

NEW SPECIES OF *HYPERASPIS* CHEVROLAT FROM CHILE AND ARGENTINA (COLEOPTERA: COCCINELLIDAE)

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Abstract: Three new species of the genus *Hyperaspis* are described from Chile and Argentina: *H. andina*, n. sp., *H. abscondita*, n. sp. and *H. lanatii*, n. sp. The new species are placed within the South American classification of Gordon & Canepari (2008).

Key words: Coleoptera, Coccinellidae, *Hyperaspis*, taxonomy, new species, Chile, Argentina.

Nuevas especies de *Hyperaspis* Chevrolat de Chile y Argentina (Coleoptera: Coccinellidae)

Resumen: Se describen tres nuevas especies del género *Hyperaspis* de Chile y Argentina: *H. andina*, n. sp., *H. abscondita*, n. sp. e *H. lanatii*, n. sp.. Las nuevas especies son incluidas en la clave de *Hyperaspis* de Sudamérica de Gordon & Canepari (2008).

Palabras clave: Coleoptera, Coccinellidae, *Hyperaspis*, taxonomía, nuevas especies, Chile, Argentina.

Taxonomy/Taxonomía: *Hyperaspis andina* n. sp. *Hyperaspis abscondita* n. sp. *Hyperaspis lanatii* n. sp.

Introduction

The South American taxa of Hyperaspidini were recently revised by Gordon & Canepari (2008) in a publication that provides current classification and species distributions of taxa included in that tribe.

The Chilean *Hyperaspis* fauna historically has been composed of four species forming a compact group: *germainii* Crotch, *funesta* (Germain), *nana* Mader and *sphaeridioides* Mulsant. This fauna is distributed in Central Chile in a long north-south zone ranging from 28 to 42° S between the Pacific coast and the Andean mountains, at an altitude ranging from 0-2000m. Recently one of the authors received two loans containing specimens of a remarkable new species of *Hyperaspis* from northern Chile, Parinacota Province, about 18° S, in the Andean highlands at an altitude of about 3000m. These specimens are the northernmost records of *Hyperaspis* known from Chile.

The Argentinean fauna is comparatively richer and more complex than that of Chile because portions of the country extend into tropical or subtropical areas. Recent examination of Argentinean collections has revealed several new species.

Material and methods

Dissection: Specimens were softened in hot water, abdomen removed, then placed in a dilute KOH solution for about 24 hours, then rinsed and genital structures separated in clear water, then put in glycerin for examination and placed in glycerin in microvials.

Genitalia terminology: following Gordon & Canepari (2008).

Type Material and Collections: Type material was deposited in the following collections: Museo Universidad de Tarapacá, Arica, Chile (UTAR), Museo Nacional de Historia Natural, Santiago, Chile (MNHNS), Juan Enrique Barriga Collection, Curicó, Chile (JEB), Silvio Lanatii Collection, Mendoza, Argentina (SLC), Guillermo González Collection, Santiago, Chile (GGC).

Systematics

Hyperaspis andina González & Gordon, n. sp.

Fig. 1 - 11

DESCRIPTION: Holotype male, length 2.2 mm, width 1.6 mm. Form elongate oval, somewhat flattened dorsoventrally. Color black. Pronotum with lateral 1/8 and narrow anterior border yellow (Fig. 2). Elytra with lateral margin yellow, yellow border leaving margin in apical 1/10 becoming transverse, forming 90° angle near suture, then angled away from suture into anterior 1/2 of elytra, abruptly curved in an “S” shape with apex completely recurved posteriorly (Fig. 1). Antenna, mouthparts brownish yellow, hypomera and epipleura yellow, legs blackish brown with yellow areas, yellow areas mostly on femora, tibia of prolegs. Epipleura with large depression for hind femoral apex, brown, with more feeble depressions for pro- and mesotibiae. Head shiny, punctured, punctures separated by a diameter or less. Antenna with 11 articles. Clypeus and frons joined at abrupt angle. Pronotal punctation dense, uniform in size, punctures twice size of head punctures, equally dense, separated by 0.75 to 1.0X a diameter. Elytral punctures coarse, dense, slightly larger than on pronotum and similarly dense, uniform in size. Metasternum finely, sparsely punctured medially and anteriorly, coarsely, densely punctured laterally and posteriorly with punctures large, often confluent. Each puncture with long, yellow, decumbent seta. Abdominal sternites coarsely punctured, punctures separated by about twice a diameter, punctures becoming coarser laterally and on last sternite. First abdominal sternite with post-coxal line descending, reaching posterior border at a 45° angle, then continuing along border, diagonally angled anteriorly at lateral 1/3, ending at lateral 1/4 of border at 1/2 length of sternite. Apex of 6th abdominal sternite truncate (Fig. 3). Male genital basal lobe with one side continuously curved, opposite side basally tapered with angulate projection at apical 1/3, anterior 2/3 evenly rounded to rounded apex; parameres slightly longer than basal lobe, oblong, inner margin evenly rounded in anterior 1/2.; siphon long, curved in basal 3/4, apical

1/4 with external membranous projection (Fig. 11), basal capsule with inner arm long, outer arm rectangular (Fig. 10).

FEMALE: Length 2.5 mm, width 1.8 mm. Similar to male except lack of yellow anterior pronotal border (Fig. 1). Epipleura brown, legs brown, yellow areas reduced in comparison with male. Sixth sternum rounded apically (Fig. 3). Female genitalia with short genital plates (Fig. 4), spermathecal structure with distal capsule oblong, united with duct twice as long as capsule to basal unit (Fig. 5), basal unit slightly larger than distal capsule, with sclerotized beak $\frac{1}{2}$ as long as duct (Fig. 6).

VARIATION: Length 2,1 - 2,5 mm., width 1,5 - 1.8 mm. Yellow areas on venter variable from yellow to brown.

TYPE MATERIAL: **Holotype** male: CHILE, I Region [Arica, Parinacota Province], Lupica [3.200 mts.], 08/1/[19]97, en oregano, [leg.] R. Mendoza (UTAR). **Paratypes** (3 ejs.). Same data as holotype (1 female.); Arica, [Parinacota Province], Saxamar [2.900 mts.], 7/1/2004 [leg. M.] Ferrú (2 males) (MNHNS, UTAR).

ETYMOLOGY: The name *andina* refers to the Andean mountain chain where specimens of this species were found.

REMARKS: *Hyperaspis andina* is distinguished from other South American *Hyperaspis* by the elytral pattern, unusual blackish legs, and northern Chile distribution. The species belongs to *Hyperaspis* Section I (Gordon & Canepari 2008). Within that Section it is placed in the *joannae* group, based on siphonal form of the male genitalia. All other Chilean *Hyperaspis* species belong to Section II, but *H. andina* is most similar to species known from more tropical regions. The only biological data available is mention of the plant "oregano" (*Origanum vulgare*), no prey records are recorded.

***Hyperaspis abscondita* González & Gordon, n. sp.**

Fig. 12 - 21

DESCRIPTION: Holotype male, length 2.9 mm, width 2.1 mm. Form oval, somewhat flattened dorsoventrally. Color yellow brown. Pronotum entirely light yellow except median basal border brownish black in median 2/3, 2 lateral spots pale brown (Fig. 12). Elytra blackish brown with lateral margin yellow, yellow border leaving margin in apical 1/10, becoming transverse, forming 90° angle near suture, then angled away from suture onto anterior $\frac{1}{2}$ of elytra, abruptly curved in an elongate "S" shape, connected at end with basal transverse spot (Fig. 12). Antenna yellow. Mouthparts brownish yellow, hypomeron and epipleuron yellow, legs yellow with brownish tinge. Ventral surface blackish brown. Epipleuron with large depression for hind femoral apex, yellow, with more feeble depressions for pro- and mesotibiae. Head shiny, punctures separated by 1 to 2X a diameter, space between punctures with visible microreticulation. Antenna with 10 articles (Fig. 21). Clypeus and frons joined at abrupt angle. Pronotal punctation dense, uniform in size, punctures slightly larger than head punctures, equally dense, separated by 1.0 to 2.0X a diameter. Base of pronotum with fine, raised line medially, line sepa-

rated from posterior border by 1/10 pronotal length. Elytral punctures fine, slightly less dense and smaller than on pronotum, uniform in size, microreticulation nearly absent. Metasternum finely, sparsely punctured medially, coarsely, densely punctured laterally, lateral punctures large, separated by about a diameter, often confluent, each puncture with long, yellow, decumbent seta. Median depression with fine, irregular, effaced line, in apical 1/3 strongly raised as a continuation of raised anterior margin. Abdominal sternites coarsely punctured, punctures separated by about twice a diameter, punctures becoming coarser laterally and on last sternite. First abdominal sternite with postcoxal line descending, reaching posterior border at 45° angle, continued along posterior border, then diagonally angled anteriorly at lateral 1/4, ending at lateral 1/5 of border at $\frac{1}{2}$ length of sternite. Apex of sixth abdominal sternite nearly truncate, slightly emarginate (Fig. 13). Genital basal lobe with one side straight, curved in semicircle in apical 1/4, opposite side straight with angulate projection at apical 1/3; parameres 1/3 longer than basal lobe, oblong, inner margin evenly rounded in anterior $\frac{1}{2}$ (Fig. 14, 15); siphon long, curved in basal 1/4, apical 1/4 with external, trumpet shaped membranous projection, basal capsule with inner arm short, trapezoidal, outer arm long, parallel sided, rectangular with irregular apex, about 1 $\frac{1}{2}$ times longer than wide (Fig. 16).

FEMALE: Similar to male except head black. Pronotum black with lateral margin and basal external marginal 1/6 yellow (Fig. 18). Elytral yellow border reduced, basal spot not joined to central vitta (Fig. 18). Sixth abdominal sternum rounded apically (Fig. 19). Genital plates short (Fig. 20), spermathecal structure with distal capsule oblong, united to basal unit with duct twice as long as capsule, basal unit 1.5X larger than distal capsule, missile like, with large, sclerotized beak 2/3 as long as basal unit (Fig. 20).

VARIATION: Length 2.9 -3.0 mm.

TYPE MATERIAL: Holotype male: Argentina, Santa Fe, II-1960, leg E. Tapia. Ex. Col. M. Viana, Col. J.E. Barriga (JEB). Paratype (1), same data as holotype (female) (JEB).

ETYMOLOGY: The specific name is from the Latin *conditus*, meaning hide, concealed, in reference to the lack of specimens in collections.

REMARKS: *Hyperaspis abscondita* is superficially similar to other South American *Hyperaspis* with longitudinal elytral vittae, such as *H. conclusa* and *elegantissima* Brethes. *Hyperaspis abscondita* is distinguished from these species by the 10 articulated antenna. This species belongs to *Hyperaspis* Section I (Gordon & Canepari 2008). Within that Section it is placed in the *onerata* group based on the characteristic basal lobe of the male genitalia. Within this group *H. abscondita* is similar only to some specimens referred to *H. brethesi* Gordon & Canepari (2008) but not included in the type series.

No biological data are known.

This new species is the only one in the *onerata* group with 10 antennal articles, thus necessitating a redefinition of that group as one containing species with either 10 or 11-articled antennae.

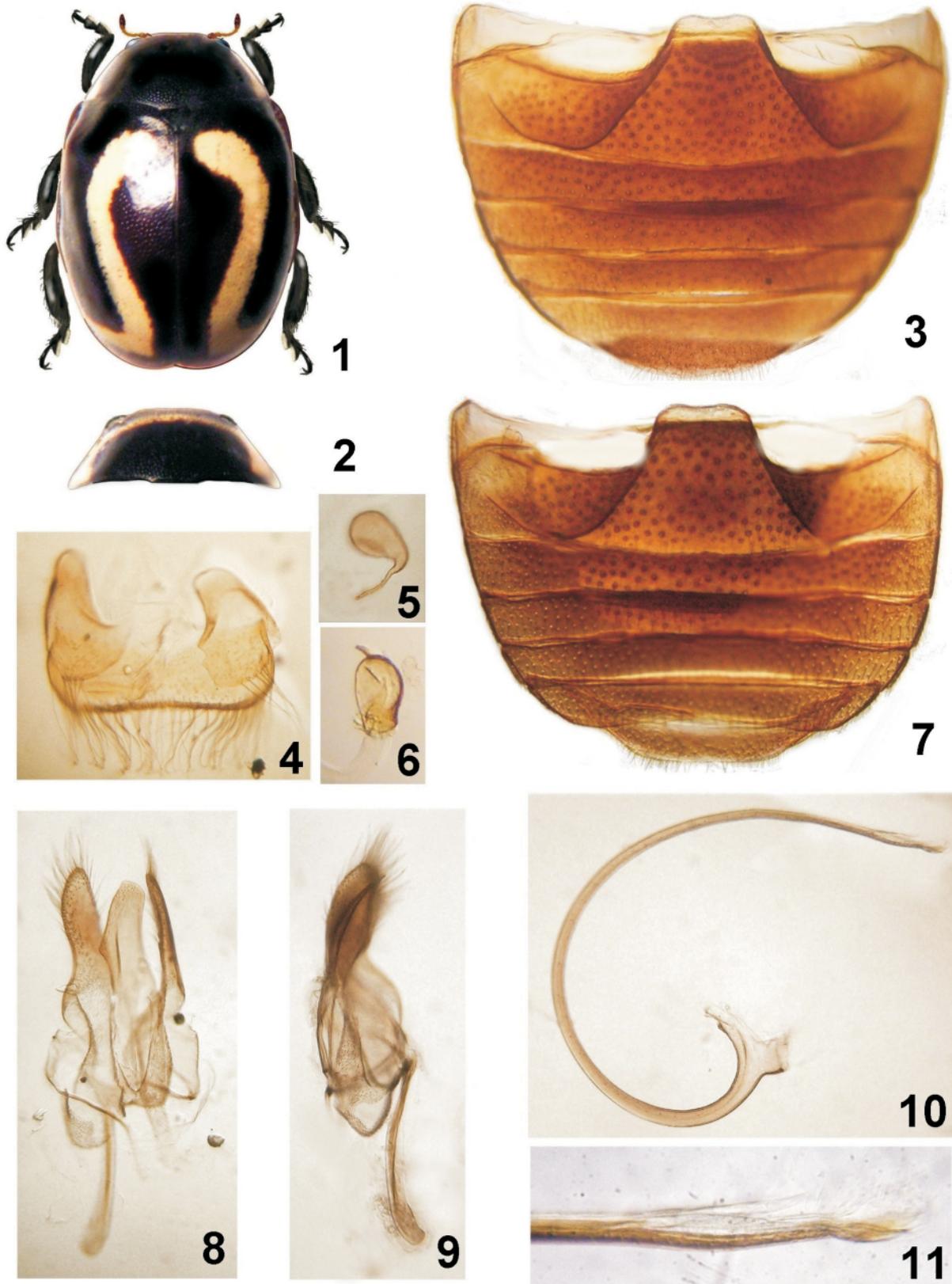


Fig. 1-11. *Hyperaspis andina* González and Gordon n. sp. **1:** habitus dorsal (female); **2:** pronotum (male); **3-6:** female: **3:** abdomen, **4:** genital plates, **5:** distal capsule, **6:** basal unit; **7-11:** male: **7:** abdomen, **8:** tegmen ventral, **9:** tegmen lateral, **10:** siphon, **11:** siphon distal apex (detail).

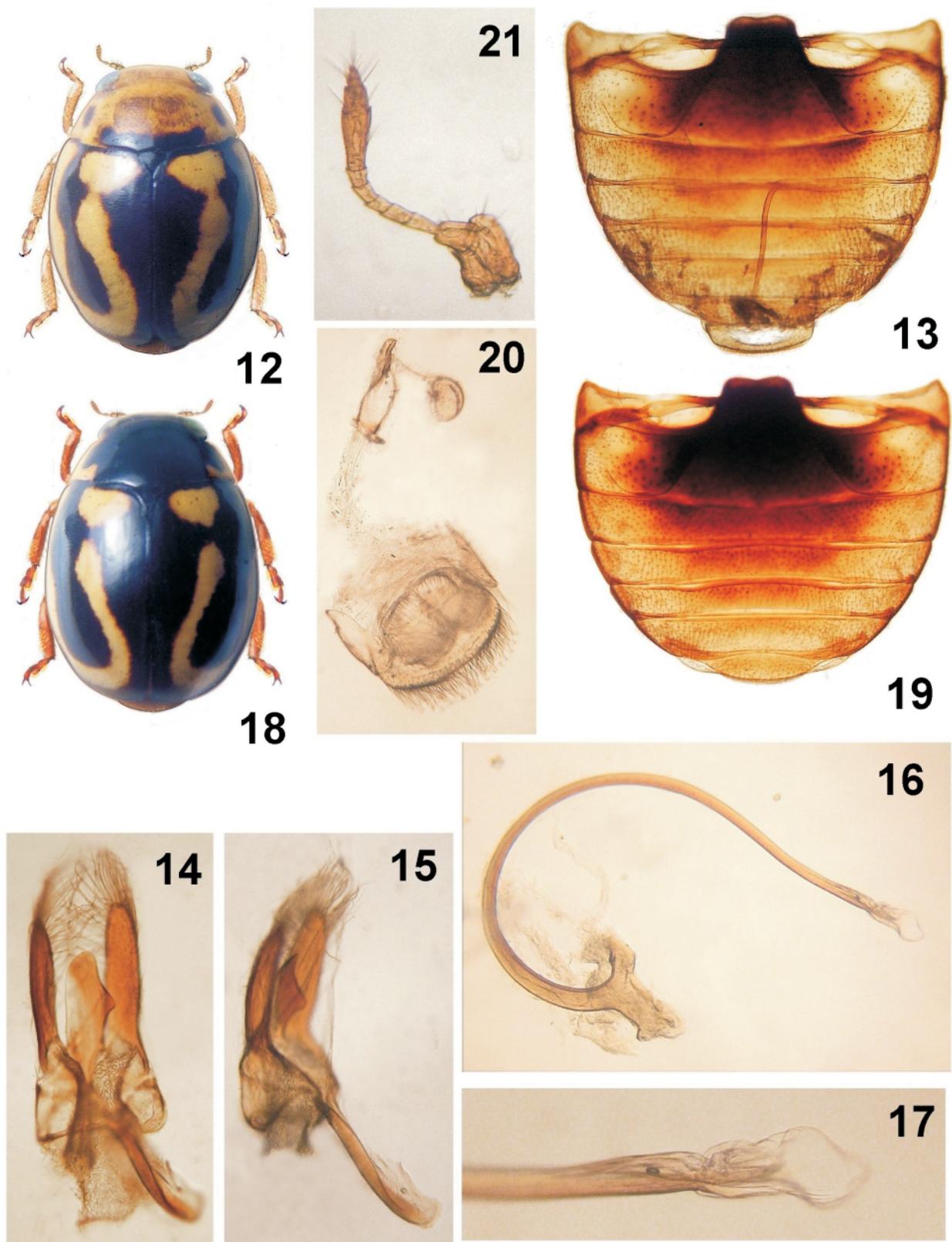


Fig 12-21. *Hyperaspis abscondita* González and Gordon n. sp. 12-17: male: 12: habitus dorsal; 13: abdomen; 14: tegmen ventral, 15: tegmen lateral, 16: siphon, 17: siphon distal apex (detail). 18-21: female: 18: habitus dorsal; 19: abdomen 20: female genitalia; 21: antenna.

***Hyperaspis lanatii* González & Gordon, n. sp.**

Fig. 22 – 33.

DESCRIPTION: Holotype male, length 2.1 mm, width 1.6 mm. Form oval, somewhat flattened dorsoventrally. Color black. Head entirely yellow. Pronotum with lateral 1/6 and anterior border yellow. Elytra black with lateral margin yellow expanded in longitudinal 3/5 in a triangular expansion, the yellow border leaving margin in apical 1/5, becoming transverse and finishing near the suture (Fig. 22). Antenna yellow. Mouthparts brownish yellow, hypomerion and epipleuron yellow, legs brown with blackish tinge. Ventral surface blackish brown. Epipleuron with large depression for hind femoral apex, yellow, with more feeble depressions for pro- and mesotibiae. Head shiny, punctures separated by 1 to 2X a diameter, space between punctures with visible microreticulation. Antenna with 11 articles (Fig. 32). Clypeus and frons smoothly joined. Pronotal punctures dense, uniform in size, punctures slightly larger than head punctures, equally dense, separated by 2.0X a diameter. Base of pronotum with fine, raised line medially, line separated from posterior border by 1/15 pronotal length. Elytral punctures fine, slightly bigger and equally dense than on pronotum, uniform in size, microreticulation nearly absent. Metasternum finely, sparsely punctured medially, coarsely, densely punctured laterally, lateral punctures large, separated by about a diameter, often confluent, each puncture with long, yellow, decumbent seta. Median depression with fine, irregular, effaced line, Abdominal sternites coarsely punctured, punctures separated by about 1.5X a diameter, punctures becoming coarser laterally. First abdominal sternite with postcoxal line descending, reaching posterior border at very abrupt angle, continued along posterior border, then diagonally angled anteriorly at lateral 1/4, ending at lateral 1/10 of border at 1/2 length of sternite. Apex of sixth abdominal sternite nearly truncate, slightly emarginate (Fig. 23). Genital basal lobe with one side straight, curved in semi-circle in apical 1/4, opposite side straight, smoothly concave at apex then regularly convex, without angulated projection; parameres 1/4 longer than basal lobe, oblong, (Fig. 24, 25); siphon long, curved in semicircular basal 2/3, apical 1/3 straight, with smooth oblong slightly wider membranous end. Basal capsule with inner arm short, rectangular, about half long as wide, outer arm parallel sided, rectangular, about 1.5 times wider than long (Fig. 26, 27).

FEMALE: Similar to male except head black and lack of yellow anterior pronotal border (Fig. 28, 33). Sixth abdominal sternum rounded apically (Fig. 29). Genital plates short (Fig. 30), spermathecal structure with distal capsule oblong, united to basal unit with duct 1.5 times as long as capsule, basal unit 1.5X larger than distal capsule, irregular, with sclerotized beak about 1/2 as long as basal unit, with pointed projections (Fig. 31).

VARIATION: Length 2.1 – 2.4 mm. The spot color varies from light yellow to the orange yellow. The spots may be partially joined, especially in the longitudinal line, and the central spot with the lateral spot at the same lateral border.

TYPE MATERIAL: Holotype male: Argentina, Mendoza, La Consulta, 28-III-2008, [leg.] Lanati S.J. E col. / s/ *Pseudococcidae* en “quillo”. Paratype (total 13), same data as holotype (11), Argentina, Mendoza, 7-III-2002, S/*Planococcus ficus* / *Vitis vinifera* Chardonay (2)

ETYMOLOGY: The species is named for the collector of the type series, the excellent Argentinean entomologist Silvio Lanati.

REMARKS: *Hyperaspis lanatii* belongs to the *conclusa* group because the frons and clypeous are smoothly, obliquely joined and the basal lobe lacks an abrupt hooklike projection on one side. The genitalia are similar to those of the closely knit group of Chilean species formed by *H. nana* Mader, *H. funesta* Germain and *H. sphaeridiodes* Mulsant, but the basal capsule of the siphon and other genitalic details are very different from those species. The superficial color pattern is similar to that of *H. nana* from Chile. In the Argentinean fauna it resembles the very common *H. festiva*, but lacks a projection of the yellow, lateral pronotal border, a character that distinctly separates these species.

The biological data are recorded from labels and indicate association with Pseudococcidae, specifically *Planococcus ficus* (Risso) on *Vitis vinifera* (L). *Planococcus ficus* is known to cause serious damage to the grape culture.

H. andina and *H. abscondita*, n. sp., key to couplet 4 in the species key of Gordon & Canepari (2008), which is modified as follows:

- 4(3). Species without pale elytral spot, with yellow lateral border on elytron *scutifera* Mulsant
- Species with 1 or more discal spots or vittae on each elytron, with lateral elytral border yellow 4a
- 4a(4). Elytron vittate, lateral border yellow 4b
- Elytron with yellow lateral border and 1, 2, or more yellow discal spots 5
- 4b(4a). Yellow discal vitta not reaching elytral base, without basal yellow spot (Fig. 12) Chile *andina* n. sp.
- Yellow discal vitta reaching elytral base, terminated in basal yellow spot, spot and vitta sometimes discontinuous (Fig. 12, 18); Argentina *abscondita* n. sp.

Hyperaspis lanatii n. sp. key to couplet 68 which is modified as follows:

- 68(67). Elytron with 5 yellow spots, discal and lateral spots usually narrowly connected 68a
- Elytron with reddish yellow discal and apical spots narrowly connected *connectens* (Thunberg)
- 68a(68). Discal spot longitudinally elongate, 1/3 as long as elytra. Yellow lateral margin always present and very conspicuous *lanatii* n. sp.
- Discal spot rounded or slightly oval, 1/4 as long as elytra. Yellow lateral margin irregular *vredenburgi* Gordon & Canepari.

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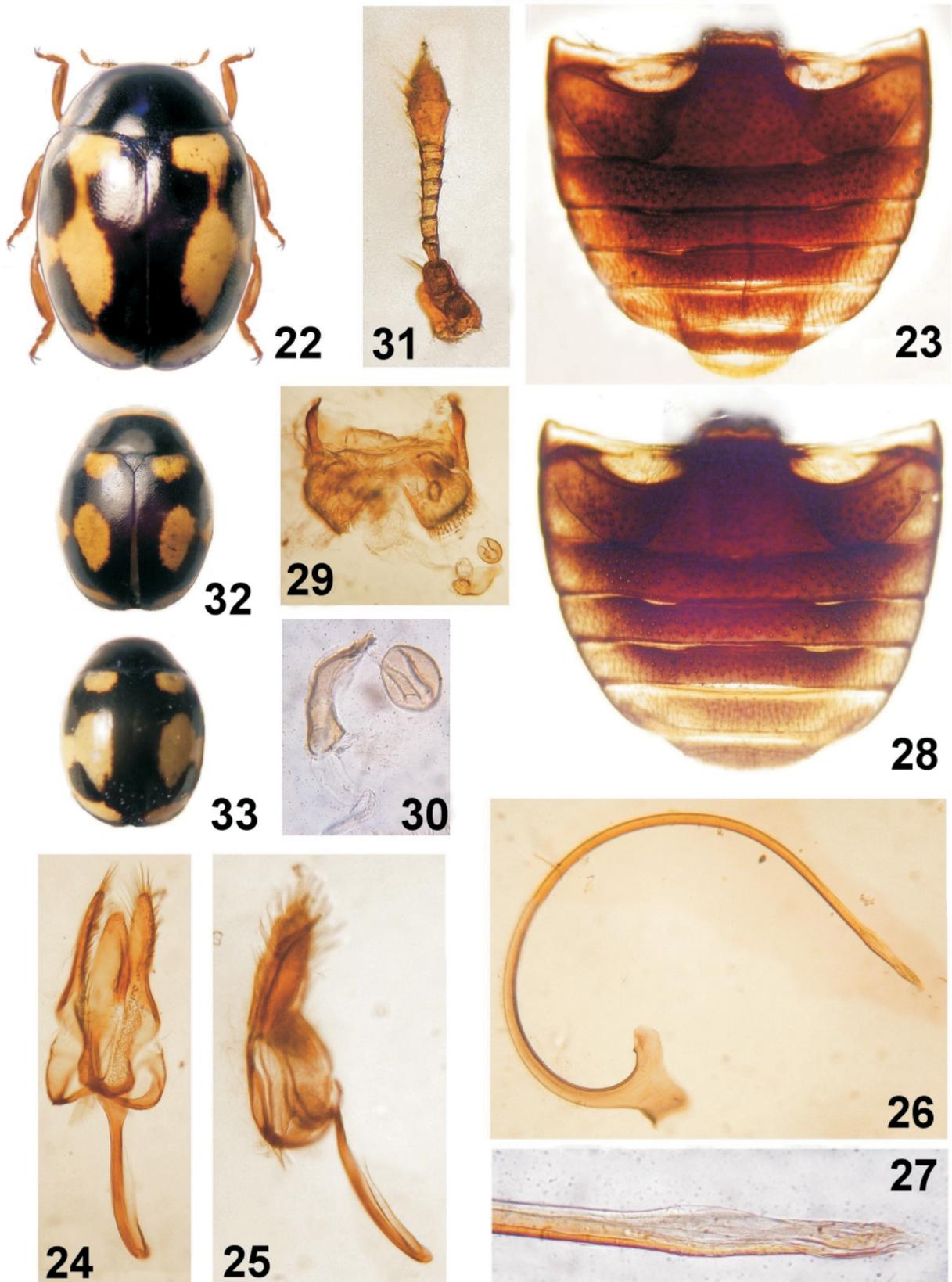


Fig. 22-33. *Hyperaspis lanatii* González and Gordon n. sp. **22-27:** male: **22:** habitus dorsal; **23:** abdomen; **24:** tegmen ventral, **25:** tegmen lateral, **26:** siphon, **27:** siphon distal apex (detail). **28-33:** female: **28:** habitus dorsal; **29:** abdomen, **30:** female genitalia; **31:** spermatheca (detail), **32:** antenna, **33:** variation, habitus.

Literature Cited

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