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A revision of the genus *Ora* Clark, 1865 (Coleoptera: Scirtidae) in Argentina (part I)—descriptions of new species

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Abstract

Three new species of the genus *Ora* Clark are described from Argentina: *O. breviementia* sp. n., *O. megadepressa* sp. n. and *O. sigmoidea* sp. n. All the species are characterized by a pair of frontoclypeal foveae, dorsal surface of mandible covered with setae, third labial palpomere arising from the inner margin of second palpomere, anterior pronotal angles distinctly projected anteriorly, a pair of glabrous areas on abdominal ventrites 2–5, ventrite 5 emarginate, with a pair of foveae in females, and tegmen with an apical digitiform lobe. *Ora breviementia* is similar externally to *O. gamma* Champion and *O. platensis* Brèthes, but it differs in having a more convex body, a smaller total length/elytral width ratio, coarser elytral punctation and a shorter lateral protuberance on the penis. *Ora megadepressa* is similar externally to *O. depressa* Fabricius, but differs in that the body is wider, the tegmen is laterally spiny with the lobe less narrowed basally, and the penis is straight with the base and the longer subapical process directed to the right-hand. *Ora sigmoidea* is similar in body color and shape to *O. brevenotata* Pic, and the aedeagus resembles that of *O. texana* Champion. However, the lobe of the tegmen is less protruding, the laminar dorsal piece of the penis is broadened, the apex is truncate, and the S-shaped ventral piece is distinctly curved.

Key words: marsh beetles, taxonomy, southern Neotropical region

Introduction

Ora Clark, 1865 is a pantropical speciose saltatorial genus of Scirtidae, currently represented by ca. 60 described species. Many Neotropical, African and Oriental species were briefly described by Champion (1897, 1918) and Pic (1915, 1918, 1922, 1928). More recently, Watts (2004) and Yoshitomi (2005) revised the Australian and Japanese species, respectively, and Ruta (2009, 2013) redescribed several species previously described by Motschulsky and Fabricius in *Scirtes*.

Regarding the Neotropical fauna, the genus was never studied comprehensively. In particular, the knowledge on the Argentine fauna is scarce, with only four species reported from the country: *O. atroapicalis* Pic, *O. bruchi* Pic, *O. platensis* Brèthes and *O. semibrunnea* Pic (Brèthes 1925; Pic 1928; Libonatti *et al.* 2013).

The examination of newly collected material from several undersampled localities, together with the study of the scirtid collections of the Museo Argentino de Ciencias Naturales Bernardino Rivadavia (Buenos Aires), the Muséum national d'Histoire naturelle (Paris) and the Natural History Museum (London), have revealed three undescribed Argentine species. The present contribution therefore aims at describing and illustrating in detail these new species.

Material and methods

Specimens studied. Most of the scirtid specimens examined were collected during 2011–2012 using mercury vapor light traps and beating riparian vegetation in protected areas of three Argentine provinces (Buenos Aires and Corrientes). One specimen examined belongs to the collection of F. Angelini (AC) (held in the Museum of Natural

History, University of Florence). Additional specimens were borrowed from the Museo Argentino de Ciencias Naturales Bernardino Rivadavia (MACN). Both recently collected specimens and those borrowed from MACN were compared to type material of previously described species from the Neotropical Region deposited in the Museum national d'Histoire naturelle and the Natural History Museum (NHM).

Depositories. Type specimens of the new species described herein are deposited in the AC, the MACN and in the NHM. Additional examined specimens are placed in the Carlos Bruch Collection (BR) (held in MACN at present) and in my personal collection (MLLC) (Laboratory of Entomology, University of Buenos Aires, Argentina). As head of the entomological section of the Museo de La Plata (Buenos Aires) in the early 20th century, Bruch maintained an intense epistolary exchange with specialists from several countries, sending them material for identification. For this reason, some specimens in his collection have an identification label handwritten by Pic, probably cut from a letter (Bachmann, personal communication 2013).

Dissection techniques. Dried specimens were relaxed in boiling water for a couple of minutes (not necessary in the case of specimens preserved in ethanol), the heads, thoraces and abdomens were removed and transferred to a 10% NaOH solution overnight. The structures were washed with distilled water and dissected; temporary slides were prepared using either glycerine (for abdominal ventrites, terminalia and genitalia) or polyvinyl-lacto-glycerol (for mouthparts, thoracic ventrites and hind wings) as mountants. Female genitalia were additionally placed in a glycerine solution of chlorazol black to stain membranous structures. When sufficiently stained the structures were washed with distilled water.

Illustration techniques. Drawings were made using an Olympus CX41 compound microscope equipped with a camera lucida, scanned and digitally edited; the final line drawings were made with a Genius Gpen F610 digitiser board (following Coleman 2003). Photographs were taken using a Sony DSC-W530 camera adapted to the microscope; the final images were generated using Helicon Focus (5.3 Pro) software and digitally edited. Finally, the slides were remounted, the genitalia were washed with distilled water and glued on cardboards with a solution of polyvinyl alcohol. Illustrations of male genitalia are oriented with the posterior end of the structures directed to the top of the page (as in Yoshitomi 2005; Ruta 2013), whereas those of female genitalia are oriented with the anterior end of the structures directed to the top of the page (as in Nyholm 2002).

Measurements. Measurements were taken using a micrometer eyepiece mounted on a Leica MZ6 stereoscopic microscope or an Olympus CX41 compound microscope. Total length (TL) was measured in dorsal view from the anterior margin of pronotum to the elytral apex. Elytral width (EW) was measured in dorsal view in the widest part of the elytra. Elytral length (EL) was measured in lateral view from the anterior margin of scutellum to the elytral apex. Pronotal width (PW) was measured in dorsal view in the widest part of the pronotum. Pronotal length (PL) was measured along its median axis. Head width (HW) was measured in dorsal view in the widest part of the head including eyes. Interocular space was measured in dorsal view at the minimum distance between the eyes. Length (L) and width (W) of antennomeres were measured and L/W of each antennomere was calculated. Ratio of antennomeres was calculated as the quotient between the length of each antennomere and the length of the shortest antennomere. Punctuation was observed under a Leica MZ6 stereoscopic microscope using diffused light coming from above at an angle of about 45° and the distances between punctures were measured relative to the diameter of the punctures.

Terminology. The terms used in Kukalová-Peck & Lawrence (1993, 2004) and Nyholm (2002) were followed for hind wing venation and female genital organs respectively. Since the aedeagi of the species treated herein are quite modified from the general structure proposed by Nyholm (1972), homologies were not attempted.

Taxonomy

Ora Clark, 1865

Type species: *Scirtes trobertii* Guérin-Méneville, 1861 (by subsequent designation of Champion 1918)

Diagnosis. Distinguished from other saltatorial genera of Scirtidae by the following combination of characters: body oval and depressed or oblong oval; metacoxae touching each other only in basal portion, diverging posteriorly; aedeagus asymmetrical.

Common morphological features of the Argentine species of *Ora*. The Argentine species of the genus share the following combination of characters; differences between Argentine and species from other areas are commented on in square brackets.

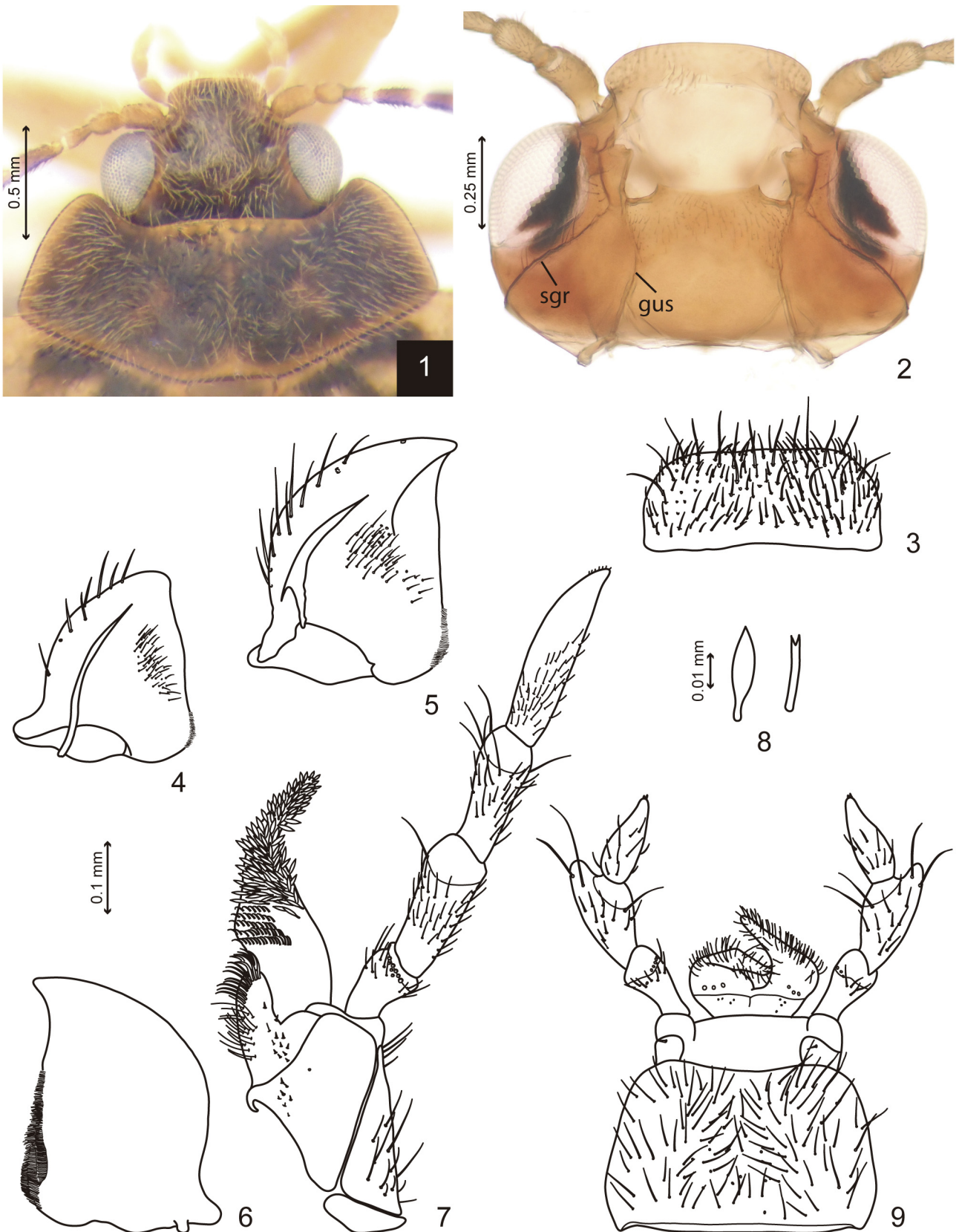
Head. Frontoclypeus with a pair of foveae above the bases of the antennae, between the eyes (Fig. 1), anterior margin slightly rounded to straight, anterior angles rounded (Fig. 2). Subgenal ridges arcuate, running from the posterolateral margin of the head to the bases of the mandibles (Fig. 2). Gular sutures arcuate (Fig. 2). Labrum rectangular, with anterior margin straight and anterior angles rounded (Fig. 3). Antennae filiform, antennomere 1 barrel-shaped with margins curved anteriorly, antennomere 2 barrel-shaped, antennomere 3 subconical, antennomeres 4–11 subcylindrical. Mandibles slightly sclerotized, symmetrical, triangular, lacking denticles on inner margin, dorsal surface covered with an inner group of short setae and an outer row of long setae, inner margin and molar region with brush-like microtrichia [inner margin devoid of microtrichia in Japanese species], apex obtuse or acute (Figs. 4–6) [apex acute in Japanese species]. Maxillae with galea broad at base, narrowing to the tip, with setae arranged in two groups: a basal group composed of long curved setae and an apical group composed of flattened, broadened, leaf-like setae widely distributed on the apical and medial part, and branched setae on the outer margin; lacinia with a basal sparser group of setae and an apical more agglomerated group of strong and curved setae (Figs. 7, 8). Maxillary palpi elongate, first palpomere very short, second and third palpomeres longer than the first palpomere, fourth palpomere the longest and apically acute (Fig. 7). Labium with trapezoidal mentum, bilobate paraglossa, third labial palpomere arising from the inner margin of the second palpomere, with acute apex (Fig. 9) [second labial palpomere more elongate in Japanese species].

Thorax. Pronotum strongly transverse, widest at base, lateral margins slightly rounded to almost straight, anterior margin slightly rounded, anterior angles distinctly projected anteriorly, posterior margin subtrapezoidal, posterior angles right-angled (Fig. 10). Hind wings fully developed, vein MP_4 long, connected with $CuA+AA_{1+2}$ in median portion (form 2 *sensu* Yoshitomi 2005) (Fig. 16). Prosternal process laminar, very thin, with ventral margin straight and posterior margin oblique (Figs. 10, 11). Anterior region of mesoventrite with a longitudinal groove receiving the prosternal process, the groove ending in a V-shaped posterior margin (Figs. 12, 14, 15); mesoventral process long, separating mesocoxae. Metaventrite with long discrimen, exceeding posterior half (Fig. 13). Metacoxae touching each other only anteriorly (Fig. 13). Metafemora enlarged, capable of jumping. Metatibiae expanding laterally at middle, metatibial spurs long, with acute, outwardly curved apices.

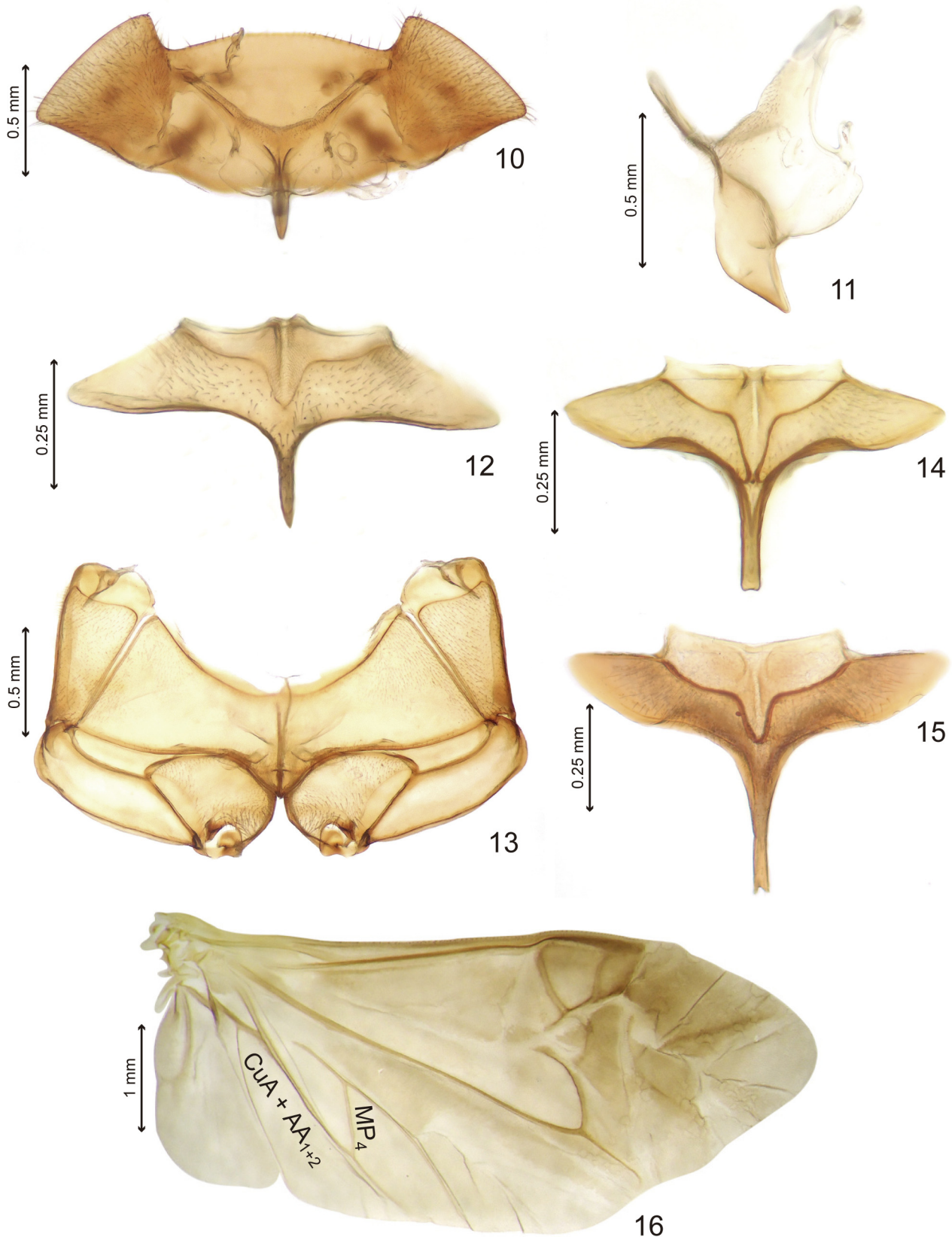
Abdomen. Ventrites 2–5 with a pair of anterolateral glabrous areas, each one extending posteriorly in the shape of ovals. Posterior margin of ventrite 5 emarginate (Figs. 30, 41, 49, 58, 64, 75). Female ventrite 5 with a pair of foveae connected to internal glands (Figs. 41, 42).

Male terminalia and genitalia. Tergite 8 well sclerotized, with a pair of apodemes converging posteriorly, plate rectangular to trapezoidal with short microtrichia on lateral parts and long microtrichia on apical margin (Figs. 32, 51, 66). Sternite 8 (when visible) weakly sclerotized, small, more or less triangular, with sclerotized basal margin (Figs. 33, 68). Tergite 9 well sclerotized, with a pair of apodemes converging posteriorly, plate more or less square-shaped, with short microtrichia (Figs. 34, 52, 69). Sternite 9 oblong-oval, apically bilobed (Figs. 36, 53, 70). Tegmen symmetrical or subtly asymmetrical, with an apical or subapical digitiform lobe (probably a paramere, according to Nyholm 1972) (Figs. 37, 55, 56, 73). Penis highly asymmetrical (Figs. 38, 54, 72) [both tegmen and penis with paired appendages in Japanese and Australian species].

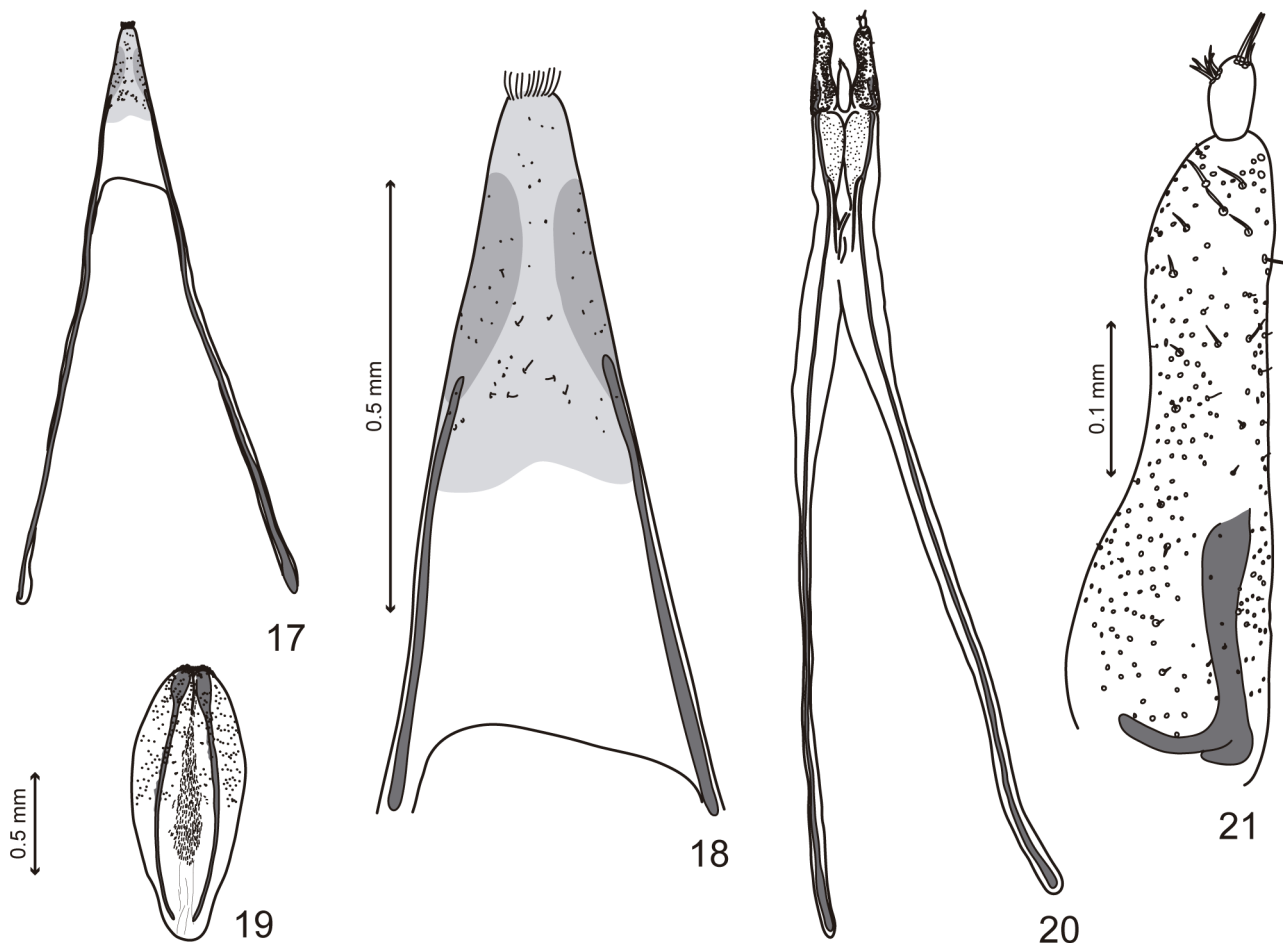
Female terminalia and genitalia. Tergite 8 with a pair of long apodemes, dorsal surface of the plate covered with pores and short setae, posterior margin with long microtrichia (Figs. 17, 18). Sternite 8 oblong-oval, ventral surface covered with pores and short setae, medial part covered with tufts of microtrichia, posterior margin bilobed and covered with long microtrichia (Fig. 19). Ovipositor with long baculi, long branchlets [short branchlets in Japanese species], surface of coxites covered with pores and short setae, styli digitiform with two apical tufts of setae (Fig. 20, 21). Bursal sclerite composed of an anterior arched part with at least one medial small tooth, a middle part with a pair of teeth (in some cases with an additional posterior tooth), and a very slightly sclerotized tongue-shaped hind part with surface covered with microtrichia (Figs. 46, 47, 61, 62, 78, 79). Bursella capacious, usually storing a spermatophore; microsculpture composed of isolated minute conical microtrichia (Fig. 45).



FIGURES 1–9. Argentine *Ora* spp., head and mouthparts morphology. 1, *O. breviementia* sp. n., head and prothorax, dorsal aspect; 2–4, *O. megadepressa* sp. n.: 2, head, ventral aspect; 3, labrum, dorsal aspect; 4, left mandible, dorsal aspect; 5–9, *O. sigmoidea* sp. n.: 5, left mandible, dorsal aspect; 6, left mandible, ventral aspect; 7, left maxilla, ventral aspect; 8, setae on apical part of galea; 9, labium, ventral aspect. Abbreviations: gus: gular suture, sgr: subgenal ridge.



FIGURES 10–16. Argentine *Ora* spp., thorax morphology. 10–13, *Ora megadepressa* sp. n.: 10, prothorax, ventral aspect; 11, prothorax, lateroventral aspect; 12, mesoventrite; 13, metathorax, ventral aspect; 14, *O. breviementia* sp. n., mesoventrite; 15–16: *O. sigmoidea* sp. n.: 15, mesoventrite; 16, right metathoracic wing, dorsal aspect.



FIGURES 17–21. *Ora sigmoidea* sp. n., female terminalia. 17, tergite 8; 18, detail of plate of tergite 8; 19, sternite 8; 20, ovipositor; 21, detail of coxite and stylus.

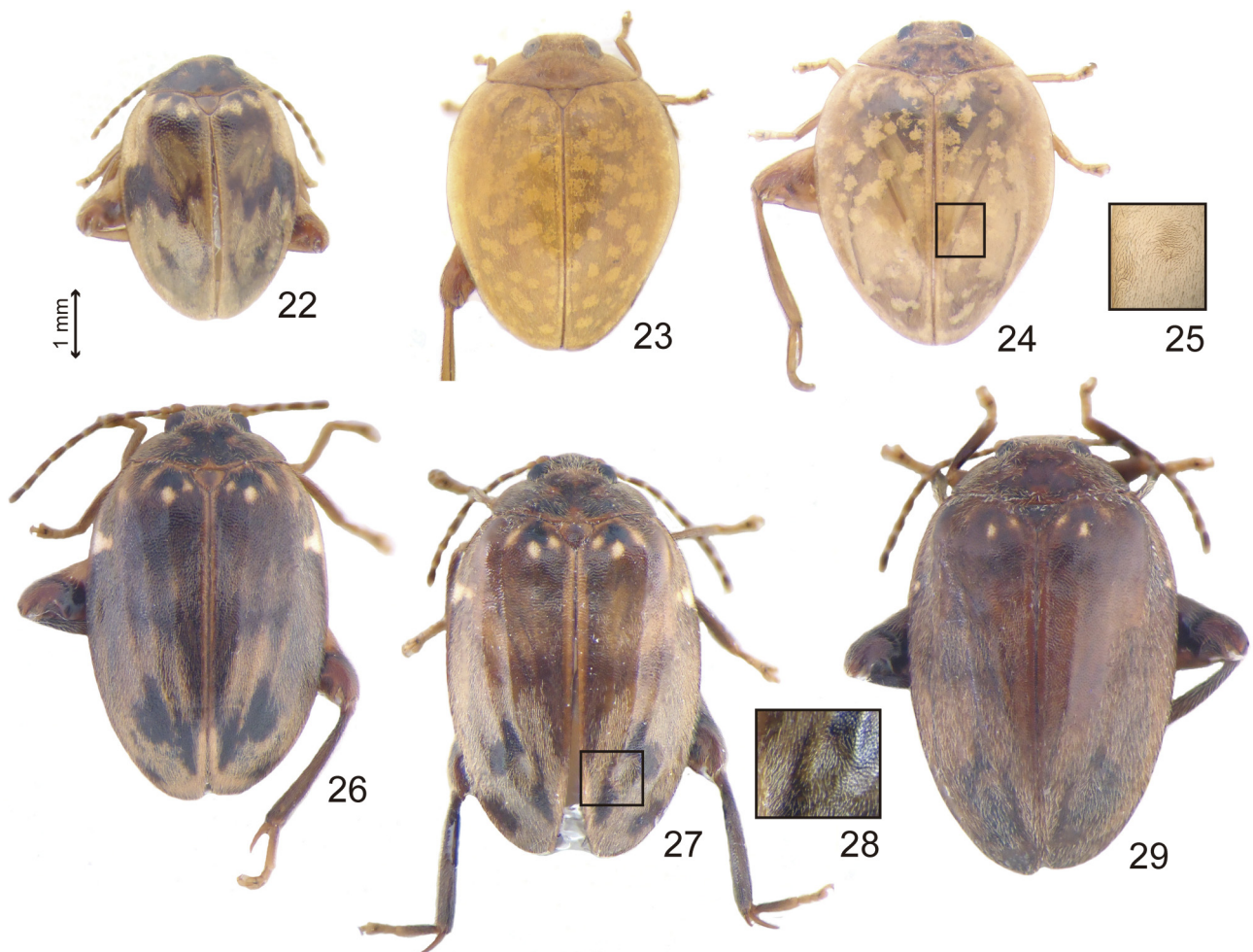
***Ora breviementia* sp. n.**

Type material. Holotype: ♂ (MACN), “ARGENTINA: Corrientes / 28° 3’ 39” S 58° 9’ 32” W / 10.xii.2012, light trap / MC Michat & PLM Torres” [white label, printed], “HOLOTYPUS / *Ora breviementia* / Libonatti, 2014” [red label, printed]. Paratypes (all bearing yellow, printed label “PARATYPUS / *Ora breviementia* / Libonatti, 2014”): 1 ♂ (AC), “Argentina. Prov. Corrientes. Ituzaingó dic. 1995. Leg. D. Carpintero. CDT”; 1 ♀ (MACN), same locality label as holotype; 2 ♀ (MACN), 2 ♀ (NHM), “ARGENTINA: Corrientes / PN Mburucuyá: A° Portillo / 28° 2’ 11” S 58° 6’ 33” W / 11.xii.2012, light trap / MC Michat & PLM Torres” [white label, printed].

Additional material studied. 1 ♀ (MACN), “MISIONES / San Ignacio / B. & W. Bade” [white label, printed], “*Scirtes* / sp.” [white, handwritten label]; 1 ♀ (MLLC), “ARGENTINA / Misiones: PN Iguazú / 27.xii.2010, light trap / MC Michat” [white label, printed].

Diagnosis. Body oval, elytral color pattern composed of a basal more or less rectangular brown spot enclosing 2–3 testaceous spots and a medial angulate brown fascia enclosing a yellowish trifurcate mark (Fig. 22); tegmen and penis tightly attached to each other, lateroapical surface of aedeagus spiny, tegmen slightly asymmetrical, its lateral margins spiny, penis foot-shaped, composed of a horizontal piece and an elongate vertical piece with a short left-handed protuberance (Figs. 37, 38); bursal sclerite with an evenly rounded anterior margin (Fig. 47), prehensor composed of two dorso-ventral laminar sclerites and a fold surrounding its anterior part (Fig. 48).

Description. *Measurements.* Males (n = 2): TL 3.71–4.04 (mean 3.88) mm, PL 0.67–0.77 (mean 0.72) mm, PW 1.62–1.73 (mean 1.68) mm, EL 3.27–3.53 (mean 3.40) mm, EW 2.55–3.25 (mean 2.90) mm. Females (n = 7): TL 3.51–4.17 (mean 3.92) mm, PL 0.61–0.77 (mean 0.70) mm, PW 1.54–1.70 (mean 1.67) mm, EL 2.97–3.71 (mean 3.43) mm, EW 2.47–2.79 (mean 2.63) mm.



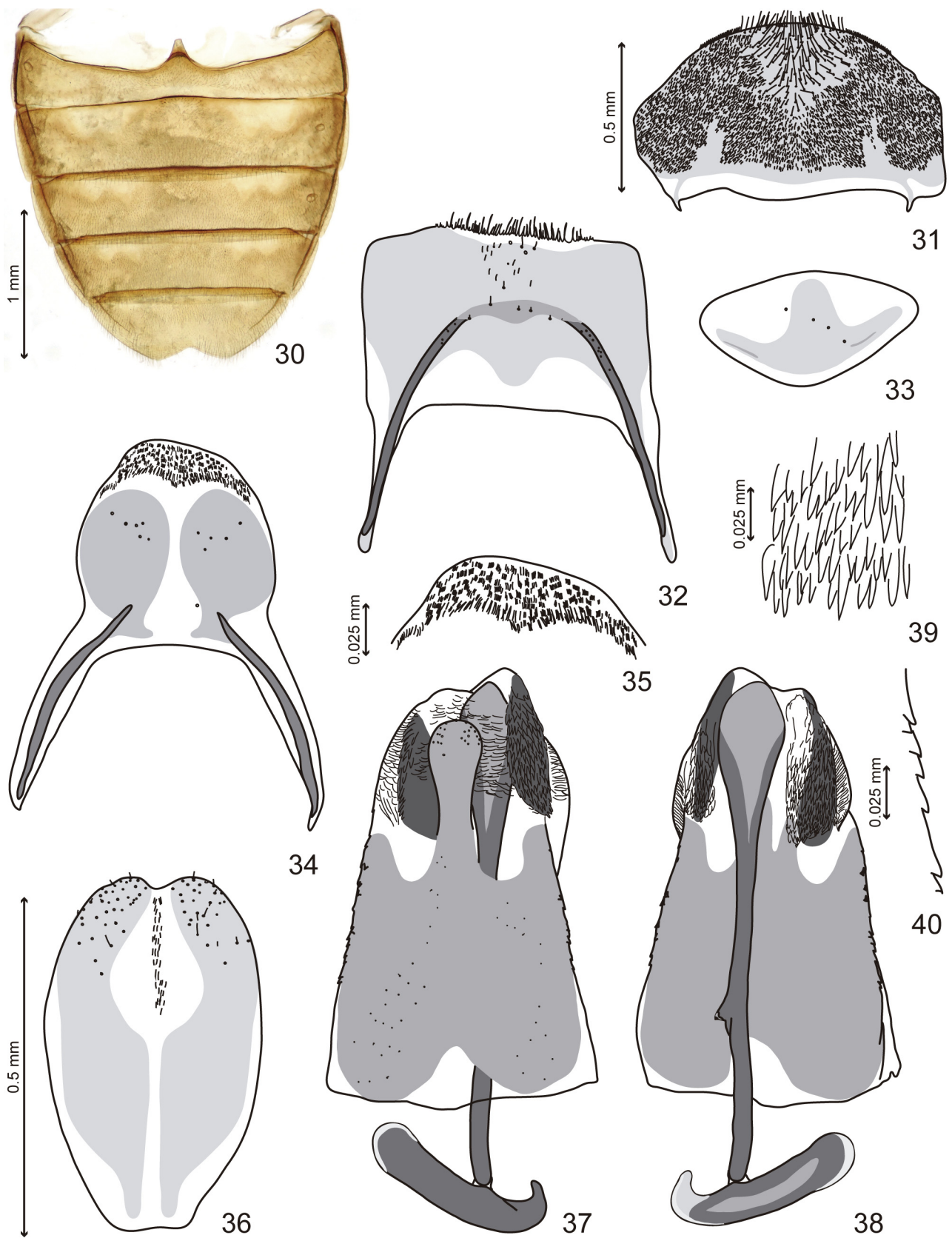
FIGURES 22–29. New species of *Ora* from Argentina, habitus. 22, *Ora breviementia* sp. n., male holotype; 23–25, *O. megadepressa* sp. n.: 23, male paratype; 24, female paratype; 25, detail of female elytron in rectangular area indicated on habitus; 26–29, *O. sigmoidea* sp. n.: 26, male holotype; 27, female paratype; 28, detail of female elytron in rectangular area indicated on habitus; 29, female paratype.

Habitus. Oval, maximum width at the end of the basal third of the elytra, closely covered with yellowish setae (Fig. 22).

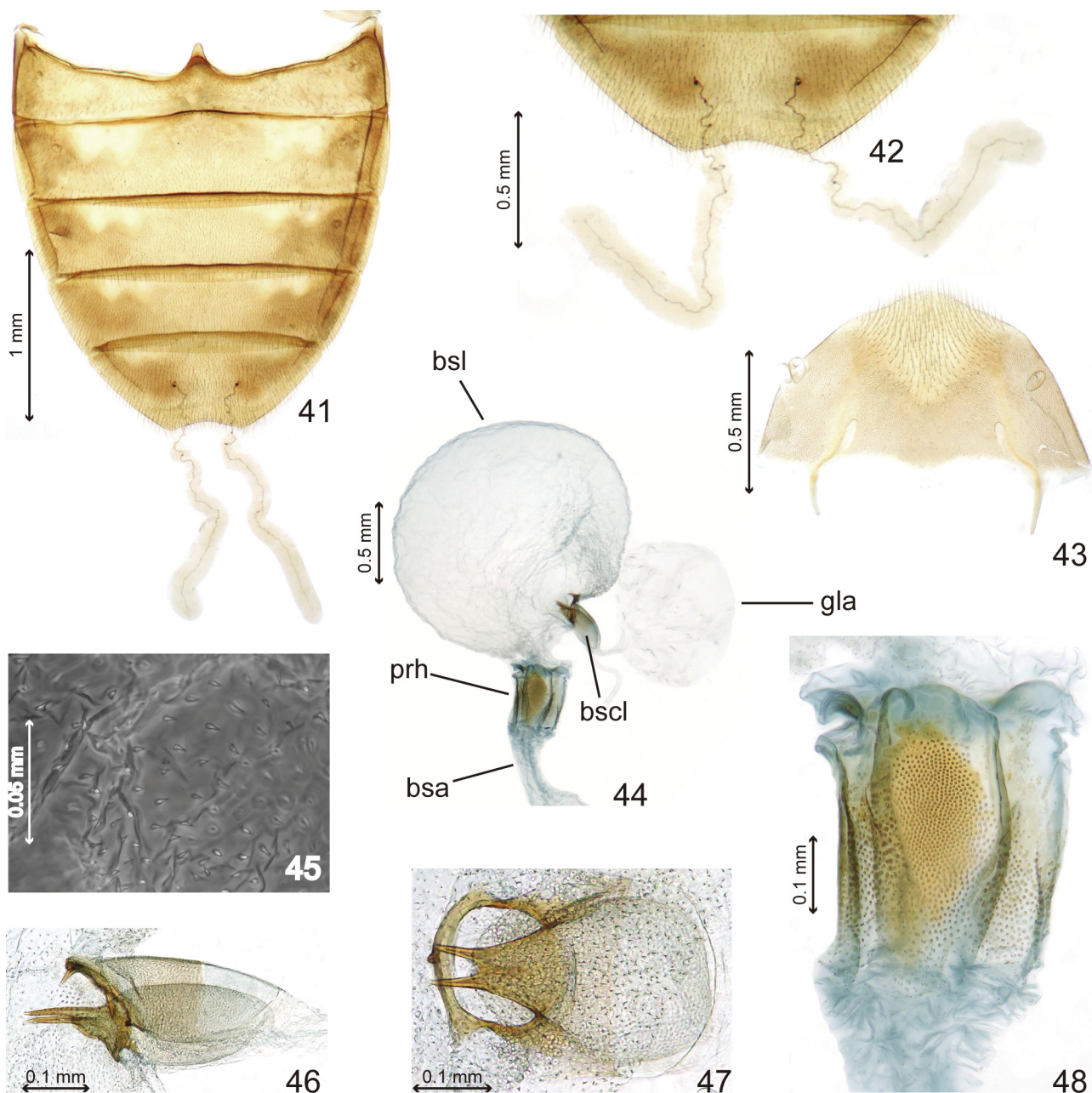
Coloration. Head brown with a reddish testaceous frontal V-shaped mark between the eyes, anterolateral parts of clypeus and labrum reddish testaceous, mouthparts and antennomeres 1–2 testaceous, antennomere 3 brownish testaceous with apex testaceous, antennomeres 4–11 brownish testaceous with base and apex testaceous. Pronotum brown, margins and a pair of central spots reddish testaceous, anterior and posterior margins with a medial triangular reddish testaceous mark extending approximately one-third of the pronotal length. Scutellum brownish testaceous. Elytra yellowish testaceous with a basal more or less rectangular brown spot enclosing 2–3 testaceous spots, outer posterior apex of the brown spot extending posteriorly until contacting a medial angulate brown fascia; the fascia together with an additional brown spot enclosing a yellowish trifurcate mark. Ventral surface testaceous, with the apex of the posterior femur and lateral parts of the abdomen brown.

Head. Wide, approximately 1.9x wider than interocular space, clypeal surface convex (Fig. 1); punctuation very fine, punctures separated by 2.0x diameter. Antennae filiform, with apical margins of antennomeres 4–10 not projected anteriorly, approximate ratio of antennomeres: 1.4: 1.0: 1.0: 2.1: 1.8: 1.8: 1.8: 1.8: 1.6: 1.6: 1.8, approximate L/W ratios of antennomeres: 1.8, 1.4, 2.0, 3.5, 3.0, 3.0, 3.0, 3.0, 2.7, 2.7, 3.0. Mandibles with acute apex (Figs. 5, 6).

Thorax. Pronotum approximately 2.4x wider than long, anterolateral angles rounded, strongly projecting anteriorly, lateral margins slightly rounded, almost straight (Fig. 1); punctuation of pronotum and scutellum very fine, punctures separated by 2.0–3.0x diameter. Elytra depressed anterolaterally, humerus well marked, lateral



FIGURES 30–40. *Ora breviementia* sp. n., male holotype. 30, abdomen, ventral aspect; 31, tergite 7; 32, tergite 8; 33, sternite 8; 34, tergite 9; 35, detail of apical microsculpture of tergite 9; 36, sternite 9; 37, aedeagus, dorsal aspect; 38, aedeagus, ventral aspect; 39, posterolateral microsculpture of aedeagus; 40, lateral microsculpture of aedeagus.



FIGURES 41–48. *Ora breviementia* sp. n., female paratype. 41, abdomen, ventral aspect; 42, ventrite 5; 43, tergite 7; 44, genital organs (except ovaries), dorsal aspect; 45, microsculpture of bursella; 46, bursal sclerite, dorsal aspect; 47, bursal sclerite, anterior aspect; 48, prehensor, dorsal aspect. Abbreviations: bsa: bursa, bscl: bursal sclerite, bsl: bursella, gla: accessory gland, prh: prehensor.

margins evenly rounded; punctation uniform, very coarse, punctures separated by 0.5–1.0x diameter, covered with long setae. Mesoventral process elongate, thin, with very subtly notched apex (Fig. 14). Approximate length ratio of metatarsomere 1: dorsal metatibial spur: ventral metatibial spur: 2.6: 2.3: 1.0.

Abdomen. Completely covered with short yellowish setae except for the pair of glabrous regions on ventrites 2–5. Apex of ventrite 5 triangularly concave (Figs. 30, 41).

Male terminalia and genitalia. Tergite 8 with apodemes converging posteriorly, fusing into a U-shaped sclerotized cross-piece, plate square-shaped with setae and pores on central part and long microtrichia on apical margin, rows of minute microtrichia on lateral parts (Fig. 32). Sternite 8 more or less triangular, weakly sclerotized along anterior margin (Fig. 33). Tergite 9 rounded, with a pair of sclerotized apodemes converging posteriorly, posterior margin with tufts of short microtrichia (Figs. 34, 35). Sternite 9 apically bilobed, with apodemes curved inwards, posterior part with setae and pores, central part with tufts of minute microtrichia (Fig. 36). Tegmen and

penis rather fused, forming a single piece (Figs. 37, 38). Tegmen membranous, slightly asymmetrical, with a medial subapical digitiform outgrowth; microsculpture consisting of pores on the digitiform outgrowth, pores and minute setae throughout the medial part, and minute spines along both sides (Fig. 40). Lateroapical parts of aedeagus with elongate spines (Fig. 39). Penis asymmetrical, foot-shaped, composed of a horizontal basal piece connected to an elongate vertical piece with more or less rounded apex and a short left-handed triangular lateral outgrowth (Fig. 38).

Female genitalia. Bursal sclerite: anterior part with a single spine and evenly rounded margin, middle part with two spines (Figs. 44, 46, 47). Prehensor composed of two laminar pieces, one located on the ventral surface and the other on the dorsal surface of the bursa, with a fold surrounding the anterior part; microsculpture composed of small spines (Figs. 44, 48).

Sexual dimorphism. Tergite 7 with a fringe of microtrichia along both lateral parts of the posterior margin in males (absent in females) (Fig. 31), with longer apodemes in females than in males, projected medially in females (Fig. 43), evenly rounded and not projected medially in males (Fig. 31). Ventrite 5 with posterior concavity much deeper in males than in females (Figs. 30, 41).

Intraspecific variation. Some specimens (the one from Iguazú National Park and two females from Mburucuyá National Park) have three very subtly marked costulae on elytra.

Etymology. This species is named from the Latin words *brevis*, meaning “short”, and *eminentia*, meaning “protuberance”, in reference to the short lateral outgrowth of the penis.

Remarks. The elytral color pattern of *Ora breviementia* sp. n. is somewhat similar to that of *O. gamma* Champion (from Brazil) and *O. platensis* Brèthes (from Buenos Aires Province); the three species have a trifurcate pale mark enclosed by brown areas. In comparison with the new species, these have the anterior margin of the pronotum more arched, the anterolateral angles much less projected, a smaller PW/PL ratio (approximately 2.2 in *O. gamma* and in *O. platensis* vs. 2.4 in *O. breviementia*), a more depressed body, and a larger TL/EW ratio (approximately 1.6 in *O. gamma* and approximately 1.8 in *O. platensis* vs. 1.4 in *O. breviementia*). Moreover, *O. breviementia* differs from *O. gamma* in having coarser punctation on elytra, the head and pronotum brown and a brown basal rectangular spot on elytra. *Ora breviementia* seems most closely related to *O. platensis* since both species have similar general morphology of the aedeagus, but it differs from the latter in having the digitiform outgrowth of the tegmen situated more centrally and with the base narrowed, the setae over the tegmen surface shorter, and the penis more uniformly elongate with the left-handed protuberance shorter and triangular.

***Ora megadepressa* sp. n.**

Type material. Holotype: ♂ (MACN), “ARGENTINA: Corrientes / 28° 3' 39" S 58° 9' 32" W / 10.xii.2012, light trap / MC Michat & PLM Torres” [white label, printed], “HOLOTYPUS / *Ora megadepressa* / Libonatti, 2014” [red label, printed]. Paratypes (all bearing same locality label as holotype and a yellow, printed label “PARATYPUS / *Ora megadepressa* / Libonatti, 2014”): 2 ♂ and 1 ♀ (MACN), 2 ♂ and 1 ♀ (NHM).

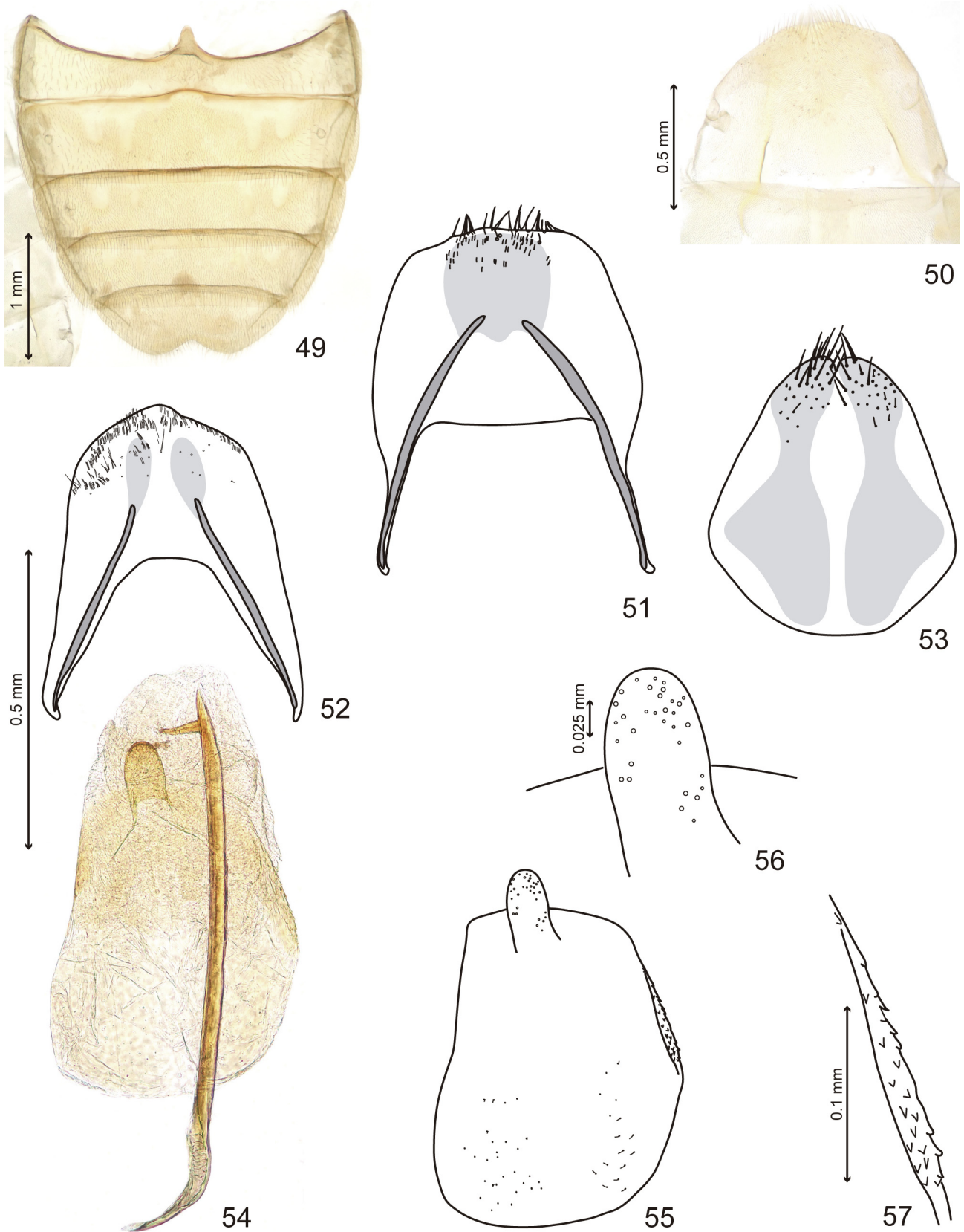
Diagnosis. Body broadly oval (Figs. 23, 24), hypomera and epipleura distinctly broad; left-handed surface of the tegmen spiny (Figs. 55, 57), penis rod-shaped, straight in its major part, its base abruptly bent to the right hand side and its subapical projection right-handed and long (Fig. 54); bursal sclerite with markedly emarginate margin (Fig. 62), prehensor membranous, composed of numerous folds (Fig. 63).

Description. *Measurements.* Males (n = 5): TL 4.33–4.63 (mean 4.48) mm, PL 0.73–0.78 (mean 0.75) mm, PW 2.24–2.39 (mean 2.31) mm, EL 3.90–4.09 (mean 3.95) mm, EW 3.26–3.46 (mean 3.39) mm. Females (n = 2): TL 4.43 mm, PL 0.71–0.73 (mean 0.72) mm, PW 2.14–2.29 (mean 2.22) mm, EL 3.80 mm, EW 3.51 mm.

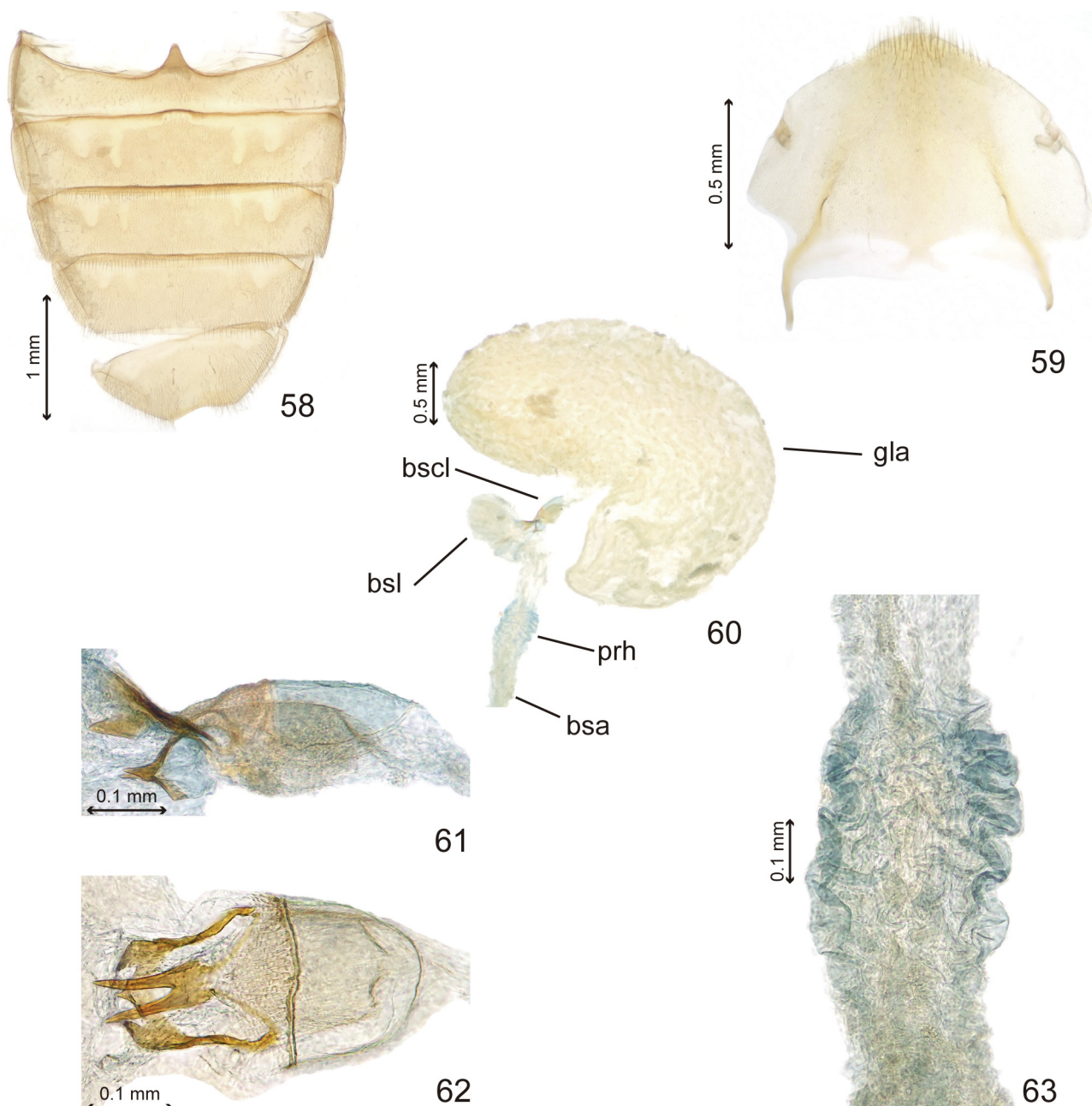
Habitus. Broadly oval, strongly dorsoventrally compressed, maximum width at basal third of elytra, closely covered with yellowish-brownish setae (Figs. 23, 24).

Coloration. Body yellow, head and pronotum somewhat brownish, elytra with many pale marks and a row of minute brown spots parallel to the elytral suture, antennae brownish, hind femur reddish.

Head. Wide, approximately 1.9x wider than interocular space, clypeal surface flat; punctation very fine, punctures separated by 2.0x diameter. Antennae subtly serrate, with apical margins of antennomeres 4–10 slightly projected anteriorly, approximate ratio of antennomeres: 1.4: 1.1: 1.0: 2.0: 2.0: 1.8: 1.8: 1.8: 1.6: 1.6: 1.8, approximate L/W ratios of antennomeres: 1.4, 1.4, 1.4, 2.5, 2.5, 2.3, 2.3, 2.3, 2.0, 2.0, 2.3. Mandibles with obtuse apex (Fig. 4).



FIGURES 49–57. *Ora megadepressa* sp. n., male holotype. 49, abdomen, ventral aspect; 50, tergite 7; 51, tergite 8; 52, tergite 9; 53, sternite 9; 54, aedeagus, dorsal aspect; 55, tegmen; 56, apical microsculpture of tegmen; 57, lateral microsculpture of tegmen.



FIGURES 58–63. *Ora megadepressa* sp. n., female paratype. 58, abdomen, ventral aspect; 59, tergite 7; 60, genital organs (except ovaries), dorsal aspect; 61, bursal sclerite, dorsal aspect; 62, bursal sclerite, anterior aspect; 63, prehensor, dorsal aspect.

Thorax. Pronotum approximately 3.3x wider than long, anterolateral angles sharply projecting anteriorly, lateral margins straight; punctation of pronotum and scutellum similar to that on head. Elytra lacking costulae, very depressed anterolaterally, humerus well marked, lateral margins fairly rounded, acuminate posteriorly; punctation composed of very fine punctures separated by 2.0–3.0x diameter, intermixed with coarse punctures twice the size and separated by 5.0–6.0x diameter; the fine punctures bearing shorter and more horizontal setae, the coarse punctures bearing longer and more erect setae, dark or light depending on the angle of light direction; elytra with a row of submarginal punctures parallel to elytral suture. Hypomera and epipleura very broad. Mesoventral process elongate, thin, with acute apex (Fig. 12). Approximate length ratio of metatarsomere 1: dorsal metatibial spur: ventral metatibial spur: 3.5: 3.1: 1.0.

Abdomen. Lateral and posterior parts of each abdominal ventrite covered with long setae, rest of the abdominal surface covered with short setae, except for the glabrous regions. Apex of ventrite 5 triangularly concave (Figs. 49, 58).

Male terminalia and genitalia. Tergite 8 with sclerotized apodemes converging posteriorly, posterior margin arcuate, with setae, pores and short microtrichia on central part and long microtrichia on apical margin (Fig. 51). Sternite 8 not distinct. Tergite 9 rounded, with a pair of sclerotized apodemes converging posteriorly, posterior margin with pores, setae and tufts of short microtrichia (Fig. 52). Sternite 9 apically bilobed, with a pair of sclerotized strips curved on inner side, posterior part with setae and pores (Fig. 53). Tegmen membranous, asymmetrical, with an apical digitiform outgrowth; microsculpture consisting of pores on the digitiform outgrowth, pores and minute setae throughout the basal part, and a spiny region on the left-handed side (Figs. 54–57). Penis asymmetrical, rod-shaped, major part straight, base abruptly curved to the right-handed side, subapical triangular process projected to the right-handed side (Fig. 54).

Female genitalia. Bursal sclerite: anterior part with one small spine and markedly emarginate margin, middle part with a pair of narrow spines (Figs. 60–62). Prehensor membranous with numerous folds (Figs. 60, 63).

Sexual dimorphism. Female with brown spots on head and pronotum, and with two groupings of short dark setae on elytra: one occupying an elongate portion of elytral surface situated at middle of elytral length adjacent to the elytral suture, and the other covering a rounded portion of the surface, approximately at the same level of the former one but more external (Figs. 24, 25). Tergite 7 more projected medially in females than in males (Figs. 50, 59). Ventrite 5 with posterior concavity much deeper in males than in females (Figs. 49, 58).

Etymology. This species is named *megadepressa* since it is very similar in habitus and morphology of male genitalia to *Ora depressa* (Fabricius, 1801) but it is larger.

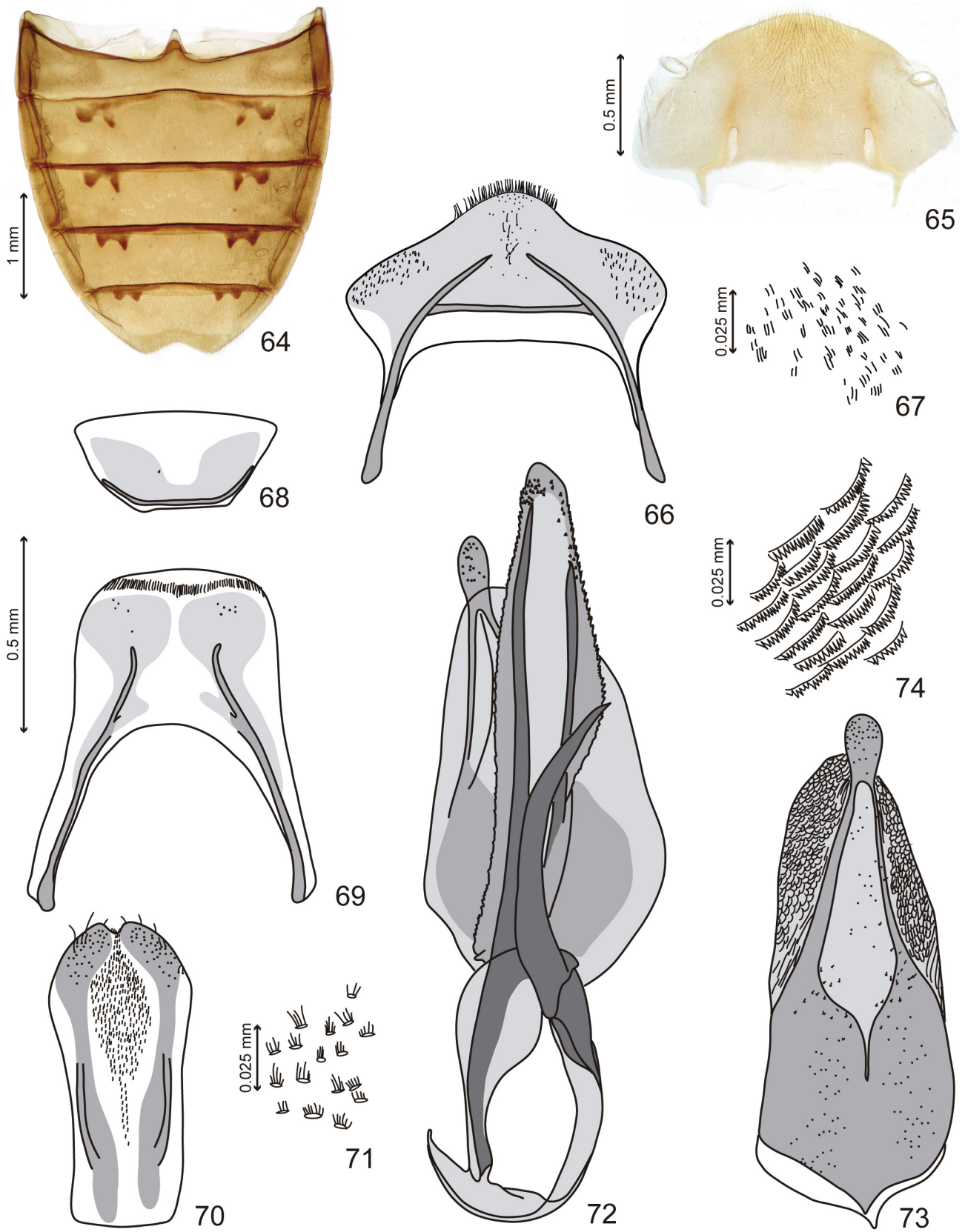
Remarks. The broadly oval, depressed body shape and the intermixed coarser punctures on elytra are shared with *O. discoidea* Champion (from Mexico, Guatemala and Honduras), *O. marmorata* Champion (from Panama, Trinidad and Brazil), *O. mixta* Champion (from Guatemala), *O. obliqua* Champion (from Mexico and Guatemala) (Champion 1897), *O. bivittata* Pic (from Brazil), *O. semibrunnea* Pic (from Brazil), *O. bruchi* Pic (Libonatti, unpublished results) and *O. depressa* (Fabricius) (from South America) (Ruta, personal communication 2014). *Ora megadepressa* sp. n. differs from the other Neotropical species in its smaller TL/EW ratio and in the body color (*O. discoidea*, *O. obliqua* and *O. bivittata* bear a brown vitta on each elytron, *O. marmorata* and *O. bruchi* exhibit brown maculated elytra, and *O. semibrunnea* has dark brown head and pronotum). The new species seems most closely related to *O. depressa*, recently redescribed by Ruta (2013). Both species share a rod-shaped penis with a subapical lateral projection. Differences between both species are summarized in Table 1.

TABLE 1. Comparison of *Ora megadepressa* sp. n. and *O. depressa* Fabricius.

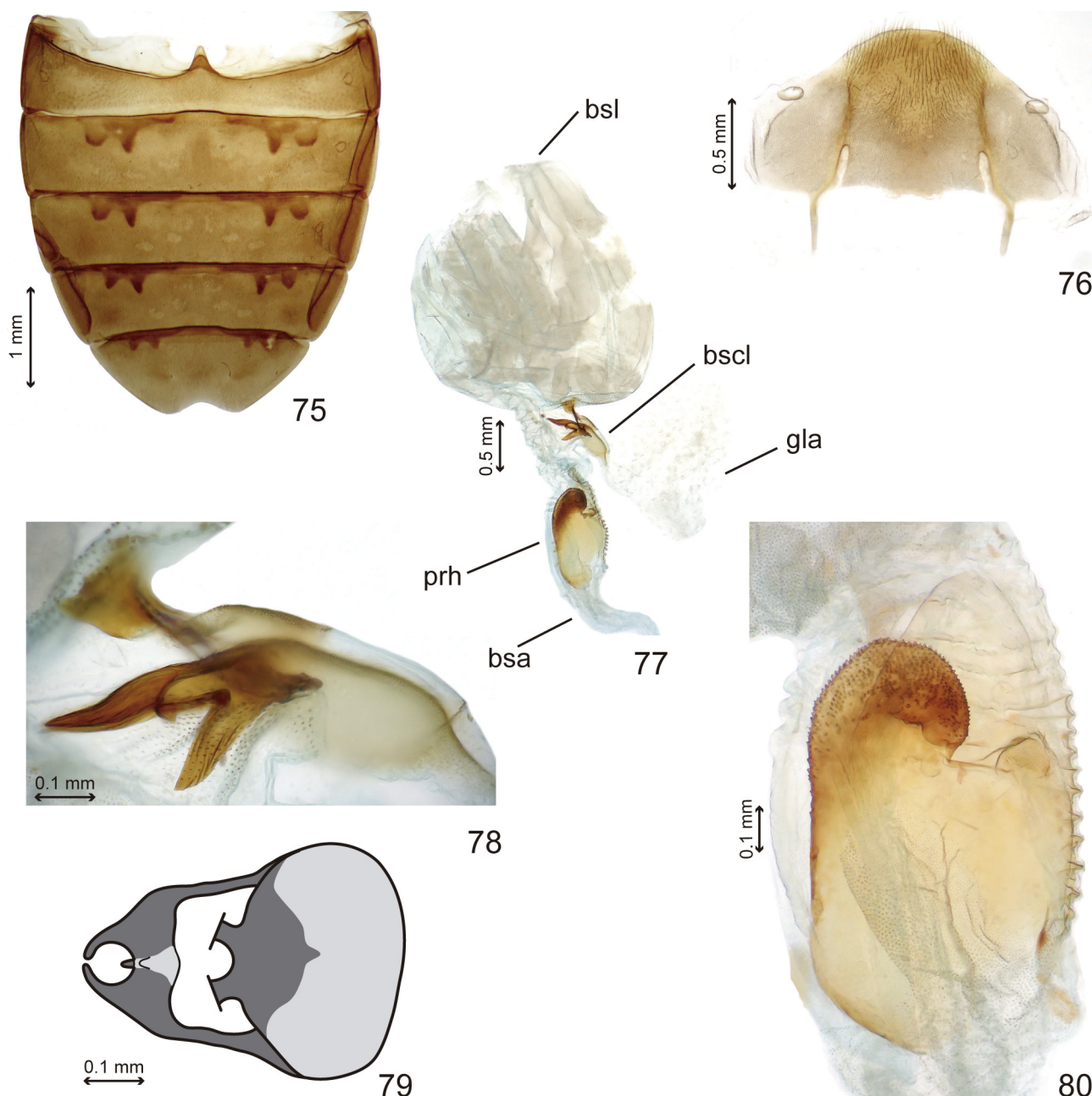
	<i>Ora megadepressa</i> (Figs. 54–57)	<i>Ora depressa</i> (see Ruta 2013: Figs. 3A, 3B, 4)
Body shape	Broader, smaller ratio TL/EW (mean: 1.13 for male, 1.17 for female); elytra acuminate posteriorly	Narrower, higher ratio TL/EW (mean: 1.41 for male, female unknown); elytra not acuminate posteriorly
Color of elytra	With pale marks	Uniformly yellow
Tegmen	Left-handed side with a spiny surface; basal part of digitiform outgrowth little narrowed	Lacking spiny surface; basal part of digitiform outgrowth strongly narrowed
Penis	Straight in most of its length, base abruptly curved to the right-handed side; subapical process longer and projected to the right-handed side	Evenly curved along its length; subapical process shorter and projected to the left-handed side

Ora sigmoidea sp. n.

Type material. Holotype: ♂ (MACN), “ARGENTINA: Buenos Aires / Reserva El Destino / 26.xi.2012 / vegetated ditch / beating riparian trees / ML Libonatti” [white label, printed], “HOLOTYPUS / Ora sigmoidea / Libonatti, 2014” [red label, printed]. Paratypes (all bearing yellow, printed label “PARATYPUS / Ora sigmoidea / Libonatti, 2014”): 1 ♀ (MACN), same locality label as holotype; 2 ♂ and 11 ♀ (MACN), same locality label as holotype except 25.xi.2012; 1 ♂ and 1 ♀ (NHN), same locality label as holotype except 21.xi.2011.



FIGURES 64–74. *Ora sigmoidea* sp. n., male holotype. 64, abdomen, ventral aspect; 65, tergite 7; 66, tergite 8; 67, lateral microsculpture of tergite 7; 68, sternite 8; 69, tergite 9; 70, sternite 9; 71, medial microsculpture of sternite 9; 72, aedeagus, ventral aspect; 73, tegmen; 74, posterolateral microsculpture of tegmen.



FIGURES 75–80. *Ora sigmoidea* sp. n., female paratype. 75, abdomen, ventral aspect; 76, tergite 7; 77, genital organs (except ovaries), dorsal aspect; 78, bursal sclerite, dorsal aspect; 79, bursal sclerite, anterior aspect; 80, prehensor, dorsal aspect. Abbreviations: bsa: bursa, bscl: bursal sclerite, bsl: bursella, gla: accessory gland, prh: prehensor.

Additional material studied. 1 ♀ (BR), “R^{EP} ARGENTINA / Prov. Buenos Aires / XI. 1894 / C. Bruch” [white label, printed], “*Scirtes / brevenotatus / var. Pic*” [white label, handwritten by Bruch], “*Scirtes / brevenotatus / var. Pic*” [white label, handwritten by Pic]; 1 ♀ (BR): “R^{EP} ARGENTINA / Prov. Buenos Aires / 189 / C. Bruch” [white label, printed]; 1 ♀ (BR): “R^{EP} ARGENTINA / Prov. Buenos Aires / 190 / C. Bruch” [white label, printed]; 1 ♂ (MACN), “Delta del Paraná - Río / Paraná de las Palmas / Estac. Exp. Agropec. INTA / Leg. Oliva A la luz” [white label, handwritten]; 1 ♂ (MACN), “Delta del Paraná – Río / Sarmiento Leg. Oliva” [white label, handwritten]; 1 ♂ (MACN), “Delta del Paraná - Río / Sarmiento / II.1976 / Leg. Oliva” [white label, handwritten]; 2 ♂ and 1 ♀ (MACN), “Delta del Paraná - Río / Sarmiento / I.1977 / Leg. Oliva” [white label, handwritten].

Diagnosis. Size relatively large, body elliptical, broad, elytral color pattern composed of five basal pale spots, pale vittae and a black trifurcate subapical mark, elytra with four costulae (Figs. 26, 27, 29); tegmen with minute setae (Fig. 73), dorsal piece of penis laminar, with apical part and lateral margins spiny, apex obliquely truncate,

ventral piece of penis sigmoid (Fig. 72); anterior margin of bursal sclerite with a semicircular emargination (Fig. 79), prehensor boxing-glove-shaped, with right-handed anterior part spiny (Fig. 80).

Description. *Measurements.* Males (n = 9): TL 4.92–5.55 (mean 5.29) mm, PL 0.78–0.97 (mean 0.90) mm, PW 2.00–2.29 (mean 2.10) mm, EL 4.14–4.92 (mean 4.51) mm, EW 2.92–3.56 (mean 3.32) mm. Females (n = 17): TL 4.87–6.02 (mean 5.50) mm, PL 0.78–1.02 (mean 0.92) mm, PW 2.00–2.53 (mean 2.28) mm, EL 4.14–5.65 (mean 4.82) mm, EW 2.98–3.70 (mean 3.40) mm.

Habitus. Elliptical, broad, depressed, maximum width at middle of elytra, closely covered with yellowish setae (Figs. 26, 27, 29).

Coloration. Head brown with a frontal V-shaped reddish testaceous mark between the eyes, mouthparts and antennomeres 1–2 testaceous, antennomeres 3–11 brownish testaceous, clypeus and labrum reddish testaceous. Pronotum brown, margins and a pair of central spots reddish testaceous, anterior and posterior margins with a medial triangular reddish testaceous mark extending a third to a quarter of the pronotal length. Scutellum brown with reddish testaceous margins. Elytra brown, basal quarter of elytra having at most five pale testaceous spots: one inverted L-shaped spot adjacent to the scutellum with its base along the anterior elytral margin, two contiguous spots located in a perpendicular line to the lateral margin of scutellum, one elongate spot on the humerus and a transversal spot on the lateral margin behind the humerus, second quarter of elytra light brown, with 2–3 testaceous stripes, posterior half of elytra light brown with an apical trifurcate black mark. Ventral surface brownish testaceous except for the brown apex of the posterior femur and tibia, and a pair of brown marks on the anterior margin of ventrites 2–5.

Head. Rather wide, approximately 2.0x wider than interocular space, clypeal surface convex; punctation fine, dense, punctures separated by 0.5x diameter. Antennae filiform, with apical margins of antennomeres 4–10 not projected anteriorly, approximate ratio of antennomeres: 2.0: 1.0: 1.6: 2.6: 2.6: 2.4: 2.4: 2.2: 2.2: 2.2: 2.2, approximate L/W ratios of antennomeres: 1.7, 1.3, 2.7, 4.3, 4.3, 4.0, 4.0, 3.7, 3.7, 3.7, 3.7. Mandibles with acute apex (Figs. 5, 6).

Thorax. Pronotum approximately 2.4x wider than long, anterolateral angles sharply projecting anteriorly, lateral margins rounded; punctation coarser than on head, punctures separated by 0.5–1.0x diameter. Scutellum with punctation somewhat coarser and more dispersed than on pronotum. Elytra depressed anterolaterally, humerus well marked, lateral margins rounded, with four costulae: the first (inner) costula beginning at the outer adscutellar testaceous spot, the second costula beginning at the apex of the inverted-L-shaped spot, the third costula beginning at the humerus and the fourth (outer) costula beginning behind the testaceous transverse spot, all of them ending at the apical dark spot; punctation uniform, coarser than on head, pronotum and scutellum, punctures separated by 1.0–2.0x diameter. Mesoventral process elongate, thin, with markedly notched apex (Fig. 15). Approximate length ratio of metatarsomere 1: dorsal metatibial spur: ventral metatibial spur: 3.1: 2.6: 1.0.

Abdomen. Completely covered with short yellowish setae except for a pair of glabrous regions on ventrites 2–5, coincident with the brown marks. Apex of ventrite 5 triangularly concave (Figs. 64, 75).

Male terminalia and genitalia. Tergite 8 with sclerotized apodemes converging posteriorly, with a sclerotized cross-piece, posterior margin arcuate, with setae on central part, short microtrichia on lateral parts and long microtrichia on apical margin (Figs. 66, 67). Sternite 8 more or less trapezoidal, weakly sclerotized, more heavily sclerotized along anterior margin (Fig. 68). Tergite 9 more or less square-shaped, with a pair of sclerotized apodemes converging posteriorly, posterior margin rounded, with a row of microtrichia (Fig. 69). Sternite 9 elongate, apically bilobed, with a pair of sclerotized apodemes more or less parallel-sided, almost meeting posteriorly, posterior margin with setae, central part with tufts of minute microtrichia (Figs. 70, 71). Tegmen membranous, slightly asymmetrical, with an apical left-handed digitiform outgrowth; microsculpture consisting of pores on the digitiform outgrowth, pores and minute setae throughout the medial part, and scale-like rows of minute microtrichia on the posterolateral part (Figs. 73, 74). Penis strongly asymmetrical, composed of two pieces: dorsal piece with a long and broad laminar appendix, with lateral margins more or less parallel-sided at base, abruptly and asymmetrically broadened at middle, then converging posteriorly to an obliquely truncate tip, surface near the tip spiny, left margin serrate throughout, right margin serrate along the apical two-thirds, ventral surface furrowed, dorsal surface crossed by two narrow, posteriorly pointed, strongly sclerotized strips; ventral piece sigmoid, ending in a strongly sclerotized, narrow, uniformly curved appendix (Fig. 72).

Female genitalia. Bursal sclerite: anterior part with one spine and arcuately emarginate margin, middle part with a pair of anterior relatively long spines with one minute spine in the middle and one posterior spine (Figs.

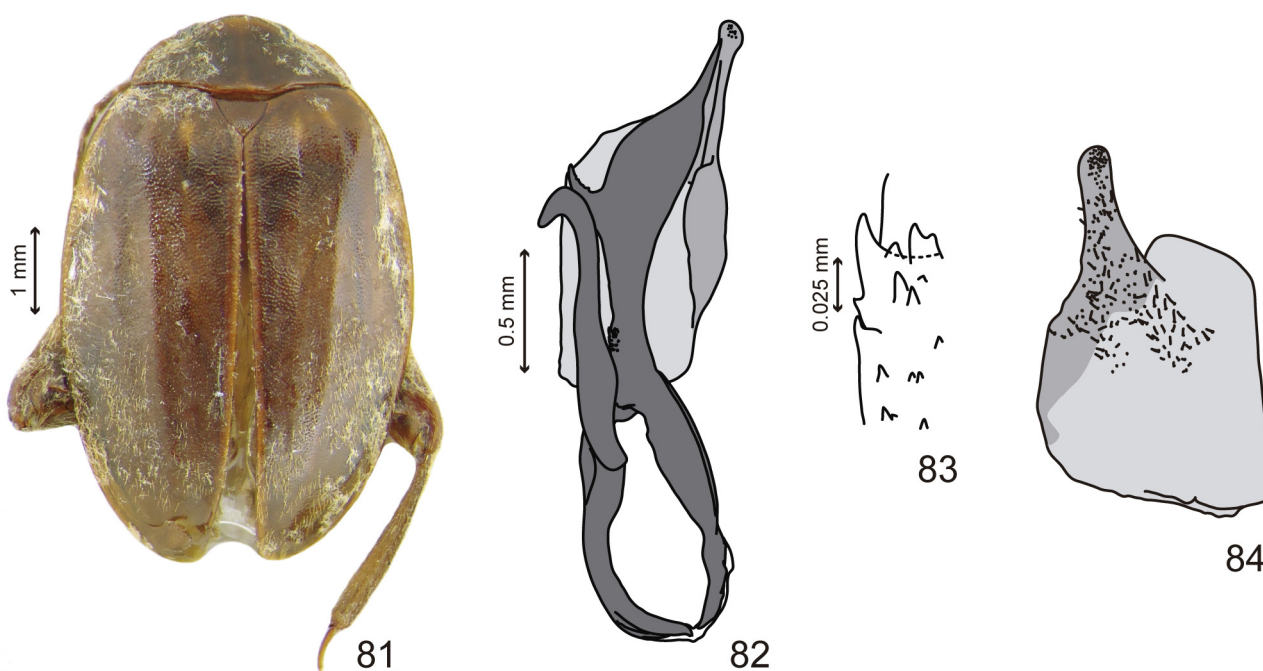
77–79). Prehensor composed of one dorsal boxing-glove-shaped part with the right-handed basal surface covered with minute spines, and one ventral laminar oblong part (Figs. 77, 80).

Sexual dimorphism. Female elytra with two foveae near the apex (Figs. 27, 28): one short longitudinal depression adjacent to the suture and one rounded depression located externally to the former, both closely covered with fine setae; male lacking elytral foveae. Tergite 7 with a fringe of microtrichia along both lateral parts of the posterior margin in males (absent in females), with longer apodemes in females than in males, posterior margin arcuately projected in females and triangularly projected in males (Figs. 65, 76).

Intraspecific variation. Specimens vary in size and in the degree of maculation on elytra. Some specimens are lighter in color and bear four testaceous stripes on each elytron, each located on a costula. Some females have the elytra almost completely brown and the apical dark mark reduced (Fig. 29).

Etymology. This species is named *sigmoidea* in reference to the resemblance of the ventral part of the penis to the Greek letter sigma.

Natural history. Adults were collected by beating riparian trees (mainly *Acacia* sp.) near a small swamp containing fallen leaves in the bottom.



FIGURES 81–84. *Ora brevenotata* (Pic), holotype: 81, habitus, dorsal aspect; 82, aedeagus, ventral aspect; 83, spiny part of penis; 84, tegmen.

TABLE 2. Comparison of *Ora sigmoidea* sp. n., *O. brevenotata* (Pic) and *O. texana* Champion.

	<i>Ora sigmoidea</i> (Figs. 72, 73)	<i>Ora brevenotata</i> (Figs. 82–84)	<i>Ora texana</i> (see Nyholm 1972: Fig. 4A)
Tegmen	Digitiform outgrowth less protruding and more narrowed at base; surface covered with short setae	Digitiform outgrowth more protruding and less narrowed at base; surface covered with long setae	Digitiform outgrowth more protruding and less narrowed at base; setae unknown
Dorsal piece of penis	Laminar, only lateral margins and apical part spiny, much more broadened than in <i>O. texana</i> , apex obliquely truncate, without lateral acute projection	Not laminar, only the medial region spiny, acutely pointed posteriorly and with a lateral acute projection	Laminar, only lateral margins and apical part spiny, much less broadened than in <i>O. sigmoidea</i> , apex acutely rounded, without lateral acute projection
Ventral piece of penis	S-shaped in ventral aspect, much more curved than in <i>O. texana</i> , apical part not abruptly bent	S-shaped in dorsal aspect, apical part abruptly bent	S-shaped in ventral aspect, much less curved than in <i>O. sigmoidea</i> , apical part not abruptly bent

Remarks. The broad elliptical body, the basal pale maculation and the costulae of elytra are features shared with *O. brevenotata* (Pic, 1915) (from Brazil) (Fig. 81). Pic apparently noticed the affinities between these species since the material in BR is labeled as a “variety” of *O. brevenotata*. Furthermore, the general shape of the aedeagus is similar in both species (Figs. 82–84), and also in *O. texana* Champion, 1897 (from southern USA) (Nyholm 1972). However, differences between the aedeagi of the three species are notable and are summarized in Table 2.

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References

- Brèthes, J. (1925) Nouveaux coléoptères Sud Américains. *Nunquam Otiosus*, 4, 11–16.
- Champion, G.C. (1897) Dascillidae. In: Godman, F.D. & Salvin, O. (Eds.), *Biologia Centrali-Americana. Insecta. Coleoptera. Vol. 3. Part 1. Serricornia. Buprestidae. Throscidae and Eucnemidae. Elateridae – Dascillidae*. Smithsonian Institution Libraries, Londres, pp. 586–662.
- Champion, G.C. (1918) New and little-known saltatorial Dascillidae. *Entomologist's monthly magazine*, 54, 93–102, 139–149, 188–198, 219–225, 256–273.
- Clark, H. (1865) An examination of the Halticidae of South America. *The Journal of Entomology. Descriptive and geographical*, 2, 375–412.
- Coleman, C.O. (2002) "Digital inking": How to make perfect line drawings on computers. *Organisms, Diversity & Evolution*, 3 (Electr. Supplement 14), 1–14.
- Fabricius, J.C. (1801) *Systema Eleutheratorum secundum ordines, genera, species adiectis synonymis, locis, observationibus, descriptionibus. Tomus I. Kiliae*, 506 pp.
- Guérin-Ménéville, F.E. (1861) Monographie du nouveau genre *Dicranopselaphus* et description de quelques autres Insectes coléoptères appartenant aussi a la famille des Dascillides. *Revue et magasin de zoologie pure et appliquée*, 2 (13), 531–547.
- Kukalová-Peck, J. & Lawrence, J.F. (1993) Evolution of the hind wing in Coleoptera. *The Canadian Entomologist*, 125, 181–258.
<http://dx.doi.org/10.4039/Ent125181-2>
- Kukalová-Peck, J. & Lawrence, J.F. (2004) Relationships among coleopteran suborders and major endoneopteran lineages: Evidence from hind wing characters. *European Journal of Entomology*, 101 (1), 95–144.
<http://dx.doi.org/10.14411/eje.2004.018>
- Libonatti, M.L., Michat, M.C. & Torres, P.L.M. (2013) Aquatic Coleoptera from two protected areas of the Humid Chaco eco-region (Chaco Province, Argentina). *Revista de la Sociedad Entomológica Argentina*, 72 (3–4), 155–168.
- Nyholm, T. (1972) Zur Morphologie und Funktion des Helodiden-Aedoeagus (Col.) *Entomologica scandinavica*, 3, 81–119.
<http://dx.doi.org/10.1163/187631272X00193>
- Nyholm, T. (2002) *Scirtes japonicus* Kiesenwetter and its allies, with description of *Scirtes ussuriensis* n. sp. (Coleoptera, Scirtidae). *Entomologische Blätter für Biologie und Systematik der Käfer*, 98 (1), 49–60.
- Pic, M. (1915) Descriptions abrégées diverses. *Mélanges exotico-entomologiques*, 12, 3–20.
- Pic, M. (1918) Nouveautés diverses. *Mélanges exotico-entomologiques*, 29, 7–24.
- Pic, M. (1922) Nouveautés diverses. *Mélanges exotico-entomologiques*, 37, 1–32.
- Pic, M. (1928) Notes et descriptions. *Mélanges exotico-entomologiques*, 51, 1–36.
- Ruta, R. (2009) Revision of Scirtidae (Insecta: Coleoptera) described by Victor Ivanovitsch Motschulsky. *Zootaxa*, 2210, 26–50.
- Ruta, R. (2013) Review of Scirtidae (Coleoptera: Scirtoidea) described by Johan Christian Fabricius (1745–1808). *Zootaxa*, 3646 (1), 51–67.
<http://dx.doi.org/10.11646/zootaxa.3646.1.4>
- Watts, C.H.S. (2004) Revision of Australian *Scirtes* Illiger and *Ora* Clark (Coleoptera: Scirtidae). *Transactions of the Royal Society of South Australia*, 128 (2), 131–167.
- Yoshitomi, H. (2005) Systematic revision of the family Scirtidae of Japan, with phylogeny, morphology and bionomics (Insecta: Coleoptera, Scirtoidea). *Japanese Journal of Systematic Entomology Monographic Series*, 3, 1–212.