

# Additions to the Peruvian fauna of the plant feeding genus *Epilachna* Chevrolat (Coleoptera Coccinellidae)

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## RESUMEN

En el presente trabajo se describen tres nuevas especies peruanas del género *Epilachna*, a saber: *E. esemephata*, *E. ciliata* y *E. pseudolepida* y sus descripciones se acompañan de dibujos ilustrativos y se comparan con las de otras especies ya descritas. Los datos de las plantas huéspedes se suministran, cuando éstos son conocidos. La especie *E. esemephata* es la segunda de este género que se registra como atacante de las plantas de fríjol.

## Abstract

Three new Peruvian species of *Epilachna*, *E. esemephata*, *E. ciliata*, and *E. pseudolepida* are described, illustrated and compared with previously described species. Host plant data are included where known; *E. esemephata* is recorded as the second species of the genus known to feed on bean plants.

A joint University of Maryland and USDA Systematic Entomology Laboratory effort to find parasites effective against a major pest of beans, *Epilachna varivestis* Mulsant, included 4 years of field work in the Cusco region of southern Peru. More than 20,000 specimens of about 40 species of *Epilachna* were collected, along with host plant data and immature stages. Field collected beetles were reared in the laboratory, parasites collected from the rearing cages, and the im-

matures preserved for future study and description.

Preliminary systematic investigation has revealed 3 species not included in the revision of the Epilachninae of the Western Hemisphere (Gordon, 1976), and these taxa are described here. Type specimens are deposited in the United States National Museum (USNM).

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## *Epilachna ciliata*, new species

**Description:** Male, length 8.0 mm, width 5.80 mm. Form elongate oval, widest anterior to middle of elytra. Color predominantly black; mouthparts yellow to reddish black; antenna with basal segment and segments 6-11 piceous, segments 2-5 yellowish brown; pronotum with anterior angle narrowly yellow; elytron orange with sutural and lateral margins narrowly black, and black median vitta extending from humeral callus nearly to apex (fig. 1a). Punctures on elytron dual, small punctures separated by about a diameter, large punctures separated by 1 to 3 times a diameter. Pubescence golden yellow, median vitta and black sutural margin with pubescence dense, "combed" to middle, appearing as golden stripe on center of black area. Postcoxal line on 1st abdominal sternum indistinct, incomplete, not reach middle of sternum. Abdomen with hind margin of 5th sternum broadly, feebly emarginate; 6th ster-

num notched medially, 6th tergum feebly emarginate medially. Genitalia with basal lobe longer than paramere, with group of setae on each side of lateral margin in apical 1/3 (figs. 6,7); siphon elongate, slender, apex curved upward, armed dorsally with serrate ridge, siphonal orifice dorsal, sub-terminal (figs. 8,9).

**Female:** Similar to male except 5th abdominal sternum not emarginate; 6th sternum apically triangular; 6th tergum apically truncate.

**Variation:** Length 7.30 to 8.20 mm, width 5.70 to 6.0 mm.

**Type material:** Holotype male; Peru, Cusco, Valle de Lares-Calca, 20-III-1979, Univ. Maryland-SEL: SMF Expedition (USNM). Allotype and 16 paratypes; same data as holotype (USNM). One paratype; Peru, Cusco, 75 km North of Calca, 7 Feb 1979, Univ. Maryland-SEL: SMF Expedition (USNM).

**Discussion:** This species is a member of the *vittigera* group (Gordon, 1976). It is immediately separable from all other members of that group by the golden elytral pubescence which forms a "stripe" on the black median vitta and black sutural margin, and also the serrate ridge on the siphonal apex. When specimens are alive this pubescent stripe is very obviously golden and distinct even without magnification. Dead specimens have a dusty appearance until examined under magnification, only then is the nature of the pubescence apparent.

**Etymology:** The specific name is from the Latin *cilium*, referring to the distinctive dorsal pubescence.

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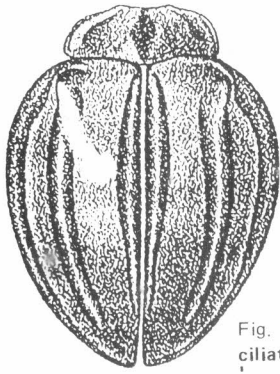


Fig. 1a, *Epilachna ciliata*, new species;

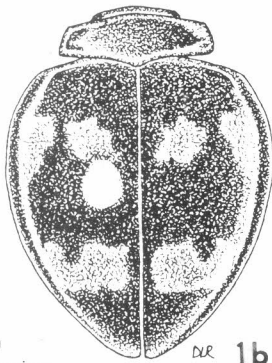


Fig. 1b *Epilachna esemephata*, new species;

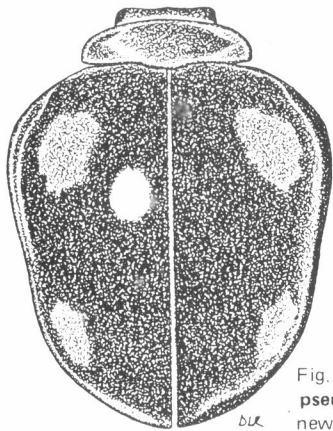


Fig. 1c, *Epilachna pseudolepida*, new species.

Fig. 1. Habitus views:

*Epilachna esemephata*, new species

**Description:** Male, length 7.0, width 5.25 mm. Form cordate shortened, widest across basal 1/3 of elytra. Color predominantly black; mouthparts yellow to reddish black; Antenna with basal segment black, segments 2-8 yellow, 9-11 piceous; elytron bluish black with 4 roundish, yellow spots, 1 posterior to humerus, 1 on disc in basal 1/3, 1 near lateral margin in apical 1/3, 1 nearly touching suture in apical 1/3 (fig. 1b). Punctuation on elytron not noticeably dual, punctures separated by their diameter or less.

Pubescence grayish white throughout. Postcoxal line on 1st abdominal sternum distinct, nearly complete, extending 2/3 length of sternum. Abdomen with hind margin of 5th sternum moderately notched medially; 6th sternum strongly notched medially, 6th tergum deeply emarginate/notched medially. Genitalia with basal lobe laterally compressed, apex abruptly curved upward, trilobed in ventral view (figs. 2-4); siphon short, robust, siphonal apex blunt with small ventral tooth and dorsal, subterminal orifice (fig. 5).

**Female:** Similar to male except 5th sternum lacking median notch; 6th sternum with deep, narrow notch; 6th tergum feebly, shallowly emarginate.

**Variation:** Length 6.40 to 8.25 mm, width 4.74 to 6.0 mm. Body form varies from narrowly cordate to broadly cordate. Color pattern of elytron varies from having 4 discrete yellow spots to posterior spots narrowly connected, or both anterior and posterior spots narrowly connected, or elytron yellow with all margins bluish black.

**Type material:** Holotype male; Peru, Cusco, 20-50 km S Quillabamba, 22-Feb-1978, Univ. Maryland-SEL: SMF Expedition (USNM). Allotype; same data as holotype (USNM). Paratypes, 82; same data as holotype (USNM).

**Discussion:** This is only the second species known to belong to the *obliqua* group, and it differs from *E. obliqua* by having a cordate body form, grayish white dorsal pubescence, a rounded interior basal spot on the elytron, and a different shape to the male basal lobe. The primary host plants of *Epilachna* species belong to the families Solanaceae and Cucurbitaceae.

*Epilachna varivestis* has been the only species known to feed on beans (Leguminosae), however, all specimens of *E. esemephata* found were feeding on bean plants, *Phaseolus* sp., in a garden plot south of Quillabamba. Whether *E. obliqua* also feeds on beans is unknown, but the male genitalia of members of this group are unique within the genus, indicating a common ancestry, therefore they may also share the same food preference.

**Etymology:** The specific epithet is an arbitrary combination of letters.

*Epilachna pseudolepida*, new species

**Description:** Male, length 8.25 mm, width 6.60 mm. Form cordate, widest posterior to humeral angle, lateral margin of elytron slightly pinched medially. Color predominantly black; mouthparts yellow to reddish black; antenna with basal segment and segments 8-11 reddish black, segments 2-7 yellow; elytron brassy black with 2 yellow spots, anterior spot directly behind humeral callus, posterior spot on apical 1/3 near lateral margin (fig. 1c). Punctuation on elytron dual, fine punctures separated by about a diameter, coarse punctures separated by less than to 3 times a diameter.

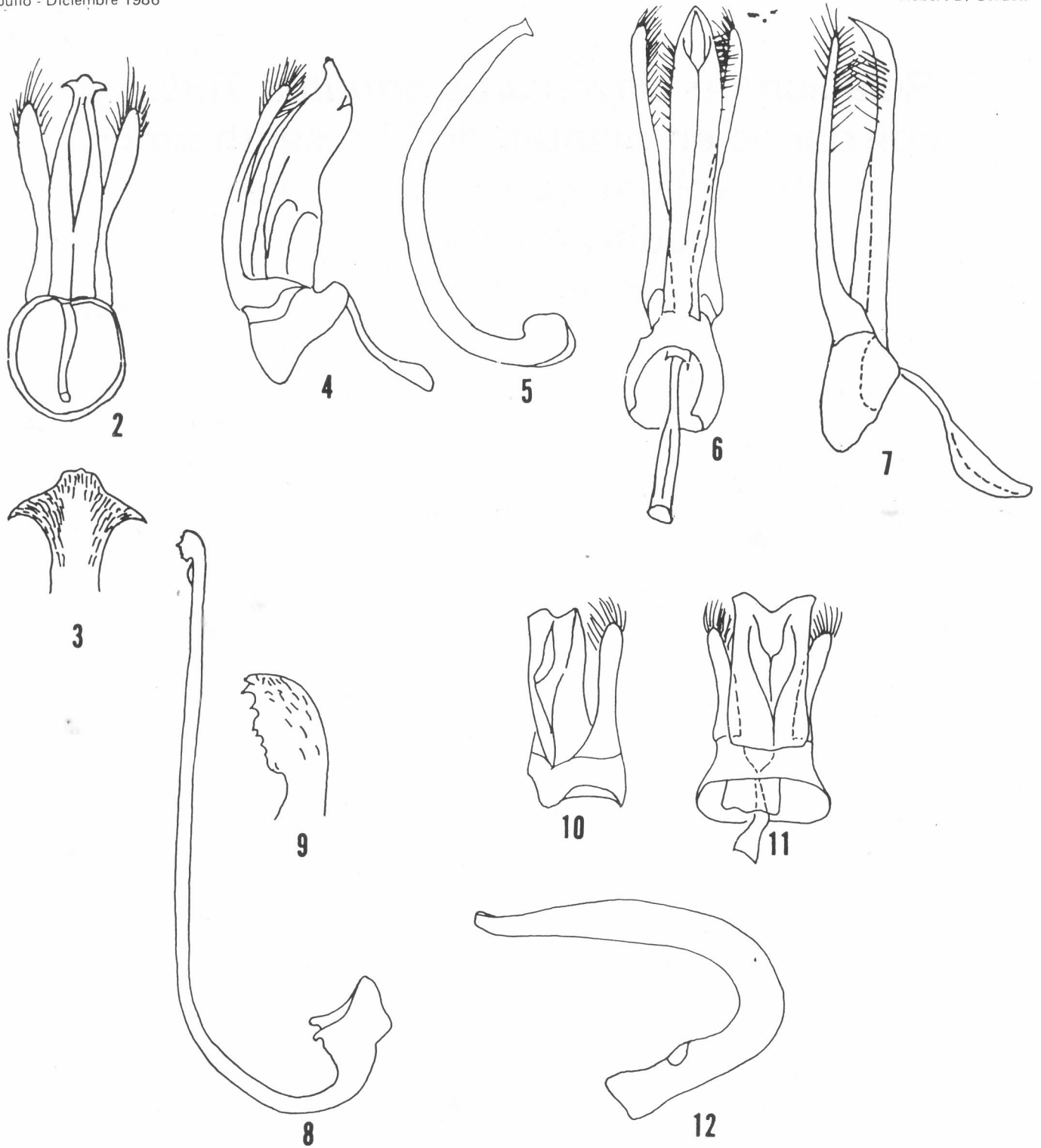
Pubescence brownish yellow. Postcoxal line on 1st abdominal sternum complete, distinct, extending slightly beyond middle of sternum. Abdomen with hind margin of 5th sternum very feebly emarginate medially; 6th sternum broadly notched; 6th tergum broadly emarginate. Genitalia with phallobase short, robust, heavily pigmented; basal lobe short, broad, apex shallowly emarginate in ventral view, lateral apical angle truncate, sides nearly parallel (figs. 10,11); siphon short, robust, apex bent upward, orifice dorsal, subterminal (fig. 12).

**Female:** Similar to male except 6th abdominal sternum broadly, feebly emarginate; 6th tergum emarginate medially.

**Variation:** Length 8.0 to 9.5 mm, width 6.0 to 7.0 mm. The yellow elytral spots vary slightly in size and shape.

**Type material:** Holotype male; Peru, Cusco, 30-50 km S Quillabamba, 22-Feb-1978, Univ. Maryland-SEL: SMF Expedition (USNM). Allotype and 40 paratypes; same data as holotype (USNM).

**Discussion:** This species is a member of the *E. azurea* group (Gordon, 1976). It is most similar to *E. lepida* Erichson, also a Peruvian species, but *E. pseudolepida* has the dorsal pubescence



Figs. 2-12. Figs. 2-5, *Epilachna esemephata*, new species (male genitalia); Figs. 6-9, *Epilachna ciliata*, new species (male genitalia); Figs. 10-12, *Epilachna pseudolepida*, new species (male genitalia).

brownish yellow instead of grayish white, the elytron brassy black instead of bluish black, and the male basal lobe shallowly emarginate apically instead of deeply so. All type specimens were found feeding on **Solanum**

**furcatum** Dunal along the roadside south of Quillabamba.

**Etymology:** The specific name refers to the similar appearance of **E. pseudo-lepida** and **E. lepida**.

**Reference**

GORDON, R.D. 1976. A revision of the Epilachninae of the Western Hemisphere (Coleoptera: Coccinellidae). U.S. Dept. Agr. Tech. Bull. 1493:1-409.