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Bruchidae of Chile (Insecta: Coleoptera)

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Abstract. Species descriptions, keys to genera and species, and geographical distributions are presented for 43 species of the family Bruchidae (Coleoptera: Chrysomeloidea) for Chile. Of these species, seven are described as new: *Acanthoscelides aricae* sp. nov., *Lithraeus chillan* sp. nov., *L. comptus* sp. nov., *L. elguetai* sp. nov., *L. limari* sp. nov., *L. lonquimay* sp. nov., and *L. penai* sp. nov. Eight species are endemic to Chile. A list of true host plants and floral records for those with known host associations is presented. Habitus photographs and drawings of pertinent body parts, including male genitalia, are provided. References pertaining to the previously described species are listed.

Key Words. Seed beetles, taxonomy, host plants, new species.

Introduction

Bruchidae is a relatively small family of beetles containing about 102 genera and 1300 species. It belongs in a group of Coleoptera that includes Cerambycidae, Chrysomelidae, Curculionidae sensu lato, Anthribidae, and Scolytidae (the latter now included with the Curculionidae). Members of all of these families are associated with plants both as larvae and as adults. Bruchids are characterized by a configuration of five-segmented tarsi with the fourth segment small and nearly hidden in an emargination of the third segment. Contemporary coleopterists generally agree that the Bruchidae are closely related to the Chrysomelidae (leaf beetles) and represent a seed-feeding phyletic branch within the Chrysomeloidea with highly developed characteristics for a spermatophagous mode of life. Some argue that these characteristics qualify it for a full family status, as it has been classified for 150 years, whereas others claim that, because the taxon is closely related to the Chrysomelidae, their morphology and habits should place them only as a subfamily of that group. However, bruchids oviposit exclusively on seeds, or seed envelopes, suitable for larval development, their feeding in and pupating entirely within the seed, their use of the feeding cavity for a pupal chamber, and their habit of partly cutting an escape window in the seed wall to permit adult emergence, all point to a mode of life unlike the leaf-feeding Chrysomelidae. Furthermore, the newly hatched (neonate) larva possesses a dorsal thoracic plate that is used by the larva to escape from the egg (Yus Ramos 2009). The common name “seed beetles” is appropriate because the immature life stages are intimately associated with seeds. Eggs are glued to the surface of seeds, or seed envelopes (pods in most instances), and the neonate larvae bore into the seed and complete their development by excavating the cotyledon. Before pupating, the larvae, from inside the seed, cut a circu-

lar patch in the seed integument, after which the larvae re-enter the feeding cavity and complete the pupal stage. Following eclosion, adults emerge from the seed by pushing through the partly cut patch. Mating occurs outside the seed.

Because bruchid immature forms are easily transported in international trade, some species have become economically important because they infest seeds stored for human or domestic animal consumption. Six such species are recorded for Chile: *Acanthoscelides obtectus* (Say), the common bean weevil; *Zabrotes subfasciatus* (Boheman), the Mexican bean weevil; *Bruchus pisorum* (Linnaeus), the pea weevil; *Bruchus rufimanus* Boheman, the broadbean weevil; *Callosobruchus chinensis* (Linnaeus), the Chinese bean weevil; and *Callosobruchus maculatus* (Fabricius), the cowpea weevil. All six have a wide distribution due to human activities. The first two apparently originated in the New World, but the other four are Old World in origin. However, other species can be used as biological control of weeds, e.g. *Megacerus* Fahraeus on Convolvulaceae or *Acanthoscelides macrophthalmus* (Schaeffer) on *Leucaena leucocephala* (Lam.) de Wit in Australia. Most species of bruchids, although of scientific interest, are of no particular economic interest, but in general can be considered as biological control agents for plant populations.

Chile is a long narrow republic, extending over 3,000 miles, and covering a variety of habitats, ranging from desert habitats in the north near the Peruvian border, to glaciers to the south, as well as the Andes Mountain range forming most of the eastern border and Pacific coastline on the western border. These conditions should bring about a certain amount of endemism in the fauna. Of the 43 species treated in this report, eight (16.6%) are known only from Chile. Further collecting will undoubtedly increase the number of species with the emphasis on furthering the knowledge of the Chilean fauna by the second author and the present paper.

The purpose of this paper is to bring together what is known about the Bruchidae of Chile, including keys to facilitate identification of genera and species, lists of their true host and floral host plants, and their distributions both in and outside of Chile. This paper also includes descriptions of genera and species (including seven new species descriptions), depositions of type specimens, and full bibliographic citations for all species.

Materials and Methods

Most of the specimens upon which this paper is based came from the personal collections of the second author assembled during several years of collecting in all parts of Chile. Additional records were obtained from the following collections, some of which were used as depositories of type material:

- BMNH** — British Museum of the Natural History, London, England.
- CEAM** — Colegio de Postgraduados, Especialidad de Fitosanidad—Entomología y Acarología, Montecillo, Estado de México, México.
- CNC** — Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada.
- FMLA** — Fundación Miguel Lillo, Tucuman, Argentina.
- FSCA** — Florida State Collection of Arthropods, Gainesville, Florida, USA.
- JEBC** — J.E. Barriga Private Collection, Curico, Chile.
- MACN** — Museo Argentina de Ciencias Naturales, Buenos Aires, Argentina.
- MNHN** — Museum National d’Histoire Naturelle, Paris, France.
- MNNC** — Colección Museo Nacional de Ciencias Naturales de Santiago, Santiago, Chile.
- NHRS** — Naturhistoriska Riksmuseet, Stockholm, Sweden.
- PECM** — Personal Entomological Collection Gary V. Manley.
- TAMU** — Texas A & M University, College Station, Texas, USA.
- USNM** — National Museum of Natural History Collection, Washington, D.C., USA.
- ZMUC** — Zoological Museum, University of Copenhagen, Universitetsparken, Copenhagen, Denmark
- ZMUH** — Zoologisches Institut und Zoologisches Museum, Universität von Hamburg, Germany
- ZMUM** — University of Moscow, Moscow, Russia

Automontage photographs were the handiwork of Dr. Michael C. Thomas, retired head curator, Florida State Collection of Arthropods, Gainesville; drawings of male genitalia were by John M. Kingsolver and Jesús Romero Nápoles.

Most specimens of Bruchidae are too small to be impaled on an insect pin. The usual method of mounting is by gluing each individual specimen on the tip of a triangular card point, the broad point of which is then impaled on an insect pin carrying card labels with printed locality and host data.

Definitions of taxa were made using external as well as internal characteristics, such as body dimensions, integumental color and color pattern, details of armature of the hind femur and tibia, antennal structure, and sculpture and color pattern of the elytra and pygidium. An important source of defining characters is found in the male genitalia: the shape and size of the median lobe, armature of the internal sac, shape of the lateral lobes and shape of the spiculum gastrale. To best see the details of the male genitalia, the dissected genitalic mass usually needs to be treated in potassium hydroxide to dissolve musculature and connective tissue, leaving the more resistant chitinous structures (external wall and armature of the internal sac) for comparison with illustrations. Parts so treated were washed in slightly acidic alcohol to neutralize the KOH. For temporary observation, or for illustration, the parts were mounted in glycerin on a microscope slide beneath a cover slip. Best results were obtained when the median lobe and the lateral lobe were separated on the slide. Genital parts may be permanently stored in small plastic vials partly filled with glycerin and closed with a neoprene stopper. These can then be impaled below the specimens on the same pin (Kingsolver 1970; Kingsolver and Whitehead 1974). The interpretation of male genitalia was according to Romero and Johnson (1999). Adult lengths were taken from pronotum to elytra.

Ten keys based on morphology are presented: Genera of Bruchidae of Chile, species of *Bruchus*, species of *Callosobruchus*, species of *Megacerus*, species of *Acanthoscelides*, species of *Lithraeus*, species of *Pseudopachymerina*, species of *Scutobruchus*, species of *Senniuis*, and species of *Stator*. Keys are not included for the genera *Amblycerus*, *Zabrotes*, *Megabruchidius*, *Penthobruchus*, and *Rhipibruchus* because only one species of each of those genera was found in Chile.

For accuracy in keeping records, scientific names were used for all taxa. Common names can be variable depending upon local usage. Known synonyms are listed for each generic and specific name.

Records of species of bruchids captured, or observed feeding on inflorescences, so called "floral records", may or may not indicate a "true" host association that indicates seed feeding (Table 1, 2).

Results

Key to genera of Bruchidae of Chile.

1. Hind tibia with two, long, acute moveable spurs **2**
- Hind tibia without apical spurs but often with one or two fixed apical spines, or a mucro **3**

- 2(1). Eye emarginate no more than 1/3 its length; procoxae well separated by prosternal process; body length 4-8 mm; tenth elytral stria complete to apex; coloration reddish brown; reared in seeds of *Geoffroea decorticans*; found from Region IV ***Amblycerus dispar* (Sharp)**
- Eye emarginate 2/3 its length; procoxae contiguous separated by a thin prosternal process; body length 3-4 mm; tenth stria reaching only to middle of elytral margin; color black with irregular gray pattern of vestiture (male) with white maculae (female); reared in seeds of *Phaseolus*; found only in Region I ***Zabrotes subfasciatus* (Boheman)**

- 3(1). Pronotum trapezoidal, lateral margin with tooth; hind femur with lateroventral margin sinuate ***Bruchus***
- Pronotum bell-shaped, never with a lateral tooth; hind femur lacking spines or denticles, or with spines located on mesoventral margin, or with spines and/or denticles on both ventral margins **4**

- 4(3). Tenth elytral stria short, extending only past middle of the elytron; male antenna pectinate, female antenna strongly serrate or subpectinate **Megacerus**
 — Tenth elytral stria extending nearly to apex of elytron; antenna sexually dimorphic or not ... **5**
- 5(4). Hind femur with a spine or denticles on both lateroventral and mesoventral carinae **Callosobruchus**
 — Hind femur with one denticle or with multiple denticles on the mesoventral margin, or with one denticle on mesoventral margin and a series of small denticles on lateroventral margin, or lacking denticles **6**
- 6(5). Hind femur strongly enlarged with a series of five denticles forming a comb on mesoventral margin; hind tibia strongly arcuate with ventral margin denticulate; reared in seeds of *Parkinsonia aculeata* **Penthobruchus germaini (Pic)**
 — Hind femur moderately enlarged, normally with less than five denticles on mesoventral margin; hind tibia straight or bent only near base **7**
- 7(6). Third and fourth elytral striae originating in a prominent tubercle on basal margin; antennae dimorphic with male pectinate and female serrate reared in seeds of *Prosopis* **Rhipibruchus picturatus Fahraeus**
 — Elytral striae not originating at base in a tubercle; antenna various; host plant association various **8**
- 8(7). Pronotum with lateral carina prominent; hind femur sulcate in apical one-half with ventrolateral margin carinate and ventromedial margin with single acute denticle **Stator**
 — Pronotum lacking prominent lateral carina; ventral margin of hind femur variously configured **9**
- 9(8). Scutellum longer than wide; male with deep depression on first abdominal sternite; male genitalia with ventral keel **Scutobruchus**
 — Scutellum quadrate, or wider than long **10**
- 10(9). Elytral striae 3 and 4 each originating in a shining tooth at extreme basal margin; setae in elytral interstices each set in a small tubercle, or blister **Pseudopachymerina**
 — Striae lacking basal tooth; elytral interstices lacking blisters **11**
- 11(10). Body length 4.0 - 4.5 mm; basal end of 3rd, 4th, and 5th elytral striae originating in small denticle on margin; mucro of hind tibia elongated, spinelike; frontal carina prominent; female pygidium with paired sulci **Megabruchidius tonkineus (Pic)**
 — Body length less than 3.0 mm; with other characters **12**
- 12(11). Hind tibia lacking carina on lateral face **Lithraeus**
 — Hind tibia with carina on lateral face **13**
- 13(12). Hind femur with single subapical tooth; male genitalia with paired curved sclerites (hinge sclerites) in apical orifice **Sennius**
 — Hind femur with two or three subapical teeth; male genitalia without paired curved sclerites .
 **Acanthoscelides**

Table 1. Chilean true host plants.

Host plant	Bruchid species
ANACARDIACEAE	
<i>Lithraea caustica</i> (Mol.) Hook. & Arn.*	<i>elegans</i>
<i>Schinus crenatus</i> (Phil.)*	<i>elegans</i>
<i>Schinus johnstonii</i> F.A.Barkley*	<i>elegans</i>
<i>Schinus latifolius</i> (Gill. ex Lindl.) Engler*	<i>elegans, mutatus</i>
<i>Schinus molle</i> L.	<i>elegans</i>
<i>Schinus molle</i> var. <i>areira</i> L.	<i>elegans</i>
<i>Schinus montanus</i> (Phil.) Engler*	<i>elegans</i>
<i>Schinus patagonicus</i> (Phil.) I.M. Johnston*	<i>elegans</i>
<i>Schinus polygamus</i> (Cav.) Cabrera	<i>elegans, mutatus</i>
<i>Schinus terebinthifolius</i> Raddi	<i>elegans, mutatus</i>
<i>Schinus velutinus</i> (Turcz.) Johnst.*	<i>elegans</i>
CONVOLVULACEAE	
<i>Calystegia sepium</i> (L.) R. Br.	<i>eulophus</i>
<i>Calystegia soldanella</i> (L.) Roem. & Schult.	<i>eulophus</i>
<i>Convolvulus arvensis</i> L.	<i>egenus, eulophus</i>
<i>Convolvulus bonariensis</i> Cav.*	<i>eulophus</i>
<i>Convolvulus chilensis</i> Pers.*	<i>eulophus</i>
<i>Convolvulus crenatifolius</i> Ruiz & Pavón*	<i>eulophus</i>
<i>Convolvulus laciniatus laciniatus</i> Desr.*	<i>eulophus</i>
<i>Ipomoea cairica</i> (L.) Sweet	<i>baeri</i>
<i>Ipomoea imperati</i> (Vahl.) Griseb.	<i>baeri</i>
<i>Ipomoea marginisepala</i> O'Donell*	<i>eulophus</i>
<i>Ipomoea nil</i> (L.) Roth	<i>eulophus</i>
<i>Ipomoea purpurea</i> (L.) Roth	<i>eulophus</i>
<i>Ipomoea rubriflora</i> O'Donell*	<i>eulophus</i>
<i>Merremia dissecta</i> (Jacq.) Hallier f.	<i>baeri</i>
<i>Merremia sibirica</i> (L.) Hallier f.*	<i>eulophus</i>
DIOSCOREACEAE	
<i>Dioscorea auriculata</i> Poepp.*	<i>scutellaris</i>
<i>Dioscorea bryaniaefolia</i> Poepp.*	<i>scutellaris</i>
<i>Dioscorea varifolia</i> Kunze	<i>scutellaris</i>
LEGUMINOSAE	
<i>Acacia aroma</i> Hook.& Arn.	<i>furcatus, grata, spinipes</i>
<i>Acacia bonariensis</i> Hook. & Arn.	<i>cearanus, furcatus</i>
<i>Acacia caven</i> (Molina) Molina	<i>furcatus, spinipes, testudinarius</i>
<i>Acacia dealbata</i> Link	<i>cearanus, furcatus</i>
<i>Acacia furcatispina</i> Burkart	<i>cearanus, furcatus</i>
<i>Acacia macracantha</i> Willd.	<i>grata, spinipes, testudinarius</i>
<i>Acacia cochlearis</i> (Labill.)Wendl.	<i>cearanus</i>
<i>Acacia praecox</i> Griseb.	<i>furcatus</i>
<i>Acacia tortuosa</i> (L.) Willd.	<i>furcatus, germani</i>
<i>Acacia</i> sp.	<i>leguminarius, mankinsi</i>
<i>Acacia visco</i> Griseb.	<i>furcatus</i>
<i>Adesmia atacamensis</i> Phil.	<i>poverus</i>
<i>Adesmia colinensis</i> Phil.	<i>ferrugineipennis, leguminarius</i>
<i>Adesmia confusa</i> Ulibarri	<i>ferrugineipennis, poverus</i>

Table 1. Chilean true host plants (continued).

<i>Adesmia elegans</i> Clos	<i>poverus</i>
<i>Adesmia emarginata</i> Clos	<i>lonquimay, precanus</i>
<i>Adesmia glutinosa</i> Hook. & Arn.	<i>poverus, pyrrhomelas</i>
<i>Adesmia microphylla</i> Hook. & Arn.	<i>ferrugineipennis, poverus</i>
<i>Adesmia propinqua</i> Clos	<i>limari, poverus</i>
<i>Adesmia</i> nr. <i>zoellneri</i> Ulibarri	<i>poverus</i>
<i>Adesmia</i> sp.	<i>penai</i>
<i>Astragalus coquimbensis</i> Hook. & Arn.	<i>limari, pyrrhomelas</i>
<i>Astragalus</i> sp.	<i>limari, pyrrhomelas</i>
<i>Caesalpinia paraguariensis</i> (D. Parodi) Burkart	<i>grata</i>
<i>Cajanus cajan</i> (L.) Millsp.	<i>maculatus, obtectus, subfasciatus, argillaceus</i>
<i>Cercidium praecox glaucum</i> (Cav.) Burkart & A.M. Carter	<i>germaini</i>
<i>Lablab purpureus</i> (L.) Sweet	<i>argillaceus</i>
<i>Geoffroea decorticans</i> (Hook. & Arn.) Burkart	
<i>Gleditsia triacanthos</i> L.	<i>tonkineus</i>
<i>Hoffmannseggia eremophila</i> (Phil.) Ulibarri	<i>falcatus</i>
<i>Lathyrus</i> sp.	<i>obtectus</i>
<i>Leucaena diversifolia</i> (Schltdl.) Benth.	<i>cearanus, mankinsi</i>
<i>Leucaena leucocephala</i> (Lam.) De Wit	<i>suramerica</i>
<i>Leucaena leucocephala glabrata</i> (Rose) Zarate*	<i>suramerica</i>
<i>Leucaena trichodes</i> (Jacq.) Benth.	<i>suramerica</i>
<i>Leucaena</i> sp.	<i>mankinsi</i>
<i>Medicago sativa</i> L.	<i>egenus, pyrrhomelas</i>
<i>Mimosa pigra</i> L.	<i>pigricola</i>
<i>Mimosa</i> sp.	<i>pigricola</i>
<i>Parkinsonia aculeata</i> L.	<i>germaini, spinipes, testudinarius</i>
<i>Patagonium colinense</i> (Phil.) Reiche*	<i>ferrugineipennis</i>
<i>Phaseolus lunatus</i> L.	<i>argillaceus, obtectus, subfasciatus</i>
<i>Phaseolus vulgaris</i> L.	<i>argillaceus, obtectus, pisorum, subfasciatus</i>
<i>Piptadenia obliqua</i> (Pers.) J.E. Macbr.	<i>cearanus</i>
<i>Pithecellobium excelsum</i> (Kunth) Mart.	<i>cearanus</i>
<i>Pisum sativum</i> L.	<i>pisorum</i>
<i>Prosopis abbreviata</i> Benth.	<i>ceratioborus</i>
<i>Prosopis affinis</i> Spreng.	<i>picturatus</i>
<i>Prosopis alba</i> Griseb.	<i>ceratioborus, picturatus</i>
<i>Prosopis alpataco</i> Phil.	<i>ceratioborus</i>
<i>Prosopis burkartii</i> O. Muñiz	<i>gastoi, picturatus</i>
<i>Prosopis caldenia</i> Burkart	<i>ceratioborus, longescutus, picturatus</i>
<i>Prosopis chilensis</i> (Molina) Stuntz	<i>ceratioborus, longescutus, picturatus</i>
<i>Prosopis chilensis chilensis</i> (Molina) Stuntz	<i>picturatus</i>
<i>Prosopis elata</i> (Burkart) Burkart	<i>picturatus</i>
<i>Prosopis ferox</i> Griseb.	<i>picturatus</i>
<i>Prosopis flexuosa</i> DC.	<i>ceratioborus, longescutus</i>
<i>Prosopis flexuosa flexuosa</i> DC.	<i>ceratioborus, picturatus</i>
<i>Prosopis humilis</i> Hook.	<i>picturatus</i>
<i>Prosopis juliflora</i> (Sw.) DC.	<i>ceratioborus</i>

Table 1. Chilean true host plants (continued).

<i>Prosopis nigra</i> Hieron	<i>ceratioborus, longescutus, picturatus</i>
<i>Prosopis reptans</i> Benth.	<i>ceratioborus, longescutus</i>
<i>Prosopis ruscifolia</i> Griseb.	<i>ceratioborus</i>
<i>Prosopis sericantha</i> Hook	<i>ceratioborus</i>
<i>Prosopis strombulifera</i> (Lam.) Benth.	<i>ceratioborus, gastoi, longescutus, picturatus</i>
<i>Prosopis tamarugo</i> Phil.	<i>gastoi, picturatus</i>
<i>Prosopis torquata</i> (Lag.) DC.	<i>ceratioborus, picturatus</i>
<i>Senna acuta</i> (Vogel) Zoellner & San Martin	<i>leguminarius</i>
<i>Senna angustisiliqua</i> (Lam.) H.S. Irwin & Barneby	<i>leguminarius</i>
<i>Senna australis</i> (Vell.) H.S. Irwin & Barneby	<i>transversesignatus</i>
<i>Senna bicapsularis</i> (L.) Roxb.	<i>lebasi</i>
<i>Senna candolleana</i> (Vogel) H.S. Irwin & Barneby	<i>ferrugineipennis, leguminarius</i>
<i>Senna closiana</i> (Phil.) Irw. & Barn.*	<i>leguminarius</i>
<i>Senna coquimbensis coquimbensis</i> (Vogel) H.S. Irwin & Barneby	<i>leguminarius</i>
<i>Senna cumingii cumingii</i> (Hook, & Am.) H.S. Irwin & Barneby	<i>leguminarius</i>
<i>Senna cumingii coquimbensis</i> (Vogel) Irw. & Barn.*	<i>leguminarius</i>
<i>Senna frondosa</i> (Soland) Hook. & Arn.*	<i>leguminarius</i>
<i>Senna huidobriana</i> (Phil.) Zoellner & San Martin	<i>leguminarius</i>
<i>Senna multiglandulosa</i> (Jacq.) H.S. Irwin & Barneby	<i>leguminarius</i>
<i>Senna obtusifolia</i> (L.) H.S. Irwin & Barneby	<i>transversesignatus</i>
<i>Senna occidentalis</i> (L.) Link.	<i>falcatus</i>
<i>Senna stipulaceae angulorum</i> H.S. Irwin & Barneby	<i>ferrugineipennis, leguminarius</i>
<i>Senna stipulaceae stipulaceae</i> (Aiton) H.S. Irwin & Barneby	<i>ferrugineipennis, leguminarius</i>
<i>Senna</i> sp.	<i>aricae</i>
<i>Trifolium pratense</i> L.	<i>pyrrhomelas</i>
<i>Trifolium repens</i> L.	<i>pyrrhomelas</i>
<i>Trifolium subterraneum</i> L.	<i>pyrrhomelas</i>
<i>Vicia faba</i> L.	<i>rufimanus</i>
<i>Vicia sativa sativa</i> L.	<i>rufimanus</i>
<i>Vigna unguiculata</i> (L.) Walp.	<i>argillaceus</i>
<i>Vigna unguiculata sesquipedalis</i> (L.) Verdc.	<i>obtectus</i>
RHAMNACEAE	
<i>Ziziphus joazeiro</i> Mart.*	<i>dispar</i>
VERBENACEAE	
<i>Diostea juncea</i> (Gill. & Hook.) Miers	<i>elguetai</i>

Table 2. Chilean host plants floral associations.

Host plants floral associations	Bruchid species
AMARANTHACEAE	
<i>Atriplex repanda</i> Phil.	<i>egenus</i>
ANACARDIACEAE	
<i>Lithraea caustica</i> (Mol.) Hook. & Arn.*	<i>elegans</i>
<i>Schinus latifolius</i> (Gill. ex Lindl.) Engler*	<i>egenus, elegans</i>
<i>Schinus molle</i> L.	<i>elegans, obtectus, testudinarius</i>
<i>Schinus polygamus</i> (Cav.) Cabrera	<i>elegans</i>
ASPARAGACEAE	
<i>Asparagus officinalis</i> L.	<i>eulophus</i>
ASTERACEAE	
<i>Aster squamatus</i> (Spreng.) Hieron.	<i>elegans</i>
<i>Baccharis</i> sp.	<i>elegans, scutellaris</i>
<i>Carduus nutans</i> L.	<i>egenus</i>
<i>Carthamus lanatus</i> L.	<i>egenus</i>
<i>Proustia cuneifolia</i> D. Don.	<i>scutellaris</i>
<i>Taraxacum officinale</i> F.H. Wigg.	<i>precanus</i>
ATHEROSPERMATAEAE	
<i>Laurelia sempervirens</i> (Ruiz. & Pav.) Tul.	<i>poverus, scutellaris</i>
<i>Laurelia</i> sp.	<i>scutellaris</i>
CAPPARACEAE	
<i>Capparis</i> sp.	<i>leguminarius</i>
CONVOLVULACEAE	
<i>Convolvulus arvensis</i> L.	<i>egenus, elegans, obtectus, pyrrhomelas</i>
<i>Convolvulus bonariensis</i> Cav.*	<i>eulophus</i>
<i>Convolvulus chilensis</i> Pers.*	<i>eulophus</i>
<i>Convolvulus laciniatus laciniatus</i> Desr.*	<i>eulophus</i>
DIOSCOREACEAE	
<i>Dioscorea auriculata</i> Poepp.*	<i>scutellaris</i>
<i>Dioscorea bryoniaefolia</i> Poepp.*	<i>scutellaris</i>
<i>Dioscorea</i> sp.	<i>scutellaris</i>
<i>Dioscorea variifolia</i> Bertero*	<i>scutellaris</i>
ESCALLONIACEAE	
<i>Escallonia revoluta</i> (R. & Pav.) Pers.*	<i>egenus, elegans, obtectus, pyrrhomelas</i>
LEGUMINOSAE	
<i>Acacia caven</i> (Molina) Molina	<i>spinipes</i>
<i>Acacia farnesiana</i> (L.) Willd.	<i>grata</i>
<i>Acacia macrantha</i> Willd.	<i>spinipes</i>
<i>Acacia</i> sp.	<i>leguminarius</i>
<i>Adesmia colinensis</i> Phil.	<i>ferrugineipennis</i>
<i>Adesmia confusa</i> Ulibarri	<i>ferrugineipennis</i>
<i>Adesmia emarginata</i> Clos	<i>lonquimay</i>
<i>Adesmia microphylla</i> Hook. & Arn.	<i>poverus</i>
<i>Adesmia propinqua</i> Clos	<i>limari, poverus</i>
<i>Adesmia viscosa</i> Hook. & Arn.	<i>poverus, pyrrhomelas</i>
<i>Adesmia</i> sp.	<i>egenus, penai</i>
<i>Anadenanthera colubrina cebil</i> (Griseb.) Altschul	<i>furcatus</i>
<i>Astragalus</i> sp.	<i>limari, pyrrhomelas</i>

Table 2. Chilean host plants floral associations (continued).

<i>Astragalus coquimbensis</i> Hook. & Arn.	<i>pyrrhomelas</i>
<i>Gleditsia triacanthos</i> L.	<i>tonkineus</i>
<i>Medicago sativa</i> L.	<i>eulophus</i>
<i>Parkinsonia aculeata</i> L.	<i>germaini, spinipes</i>
<i>Phaseolus vulgaris</i> L.	<i>obtectus</i>
<i>Senna pendula</i> (Willd.) H.S. Irwin & Barneby	<i>furcatus</i>
<i>Trifolium pretense</i> L.	<i>pyrrhomelas</i>
<i>Trifolium repens</i> L.	<i>pyrrhomelas</i>
<i>Trifolium subterraneum</i>	<i>pyrrhomelas</i>
MONIMIACEAE	
<i>Peumus boldus</i> Molina	<i>scutellaris</i>
NOTHOFAGACEAE	
<i>Nothofagus alpina</i> (Poepp. & Endl.) Oerst.*	<i>scutellaris</i>
<i>Nothofagus dombeyi</i> (Mirb.) Oerst.	<i>elegans, mutatus, poverus, scutellaris</i>
<i>Nothofagus obliqua</i> (Mirb.) Oerst.	<i>elguetai, scutellaris</i>
POACEAE	
<i>Zea mays</i> L.	<i>eulophus</i>
PROTEACEAE	
<i>Lomatia hirsuta</i> Diels ex J.F. Macbr.	<i>dispar</i>
<i>Lomatia</i> sp.	<i>limari, poverus, pyrrhomelas</i>
QUILLAJACEAE	
<i>Quillaja saponaria</i> Molina	<i>egenus, elegans, obtectus, pyrrhomelas, scutellaris, spinipes</i>
ROSACEAE	
<i>Fragaria</i> sp.	<i>pyrrhomelas</i>
<i>Rosa</i> sp.	<i>elegans</i>
SALICACEAE	
<i>Azara dentata</i> Ruiz & Pav.*	<i>egenus, elegans, scutellaris</i>
<i>Azara</i> sp.	<i>elegans</i>
VERBENACEAE	
<i>Diostea juncea</i> (Gill. & Hook.) Miers	<i>elegans, elguetai</i>
<i>Duranta serratifolia</i> (Griseb.) Kuntze	<i>furcatus</i>

BRUCHIDAE**Amblycerinae****Amblycerini****Genus *Amblycerus* Thunberg, 1815**

Amblycerus Thunberg 1815: 121; Bridwell 1930: 29; 1946: 53; Blackwelder 1946: 97; Johnson 1968: 1268; Kingsolver 1970: 471; Johnson and Kingsolver 1982; Romero et al. 1996: 7; Kingsolver 1990: 50; Ribeiro-Costa 1995: 2; Kingsolver and Ribeiro 1997: 325.

Anthotribus Gistel 1856: 815.

Spermophagus Schoenherr 1833: 102.

Amblycerus is a large New World genus of more than 100 described species, and many more undescribed. Only one species is found in Chile.

Amblycerus dispar* (Sharp)*Fig. 1-2**

Spermophagus dispar Sharp 1885: 494; Pic 1913a: 59.

Amblycerus dispar: Blackwelder 1946: 762; Johnson and Kingsolver 1982: 410; Udayagiri and Wadhi 1989: 9; Barriga and Kingsolver 2010: 1.

Spermophagus longissimus Pic 1902c: 172; Pic 1913: 60; Bondar 1931: 59; Bondar, 1937: 32; Zacher 1952: 468.

Amblycerus longissimus: Blackwelder 1946: 762; Costa Lima 1955: 249; Silva et al. 1968: 376; Johnson and Kingsolver 1975: 328; Udayagiri and Wadhi 1989: 11; Kingsolver and Silva 1991: 414.

Spermophagus caryoboriformis Pic 1911: 110; Bosq 1943: 46; Blackwelder 1946: 762; Terán and Muruaga de L'Argentier 1979: 436; 1981: 68; Muruaga 1983: 99; Terán 1984: 211; Udayagiri and Wadhi 1989: 8; Kingsolver 1990: 50.

Spermophagus thomasi Brèthes 1925: 203; Udayagiri and Wadhi 1989: 30; Kingsolver 1990: 50.

Spermophagus guyanensis Pic 1917: 302; Kingsolver and Ribeiro 1997: 326.

Amblycerus guyanensis: Blackwelder 1946: 762; Udayagiri and Wadhi 1989: 10.

Spermophagus piceosuturalis Pic 1927: 13.

Amblycerus piceosuturalis: Blackwelder 1946: 763; Udayagiri and Wadhi 1989: 13.

Spermophagus caracasensis Pic 1954: 16.

Type depositories: *S. dispar*- BMNH; *A. longissimus*, *S. guyanensis*, *S. piceosuturalis*, *S. caracasensis*- MNHN; *S. thomasi*- probably MACN.

Type localities: *S. dispar*- Caldera, Panama; *A. longissimus*- Brazil; *S. guyanensis* and *S. piceosuturalis*- French Guiana; *S. caracasensis*- Venezuela; *S. thomasi*- Chile.

Label data for these types are detailed in Kingsolver and Ribeiro (1997: 325-6).

Description. Male. Length 5.0-7.0 mm; width 2.0-3.5 mm. **Color.** Integument uniformly brown, antenna reddish brown. **Vestiture.** Evenly distributed ash gray setae, except more dense on lateral margins of pronotum and in paired round spots on disk of pronotum; pygidium with a faint median line of setae; ventral areas with evenly distributed vestiture. **Structure.** Body elongate-oval; head turbiniform, frons narrowly convergent, convex between coarsely faceted eyes, not carinate; vertex convex, setose; antenna elongate slender, serrate, reaching middle of elytra; pronotum subquadrate, lateral margins subparallel in basal ½ then arcuate to meet anterior margin; basal margin sinuate. Scutellum elongate, expanded to blunt apex; elytral striae narrow; pygidium flat, obovate; metafemur unarmed; tibial spurs slender, lateral spur twice length of mesal spur; fifth abdominal sternum emarginate at apex (Fig. 1a-c). **Male genitalia.** Median lobe 4x as long as wide, ventral valve ogival, apex slender; internal sac with slender median sclerite bearing a row of short, acute denticles; lateral lobes broad, apices concave,

densely setose (Fig. 2a-b). **Female.** Similar to male, except fifth abdominal sternum not emarginate at apex.

Host plants. *Geoffroea decorticans* and *Ziziphus joazeiro*. Floral association: *Lomatia hirsuta*.

Distribution. Argentina, Brazil, Chile, Curacao, Guyana, Honduras, Panama, Venezuela.

Material examined. CHILE: Copiapó, Copiapó, 12/XI/1972, Charlín; id. 15/XI/1972, Planella; id. XI/1973, Charlin; id. X/1984, Jordán; id. IX/1985, JEB, all ex *Geoffroea decorticans*. **Huasco,** El Carmen, IX/1985, JEB; Carmen Alto, Jan. 1989, JEB, ex *Geoffroea decorticans*: id. Dec. 1990, JEB, ex *Geoffroea decorticans*: Vallenar, Feb. 1995, ex *Geoffroea decorticans*, G. Mieres.

Spermophagini

Genus *Zabrotes* Horn, 1885

Zabrotes is a New World genus with 35 described species. One species found in Chile has been distributed around the world in the subtropical zone by man's cultivation of leguminous food crops.

Zabrotes subfasciatus (Boheman)

Fig. 3-5

Zabrotes subfasciatus Boheman 1833: 111; Romero and Johnson 2000: 221; Barriga and Kingsolver 2010: 1.

Spermophagus musculus Boheman 1833: 112.

Spermophagus semifasciatus Boheman 1839: 137.

Spermophagus pectoralis Sharp 1885: 492.

Spermophagus semicinctus Horn 1894: 411.

Spermophagus dorsopictus Lepesme and Vayssiere 1941: 201.

Description. Male. Length 2.0-2.8 mm; width 1.4-1.5 mm. **Color.** Integument dark brown to black; antennae with segments 1 and 2 reddish brown, terminal segments dark brown to black; legs black except apices of pro- and metafemora red, tarsi sometimes red, hind legs black; pronotum black; abdomen dark brown to yellowish brown. **Vestiture.** Head brown; pronotum and elytra with scattered patches of yellowish brown and variable median stripe of yellowish setae; elytra black with transverse band of short stripes of yellow and dark brown setae; pygidium uniformly yellowish brown to black with indistinct, narrow median stripe, sometimes mottled. **Structure.** Head with frontal carina, ocular sinus $3/5$ length of eye; antenna long, slender; pronotum strongly convex; lateral margins carinate; striae punctures elongate, deep, interstices densely punctulate; metasternum with depressed, densely setose median sulcus; pygidium convex, with apex recurved into sternal sinus; metafemur broad, curved; metatibia with two short terminal spurs (Fig. 3a-c). **Male genitalia.** Median lobe short; ventral valve triangular; internal sac with two median clusters of denticles; lateral lobes with bases fused strap-like (Fig. 5a-b). **Female.** Similar to male except pronotum and elytra mostly black with contrasting white basal pronotal patch and median white patches on each elytron; pygidium dark brown to black with white median stripe (Fig. 4a-b).

Host plants. See Barriga (1990), Romero and Johnson (2000), and Kingsolver (2004a) for an extensive list of hosts.

Distribution. Cosmopolitan species.

Material examined. CHILE: Valparaiso, Puerto de Valparaiso, (probable introduction from Ecuador), 29/IV/1993, s/rice, E. Prado. id., in rice, from Ecuador, 20/IV/1983, E. Prado.

Discussion. The tropicopolitan distribution of this species has resulted in numerous synonyms (see Kingsolver (2004a) for a complete list of synonyms) and a long list of host plants, many of which produce seeds of economic importance. The species undoubtedly originated in the Neotropics, where its nearest relatives are found. It is a continuous breeder in stored seeds.

Bruchinae Bruchini

Genus *Bruchus* Linnaeus, 1767

Bruchus Linnaeus 1767: 604 (not *Bruchus* Geoffroy 1762). Linnaeus 1758: 356, by subsequent designation, Latreille 1810.

Laria Scolopi 1763: 21, of authors. Although *Laria* was used by several authors, it is invalid for Bruchidae since Bridwell (1932) designated *Laria dulcamarae* Scopoli, a nitidulid, as the type species.

Mylabris Müller 1764: 14.

Type species. *Dermestes pisorum* Linnaeus 1758, by subsequent designation, Bridwell 1932 (not *Mylabris* Fabricius 1775).

Key to species of *Bruchus*

1. Metafemur with long external tooth near apex; mucro shorter than lateral denticle (Fig. 9); protibia and apical one-half of of mesotibia and tarsus red; pygidium with two large black maculae (Fig. 6c) ***Bruchus pisorum* (Linnaeus)**
- Metafemur with only an angulation on ventral margin (Fig. 13a); mucro short; part of fore legs red, mid legs black; pygidium without paired gray apical maculae (Fig. 10c) ***Bruchus rufimanus* (Boheman)**

Bruchus pisorum (L.)

Fig. 6-9

Dermestes pisorum Linnaeus 1758: 356.

Bruchus pisi Linnaeus 1767: 604.

Bruchus obscurus Philippi and Philippi 1864: 360.

Bruchus philippi Pic 1912: 92, as a new name for *obscurus* Philippi and Philippi, not Fahraeus 1839.

Bruchus pisorum: Pintureau 1999: 53; Porter 1933: 87; Olalquiaga 1949: 88; Barriga and Kingsolver 2010: 1.

See Kingsolver (2004a: 72) for additional citations.

Description. Male. Length 3.9-4.9 mm; width 2.3-2.8 mm. **Color.** Integument black with four basal antennal segments, protibiae and tarsi reddish orange. **Vestiture.** White, yellowish brown and dark brown or black in pattern of Fig. 6a on pronotum and elytra; head white to yellowish brown; pronotum yellowish brown and intermixed white; basal lobe with white patch; scutellum white; elytra mostly yellowish brown with dark brown lateral maculae separated from dark brown apical patches by diagonal row of white patches; pygidium mostly white to yellowish brown with basal and subapical patches black. **Structure.** Vertex, frons and clypeus densely foveolate; frontal carina absent; ocular sinus three-fourths as long as eye; antenna moderately eccentric, extending to humerus of elytra; pronotum transverse, broadly semicircular; each lateral margin with small tooth at midpoint; disk densely foveolate and punctulate; scutellum transverse; mesepimeron narrowly reaching mesocoxa; elytra together 1.1x as

long as wide slightly depressed along suture, laterally convex; striae deep, narrow, subparallel, lacking basal denticles, humeri coarsely imbricate; hind leg as in Fig. 6b, femur with long, slender denticle on ventromesal margin, tibia with lateral, mesal and ventral carinae distinct, mucro short, blunt; middle tibia with short curved hook; pygidial disk densely foveolate, apex truncate (Fig. 6c). **Male genitalia.** Median lobe slender, slightly expanded toward apex; ventral valve ovate, apex broadly rounded, dorsal valve rounded; armature of internal sac consisting of a pair of small setal patches at apical orifice, sac lined with fine spicules for entire length, closure valve undifferentiated; lateral lobes elongate, slender, cleft one-half their length, apices strongly curved, each with setose, alate process (Fig. 8a-b). **Female.** As in male but with pygidium not reflexed at apex, but rounded (Fig. 7a-c).

Host plants. In Chile this species has been reared only in *Pisum sativum* seeds; however, in other countries it can feed on the following hosts: *Cytisus* sp., *Lathyrus laetiflorus* Greene, *L. latifolius* L., *L. odoratus* L., *L. sativus* L., *Phaseolus vulgaris* L., *Pisum arvense* L., *P. elatius* M. Bieb., *Pisum sativum elatius* (M. Bieb.) Asch. and Graebn., *Vicia benghalensis* L., *V. caroliniana* Walter, *V. cracca* L., *V. faba* L., *V. faba minor* Beck, *V. grandiflora* Scop., *V. leucantha* Bivona, *V. pannonica* Crantz, *V. peregrina* L., *V. radiata radiata* (L.) R. Wilczek, *V. sativa* L., *V. sepium* L., *V. villosa* Roth.

Distribution. Afghanistan, Algeria, Argentina, Australia, Belgium, Bulgaria, Chile, China, Croatia, Cuba, Cyprus, France, Greece, Hungary, India, Iran, Israel, Italy, Japan, Lebanon, Morocco, New Zealand, Nicaragua, Pakistan, Portugal, Puerto Rico, Sardinia, Spain, Turkey, USA.

Material examined. CHILE: Quillota, Cerro la Campana, mina, XII/1978, Herrera. **Valparaiso,** Concon, 15/I/1959, Jetés. **Santiago,** Antumapu, 8/XI/1973, Barriga, in flowers *Pisum sativum*; id. I/1977, Barriga; Santiago, 16/VIII/1961; id. 19/II/1951, Durán; Las Cruces, Cord. Parral, 25/XI/1960, Peña. **Cachapoal,** Copequen, 5/XII/1999, Ugarte. **Talca,** Talca, 9/III/1968, López. **Concepción,** Concepción, 6/III/1955, JAC., ex *Pisum*; id. 25/IX/1956, JAC., ex *Pisum*; id. 25/VII/1958, JAC., ex *Pisum*; id. 25/IX/1958, JAC., ex *Pisum*; id. 25/XII/1958, Truesto; Laraquete, 9/XII/1959, Pérez. **ARGENTINA: Buenos Aires,** Glew, Carpintero, X/1975. **Entre Rios,** El Palmar, Viana, I/1974.

Discussion. *Bruchus pisorum* is one of the most widely distributed bruchid species in the world due to the cultivation of its normal host *Pisum sativum* (green pea). It often emerges from stored seeds but does not reinfest seeds in storage because it must oviposit on green pods in the field.

Bruchus rufimanus Boheman

Fig. 10-13

Bruchus rufimanus Boheman 1833: 58; Horn 1873: 315; Back 1940: 7; Olalquiaga 1949: 88; Decelle 1975: 115; Barriga and Kingsolver 2010: 1.

Many other references can be found in Luk'yanovich and Ter-Minassian (1957: 100) and Udayagiri and Wadhi (1989: 200).

Description. Male. Length 3.1-4.4 mm; width 2.2-2.6 mm. **Color.** Body and appendages black except for four basal antennal segments and forelegs reddish orange. **Vestiture.** Variable; head and pronotum usually with yellowish-brown clothing, lateral pronotal margin and discal spots white; base of pronotum with white triangular patch; scutellum white; elytra varying from pattern of white spots with short, yellowish brown sutural stripe to intermixed yellowish brown, black and white with variably distributed white spots; pygidium varying from white to brownish yellow, with two subapical black spots; disc with two vague, elongate grayish maculae; venter of body usually white with some variable yellowish brown mottling on metepisternum. **Structure.** Vertex and frons densely foveolate around median boss; frontal carina absent; ocular sinus 4/5 as long as eye; antenna slightly eccentric from 5th segment, terminal segment ovate; pronotum trapezoidal, lateral margins sinuate with denticle at midpoint of margin, disk convex with triangular sulcus on basal lobe; lateral carina absent. Scutellum quadrate, emarginate. Elytra moderately convex; striae deep, subparallel, slightly sinuate near base; interstices flat, in basal

one-third, densely punctate toward apex; hind leg as in Fig. 13a; metafemur with ventrolateral margin emarginate near apex; mesotibia ventrally dilated (Fig. 13b), and with small terminal hook. Fifth abdominal sternum with apical margin shallowly emarginated (Fig. 10a-c). **Male genitalia.** Ventral valve broad, apex narrowly acute; internal sac densely lined with denticles, with curvate sclerite near apex. Lateral lobes cleft one-half their length; apical lobes strongly curvate (Fig. 11a-b). **Female.** Similar to male but lacking modified middle tibia; apical margin of terminal sternum truncate (Fig. 12a-c).

Host plants. *Vicia faba* and *V. sativa*. In addition, there are the following host records in other countries: *Cicer arietinum* L., *Lathyrus cicero* L., *L. clymenum* L., *L. laxiflorus* (Desf.) Kuntze, *L. sativus* L., *L. venetus* (Mill.) Wohlf., *Lens culinaris* Medik., *Lupinus angustifolius* L., *Phaseolus* sp., *Phaseolus vulgaris* L., *Pisum sativum* L., *Vicia articulata* Willd., *V. bithynica* (L.) L., *V. faba minor* Beck, *V. hybrid* L., *V. lutea* L., *V. lutea lutea* L., *V. monantha* Retz., *V. narbonensis* L., *V. onobrychioides* L., *V. pannonica* Crantz, *V. pannonica pannonica* Crantz, *V. peregrina* L., *V. sativa nigra* (L.) Ehrh., *V. tenuifolia* Roth, *V. vestita* Boiss., *V. villosa* Roth, *V. villosa varia* (Host) Corb. *V. subterranean* (L.) Verdc., *Voandzeia subterranea* (L.) DC.

Distribution. Algeria, Argentina, Belgium, Bulgaria, Chile, China, Croatia, Cyprus, Egypt, France, Germany, Greece, Hungary, Iran, Israel, Italy, Japan, Jordan, Korea, Macedonia, Morocco, Netherlands, Portugal, Spain, Tunisia, Turkey, USA.

Material examined. CHILE: Cautin, Temuco, ex *Vicia faba*, J. Luna, leg. (extralimital.); Prodesal, Perquenco, 13/VIII/1997, in *Vicia faba*, H. Vasquez; Maquehue, Padre de las Casas, 26/III/2002, in *Vicia faba*, M. Schafer; Carahue, 2/VII/2008, in *Vicia faba*, H. Careau; Galvarino, 25/VIII/2008, in *Vicia faba*, M. Espinoza; Victoria, 8/X/2008, in *Vicia faba*, Yanes; Entre Rios, C.N. Imperial, 2/VII/2009, in *Vicia faba*, L. Toy. **ARGENTINA:** Interception data: Bahía Blanca, Liucura International Barrier, 21/III/1994, ex. *Vicia faba*; Pino Hachado International Barrier, 23/III/2008, ex. *Vicia faba*.

Genus *Callosobruchus* Pic, 1902

Callosobruchus Pic 1902: 6, described as a subgenus of *Bruchus*.

Two species are recorded from Chile, mostly intercepted at ports of entry, or in seeds brought into the country. Neither is apparently established as a pest species in Chile, but because they are easily transported and have the potential of becoming pest species, they are included here. The genus is Old World in origin. Lists of host plants are given for these two species in Kingsolver (2000: 242).

Key to species of *Callosobruchus*

1. Elytral striae 3 and 4 each with a small triangular denticle on a prominent basal gibbosity *Callosobruchus chinensis* (Linnaeus)
- Elytral striae originating at basal margin and lacking denticles or gibbosity *Callosobruchus maculatus* (Fabricius)

Callosobruchus chinensis (Linnaeus)

Fig. 14-16

Curculio chinensis Linnaeus 1758: 386.

Type locality. China.

This species has a long list of synonyms. See Udayagiri and Wadhi (1989: 167), or Kingsolver (2004a: 80).

Description. Male. Length 2.7-3.0 mm; width 1.8-2.3 mm. **Color.** Integument red to black, most frequent color pattern (Fig. 14a-c) with darker median pronotal stripe, basal lobe of pronotum with prominent paired dense patches of white setae often appearing matted; elytra with basal maculae flanking the scutellum extending to humeri, followed by angular yellow bands extending from median suture to lateral margin and delimited behind by dark red maculation and a transverse white band, apical 1/4 of elytra dark red; pygidium white sometimes with faint maculae at apex; ventral areas of body with sparse white setae except in dense patches at caudal end of metepisternum and lateral borders of abdominal sternites. **Structure.** Head somewhat elongated, frontal carina prominent, eyes protuberant, ocular sinus $\frac{1}{2}$ length of eye, postocular lobe narrow, antenna with segments 6-11 pectinate; pronotum conical, disk convex, basal lobe prominent; elytral striae 3 and 4 arising basally from denticles on summit of a gibbosity; humeri rounded, prominent; striae shallow, interstices of alternate widths; scutellum small, longer than wide, bilobed; pygidium convex, reflexed at apex to fit emarginate terminal sternite. Fore and mid legs slender; metacoxal face densely punctate; metafemur bicarinate ventrally, each carina with subapical denticle, metatibia with ventral, lateroventral, and lateral carinae complete, ventral carina terminating in long, acute mucro. **Male genitalia.** Median lobe long, slender, ventral valve elongate, acute; internal sac densely lined with fine spiculae, apex with two burr-like sclerites; lateral lobes long, slender, deeply cleft, apices spatulate (Fig. 16a-b). **Female.** Similar to male except antennae serrate, pygidium with broad, white median stripe flanked by elongate black maculae, pygidium not reflexed into terminal sternite (Fig. 15a-c).

Discussion. This species apparently has not been detected breeding in Chile, and only one record of its interception exists for Chile, but its potential for establishment merits its inclusion. See Kingsolver (2000: 81) for list of host plants.

Callosobruchus maculatus (Fabricius)

Fig. 17-20

Bruchus maculatus Fabricius 1775: 65.

Callosobruchus maculatus: Bridwell 1929: 40; Larson and Fisher 1938: 23-29; Olalquiaga 1949: 89; Barriga and Kingsolver 2010: 2.

Bruchus quadrimaculatus Fabricius 1792: 371.

For a more extensive list of combinations and synonyms, see Kingsolver (2004a: 82).

Description. Male. Length 2.7-3.8 mm; width 1.5-1.9 mm. **Color.** Body variably red to black, usually with head and pronotum black, elytra dark red with black maculae on lateral margins and apex; pygidium and legs yellowish red to dark red; antennae dark red. **Vestiture.** Body with gray to white uniformly distributed slender setae except for dense pad of yellowish setae on basal lobe of pronotum, sometimes extending forward along midline; pygidium with uniformly distributed vestiture. **Structure.** Head turbiniform, eyes protuberant, ocular sinus $\frac{1}{2}$ length of eye, postocular lobe narrow, frontal carina prominent; pronotum pentagonal, lateral margins evenly convergent, convex, basal lobe prominent; scutellum small, longer than wide, apex incised; elytral striae distinct, originating at basal margin, lacking basal gibbosity, interstices of subequal width; pygidium evenly convex, apex truncate; 5th sternite deeply emarginate to receive pygidial apex; fore and mid legs slender; metacoxa densely punctulate; metafemur ventrally bicarinate, each carina with prominent subapical denticle; metatibia with lateral carinae ending in marginal tooth, ventrolateral carina extending only $\frac{1}{2}$ way to apex, ventral carina strong and ending in sharp, slender mucro (Fig. 17a-c). **Male genitalia.** Two forms, one reflecting normal sedentary development (Fig. 19a-b), and the other a temporary form reflecting crowded conditions during scarcity of food (Fig. 20a-b). The two forms can only be identified by examination of male genitalia. **Females.** Similar to males except pygidium black with white median stripe, and fifth sternite not strongly emarginated (Fig. 18a-c).

Host plants. See Kingsolver (2004a) for an extensive list of hosts.

Distribution. Cosmopolitan species.

Material examined. **CHILE: Copiapo**, Copiapo, 13/III/1981, E. Prado, in peas (*Pisum* sp.); IX/1981, in white beans (*Phaseolus* sp.). **Concepción**, Talcahuano, 3/VII/1987, Sesnic. Other records are of interceptions from Venezuela, Canada, Japan, and Argentina. Hosts include peas, beans, black-eye peas (*Vigna* sp.), and chickpeas (*Cicer* sp.) in these interceptions.

Discussion. This species is cosmopolitan in distribution and carries a long list of host plants. Its ability to reinfest seeds in storage makes it difficult to control and its variability in color pattern makes it difficult to identify. Characters given in the description and key, and the photographs, should ease identification.

Genus *Megabruchidius* Borowiec, 1984

Megabruchidius Borowiec 1984: 115; Yus 2009: 371; Tuda and Morimoto 2004: 105.

This genus originated in the Old World; it has three species (*M. dorsalis*, *M. tonkineus*, and *M. sophorae*); the only species introduced to the New World is *M. tonkineus*.

Megabruchidius tonkineus (Pic)

Fig. 21-23

Laria tonkinea Pic 1904: 42.

Bruchus tonkineus: Udayagiri and Wadhi 1989: 205

Megabruchidius tonkineus: Wendt 1980: 317; Jermy et al. 2002: 346; Di-Iorio 2005: 1; Stojanova 2007: 109; György et al. 2007: 89; Yus 2009: 371; Barriga and Kingsolver 2010: 2.

Type species. *B. tonkineus* Pic 1904 (orig. desig.).

Description. Male. Length 4.0-4.5 mm; width 2.8-3.2 mm. **Color.** Integument of head black except vertex dark red; antenna with segments 1-4 yellow, remaining segments reddish brown; pronotum dark red, sometimes with reddish brown patches or streaks; elytra dark red with reddish yellow pattern composed of yellow setal patches; apical 1/8 of elytra piceous with yellow setal pattern; pygidium semi-circular, red with two small piceous spots each set in shallow fossa; ventral areas of thorax, legs and abdomen varying red to piceous. **Vestiture.** Setae yellow in vague pattern on elytra and pronotum. **Structure.** Head with prominent median carina; ocular sinus 2/5 length of eye; form of hind leg as in Fig. 21b; antenna subserrate; mesal carina of hind femur with single acute denticle; metatibial mucro elongated and slightly curved; basal abdominal sternite with, shallow, median granulate pit fringed with appressed setae (Fig. 21a-c). **Male genitalia.** Median lobe narrow, parallel-sided, ventral valve semicircular, middle of internal sac lined with minute dentate spicules; apex of sac lines with fine setae leading to transfer apparatus. Lateral lobes flat, spatulate, setose, cleft 1/2 their length (Fig. 23 a-b). **Female.** Similar to male except pygidium subtriangular with a pair of subapical, shallow, bare fossae (Fig. 22a-c).

Host plants. The host plant, *Gleditsia triacanthos*, (honey locust) was introduced from eastern North America probably as an ornamental tree, and is established in many sites in Europe and South America, and has become a weedy plant in drainage ditches and small streams. The bruchid, described from Tonkin, North Vietnam, became established and spread to numerous sites in Europe (Wendt 1980; Jermy 2002; György 2007; Yus 2009). Di-Iorio (2005) published on this bruchid in Argentina as *Bruchidius endotubercularis* Arora, now a synonym of *Megabruchidius dorsalis* (Fahraeus, 1839), a closely related species, but this was based on a misidentification by Kingsolver (Di-Iorio 2005; Yus 2009); however, later Fritzsche and Delobel (2012) revalidated the name *B. endotubercularis*. In addition, material de-

posited in FSCA intercepted from Vietnam was recorded from seeds of the following hosts: *Cassia* sp., *Vigna unguiculata* (L.) Walp., and *Phaseolus* sp.

Distribution. Argentina, Chile, France, Greece, Hungary, India, Vietnam.

Material examined. CHILE: Santiago de Chile, J.E. Barriga, ex seeds of *Gleditsia triacanthos* L.

Megacerinae

Genus *Megacerus* Fahraeus, 1839

Megacerus Fahraeus 1839: 34; Bridwell 1929: 112; 1932: 105; 1946: 54; Bottimer 1968: 1033; Terán and Kingsolver 1977: 27. Type species: *Bruchus pescaprae* Fahraeus 1839, monotypic.

Pachybruchus Pic 1912: 91, described as a subgenus of *Bruchus*.

Type species: *Bruchus coryphae* Olivier, by subsequent designation, Bridwell 1929.

Serratibruchus Terán and Kingsolver 1977: 174 (as subgenus of *Megacerus*).

Type species: *B. maculiventris* Fahraeus 1839, by original designation.

Megacerus is a New World genus, but only two species, *Megacerus eulophus* (Erichson 1847) and *M. baeri* (Pic 1934), have been recorded from Chile.

Key to species of *Megacerus*

1. Body length 2-4 mm; pronotal pubescence generally coppery; Internal sac of male genitalia with small spines arranged as follows: median group of about 25, then a line of five, and a basal couple (Fig. 26a) ***Megacerus baeri* (Pic)**
- Body length 2 mm or less; pronotal pubescence generally golden; Internal sac of male genitalia with small spines arranged as follows: median lineal group of about 22-25 and a basal group of four (Fig. 29a) ***Megacerus eulophus* (Erichson)**

Megacerus baeri (Pic)

Fig. 24-26

Bruchus (Pachybruchus) baeri Pic 1934: 17; Pic 1938b: 20.

Acanthoscelides baeri: Blackwelder 1946: 758.

Megacerus (Megacerus) baeri: Terán and Kingsolver 1977: 37; Scherer and Romanowski 2000: 39.

Bruchus (Pachybruchus) baeri var. *girardi* Pic 1934: 18. (Synonymized in Terán and Kingsolver (1977)).

Type depository. MNHN.

Type locality. Tapia, Tucuman Province, Argentina.

Description. Male. Length 3.0 mm; width 1.1-2.0 mm. **Color.** Integument varying from dark red to black, or black with reddish highlights; head black, anterior margin with reddish shading; antenna black; elytra red to black; mesosternum, metasternum and ventral parts of abdomen including pygidium black; fore and mid tibia dark red; femur black; hind legs black. **Vestiture.** Head and antenna with scattered fine golden setae; pronotal disk with scattered patches of golden setae, especially along basal border; scutellum white; elytra with small scattered patches of golden setae; middle of each elytron with small, irregular patch of white setae; pygidium white with 4 small black spots; lateral areas of abdomen white. **Structure.** Body stout, antenna strongly pectinate (Fig. 24a-c). **Male genitalia.** Internal sac of male genitalia with small spines arranged as follows: median group of about 25, then a line of five, and

a basal couple (Fig. 26a) and lateral lobes as in Fig. 26b. **Female.** Similar to male except pygidial apex not reflexed and antenna serrate (Fig. 25a-c).

Host plants. *Ipomoea cairica*, *I. imperati*, *I. purpurea*, *Merremia dissecta*.

Distribution. Argentina, Bolivia, Brazil, Chile, Peru, Uruguay.

Material examined. CHILE: U.S. Department of Agriculture interception from Chile, ex *Ipomoea cairica* seed. **ARGENTINA:** Buenos Aires: San Fernando, III/1958, I/1963, Daguerre.

Discussion. *Megacerus baeri* is distinguished in general by its larger size, usually with red spots in the postocular region, pronotal pubescence coppery and denticles of internal sac in alignment, size more than 2 mm. *M. eulophus* is generally smaller (2 mm or less), pronotal pubescence usually golden mixed with white, and internal sac denticles clustered.

Megacerus eulophus (Erichson)

Fig. 27-29

Bruchus eulophus Erichson 1847: 124.

Acanthoscelides eulophus: Blackwelder 1946: 759.

Megacerus eulophus: Zacher 1949: 138; Zacher 1952:4 60; Terán and Kingsolver 1977: 70. Pfaffenberger et al. 1984; Barriga 1990: 79; Barriga and Kingsolver 2010: 1.

Bruchus laticornis Blanchard in Gay 1851: 288; Hayward 1942: 10.

Bruchus (Pachybruchus) laticornis: Pic 1913a: 30.

Megacerus laticornis: Olalquiaga 1949: 89.

Bruchus leucogaster Blanchard in Gay 1851: 293.

Acanthoscelides leucogaster Blackwelder 1946: 760.

Lectotype: *B. eulophus*- male, Tsudi, Peru (ZMUH); *Bruchus laticornis* and *B. leucogaster* in MNHN.

Description. Male. Length 1.5-2.6 mm; width 0.9-1.6 mm. **Color.** Head black, eyes black; antennal segments 1-4 reddish brown, 5-11 black with golden setae; pronotum black; elytra black to dark red; scutellum white; ventral surfaces yellowish gray; fore and mid legs reddish brown to black, metafemur black with apex red; metatibia reddish brown to black. **Vestiture.** Body setae golden and white, short; pygidial setae white with two small black spots; elytra with variable white maculation along median suture, sometimes with variable piceous maculae. **Structure.** Body stocky; head subtriangular; eyes prominent separated by prominent carina; ocular sinus $2/3$ length of eye; postocular fringe narrow; antenna strongly pectinate; pronotum broadly pentagonal, lateral margins slightly convex, lateral carina sharp, sinuate, midline sulcate with a circular depression either side of marginal lobe; scutellum quadrate, apex incised; elytral striae broadly impressed, punctures prominent; metafemoral margins subparallel, ventral face with both margins carinate; metatibia with 4 longitudinal carinae, dorsolateral and ventrolateral on lateral face, dorsomesal and ventromesal on mesal face; pygidium vertical, flat, densely setose with short white setae, and with 2-4 small black spots; metepisternum mottled with yellow setae (Fig. 27a-c). **Male genitalia.** Internal sac of male genitalia with small spines arranged as follows: median lineal group of about 22-25 and a basal group of four (Fig. 29a) and lateral lobes as in Fig. 29b. **Female.** Similar to male except antenna serrate and pygidium with 4 small black spots (Fig. 28a-c).

Host plants. *Calystegia sepium*, *C. soldanella*, *Convolvulus arvensis*, *C. bonariensis*, *C. chilensis*, *C. crenatifolius*, *C. laciniatus*, *C. laciniatus laciniatus*, *Ipomoea marginisepala*, *I. nil*, *I. purpurea*, *I. rubriflora*, *Merremia sibirica*. **Floral association records.** *Convolvulus arvensis*, *C. chilensis*, *Medicago sativa*, *Asparagus officinalis*, *Zea mays*.

Distribution. Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, Uruguay.

Material examined. CHILE: Copiapó, Rio Copiapó, 5 km E. Copiapó, 15/X/1969, L. Peña. **Elqui,** Vicuña, 2/I/1940, Reed; id. I/1940, Bosq; id. XI/1996, Castillo; El Colorado, Cochiguas, XI/1996, Castillo; La Serena, 30/IX/1966, Charlín. **Choapa,** Illapel, original description; id. 9/I/1972, Pino. **San Felipe,** Los Patos, Putaendo, 1/XI/1981, Pino; id. 18/XI/1981, Pino; Las Coimas, Putaendo, 19/X/1975, Pino; id. 24/X/1982, Pino. **Chacabuco:** Tiltill, 19/X/1965, on alfalfa, Peterson. **Valparaíso:** Puchuncavi, 21/III/1989, ex *Convolvulus chilensis*; id. VIII/1989, ex *Convolvulus arvensis*, id. X/1989, ex *Convolvulus arvensis*, all J. E. Barriga; El Salto, 29/XI/1968, Pino; id. 19/IX/1982, Pino; id. 21/V/1938, Reed; Concón sur, Bosque, 22/XII/1983, Pino; Mantagua, 12/X/1981, Pino; Mantagua, Ritoque, 11/I/1981, Pino; Mantagua, Viña del Mar, 15/XII/1981, Pino; Viña del Mar, Sausalito, 21/IX/1982, Pino; Curacavi, 3/X/1965. **Santiago:** Maipú, II/1972; Maipú, III/1972, Dell' Orto; Quilicura, XII/1953, Peña; Antumapu, 17/III/1989, ex *Convolvulus arvensis*, J. E. Barriga; Manquehue, 13/III/1941, Parker; La Rosa, II/1955, L. Peña; Quebrada de la Plata, 510 m, 27/III/1966, J. E. Barriga; Macul, 14/XI/1984, Pino. **Cordillera:** San José de Maipo, 5/II/1989, Faundez; id. 5/II/1989, Faundez, s/*Zea mays*; id. 18/III/1989; id. I/1990, J. E. Barriga; El Tollo, 12/XII/1987, J. E. Barriga; San José de Maipo, I/1990, J. E. Barriga, s/*Zea mays*; San José de Maipo, 18/III/1989, J. E. Barriga, ex *Convolvulus arvensis*; La Obra, 9/I/1965; El Manzano, 3/XII/1950, Peña. **Talagante,** Naltagua, I/1989, ex *Ipomoea purpurea*; 21/III/1989, both J. E. Barriga. **Cachapoal:** Caracoles Rengo, 25/I/1989, Peña. **Colchagua,** Pichedegua, 9 and 24/XI/1965, Peterson. **Cardenal Caro,** Pichilemu, VI/1999, Ugarte. **Curicó,** Palquibudi, 14, 26/IX/2003, J. E. Barriga; Los Niches, VIII/IX/2004, J. E. Barriga. **Linares,** Linares, Fundo Cuñao, 11/II/1989, Artigas. **Concepción,** Contulmo, 1904, Schönemann. **ARGENTINA: Salta,** 10 km N. Salta, 22/X/1973, Habeck; Corralito, Viana, X/1986; R. de Lerma, Viana, I/1993. **Córdoba,** Mortero, Hepper. **Tucumán,** Tafi del Valle, 2000 m, 28/XII/1979, Stange and Lotti.

Discussion. This is the most widespread species of *Megacerus* in Chile.

Bruchinae Acanthoscelidini

Genus *Acanthoscelides* Schilsky, 1905

Acanthoscelides (sic) Schilsky 1905: IV, 41F, 41C, 41L.

Acanthoscelides Schilsky 1905: 95-95a; Pic 1913a: 13; Bottimer 1968: 1016, 1038, 1040; Johnson 1968: 1267.

Acanthoscelides was described by Schilsky for *Bruchus irresectus* Fahraeus, now a synonym of *Acanthoscelides obtectus* (Say). Schilsky included species under two different spellings- *Acanthoscelides* and *Acanthoscelides*; however, Bottimer (1968), followed by Johnson (1970), adopted *Acanthoscelides* as the spelling Schilsky probably intended, with *Acanthoscelides* now regarded as a *lapsus*. Bridwell, in his 1920-1930 papers, transferred some species from *Bruchus* to *Acanthoscelides*, but Blackwelder (1946) moved most of the American species assigned to *Bruchus* to *Acanthoscelides*. No attempt is made herein to assign Chilean species of *Acanthoscelides* to Johnson's North American species groups (Johnson 1983b). The genus is still a plastic group despite Johnson's lifetime study of the genus. He characterized the genus as not being a natural group but is "composed of many disparate entities". His analysis of species groups can be found in his papers on the fauna of southern Mexico (1983) and northern South America (1990), but a comprehensive study of the genus remains to be done.

Key to species of *Acanthoscelides*

1. Elytra with 3rd and 4th striae each arising from a prominent subbasal tubercle **2**
 - Elytra with 3rd and 4th striae each arising from basal margin **3**
- 2(1). Pronotum with lateral margins arcuate in dorsal aspect; pronotum campaniform; armature of internal sac of male genitalia with 2 elongate structures that may be hinge sclerites extending from near base to near middle, many fine spicules extending from base to middle, 2 strands of

- small spines at middle along with many fine spicules, a pair of large spinescent masses extending from near middle to near apex (Fig. 48a); antenna red ***Acanthoscelides suramerica* Johnson**
- Pronotum with lateral margins straight in dorsal aspect; pronotum subconical; armature of internal sac of male genitalia with 2 broad strands of fine spicules extending from base to near apex culminating in paired serrate sclerites at apex; lateral lobes expanded medially at apex, cleft to about 0.7x their length (Fig. 39a-b) ***Acanthoscelides mankinsi* Johnson**
- 3(1). Scutellum elongate, 2x as long as wide; antenna long, extending to middle of elytra (Fig. 35a-b) ***Acanthoscelides longescutus* (Pic)**
- Scutellum quadrate; antenna shorter, usually extending to humerus or slightly beyond **4**
- 4(3). Elytra clothed with yellowish gray vestiture without pattern; legs and antennae red (Fig. 31a-b) ***Acanthoscelides argillaceus* (Sharp)**
- Elytra with contrasting pattern of brown and yellow or gray vestiture; legs and antennae various **5**
- 5(4). Hind legs mostly black with reddish shading; antennae black with terminal segment red (Fig. 40a-b) ***Acanthoscelides obtectus* (Say)**
- Hind legs reddish yellow; antennae and other legs red **6**
- 6(5). Elytra with dark brown sutural stripe apically expanded to join apical maculae (Fig. 33a) ***Acanthoscelides aricae* Kingsolver and Barriga, new species**
- Dark brown sutural stripe extended to apex of elytra (Fig. 43a) ***Acanthoscelides pigricola* Kingsolver**

***Acanthoscelides argillaceus* (Sharp)**

Fig. 30-32

Bruchus argillaceus Sharp 1885: 452.

Acanthoscelides argillaceus: Blackwelder 1946: 758; Kingsolver 1975: 60; Barriga and Kingsolver 2010: 1.

Bruchus armitagei Pic 1931: 35; Bondar 1936: 38; Costa Lima 1955: 244.

Bruchus armitagei var. *semiconjunctus* Pic 1931: 35.

Acanthoscelides obreptus Bridwell 1942: 256; Olalquiaga 1949: 87.

Description. Male. Length 1.1-2.8 mm; width 1.1-1.7 mm. **Color.** Head varying from all red-orange to black with orange frons; antennae red orange; pronotum varying from red orange to piceous or with dark median stripe; elytron color varies from all red orange to piceous, piceous coloration extending from stria 7 to lateral margin; ventral areas of thorax piceous, abdomen and pygidium red orange; legs red orange with ventral margin of femur piceous. **Vestiture.** Very fine yellowish setae with faint pattern of brown spots (Fig. 30a). **Structure.** Head turbiniform eyes prominent, frons punctulate, with median carina; ocular sinus 2/3 length of eye; postocular lobe narrow but prominent, densely setose; antenna (Fig. 32b); pronotum bell-shaped, evenly convex, disk foveolate; scutellum quadrate, densely setose; elytral striae subparallel, occasionally slightly sinuate; 3rd and 4th striae with basal denticles; interstices flat; pygidium gently convex, apex reflexed into ventral abdominal sinus, disk not modified (Fig. 32c). **Male genitalia.** Median lobe (Fig. 32a) long, slender, with ventral valve broadly triangular; internal sac lined with minute denticles; lateral lobes bowed, spatulate, setose (Fig. 32b). **Female.** As in male except pygidium not reflexed at apex (Fig. 31a-c).

Host plants. *Cajanus cajan*, *Lablab purpureus*, *Phaseolus lunatus*, *Phaseolus vulgaris*, *Vicia faba*, *Vigna unguiculata*.

Distribution. Brazil, Chile, Colombia, Costa Rica, Guadeloupe, Guatemala, Haiti, Honduras, Mexico, Panama, Peru, Trinidad, Venezuela.

Material examined. CHILE: Arica, Arica y Parinacota. Interception at Perú, ex *Phaseolus lunatus*, 18/V/1962.

Discussion. This species is widespread in the Neotropical areas, but its appearance in Chile is a new distribution record; however, it is found only in Region I.

***Acanthoscelides aricae* Kingsolver and Barriga, new species**

Fig. 33

Description. Female. Color. Integument of body reddish brown, legs and antennae amber; head black except vertex red; eyes black. **Vestiture.** Body mostly pale yellow except for darker median stripe on pronotum; elytra with distinctive dark brown pattern (Fig. 33a); pygidium mostly pale yellow with paired darker basal clouding; abdomen and legs pale yellow. **Structure.** Body obovate; head turbiniform; eyes protruding from head margin about one-half their diameter; frons densely punctulate; setae arranged in circular pattern; side of head with yellow setal patch; postocular fringe narrow; pronotum subconical, lateral margins gently curvate; disk evenly convex, densely punctulate, punctures in lateral portions of disk nearly concealed by vestiture; scutellum quadrate, apex shallowly bifid; elytra with striae prominent, interstices of uniform width, densely setose; second stria slightly deflected laterad at scutellum; striae lacking basal denticles; pygidium scutate, slightly convex; Hind femur with one long subapical denticle as long as tibial width at juncture, denticles followed by a minute denticle; mucro acute; three coronal denticles (Fig. 33b); pygidium punctate, convex in lateral view (Fig. 33c). **Male.** Unknown.

Host plants. *Senna* sp.

Distribution. Chile and Ecuador.

Type series. Holotype female and three female paratypes: Ecuador, Guayas, 20 km N Guayaquil, 23/VI/1982, Gary Manley. One paratype: Chile, Arica, Arica, 9/II/1998, ex *Cassia* sp. (now *Senna*), J. E. Barriga. Holotype and one female paratype deposited in MNNC. One paratype in FSCA, one in Manley Collection (PECM).

Etymology. The specific epithet references the locality where the Chilean paratype was collected.

Discussion. Because no males are yet available, group placement of this species is problematic. If the elytral pattern is reliable, it probably belongs to a group containing *Acanthoscelides suturalis* (Boheman) with a sutural mark similar to the Greek letter iota. The elytral pattern and the shape of the spiculum gastrale are defining characters until a series of specimens, including males, is available. Although this species closely resembles *A. suturalis*, the spiculum is differently shaped.

***Acanthoscelides longescutus* (Pic)**

Fig. 34-36

Bruchus longescutus Pic 1938: 24; Blackwelder 1946: 760; Hayward 1958: 6; Kingsolver et al. 1977; S. Muruaga L'Argentier 1992: 10; Barriga and Kingsolver 2010: 1.

Type depository. MNHN.

Type locality. Bolivia.

Description. Male. Length 1.6-2.1 mm; width 0.9-1.2 mm. **Color.** Integument red except mesosternum piceous, humeri black; antenna bright red. **Vestiture.** White, evenly distributed dorsally except in some specimens; elytra with 3 marginal spots on either side of elytra, and 3 spots on each 3rd interstice; pygidium with narrow median stripe. **Structure.** Head turbiniform, eyes prominent, ocular sinus 1/2 length of eye; frons with faint median carina; antenna strongly serrate in both sexes, reaching middle of elytra; pronotum subconical, disk evenly convex; scutellum 2-1/2x as long as wide with lateral margins narrowly parallel, apex bifurcate; elytral striae uniform, not distorted, humeri denuded (Fig. 34a-b); pygidium nearly flat in basal 1/2, convex apically with apex reflexed into emarginate 5th sternite; legs not modified, typically acanthoscelidine (Fig. 34c). **Male genitalia.** Median lobe slender, lateral margins slightly constricted; ventral valve triangular; basal 1/2 of internal sac with minute circular sclerites with setose margins, middle of sac with an angular setose sclerite, and 4 long slender spicules; apex of sac with conical valve (Fig. 36a); lateral lobes slightly spatulate, apices evenly rounded, setose (Fig. 36b). **Female.** Similar to male except fifth sternite not strongly emarginated (Fig. 35a-c)

Host plants. *Prosopis caldenia*, *P. flexuosa*, *P. nigra*, *P. reptans*, *P. strombulifera*.

Distribution. Argentina, Bolivia, Chile.

Material examined. CHILE: Valparaiso, Valparaiso, II/2006, Torelli. **ARGENTINA: Catamarca,** Casablanca, L. Peña, 4/XI/1991; El Huaco, L. Peña, 22/I/1995; Punta Balasto, 2100 m, L. Peña, 27/I/1995; Hualpín, L. Peña, 24/I/1995. **Córdoba,** Rio Tercero, Carpintero, 1971, ex *Prosopis*; Serrezuela, Genise, II/1982, ex *Prosopis strombulifera*; id., ex *Prosopis chilensis*. **San Juan,** Las Flores, L. Peña, 20/II/1995; San Juan, 26/XI/1976, ex *Prosopis strombulifera*. **Mendoza,** Mendoza, Lira, ex *Prosopis strombulifera*, 1991.

Discussion. The conical pronotum, elongated serrate antennae, and the elongate scutellum are diagnostic characters for this species. Muruaga de L'Argentier (1992) published an exhaustive study of this species. Although this species and the species included in *Scutobrachus* (q.v.) are marked with an elongate scutellum, comparison of the male genitalia will readily distinguish them. Johnson and Siemans (1997) found that eggs of this species are not glued to the host seedpods but instead are inserted into crevices on the pod surface.

Acanthoscelides mankinsi Johnson

Fig. 37-39

Acanthoscelides mankinsi: Johnson 1983: 121; 1990: 723; Barriga and Kingsolver 2010: 1.

Type depository. USNM.

Description. Male. Length 1.9-3.1 mm; width 0.9-1.5 mm. **Color.** Head, body and appendages red-orange to reddish brown except elytra with small dark brown patches between striae 2 and 5, and apex streaked with dark brown; pronotal disk with dark brown marginal stripe; ventral areas of prothorax sometimes suffused with brown (Fig. 37a). **Vestiture.** Head, pronotum and elytra with golden setae except dark brown in apical brown patches of elytra; pygidium with indistinct curved dark brown apical streaks. **Structure.** Head sometimes with vague median carina; eyes protuberant; antenna subserrate; pronotum subconical, lateral margin slightly arcuate; disk convex with shallow median and basilateral sulci; scutellum quadrate, bidentate; elytra slightly depressed, bases of third and fourth striae each with a small tubercle; fore and middle legs not modified, metafemur moderately inflated (Fig. 37b), pecten with one large and two to three small subapical denticles; metafemur arcuate in basal one-half, mucro short, acute, coronal denticles small; pygidium slightly convex (Fig. 37c). **Male genitalia.** Median lobe moderate in length; in ventral view ventral valve broadly truncate at apex, sides concave, base of ventral valve about as wide as apex of median lobe, arcuate in lateral view; armature of internal sac with 2 broad strands of fine spicules extending from base to near apex culminating in paired serrate sclerites at apex

(Fig. 39a); lateral lobes expanded medially at apex, cleft to about 0.7 their length (Fig. 39b). **Female.** Similar to male except pygidium with inverted U-shaped brown mark (Fig. 38a-c).

Host plants. *Leucaena* sp. In addition, there are the following host records in other counties: *Leucaena collinsii* Britton and Rose, *L. collinsii collinsii* Britton and Rose, *L. confertiflora* Zarate, *L. cuspidata* Standl., *L. diversifolia* (Schltdl.) Benth., *L. diversifolia diversifolia* (Schltdl.) Benth., *L. diversifolia stenocarpa* (Urb.) Zarate, *L. esculenta* (Moc. and Sesse Ex Dc.) Benth., *L. esculenta paniculata* (Britton and Rose) Zarate, *L. lanceolata* S. Watson, *L. leucocephala* (Lam.) de Wit, *L. leucocephala glabrata* (Rose) Zarate, *L. leucocephala leucocephala* (Lam.) de Wit, *L. macrophylla* Benth., *L. multicapitula* Schery, *L. pueblana* Britton and Rose, *L. pulverulenta* (Schltdl.) Benth., *L. shannonii* Donn. Sm., *L. shannonii salvadorensis* (Standl. ex Britton and Rose) Zarate, *L. trichandra* (Zucc.) Urb.

Distribution. Costa Rica, Chile, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Venezuela.

Material examined. CHILE: Valparaiso, I. Pascua, II/1996, col. SAG V Reg.; I. Pascua, ex “*Acacia*” sp., col. SAG V Reg.

Discussion. Chile is a new distribution record for this bruchid species, and the specimen from Easter Island (Isla de Pascua) is the first record from an island and the first outside continental America. This species was most likely introduced in a species of *Leucaena* (Leguminosae). The *Acacia* record may be a misidentification of the host.

***Acanthoscelides obtectus* (Say)**

Fig. 40-42

Bruchus obtectus Say 1831: 1; Barriga and Kingsolver 2010: 1. For a long list of synonyms and combinations, see Kingsolver (2004a: 130-131).

Acanthoscelides obtectus: Essig 1930: 858; Larson and Fisher 1938: 16-22; Olalquiaga 1942: 25; Kingsolver 1968b: 4-9; Johnson 1983b: 144; Barriga and Kingsolver 2010: 1.

Type depository. Type apparently destroyed.

Type locality. Louisiana.

Description. Male. Length 2.0-3.7 mm; width 1.3-2.2 mm. **Color.** Integument mostly black except abdomen variably red, pygidium red, antenna with basal 4 and terminal segments red, legs red except ventral margin of femur brown to black. **Vestiture.** Yellowish gray and dark brown setae, brown setae forming 3 vaguely defined bands across elytra; head, pronotum, and ventral areas of body uniformly yellowish gray; pygidium evenly setose except narrow median stripe yellowish (Fig. 40a). **Structure.** Head with frons evenly punctulate, frontal carina absent; ocular sinus 2/3 length of eye; postocular lobe narrow but prominent; antenna slender, reaching elytral humerus; pronotum bell-shaped with lateral carina lacking; disk evenly convex except shallowly sulcate in basal lobe; surface densely punctulate; scutellum quadrate, densely setose with apex bidentate; elytra together slightly longer than wide, laterally convex but medially depressed; striae mostly subparallel, occasionally sinuate, 3rd and 4th striae with minute basal denticles; 3rd, 5th, 7th and 9th interstices slightly wider; metafemur with subapical pecten as shown; abdominal sternum 1 not modified (Fig. 40b); pygidium evenly convex; slightly reflexed at apex into sternal sinus (Fig. 40c). **Male genitalia.** Median lobe elongate, slender, ventral valve short and broadly triangular; armature of internal sac lined with fine, acute spicules in basal 1/2, broader scale-like denticles in apical 1/2 (Fig. 42a); lateral lobes deeply cleft, spatulate (Fig. 42b). **Female.** Female similar to male except antenna not as long, and pygidium not reflexed at apex (Fig. 41a-c).

Host plants. Many host plants have been listed in the literature for this bruchid. It prefers to develop in species of the genus *Phaseolus*, but seeds of other fabaceous genera are attacked as well. Plant genera include *Cajanus*, *Cicer*, *Dolichos*, *Glycine*, *Lablab*, *Lathyrus*, *Lens*, *Pisum*, *Sesbania*, *Vicia*, and *Vigna*. See Kingsolver (2004a,b) for a complete list of host species.

Distribution. Cosmopolitan.

Material examined. **CHILE:** Arica, Parcelas de Chaca, 1/IX/1993, J. E. Barriga, in flower *Schinus molle*. **Elqui**, Toro Muerto, Baños del Toro, 12/I/1996, G. Castillo; Vicuña, I/1988, G. Castillo. **Huasco**, Vallenar, III/1943. **Petorca**, Cachagua, 16/II/, J. E. Barriga, flowers *Escallonia revoluta*. **Quillota**, Limache, 25/IX/1940, P.A. Berry, beans and cowpeas. **Chacabuco**, Lampa, 27/VIII/1968, Apablaza. **Valparaíso**, Hanga-Roa, Isla de Pascua, 22/V/1972, Campos and Peña; Limache, 1938, *Vigna unguiculata sesquipedalis*; Valparaíso, 16/XII/1968, M. Pino, ex *Phaseolus*; id. IV/1981, N. Nichterhein, ex *Phaseolus*; Viña del Mar, 15/IV/1984, E. Arriagada; Limache, 1938, *Vigna unguiculata sesquipedalis*. **Santiago**, Antumapu, IV/1976, J. Araya: IV/1948, 19/III/1975; Santiago, VI/1948, Peña.; Las Condes, VI/1948; Puente Alto, 15/VIII/1974: Macul, V/1974; Muñoz, 15/IV/1974. **Talagante**, Penaflor, 22/XI/1970. **Cordillera**, El Canelo, 23/I/1949, Peña. **Melipilla**, Curacavi, 17/X/1968. **Cachapoal**, Rangué, Caracoles, 25/I/1989, L. Peña. **Curico**, XII/1980, J. E. Barriga, in seeds *Phaseolus vulgaris*. **Linares**, Longaví, 16/IX/1972, L. Azócar: Longaví, 16/XI/1972. **Ñuble**, Itata, II/1954. **Bio-Bio**, Río Bio-Bio, X/1982. **Concepción**, 17/VI/1957, J. Artigas, ex *Phaseolus*; id. 25/III/1964, Orellana; id. 14/XII/1970, E. Reyes; id. XII/1989, M. Mella; id. 11/X/1996, J. Artigas, ex *Phaseolus*. **Malleco**, Nahuelbuta, 18/XII/1987, J. E. Barriga. **Valdivia**, Valdivia, 1-10/I/1988, M. Pino. **Chiloé**, Castro, 18/II/1968, Cekalovic.

Discussion. This is one of the most widespread and destructive bruchids in the world. Its host preferences are for leguminous seeds grown and stored by man. Seeds infested by bruchid larvae easily escape detection and are consequently transported.

Acanthoscelides pigricola Kingsolver

Fig. 43-45

Acanthoscelides pigricola Kingsolver 1980: 284; Johnson and Kingsolver 1982: 415; Johnson 1983c: 159.

Type depository. USNM.

Description. Male. Length 2.0-2.5 mm; width 1.3-1.8 mm. **Color.** Body brown to reddish brown with darker brown pattern; head red, usually with dark median spot or vertical stripe; eyes black; antennal segments 1-5 reddish brown, flagellum piceous; pronotum reddish brown with median piceous double stripe; elytra reddish brown with sutural stripe and humeri piceous; elytral disk with elongated darker maculae (Fig. 43a-b); pygidium with paired dark brown stripes divided by a pale median stripe; ventral areas reddish brown to dark brown. **Vestiture.** Yellowish white except for dark stripes on pronotum and parasutural stripes on elytra. **Structure.** Head turbinate; ocular sinus $\frac{1}{2}$ length of eye; postocular fringe very narrow; pronotum ovate, lateral margins straight, not bulbous; disk evenly convex; elytra ovate, disk evenly convex; striae uniformly spaced; pecten of metafemur with 1 long tooth followed by 4 or 5 shorter teeth; metatibia with short, acute lateral carina complete to apex; pygidium scutiform; apex reflexed into emargination of terminal abdominal segment (Fig. 43c). **Male genitalia.** Median lobe about 4.5x as long as wide; ventral valve ogival in outline; internal sac with 2 L-shaped sclerites and clusters of minute denticles (Fig. 45a); lateral lobes as in Fig. 45b. **Female.** Similar to male but pygidium not apically reflexed (Fig. 44a-c).

Host plants. *Mimosa* sp. and *Mimosa pigra* L.

Distribution. Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Panama, Peru, Venezuela.

Material examined. **BOLIVIA:** Santa Cruz, 4-6 km SSE Buena Vista, F and F Hotel, 5-8/V/2004, Wappes and Cline. **BRAZIL:** Bahía 1831-1836, Charles Darwin. **CHILE:** Aconcagua, 10 km SE Zapallar, 23/XI/1967, C. W. O'Brien.

Discussion. New records herein are from Bolivia, Brazil, and Chile.

***Acanthoscelides suramerica* Johnson**

Fig. 46-48

Acanthoscelides suramerica Johnson 1990: 473; Kingsolver 1991: 24; Barriga and Kingsolver 2010: 1.

Type depository. USNM.

Type locality. Falcón, Venezuela.

Description. Male. Length 2.0-3.0 mm; width 1.2-1.8 mm. **Color.** Integument largely reddish orange, elytral spots and hind coxae dark red; head dark red to nearly black; eyes black; antenna reddish brown except segments 1 and 2 dark brown; pronotal disk reddish orange; elytra reddish orange with lateral margins variably piceous, apex with variable dark macula, basal one-third with transverse row of 4 small dark spots, third interstice with small spot at apical 1/3 and small spot near apex; pygidium uniformly yellow to brown with narrow median stripe and faint lateral maculae; body beneath and legs red-orange except mesosternum and metasternum dark brown to nearly black. **Vestiture.** Mostly of fine silvery white setae, third interstice with elongate pale spots (Fig. 46a). **Structure.** Head turbiniform, eyes prominent separated by narrow, carinate frons; male antenna strongly serrate; ocular sinus $\frac{1}{2}$ length of eye; postocular lobe narrow; pronotum trapezoidal with anterior margin arcuate, posterior margin sinuate; elytra 1.3x as long as wide (Fig. 46b); pygidium subtriangular, gently convex; elytra depressed, lacking asperities except 4th interstice with prominent basal tubercle (Fig. 46c). **Male genitalia.** Median lobe moderate in length, in ventral view apex of ventral valve gently rounded and narrow, sides concave, base of ventral valve about 0.9x as wide as apex of median lobe, arcuate in lateral view; armature of internal sac with 2 elongate structures that may be hinge sclerites extending from near base to near middle, many fine spicules extending from base to middle, 2 strands of small spines at middle along with many fine spicules, a pair of large spinescent masses extending from near middle to near apex (Fig. 48a); lateral lobes expanded at apex, cleft to about 0.7x their length (Fig. 48b). **Female.** Similar to male in color; eyes more widely separated; pygidial disk with paired curvate maculae and narrow median line; disk nearly flat, triangular (Fig. 47a-c).

Host plants. *Leucaena leucocephala*, *L. leucocephala glabrata*, *L. trichodes*.

Distribution. Colombia, Dominican Republic, Ecuador, Peru, Puerto Rico, Venezuela.

Material examined. **CHILE: Arica,** Arica, 10/XII/1966, Campos, ex ("*Albizia* sp.") *Leucaena leucocephala*; id. I/1967, Campos, ex ("*Albizia* sp.") *Leucaena leucocephala*; id. 5/XI/1993, J. E. Barriga; id. 8/XI/1993, J. E. Barriga, ex *Leucaena leucocephala*; id. 10/XII/1982, Traur; Azapa, km.3, 17/XII/1993, J. E. Barriga, ex *Leucaena leucocephala*; id. 10/XI/1994, J. E. Barriga, ex *Leucaena leucocephala*; Azapa, km 12, 20/XI/1993, J. E. Barriga, ex *Leucaena leucocephala*; id. 10/IX/1994, J. E. Barriga, ex *Leucaena leucocephala*; id. 17/XII/1993, J. E. Barriga, ex *Leucaena leucocephala*. **Iquique,** Iquique, 15/VII/1964, Barrales. *Leucaena* was misidentified as *Albizia*.

Discussion. This species is identified by the elytral and pygidial patterns, and male genitalia (Fig. 48).

Genus *Lithraeus* Bridwell, 1952

Lithraeus Bridwell 1952: 125; Bottimer 1968: 1022; Borowiec 1987: 116; Udayagiri and Wadhi 1989: 83; Kingsolver 1990: 49; Barriga Tuñón 1990: 61; Barriga Tuñón and Kingsolver 2010: 1

Type species: *Bruchus electus* Bridwell, 1952, by monotypy, unnecessary new name for *Bruchus elegans* Blanchard 1851.

Lithraeus, with 15 species, is related to *Acanthoscelides* but is distinguished by its small size and lack of a lateral carina on the hind tibia. Species are differentiated mostly by color pattern and characteristics of the male genitalia.

Key to species of *Lithraeus*

1. Pronotum with basal patch of white setae 2
- Pronotum without basal patch of white setae 3

- 2(1). Pronotum with small basal patch of white setae; integumental color variable from red to black; body pubescence sparse except for some condensed patches of white setae in variable pattern on elytra; pygidium with fringe of white setae on dorsal and lateral borders (Fig. 57c) *Lithraeus elegans* (Blanchard)
- Pronotum with wide basal patch of white setae; integumental color variable from red to black; body pubescence sparse except for some condensed patches of white setae in variable pattern on elytra; pygidium black or red with pygidium black with dense white median stripe (Fig. 52c) *Lithraeus comptus*, new species

- 3(1). Integument of body and appendages uniformly dark red; pygidium with two dark spots *Lithraeus leguminarius* (Gyllenhal)
- Integument of body and appendages of various colors; pygidium variously decorated or uniform in color 4

- 4(3). Integument of body and appendages black 5
- Integument of body and appendages various 7

- 5(4). Vestiture of elytra white or golden 6
- Vestiture with brown appearance *Lithraeus egenus* (Philippi and Philippi)

- 6(5). Vestiture of elytra white in uniform rows on intervals and uniformly distributed on remainder of body; scutellum not prominent *Lithraeus elguetai* Kingsolver and Barriga, new species
- Vestiture of elytra of white and golden setae in patchy pattern; scutellum and basal thoracic spot prominently white *Lithraeus scutellaris* (Philippi)

- 7(4). Elytra with a reddish brown median stripe *Lithraeus lonquimay* Kingsolver and Barriga, new species
- Elytra without a reddish brown median stripe 8

- 8(7). Fore and middle legs and antennae red, body black; male head with dense white setae; male pygidium deeply reflexed into last sternite; vestiture of pronotum and body and elytra dense brown; subbasal femoral denticle equal in length to width of tibia at their juncture; mucro and dorsal coronal denticle about equal in length *Lithraeus poverus* (Blanchard)
- With other characteristics 9

- 9(8). Elytra mostly black 10
- Elytra red 11

- 10(9). Dorsal vestiture brassy, coarse, no pygidial spot
 *Lithraeus pyrrhomelas* (Philippi and Philippi)
 — Dorsal vestiture very fine, nearly invisible, pygidial basal spot white
 *Lithraeus precanus* (Motschulsky)
- 11(10). Metafemur with denticle on medial ventral margin 12
 — Metafemur lacking denticle on inner ventral margin *Lithraeus mutatus* (Pic)
- 12(11). Elytra with basal denticles on third and fourth striae; mucro of metatibia one-fourth as long as basitarsus, with coronal denticles 4 or 5
 *Lithraeus chillan* Kingsolver and Barriga, new species
 — Elytra with basal denticles on second, third, and fourth striae; metatibia with short, acute mucro and 3 acute coronal denticles *Lithraeus ferrugineipennis* (Blanchard)

***Lithraeus chillan* Kingsolver and Barriga, new species**

Fig. 49-51

Description. Male. Length 1.1-1.2 mm; width 0.6-0.8 mm. **Color.** Head, pronotum and pygidium black; elytra mostly red except for elongate black triangular patch extending along suture one-half way to apex; some specimens with elongate darker humeral streak; body beneath black; fore and middle legs mostly red with basal one-half of femur black; hind femur with basal two-thirds black, apical one-third red; tibia and tarsus red. **Vestiture.** Mostly of fine white setae sparsely distributed on pronotum, elytra, and pygidium; scutellum white; pronotum with narrow median line of setae and narrow condensations of setae; ventral areas with sparse distribution of setae except denser on metepimeron and sides of abdomen; legs densely setose (Fig. 49a). **Structure.** Body broad; head turbiniform; eyes moderately protuberant; ocular sinus one-third length of eye; frontal carina absent; pronotum campaniform, uniformly convex, densely punctulate, posterior angles contiguous with humeri; elytra with striae uniform, shallow, evenly spaced, nearly concealed by vestiture; basal denticles on third and fourth striae; apices evenly rounded; metafemur with short, sharp denticle on medial ventral margin; mucro of metatibia one-fourth as long as basitarsus; coronal denticles 4 or 5; fore and middle legs not modified (Fig. 49b); pygidial width equal to its length, convex, densely punctulate, slightly reflexed at apex (Fig. 49c). **Male genitalia.** Median lobe slender; ventral valve elongate, triangular, apex acute; internal sac with elongate dense cluster of denticles and setae occupying nearly one-half length of median lobe from base of ventral valve; middle of sac with a pair of spines flanking an angular serrate sclerite; base of sac with cluster of amorphous thickening of sac walls (Fig. 51a); lateral lobes elongate, narrowly spatulate, deeply cleft medially (Fig. 51b). **Female.** As in male except pygidial apex not strongly reflexed (Fig. 50a-c).

Host plants. Unknown.

Distribution. Chile.

Type series. Holotype male. **CHILE:** Cord. **Chillan**, 6-31/I/1983, 1500 m, J. E. Barriga. Allotype, 4 males, and 2 female paratypes, same data as the holotype. **Talca**, Alto Vilches, 30/XII/1987, J. E. Barriga, 1 paratype. Holotype and 2 paratypes deposited in MNNC; allotype and 3 paratypes in FSCA; one paratype in USNM, and one in JEBC.

Etymology. The name is a noun in apposition to the name of the type locality.

Discussion. This species with red elytra might be confused with smaller examples of *Lithraeus ferrugineipennis*. The white vestiture of *L. chillan* and details of the male genitalia should distinguish the two.

Lithraeus comptus* Kingsolver and Barriga, new species*Fig. 52-53**

Description. Male. Length 1.8 mm; width 1.5 mm. **Color.** Head missing; integument of pronotum and elytra black; legs with femora dark red, tibiae and tarsi reddish brown. **Vestiture.** Pronotum with basal patch of white setae, anterior angles and lateral margins with fine mixed golden and white setae; elytra with sutural, second and third interstices dark brown forming longitudinal stripe expanding at base to fourth stria base, and apically curving around apical margin to connect to similar dark brown marginal stripe set with golden setae; middle of each elytron with reddish brown stripe divided by prominent median stripe of white setae (Fig. 52a); with dense white median stripe; exposed portion of abdominal segment between elytral apices white; venter of thorax black with densely placed white setae especially on posterior corner of each segment; pygidium black with dense white median stripe (Fig. 52c). **Structure.** Metafemur with small, triangular subapical denticle; metatibial mucro acute; coronal denticles 3 (Fig. 52b). **Male genitalia.** Median lobe 4.5x as long as wide; ventral valve arcuate with lateral margins ogival with acute apex; base of internal sac with pair of circular sclerites, and a pair of amorphous circular sclerites; middle of sac with wishbone-shaped sclerite and two companion thorn-like spines, and a large, twisted sclerotized mass covered with long, acute spines (Fig. 53a); lateral lobes short, broadly spatulate; separated by deep sinus; base of tegmen broad, lacking keel (Fig. 53b). **Female.** Unknown.

Host plants. Unknown.

Distribution. Chile.

Type series. Holotype male. **CHILE:** Elqui, Pisco Elqui, 16/XI/1989, L. Peña. Deposited in MNNC.

Etymology. The species name alludes to the pleasing color of the elytra.

Discussion. This handsome beetle species is represented by only one specimen, unfortunately lacking its head. The armature of the internal sac of the male genitalia includes a pair of unique circular sclerites near the base of the sac and a forked sclerite near the middle.

Lithraeus egenus* (Philippi and Philippi)*Fig. 54-56**

Bruchus egenus Philippi and Philippi 1864: 358.

Lithraeus egenus: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Bruchus atomarius Boheman 1858: 11 (not Linnaeus 1761).

Bruchus pauperculus Philippi and Philippi 1864: 358 (not LeConte 1857).

Bruchus chilensis Schilsky 1905: 20, as new name for *atomarius* Boheman 1858 (not Linnaeus 1761).

Bruchus chilensis Pic 1912: 92, as new name for *pauperculus* Philippi and Philippi 1864 (not LeConte 1857).

Bruchus bimutatus Pic 1913b: 110, as new name for *chilensis* Pic 1912 (not Schilsky 1905).

Acanthoscelides egenus: Blackwelder 1946: 759; Barriga 1990: 42.

Lithraeus egenus: Kingsolver 1990: 50.

Type depositories. *B. egenus*- MNNC; *B. atomarius*- NHRS; *B. pauperculus*- MNNC.

Type localities. *B. egenus*- Chile; *B. atomarius*- San Francisco, California; *B. pauperculus*- Chile.

Description. Male. Length 1.2-1.5 mm; width: 0.4-0.8 mm. **Color.** Integument of head and body black, antenna with basal 4 segments red, terminal segments black; legs with basal 3/4 of femora black, apical 1/4 of femora, tibiae and tarsi red. **Vestiture.** Pubescence composed of brassy and white slender setae, sparse on head except for white postocular patch; pronotum with mostly brassy setae but with indis-

tinct median line and lateral spots white, posterior angles with white streak; elytra with indistinct alternating interstitial stripes of white and brassy setae; pygidial vestiture mostly brassy but with narrow median stripe of white; ventral areas of body with mostly brassy setae but with white stripe on metepimeron and abdomen parallel to elytral margin (Fig. 54a). **Structure.** Head turbiniform with brief median carina; eyes moderately protuberant, ocular sinus one-half length of eye, postocular lobe with fringe narrow; frons finely punctulate, sparsely setose; pronotum campaniform, lateral margins gently ogival, disk evenly convex except slightly depressed at each posterior border, densely punctulate; scutellum quadrate; elytra with humeri contiguous with posterior angle of pronotum, lateral margins evenly arcuate, striae regularly spaced, sutural, second and third slightly distorted at scutellum; striae setae minute, interstices with 3 to 4 rows of setae; fore and midlegs normal, mesoventral margin of hind femur mutic or with minute denticle; hind tibia with acute mucro, and a short spine on dorsal apical margin (Fig. 54b); pygidium scutate, evenly convex; reflexed into ventral segment (Fig. 54c). **Male genitalia.** Median lobe slender; ventral valve semicircular with apical nipple; middle of internal sac with a pair of thorn-like sclerites, a complex cluster composed of paired crescentic sclerites, and a slender, bristly median structure (Fig. 56a); lateral lobes spatulate, deeply cleft with sparsely setose apices (Fig. 56b). **Female.** Similar to male except pygidium not reflexed (Fig. 55a-c).

Host plants. Unknown. **Floral association records.** *Adesmia* sp., *Atriplex repanda*, *Azara dentata*, *Carduus nutans*, *Carthamus lanatus*, *Convolvulus arvensis*, *Escallonia revoluta*, *Quillaja saponaria*, *Schinus latifolius*.

Distribution. Argentina, Chile, and Uruguay.

Material examined. CHILE: Elqui, Coquimbo, 30/X/1988, J. E. Barriga; id. 18/IX/1990, J. E. Barriga; km 272, Panam. N., 23/X/1985, in *Schinus latifolius*. **Limarí,** 33 km SW Ovalle, 5/XII/1967, O'Brien; Limarí, 18/IX/1990, J. E. Barriga. **Choapa,** Los Vilos, X/1987, L. Peña; id. VII/1987, L. Peña; id. 3/X/1990, L. Peña; id. 20/XII/1977, F. Squella, ovipositing on *Atriplex repanda* fruits; id. IV/1979, M. Pino; 1 km S Huentelauquen, 14/XII/1967, C. and L. O'Brien; id. X/1987, L. Peña; id. VII/1987, L. Peña; id. 3/X/1990, L. Peña; Millahue, 18/II/1982, G. Blanchar y M. Pino. **Petorca,** Cachagua, 18/IX/1974, P. Vidal; 10 km SE Zapallar, 23/IX/1967, O'Brien; 20 km N Quinquimo, 13/XII/1967, O'Brien; Chincolco, 20/XI/1981, M. Pino. **Quillota,** Reuten, Quillota, 27/I/1974, M. Pino; Tranque Los Molles, Quilpué, 20/XII/1981, M. Pino. **San Felipe,** Los Patos, Putaendo, 28/XI/1981, M. Pino; id. 12/X/1985, M. Pino. **Valparaiso,** Lo Vásquez, IX/1988, J. E. Barriga, flowers of *Azara dentata*; San Pedro, 14/I/1970, in strawberry; near Valparaiso, II/1928, P. Arretz; Cuesta Quintay, 14/IX/1981, P. Melis and M. Pino; Rodelillo, 14/XII/1980, M. Pino; Puntas Negras, 12-19/VIII/1972, M. Pino; id. 12-19/XI/1972, M. Pino; Mantagua, Ritoque, 11/I/1981, M. Pino; Colliguay, 15/III/1980, A. Herrera; Tranque Los Molles, Quilpué, 20/XII/1981, M. Pino; Lo Orozco, Casablanca, 30/XII/1984, M. Pino; id. 6/I/1985, M. Pino; Peñuelas, 9/II/1982, E. Arredondo; Concón Sur, 29/X/1972, M. Pino; Viña del Mar, Sausalito, 1/XII/1981 M. Pino and E. Arredondo; id. 16/XI/1985, M. Pino and E. Arredondo; Villa Dulce, 29/IX/1981, P. Molis and M. Pino; Viña del Mar, 28/IX/1981, E. Arredondo; Parque el Salitre, 5/XI/1981, M. Pino; id. 14/XI/1981, M. Pino; between Concan and Quintero, 14/XII/1965, Mahunka leg. **Chacabuco,** El Portezuelo Colina, III/1988, L. Peña. **Santiago,** Cerro San Cristobal, 27/II/1985, de Arce; Las Condes, XI/1986; Antumapu, 25/I/1989, J. E. Barriga, flowers *Convolvulus arvensis*; id. 7/II/1989, J. E. Barriga, flowers *Convolvulus arvensis*; 3 km E El Manzano, 18/XI/1967, L. and C. O'Brien; Las Condes, XI/1966, L. and C. O'Brien; Baños de Colina, 23/XII/1945, Peña; El Canelo, I/1953, H. Molinari; Pudahuel, Ambiente, 17/XII/1984, Arce; 27/II/1994, Eger and Noling; Talagante, Naltagua, XI/1986, J. E. Barriga; Cajon Rio Colorado, 20/XII/1980, J. E. Barriga, flowers *Quillaja saponaria*; 3 km E El Manzano, 18/XI/1967; Tiltill, Cuesta la Dormida; 5/XI/1965. **Cordillera,** Baños Morales, 7/II/1989, 2000 m, J. E. Barriga, flowers *Convolvulus arvensis*; San Alfonso, 7/II/1989, flowers *Convolvulus arvensis*; San José de Maipo, I/1990, J. E. Barriga, flowers Asteraceae; El Volcán, 20/II/1989, J. E. Barriga; Lo Valdés, 16/VIII/1984, M. Pino. **Melipilla,** La Viluma, 350 m, 16/XII/1987, L. Peña. **San Antonio,** Lo Abarca, Cartagena, 6/XI/1980, A. Bergasa; San Sebastian, San Antonio, 10/XI/1981, M. Pino; Llolleo, playa, 22/VIII/1971, M. Pino. **Cachapoal,** Coltauco, Quinamavida, 21/IV/1982, E. Arredondo. **Colchagua,** Ranguilí, Santa Cruz, 15/XII/1985, M. Pino. **Curicó,** Los Niches, 24/II/1992, J. E. Barriga; 5 km E Curicó, 8/X/1994, J. E. Barriga. **Talca,** Talca, 10/I/1989, J. E. Barriga,

flowers *Convolvulus arvensis*. **Linares**, Retiro, 257IX/1989, J. Artigas. **Maule**, Tregualemu, 6/XI/1993. L. Peña. **Concepción**, Escuadrón, 24/III/1989, T. Cekalovic. **BioBio**, Mulchén, Despertar Campesino, 10/IX/1976, Johnson; Yumbel, 13-15/IX/1981, A. Arenas. **Malleco**, Angol, 1/XI/1957; id. 20/III/1932, Bullock.

Discussion. This species may be confused with *Lithraeus limari* or *L. pyrrhomelas* due to its similar coloration, but the lack of a femoral denticle, or the presence of a minute femoral denticle, will immediately distinguish it from the prominent acute denticle of either of the other two species. The male genitalia of the three are quite distinct. The male genitalia of *L. egenus* (Fig. 56) resemble those of *L. precanus* but differ in the shape of the ventral valve, the apices of the lateral lobes, and the complex median sclerite cluster (Fig. 86).

Lithraeus elegans (Blanchard)

Fig. 57-59

Bruchus elegans Blanchard 1851: 294; (Sturm 1826, catalog only); Philippi 1887: 778; Porter 1925: 286; 1933: 86; Olalquiaga 1949: 88.

Bruchus ruficollis Motschulsky 1874: 222; Kingsolver 1990: 50 (as *ruficolis*).

Bruchus cingulatus Motschulsky 1874: 229.

Acanthoscelides elegans: Blackwelder 1946: 760.

Bruchus elegans obscurior Pic 1902a: 51; (not *Bruchus (Pseudoptinus) martini obscurior* Pic 1896).

Lithraeus electus Bridwell 1952: 125.

Lithraeus elegans: Bottimer 1968c: 1022; Borowiec 1987: 116; Udayagiri and Wadhi 1989: 83;

Kingsolver 1990: 50; Barriga 1990: 61; Bascunan and Saiz 1997: 9; Briones and Jerez 2004: 43; Barriga and Kingsolver 2010: 1.

Type depositories. *B. elegans* and *B. obscurior*- MNHN; *B. ruficollis* and *B. cingulatus*- ZMUM

Type localities. *B. elegans*- Chile; *B. elegans obscurior*- Argentina.

Description. Male. Length 1.5 - 2.6 mm; width 0.9-1.6 mm. **Color.** Integument varying from all black with legs black, body black with legs red, to body all red; body all black beneath with elytra and legs red, to all red; pronotum red to black; antenna usually black, sometimes with basal two or three segments dark red; vestiture all white, pronotum with prescutellar spot and posterior angles with white setal patches; variable in extent on elytra, usually with a diagonal stripe at middle, sometimes extending to spot on fifth interstice. Each elytron often with indistinct, broad median stripe and with lateral borders similarly marked; metepisternum and lateral margins of abdominal sternites with series of white patches; pygidium black or red with white setal border (Fig. 57a). **Structure.** Body subelliptical; head obovate, frons densely punctulate, lacking median carina; eyes protuberant, ocular sinus two-thirds length of eye, postocular lobe narrow; antenna moderately serrate; pronotum campaniform, disk evenly convex except slightly depressed at each posterior caudal border, lateral carina fine, extending from posterior angle to ventral end of cervical sulcus; pronotal disk densely punctulate; posterior border sinuate; scutellum quadrate, posteriorly bifid; elytra with striae regular, not distorted, lacking basal denticles; medial ventral carina with minute denticle; metatibia with mucro short, acute, scarcely longer than lateral denticle (Fig. 57b); metafemur moderately expanded; pygidium moderately convex, apex reflexed, fitting into emargination on posterior margin of terminal sternite (Fig. 57c). **Male genitalia.** Median lobe 3-3/4x as long as wide; ventral valve cordate, apex blunt; internal sac with parallel clusters of fine, slender denticles near apex of sac, two clusters of fine denticles and two flat spines near base (Fig. 59a); lateral lobes broadly spatulate, densely setose (Fig. 59b). **Female.** Color similar to male in coloration; pygidium not reflexed (Fig. 58a-c).

Host plants. *Lithraea caustica*, *Schinus crenatus*, *S. johnstonii*, *S. latifolius*, *S. molle*, *S. molle areira*, *S. montanus*, *S. patagonicus*, *S. polygamus*, *S. terebinthifolius*, *S. velutinus*. **Floral association records.**

Aster squamatus, *Baccharis* sp., *Diostea juncea*, *Escallonia revolute*, *Quillaja saponaria*, *Rosa* sp., *Schinus molle*.

Distribution. Argentina and Chile.

Material examined. CHILE: Arica, Azapa km. 12-20/XI/1993, J. E. Barriga, ex *Schinus molle*; id. 23/II/1994, J. E. Barriga, ex *Schinus molle*; id. 10/IX/1994, J. E. Barriga, ex *Schinus molle*; id. 6/XI/1993, J. E. Barriga, ex *Schinus molle*; id. 7/XII/1994; Parcelas de Chaca, 1/XI/1993, JEB, flowers *Schinus molle*; id. 17 Dec. 1993, JEB, ex *Schinus molle*; id. 23 Feb. 1994, JEB, ex *Schinus molle*; id. 5/XI/1993, J. E. Barriga, ex *Schinus molle*, 7/XII/1994. **Parinacota**, Codpa, 2000 m, 11/II/1998, A. Ugarte. **Iquique**, Iquique, 19/VII/2006, J. E. Barriga, UV trap. **Copiapó**, Embalse Lautaro, 2/X/1987, J. E. Barriga, flowers *Baccharis* sp.; Hacienda Castilla, 24/II/1994, J. E. Barriga, ex *Schinus terebinthifolius*; id. 10/X/1994, J. E. Barriga, *Schinus terebinthifolius*; id. 17/XII/1993, J. E. Barriga, ex *Schinus terebinthifolius*; id. 10/IX/1994, J. E. Barriga, ex *Schinus terebinthifolius*. **Elqui**, El Pangué, Hurtado, 22/XI/1989, L. Peña; 12/XII/1989, G. Castillo; El Colorado, Cochiguaz, G. Castillo, XI/1996; Vicuña, G. Castillo, XI/1996; El Pangué, 30/XI/2000, J. E. Barriga, S 31° 52.557' W 71° 9,171'; Quebrada El Arrayan, 15 km S La Villa, 472 m, malaise trap, 21/XI/-13/XII/2003, M. E. Irwin, S 30° 6.277' W 70° 59.411'; El Colorado, A. Ugarte, XI/1995; Quebrada Seca, J. E. Barriga, 25/XI/2000, 130 m. **Limarí**, Quebrada Seca, 10/XI/1991, J. E. Barriga; id. XI/1991, J. E. Barriga; Ramadillas, 1300 m, 15/IV/1994, L. Peña. **Choapa**, 10 km N Los Vilos, V/1966, Gonzalez, in fruit *Schinus*; Hda. Illapel, 24/X/1954, 600-1000 m, Molinari; Forest of Nagua nr. Los Vilos, 2/XII/1976, Gurney; Los Vilos, 11/X/1994, L. Peña; id. 5/II/1971, M. Pino; Cuesta Cavilolén, 11/X/1994, J. E. Barriga. **Aconcagua**, 5 km NE Papudo, 500 m, 24/IX/1967, O'Brien. **Petorca**, El Melón, 10/XI/1988, J. E. Barriga, ex *Schinus polygamus*; 5 km NE Papudo, 500', 24/IX/1967, O'Brien; Cabildo, 20/XI/1980, M. Pino; Chincolco, Alicahue, 20/XI/1980, M. Pino; Pullally, 1/II/1974, M. Pino. **Quillota**, La Dormida, 20/XI/1989, J. E. Barriga; Quebrada de Alvarado, 14/X/1994, L. Peña; El Melón, 10/XI/1988, J. E. Barriga, ex *Schinus latifolius*; Quebrada Alvarado, Limache, 10/XI/1982, M. Pino; Granizo, 31/VIII/1969, M. Pino; Cerro la Campana, Granizo, 24/X/1981, M. Pino; id. 18/XII/1983, M. Pino; La Campana, 15/XII/1974, Soleriscens; id. 15/XII/1983, Veas; Cajón lo Castre, Quebrada de Alvarado, 1/XII/1985, M. Pino; Limache, La Dormida, 20/XII/1968, M. Pino; Cuesta la Dormida, 29/I/1973, G. Barriá and L. Cartagena; Olmué, 22/IX/1982, M. Pino; Cuesta El Melón, 24/XI/1961, L. Peña; Hijuelas, 11/IX/1982, leg E. Arriagada. **San Felipe**, Huaquén, Aconcagua, 24/III/1977; Las Coimas, Putaendo, 28/XI/1981, M. Pino; Los Patos, Putaendo, 12/X/1980, M. Pino; id. 28/XI/1981, M. Pino; id. 28/II/1982, M. Pino and A. Blanford; 15 km E Llay Llay, 13/IX/1967, O'Brien. **Los Andes**, Valle de los Leones, Río Blanco, 12/XI/1972, M. Pino; Juncal, Río Blanco, 26/I/1975, A. Herreros; Piscicultura, Río Blanco, 2/XI/1975, M. Pino; Saladillo, 6/XI/1984, M. Pino; id. 29/XI/1984, M. Pino. **Chacabuco**, La Dormida, 1/XI/1987, J. E. Barriga; La Dormida, Tiltill, X/1987, J. E. Barriga, ex *Lithraea caustica*; Cuesta La Dormida, A. Ugarte, 11/X/1995; Termas de Colina, 23/XII/1945, Peña. **Valparaíso**, Lo Vásquez, 1/X/1988, J. E. Barriga, ex *Schinus latifolius*; X/1988, J. E. Barriga, flowers *Azara* sp.; id. X/1990, J. E. Barriga, ex *Schinus latifolius*; Quintay, I/1989, J. E. Barriga, ex *Schinus latifolius*; Ritoque, 26/IV/1992, J. E. Barriga; ex *Schinus polygamus*; Zapata, X/1986, L. Peña; 14 km E Algarrobo, 29/XII/1967; Viña del Mar, Sausalito, 21/IX/1982, M. Pino; id. 21/XI/1982, M. Pino; id. 16/XI/1985, M. Pino; Mantagua, 12/X/1981, M. Pino; id. 15/XII/1981, M. Pino; Variante Viña, 28/XII/1980, M. Pino; id. 23/X/1981, M. Pino; Rodelillo, 17/XI/1976, M. Pino; id. 14/XII/1980, M. Pino; Parque el Salitre, 5/XI/1981, M. Pino; Placilla, La Polvora, 3/XI/1985, M. Pino; Paso del Agua, Colliguay, 26/X/1965, M. Pino; 4/III/1975, M. Pino; Cuesta Colliguay, 8/XI/1975, M. Pino; id. 8/XI/1976, M. Pino; Lo Vasques, X/1988, flowers of *Azara* sp., J. E. Barriga. **Santiago**, San Ramon, X/1955, Molinari; 15 km E Las Condes, 19/III/1966, M.E. Irwin; Maipu, Quebrada., La Plata, 510 m, 20/X/1967. **Cordillera**, Lo Valdés, Cajon del Maipo, 1800 m, X/1979, J. E. Barriga; El Volcán, 15/XI/1987, J. E. Barriga; id. 7/II/1989, J. E. Barriga, ex *Schinus polygamus*; San Alfonso, 7/II/1989, J. E. Barriga, flowers *Aster squamatus*; Lagunillas, 1400 m, X/1988, J. E. Barriga, ex *Lithraea caustica*; id. 20/XII/1988, J. E. Barriga, ex *Schinus polygamus*; El Tollo, 12/XII/1987, J. E. Barriga; El Canelo, X/1985, J. E. Barriga; Cajon Río Colorado, 1000 m, J. E. Barriga, ex flowers *Quillaja saponaria*; El Manzano, J. E. Barriga, X/1980; El Volcán, 1400 m, IV/1989, J. E. Barriga, ex *Schinus polygamus*. **Melipilla**, La Viluma, 350 m, 16/XII/1987, L. Peña. **Talagante**, Naltagua, 2/II/1989, J. E. Barriga, ex *Schinus polygamus*; id. 14/II/1989, J. E. Barriga, ex *Schinus polygamus*. **San Antonio**, Tunquén, 3/X/1982, M. Pino; id. 14/

X/1982, M. Pino: Llo-lleo, 23/XI/1968, O'Brien; Llo-lleo, 1968; Las Cruces, V/1961, ex *Schinus latifolius*. **Maipo**, Rangué, 10-16/X/1989, J. E. Barriga: Pichi Alhue, 26/XI/1967, L. Peña. **Cachapoal**, Copequén, 5/XII/1999, A. Ugarte. **Cardenal Caro**, Pichilemu, VI/1999, A. Ugarte. **Curicó**, Rio Teno, 26/I/1968, L. Peña; 15 km E Potrero Grande, Puente Morongos, 25/XI/2003, J. E. Barriga, fogging s/ *Nothofagus dombeyi*, S 35° 12' 58" W 70° 58' 37.4"; Palquibudi, 14/IX/2003, J. E. Barriga. **Talca**, Alto Vilches, 27/XII/1987, J. E. Barriga, flowers *Diostea juncea*; Las Placetas NE San Clemente, 19/XII/1994, L. Peña; Curepto, 12/XII/1993. **Linares**, Cobquecura, Padre de la Iglesia, 7/XI/1993, L. Peña; Malcho (Parral), 11/XI/1993, L. Peña. **Ñuble**, Puente Marchant, 15/XII/1989, J. E. Barriga, flowers *Rosa* sp.; IV/1989, J. E. Barriga, *Schinus patagonicus*; Quillón, XII/1989, J. Artigas. **Malleco**, Fundo San Lorenzo, 1500 m, 25/I/1999, A. Ugarte. **Aisén**, Lago Buenos Aires, Chile Chico, 15/I/1956, G. Kuschel. **ARGENTINA: Neuquén**, Patagonia, Cañadon Leon, 29/I/1962, Cekalovic. **Rio Negro**, Nahuel Huapí, M. Viana, 1973; San Carlos de Bariloche, 2/IX/1916; Bariloche, D. Carpintero, IX/1976; II/1976.

Discussion. Bridwell (1952) gave a redescription of this handsome species, placed it in a new genus, and gave a discussion of host-plant associations. He concluded that the specific name *Bruchus elegans* Blanchard 1851 was a primary homonym of Sturm (1845) and proposed the new name "*electus*" for the species. He gave the date 1845 in the discussion and 1843 in the list of synonyms. The name *Bruchus elegans* Sturm dates from 1826 in a catalog listing Sturm's collection, but without description or illustration. Later references to the name *Bruchus elegans* Sturm are in catalogs only until Bridwell's reference to the name. Sturm (1843) lists *B. elegans* in synonymy with *Bruchus quadrimaculatus* F., now *Callosobruchus maculatus* (F.). Because *Lithraeus electus* Bridwell was unnecessarily proposed, we should revert to the original and more appropriate name, *Bruchus elegans*, proposed by Blanchard. *Lithraeus elegans* is one of the most common bruchids in Chile. As can be seen from the locality records, it ranges throughout most of the country. The white border of the pygidium is immediately recognizable, regardless of whether the dorsal pattern is developed.

***Lithraeus elguetai* Kingsolver and Barriga, new species**
Fig. 61-63

Description. Male. Length 1.5-2.0 mm; width 0.9-1.2 mm. **Color.** Integument of body and appendages black. **Vestiture.** Fine white setae densely placed on head, pronotum, elytra, legs and pygidium; setae on ventral parts more densely placed than on dorsal side; elytral vestiture in distinct rows (Fig. 60a). **Structure.** Head turbiniform, eyes protuberant; ocular sinus one-half length of eye; frons minutely punctulate, frontal carina lacking, pronotum campaniform, evenly convex, disk punctulate; scutellum longer than wide, apically incised; elytra with striae distinct, strial setae minute; interstices with 3 to 4 rows of setae, striae 3, 4 and 5 with minute basal denticles; fore- and middle legs not modified, hind femur without denticle; tibia with mucro short, acute, apex with two coronal denticles (Fig. 60b); pygidium scutate, convex, apex slightly reflexed, densely setose (Fig. 60c). **Male genitalia.** Median lobe with ventral valve triangular; dorsal valve arcuate; internal sac with two pairs of horn-shaped sclerites, and a wishbone-shaped sclerite; base with a c-shaped closure valve (Fig. 62a). Lateral lobes elongate, spatulate (Fig. 62b). **Female.** Similar to male, but pygidium nearly flat (Fig. 61a-c).

Host plants. *Diostea juncea*. **Floral association records.** *Diostea juncea*, *Nothofagus obliqua*

Distribution. Chile and Argentina.

Type series. Holotype male, **CHILE: Curicó**, Potrero Grande, 28/XI/1995, ex flowers *Diostea juncea*, Barriga and Kingsolver, leg. **Colchagua**, Cord. San Fernando, Vegas del Flaco, 30/X/1957, 14 paratypes. **Curicó**, Potrero Grande, I/1993, J. E. Barriga, ex *Diostea juncea*, 46 paratypes; 15 km E. Potrero Grande, camino a El Relvo, 4/XII/2004, fogging s/*Nothofagus obliqua*, 1000 m, 1 paratype; Mina BioBio, 2000 m, 12/XII/2002, J. E. Barriga, 2 paratypes; Portrero Grande, 1 mi N Puente Morongos, 21-23/XII/2006, J. E. Barriga, s/ flowers of *Diostea juncea*, 1322 paratypes and allotype. **Elqui**, Quebrada El Arrayan, 10 km S LaVilla, 16/XII/2003, 400 m, M.E. Irwin, in Malaise trap, 2 paratypes. **Talca**, Alto Vilches, 27/XII/

1987, J. E. Barriga, in flowers *Diostea juncea*, 54 paratypes. **Nuble**, Las Trancas, 16/I/1989, J. E. Barriga; Recinto, 15/XII/1989, ex *Diostea juncea*; 4 km SE Recinto, 700 m, Howden, 6 paratypes; Puente Marchant, 15/XII/1989, J. E. Barriga, in flowers of *Diostea juncea*, 9 paratypes; 16/I/1989, J. E. Barriga, in flowers *Diostea juncea*, 6 paratypes; Recinto, 15/XII/1989, J. E. Barriga, in flowers *Diostea juncea*, 16 paratypes; Puente, Marchant, 16/I/1989, J. E. Barriga, in flowers *Diostea juncea*, 6 paratypes. **ARGENTINA: Rio Negro**, El Bolson, 22/XII/1964, A. Kovacs, 5 paratypes. Holotype and paratypes in MNNC. Allotype and paratypes in FSCA.

Etymology. This species is named to honor Dr. Mario Elgueta, curator at MNNC.

Discussion. *Lithraeus elguetai* is similar to *L. scutellaris* but the armature of the internal sac of the male genitalia differentiates it. *Lithraeus elguetai* is one of the smallest species studied.

Lithraeus ferrugineipennis (Blanchard)

Fig. 63-65

Bruchus ferrugineipennis Blanchard 1851: 294.

Acanthoscelides ferrugineipennis: Porter 1914: 43; Blackwelder 1946: 759; Udayagiri and Wadhi 1989: 46.

Lithraeus ferrugineipennis: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Type depository. MNHN.

Type locality. Chile.

Description. Male. Length 0.9-1.5 mm; width 0.6-1.0 mm. **Color.** Integument of head, pronotum, and ventral surfaces of body, basal ½ of fore, mid- and hind femora, apical segments of antenna black but a dense clothing of yellowish and white setae conceal the basic color; elytra, pygidium, and apical ½ of each femur reddish brown (Fig. 63a). **Vestiture.** Head, pronotum, and elytra generally golden brown, pronotum with narrow median line and lateral spots white, scutellum white, elytra with a small black spot on each humerus; pygidial vestiture gray with faint median white line; vestiture of sternal and abdominal sclerites gray. **Structure.** Head turbiniform with eyes prominent, ocular sinus ½ length of eye; postocular lobe narrow with white setal fringe; pronotum semicircular with lateral margins slightly arcuate, disk convex, slightly depressed either side of basal lobe on posterior border; scutellum quadrate; elytra 1-1/2x as wide as long, lateral margins slightly curvate; striae concealed by vestiture; with basal strial denticles on 2nd, 3rd and 4th striae; metafemur with short, acute denticle on median ventral carina; metatibia with short, acute mucro and 3 acute coronal denticles (Fig. 63b); pygidium strongly convex with apex reflexed into deep emargination of 5th sternum (Fig. 63c). **Male genitalia.** Median lobe 5x as long as wide; ventral valve broad at base and bluntly rounded apically with ventral keel; internal sac with 2 pairs of slender spines, a short rounded sclerite, and an apical mass of fine spicules (Fig. 65a); lateral lobes bowed, setose apically (Fig. 65b). Female. Similar to male except pygidium only slightly convex and sternal sinus less indented (Fig. 64a-c).

Host plants. *Adesmia colinensis*, *A. confusa*, *A. microphylla*.

Distribution. Chile and Argentina. The specimen from Argentina is a new distribution record.

Material examined. CHILE: Copiapó, El Torín, 125 km SE Copiapó 2575 ft., Malaise in alluvial wash; 9-17/XI/2003, M.E. Irwin, F.D. Parker, S 28° 16.52' W 69° 44.13', E. I. Schlinger Foundation Ins. Expedition. **Huasco**, Domeyko, 10/XII/1989, Miller and Stange, on insectivorous plant; 9/III/1989, J. E. Barriga, ex *Adesmia colinensis*; Atacama, Chañarcillo km 10, 2/X/1990, L. Peña; 10 km Chañarcillo, 11/X/1990, L. Peña. **Elqui**, Coquimbo, 20 km S Ovalle, 1/X/1967, O'Brien; Guanaqueros, 19/X/1994, L. Peña; El Pangué, 12/XII/1989, G. Castillo; El Pangué, 1700 m, XII/1954, Kuschel; Guanaqueros, J.

E.Barriga, 20/X/1994; Cochiguaz, J. E.Barriga, 29/X/1996. **Limarí**, 7 km E Los Molles, 5400', 30/IX/1967, Los Molles, 1800 m, 16/X/1994, L. Peña. **Choapa**, Los Vilos, 11/X/1994, L. Peña. **Petorca**, Las Palmas, J. E.Barriga, ex *Adesmia microphylla*, IX/1993; Cuesta del Espino, 19/IX/1992, J. E.Barriga. **Chacabuco**, 6 km W Rungue, 2760', 12/XI/1967, L. and C. O'Brien. **Cordillera**, Lo Valdés, Cajón del Maipo, 1800 m, XII/1979; San Alfonso, 20/XII/1988, J. E.Barriga, ex *Adesmia confusa*; San José de Maipo, 18/XI/1967, O'Brien, on white flowering shrub; San Gabriel, XII/1988, J. E.Barriga, ex *Adesmia confusa*; id. X/1989, ex *Adesmia confusa*; 15 km SE San José de Maipo, 18/IX/1967. C. O'Brien, on white flowering shrub. **Talagante**, Naltagua, 1/II/1998, J. E. Barriga, flowers of *Adesmia confusa*; id. 14-20/II/1989, J. E.Barriga, ex *Adesmia colinensis*; id. 28/II/1989, J. E.Barriga, ex *Adesmia colinensis*; id. 24/III/1989, J. E.Barriga, ex *Adesmia* sp. **Maipo**, Rangué, 2700', 12/XI/1967, O'Brien. **San Antonio**, Tunquén, 14/X/1982, M. Pino. **Curico**, Mina Bio-Bio, 2000 m., 12/XII/2002, J. E.Barriga. **ARGENTINA**: USDA Interception, 7/VIII/1952, in *Adesmia* seed.

Discussion. The red elytra with a mottled setal pattern, pronotum with narrow median line and lateral spots white, and pygidial vestiture gray with faint median white line are characteristic for this species.

Lithraeus leguminarius (Gyllenhal)

Fig. 66-68

Bruchus leguminarius Gyllenhal 1833: 69; Hayward 1942: 10; Olalquiaga 1949: 88; Bridwell 1944: 23. *Acanthoscelides leguminarius*: Blackwelder 1946: 760; Udayagiri and Wadhi 1989: 55 (as syn. of *A. obtectus* (Say)); Barriga 1990: 45.

Lithraeus leguminarius: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Bruchus ingae Fahraeus 1839: 27.

Bruchus melanocephalus Fahraeus 1839: 87; Olalquiaga 1949: 89.

Bruchus leguminarius var. *melanocephalus*: Pic 1913a: 30; Olalquiaga 1949: 89.

Bruchus conspurcatus Blanchard 1851: 291.

Bruchus subroseus Motschulsky 1874: 227.

Type depositories. *B. leguminarius*, *B. melanocephala*, *B. ingae*.- NHRS; *B. conspurcatus*.- MNHN; *B. subroseus*.- ZMUM

Type localities. *B. leguminarius* and *B. melanocephalus*.- Chile; *B. ingae*.- Mexico; *B. subroseus*.- Brazil. The type specimens of *B. ingae* and *B. leguminarius* were determined to be conspecific.

Description. Male. Length 3.3-4.1 mm; width 1.4-2.1 mm. **Color.** Integument reddish brown, head dark brown to black, prothoracic pleura dorsad of coxa black; antenna reddish brown. **Vestiture.** Brown with scattered gray spots on elytra, especially along lateral border; pronotum brown with diagonal row of gray spots either side of midline; head with mixed brown and gray setae; postocular fringe yellowish gray; vestiture of legs mottled yellowish gray; body beneath yellowish gray, densely set on metepisternum and lateral margins of abdomen; pygidium uniformly yellowish gray with two bare spots at middle (Fig. 66a). **Structure.** Head obovate, eyes prominent, ocular sinus $\frac{1}{2}$ length of eye; frons and vertex finely punctulate, frontal carina lacking; pronotum trapezoidal, anterior margin truncate; lateral margins only slightly arcuate, basal margin sinuate, basal lobe broad; disk evenly convex, slightly depressed near posterior angles; scutellum longer than broad; elytra together slightly broader than long, disk mostly flat, slightly depressed around scutellum; striae regular, mostly obscured by vestiture; legs normal, metafemur with denticle on mesal carina acute, as long as tibial width at their juncture; metatibia slender, mucro short acute, coronal denticles small (Fig. 66b); pygidium convex, apex reflexed into deep sternal emargination (Fig. 66c). **Male genitalia.** Median lobe $4\frac{1}{2}x$ as long as wide; ventral valve broadly cordate; apex acute; internal sac armature with a large, curvate, serrate sclerite near base of sac; four thorn-like median sclerites; apical area with membranous amorphous structure; apex of sac with circular valve (Fig. 68a); lateral lobes broadly spatulate, setose (Fig. 68b). **Female.** Similar to male but integu-

ment of head, pronotum and elytra patchy black, pygidium with large central dark spot; metafemur with black ventral margin (Fig. 67a-c).

Host plants. *Senna acuta*, *S. candolleana*, *S. closiana*, *S. cumingi cumingi*, *S. cumingi coquimbensis*, *S. frondosa*, *S. huidobriana*, *S. multiglandulosa*, *S. stipulacea stipulacea*, and *S. stipulacea angulorum*.

Floral association records. *Capparis* sp. and *Senna* sp.

Distribution. Chile.

Material examined. CHILE: Elqui, Guanaqueros, VI-VII/1987, J. E. Barriga, ex *Senna cumingi coquimbensis*; Tongoy, 6/VI/1987, J. E. Barriga, ex *Senna cummingsii coquimbensis*; id. VII/1987, J. E. Barriga, ex *Senna cummingsii coquimbensis*; id. VI/1987, J. E. Barriga, ex *Senna cummingsii coquimbensis*; Las Rojas, 21 km E La Serena, 220 m, 1952, Hutchinson, ex seed *Senna coquimbensis coquimbensis*; Cactarium de las Cardas, Univ. De Chile, XII/1983, L. Faundez, ex *Senna cumingi coquimbensis*; Cactarium de las Cardas, Univ. Of Chile, XII/1983, L. Faundez, ex *Senna cumingi coquimbensis*. **Limarí,** Quebrada Seca, 19/XI/1991; Socos, 12/XI/1965. **Choapa,** Yerba Loca, VI/1988, L. Faundez, ex *Senna closiana*; id. 17/V/1988, J. E. Barriga, ex *Senna closiana*; id. 15/VIII/1988, J. E. Barriga; Los Vilos, 11/X/1994, L. Peña; id. 1/XII/1960, O'Brien, ex Alcaparra flowers (*Capparis* sp.); id. I/1989, J. E. Barriga, ex *Senna cummingsii coquimbensis*; id. I/1989, J. E. Barriga; Cuesta Cavilolén, 11/X/1994, J. E. Barriga; Placilla, I/1989, J. E. Barriga; Huentelauguén, km 272 Panam N., 24/X/1985, Elgueta, ex *Senna cummingsii coquimbensis*; 12 km N Huentelauguén, 14/XII/1967, O'Brien. **Petorca,** Chincolco, 20/XI/1981, M. Pino. **San Felipe,** 9 km W Llay Llay, 12/XI/1967, O'Brien. **Quillota,** La Campana N.P., 19/IX/1964, M. Cerda; Limache, I/1940, on *Acacia* sp., Olalquiaga; Cuesta el Melón, La Calera, 5/XII/1971, M. Pino; Hijuelas, 11/IX/1982, E. Arredondo; Quebrada Alvarado, Limache, 22/XII/1968, M. Pino; id. 1/XI/1982, M. Pino; id. 10/XI/1982, M. Pino; Santa Rosa, Limache, 3-7/I/1975, M. Pino. **Valparaíso,** Concón Alto, 14/IV/1970, M. Pino; Concón Sur, Bosque, 22/I/1983, M. Pino; Cuesta Quintay, 14/IX/1981, P. Melis; Laguna Verde, 16/X/1968, M. Pino; Laguna Verde, 3/IX/1972, M. Pino; id. 1/X/1972, M. Pino; Viña del Mar, Sausalito, 21/X/1982, M. Pino; Mantagua, 11/I/1982, M. Pino; Embalse Aromos, 29/IX/1981, P. Melis. **San Antonio,** Algarrobo, 26/IV/1974, G. Schillig and Trobok; Tunquén, 14/X/1982, M. Pino; Leyda, 8/XII/1973, L. Peña. **Cachapoal,** Copequen, 5/X/1999, A. Ugarte. **Maule,** Tregualemu, 6/XI/1993, L. Peña.

Discussion. The majority of species assigned to *Lithraeus* do not exhibit strong sexual dimorphism, so the reddish-yellow males of this species, in contrast with the largely black females, are unusual. The large serrate plate-like sclerite in the male genitalia is also unique in this species.

Lithraeus limari Kingsolver and Barriga, new species

Fig. 69-71

Description. Male. Length 0.9-1.5 mm; width 0.6-0.8 mm. **Color.** Integument of head and body black; labrum, antenna, apical ½ of each femur and tibia and tarsus red, basal ½ of each femur black. **Vestiture.** Mostly gray, very fine recumbent setae mottled with indistinct bronze spots of setae in interstices 3 and 8; pronotal disk with indistinct median stripe and small spots of condensed gray setae, pygidium with elongate basal spot of condensed gray setae; ventral areas with evenly distributed gray setae except more dense on metepisternum and in indistinct spots on lateral margins of sternites; legs with gray setae (Fig. 69a). **Structure.** Head turbiniiform with impunctate median area in some specimens forming rudimentary carina; setae of vertex and clypeus aligned vertically, of frons transverse; eyes strongly protuberant, ocular sinus ½ length of eye, postocular fringe narrow; antennal segments 1-5 elongate, 6-11 subserrate; pronotal disk subconical, lateral margins arcuate, disk finely punctulate, evenly convex; scutellum quadrate, apex bifid, densely setose; elytral striae regular, evenly spaced, striae 2, 3 and 4 with minute basal denticles; fore and middle legs not modified, metafemur with short, acute denticle; tibia with acute mucro, 3 coronal denticles (Fig. 69b); pygidium convex, apex reflexed into deep sternal sinus (Fig. 69c). **Male genitalia.** Median lobe 5x as long as wide, margins parallel, ventral valve acutely triangular; internal sac with cluster of fine denticles at apex, a pair of arcuate, serrate sclerites, a median serrate sclerite flanked with 2 slender spines, and an amorphous structure bearing fine spines near

base of sac (Fig. 71a); lateral lobes spatulate, cleft $\frac{1}{2}$ their length (Fig. 71b). **Female.** Similar in color and pattern but with pygidium not reflexed and terminal sternite not emarginated (Fig. 70a-c).

Host plants. *Astragalus coquimbensis*, *Astragalus* sp. **Floral association records.** *Astragalus* sp.

Distribution. Chile and Argentina.

Type series. Holotype, Allotype, and many paratypes: **CHILE, Limarí,** Socos, R. Limarí, 20/III/1989, J.E. Barriga, ex *Astragalus* seeds; same locality as type except V/1989, J. E. Barriga, 44 paratypes; same locality except II/1989, in *Astragalus* sp. seeds, 1891 paratypes. **Elqui,** Coquimbo, 2 km N Los Vilos, 4/X/1967, L. Peña, 34 paratypes; 2 km N Los Vilos, 4/XII/1967, L. Peña, 34 paratypes. **Limarí,** Socos, 25/XI/1987, J. E. Barriga, ex *Astragalus* sp., 16 paratypes; 25/XI/1987, J. E. Barriga, ex *Astragalus* sp., emerged IV-V/1988, 46 paratypes; 18-26/XI/2005, J. E. Barriga, s/*Astragalus* sp., 835 paratypes; El Teniente, 25/XI/1987, J. E. Barriga, ex *Astragalus* sp., 20/X/1988, 532 paratypes; II/1989, J. E. Barriga, ex *Astragalus coquimbensis*, 262 paratypes; 1/IV/1989, J. E. Barriga, ex *Astragalus coquimbensis*, 56 paratypes; XII/1989, J. E. Barriga, ex *Astragalus coquimbensis*, 39 paratypes; X/1990, J. E. Barriga, ex *Astragalus coquimbensis*, 12 paratypes; 20/X/1987, J. E. Barriga, 49 paratypes. **Santiago,** El Convento, 16-19/IX/1966, L. Peña; 1 male in *Astragalus*, Rivera. **Valparaíso,** La Ligua, I/1913, Porter, 1 paratype. **Curico,** Las Jaulas, 1200 m, III/2006, J. E. Barriga, ex *Astragalus* sp., 423 paratypes; 1200 m, 7/V/2001, J. E. Barriga, ex *Astragalus* sp., 38 paratypes; 1200 m, 7/V/2001, J. E. Barriga, ex *Astragalus* sp., 2 paratypes. **Malleco,** 8 km NW Collipulli, 3/XI/1967, O'Brien, 5 paratypes. **ARGENTINA: La Rioja,** Santa Cruz, 1600 m, 1/XII/2002, malaise trap, L.A. Stange, 1 paratype. Holotype deposited in MNNC, Allotype and paratypes deposited in FSCA, paratypes also deposited in USNM, TAMU, CEAM, FMLA MCUZ, and JEBC.

Etymology. The specific name is a noun in apposition to the name of the type locality.

Discussion. This species is apparently closely related to *Lithraeus pyrromelas* because of the external morphology, but the ventral valve of median lobe and details of the male genitalia armature can easily separate these species.

Lithraeus lonquimay Kingsolver and Barriga, new species

Fig. 72-74

Description. Male. Length 1.6-2.5 mm; width 1.0-1.5 mm. **Color.** Integument black except each elytron with broad reddish brown stripe extending nearly full length between 3rd and 7th striae; forelegs and midlegs with femur black except apical 1/8 red, tibia and tarsus dark red, hind legs with basal 2/3 black, apical 1/3 and tarsus dark red; antennal segments 1-3 dark red, apical segments black; pygidium uniformly black. **Vestiture.** Head with extremely fine golden setae; postocular fringe gray; pronotum with dense, very fine golden setae; elytra densely clothed with gray setae; venter of body similarly clothed (Fig. 72a). **Structure.** Head finely, evenly punctate; frons evenly convex, lacking median carina but with an impunctate median line; eyes hemispherical, ocular sinus $\frac{1}{2}$ length of eye; antennal segments 1-3 subequal in length, 4 shorter, 5-11 moderately eccentric, appearing subserrate; pronotum in dorsal aspect semicircular, lateral margin slightly sinuate near posterior angles, posterior margin slightly sinuate with median lobe shallow; scutellum quadrate, bifid; each elytron 2x as long as wide, evenly convex, striae nearly hidden by vestiture, but visible in oblique light; 3-6 with minute basal denticles; pygidium evenly convex, lacking asperities; metafemur with minute subapical denticle, tibia with mucro acute, slightly longer than coronal denticles, with ventral carina ending in mucro (Fig. 72b); apex of male pygidium reflexed into emarginate 8th sternum; fore and middle legs not modified (Fig. 72c). **Male genitalia.** Ventral valve equilaterally triangular, dorsal valve membranous; internal sac with cluster of fine spinules near apex of ventral valve, middle of sac with transverse rows of minute setae, a horseshoe-shape median sclerite, two irregular spiny sclerites, a median acute spine and two smaller spiny sclerites; base of sac with a sleeve-like setose membranous structure and terminal valve small, convoluted (Fig. 74a); lateral lobes deeply separated, apices spatulate, terminally setose (Fig. 74b). **Female.** Simi-

lar to male except pygidial apex not reflexed, terminal abdominal sternum evenly rounded, not emarginated (Fig. 73a-c).

Host plants. *Adesmia emarginata*. **Floral association records.** *Adesmia emarginata*.

Distribution. Chile and Argentina.

Type series. Holotype, Allotype, and many paratypes: **CHILE**, **Nuble**, Shangri-la, 8/XII/2008, J. E. Barriga, flowers of *Adesmia emarginata*. **Malleco**, Volcan Lonquimay, 1400 m, 22/XII/1994, JEB, ex *Adesmia emarginata*, 410 paratypes; same locality but 18/XII/2006, J. E. Barriga, flowers of *Adesmia emarginata*, 1117 paratypes; same locality but 28/I/1991, L. Peña, 11 paratypes. **Magallanes**, Cerro Giodo, 1/XII/1968, O'Brien, 2 paratypes; Cerro Castillo, 12/I/1968, at light, O'Brien, 2 paratypes. **ARGENTINA: Santa Cruz**, Puerto Coyle, 26/XI/1966, 10 m, Irwin and Schlinger, 5 paratypes. **Tierra del Fuego**, 36, Estancia Viamonte Auricosta, 2 m, 31/I/1979, Mision Cientifica Danesa; 4 paratypes. **Rio Negro**, Bariloche, Topal, No. 746, 29/XI/1961. Holotype and 410 paratypes deposited in MNNC. Allotype and paratypes in FSCA. Paratypes in USNM, TAMU, CEAM, FMLA, JEBS, and ZMUC.

Etymology. The specific name is a noun in apposition to the name of the type locality.

Discussion. In most specimens of this species, the reddish-brown median elytral stripe is diagnostic. In the male genitalia, the horseshoe-shaped median sclerite and the five smaller spiny sclerites are characteristic. The locality of Tierra del Fuego is the southernmost record for any New World bruchid.

Lithraeus mutatus (Pic)

Fig. 75-77

Bruchus mutatus Pic 1912: 92.

Acanthoscelides mutatus: Blackwelder 1946: 760; Udayagiri and Wadhi 1989: 52.

Lithraeus mutatus: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Bruchus rufulus Philippi and Philippi 1864: 360 (not Fahraeus 1839); Udayagiri and Wadhi 1989: 53.

Bruchus bisignatipennis Pic 1938b: 23.

Type depositories. *B. bisignatipennis* and *L. mutatus*- MNHN; *B. rufulus*- MNNC.

Type localities. *B. mutatus*: Chile; *B. rufulus*: Santiago; *B. bisignatipennis*: Chile.

Description. Male. Length 2.0-2.5 mm; width 1.25-1.5 mm. **Color.** Head mostly red with frons sometimes piceous, eyes black; antennae red; pronotum red, piceous at coxal insertion; scutellum covered with pale setae; elytron red with darker spots on third interstice and on humeri, usually with large triangular dark red spot at middle of lateral margin; pygidium dark red with median line of pale setae; body beneath piceous to testaceous, setae everywhere pale, with prominent white spot on lateral end of metacoxa and adjacent metepisternum; fore and mid legs red, metafemur variable, usually red with basal one-half to two-thirds piceous, tibia red (Fig. 75a). **Structure.** Body obovate; pronotum campaniform; elytra elongate-ovate; head turbiniiform, eyes moderately protuberant, ocular sinus 4/5 length of eye; frons densely punctulate, sparsely pubescent except sides of head more densely pubescent; clypeus densely pubescent; elytra densely covered with short, pale setae; interstitial punctures marked by series of spots bearing fine setae; metafemur lacking denticle on inner ventral margin; pygidial apex moderately reflexed (Fig. 75b); pygidium usually with two basal black spots (Fig. 75c). **Male genitalia.** Median lobe 5x as long as wide; ventral valve subtriangular with lateral margins strongly incurved, apex bluntly rounded, internal sac for entire length armed with minute triangular sclerites (Fig. 77a); lateral lobes slender, spatulate, deeply, broadly cleft, arms slightly bowed; base of tegmen broad (Fig. 77b). **Female.** Similar to male except pygidium vertical, not apically flexed (Fig. 76a-c).

Host plants. *Schinus latifolius*, *S. polygamus*. **Floral association records.** *Nothofagus dombeyi*.

Distribution. Chile and Argentina (new distribution record).

Material examined. CHILE: **Elqui**, El Pangue, J. E. Barriga, 30/XI/2000, 130 m, S 31° 62,557', W 71° 09,171'; id. 22/XI/1989, L. Peña; id. 12/XII/1989, G. Castillo; Cochiguaz, J. E. Barriga, 29/X/1996; El Colorado, Cochiguaz, G. Castillo, XI/1996; El Colorado, A. Ugarte, XI/1995; 50 km S La Serena, 1/XII/1950, Ross and Michelbacher. **Limarí**, 35 mi S Ovalle, 1/XII/1950; Los Molles, 1800 m, 16/X/1994, L. Peña. **Choapa**, Hda. Illapel, 600-1000 m, 24/X/1954, Molinari; Los Molles, 1800 m, 16/X/1994, L. Peña. **Los Andes**, Piscicultura, Rio Blanco, 22/XI/1975, M. Pino. **Valparaiso**, Ritoque, 26/IV/1992, J. E. Barriga, ex *Schinus polygamus*, 24/III/1989, J. E. Barriga, ex *Schinus polygamus*; Mantagua, 15/XII/1981, M. Pino. **Santiago**, 5 km E San José de Maipo, 18/XI/1967, O'Brien and Apablaza, on white flowering shrub; Las Condes, X/1953, L. Peña; Rangué, 19/IX/1967, O'Brien. **Cordillera**, El Volcán, 1500 m, 7/II/1989, J. E. Barriga; id. 20/II/1989, J. E. Barriga; id. IV/1989, J. E. Barriga, ex *Schinus polygamus*; 5 km E San José de Maipo, 18/XI/1967, O'Brien and Apablaza, on white flowered shrubs; Rio Yeso, 15/XI/1992, A. Ugarte. **Talagante**, Naltagua, 2-14/II/1989, J. E. Barriga, ex *Schinus polygamus*; id. 14/II/1989, JEB, ex *Schinus polygamus*. **Curicó**, 15 km E Potrero Grande, Puente Morongos, 25/XI/2003, J. E. Barriga, fogging s/ *Nothofagus dombeyi*, S 35° 12' 58.1" W 70° 58' 37.4"; Parque del Inglés, 28/XI/1993, J. E. Barriga, ex *Schinus polygamus*; Fundo Alupenhué, Molina, 5/II/1969, V. Matte, obtained from herbarium sheet-EIF N°2083 Santiago. **Talca**, Las Placetas, NE San Clemente, 19/XI/1994, L. Peña. **Linares**, Lara Bullileo, Cordillera de Parral, 1-7/XII/1977, G. Barria; Lara, II-III/1978, G. Barria; Las Cruces, 11-25/XI/1960. **Nuble**, Polcura, 12/II/1966, C. Donoso, ex *Schinus polygamus*, obtained from herbarium sheet -EIF N°2332. **Bío Bío**, El Abanico, 30/XII/1950, Ross and Michelbacher. **Magallanes**, Chorillo Tres Puntas, 21/II/1962, T. Cekalovic. **ARGENTINA:** Santa Cruz, 166 km S San Julian, 11/XII/1966, Schlinger and Irwin.

Discussion. The basic integument, with dark red or piceous maculae on the elytra, pronotum, and occasionally on the pygidium, are characteristic of this species. Armature of the internal sac of the male genitalia consists of very small denticles uniformly lining the sac.

This species is closely related to *Lithraeus atronotatus* (Pic), which was introduced from Brazil into Hawaii by Krauss (1963) in an attempt to suppress the spread of *Schinus terebinthifolius* Raddi (Christmas Berry), itself introduced from Brazil. Although it became established, it has never reproduced in sufficient numbers to effectively control this plant species.

Lithraeus penai Kingsolver and Barriga, new species

Fig. 78-80

Description. Male. Length 1.1-1.2 mm; width 0.6-0.7 mm. **Color.** Integument of body black; basal ½ of fore and middle tibia black with apical ½ of fore and middle femur and all of tibia red; metafemur black except apex often red, basal ½ of metatibia black, apical ½ of metafemur and tarsi red; antenna red. **Vestiture.** Body setae fine, white, uniformly dense dorsally, on legs, pygidium and abdominal sternites, more dense on metepisternum and lateral end of metacoxa (Fig. 78a). **Structure.** Size small, head turbiniiform, eyes protruding, ocular sinus ½ length of eye; frons convex, in some specimens with brief impunctate midline; postocular fringe narrow; antenna subserrate, reaching metacoxa; pronotum semicircular, lateral margins gently arcuate in dorsal aspect, lateral carina absent; scutellum quadrate with apex bifid; elytra together as long as wide; striae shallow, not distorted, striae 3, 4, and 5 each with a minute basal denticle; metafemur with prominent subapical denticle; metatibia with ventral carina; mucro and 3 coronal denticles subequal in length and form; basal abdominal sternite with flattened median area bordered by fine curved setae (Fig. 78b); pygidium scutate, convex, with apex reflexed to fit emarginate 5th sternite (Fig. 78c). **Male genitalia.** Ventral valve acutely triangular; apex of median lobe with darkly sclerotized curvate structure either side of valve base; apex of internal sac beneath ventral valve with triangular cluster of minute acute denticles followed toward apex of sac by a horse-shoe shaped transparent sclerite; middle of sac with with four rows of acute spines, some with hook-like

bases; next is a semicircular saw-toothed sclerite followed by four acute hollow-based spines; near base of sac is a membranous sac-like structure enclosing several minute spines and saw-toothed sclerites (Fig. 80a); lateral lobes flat with setose apices expanded laterad, cleft about $\frac{1}{2}$ their length (Fig. 80b). **Female.** Similar to male except apex of pygidium not reflexed (Fig. 79a-c).

Host plants. Unknown. **Floral association records.** *Adesmia* sp.

Distribution. Chile.

Type series. Holotype male, allotype and paratypes: **CHILE, Talca**, Alto Vilches, 8/XII/1995, J.E. Barriga; **Malleco**, Rio Blanco, Feb. 1995, L. Peña, 1 male paratype. One female paratype, allotype female and 1 male paratype deposited in FSCA. Holotype deposited in MNNC. Twenty-four male and female paratypes deposited in JEBS and FSCA.

Etymology. The specific name is a patronym of the late Chilean coleopterist Luis Peña G.

Discussion. This species has only been collected in two localities in the central part of Chile. The black integument, red antennae, red fore- and midlegs, and red metatibiae are distinctive characters. This is the only species of *Lithraeus* with massive curvate sclerites framing the base of the ventral valve.

Lithraeus poverus (Blanchard)

Fig. 81-83

Bruchus poverus Blanchard 1851: 292.

Acanthoscelides poverus: Blackwelder 1946: 760; Udayagiri and Wadhi 1989: 59.

Lithraeus poverus: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Type depository. MNHN.

Type locality. Chile.

Description. Male. Length 3.0-3.5 mm; width 0.8-2.0 mm. **Color.** Integument mostly black; metafemur black, metatibia black with apical one-third often red; metatarsi varying from black to ferruginous; antenna red, fore and midlegs yellow, elytra yellow; pygidium evenly clothed with golden setae. **Vestiture.** Varying shades of golden setae, occasionally with streaks of gray setae; of pygidium evenly gray; scutellum yellowish gray, frons and clypeus densely clothed with yellowish setae (Fig. 81a). **Structure.** Body obovate; head turbiniform; eyes protruding laterad, ocular sinus one-half length of eye, setose; pronotal disk semicircular in outline, lateral margins slightly sinuate, base sinuate, disk evenly convex, slightly depressed either side of basal lobe, discal surface finely, evenly punctulate; elytra together longer than wide, lateral margins gently curvate; striae narrow, evenly spaced; basal end of each stria with minute denticle (Fig. 81b); pygidium subtriangular, apex strongly reflexed with apex fitting deep emargination of terminal sternite (Fig. 81c). **Male genitalia.** Median lobe elongate, 10x as long as wide; ventral valve acutely triangular; internal sac with irregular rows of minute spines near base of ventral valve, small denticle in middle of sac followed by a pair of forked spines and second pair of curved spines; base of sac with lining of very fine denticles (Fig. 83a); lateral lobes elongate, slender, cleft about $\frac{1}{2}$ their length (Fig. 83b). **Female.** Similar to male in coloration; head lacking dense setal clothing but with short, transparent setae; pygidial apex vertical, not recurved, and antennae are piceous (Fig. 82a-c).

Host plants. *Adesmia atacamensis*, *A. confusa*, *A. glutinosa*, *A. microphylla*, and *A. propinqua*. **Floral association records.** *Adesmia viscosa*, *Laurelia sempervirens*, *Lomatia* sp., *Nothofagus dombeyi*.

Distribution. Chile.

Material examined. CHILE: Coquimbo, Cuesta Cavilolén, 11/X/1994, J. E. Barriga; 7 km S Los Molles, 5400', 30/IX/1967, O'Brien. **Petorca**, Las Palmas, 18/IX/1993, J. E. Barriga; id. 19/IX/1992, J. E. Barriga, on *Adesmia microphylla*; id. J. E. Barriga, IX/1993, on flowers of *Adesmia microphylla*; Auco, IX/1965, ex *Adesmia* nr. *zoellneri*; 10 km SE Zapallar, O'Brien; 20 km N Putaendo, XII/1963, E. Pisano; ex *Adesmia* sp. **Quillota**, La Dormida, 20/XI/1989, J. E. Barriga; id. XII/1990, J. E. Barriga, ex *Adesmia atacamensis* (= *Adesmia glandulosa*), II/1991; id. 10/IX/1981, P. Ojeda; id. X/1987, J. E. Barriga; Cuesta la Dormida, X/1987, J. E. Barriga, flowers *Adesmia viscosa* (= *Adesmia pulchra*), and ex *Adesmia glutinosa* seeds. **San Felipe**, Los Patos, Putaendo, 12/X/1985, M. Pino. **Valparaíso**, Quintay, 6/XI/1988, J. E. Barriga, ex *Adesmia microphylla*; id. II/1989, J. E. Barriga, ex *Adesmia microphylla* and *A. confusa*; 7 mi. S Casablanca, Los Maitenes, 1200-1400 m, 17/X/1954, Molinari; Variante Viña, 28/XII/1980, Pino; Placilla, 28/XI/1985, Pino; Camino La Pólvara, 9/X/1983, M. Pino. **Santiago**, Farellones, 16/X/1984, Pino. **Cordillera**, San Alfonso, 20/XII/1988, J. E. Barriga, ex *Adesmia confusa*; San Gabriel, 1/I/1989, J. E. Barriga, ex *Adesmia confusa*; El Melocotón, 26/IX/1984, Pino. **Cachapoal**, Copequen, 5/XII/1999, Ugarte. **Curicó**, X-XII/1959; 15 km E Potrero Grande, 8/XI/2003, J. E. Barriga; id. El Relvo, 23/XI/2003, J. E. Barriga, fogging s/ *Nothofagus dombeyi*, S 35° 11' 8.2" W 70° 5' 6"; id. XI/1997, J. E. Barriga; id. Puente Morongos, 25/XI/2003, J. E. Barriga, fogging s/ flowers *Laurelia sempervirens*, S 35° 12" 58.1" W 70° 58" 37.4"; 20 km E Potrero Grande, El Relvo, 26/II/2004, J. E. Barriga, fogging s/ *N. dombeyi*, S 35° 11.1' W 70° 58.1'; id. El Relvo, 8/V/2004, J. E. Barriga, fogging s/ *Adesmia* sp. 1100 m, S 35° 11.14' W 70° 56.1'; El Coigo, X-XI/1959, L. Peña. **Talca**, Alto Vilches, 10/XI/1989, Curkovic. **Cauquenes**, Los Ruiles, 20 km W Cauquenes, 1/X/2003, J. E. Barriga. **Nuble**, Recinto, 15/XII/1989, J. E. Barriga, on *Adesmia propinqua*; Cordillera Chillan, 30/XI/1959, Rivera; Puente Marchant, 15/XII/1989, J. E. Barriga, ex *Adesmia propinqua*; Shangri-la, 26/XI/1994, L. Peña; 70 km E Chillan, 13/XII/1976, Howden; Las Trancas, 16/I/1989, J. E. Barriga; El Marchant, 15/XII/1989, J. E. Barriga, in flowers of *Adesmia propinqua*; id. 15/XII/1989, J. E. Barriga, ex *Adesmia propinqua*; Central Polcura, VIII Región, L. Araya, ex *Adesmia elegans*, II/1987; Rio Diguillín, Rio Renegado, 750 m, 21/II/1967, M. Schilling. The locality "Santa Rosa" in the original description could not be positively located.

Discussion. The dorsal vestiture in this species varies from uniformly golden to alternating interval striping of golden and gray setae, however, the pygidial vestiture is uniformly gray in both sexes. The evenly gray to yellowish-gray vestiture of the male frons is unusually dense. The male genitalia are unusually long and slender.

Lithraeus praecanus (Motschulsky)

Fig. 84-86

Bruchus praecanus Motschulsky 1874: 220.

Acanthoscelides praecanus: Blackwelder 1946: 760; Udayagiri and Wadhi 1989: 59.

Lithraeus praecanus: Kingsolver 1990: 50; Barriga and Kingsolver 2010: 1.

Type depository. ZMUM.

Type locality. Chile.

Description. Male. Length 1.2-1.4 mm: width 0.6-0.8 mm. **Color.** Integument mostly black, legs with basal two-thirds of femora black, apical one-third castaneus, tibiae and tarsi red, antenna with five basal segments black on dorsal faces, red on ventral faces, remainder of antenna black. **Vestiture.** With mottled pattern composed of fine gray and bronze setae nearly concealing integument on elytra, more sparse on pronotum, occasionally with paired white spots and anterior median spot; scutellum prominently white; pygidium with dense white stripe; lateral areas mottled gray and bronze; vestiture beneath evenly gray, more densely set on metepisternum and dorsal margins of abdominal segments; legs with dense gray vestiture (Fig. 84a). **Structure.** Head in dorsal aspect with eyes protuberant, frons convex, sparsely punctulate; frontal carina lacking, ocular sinus about three-fifths as long as eye; pronotum campaniform, lateral margins gently arcuate; disk evenly convex except slightly depressed at

posterior angles, posterior margin sinuate; scutellum quadrate, apex incised; elytra with interstices evenly spaced except bases of first and second slightly directed laterad; interstices lacking large punctures and with only extremely fine setal base punctures; metafemur with fine denticle on ventromesal carina; apex of tibia with three acute coronal denticles, mucro acute, three times length of nearest denticle (Fig. 84b); pygidium similarly punctate (Fig. 84c). **Male genitalia.** Median lobe 5x as long as wide; ventral valve ogival, apex bluntly rounded, setose; internal sac with two long slender, thorn-like spines in middle, a membranous amorphous structure bearing minute spines located near base of sac (Fig. 86a); lateral lobes spatulate, cleft 2/3 their length, apical margin variable (Fig. 86b). **Female.** Similar to male except apex of pygidium not reflexed (Fig. 85 a-c).

Host plant. *Adesmia emarginata*. **Floral association record.** *Taraxacum officinale*.

Distribution. Chile.

Material examined. CHILE: Elqui, Quebrada El Arrayán, 15 km S La Villa, 472 m, malaise trap, 21/XI-13/XII/2003, Irwin. **Santiago,** El Canelo, 16/XI/1954. **Cordillera,** El Canelo, 16/XI/1954. **Nublé,** Las Trancas, 16/I/1989, J. E. Barriga. **Aisén,** 20 km N Cochrane, 4/II/1990, L. Peña. **Ultima Esperanza,** Parque Nacional Torres del Paine, 3/X/1998, J. E. Barriga, flowers of *Taraxacum officinale*. **Magallanes,** Rio Tres Brazos, 9-3/I/1966, Flint and Cekalovic; La Peninsula 10/XII/1960, Cekalovic.

Discussion. Diagnostic characters are the evenly black dorsum, red tibia, and red basal antennal segments. The form of the male genitalia is similar to that of *Lithraeus egenus* but external color patterns of the two species are quite different.

Lithraeus pyrrhomelas (Philippi and Philippi)

Fig. 87-89

Bruchus pyrrhomelas Philippi and Philippi 1864: 359.

Acanthoscelides pyrrhomelas: Blackwelder 1946: 761; Kingsolver 1968c: 319; Udayagiri and Wadhi 1989: 61; Barriga 1990: 53.

Lithraeus pyrrhomelas: Kingsolver 1990: 50; Gonzales et al. 1973: 29; Gonzales 1989: 180; Barriga and Kingsolver 2010: 1.

Bruchus bicolor Philippi and Philippi 1864: 359.

Type depository. MNNC (Paralectotype).

Type locality. *L. pyrrhomelas*: Chile; *B. bicolor*: Chile.

Description. Male. Length 1.50-1.75 mm; width 1.2-1.5 mm. **Color.** Body black, occasionally with elytra red with black margins and median suture red; antenna with basal 5 segments red, remainder black; legs with profemur mostly red or with basal one-half black, mesofemur red or black, metatibia usually black, sometimes with basal half black and apical half red. **Vestiture.** Mostly with fine, moderately dense, white setae, except markedly more dense on metepisternum and sides of abdomen; occasional specimens exhibit a mottling on the pronotum. Third elytral interval often with elongate, conspicuous white patch (Fig. 87a). **Structure.** Head turbiniform; eyes strongly protuberant, ocular sinus one-half length of eye; frons minutely punctulate, lacking frontal carina; pronotum campaniform, evenly convex, densely punctulate; scutellum quadrate, apex deeply incised; elytra with lateral margins gently arcuate, apices rounded, striae lightly impressed, uniformly separated, basal denticles on striae 3, 4, 5 and 6; striae nearly concealed by vestiture; hind femur with short, curved denticle on mesoventral margin; 3 coronal denticles nearly as long as mucro (Fig. 87b); pygidium scutate, convex, reflexed apically (Fig. 87c). **Male genitalia.** Median lobe slender, ventral valve broad, apex truncate, internal sac at base of ventral valve with small, acute denticles, a pair of falcate, serrate sclerites near apex of sac, middle of sac with short, serrate sclerite flanked by pair of thorn-like sclerites and a complex structure of curvate

processes (Fig. 89a); lateral lobes narrowly spatulate with slender bases, cleft deeply between lobes (Fig. 89b). **Female.** Similar to male except the pygidial apex is not reflexed (Fig. 88a-c).

Host plants. *Trifolium pratense*, *T. repens*, *T. subterraneum*. **Floral association records.** *Adesmia viscosa*, *Astragalus coquimbensis*, *Convolvulus arvensis*, *Escallonia revoluta*, *Quillaja saponaria*, *Lomatia* sp.

Distribution. Chile.

Material examined. **CHILE:** **Limarí,** Socos, 1/IV/1989, J. E. Barriga, on *Astragalus* sp.; 1 km S Huentelauquén, 14/XII/1967, O'Brien; 33 km SW Ovalle, 5/XII/1967; El Teniente 15/XII/1967, 4/IV/1959, J. E. Barriga, on *Astragalus coquimbensis*. **Choapa,** Los Vilos, 3/X/1990, L. Peña; 25 km N Los Vilos, 4/X/1967, L. Peña; Millahue, 18/II/1982, G. Blanchard and M. Pino; Illapel, 9/I/1972, Pino. **Petorca,** Cachagua, 18/IX/1974, P. Vidal; Chincolco, 20/XI/1981, Pino. **Quillota,** Cuesta La Dormida, X/1987, J. E. Barriga, in flowers of *Adesmia viscosa* (= *Adesmia pulchra*); Reuten, Quillota, 27/I/1974, Pino. **Chacabuco,** El Portezuelo Colina, III/1988, L. Peña. **Valparaíso,** San Pedro, 14/I/1970, Arretz, on strawberry; Peñuelas, 11/X/1981, Pino; Cuesta Quintay, 14/IX/1981, Melis and Pino; Tranque Los Molles, Quilpué, 20/XII/1981, Pino; Placilla, 28/XI/1982, Pino; Casablanca, 10/X/1981, Pino; Viña del Mar, Sausalito, 9/V/1983, Pino; Mantagua, 12/X/1981, M. Pino; id. 15/XII/1981, M. Pino; Camino La Pólvora, 9/X/1983, M. Pino; Punta Horcones, 21/XII/1980, M. Pino; Tiltill, 5/XI/1965; Valparaíso, II/1928, E.P. Reed. **Santiago,** Antumapu, 7/II/1989, J. E. Barriga, in flowers of *Convolvulus arvensis*; Conchali, 27/X/1994, L. Peña; Santiago, 23/IV/1953, in *Trifolium pratense*. **Talagante,** Naltagua, XI/1986, J. E. Barriga; id. XI/1986; id. 25/X/1984, J. E. Barriga. **Cordillera,** San Alfonso, 7/II/1989, J. E. Barriga, in flowers of *Convolvulus arvensis*. **San Antonio,** San Sebastian, San Antonio, 10/XI/1981, Pino; El Peumo, Sur de Llo Lleo, 3/XII/1980, Pino; Llo Lleo, playa, 22/VIII/1971, Pino. **Colchagua,** Bucalemu, 12/XII/1963, L. Peña; Placilla, 21/II/1958, Barrera, ex clover; Placilla, 21/II/1958, Vergasa; Sta. Cruz, 27/V/1928, Vergasa. **Nuble,** Quillón, 8/XII/1989, J. Artigas; Las Trancas, 10/I/1989, in flowers of *Lomatia* sp.

Discussion. In the majority of specimens, the basic integumental color is black, but occasionally the elytra are red. The male genitalia are very similar to those of *Lithraeus limari*, n. sp. This species has been reported as being a pest of clovers.

Lithraeus scutellaris (Philippi and Philippi)

Fig. 90-92

Bruchus scutellaris Philippi and Philippi 1864: 358; Porter 1933: 87.

Acanthoscelides scutellaris: Blackwelder 1946: 761; Udayagiri and Wadhi 1989: 63.

Lithraeus scutellaris: Kingsolver 1990: 51; Barriga and Kingsolver 2010: 1.

Type depository. MNNC.

Type locality. Santiago.

Description. Male. Length 1.0-2.4 mm; width 0.7-1.6 mm. **Color.** Integument black. **Vestiture.** Head and pronotum with fine, elongate, evenly distributed white setae, setae in mottled pattern on elytra and sometimes on pronotum, densely placed on pygidium with conspicuous basal spot of white setae and with median setal streak; evenly distributed on legs and body except apex of metepisternum with intensely white patch of setae; scutellum conspicuously white (Fig. 90a). **Structure.** Body obovate, lateral margins of pronotum straight, evenly convergent; disk convex, densely punctulate. Head elongate-obovate; eyes only slightly protruding; ocular sinus 2/3 length of eye; antenna reaching humerus; elytral striae shallow, striae punctures inconspicuous, interstices regular, evenly spaced, lacking basal denticles; inner carina of hind femur with small, acute denticle; hind tibia with mucro short, acute; coronal denticles minute (Fig. 90b); pygidial apex reflexed with tip fitting into emarginate caudal margin of sternite

(Fig. 90c). **Male genitalia.** Median lobe slender, apex slightly expanded, ventral valve triangular, lateral margins incurved, apex rounded; internal sac with small hinge sclerites; apical ½ of sac with fine clusters of setose sclerites; basal 1/3 of sac with 12 or 13 thorn-like denticles and many fine spicules (Fig. 92a); lateral lobes slender, converging apically (Fig. 92b). **Female.** Similar to male except pygidial apex not strongly reflexed (Fig. 91a-c).

Host plants. *Dioscorea bryoniaefolia*; *D. auriculata*; *D. variifolia*. **Floral association records.** *Azara dentata*, *Baccharis* sp., *Laurelia* sp., *Nothofagus alpina*, *N. dombeyi*, *N. obliqua*, *Peumus boldus*.

Distribution. Chile.

Material examined. CHILE: Elqui, Quebrada Seca, J. E. Barriga, 25/XI/2000, 130 m, S 30° 30.524', W 71° 29.565'; Coquimbo, N Nocate Langsch, km 272, Panam N., id. 20/VIII/1985, O'Brien; Quebrada Seca, 10/XI/1991, J. E. Barriga; id. XI/1991, J. E. Barriga, ex *Dioscorea* sp. **Choapa,** Los Molles, 8/I/1987, id. IV/1987, Faundez, ex *Dioscorea bryoniaefolia*; id. IV/1988, L.A. Faundez, ex *Dioscorea bryoniaefolia*; id. 8/I/1988, J. E. Barriga, ex *Dioscorea bryoniaefolia*; Cuesta Cavilolén, 11/X/1994, J. E. Barriga; Palquico, 19/IX/1992, J. E. Barriga, on *Proustia cuneifolia*. **Petorca,** Petorca, 7/IX/2006, J. E. Barriga; NE Papudo, 500', 24/IX/?, O'Brien; 10 km SE Zapallar, 23/IX/1967, O'Brien; 10 km S Zapallar, 23/IX/1967, O'Brien. **San Felipe,** 10 km SE Llay-Llay, 3/IX/1967, O'Brien. **Quillota,** Cuesta del Melón, 600 m, 30/XI/2000, J. E. Barriga, S 32° 36.626' W 71° 14.222'. **Valparaíso,** Los Vasquez, IX-X/1988, J. E. Barriga, flowers of *Azara dentata* and flowers of *Peumus boldus*; Quintay, VII/1989, J. E. Barriga, ex *Dioscorea* sp.; Quintay, J. E. Barriga, ex *Dioscorea* sp., 12/III/1989; 15 km SE Villa Alemana, 450', 9/IX/1967, O'Brien; El Salto, 7/VIII/1980, E. Arredondo and M. Pino; Rodelillo, 14/XII/1980, Pino; Variante Viña, 28/XII/1980, Pino; Embalse Aromos, 27/IX/1981, Pino and Melis; Cuesta Quintay, 14/IX/1981, Melis; Parque el Salitre, 6/XI/1981, Pino; Punta Horcones, 21/XII/1980, Pino; Concón sur, 21/VIII/1982, Arredondo and Pino; Villa Dulce, 15-24/IX/1987, P. and M. Melis; id. 29/IX/1981, Melis; Quilpué, Paso Hondo, 12/IX/1981, E. Arredondo; Concón Sur, 21/VIII/1982, E. Arredondo; Viña del Mar, Sausalito, 9/X/1981, Arenas; 3/XII/1981, Arredondo; 4/IX/1982, Arredondo and M. Pino; 21/X/1982, Pino; Viña del Mar, 23-25/IX/1981, Arredondo; id. 4/X/1981, E. Arredondo and Pino; Mantagua, 12/X/1981, Pino. **Santiago,** La Castrina, X/1969, Alfaro; El Canelo, I/1953, Molinari; Quebrada de Macul, J. E. Barriga, XI/1983. **Cordillera,** El Volcán, 27/IV/1992, J. E. Barriga; El Manzano, 22/IX/1984, J. E. Barriga. **Talagante,** Naltagua, I/1989, J. E. Barriga, ex *Dioscorea auriculata*; id. 2/II/1989, J. E. Barriga, *Dioscorea* sp.; id. I/1989, J. E. Barriga, *Dioscorea* sp. **Melipilla,** La Viluma, 15/XII/1967, J. E. Barriga. **San Antonio,** Rapel, 9/XI/1975, A. Valderrama, ex *Dioscorea* sp.; Algarrobo, 21/VII/1951, Kuschel and Peña. **Maipo,** Rangué, 1/III/1989, id. 10/X/1989, id. 16/X/1989, J. E. Barriga, ex *Dioscorea* sp.; Aculeo, XII/1988, J. E. Barriga, id. XII/1988, ex *Dioscorea variifolia*; Rangué, J. E. Barriga, ex *Dioscorea variifolia*, id. I/1989; id. J. E. Barriga, ex *Dioscorea auriculata*, 26/IV/1992. **Aconcagua,** 10 km SE Zapallar, 10/XI/1967, O'Brien; NE Papuda, 500', 24/IX/1967, O'Brien. **Cachapoal,** Rengo, Caracoles, 25/I/1898, Peña; Pelequén, 12/IX/1987, Perez de Arce; Las Cabras, 6/I/1963, Peña. **Curicó,** 5 km E Curicó, 8/X/1994, J. E. Barriga and R. Aceituno; El Coigo, XI/1957, L. Peña; Licantén, XI/1997, J. E. Barriga; 15 km E. Potrero Grande, El Relvo, 24/V/2004, J. E. Barriga, fogging s/*Nothofagus alpina*, *N. obliqua*, and *Laurelia* sp., 1000 m, S 35° 12.36' W 70° 57.76'; Puente Morongos, 25/XI/2003, J. E. Barriga, fogging s/ *Nothofagus dombeyi*, S 35° 12' 58." W 70° 58' 37.4"; Road to El Relvo, 4/XII/2004, J. E. Barriga, fogging s/ *Nothofagus obliqua*, 1000 m, S 35° 11.14' W 70° 56.1'; id. 9/X/1994, J. E. Barriga; 20 km E Potrero Grande, El Relvo, 23/XI/2003, J. E. Barriga, fogging s/ flowers *Laurelia sempervirens*, S 35° 11' 8.2" W 70° 56' 6"; Potrero Grande, J. E. Barriga, 20/I/1992; Cerro Hueca-huecán, camino Zapallar, 10 km E Curicó, Malaise trap, J. E. Barriga, 4-11/II/1998; id. 18-30/IV/1998; id. 7-14/V/2000; id. 1-16/V/2000; id. 1-16/V/2000, J. E. Barriga, ex *Dioscorea* sp. **Talca,** Alto Vilches, 30/XII/1983, J. E. Barriga; id. 10/XI/1989, Henriquez. **Linares,** Malcho, (Parral), 11/XI/1993, L. Peña. **Nuble,** El Recinto, Fdo. El Castillo, I/1970, Rivera; Cord. Chillan, 31/I/1963, 1500 m, J. E. Barriga. **Concepcion,** 3 km SE Agua de la Gloria, 4/XI/1967, O'Brien. **Malleco,** Volcán Llaima, 15/II/1975, Schilling, ex *Dioscorea* sp. **Valdivia,** Valdivia, 18-20/XII/1984, Pino. **Aisén,** 12 km E Coihaique, 22/I/1968, O'Brien.

Discussion. The wholly black integument, the prominent white pygidial spot, and the random sprinkling of white setae in the elytral pattern easily identify this species. The locality “Salta” listed in the original description has not been definitively located.

Genus *Penthobruchus* Kingsolver, 1973

Type species. *Pachymerus germaini* Pic, by original designation.

Type depository. MNHN.

Type locality. Pampas. Probably La Pampa Prov., Argentina.

Penthobruchus is a South American genus of only two species, one of which is found in Chile.

Penthobruchus germaini (Pic)

Fig. 93-95

Pachymerus (sic) *germaini* Pic 1894: 65; Hoffmann 1945: 94.

Pseudopachymerus germaini: Pic 1913a: 11; Pic 1938b: 19

Caryedes germaini: Blackwelder 1946: 758; Terán 1962: 232 (misident.).

Penthobruchus germaini: Kingsolver 1973: 142; Udayagiri and Wadhi 1989: 96; Barriga and Kingsolver 2010: 1; Briano et al. 2002: 292; CSIRO Project in Australia 2006: 1.

Description. Male. Length 4.5-5.0 mm; width 3.5-4.0 mm. **Color.** Integument of head black; antenna dark brown except terminal segment yellowish brown; pronotal integument black; elytral integument dark red with scutellar area black; pygidial integument red with two black spots adjoining terminal margin, ventral body areas black; fore and mid legs reddish brown; metafemur black, metatibia dark red, lateral areas of abdominal segments 1 to 3 denuded. **Vestiture.** Of head brown; median area of pronotal disk brown, flanks yellow; scutellum and scutellar area gray; disk of elytra mottled with patches of gray, golden brown and dark brown; third interstice with elongate black patch; pygidium with mostly yellowish brown vestiture, faintly darker in middle; fore and mid legs yellowish gray; metafemur with white patches (Fig. 93a). **Structure.** Body stout; head trapezoidal, eyes protuberant, frons carinate; antenna subserrate from 5th segment; pronotum convex, margins subpentagonal, lateral margins incurved; anterior margin curvate, base broadly lobed; scutellum small, rectangular; elytra quadrate; disk medially subdepressed; humeri ridged; stria punctures partly concealed by vestiture; base of 4th stria with depressed denticle; base of second stria with small denticle; metafemur extending beyond apex of pygidium, lateroventral margin with 10-12 short denticles and separated from pecten on mesoventral margin by ventral channel, pecten with 6-9 denticles; metatibia strongly arcuate and fitting into ventral channel; mesal and external tibial carinae complete; mucro short, angulate, coronal denticles lacking; dorsal face scabrous (Fig. 93b); pygidium gently convex with paired depressions on apical border (Fig. 93c). **Male genitalia.** Median lobe broad, 3.5x as long as wide; ventral valve broad, apex short, acute; internal sac with large median sclerites (Fig. 95a); lateral lobes broad, bluntly rounded, cleft (Fig. 95b). **Female.** Similar to male but with black x-shaped black design on pygidial disk (Fig. 94a-c).

Host plants. *Parkinsonia aculeata* and *Cercidium praecox* glaucum. **Floral association records.** *Parkinsonia aculeata*.

Distribution. Argentina, Chile, and Uruguay.

Material examined. CHILE: Arica, Azapa, km 12, 20/IX/1993, J. E. Barriga, ex *Parkinsonia aculeata*; id. 24/II/1994, J. E. Barriga, ex *Parkinsonia aculeata*; id. 17/XII/1993, J. E. Barriga, ex *Parkinsonia aculeata*; id. 20/XI/1993, J. E. Barriga, ex *Parkinsonia aculeata*. **Valparaiso,** Villa Alemana, 9/XII/1988,

Solervicens. **Santiago**, Santiago, I/1989, J. E. Barriga, ex *Parkinsonia aculeata*; IV/1981; *Parkinsonia aculeata* seeds; XII/1988, J. E. Barriga, 15/III/1981, J. E. Barriga, *Parkinsonia aculeata*; Las Condes, XII/1996, J. E. Barriga, ex *Parkinsonia aculeata*; IV/1981, J. E. Barriga, ex *Parkinsonia aculeata*. **ARGENTINA**: Santa Fe, and Buenos Aires provinces. **San Juan**, Matagusanó, 29/I/1970, L. Peña. **Buenos Aires**, Glew, Carpintero, XI/1974; id. X/1975 and XII/1974. **Entre Ríos**, Liebig, XI/1987.

Discussion. The host plant is widely distributed in tropical and subtropical America because of its cultivation as a medicinal and ornamental tree, but *P. germaini* attacks it only in Argentina and Chile.

Genus *Pseudopachymerina* Zacher, 1952

Pseudopachymerina Zacher 1952: 467 (described in footnote)

Type species: *Bruchus (Pachymerus) lallemanti* Marseul, by original designation.

Pseudopachymerina contains two species, *P. spinipes* (Erichson) and *P. grata* Terán. Both are present in Chile.

Key to species of *Pseudopachymerina*

1. Metafemur with pecten consisting of one long triangular denticle followed by 3 lesser denticles, pygidial pattern of dark areas less pronounced, male genitalia with a couple of hooks and curved button-like spines *Pseudopachymerina spinipes* (Erichson)
- Metafemur with pecten consisting of one long triangular denticle followed by 4 lesser denticles, pygidial pattern of dark areas more pronounced, male genitalia lack the hooks and curved button-like spines *Pseudopachymerina grata* Terán

Pseudopachymerina grata Terán

Fig. 96-98

Pseudopachymerina grata Terán 1990: 25; Barriga and Kingsolver 2010: 1.

Type depository. FMLA.

Description. Male. Length 4.4-5.0 mm; width 3.0 mm. **Color.** Head and pronotum reddish brown to black; eyes black; elytral pattern as in Fig. 96a; antenna uniformly brown; femur dark red on dorsal ½, black on ventral ½; pygidium dark red. **Vestiture.** Frons and postocular patch white, vertex brown; pronotum dark brown with flanks white; elytra with mixed gray, dark brown and black setae forming short stripe and spots on 3rd interstice; pygidium gray with darker pattern; ventral areas of body mostly white. **Structure.** Head turbiniform, eyes prominent; frons with Y-shaped median carina; ocular sinus ½ length of eye; postocular fringe very narrow; antenna moderately serrate; pronotum convex with margins slightly inflated, disk densely punctate; lateral corners slightly depressed; scutellum quadrate; striae regular, uniformly space; third and fourth striae each with prominent denticle on basal margin; hind femur with long and usually 3 shorter denticles in the pecten; hind tibia with 4 carinae; mucro short; pygidium cordate, apex slightly convex (Fig. 96c). **Male genitalia.** Median lobe with ventral valve equilaterally triangular; armature of internal sac at apex with an amorphous sac-like structure bearing 4-5 spines, two median elliptic sclrites and four hook-like spines, and one spiny basal sclerite (Fig. 98a); lateral lobes as in Fig. 98b. **Female.** Similar to male but with more pronounced pygidial pattern (Fig. 97a-c).

Host plants. *Acacia macrantha* (new host record), *Acacia aroma*, and *Caesalpinia paraguariensis* (D. Parodi) Burkart. **Floral association records.** *Acacia farnesiana*

Distribution. Argentina, Chile, and Ecuador. Ecuador is a new distribution record for *P. grata*.

Material examined. **CHILE:** Arica, Azapa, 12/III/1982, ex yaro (*Acacia macrantha*); Parcelas de Chaca, 17/XII/1993, J. E. Barriga, ex *Acacia macrantha*; id. 30/IX/1994, J. E. Barriga, ex *Acacia macrantha*. **Santiago,** Cajon del Rio Colorado, 1000 m, on flowers *Quillaja saponaria*. **ARGENTINA:** Salta, Pocitos, Fritz, coll. **ECUADOR:** La Toma, 1220 m, W Loja, 18/XI/1970; 9 km NW Arenillas, El Oro, 12/I/1989, *Acacia farnesiana*, Johnson; Loja Catamayo, 1200 m, 8/VII/1989, Stange; 84 km SW Cumbe, 25/I/1989, 5900 m, *Acacia macrantha*.

Discussion. In the original description, Terán (1990) noted that this species is difficult to distinguish from *P. spinipes*. The principal diagnostic characters are: a) the pecten of the hind femur has four teeth compared to 3 in *P. spinipes*; b) the pygidial pattern of dark areas is more pronounced than that of *P. spinipes*; c) the male genitalia lack the hooks and curved button-like spines of *P. spinipes*.

Pseudopachymerina spinipes (Erichson)

Fig. 99-101

Bruchus spinipes Erichson 1833: 252; Olalquiaga 1949: 88.

Acanthoscelides spinipes: Zacher 1952: 465.

Pseudopachymerina spinipes: Decelle 1966: 111; Kingsolver 1972a: 24; Avandano and Saiz 1978: 81; 1993: 31; Saiz et al. 1980; Yates et al. 1989: 721; Terán 1990: 25; Johnson and Siemans 1997: 97; Barriga and Kingsolver 2010: 1; Rojas-Rousse 2006: 1; Rojas-Rousse et al. 2007: 348.

Bruchus jaspideus Erichson 1847: 125.

Pseudopachymerus jaspideus: Bondar 1936: 22.

Bruchus spinipes Erichson 1833: 252.

Pachymerus jaspideus: Hoffmann 1945: 96.

Caryedes jaspideus: Zacher 1952: 467.

Pseudopachymerina jaspideus: Kingsolver 1972a: 24.

Bruchus (Pachymerus) lallemanti Marseul 1875: 39; Costa Lima 1955: 251.

Mylabris lallemanti: Baudi 1886: 410.

Bruchus lallemanti: Olivier 1887: 67.

Acanthoscelides lallemanti: Sainte-Claire-Deville 1910: 374; de Luca 1962: 253.

Pseudopachymerus lallemanti: Pic 1913a: 11; Hayward 1942: 10; Costa Lima 1955: 251; Udayagyri and Wadhi 1989: 97.

Pseudopachymerina lallemanti: Zacher 1952: 467; de Luca 1963: 37; Costa Lima 1955: 251; Udayagiri and Wadhi 1987: 97.

Type depositories. *B. spinipes* lectotype male and *B. jaspideus* paralectotype male- Humboldt Museum, Berlin; *B. lallemanti*- MNHN.

Type localities. *B. spinipes* lectotype: Chile, Meyen; *B. jaspideus* lectotype male: Tschudi, Peru; *B. lallemanti*: Algeria.

Description. Male. Length (pronotum-elytra) 4.4-5.0 mm; width 3.0 mm. **Color.** Integument dark red and black. Head with frons dark red, eyes black, antenna uniformly dark red; pronotal disk and elytra and ventral areas mostly dark red; fore and mid legs yellowish red. **Vestiture.** Head and pronotum with mixed yellow and gray setae; elytra with vague patches of gray setae; third interstice with short patch of contrastingly yellow setae at middle and at base; ventral areas with mostly gray setae; with dense patch of yellowish setae at posterior end of metepisternum and at end of metacoxa; pygidium with basal white triangle, disk with mixed brown and white setae; apex with paired brown spots (Fig. 99a). **Structure.** Head turbiniform; eyes prominent, deeply incised; frons with V-shaped median boss; antenna reaching metacoxa, segments strongly serrate; anterior margin of pronotum obtusely rounded; basal margin truncate except median lobe rounded; disk densely punctate; scutellum quadrate; elytra parallel-sided,

convex, slightly depressed along suture; striae evenly parallel, well-marked, striae 1-5 deflexed laterad in vicinity of scutellum, 3 and 4 arising basally from appressed triangular denticles; interstices regularly punctate; metacoxae punctulate save along anterior border; fore and mid legs not modified; metafemur moderately expanded, pecten consisting of one long triangular denticle followed by 3 lesser denticles; metatibia slender, curvate in basal one-fifth, with complete ventral and lateral carinae and abbreviated ventrolateral carina; mucro short, acute, coronal denticles 3 or 4; dorsal face of tibia scabrous (Fig. 99b); pygidium convex, apex reflexed into emarginate 5th sternite (Fig. 99c). **Male genitalia.** Median lobe with ventral valve equilaterally triangular with lateral margins incurved; armature of internal sac at apex with an amorphous sac-like structure bearing 4-5 spines, a pair of large fishhook-shaped spines, a pair of hook-like spines each with a broad base, a sleeve-like transparent structure, and an amorphous mass lined with fine elongate setae; entire sac lined with fine elongate setae (Fig. 101a); lateral lobes bowed, apically spatulate, cleft more than 1/2 their length (Fig. 101b). **Female.** Similar to male except the pygidium is not reflexed at apex, and pygidial disk is marked with a pattern of dark spots (Fig. 100a-c).

Host plants. Chile: *Acacia caven*. Argentina. *Acacia aroma*. Host records from other geographic areas: *Acacia arabica* (Lam.) Willd., *A. aromatica* Poepp. ex Benth., *A. cyanophila* Lindl., *A. farnesiana* (L.) Willd., *A. tortuosa* (L.) Willd., *Astragalus caprinus* L., *Cassia* sp., *Ceratonia siliqua* L., *Caesalpinia* sp., *Calapogonium* sp., *Icama* sp., *Pachyrhizus erosus* (L.) Urb. Reared from *Enterolobium cyclocarpum* (Jacq.) Griseb. **Floral association records.** *Acacia caven*, *Quillaja saponaria*.

Distribution. Algeria, Argentina, Bolivia, Brazil, Chile, Ecuador, Egypt, France, Germany, Greece (Crete), Israel, Italy, Lebanon, Morocco, Peru, Spain, Syria, Tunisia, Turkey, Uruguay, and Zaire.

Material examined. **CHILE:** Arica, Azapa, 17/XII/1982, Muñoz. **Huasco**, Alto del Carmen, J. E. Barriga, XII/1990. **Elqui**, El Colorado, Ugarte, XI/1995; El Colorado, Cochiguaz, Castillo, /XI/1996; Cochiguaz, 29/X/1995, J. E. Barriga; Quebrada Seca, J. E. Barriga, 25/XI/2000, 130 m, S 30° 30.524', W 71° 29.565'. **Limarí**, Quebrada Seca, 10/XI/1991, J. E. Barriga; Río Limarí, 7/V/1972, Alfaro. **Petorca**, 145 km N Santiago, 19/I/1996, Pacho. **San Felipe**, Los Patos, Putaendo, 1/XI/1981, Pino; 28/XI/1981, Pino; id. 7/II/1982, Pino and Blanchard; id. 12/X/1985, Pino. **Quillota**, Quillota, VII/1898, Germain; Granizo, 30/V/1970, H. Sielfeld; Reuten, Quillota, 27/I/1974; Quebrada Alvarado, Limache, 22/XII/1968, Pino; Cuesta El Melon, 3/XI/1965; XII/1988, J. E. Barriga, ex *Acacia caven*. **Valparaíso**, Villa Alemana, 1961; Tranque Los Molles, Quilpué, 20/XII/1981, M. Pino; Lo Orozco, 5/X/1969, Pino; Isla de Pascua, Punapau, 6/VI/1972, R. Charlin; id. 6/XI/1972, Charlin; id. 5/V/1972, Charlin; Curacavi, 15/I/1966. **Chacabuco**, El Portezuelo Colina, III/1988, L. Peña; id. Ugarte 17/XII/1995. **Santiago**, Santiago, XII/1882, III/1883, VII/1883, Philippi; 12/XI/1967, Tober; Manquehue, 30/VIII/1973, ex *Acacia caven*; Lo Barnechea, 31/V/1970, Arriagada; Santiago, 27/II/1994, Eger; id. 30/IX/1961, Leiholler; Rinconada de Maipú, 19/IV/1974, Charlin; id. IX/1989, J. E. Barriga, ex *Acacia caven*; id. 8/VI/1981, J. E. Barriga, flowers *Quillaja saponaria*. **Cordillera**, El Manzano, II/1972, Alfaro; id. I/1986, J. E. Barriga, ex *Acacia caven*; id. X/1988, J. E. Barriga, ex *Acacia caven*; id. 2/VIII/1985, ex *Acacia caven*; id. X/1985, 1000 m, ex *Acacia caven*; id. X/1986, J. E. Barriga, ex *Acacia caven*; id. VIII/1985, ex *Acacia caven*; Pirque, Ugarte, V/1995; id. Ugarte, V/1998; El Clarillo, VII/1980, Luengo; Cajon del Río Colorado, ex flowers *Quillaja saponaria*; El Canelo, 23/XI/1985, J. E. Barriga. **Talagante**, Naltagua, VII/1985, J. E. Barriga, ex *Acacia caven*; id. 9/III/1989, J. E. Barriga, ex *Acacia caven*; id. 22/III/1989, J. E. Barriga, ex *Acacia caven*; id. VII/1994, J. E. Barriga, ex *Acacia caven*; 7/IV/1981, J. E. Barriga, on *Acacia caven*. **San Antonio**, Quebrada de Cordoba, 13/X/1999, Ugarte. **Cachapoal**, Copequen, 5/XII/1999, Ugarte. **Cardenal Caro**, Pichilemu, VI/1999, Ugarte. **Curicó**, Cerro Hueca-Huecán, camino Zapallar 10 km E. Curicó, 12-22/XII/1997, J. E. Barriga, Malaise trap; id. 10-20/III/1998, J. E. Barriga, Malaise trap; Llico, I/1969, Ramirez. **Talca**, Vilches Alto, 17/XII/1982. **Nuble**, Bulnes, 21/VI/1984, Monsalve, ex *Acacia caven*; id. 5/XI/1983, J. Artigas; Coyanco, 3/VI/1962, Mendez; Ninhue, 6/IV/1969, Longery. **Concepción**, Concepción, 14/XII/1970, Reyes. **Chiloé**, Castro, 18/II/1968, Cekalovic. **ARGENTINA:** Buenos Aires, Glew, Carpintero, XI/1974; id. X/1975; Guernica, Carpintero, XII/1974; X/1989, Di-Iorio. **San Juan**, Matagusanó, 29/I/1970, Peña. **Entre Ríos**, Liebig, X/1987. **BRAZIL:** Bahia. **PERU:** Guadalupe, Casma. **ECUADOR:** Guyas; 19 mi N Santa Elena, 14/I/1989, ex *Acacia tortuosa*.

Discussion. Because this species is widespread in South America and Europe and has been known under three specific names with a variety of associated host plants, many reports of its occurrence exist in the literature. It undoubtedly originated in South America and was probably transported in one or more species of *Acacia*.

Genus *Rhipibruchus* Bridwell, 1932

Rhipibruchus Bridwell 1932: 105; Kingsolver 1967: 318; Kingsolver et al. 1977: 115.
Megalorhipis Philippi 1859: 668 (not Lacordaire 1857).

Type species: *Megalorhipis leiboldi* Philippi (orig. desig.).

Rhipibruchus picturatus (Fahraeus)

Fig. 102-104

Bruchus picturatus Fahraeus 1839: 2, 5: 1-456; Blanchard 1851: 289.

Megalorhipis leiboldi Philippi 1859: 668, synonymized by Bridwell 1932.

Megalorhipis leyboldi Pic 1913a: 12 (misspel.).

Rhipibruchus picturatus: Bridwell 1932: 105; Olalquiaga 1949:89; Kingsolver 1967: 320; 1982: 672; Bottimer 1968: 1041; Kingsolver et al. 1977:115; Borowiec 1987: 108; Kingsolver 1990a: 51; Barriga 1990: 69; Kingsolver, M. L'Argentier and Terán 2003: 37; Kingsolver and M. L'Argentier 2004; Barriga and Kingsolver 2010: 1; Kingsolver et al. 1977: 115.

Type species. *Megalorhipis leiboldi* Philippi (orig. desig.).

Type depository. *B. picturatus*- NHRS; *M. leiboldi*- MNNC.

Type locality. *M. leiboldi*: Valdivia, Chile.

Description. Male. Length (pronotum-elytra) 2.7-3.3 mm; width 1.7-2.0 mm. **Color.** Integument reddish brown to black; head black, antenna dark brown to black; pronotal disk dark brown to black with cruciate setal pattern; elytral integument dark red with lateral and apical maculae and humeri and basal gibbosity dark brown to black; scutellum concealed by white pilosity; pygidium dark red; prosternum, mesosternum and metasternum including coxae black; venter of abdomen red; femora with dorsal ½ red, venter ½ black. **Vestiture.** Head with mostly brown setae except white patch behind each eye; pronotal disk with mixed brown and white setae, gray on flanks, gray in cruciate pattern and in a spot on basal marginal lobe; scutellum white; elytra mostly gray with yellowish patch on 3rd interstice; basal gibbosities, lateral and apical maculae with scattered black setae; pygidium with white basal triangle, discal setae curving toward midline; ventral vestiture gray on body and legs (Fig. 102a). **Structure.** Head turbiniform; eyes prominent, ocular sinus 4/5 length of eye; frons strongly carinate; antenna pectinate with first segment elongate, second bead-like, third broadly triangular; pronotum conical, impressed with cruciate sulci, basal ½ gibbous with lateral protuberances near lateral angles; elytra quadrate, striae prominent, striae 1 and 2 slightly curvate near scutellum, 3 and 4 deflected laterad to arise in basal denticles on prominent gibbosities; fore and mid legs slender, metafemur moderately swollen, pecten composed of 4 to 6 denticles; metatibia with 3 longitudinal carinae, mucro short, apical margin with 3 coronal denticles; abdominal sternites strongly narrowed along midline due to apical emargination; pygidium convex with apex reflexed and fitting into deep emargination of 5th sternite (Fig. 102b). **Male genitalia.** Median lobe slender, ventral valve cordate, acute; internal sac of median lobe with brush of setae short; spinous plate short, broad, with 4-5 spines; median cluster of 5 large, thornlike, curved spines and 3-4 smaller denticles (Fig. 104a); lateral lobes blunt apically, somewhat oblique on median margin, cleft to about 1/2 their length (Fig. 104b). **Female.** Similar to male except antenna serrate, pygidium as in Fig. 103c, frontal carina not as prominent as in male.

Host plants. *Prosopis alba*, *P. affinis*, *P. caldenia*, *P. chilensis chilensis*, *P. elata*, *P. ferox*, *P. flexuosa flexuosa*, *P. humilis*, *P. nigra*, *P. strombulifera*, *P. tamarugo*, *P. torquata*.

Distribution. Argentina, Chile, Colombia, and Uruguay.

Material examined. CHILE: Arica, Valle Camarones, 7/IV/1989, Bobadilla, ex *Prosopis tamarugo*. Iquique, Pampa del Tamarugal, Zapiga, 16/II/1989, ex *Prosopis* sp. (Algarrobo), H.U.C. and D.B.G.; Pampa del Tamarugal, 21/II/1986, L. Peña; Pampa del Tamarugal, Refresco, 16/II/1989, Vargas C., ex *Prosopis tamarugo*; id. 7/IV/1989, Vargas C., ex *Prosopis tamarugo*; id. 20/IV/1989, Vargas, ex *Prosopis tamarugo*. **El Loa**, San Pedro de Atacama, 20/III/1958, Gonzalez, ex *Prosopis*. **Antofagasta**, Quillagua, 24/II/1994, J. E. Barriga, ex *Prosopis flexuosa*. **Elqui**, Vicuña, Baños el Pangué, 5/VI/1940, Olalquiaga, ex *Prosopis* sp. **Huasco**, Conay, 2000 m, IX/1985, J. E. Barriga, ex *Prosopis nigra*; id. 5/X/1985, ex *Prosopis chilensis* var. *chilensis*. **Chacabuco**, Chacabuco, V-VI/1988, Faundez, ex *Prosopis chilensis*; El Portezuelo Colina, III/1988, L. Peña; Termas de Colina, 1956; Huechún, VIII/1964, E. Pisano. **Santiago**, Antumapu, 11/VI/1974, J. E. Barriga; Rinconada de Maipú, III/1965, Charlín; Santiago, X/1980, 560 m, J. E. Barriga, ex *Prosopis chilensis* seeds. **ARGENTINA:** **Catamarca**, El Huaco, L. Peña, 22/I/1995; San Fernando, L. Peña, 4/XI/1991. **Córdoba**, Río Tercero, Carpintero, 1971. **Corrientes**, Mercedes, Carpintero, XII/1974. **Mendoza**, Mendoza, Lira, 1991. **Salta**, Amaichá del Valle, Di Iorio, ex *Prosopis alba*, 28/III/1992. **Santiago del Estero**, Telares, L. Peña, 3/III/1992; Quimilí, L. Peña, 1/III/1992.

Discussion. Seven species are assigned to *Rhipibruchus* genus, it is a South American genus and is apparently restricted to seeds of *Prosopis*. In the future, more species of this genus will likely be found in Chile.

Genus *Scutobruchus* Kingsolver, 1968

This genus contains six species: *Scutobruchus ceratioborus*, *S. curtitropis*, *S. ferocis*, *S. gastoi*, *S. terani*, and *S. vinalicola*. The only species present in Chile are *S. ceratioborus* and *S. gastoi*.

Key to species of *Scutobruchus*

1. Hind tibia without lateral carina; male genitalia with lateral alae and ventral keel (Fig. 110a) ***S. gastoi* Kingsolver**
- Hind tibia with lateral carina; median lobe of male genitalia with ventral keel elongated and attenuate (Fig. 107b.) ***S. ceratioborus* (Philippi)**

Scutobruchus ceratioborus (Philippi)

Fig. 105-107

Bruchus ceratioborus Philippi 1859: 670.

Kytorhinus cassivorus Motschulsky 1874: 207.

Bruchus vagenotatus Pic 1938: 19; Bosq 1943: 42; Kingsolver 1968a: 283.

Acanthoscelides ceratioborus: Blackwelder 1946: 759; Zacher 1952: 465.

Algarobius ceratioborus: Olalquiaga 1949: 89; Udayagiri and Wadhi 1989: 99; Kingsolver 1990: 51; Barriga 1990: 74; Kingsolver and Ribeiro 2001: 25; Terán, L'Argentier and Kingsolver 2005: 78.

Bruchus crassivorus: Pic 1913a: 23 (missp.).

Acanthoscelides vagenotatus: Blackwelder 1946: 761.

Acanthoscelides crassivorus: Blackwelder 1946: 759 (missp.).

Scutobruchus ceratioborus: Kingsolver 1983: 283; Barriga and Kingsolver 2010: 2.

Type depository. MNNC.

Type locality. CHILE, Valdivia Prov.

Description. Male. Length 3.1-4.5 mm; width 1.6-2.0 mm. **Color.** Integument reddish brown to piceous; eyes black; head with vertical piceous median stripe; mouthparts brown; antenna with apical ½ of each segment dark brown; elytral color variable from nearly uniform yellowish brown to dark brown macular pattern; pronotum usually with piceous median maculation; pygidium with vague median stripe and dark maculation either side of stripe. **Vestiture.** Mostly yellowish gray but with dark brown spots on dorsum; scutellum gray; pygidial stripe gray; on ventral parts and legs gray (Fig. 105a). **Structure.** Head turbiniform, eyes prominent, ocular sinus ½ length of eye, frons slightly swollen, postocular fringe a single row of setae; antennal segments 1-4 slender, 5-10 moderately serrate, 11 ovate; pronotum bell-shaped, convex, densely punctulate, lateral margins briefly carinate near basal angles; scutellum nearly twice as long as wide, apically bidentate; elytra subparallel, lateral margins evenly curvate; striae shallow, parallel; hind leg with lateral, lateroventral and ventral carinae complete to apex, mucro slender, acute (Fig. 105b); basal sternite with round pruinose pit (Fig. 105c); pygidium reflexed at apex as in Fig. 105d. **Male genitalia.** Median lobe with ventral keel and two dorsal processes, ventral valve lacking (Fig. 107a, b); lateral lobes strongly curved (Fig. 107b). **Female.** Similar to male except that it lacks ventral pit on first ventrite, and the pygidium is not reflexed (Fig. 106a-c).

Host plants. *Prosopis abbreviata*, *P. alba*, *P. alpataco*, *P. caldenia*, *P. chilensis*, *P. flexuosa*, *P. juliflora*, *P. nigra*, *P. reptans*, *P. ruscifolia*, *P. sericantha*, *P. strombulifera*, *P. torquata*.

Distribution. Argentina, Chile, Ecuador, Panama, and Peru.

Material examined. CHILE: Arica, XI/1974, Longui. **Iquique**, Pampa del Tamarugal, 21/II/1986, L. Peña; id. 5/VII/1956, Ricardi, ex algarrobo; Quillagua, 25/XI/1993, J. E. Barriga, ex *Prosopis flexuosa*; id. , J. E. Barriga, ex *Prosopis flexuosa*, 24/II/1994; id. IX/1970, H. Siglfeld. **El Loa**, San Pedro de Atacama, 3/II/1994, L. Peña; Quito, S.P. de Atacama, 4/VIII/2009, 2400 m, ex *Prosopis alba*, also 2 and 24/IX/2009, 8-11/I/2010, 4/I/2010, 10/I/2010, 21/II/2010, 2/IX/2010 and 18/X/2010, Ramirex, ex *Prosopis alba*; Calama, I/1995, A. Ugarte; 14/II/2010, Ramirez, ex *Prosopis alba*. **Huasco**, Llano del Algarrobal, Vallenar, 30/XI/1987, J. E. Barriga, ex *Prosopis flexuosa*. **Chacabuco**, Chacabuco, V/1988, L. Faundez, ex *Prosopis chilensis*; id. 15/II/1989, J. E. Barriga, ex *Prosopis chilensis*; El Portezuelo Colina, III/1988, L. Peña. **ARGENTINA:** Salta, Amaichá del Valle, Di' Iorio, ex *Prosopis alba*, 28/III/1992. I/1970. **Catamarca**, Santa María, L. Peña, 9/II/1983; Catamarca, L. Peña. **ECUADOR:** (all in *Prosopis juliflora*), **Guyas:** 30 km W Guyaquil, 13/I/1989; 52 km W Guyaquil, 13/I/1989; El Oro, 1 km NW Arenillas, 19/I/1989; 9 km NW Arenillas, 19/I/1989; 16 SW Santa Rosa, 18/I/1989.

Discussion. Johnson and Siemans (1997) found that this species does not glue its eggs to the surface of host pods but instead inserts them into crevices of the pod.

Scutobruchus gastoi Kingsolver

Fig. 108-110

Scutobruchus gastoi Kingsolver 1968a: 285; Udayagiri and Wadhi 1989: 99; Elgueta and Arriagada 1989: 29; Kingsolver 1990: 51; Barriga and Kingsolver 2010: 2.

Type depository. Museo Nacional, Santiago, Chile.

Type locality. Chile, Canchones, Tarapaca.

Description. Male. Length 2.5-3.9 mm; width 1.25-1.50 mm. **Color.** Integument reddish brown, pronotum with median stripe dark brown; frons and median stripe on head piceous; pygidium piceous with median stripe and lateral border reddish brown; elytral apices and scutellar area piceous; ventral areas of prosternum, mesosternum and metasternum, and median portions of abdominal sterna pi-

ceous; metacoxa dark red; metepisternum, a row of lateral spots on sternites and 5th sternite yellowish red; legs yellow. **Vestiture.** Head with sparse yellow setae; pronotum with narrow median line yellow, lateral margins densely covered with yellow setae; scutellum white; basal 1/4 of elytra yellow; pygidium piceous with narrow median stripe yellow; most of metendosternite and ventral areas white, caudal end of metendosternite and marginal spots of abdominal sternites yellow (Fig. 108a). **Structure.** Eyes prominent; ocular sinus ½ length of eye; frons convex, not carinate; pronotum campaniform, densely punctulate; scutellum 2x as long as wide; elytral striae shallow, evenly spaced; pygidium scutate; metafemur with 1 subapical denticle followed with 1 small tubercle; first ventrite with shallow, setose depression (Fig. 108b); pygidium as in Fig. 108c. **Male genitalia.** Median lobe with ventral keel apically rounded; dorsal processes laterally expanded (Fig. 110a-b): lateral lobes as in Fig. 110c. **Female.** As in male except pygidial stripes are narrower; basal sternite lacks setose pit (Fig. 109 a-c).

Host plants. *Prosopis burkartii*, *P. strombulifera*, *P. tamarugo*.

Distribution. Chile.

Material examined. CHILE: Arica, Arica, 18° 29' S, 70° 20' W, 28/XI/1995, Benavides.

Iquique, Col. Pintados, 1/XII/1993, J. E. Barriga, ex *Prosopis tamarugo*; id. XI/1993, ex *Prosopis tamarugo*; Pampadel Tamarugal, XI/1968, Campos, fruits *Prosopis* sp.; id. 20/IV/1989, Vargas, ex *Prosopis tamarugo*; id. 5/VII/1956, Ricardi; id. 10/X/1973; id. 11/III/1972, Quezada; La Huayca, 1/XI/1993, J. E. Barriga, ex *Prosopis strombulifera*; id. 23/II/1994, J. E. Barriga, ex *Prosopis strombulifera*; id. 1/XI/1993, J. E. Barriga, ex *Prosopis burkartii*; Canchones, VI/1966, Gasto, ex *Prosopis tamarugo*; id. 1/XI/1993, J. E. Barriga; id. 1/XII/1993, J. E. Barriga, ex *Prosopis tamarugo*; id. 17/XII/1993, J. E. Barriga, ex *Prosopis tamarugo*; id. 24/VI/1994, J. E. Barriga, ex *Prosopis tamarugo*; id. 30/IX/1994, J. E. Barriga, ex *Prosopis tamarugo*; Canchones, 7/XI/1993, J. E. Barriga, ex *Prosopis tamarugo* id. 3/I/1995; id. ex *Prosopis tamarugo*, ex 12/II/1996; Iquique, II/1973, ex *Prosopis tamarugo*.

Discussion. The specific name is a patronym of the name of Dr. Juan Gastó, Professor of Ecology, Facultad de Agronomía de la Universidad de Chile, who collected the type series.

Genus *Sennius* Bridwell, 1946

Sennius Bridwell 1946: 55; Johnson and Kingsolver 1973.

Type species: *Bruchus cruentatus* Horn.

This New World genus is in need of a continental revision. Species north of Panama are well delineated but Southern Hemisphere species are relatively poorly known. At present, characteristics being used to separate *Sennius* from other related genera are: medial ventral carina of the metafemur with a single subapical denticle, and male genitalia with “hinge sclerites” flanking the apical orifice at the base of the ventral valve. Three species have been recorded from Chile.

Key to species of *Sennius*

1. Integument of pygidium black with narrow white basal band and median dark of white setae .
..... *Sennius transversesignatus* (Pic)
- Integument of pygidium dark red with white or yellowish-white basal band 2
2. Elytra with black transverse basal band extending between humeri; middle of elytra with broad, yellow or white band extending from border to border, apical ½ of elytra dark brown or black; scutellum prominent, white *Sennius lebasi* (Fahraeus)
- Elytral vestiture mostly gray; middle of lateral margin with short, white macula, and a curved, darker marginal macula; pronotum and pygidium black covered with uniformly gray vestiture

sometimes with faint median stripe; scutellum clothed with yellowish pubescence
 *Sennius falcatus* Kingsolver and Ribeiro

***Sennius falcatus* Kingsolver and Ribeiro**

Fig. 111-113

Sennius falcatus Kingsolver and Ribeiro 2001: 26.

Type depositories. Holotype and one paratype deposited in CNC; 15 paratypes in FSCA, 1 paratype in USNM.

Description. Male. Length 2.2 mm; width 1.3 mm. **Color.** Integument of head and body black, antenna and legs yellowish red. **Vestiture.** Of head white, of pronotum and elytra uniformly brown, scutellum white, pygidium yellowish gray, more dense in basal one-half; ventral areas yellowish white. **Structure.** Head turbiniform, eyes moderately protuberant, ocular sinus 2/3 length of eye; frons lacking median carina; antenna gradually broadening from insertion to segment four then of uniform width to apex, apical segment ovate, flagellar segments moderately eccentric; antenna reaching humerus; pronotum evenly convex, basal lobe with slight depression, lateral margins gently curved, lateral carina evident only at base. Scutellum quadrate, apically bifurcate; elytra with striae narrow, nearly hidden by vestiture, striae 2, 3, and 4 each with minute basal denticle, apices of elytra individually rounded; pygidium scutate, evenly convex, apex reflexed fitting emarginate sternite; forelegs and midlegs normal, hind femur moderately inflated, ventral margin bicarinate, mesal carina armed with minute subapical denticle; hind tibia with lateral carina complete ending in short denticle; mucro short; apical margin with two additional dorsoapical denticles; abdominal segments not modified (Fig. 111a); pygidium as in Fig. 111b. **Male genitalia.** Median 4x as long as wide, ventral valve triangular, basal angles slightly flared, lateral margins of median lobe slightly constricted; hinge sclerites elongate-oval with basal end continuing into internal sac as a denticulate tubular structure expanding into inflated lobes with numerous denticles and setae (Fig. 113a); lateral lobes cleft two-thirds their length; apices of lobes spatulate and setose (Fig. 113b). **Female.** Similar to male except pygidium not apically reflexed (Fig. 112a-c).

Host plants. *Senna occidentalis* and the new host record *Hoffmanseggia eremophila*.

Distribution. Ecuador and Chile, the latter is a new distribution record.

Material examined. CHILE: Arica. (Tarapaca), Azapa, 10 mi. E Arica, 30/VII/1968, O'Brien. Azapa, XII/1945, Olalquiaga, in *Hoffmanseggia*, 2 males, 1 female; Km Camino to Azapa, Arica, I/1978, L. Faundez, 4 males, 5 females, ex *Hoffmanseggia eremophila*.

Discussion. This species was first described from the Galapagos Islands. The name alludes to the falcate pattern on the elytra of the type specimen.

***Sennius lebasi* (Fahraeus)**

Fig. 114-116

Bruchus lebasi Fahraeus 1839: 25.

Acanthoscelides lebasi: Blackwelder 1946: 760.

Sennius lebasi: Kingsolver 1979: 342.

Bruchus rufescens Motschulsky 1874: 222.

Bruchus celatus Sharp 1885: 499.

Sennius celatus: Bottimer 1961: 294.

The complete synonymy is listed in Udayagiri and Wadhi (1982:105).

Description. Male. Length (pronotum-elytra) 1.5-2.8 mm; width 0.9-1.9 mm. **Color.** Head, pronotum, thoracic sterna except abdominal segments 2-5 black, elytral color pattern composed of black, yellow, red and dark brown coloration (Fig. 114a); antennae, legs, lateral portions of abdominal sterna, and pygidium reddish brown, basal ½ of hind leg often piceous. **Vestiture.** Head with short, very fine white setae; pronotal setae golden and white in cruciate pattern on disk; scutellum white; elytra with white setae on transverse yellow median band; apical ½ of elytra black with reddish circular patch; pygidial setae white condensed into 3 basal patches; setae of ventral areas white (Fig. 114a). **Structure.** Head with frons with median carina; antennal segments 1 and 3 usually filiform, 2 and 4 usually moniliform, 4 shorter than adjacent segments, 5-10 eccentric, 11 subacute apically; hind femur with single sharp denticle about as long as width of tibial base; mucro short (Fig. 114b); pygidium punctate, convex in lateral view (Fig. 114c). **Male genitalia.** Median lobe with ogival margin; hinge sclerites arcuate; internal sac lined with long, slender spiculiform denticles (Fig. 116a); lateral lobes expanded apically, cleft to about three-fourths their length (Fig. 116b). **Female.** Similar to male except pygidial apex not reflexed (Fig. 115a-c)

Host plants. Some species in the genera *Cassia* and *Senna* have been recorded as host plants, but at this time there is no specific record for Chilean specimens of *S. lebasii*. A complete list of host plants can be found in Herzog and Ribeiro (2013).

Distribution. Belize, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Trinidad and Tobago, USA, and Venezuela.

Material examined. CHILE: Cordillera. El Canelo, 25 km SE Santiago, 15/I/1947, Peña, coll.

Discussion. This species has a wide distribution in North and South America in a number of host plant species.

***Senniüs transversesignatus* (Fahraeus), New Combination**
Fig. 117-119

Bruchus transversesignatus Fahraeus 1839: 26.

Acanthoscelides transversesignatus: Blackwelder 1946: 761; Costa Lima 1955: 246.

Type depository. NHRS.

Description. Male. Length 2.1-3.0 mm; width 1.1-2.0 mm. **Color.** Head and body black, elytra with transverse, irregular red band in basal ½; antenna red; fore and mid legs red, metafemur mostly black with apex red, metatibia dark red. **Vestiture.** Scutellum with dense white setae; pronotum with faint lateral curvate lines of white setae near posterior angles; elytral setae very fine, transparent except white in transverse red band, and along sutural striae; pygidium black with white setal patches at anterior angles, along basal border, and in prominent medial dart (Fig. 117a). **Structure.** Head with frontal carina, frons irregularly punctate, vertex finely punctate; ocular sinus ½ length of eye; postocular fringe narrow; antennal segments moderately serrate, 11th segment ovate; pronotum conical, lateral margins straight but converging, disk evenly convex, depressed either side of basal lobe; base shallowly sulcate; integument densely punctulate by 2 sizes of punctures; Elytra evenly convex except slightly depressed along suture; striae straight, evenly spaced except some specimens with 3rd interstice slightly wider in middle; interstices densely punctulate; metafemur with single, triangular subapical denticle on median margin; metatibial apex with sharp mucro and 3 to 4 coronal denticles (Fig. 117b); pygidium moderately densely punctulate, with apex slightly reflexed into terminal sternite. **Male genitalia.** Median lobe rather short, broad, especially at base; in ventral view, ventral valve triangular with its base concave; hinge sclerites large, almost linear; armature of internal sac consisting of short acute denticles and a densely spine mass at anterior portion of sac (Fig. 19a). Lateral lobes cleft to about half their length, apices rounded (Fig. 19b). **Female.** Similar to male except pygidial apex not reflexed (Fig. 118a-c).

Host plants. *Senna australis* and *Senna obtusifolia*.

Distribution. Brazil; for Bolivia, Chile, Colombia, and Tobago are new distribution records.

Material examined. CHILE: Magallanes Prov., 20 km E of Lazo, 12/I/1968, O'Brien.

Discussion. Diagnostic characters for this species are as follows: the black body with a transverse red band across the middle of the elytra; antenna, foreleg, midlegs and metatibia red; and the pygidium with a median dart of white setae on a mostly black disk.

Genus *Stator* Bridwell, 1946

Stator Bridwell, 1946: 55; Johnson, 1963: 860; Johnson and Kingsolver, 1976; Johnson, Kingsolver and Terán, 1989:1.

Type species: *Bruchus pruininus* Horn.

This New World genus contains 32 species, four of which are recorded from Chile, including one new species. The male genitalia of *Stator* differ principally in the shape of the ventral valve, and the position of the two large sclerites of the internal sac.

Key to species of *Stator*

1. Pronotum red or ferruginous, or black with maculations of these colors *Stator furcatus* Johnson, Kingsolver and Terán
- Pronotum black or blackish without maculations 2
2. Hind femur and abdomen black *Stator cearanus* (Pic)
- Hind femur and/or abdomen reddish, ferruginous, or with black maculations *Stator testudinarius* (Erichson)

Stator cearanus (Pic, 1930), New Combination

Fig. 120-122

Bruchus cearanus Pic 1930d: 12; Bondar 1936: 39.

Acanthoscelides cearanus: Blackwelder 1946: 759; Costa Lima 1955: 245.

Stator cearanus: Kingsolver 1972: 225; Johnson and Kingsolver 1976: 82; Johnson, Kingsolver and Terán 1989: 27; Johnson 1995: 332 (synonymy).

Description. Male. Length (pronotum-elytra) 2.0-2.3 mm; width 1.6-1.8 mm. **Color.** Head black; antenna dark red; pronotum black; ventral areas black except abdomen faint reddish brown; elytra reddish yellow with broad sutural stripe and lateral marginal spot black; pygidium uniformly reddish brown; fore and mid legs uniformly red, hind legs black, sometimes with basal ½ of femur black (Fig. 120a). **Vestiture.** Uniformly distributed fine white setae. **Structure.** Head with faint frontal carina; ocular sinus ½ as long as eye, postocular lobe a narrow fringe; pronotum evenly convex, surface finely, uniformly punctulate; elytral striae shallow, uniformly spaced (Fig. 120b); pygidium with reflexed apex fitting emargination of terminal abdominal segment (Fig. 120c). **Male genitalia.** Ventral valve triangular, apex acute, incised laterally at base; armature of internal sac consisting of broad-based spine near apex and an irregular, reniform sclerite serrate on one margin near base of sac; gonopore closure valve ring-like, flanked by densely clustered pockets of fine denticles; interior of sac lined with many fine, acute denticles (Fig. 122a); lateral lobes bowed in ventral aspect, rather short, with many sensitive setae

at apices (Fig. 122b). **Female.** Similar to male but apical margin of last visible abdominal sternum straight (Fig. 121a-c).

Host plants. *Acacia cochlearis*, *A. dealbata*, *A. furcatispina*, *Leucaena diversifolia*, *Piptadenia obliqua*, *Pithecellobium excelsum*.

Distribution. Argentina, Bolivia, Brazil, Colombia, Curacao, Chile, Ecuador, Grenada, Jamaica, Peru, St. Vincent and the Grenadines, Trinidad, Uruguay, and Venezuela. Bolivia and Chile are new distribution records for *S. cearanus*.

Material examined. CHILE: Santiago, Aeropuerto Pudahuel, 3/V/1985, Muñoz, ex *Acacia cochlearis* (*A. melanoxydon*); id. 5/VII/1989, Arriagada; id. 15/III/1992, J. Moroni; Arica, 30/VII/1995, Ramirez. **ARGENTINA: Buenos Aires,** Campo de Mayo, Di' Iorio, ex *Acacia bonariensis*, 30/IV/1990; Atlantida, Stevenin. **Tucumán,** Stevenin, 15/VII/1900. **BOLIVIA: Santa Cruz,** El Cairo, 5 km W. Buena Vista, 16/X/2001, J. Eger; Buena Vista Hotel, 3/X/2004, Wappes and Morris; 22/X/2004, Eger. **TRINIDAD: St. Augustine,** Mt. St. Benedict Abbey, 10/VI/1996, B.K. Dozier. **URUGUAY: Colonia,** Stevenin.

Discussion. Because of variation in color pattern, this species is difficult to distinguish from the widespread species *Stator limbatus*. Johnson (1995) synonymized *S. cearanus* with *S. limbatus*, but now it is recognized as a distinct species.

***Stator furcatus* Johnson, Kingsolver and Terán Fig. 123-125**

Stator furcatus Johnson, Kingsolver and Terán, 1989:35.

Description. Male. Length 1.7-2.7 mm; width 1.7-1.9 mm. **Color.** Head black, antenna dark red; pronotum mostly dark red but with narrow median black stripe; thorax and abdomen beneath black except margins of abdominal segments reddish brown; elytra reddish brown except humeri and narrow sutural stripe black, median marginal spot black; pygidium black with lateral borders reddish brown; fore and mid leg red, metafemur with basal 1/2 to 2/3 black, metatibia and tarsus black. **Vestiture.** Body everywhere densely covered with fine white setae; pygidium with dense median, basal and lateral setal patches white (Fig. 123a). **Structure.** Head with frontal carina vaguely defined; eyes with ocular sinus 1/2 length of eye; post ocular fringe narrow; antenna moderately serrate and reaching lateral angle of pronotum; pronotum evenly convex, finely punctulate; elytra with striae parallel, shallow; metafemur slightly channelled, mesal carina bordering channel with single sharp denticle, lateral carina with polished lip; metatibia with three carinae, ventral carina terminating in prominent mucro (Fig. 123b); pygidial apex reflexed and fitting shallow emargination of sternum (Fig. 123c). **Male genitalia.** Ventral valve bell-shaped; armature of internal sac lined with small spinules, with a median tooth and a basal hood-shaped sclerite with small teeth bordering it (Fig. 125a); lateral lobes elongate, expanded apically, with 18-19 seate each one (Fig. 125b). **Female.** Similar to male but apical margin of last visible abdominal sternum straight (Fig. 124a-c).

Host plants. *Acacia aroma*, *A. bonariensis*, *A. caven*, *A. furcatispina*, *A. praecox*, *A. visco*. **Floral association records.** *Anadenanthera colubrina cebil*, *Duranta serraflora*, *Senna pendula*.

Distribution. Argentina, Bolivia, Brazil, Chile, Dominican Republic, and Uruguay. Chile is a new distribution record for *S. furcatus*.

Material examined. CHILE: Arica, Arica, VI/1985, JEB, ex *Acacia visco*. **Huasco,** Vallenar, 30/XI/1987, J. E. Barriga, ex *Acacia visco*; id. 29/XI/1987, J. E. Barriga, ex *Acacia visco*; id. XII/1987, J. E. Barriga, ex *Acacia visco*. **ARGENTINA: Salta,** Cafayate, O. Di-Iorio, ex *Acacia furcatispina*, 28/III/

1992. **La Rioja**, Santa Cruz, 1/XII/2002, Stange. **Taltal**, Taltal, 2/XI/2001, ex *Acacia visco*. **Trancas**, 22/XII/1966.

Discussion. According to Johnson et al. (1989), *Piptadenia macrocarpa* is recorded as a doubtful host plant; it is now a synonymy of *Anadenanthera colubrina cebil*. So at this time it will be recorded as a floral record until it can be verified as a true host.

***Sator testudinarius* (Erichson)**

Fig. 126-128

Bruchus testudinarius Erichson 1847: 124; Pic 1913a: 52.

Acanthoscelides testudinarius: Blackwelder 1946: 761.

Sator testudinarius: Kingsolver 1972a: 25; Johnson, Kingsolver and Terán, 1989: 57; Barriga and Kingsolver 1990: 51, 2010: 1.

Description. Male. Length 2.6 mm, width 1.8 mm. **Color.** Head black; antenna dark red; pronotum and prosternum black; elytra reddish brown except humeri dark red, each elytron with brown spot midway along lateral margin; abdomen dark red, pygidium dark red to black; all legs dark red. **Vestiture.** Dorsal vestiture uniformly brown except for two irregular stripes on pronotal disk, on basal and lateral patches on pygidium, abdomen with broad marginal stripe (Fig. 126a). **Structure.** Head with frontal carina prominent; ocular sinus 4/5 length of eye; postocular fringe narrow; antennal segments triangular; pronotum densely punctulate, punctures nearly hidden by vestiture; scutellum apically bifid; elytral striae parallel; metafemur with simple acute subapical denticle; ventral face carinate on mesal margin; metatibia straight, carinate on lateral, ventral and mesal faces; mucro short, acute; coronal denticles short, acute (Fig. 126b); pygidial apex reflexed and fitting shallow emargination of sternum (Fig. 126c). **Male genitalia.** Ventral valve triangle-shaped; armature of internal sac lined with small spinules, with a median curved tooth and a basal fusiform sclerite with small teeth, gonopore closure valve ring-like, flanked by densely clustered pockets of fine denticles (Fig. 128a); lateral lobes elongate, expanded apically, with 15-19 setae each one (Fig. 128b). **Female.** Similar to male but apical margin of last visible abdominal sternum straight; last sternum as long as combined length of preceding sternum (Fig. 127a-c).

Host plants. *Acacia caven*, *A. macrantha*, and *Parkinsonia aculeata*. **Floral association records.** *Schinus molle*.

Distribution. Chile, Ecuador, and Peru.

Material examined. CHILE: Arica, Azapa, XII/1982, C. Valdes, ex *Acacia*; Azapa km 12, 20/XI/1993, J. E. Barriga, ex *Parkinsonia aculeata*; id. 17/XII/1993, J. E. Barriga, ex *Acacia caven*; id. 24/II/1994, J. E. Barriga, ex *Parkinsonia aculeata*; id. J. E. Barriga, 4/XI/1993, ex *Acacia caven*, 5/I/1995. **ECUADOR:** 16 km W Catamayo, 24/I/1989, seeds of *Acacia macrantha*, C.D. Johnson; Gayas, Manglarito, 5/X/1982, Manley.

Discussion. *Parkinsonia aculeata* is a new host plant record for *S. testudinarius*.

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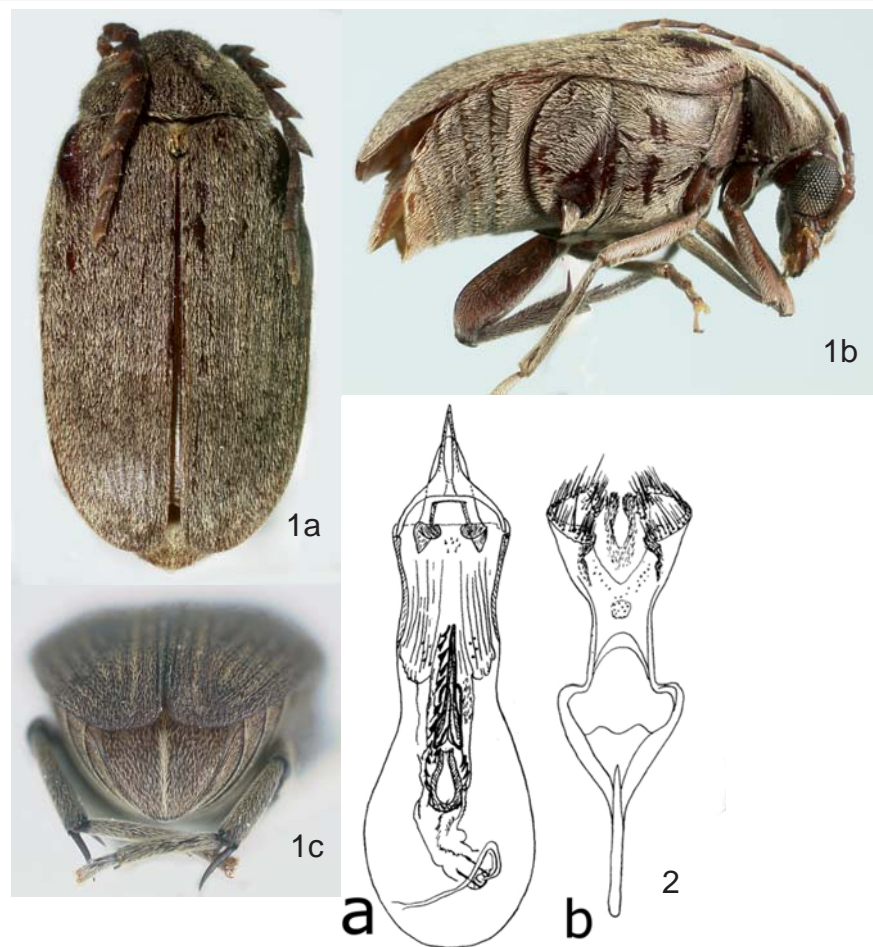
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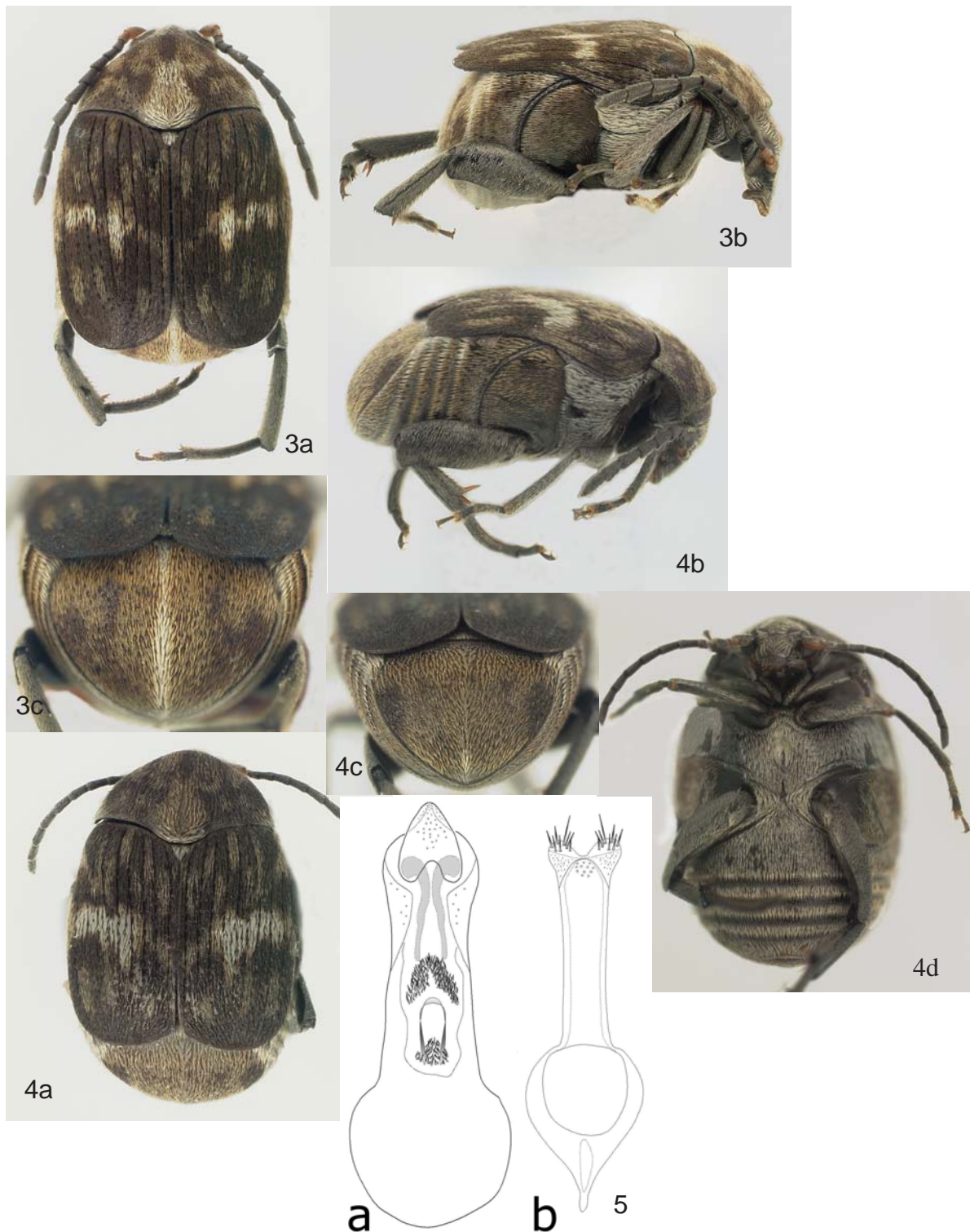
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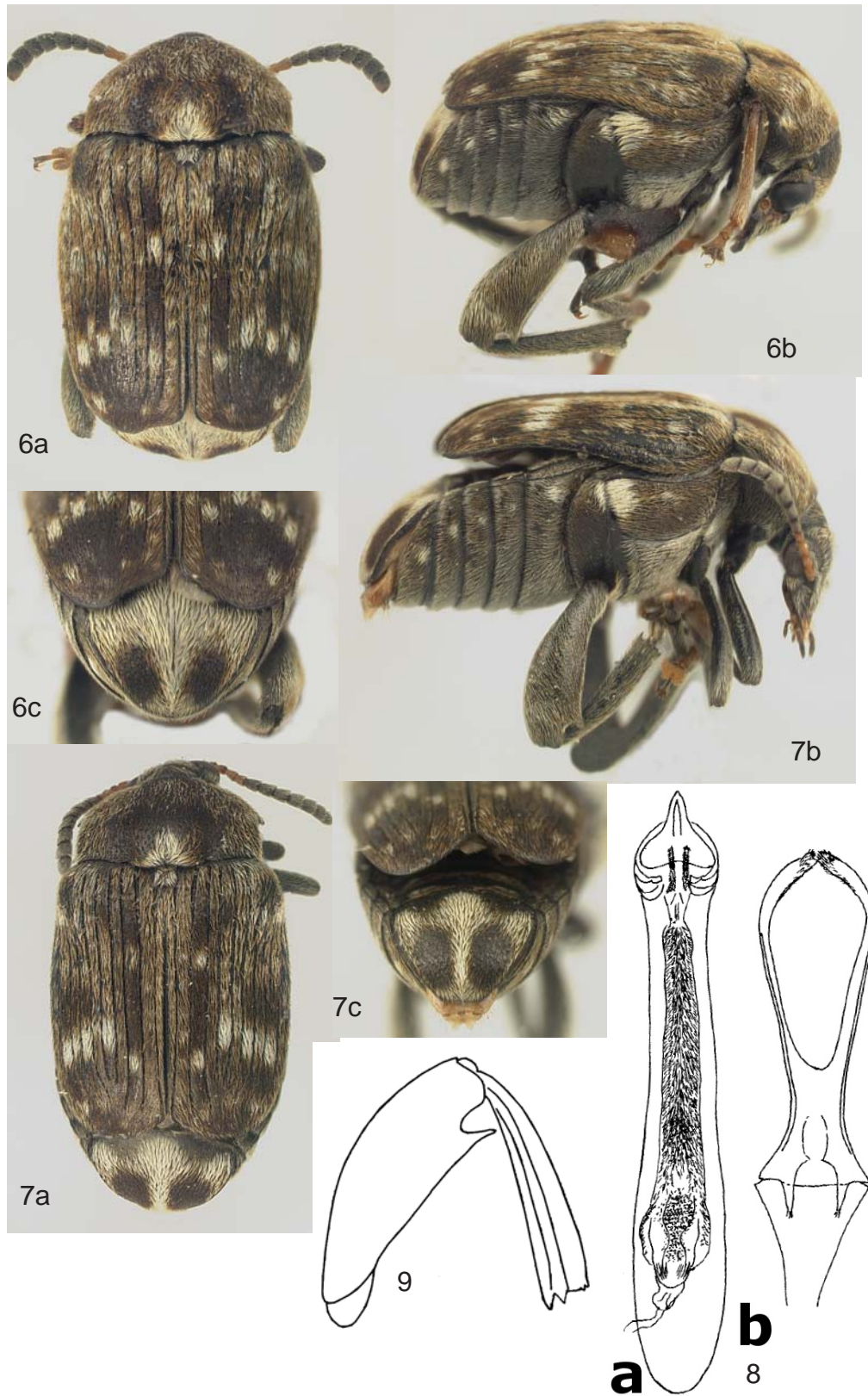
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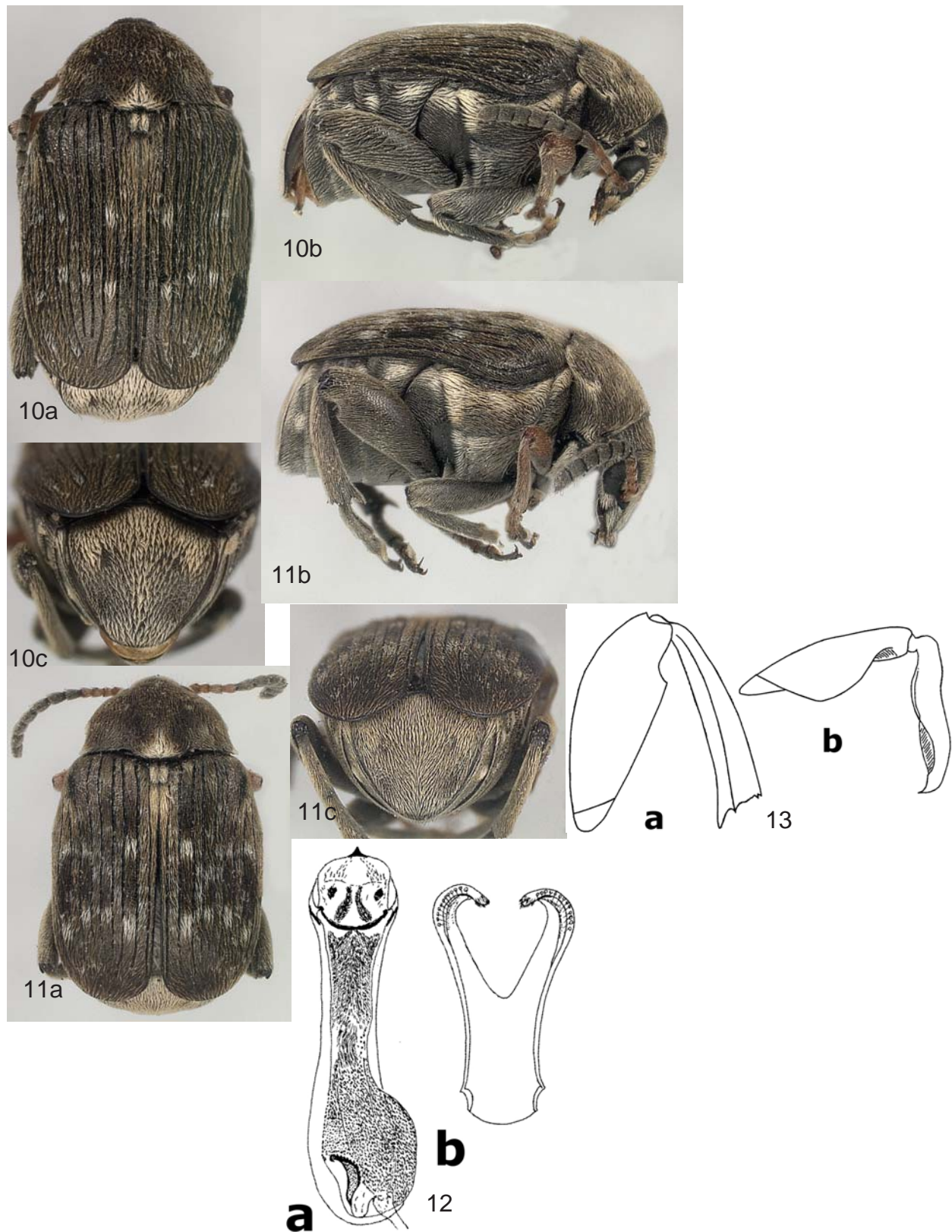
Figures 1-2. *Amblycerus dispar*. 1) Male habitus. a) Dorsal view. b) Lateral view. c) Pygidium. 2) Male genitalia. a) Median lobe. b) Lateral lobes.



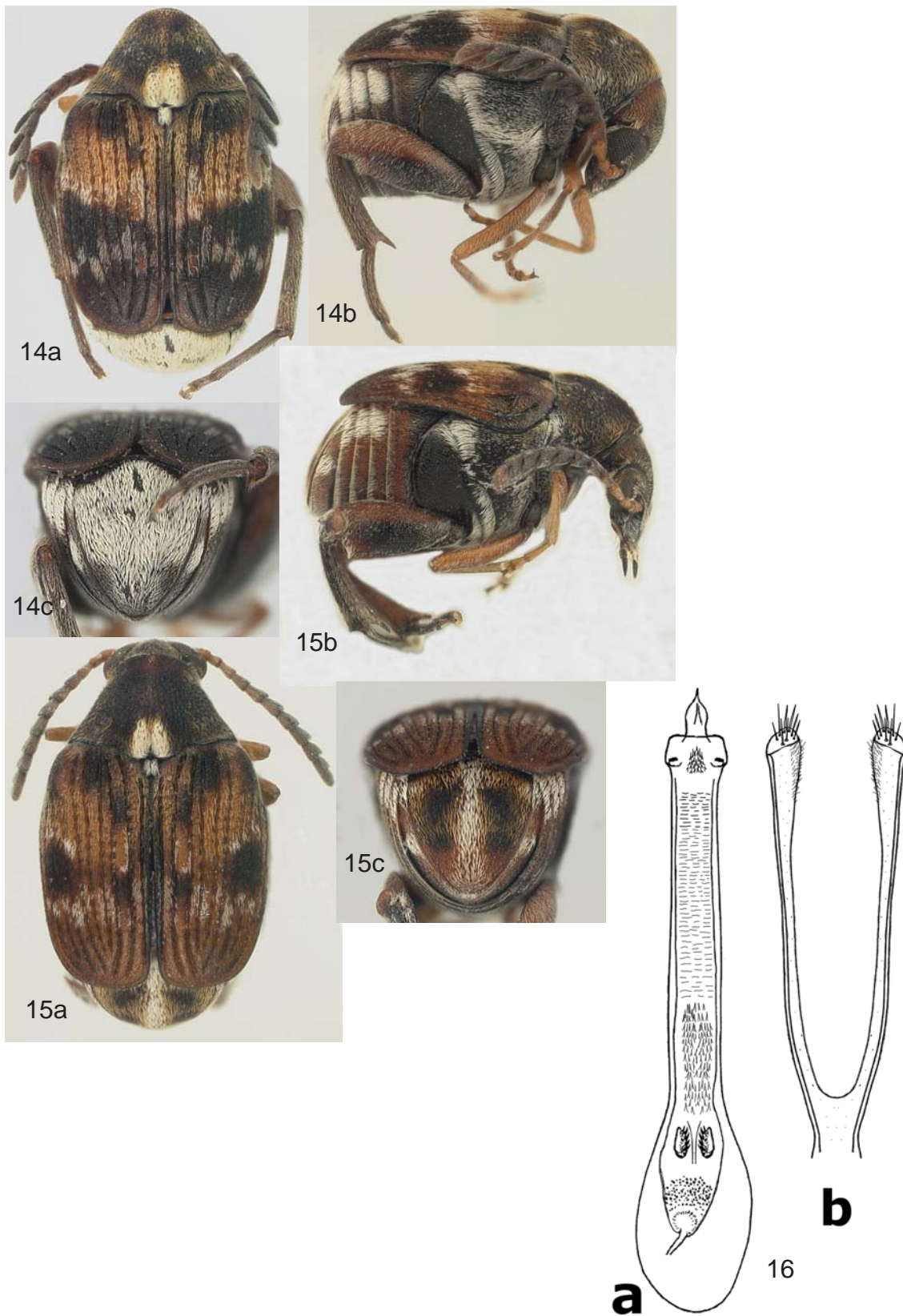
Figures. 3-5. *Zabotes subfasciatus*. **3)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **4)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **d)** Ventral view. **5)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



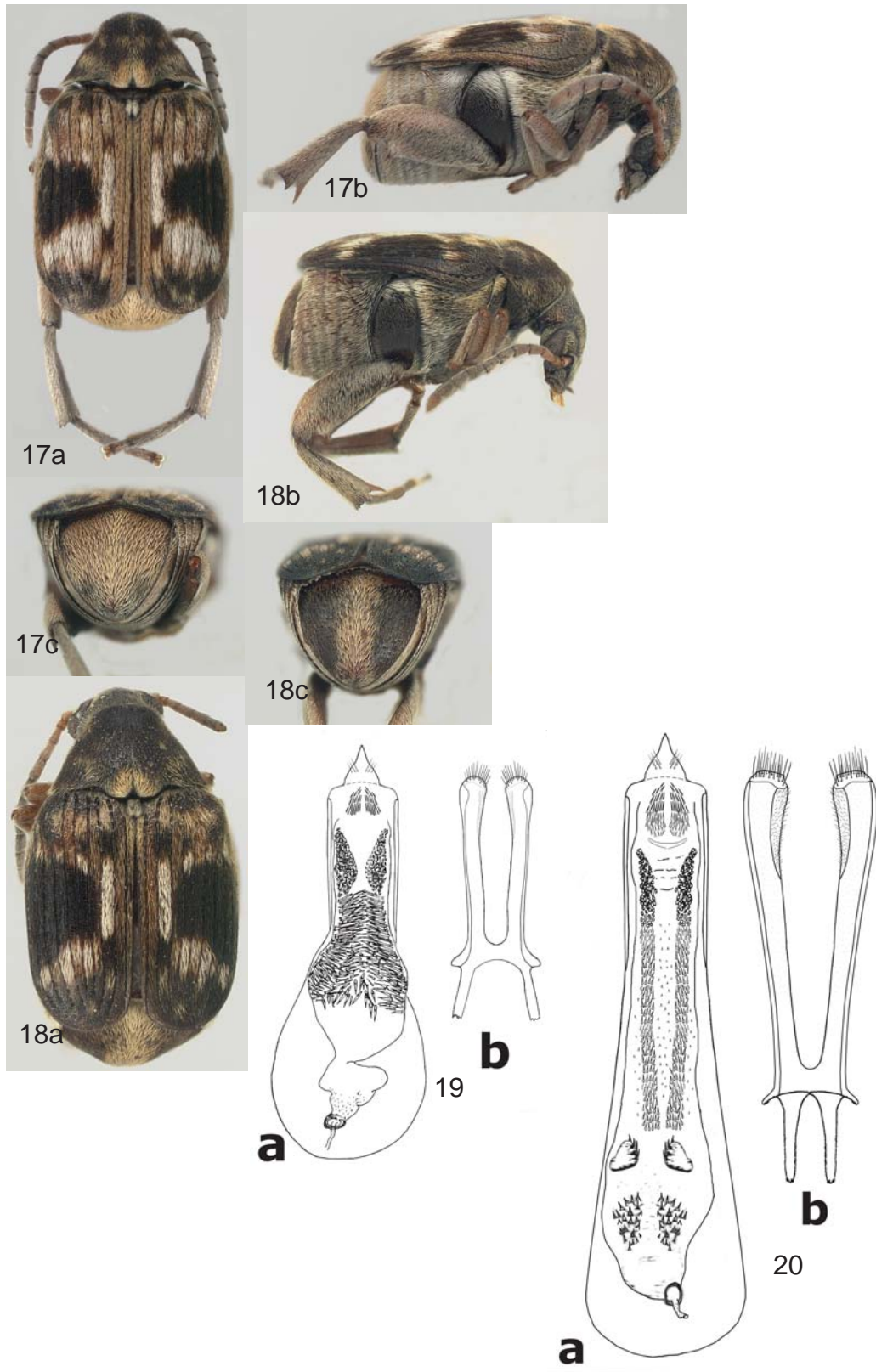
Figures 6-9. *Bruchus pisorum* **6)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **7)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **8)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes. **9)** Hind leg.



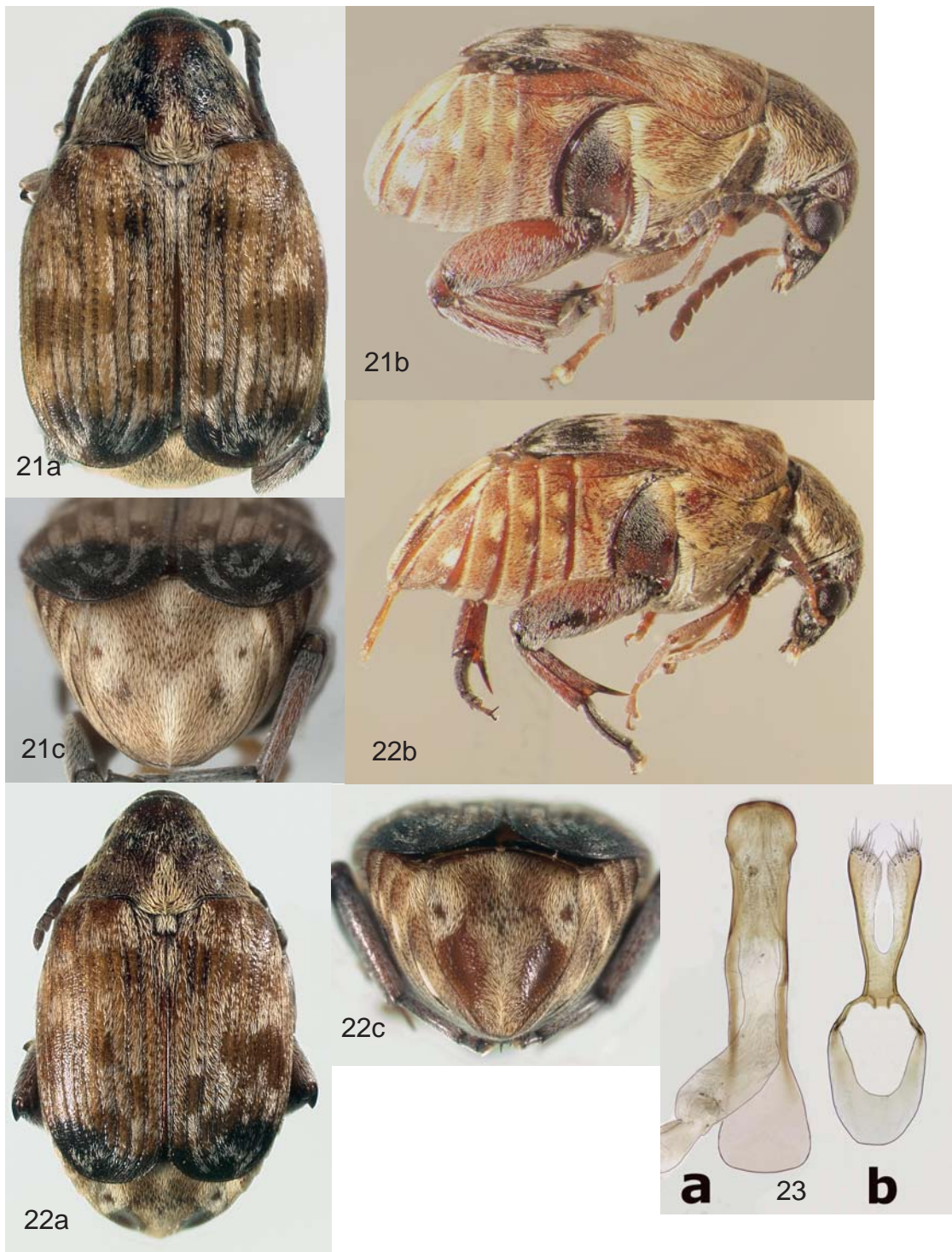
Figures 10-13. *Bruchus rufimanus*. **10)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **11)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes. **12)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **13)** Legs. **a)** hind leg. **b)** mesotibia.



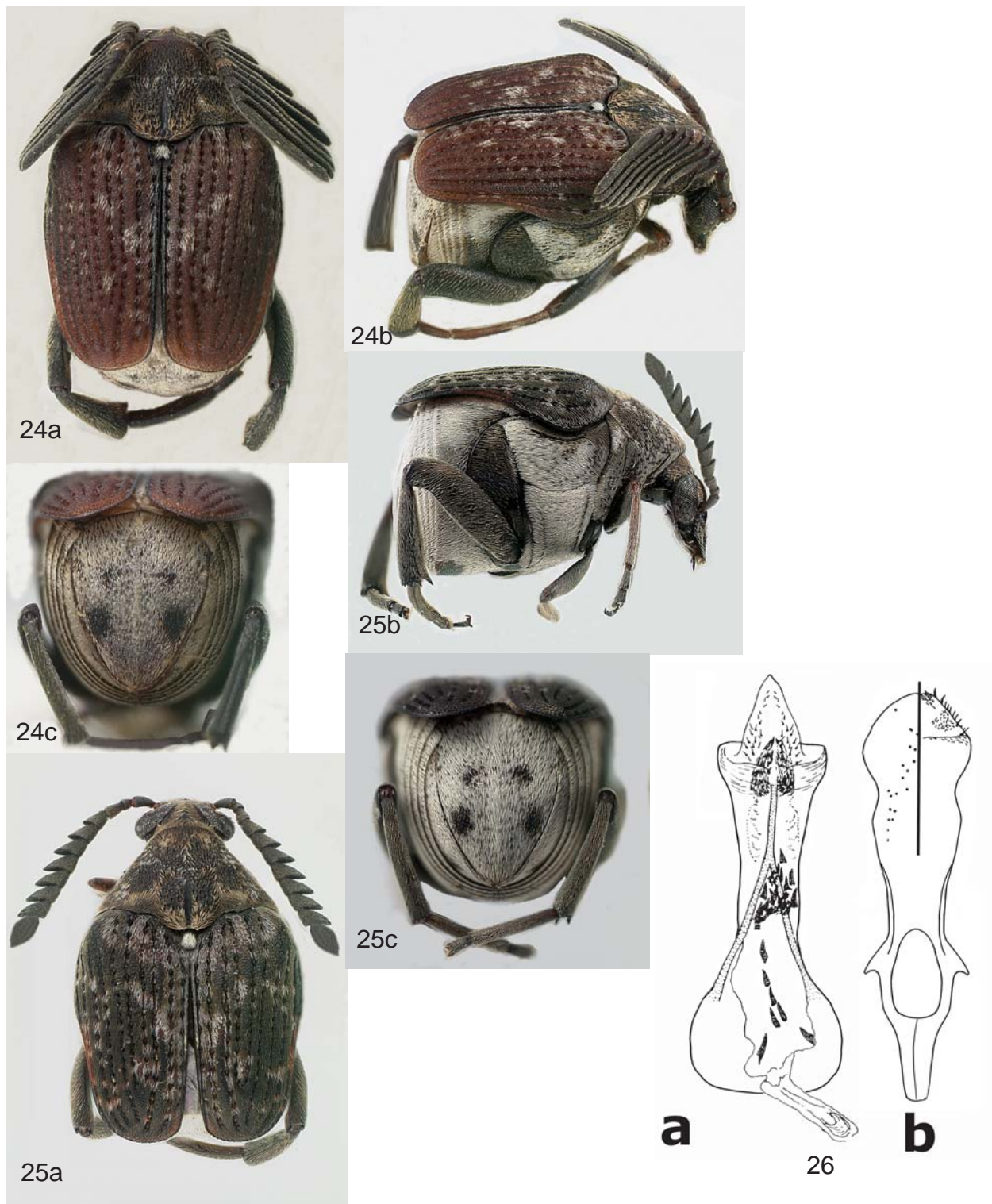
Figures 14-16. *Callosobruchus chinensis*. **14)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **15)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **16)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



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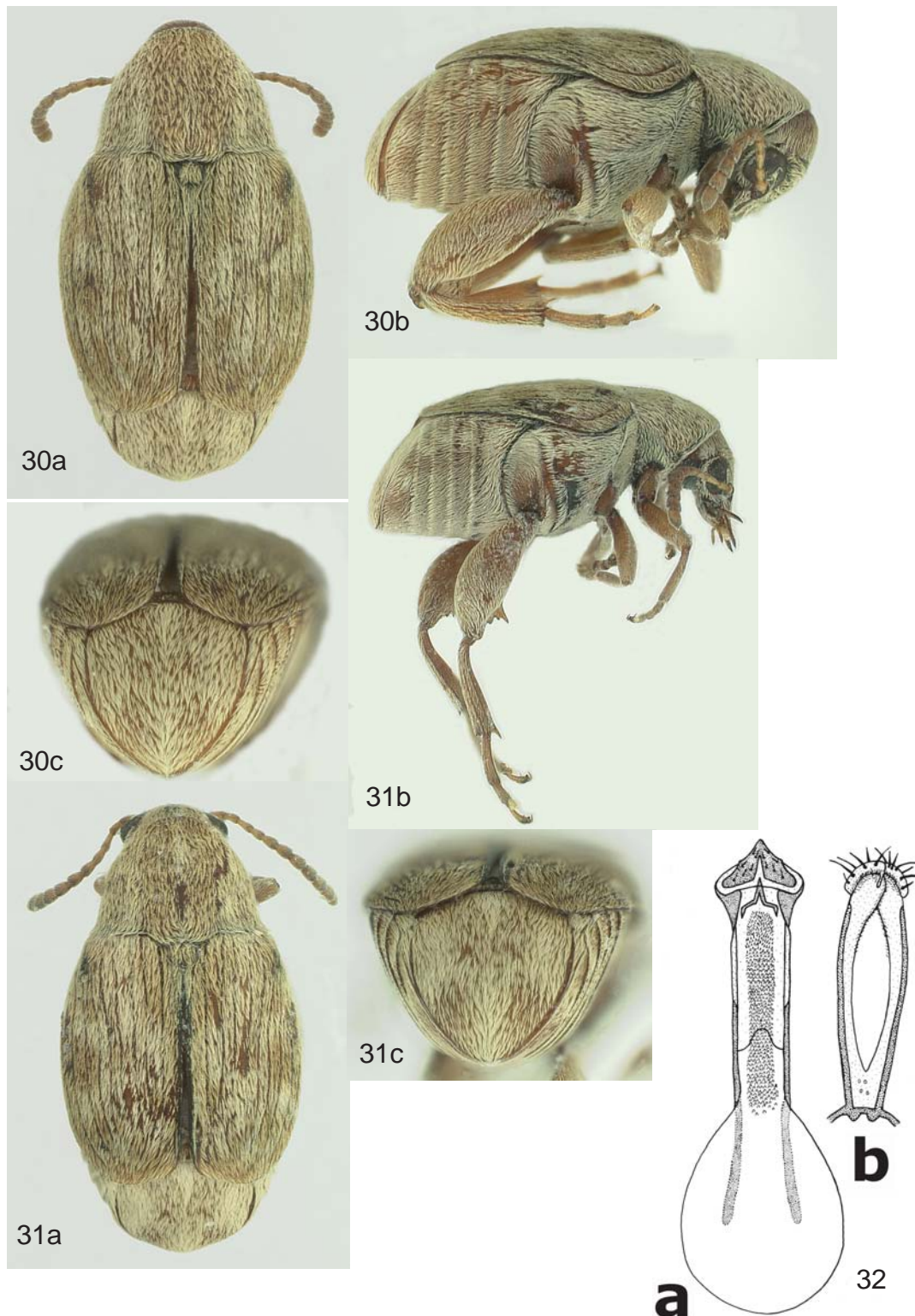
Figures 21-23. *Megabruchidius tonkineus*. **21)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **22)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **23)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



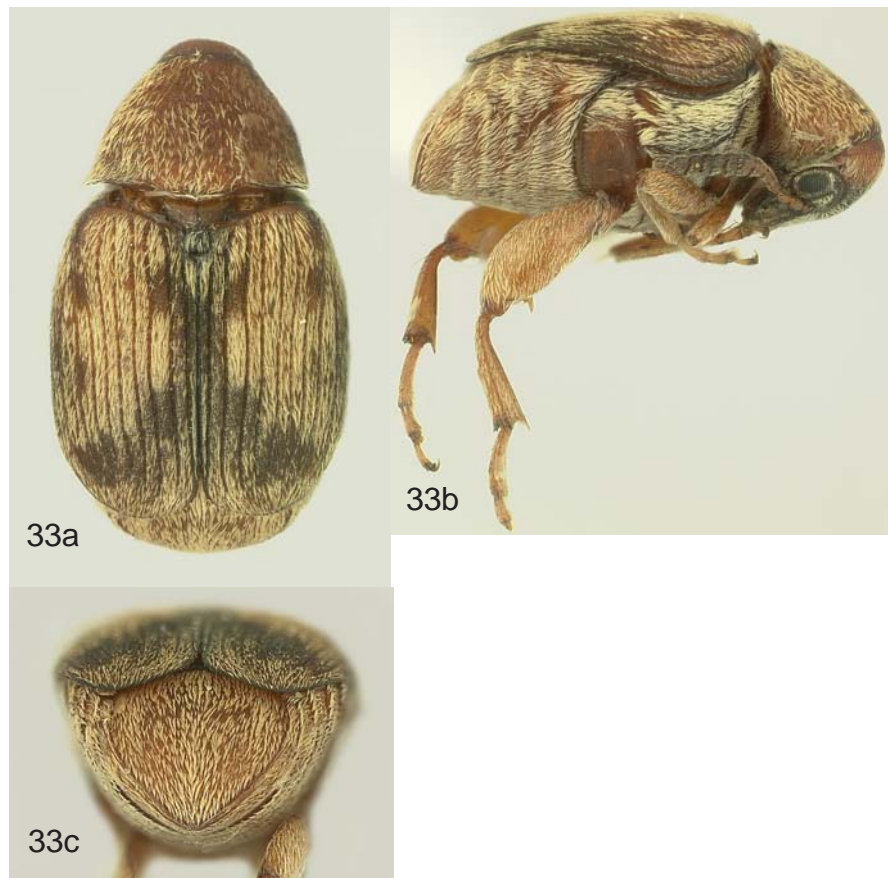
Figures 24-26. *Megacerus baeri*. **24)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **25)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **26)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



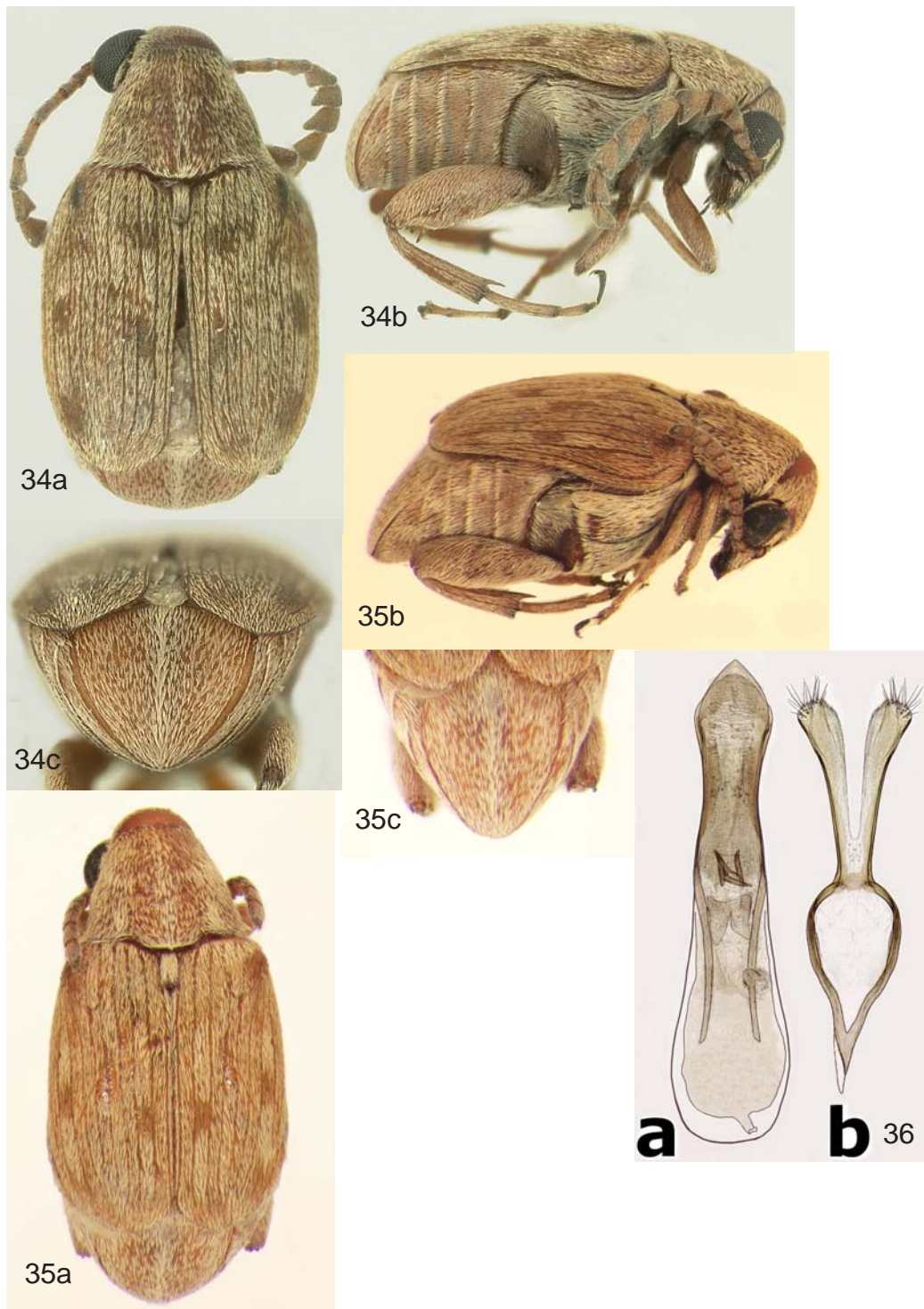
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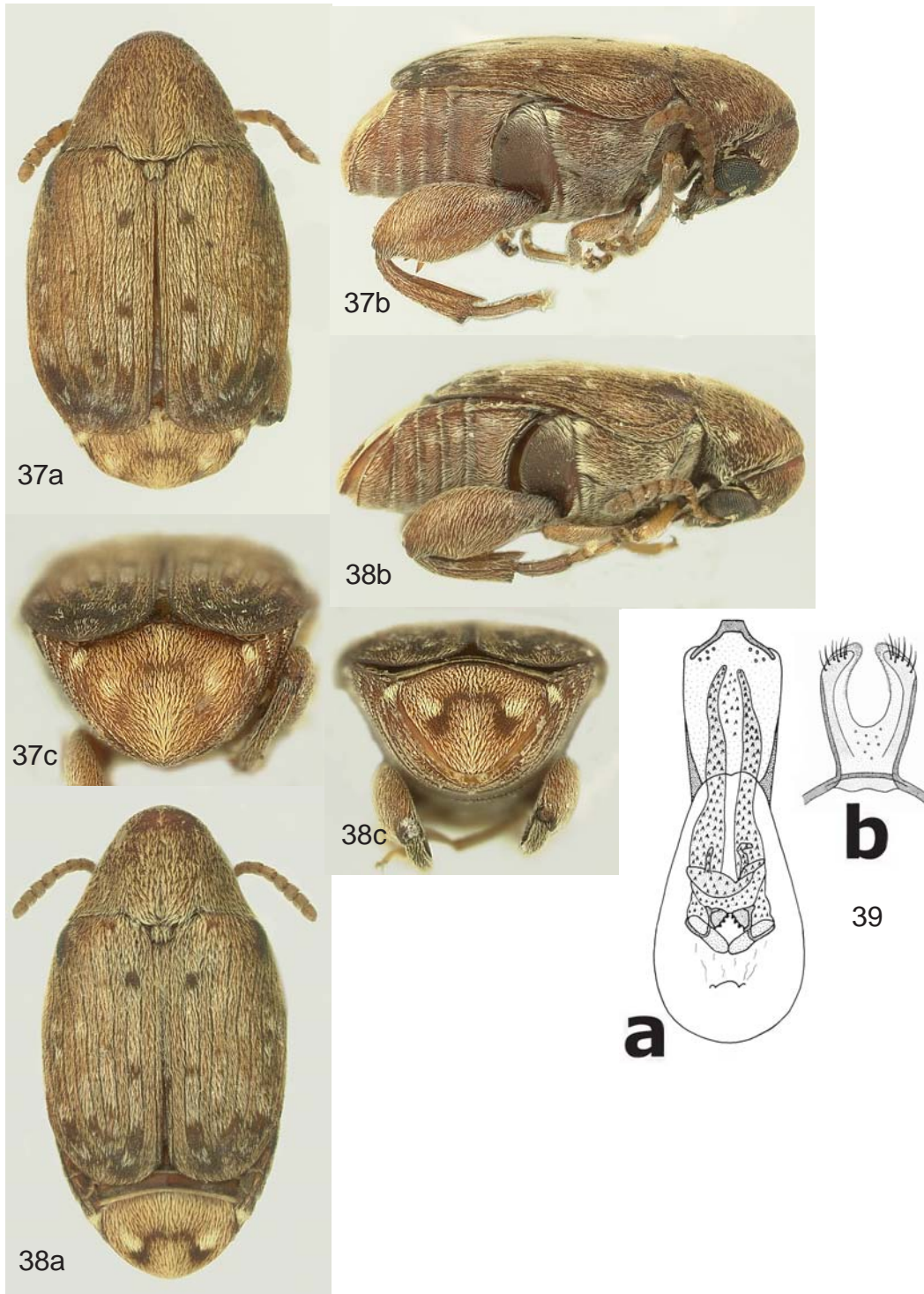
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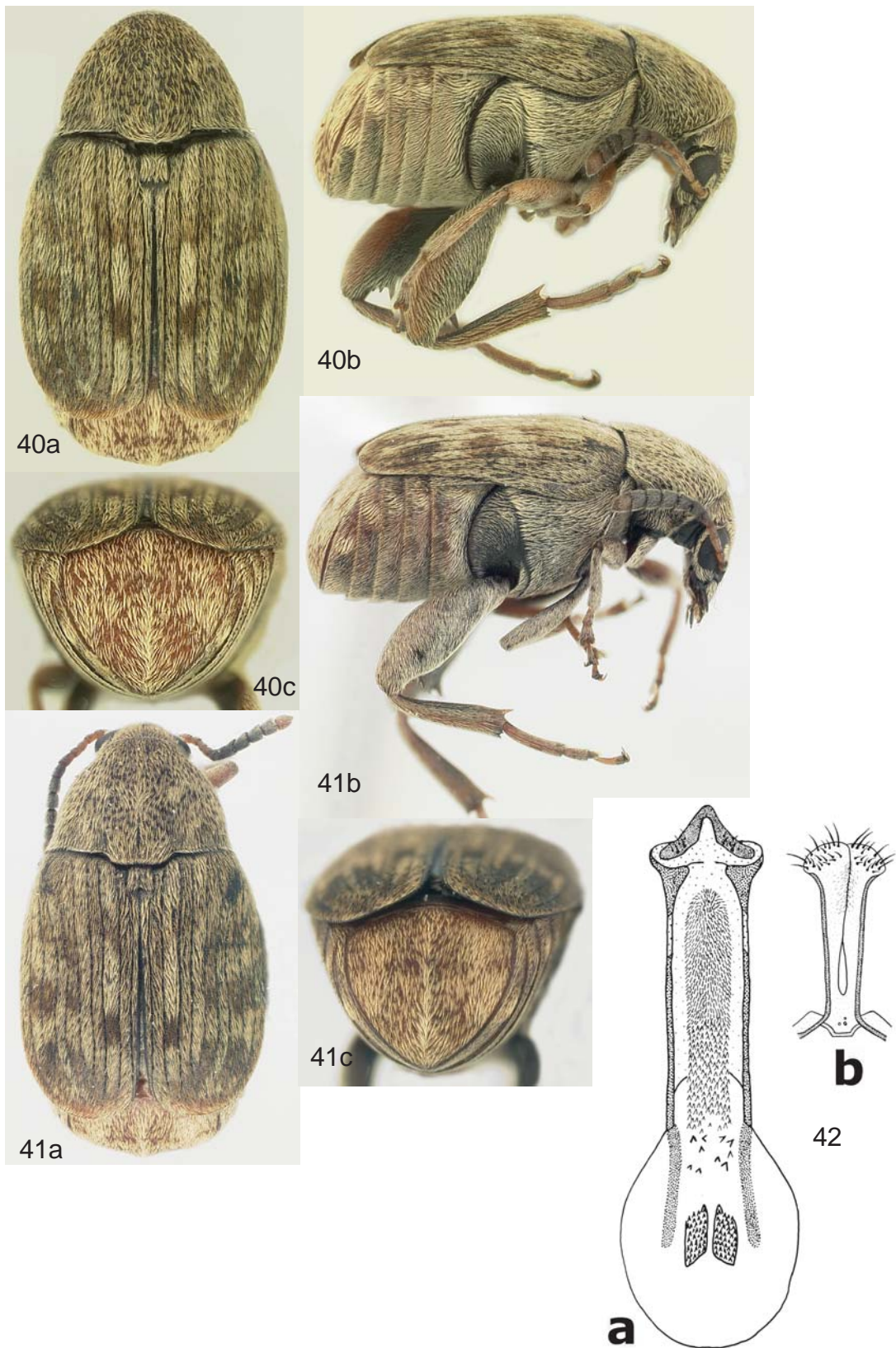
Figures 33. *Acanthoscelides aricae*. **33)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium.



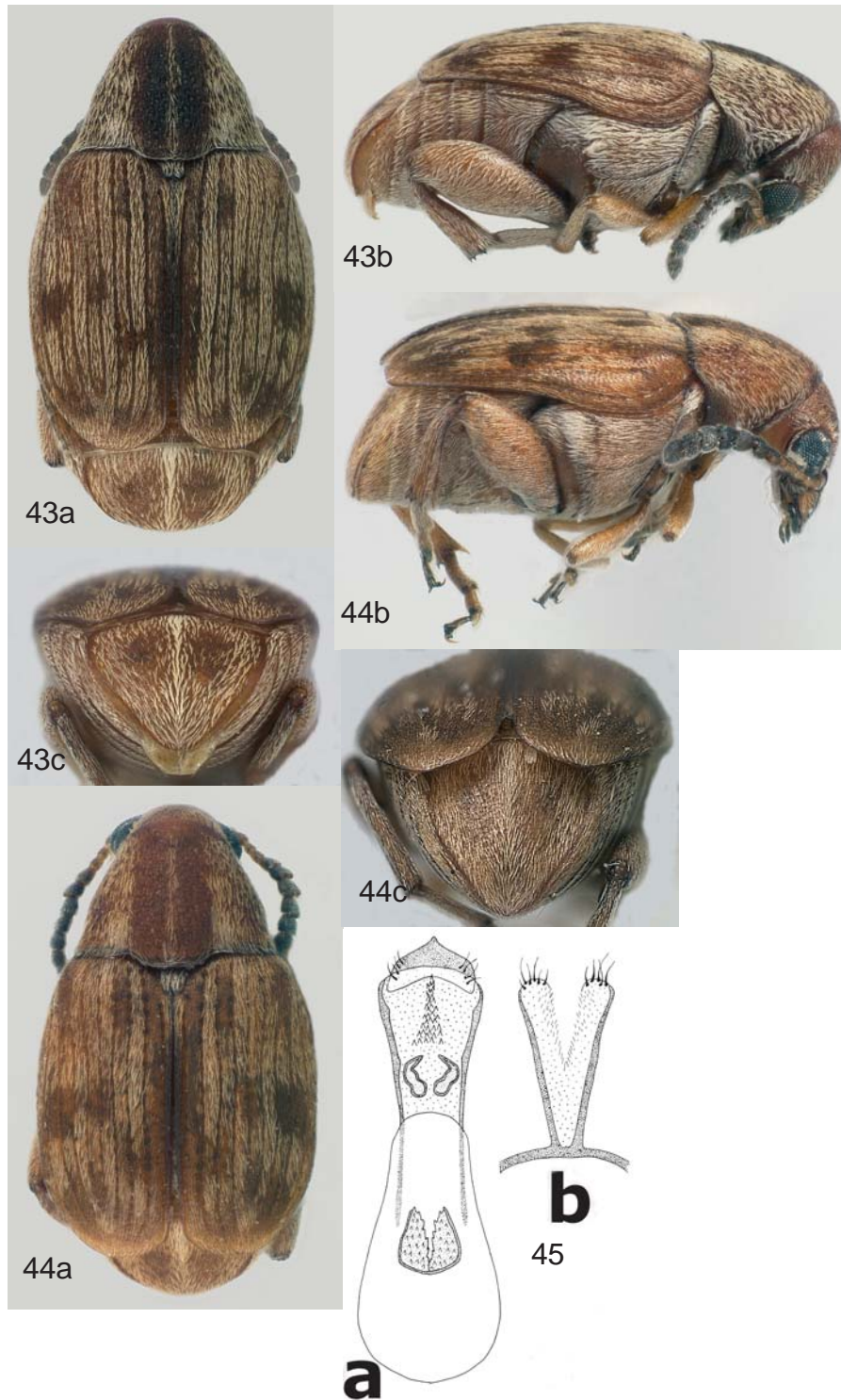
Figures 34-36. *Acanthoscelides longescutus*. **34)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **35)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **36)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



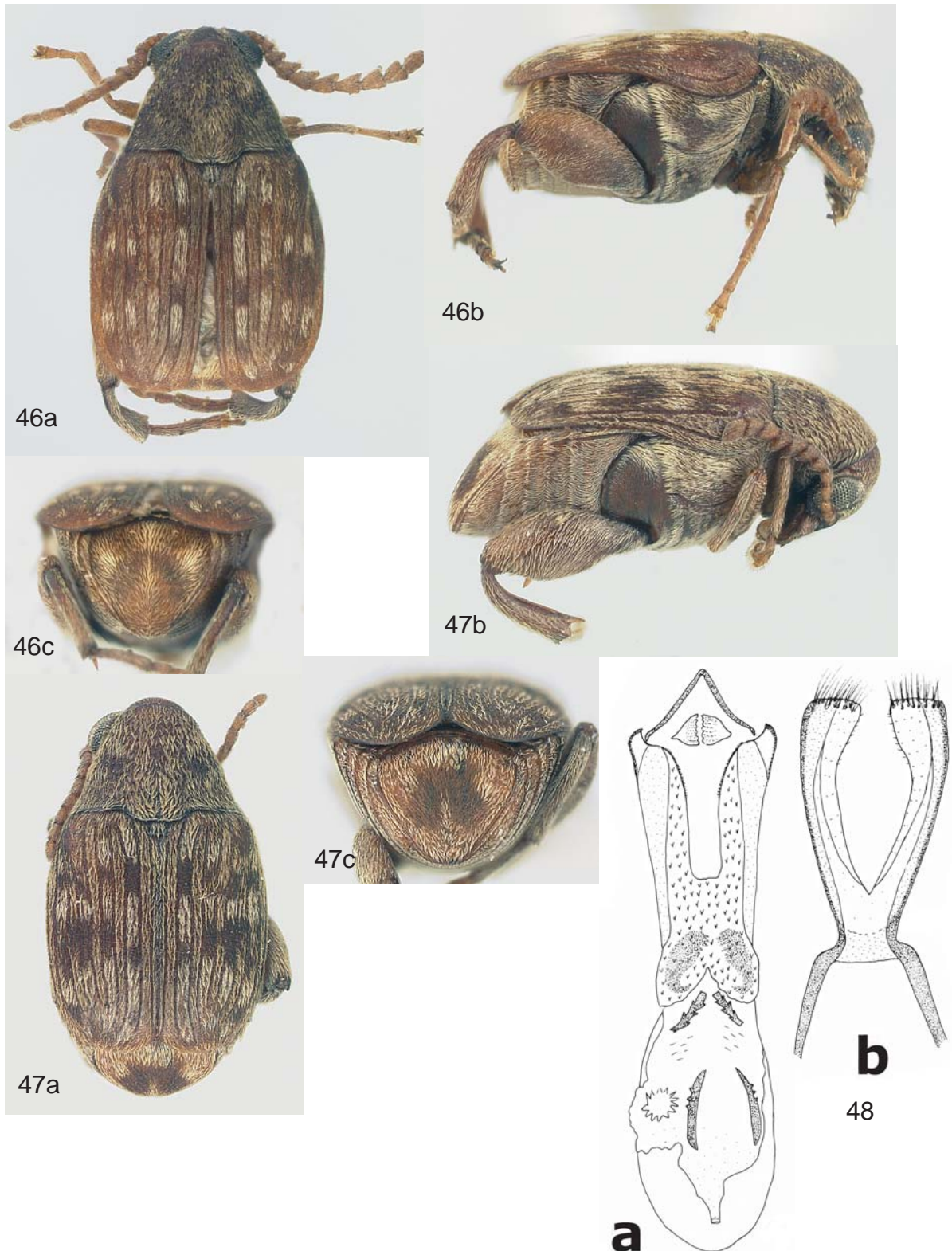
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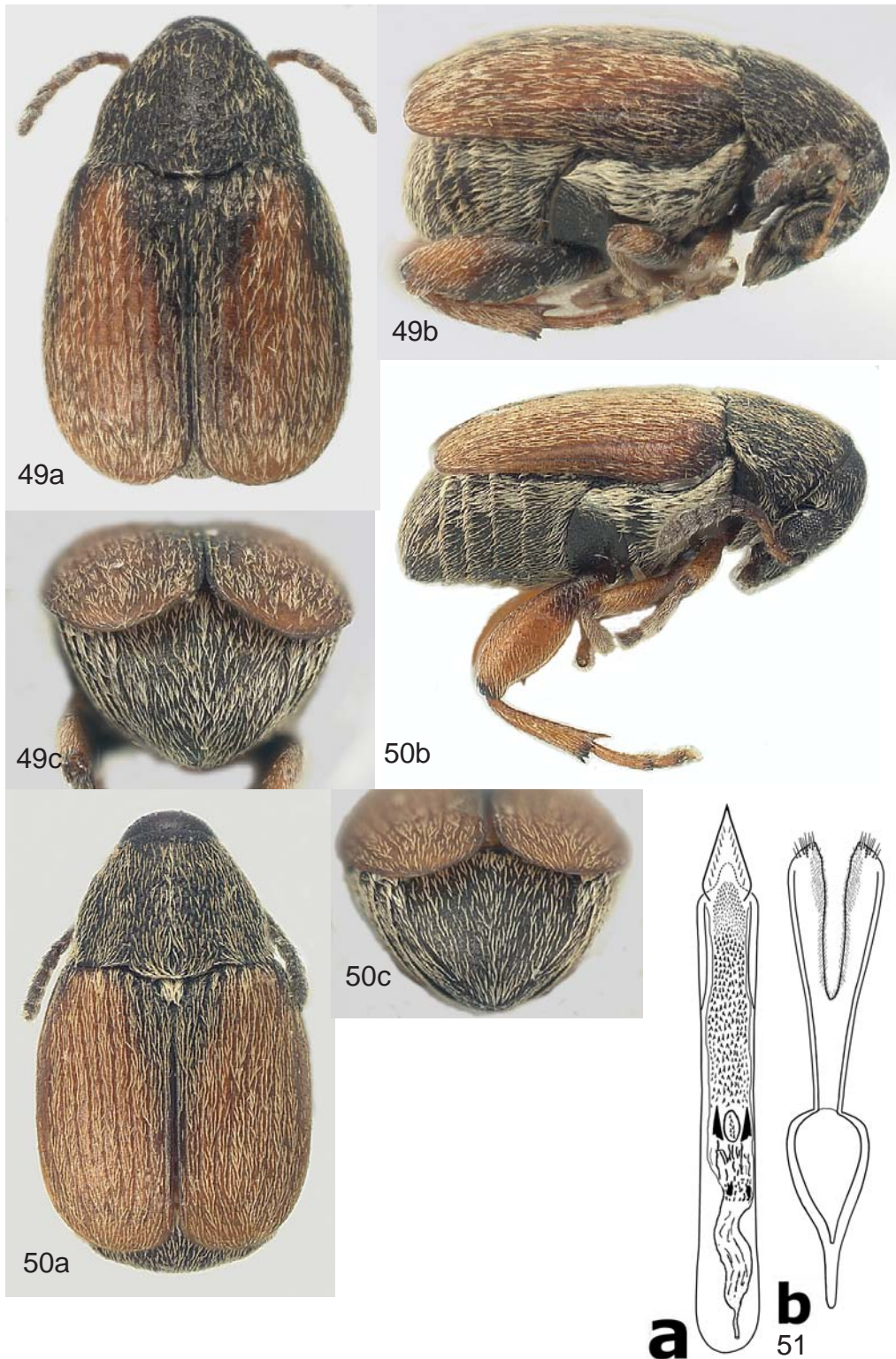
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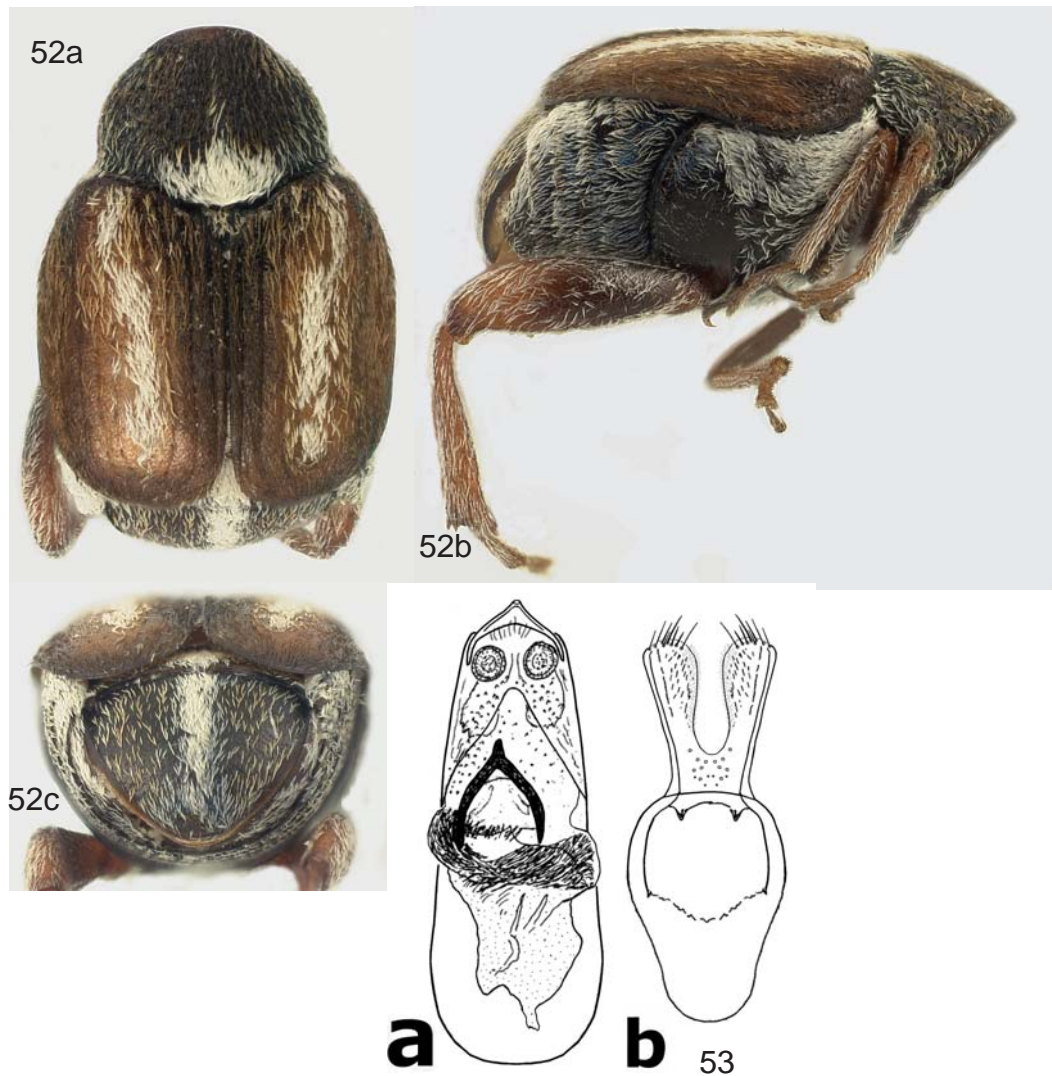
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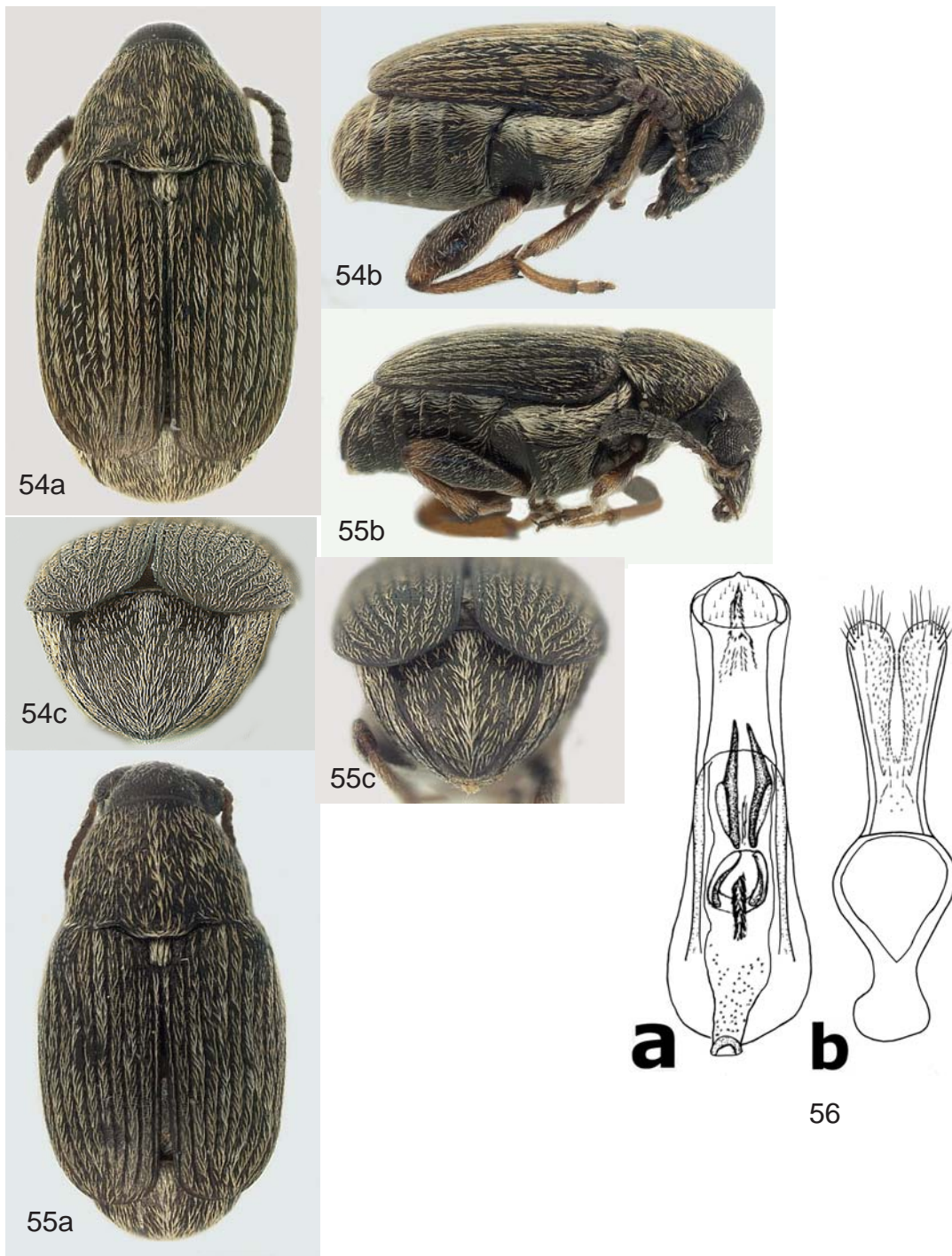
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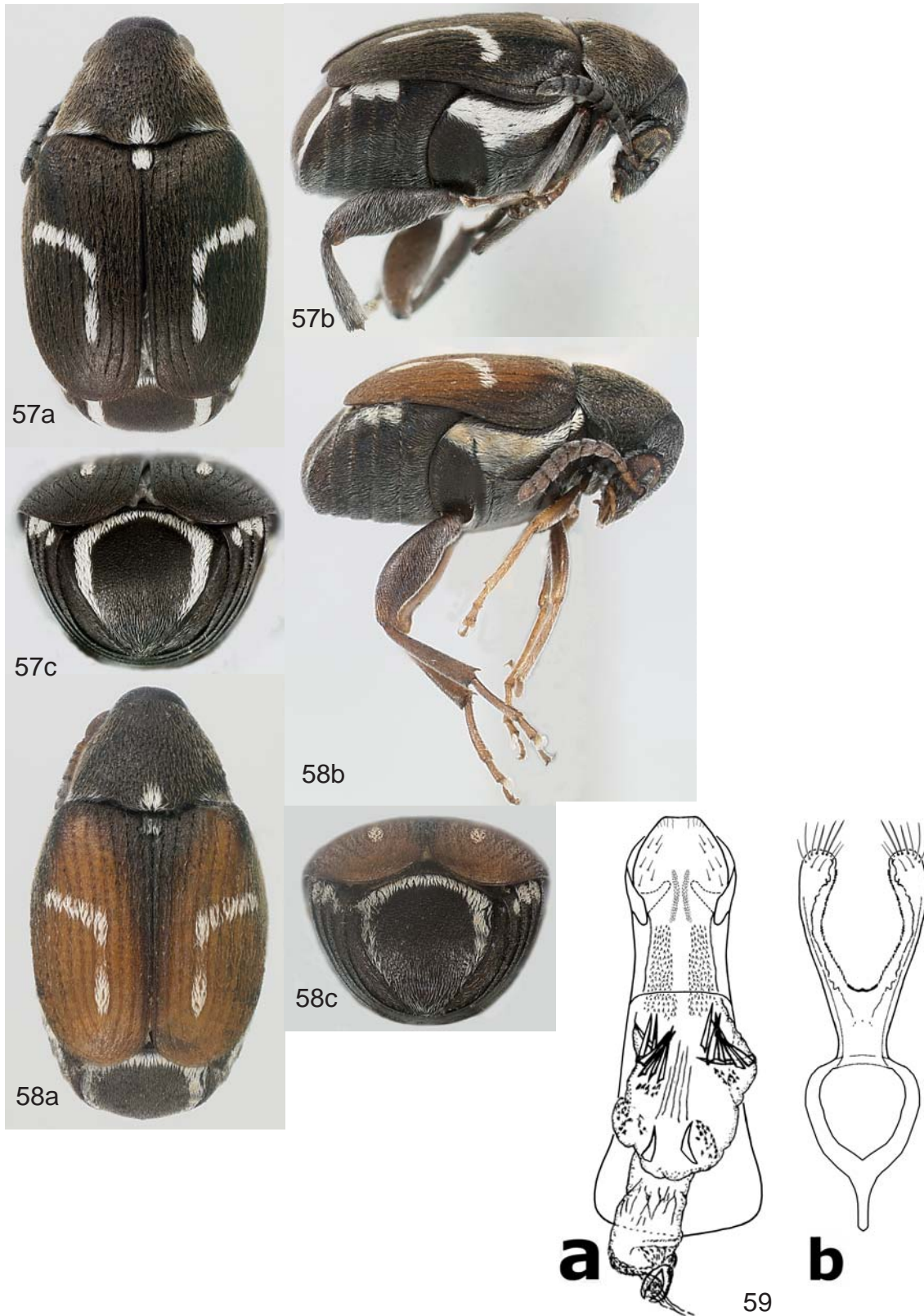
Figures 49-51. *Lithraeus chillan*. **49)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **50)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **51)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



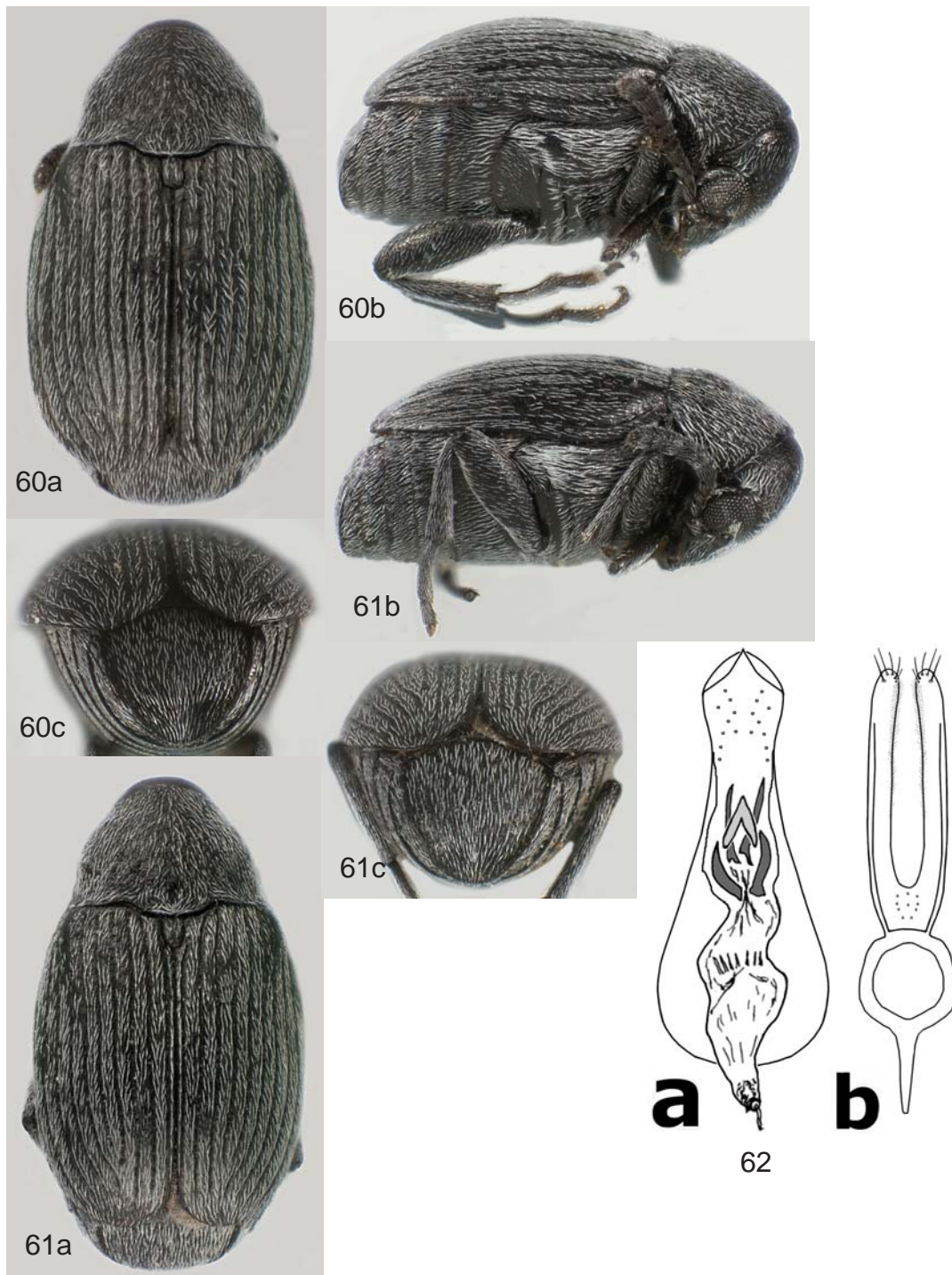
Figures 52-53. *Lithraeus comptus*. **52)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **53)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



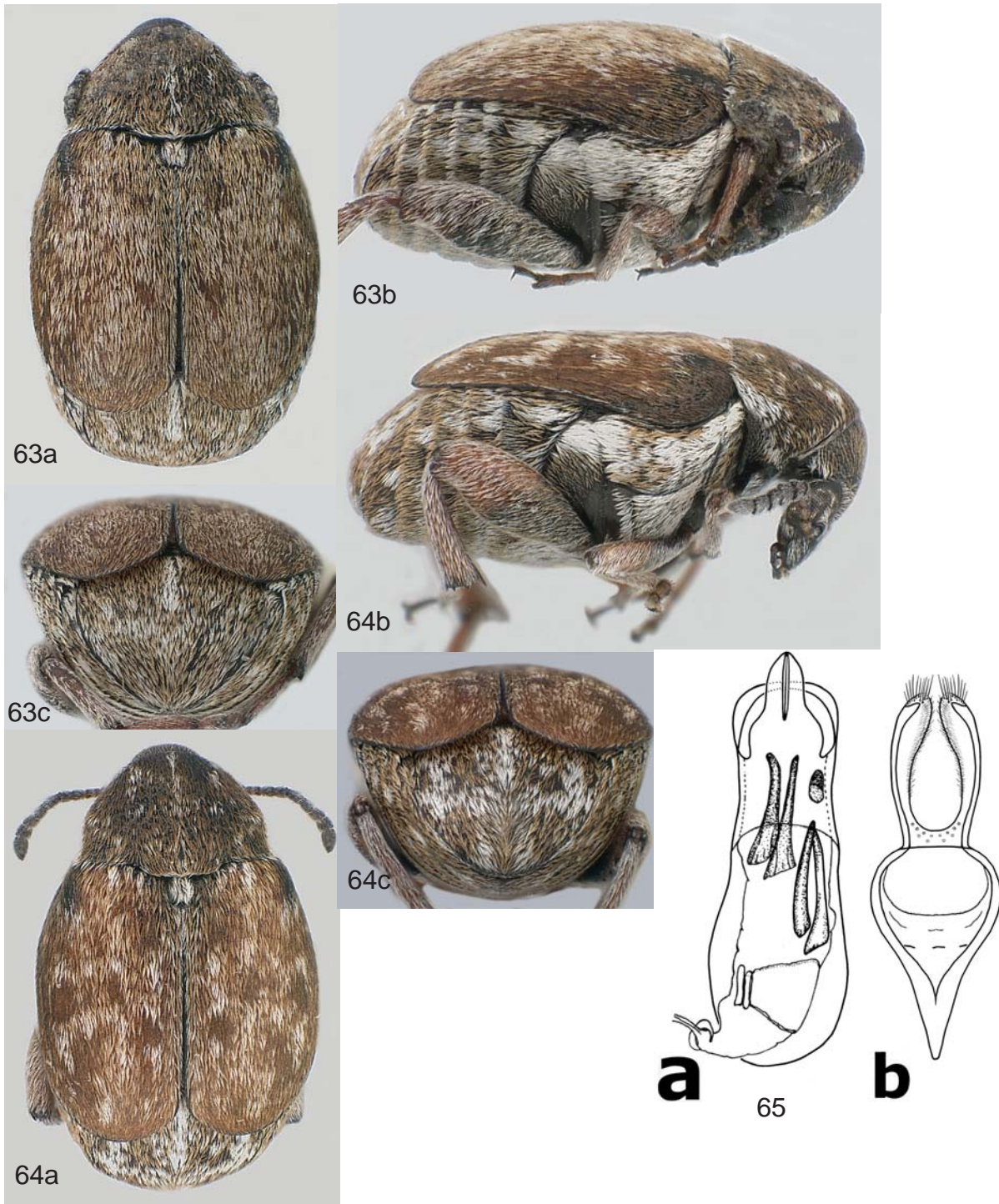
Figures 54-56. *Lithraeus egenus*. **54)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **55)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **56)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



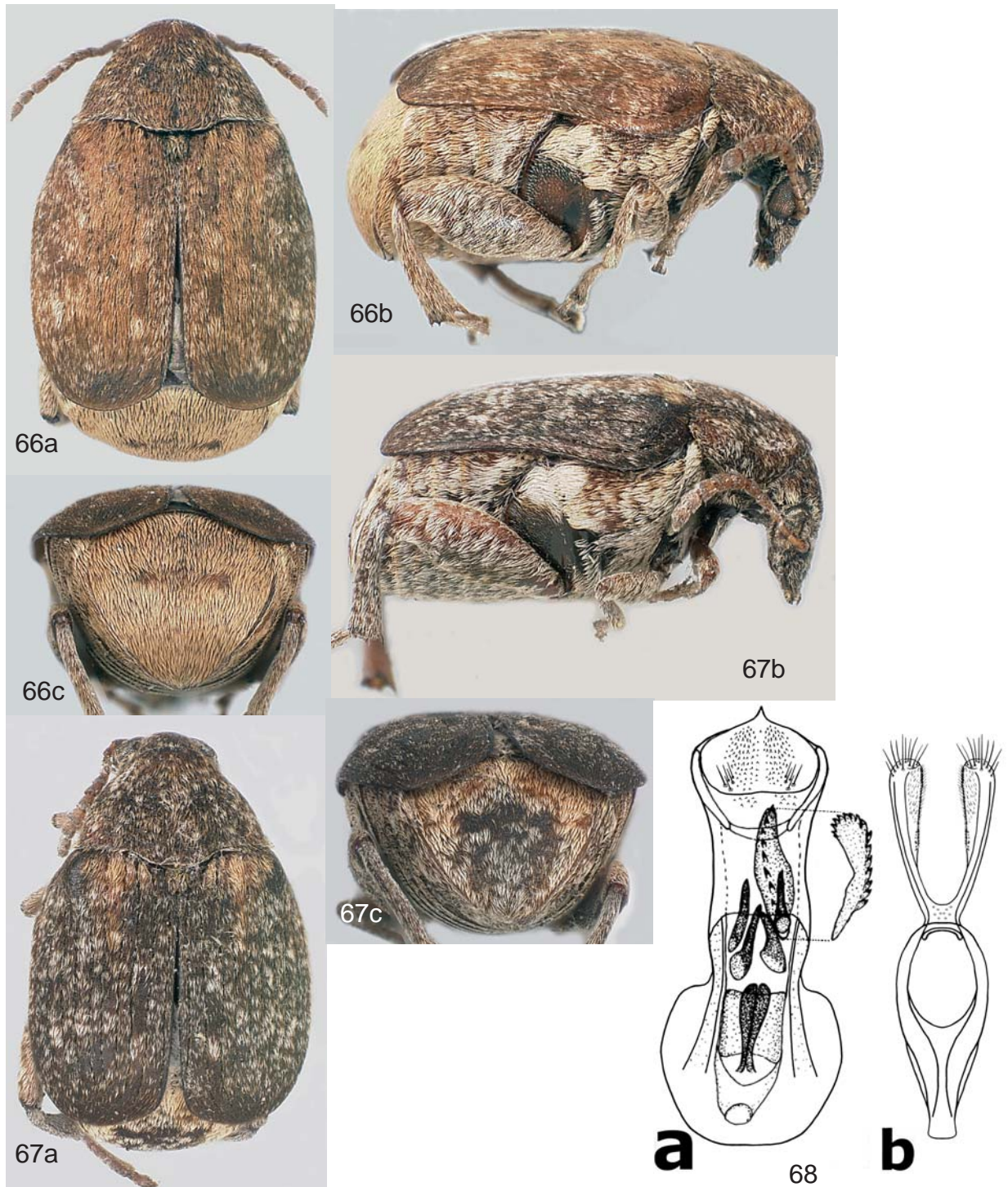
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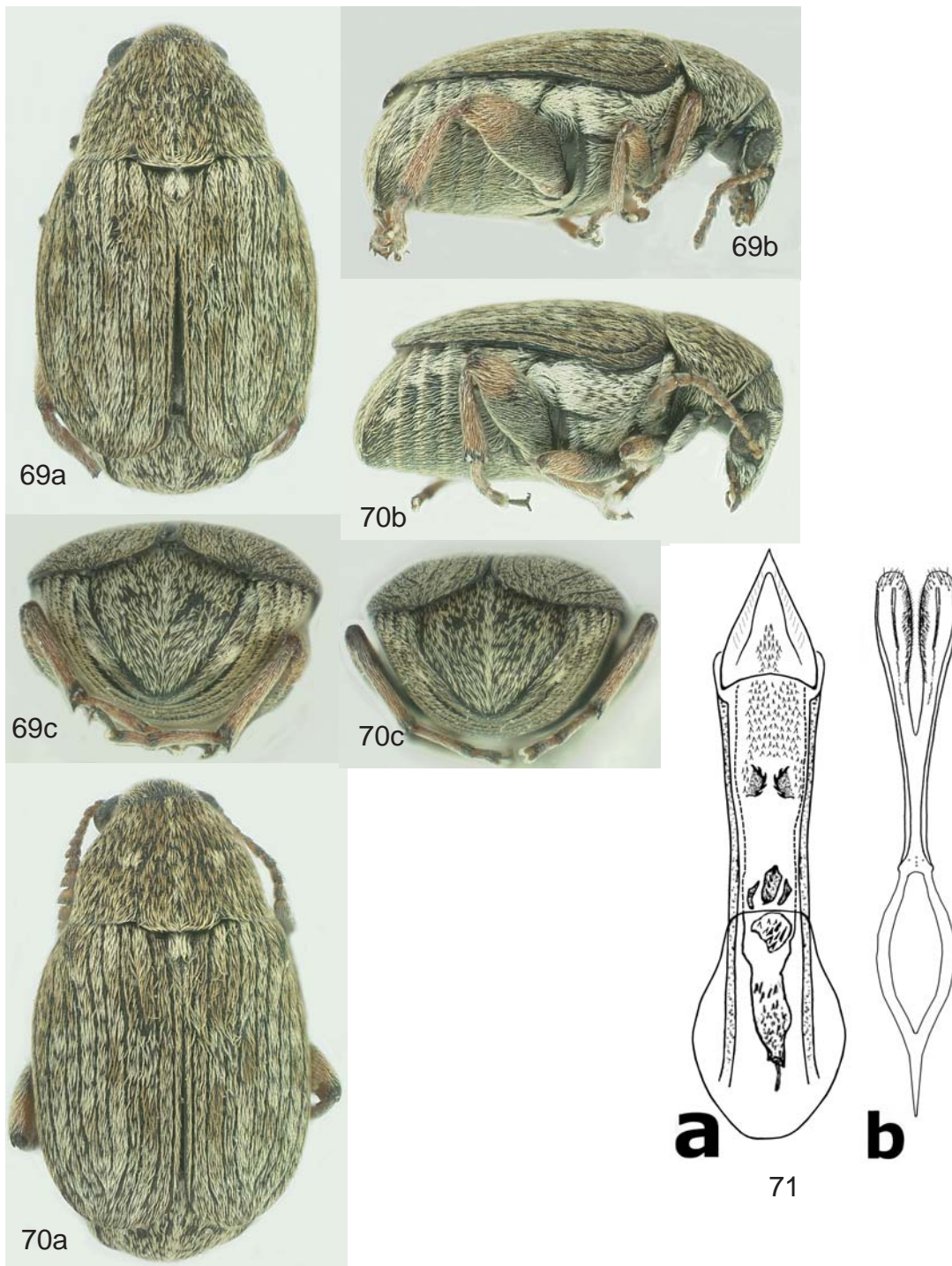
Figures 61-62. *Lithraeus elguetai*. **61)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **62)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **63)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



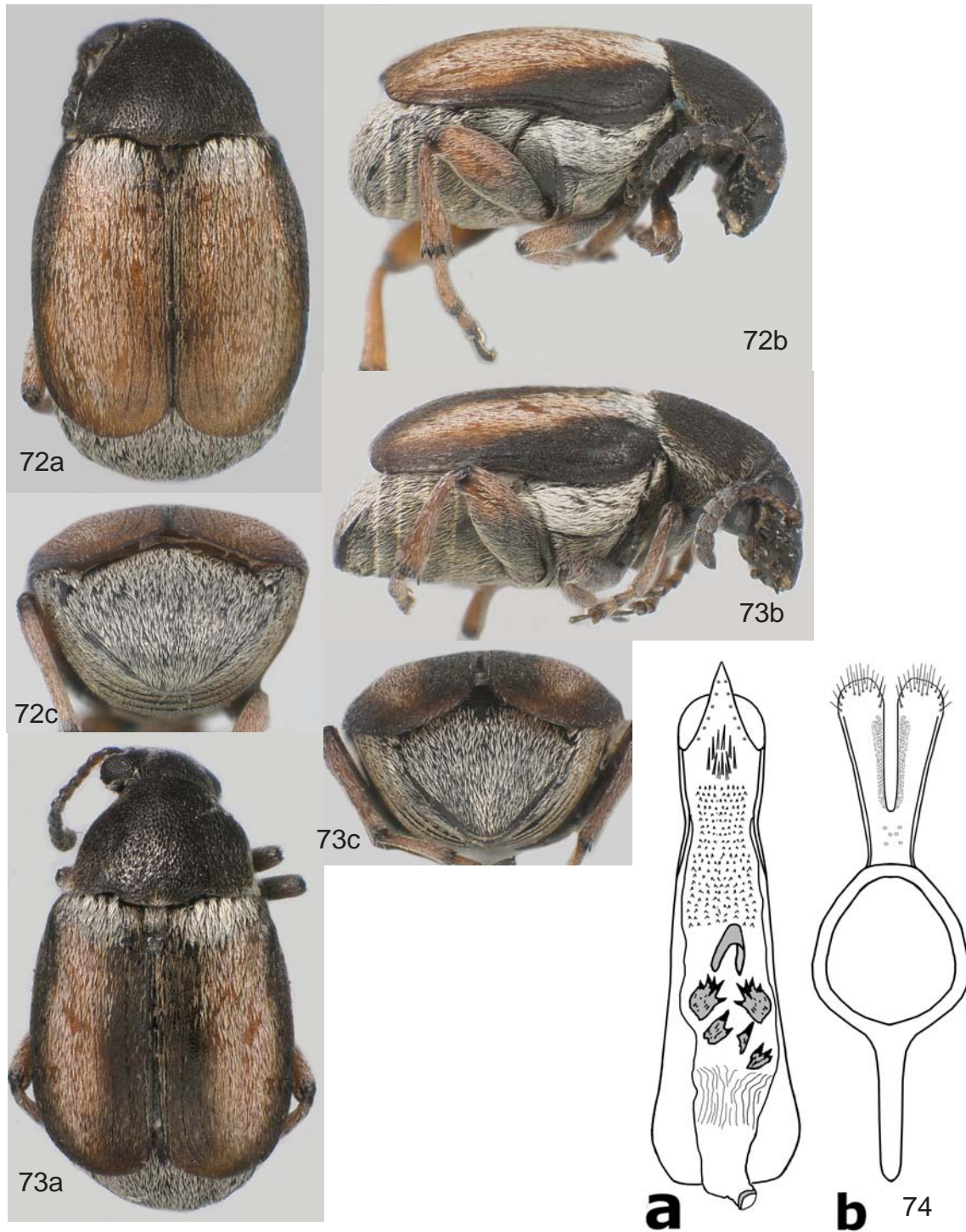
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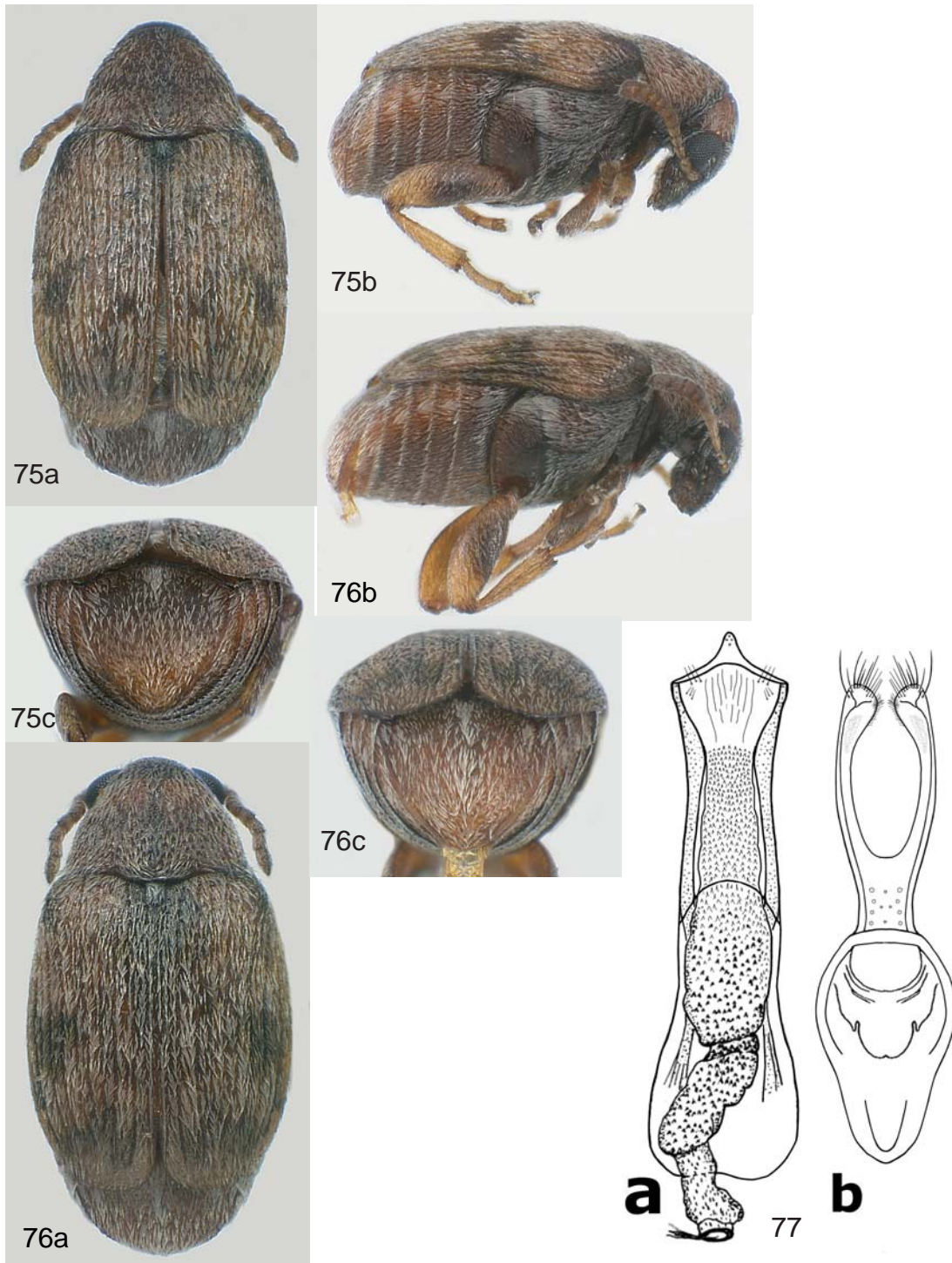
Figures 66-68. *Lithraeus leguminarius*. **66)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **67)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **68)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



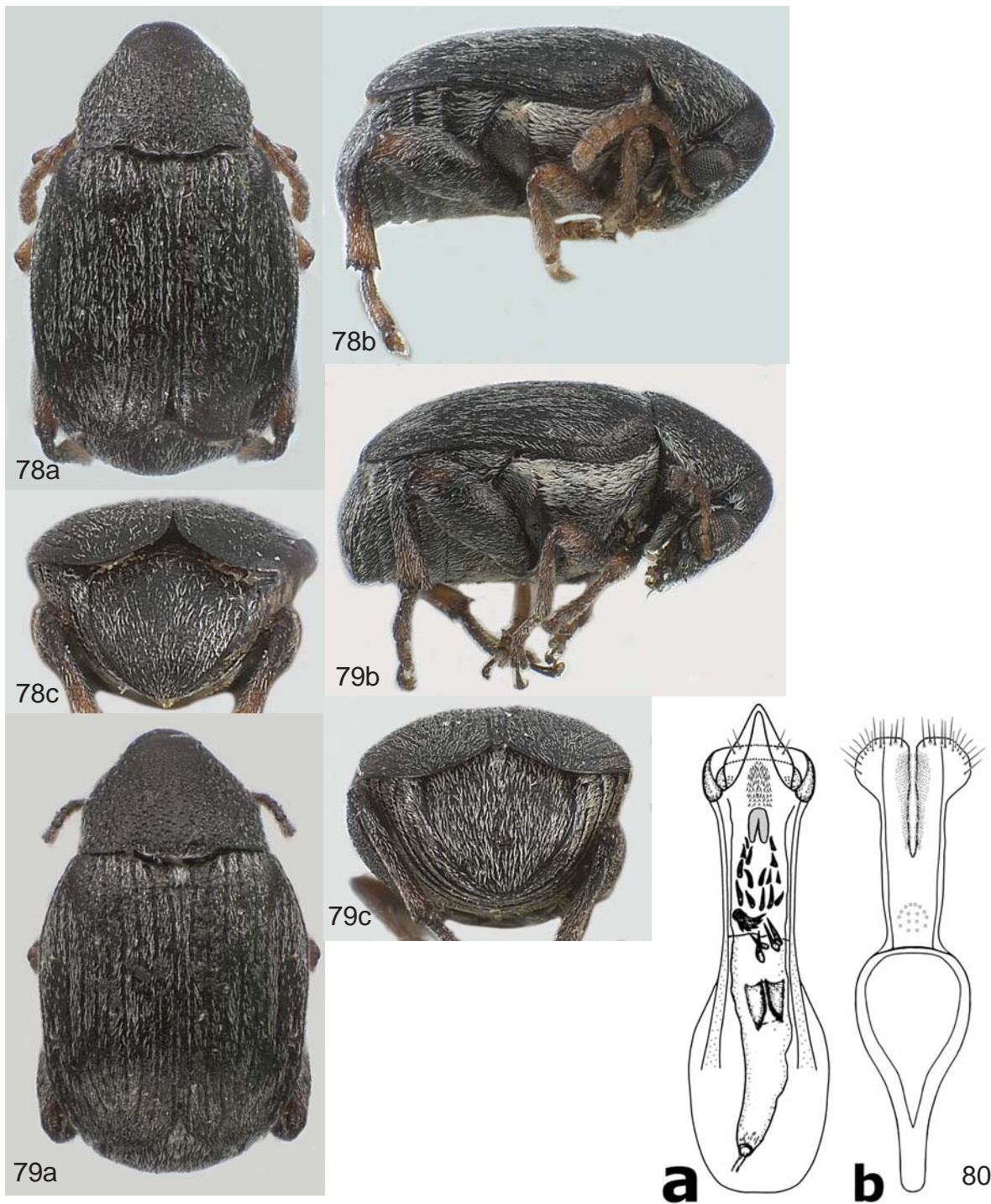
Figures 69-71. *Lithraeus limari*. **69)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **70)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **71)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



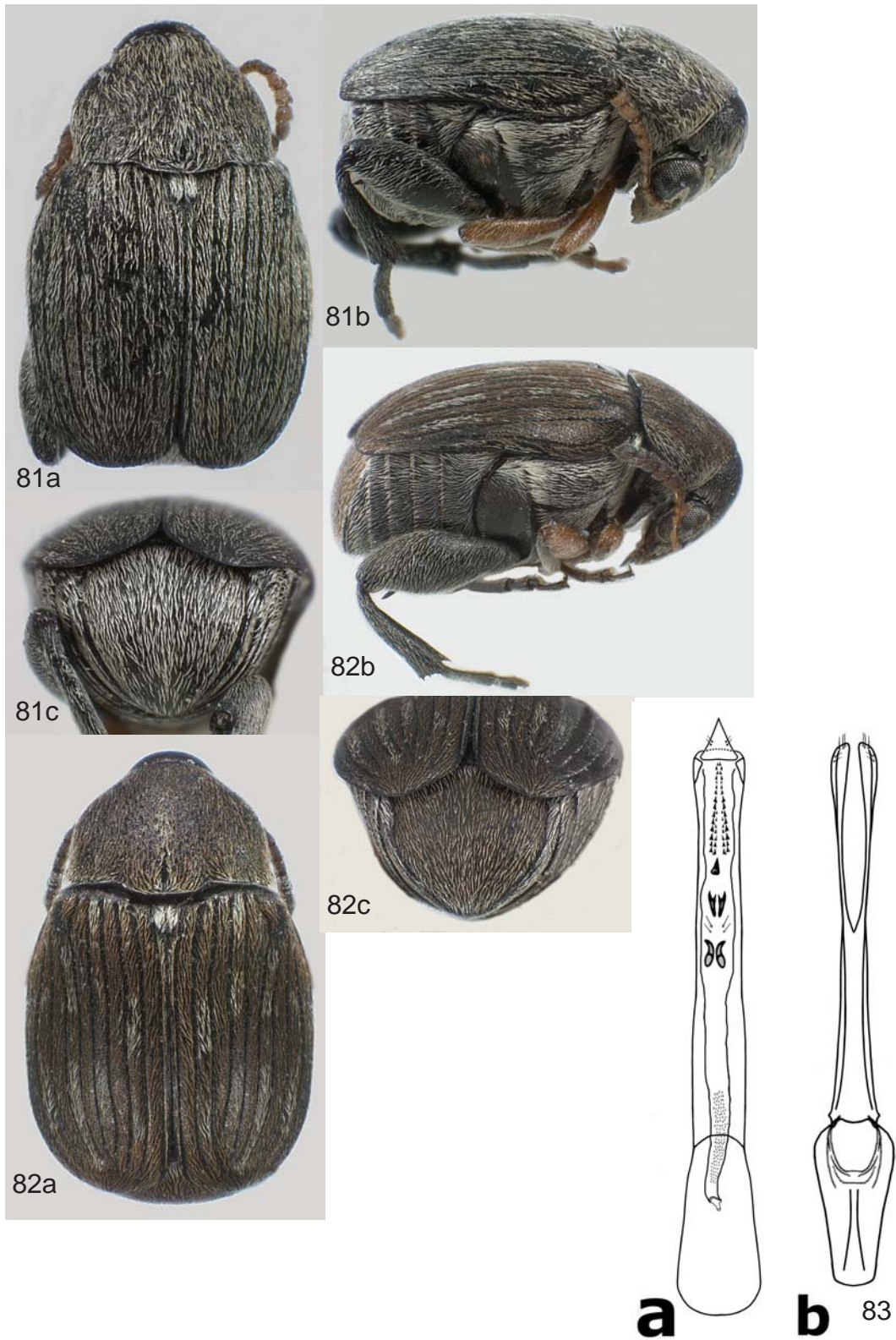
Figures 72-74. *Lithraeus lonquimay*. **72)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **73)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **74)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



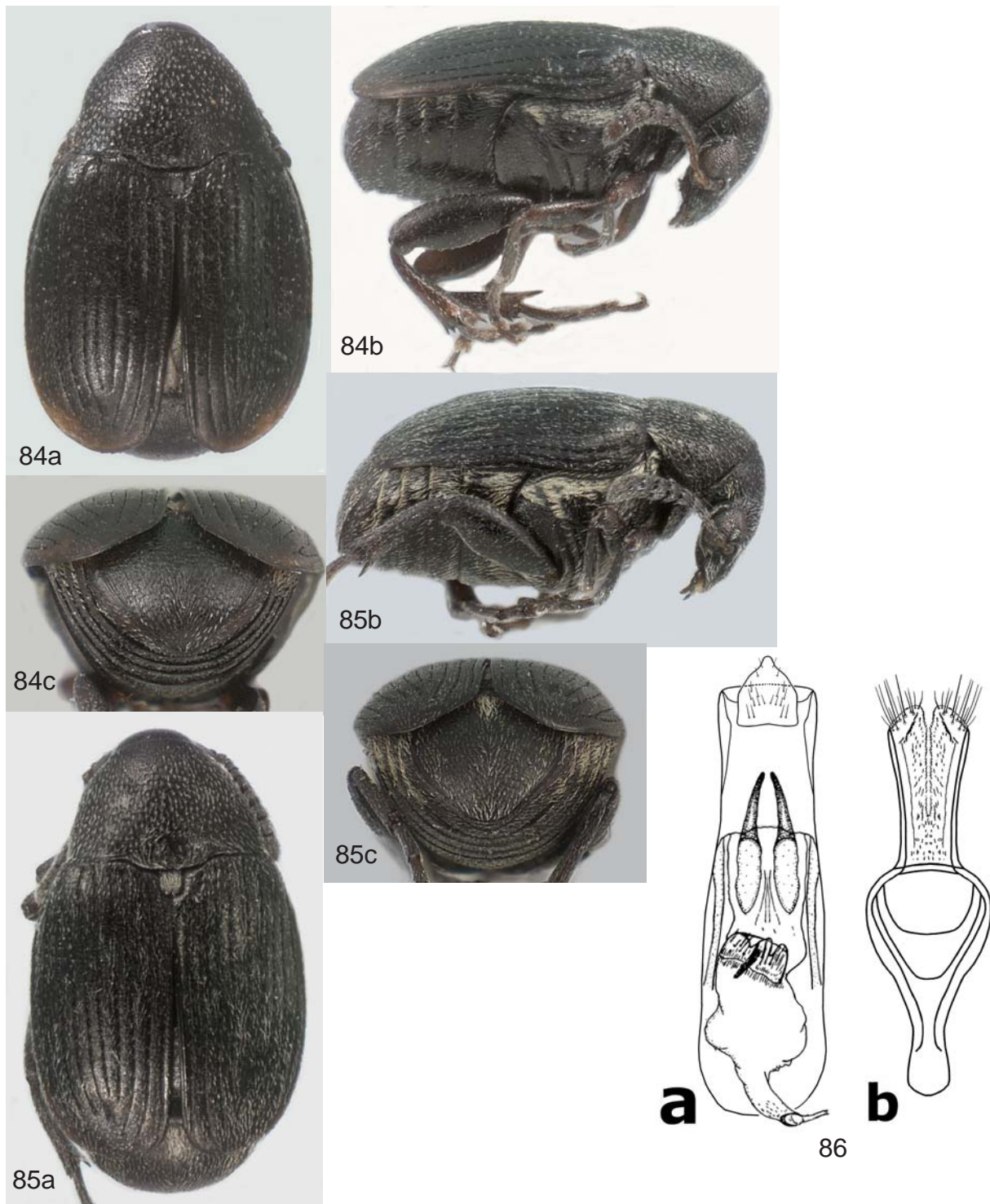
Figures 75-77. *Lithraeus mutatus*. **75)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **76)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **77)** *Lithraeus mutatus* Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



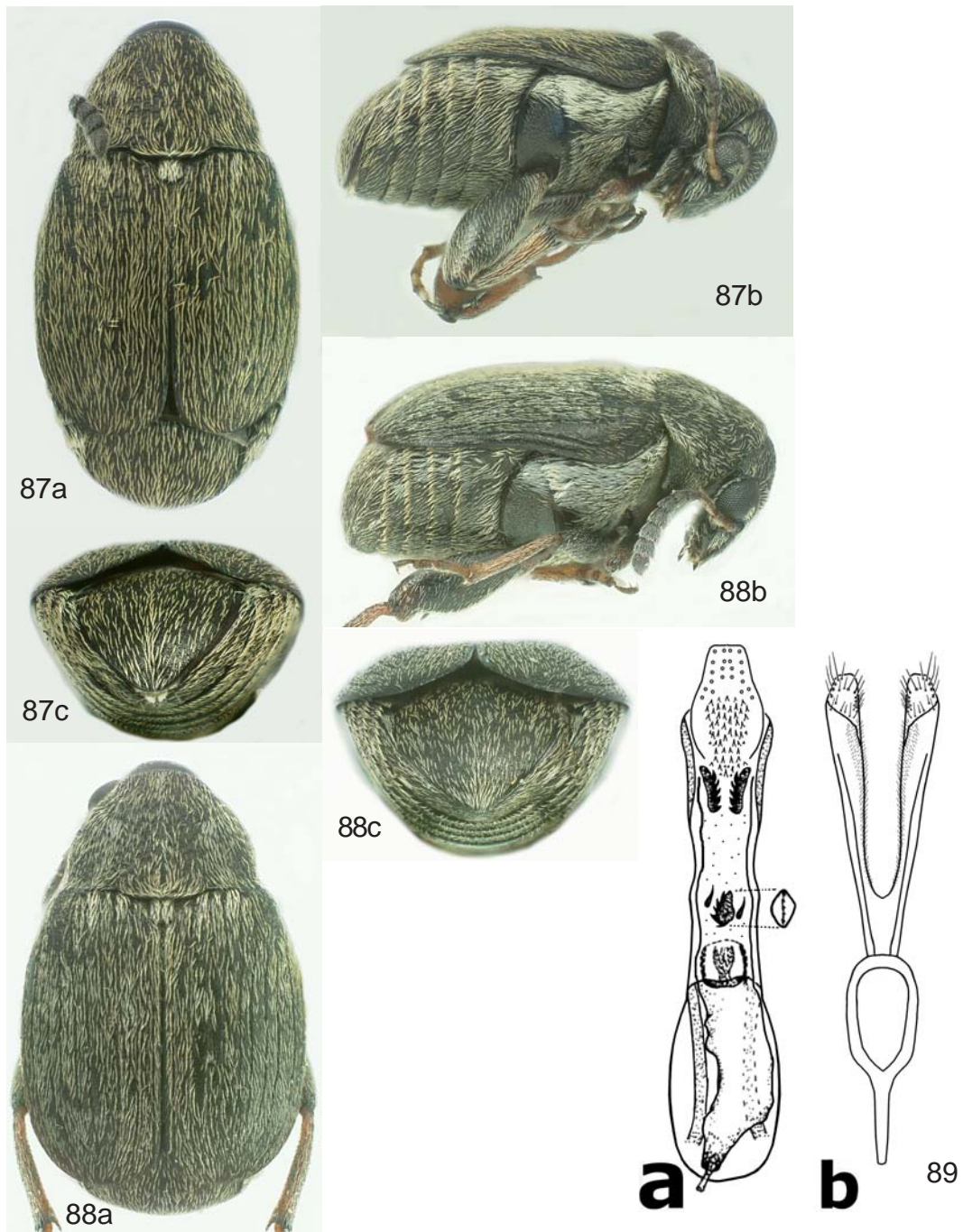
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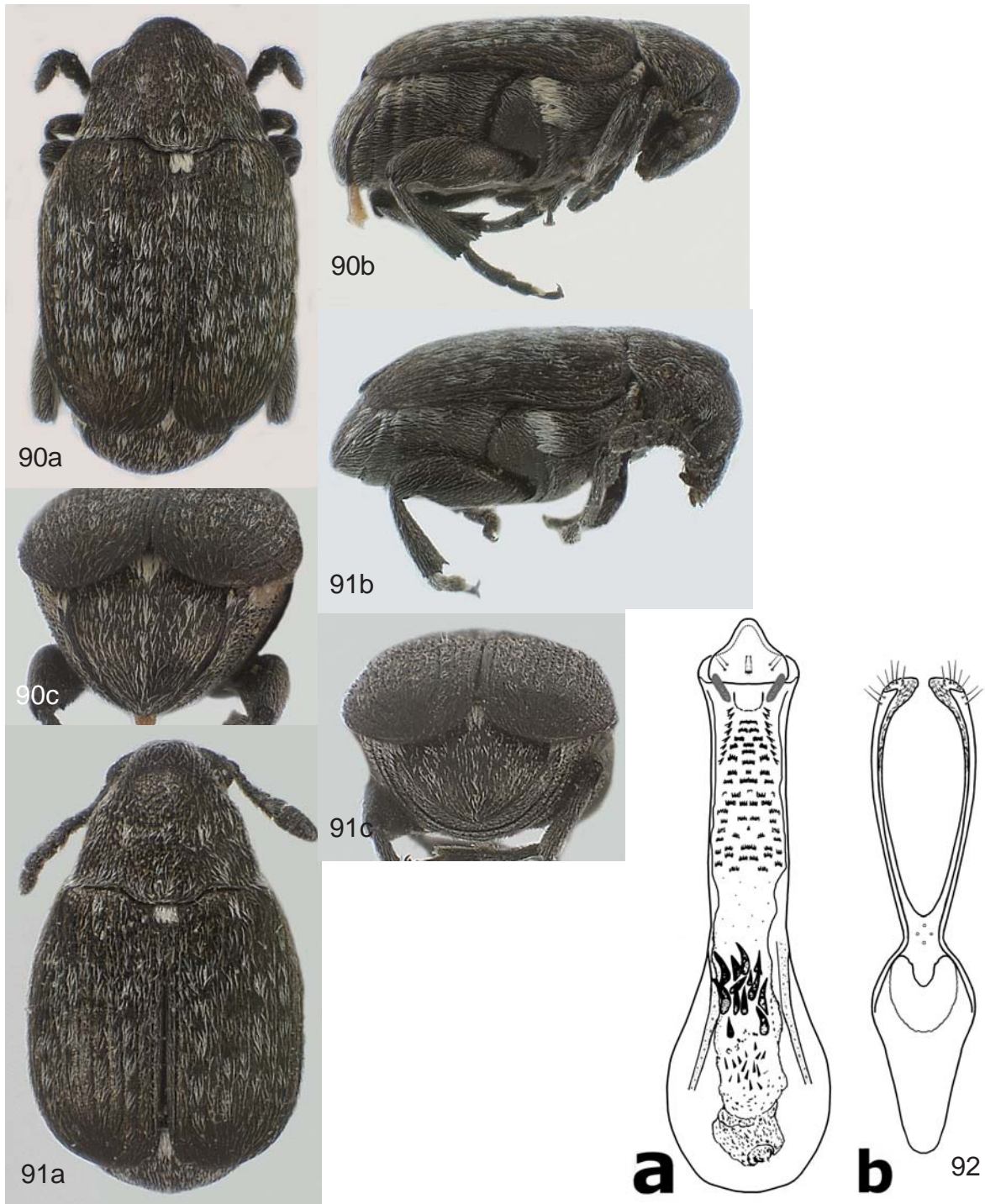
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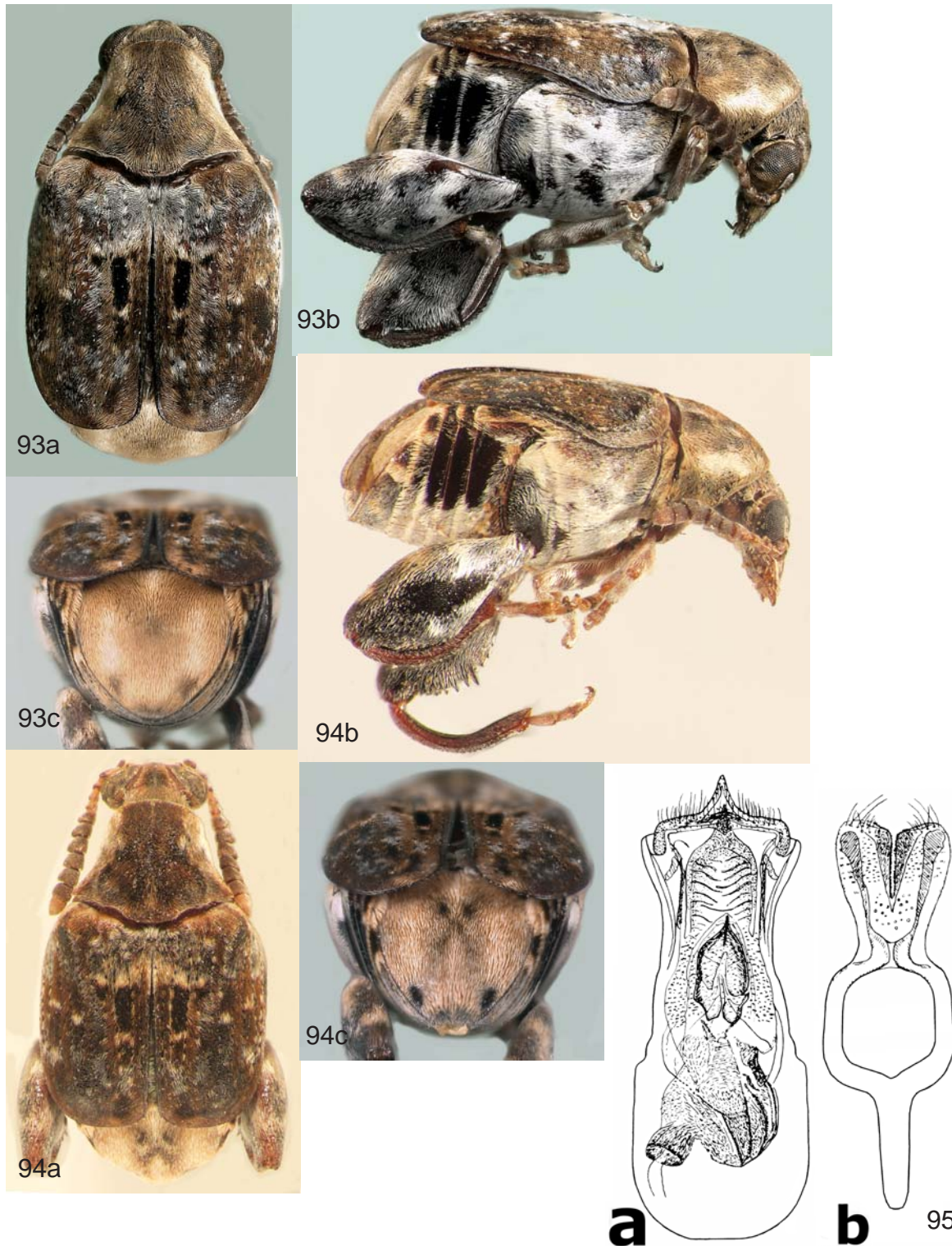
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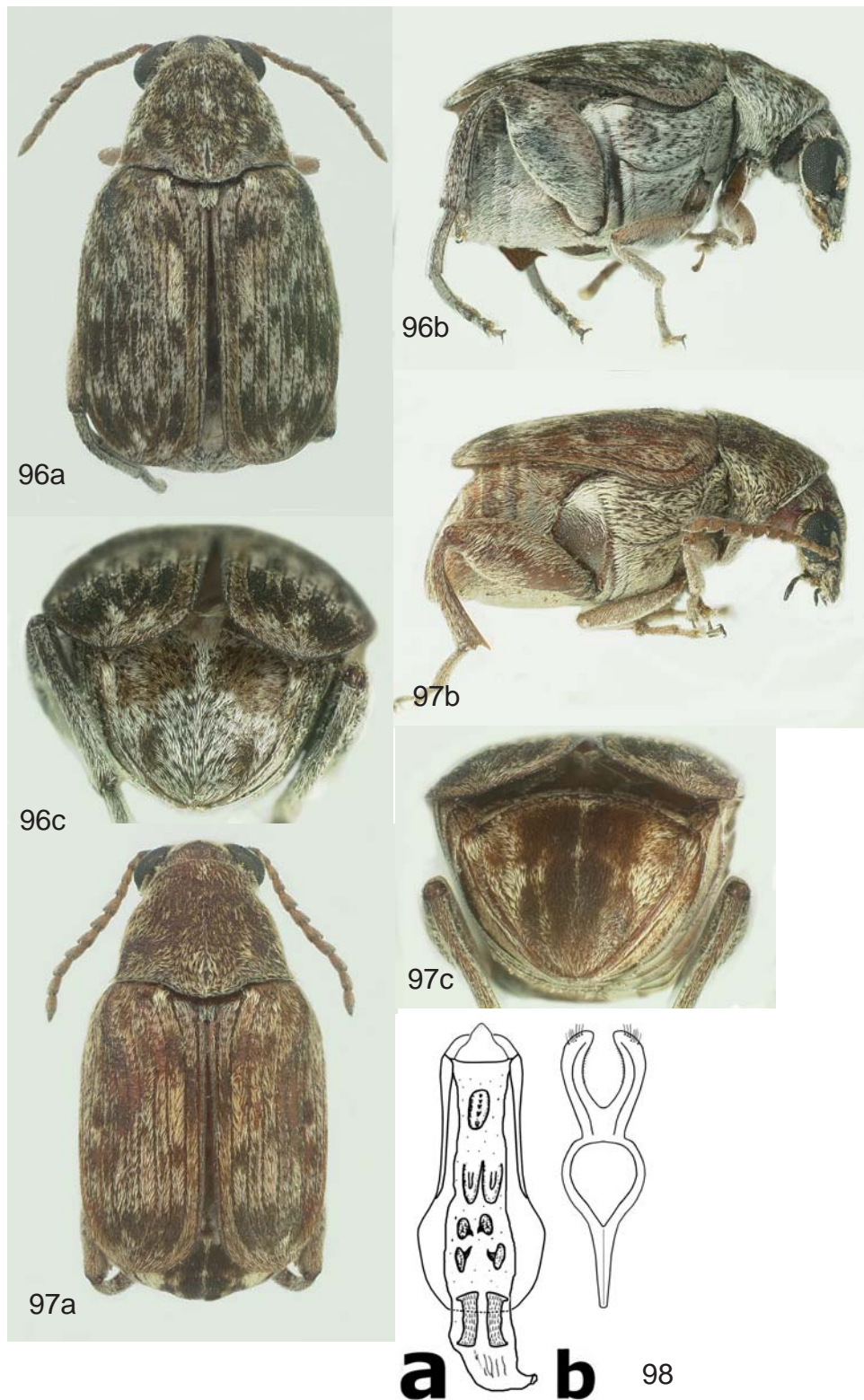
Figures 87-89. *Lithraeus pyrromelas*. **87)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **88)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **89)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



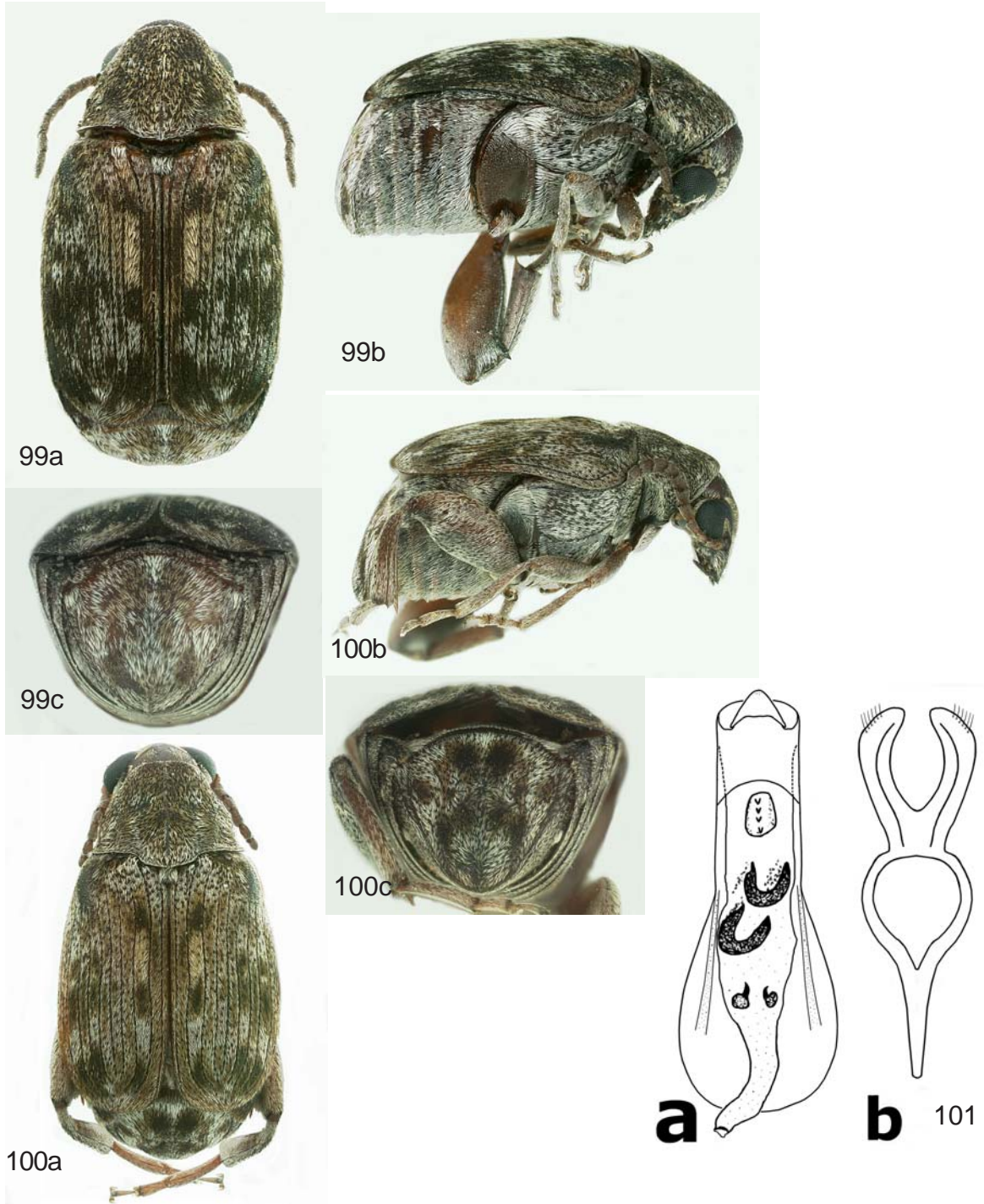
Figures 90-92. *Lithraeus scutellaris*. **90)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **91)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **92)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



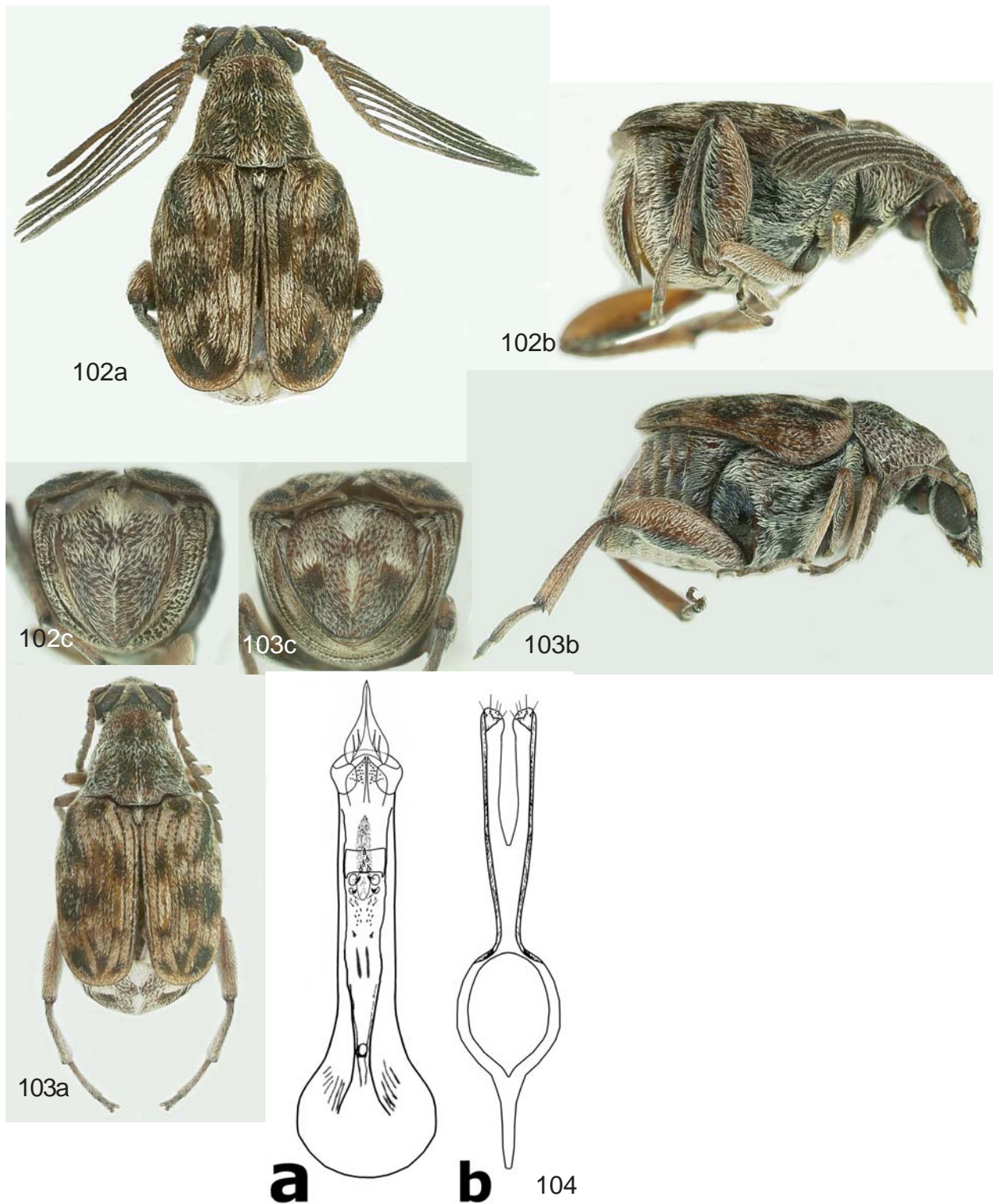
Figures 93-95. *Penthobruchus germaini*. **93)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **94)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **95)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



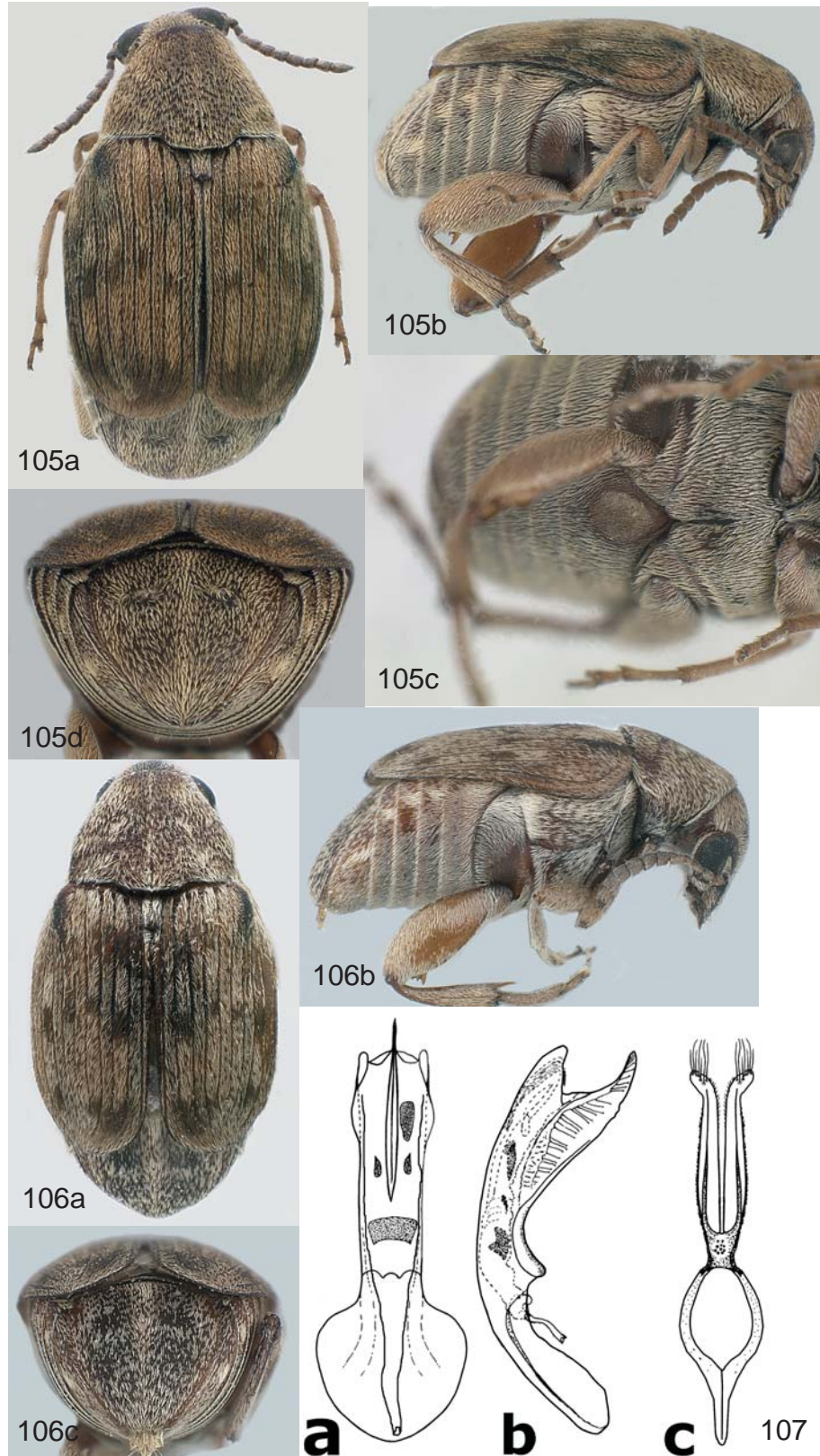
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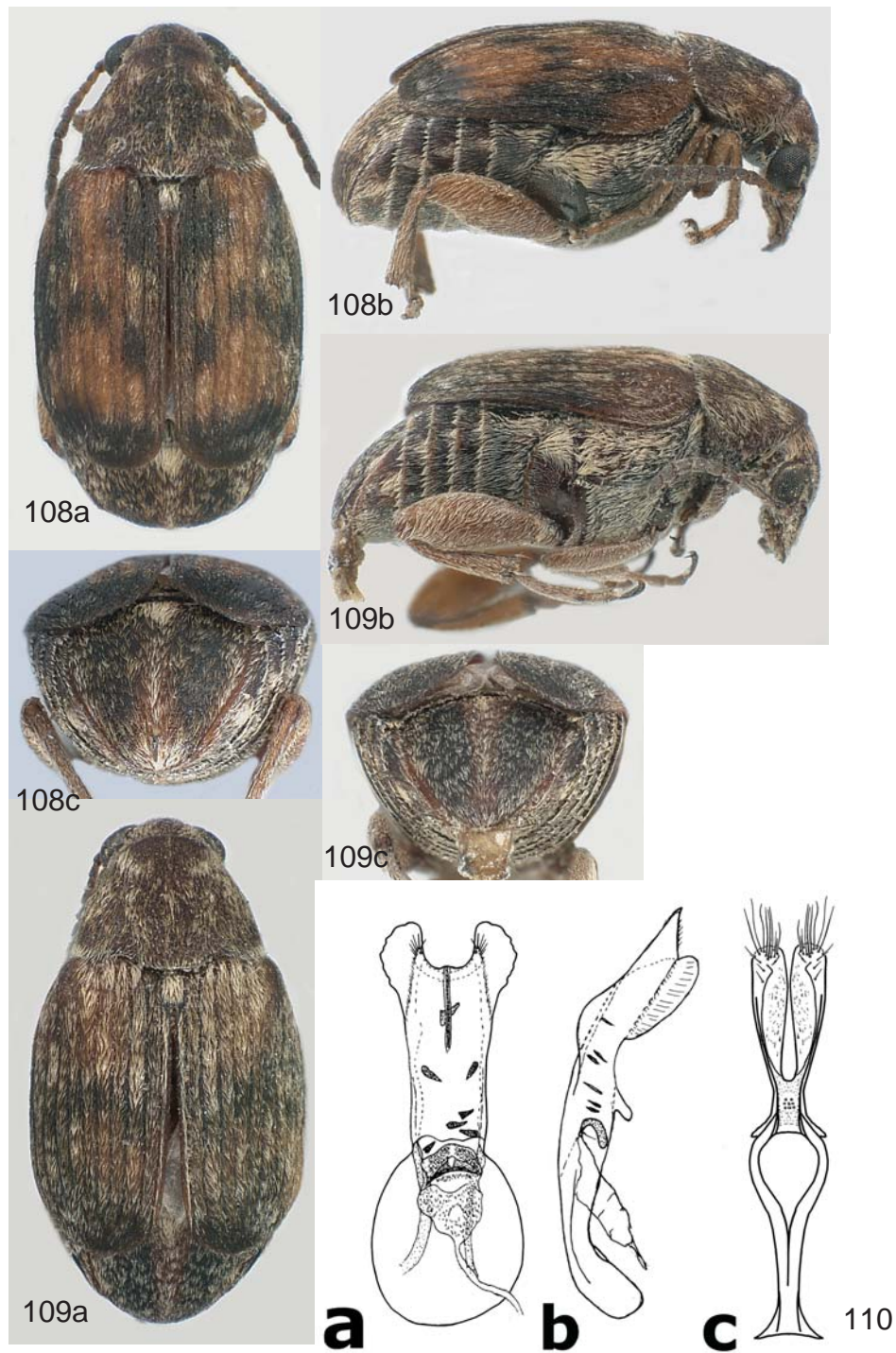
Figures 99-101. *Pseudopachymerina spinipes*. **99)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **100)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **101)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



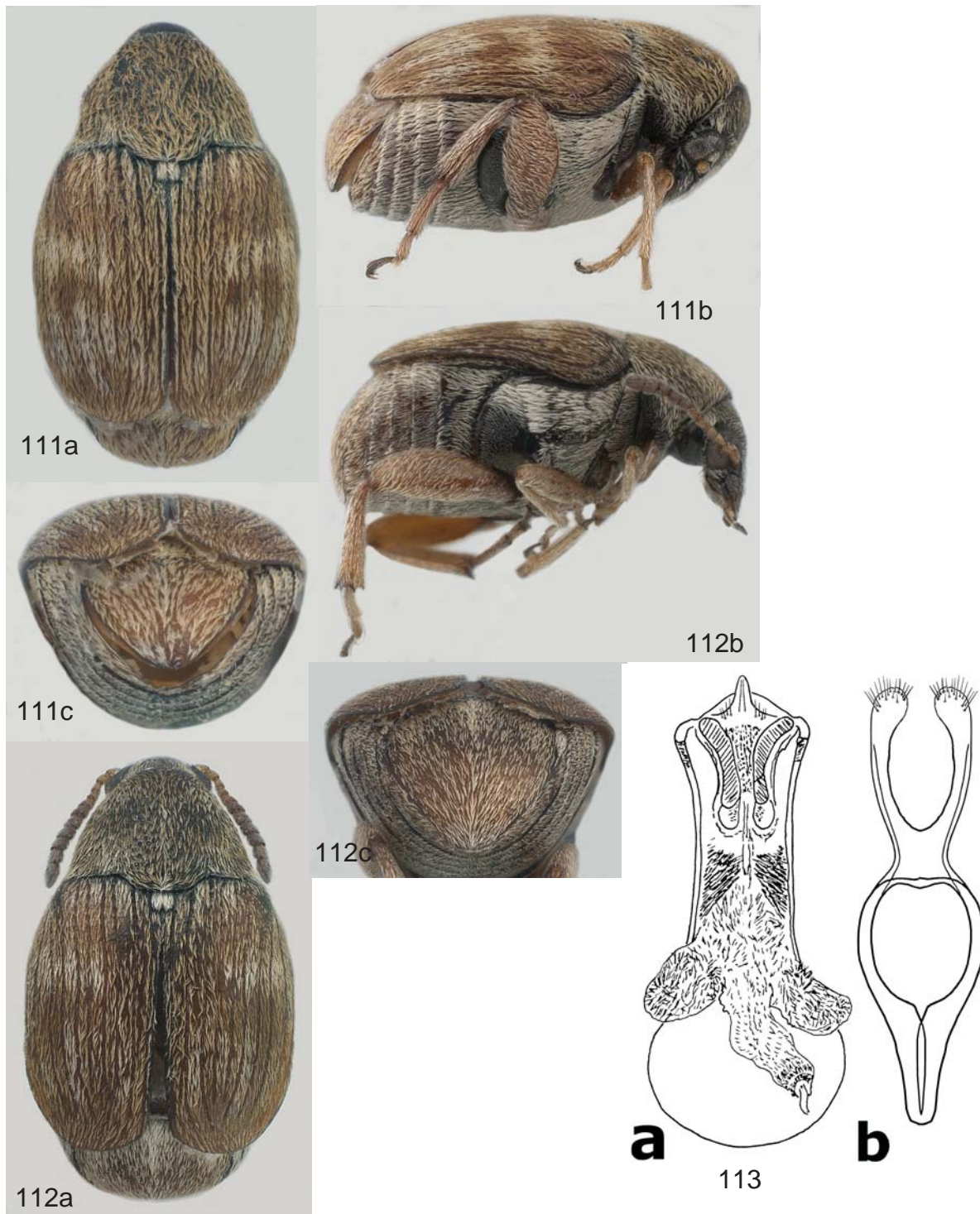
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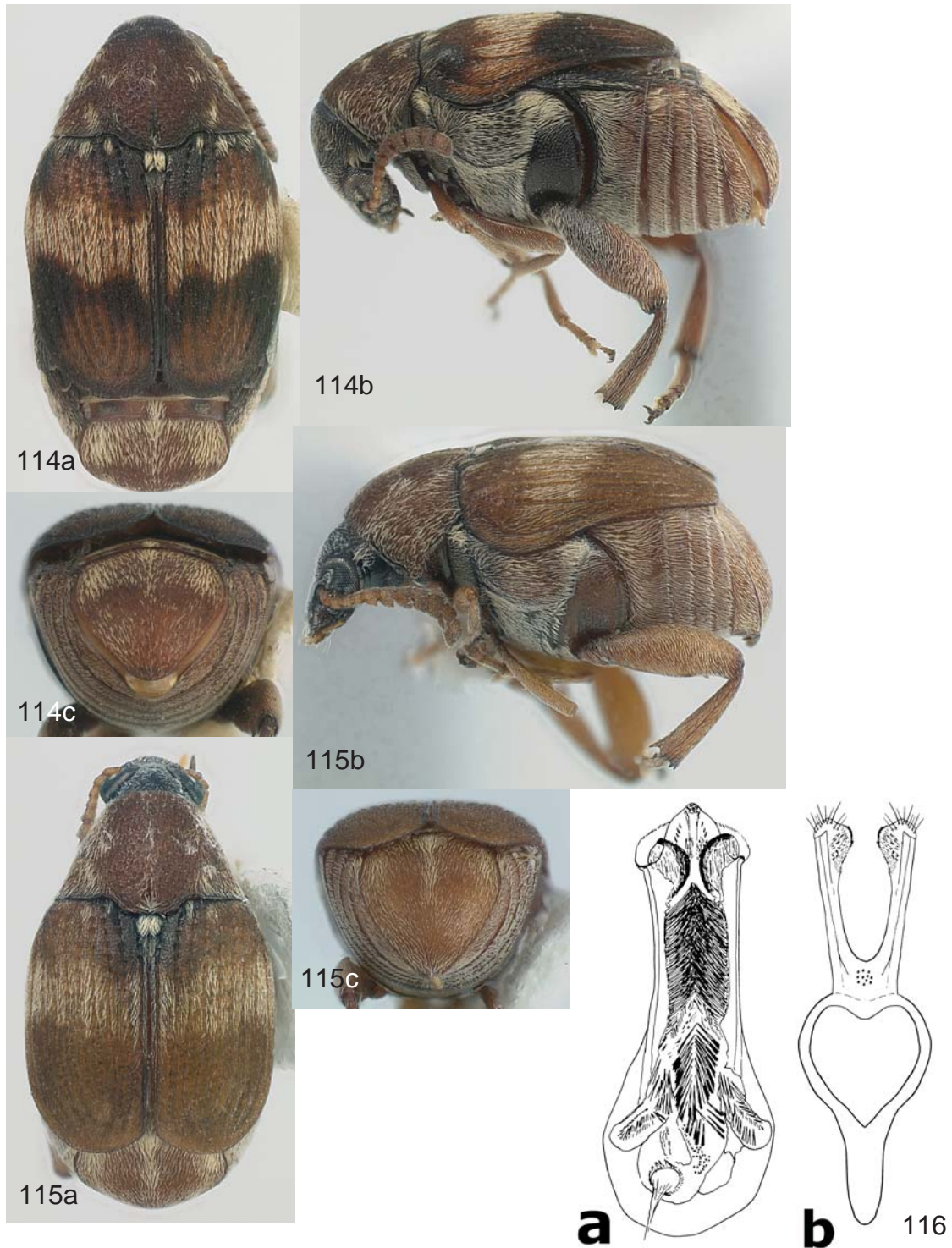
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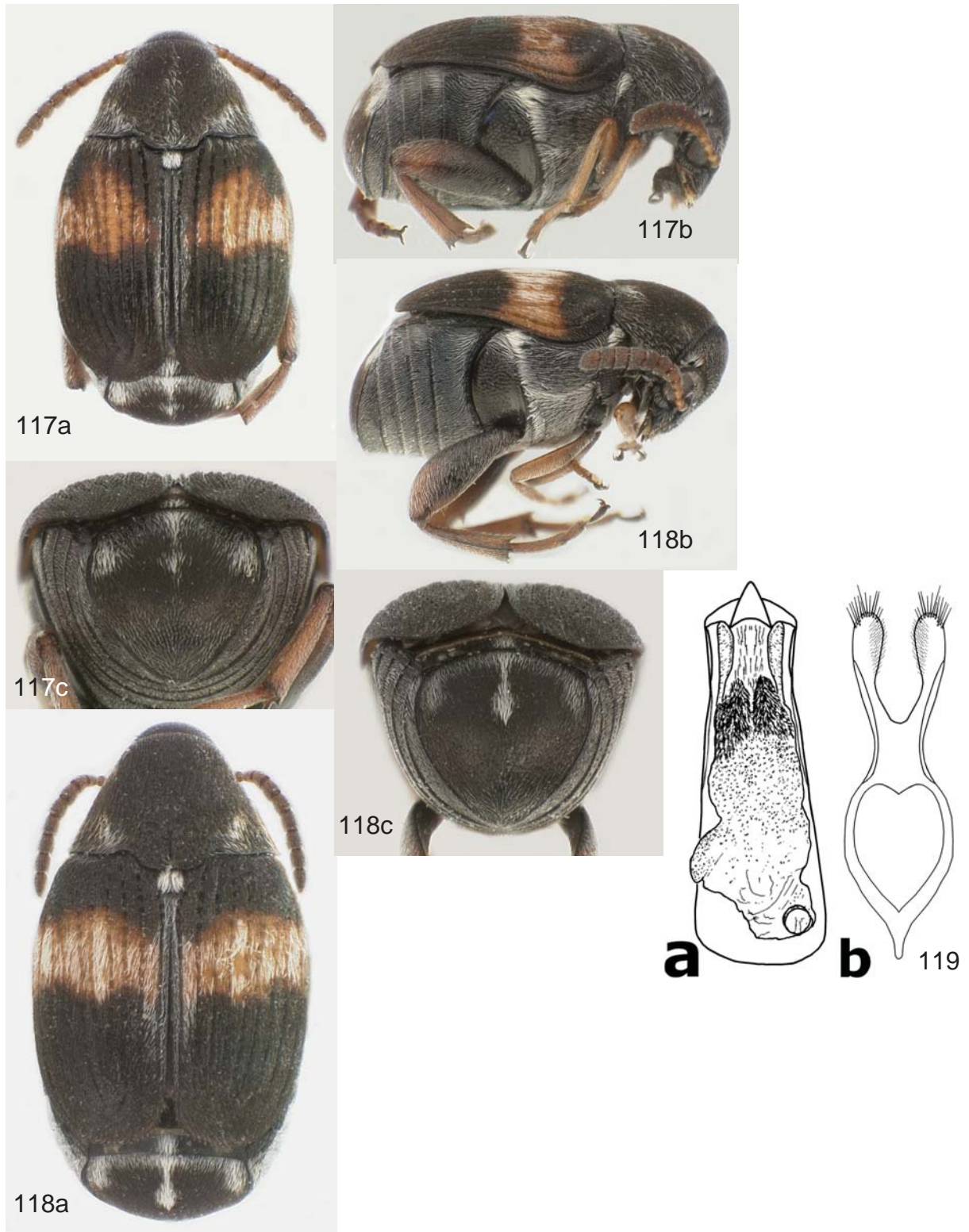
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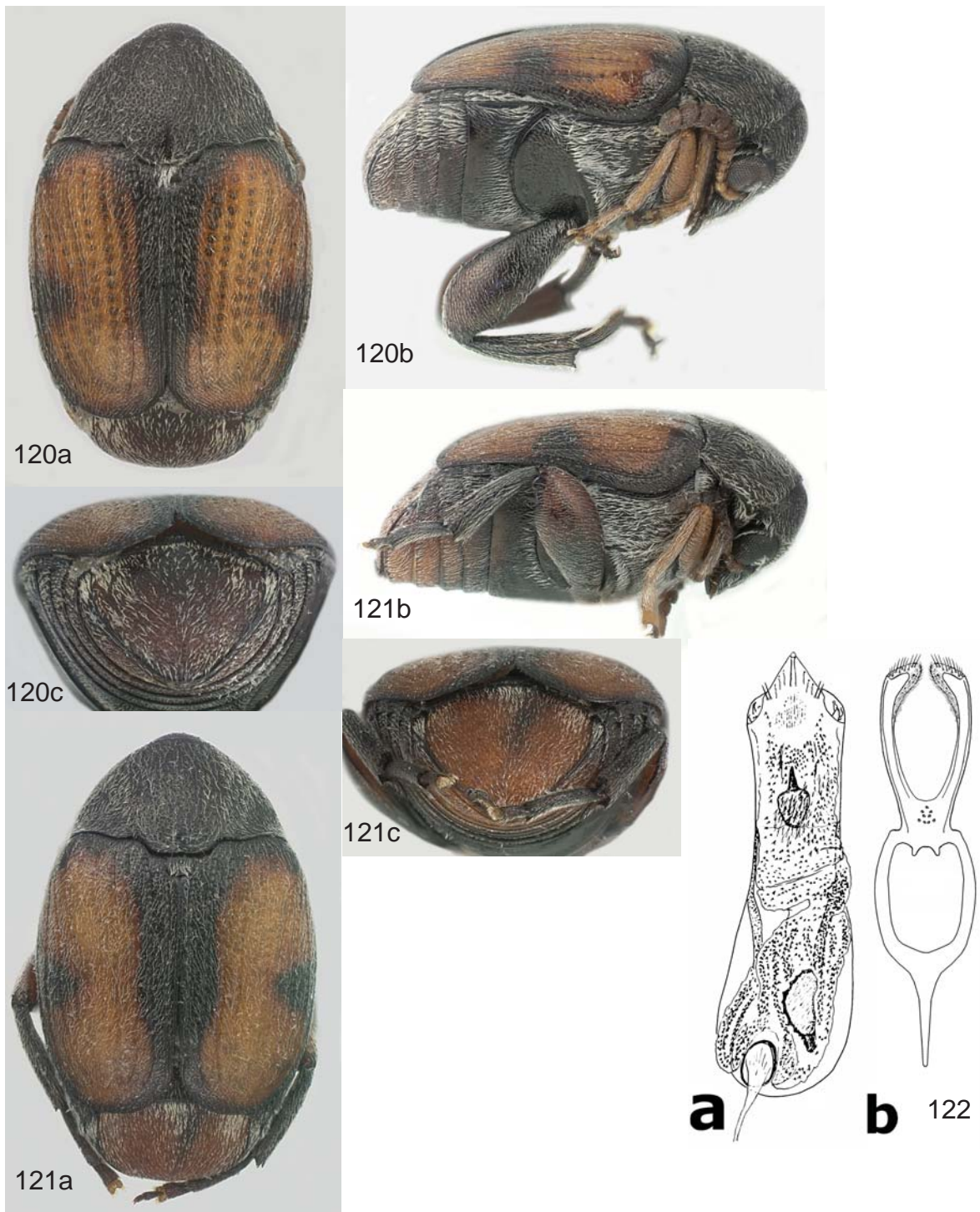
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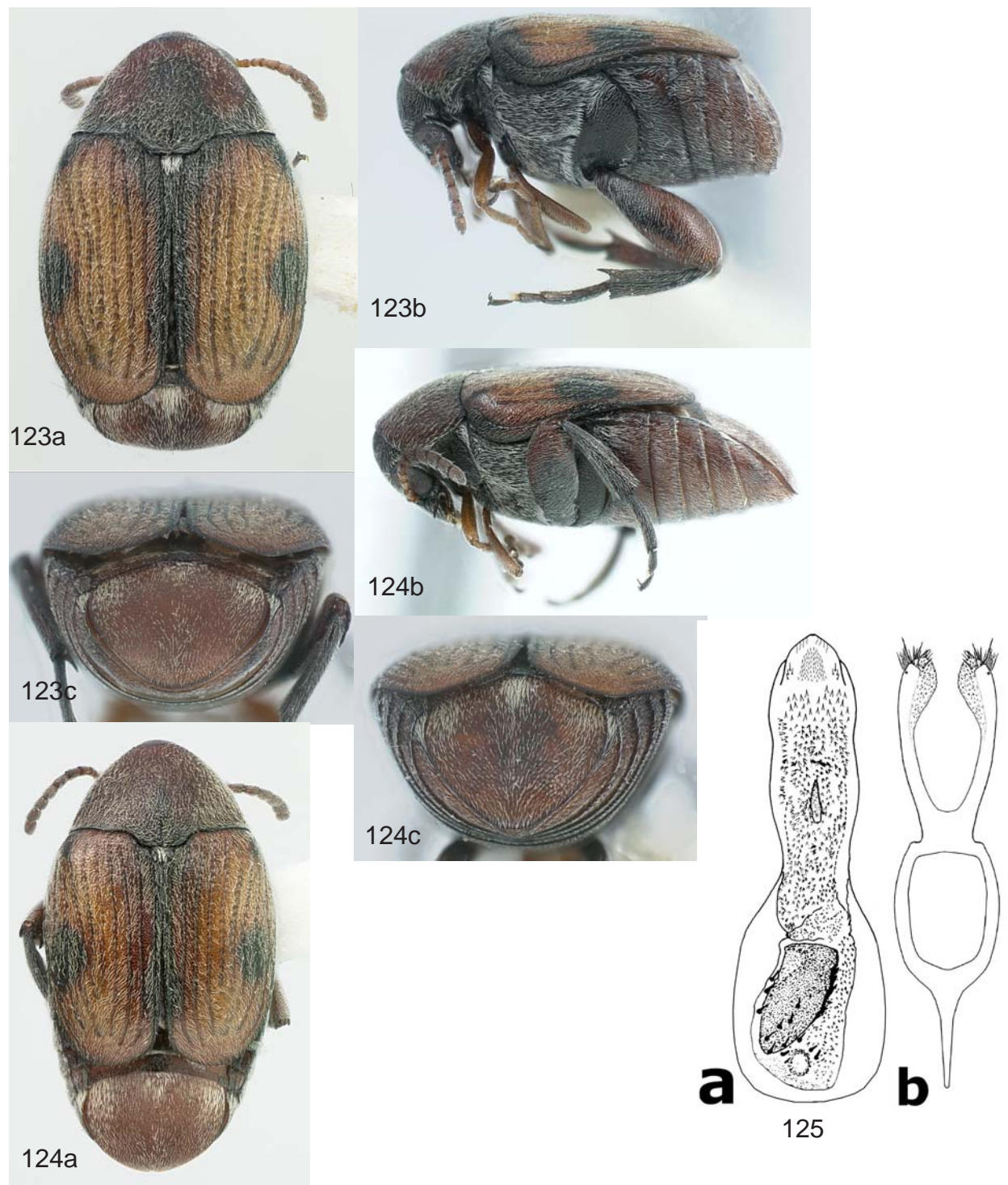
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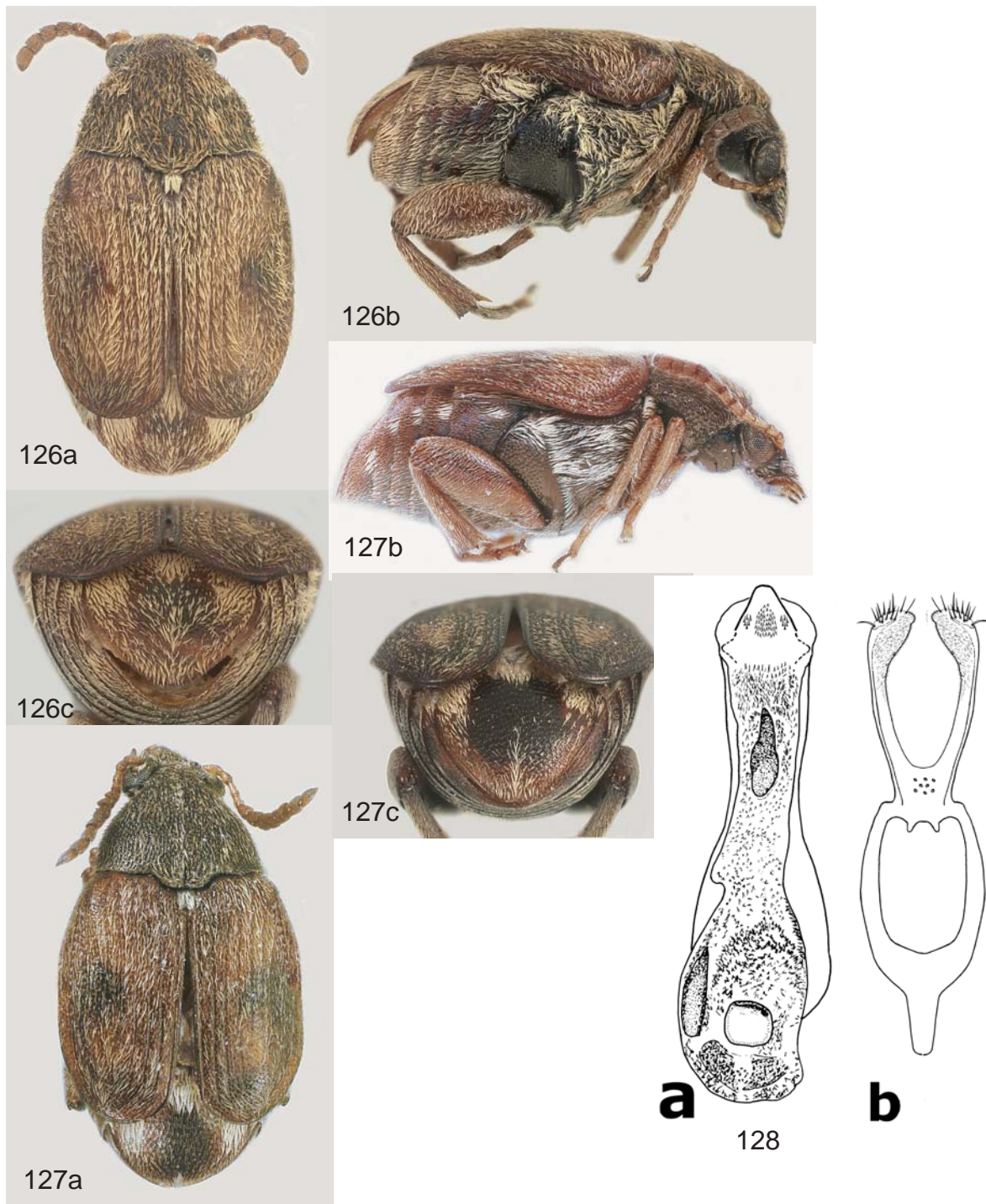
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Figures 120-122. *Stator cearanus*. **120)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **121)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **122)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



Figures 123-125. *Stator furcatus*. **123)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **124)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **125)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.



Figures 126-128. *Stator testudinarius*. **126)** Male habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **127)** Female habitus. **a)** Dorsal view. **b)** Lateral view. **c)** Pygidium. **128)** Male genitalia. **a)** Median lobe. **b)** Lateral lobes.