

Four new species and a new synonymy in the genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae) from Philippines

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Barševskis A. 2017. Four new species and a new synonymy in the genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae) from Philippines. *Baltic J. Coleopterol.*, 17(2): 161 - 173.

Four new species of the genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae) from Philippines are described and illustrated: *D. boteroi* sp. n. (Mindanao), *D. dunsikisi* sp. n. (Mindanao), *D. mindoroensis* sp. n. (Mindoro) and *D. santossilvai* sp. n. (Mindanao). One synonymy is proposed: *D. duodecimpunctata* Heller, 1923 = *D. gutowskii* Barševskis, 2013 syn. n. The genus *Doliops* in the world fauna is now represented by 57 species.

Key words: Coleoptera, Cerambycidae, *Doliops*, fauna, new species, new synonymy, Philippines

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INTRODUCTION

The genus *Doliops* Waterhouse, 1841 (Cerambycidae, Apomecynini) includes 57 species distributed in the Philippine and Taiwan archipelagos. Members of the genus are medium-sized, mostly colourful and metallic shiny, with the body length from 10 to 15 mm. The most part of the species of *Doliops* are local endemics and have restricted distribution range. The mimicry between genus *Doliops* and weevils of the genera *Pachyrhynchus*, *Metapocyrtus*, *Macrocyrtus* etc. (Curculionidae) were noted several times (Barševskis 2013, 2014, 2017b). In recent years this genus is intensively studied, several authors in last five years described more than 25 new

species (Barševskis 2013, 2014, 2017b; Barševskis & Jaeger 2014; Cabras & Barševskis 2016; Vives 2013, 2014).

The majority of species of the genus are rare in private and institutional collections, some of old specimens deposited in these institutions were collected many years ago and often have not detailed label's data. Besides that, several species were not found in the nature after the original description of these taxa and often known only on single type specimens. The ecological and bionomical data for the most part of taxa of *Doliops* are unknown. All of the above makes

the work with these species difficult despite the need of their protection.

This study presents illustrative descriptions of four new species from the Philippines (three species from Mindanao and one species from Mindoro) based on specimens deposited in the collection of DUBC. Besides that, one new synonymy in the genus *Doliops* was proposed.

MATERIAL AND METHODS

This research is based on the study of specimens collected in the Philippines by local collectors and deposited in DUBC (Daugavpils University beetle collection, Ilgas, Daugavpils Distr., Latvia). The types of *D. duodecimpunctata* Heller, 1923 deposited in SMTD (Senckenberg Naturhistorische Sammlungen Dresden, Dresden, Germany; O. Jäger).

The laboratory research and measurements have been made by *Nikon AZ100*, *Nikon SMZ745T* and *Zeiss Stereo Lumar V12* digital stereomicroscopes, NIS-Elements 6D software, and *Canon 60D* and *Canon 1Ds Mark II* cameras.

High-resolution habitus images of *Doliops* species, including type specimens and additional material, are available at “Cerambycidae of the World” web-project <http://www.cerambycidae.org> (Barševskis 2017a).

RESULTS

Doliops boteroi sp. n.
(Fig. 1)

Type material. Holotype, Female: Philippines: Mindanao Isl., Lanao del Sur, Wao, 06.2017, local collector leg.; Holotype | *Doliops* | *boteroi* sp. n. | A. Barševskis det. 2017 | <red rectangular label, handwritten>

Distribution. Philippines: Mindanao Island (Fig. 2).

Description. Body black, shining. Elytra with circle-shaped spots of greenish and pink-greenish scales. Body length: 12.9 mm, maximum width: 5.7 mm.

Head almost square, parallel-sided, with large bilobate eyes. Part of head between eyes and antennal bases with impressed longitudinal band of yellow-greenish scales and very thin and fine median line. Longitudinal band of greenish scales wide, beginning from basal portion, stretching apical, distinctly narrowed between eyes and middle of forehead. This band continues on pronotum as small rudiment. Thin median line of frontal longitudinal band stretching from basal part of head to clypeus. Frontal part of head behind clypeus convex, glossy, with very delicate punctation and fine reticulate microsculpture. Cheeks under eyes with wide spot of pink-greenish scales. Mandibles and genae with long lateral setae. Labrum convex, glossy, concaved on apical margin, with pubescence, small punctures and long setae. Clypeus short, shiny, transverse, red-brown. Head black and glossy, with very fine microsculpture, punctation and fine tomentum. Basal area of head around antennae weakly protruded, with green metallic luster. Antennae long and slender, with short pubescence and brush of internal setae at apex of antennomere 3 and with several long setae on antennomeres 4-7; two basal antennomeres black and with very fine pubescence; basal part of antennomere 3 black, brown basally, widened apically, pubescent; remaining segments testaceous and pubescent.

Pronotum subcylindrical, distinctly as wider than long, anterior margin prominent, posterior margin double, sinuous, anterior portion of disc of pronotum very convex, black, shiny, with transverse lateral microsculpture and very sparse punctation; disc of pronotum glossy, with very fine punctures. Lateral margins of pronotum with wide band of pink - greenish scales, but dorsal disc laterally in basal part with short)-shaped spot of pink-greenish scales.

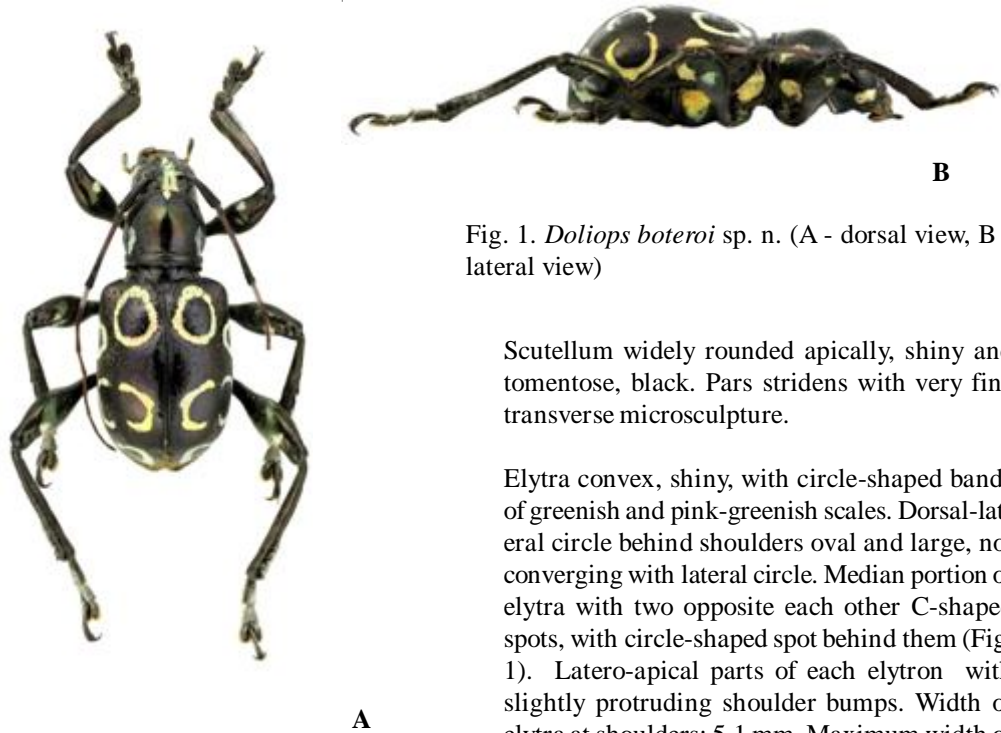


Fig. 1. *Doliops boteroi* sp. n. (A - dorsal view, B - lateral view)

Scutellum widely rounded apically, shiny and tomentose, black. Pars stridens with very fine transverse microsculpture.

Elytra convex, shiny, with circle-shaped bands of greenish and pink-greenish scales. Dorsal-lateral circle behind shoulders oval and large, not converging with lateral circle. Median portion of elytra with two opposite each other C-shaped spots, with circle-shaped spot behind them (Fig. 1). Latero-apical parts of each elytron with slightly protruding shoulder bumps. Width of elytra at shoulders: 5.1 mm. Maximum width of



Fig. 2. Distribution of *Doliops boteroi* sp. n.



Fig. 3. *Doliops jirouxi* Barševskis, 2014

elytra behind middle: 5.7 mm. Anterior and lateral portions of elytra with sparse and coarse punctures, fine microsculpture and pubescence. Meso-, metaepimera and sternites with lateral spots, covered by pink-greenish scales. Legs comparatively short and robust. Femora strongly widened at apical third, with small elongate greenish spot at apex, more or less pubescent. Tibia flattened at external margin, with fringe of dark setae. Dorsal surface of tarsomeres covered by grey pubescence. Apical parts of tibia and tarsi covered by numerous setae.

Male unknown.

Differential diagnosis. By the general shape of body and coloration, the new species is similar to *D. jirouxi* Barševskis, 2014 (known from Luzon Island), but differs from it species by the shape and coloration of elytral spots: black elytra with large circle-shaped spots behind shoulders, with median two C-shaped spots and with circle-shaped spot behind them, as in Fig. 1 (elytra of *D. jirouxi* with metallic luster and all spots on elytra are circle-shaped, as in Fig. 3); lateral margin of pronotum of *D. boteroi* sp. n. with wide band of pink-greenish scales, but on basal part of dorsal disc laterally with)-shaped spot of pink-greenish scales (pronotum of *D. jirouxi* with circle-shaped spot of greenish scales).

Etymology. The species named after my colleague cerambycidologist Juan Pablo Botero (Rio de Janeiro, Brazil).

***Doliops dunsikisi* sp. n.**
(Fig.4)

Type material. **Holotype**, female: Philippines: Mindanao Isl., Mt. Kalatungan, 04.2017, local collector leg.; Holotype | *Doliops* | *dunsikisi* sp. n. | A. Barševskis det. 2017 | <red rectangular label, handwritten>

Distribution. Philippines: Mindanao Island (Fig. 5).

Description. Body black, shining, with metallic green and golden luster. Elytra with irregular wide

spots of yellow scales. Body length: 12.9 mm, maximum width: 5.5 mm.

Head with large bilobate eyes. Part of head between eyes and antennal bases shining, with impressed longitudinal band of yellow scales and very thin, fine median line. The longitudinal band of yellow scales wide and with very dense scales, beginning from basal part of head and stretching and narrowing between eyes and middle part of forehead. This band continues on pronotum as small rudiment. Frontal part of head behind clypeus convex, glossy, with fine punctation. Cheeks under eyes with metallic greenish luster and spot of pink-greenish scales. Mandibles and genae with long lateral setae. Labrum dark-brown, convex, glossy, concaved frontally, with pubescence, small punctures and long setae. Clypeus short, shiny, transverse, red-brown. Head black and glossy, with fine punctation and sparse tomentum. Basal area of head near antennae weakly protruding, with dark greenish metallic luster. Antennae long and slender, with short pubescence and brush of internal setae at apex of antennomere 3 and with some long setae at antennomeres 4-7. Two basal antennal segments with strong golden luster and with very fine pubescence. Antennomere 3 brown basally, dark and widened apically, pubescent. Antennomere 4 brown, but darkened apically. Remaining segments testaceous and pubescent.

Pronotum subcylindrical, distinctly wider than long, anterior margin prominent, posterior margin double, sinuous, anterior portion of disc of pronotum very convex, metallic-golden, very shiny. Lateral portions of the pronotum along anterior, lateral edges and along border of pronotal dorsal disc formed a triangle of bands, covered with yellow scales. Triangle-shaped spot in middle and on dorsal disc of pronotum without scales. Dorsal disc of pronotum glossy, shiny, with very fine punctures.

Scutellum wide rounded apically, shiny and tomentose, black. Pars stridens not visible.

Elytra convex, shiny, with wide irregular bands of yellow scales. Basal transverse yellow spot more or less irregular, with several small dark-

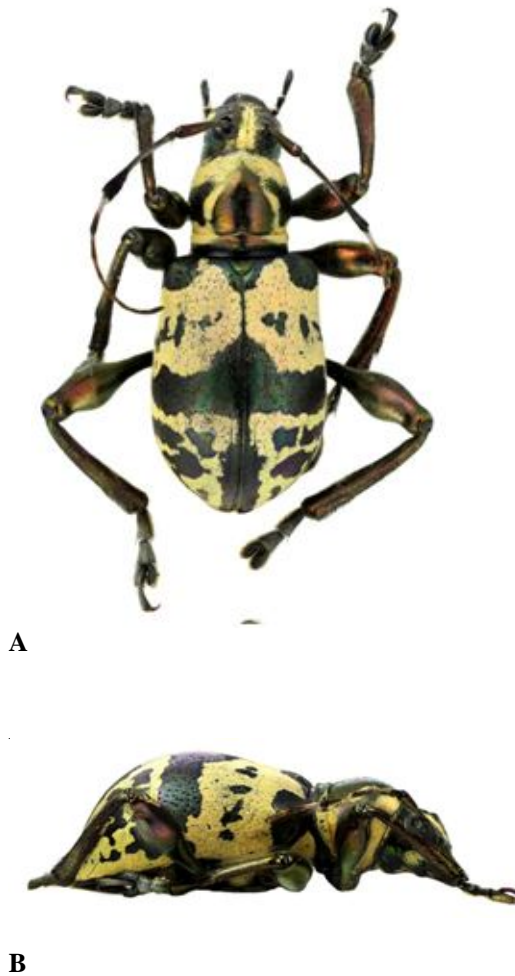


Fig. 4. *Doliops dunskisi* sp. n. (A - dorsal view, B - lateral view)

green spots without scales inwards, beginning near lateral margins of elytra and reaching suture. Apical spot of elytra large, triangular, with many dark-green irregular spots without scales inwards (Fig. 4). Width of elytra at shoulders: 4.6 mm. Maximum width of elytra behind middle: 5.5 mm. Elytra with strong reticulate microsculpture and fine punctures and pubescence, with sparse and coarse large punctures in anterior and lateral portions of elytra. Meso-, metaepimera and sternites with lateral spots, covered by yellow scales. Legs comparatively short and robust, with metallic golden luster. Femora strongly widened



Fig. 5. Distribution of *Doliops dunskisi* sp. n.



Fig. 6. *Doliops editae* Vives, 2009

at apical third, without apical spot of scales, more or less pubescent. Tibia flattened at external margin, with fringe of dark setae. Dorsal surface of tarsomeres covered by dark pubescence.

Male unknown.

Differential diagnosis. By the general shape of the body and coloration, *D. dunsiki* sp. n. is similar to *D. editae* Vives, 2009 (Mindanao Island), but differs by the shape and coloration of spots on the elytra and pronotum: elytral spots of with small and irregular dark-green spots inwards, as in Fig. 4 (elytral spots of *D. editae* with scales, without small, irregular dark scalesless spots or with several small dark spots within apical, as in Fig. 6); lateral portions of the pronotum along anterior, lateral edges and along border of pronotal dorsal disc formed a triangle of bands, covered with yellow scales. Triangle-shaped spot in middle and on dorsal disc of pronotum without scales. Pronotum of *D. editae* framing margins with a narrow band of yellow scales.

Etymology. The species named after my colleague and student Aivars Dunskis (Daugavpils, Latvia).

***Doliops duodecimpunctata* Heller, 1923**

= *D. gutowskii* Barševskis, 2013 **syn. n.**

Doliops duodecimpunctata; Heller, 1923: 46 [cited as *XII-punctata*]

Doliops gutowskii; Barševskis, 2013: 76

Doliops duodecimpunctata; Barševskis & Jaeger, 2014: 13

Doliops duodecimpunctata; Barševskis, 2014: 128, 132

Doliops duodecimpunctata; Cabras & Barševskis, 2016: 148

Type material. 3 specimens, marked with red rectangular label [typus], all from: Surigao | Mindanao | Baker | (SMTD) (Barševskis & Jaeger 2014) (Fig. 7).

Remarks. *Doliops duodecimpunctata* Heller, 1923 (cited as *D. XII-punctata*, see pg. 46) was

described by Heller (1923) based on unspecified number of specimens from “Mindanao: Surigao”. *Doliops gutowskii* Barševskis, 2013 (Fig. 8) based on two females was described from the same locality (“Philippines: Mindanao, Surigao del Sur”). The examination of the type specimens of both taxa reveals that they are conspecific. Thus, *D. gutowskii* was synonymized with *D. duodecimpunctata* as a junior synonym. In previous publications (Barševskis 20013, 2014, Cabras, Barševskis 2016), all information about *D. duodecimpunctata* founded on Mindoro Island is attributable to this species. Currently, *D. duodecimpunctata* is known only from Mindanao Island (Fig. 9).

***Doliops mindoroensis* sp. n.**

(Fig. 10, 11)

Type material. **Holotype**, male: Philippines: Mindoro Isl., Puerto Galera, 06.2016, local collector leg.; Holotype | *Doliops | mindoroensis* sp. n. | A. Barševskis det. 2017 | <red rectangular label, handwritten>



Fig. 7. Type of *Doliops duodecimpunctata* Heller, 1923 (SMTD)



Fig. 8. Holotype of *Doliops gutowskii* Barđevskis, 2013 (DUBC)



Fig. 9. Distribution of *Doliops duodecimpunctata* Heller, 1923

Paratypes, 37males, 17females: Philippines: Mindoro Isl., Baco, 02.2015, local collector leg.; Philippines: Mindoro Isl., Baco, 02.2016, local collector leg.; Philippines: Mindoro Isl., Baco, 04.2016, local collector leg.; Philippines: Mindoro Isl., Baco, 04.2016, local collector leg.; Philippines: Mindoro Isl., Baco, 04.2016, local collector leg.; Philippines: Mindoro Isl., Baco, 05.2016, local collector leg.; Philippines: Mindoro Isl., Baco, 05.2017, local collector leg.; Philippines: Mindoro Isl., Baco, 05.2017, local collector leg.; Philippines: Mindoro Isl., Baco, 05.2017, local collector leg.; Philippines: Mindoro Isl., Baco, 05.2017, local collector leg.; Philippines: Mindoro Isl., Baco, 06.2017, local collector leg.; Philippines: Mindoro

Isl., Baco, 06.2017, local collector leg.; Philippines: Mindoro Isl., Baco, 08.2017, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro Isl. Mt. Halcon, 09.2013, local collector leg.; Philippines: Mindoro

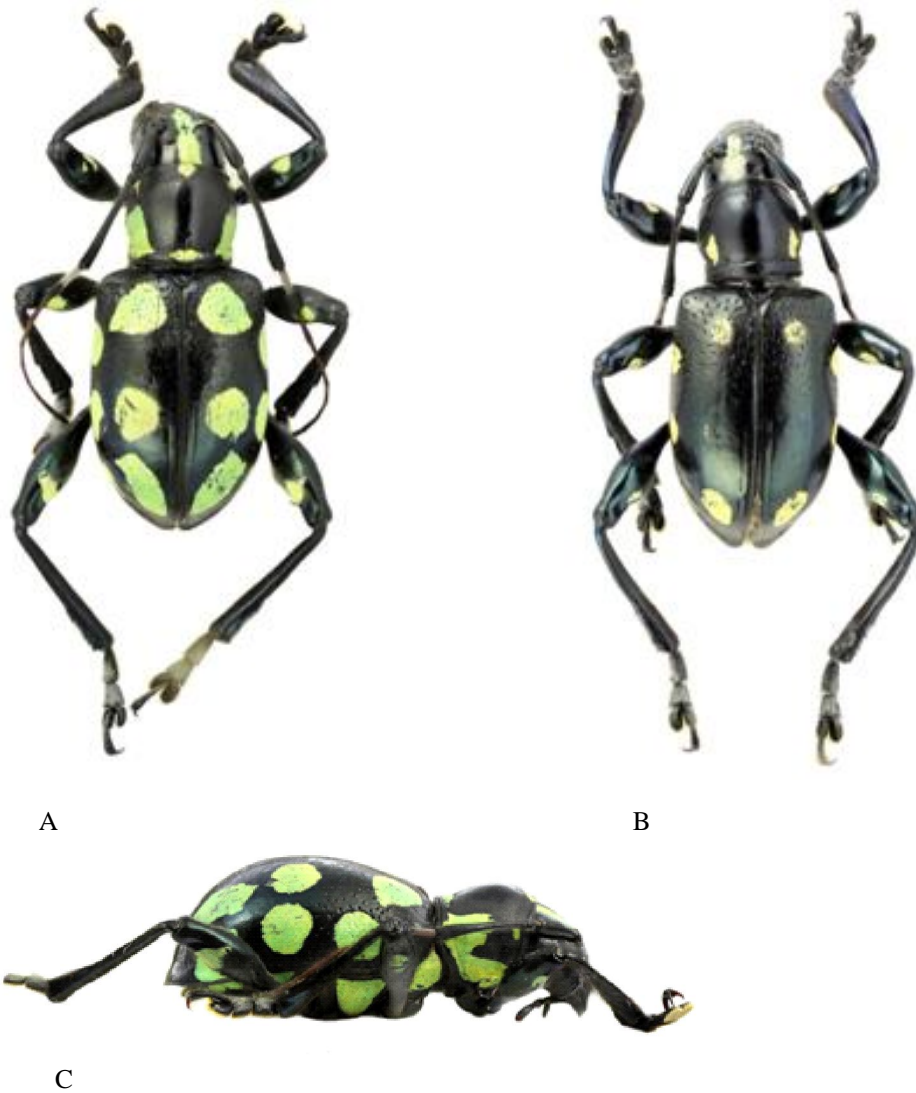


Fig. 10. *Doliops mindoroensis* sp. n. (A - dorsal view (Paratype 1), B - lateral view (Paratype 1), C - dorsal view (Paratype 2))

Pronotum subcylindrical, distinctly wider than long, anterior portion and disc of pronotum convex, posterior margin double, sinuous; pronotum black, shiny, with transverse lateral microsculpture and very sparse punctation. Disc of pronotum glossy, shiny, with very fine punctures. Lateral margin of pronotum

with wide band of greenish, pink, yellow or white scales, dorso-lateral portions of pronotum in basal part with large spot of similar color scales. Some specimens with small spot of similar color scales on anterior margin of pronotum. Size and shapes of spots on pronotum variable.

Scutellum wide rounded apically, shiny and tomentose, black. Pars stridens with very fine transverse microsculpture.

Elytra convex, shiny, each elytron with six round and oval spots of greenish, pink, yellow or white scales. These spots more or less round, except of two apical elongated spots, usually not merging each other and not forming joint V-shaped spot. Size and shapes of spots on elytra very variable and sometimes some of spots reduced. Elytra with reticulate microsculpture; anterior and lateral portions of elytra with sparse coarse punctures and pubescence. Meso-, metaepimera and sternites with lateral spots, covered by greenish, pink, yellow or white scales. Legs comparatively short and robust. Femora strongly widened at apical third, with small elongate spot of greenish, pink, yellow or white apical scales, more or less pubescent. Tibia flattened at external margin, with fringe of dark setae. Dorsal surface of tarsomeres with dark pubescence.

Male. Aedeagus in the middle slightly concaved, with pointed apex of lamella (Fig. 11).

Differential diagnosis. Based on the general coloration of the body and shape of the elytra, *D. mindoroensis* sp.n. is similar to *D. duodecimpunctata* Heller, 1923 (Mindanao Island), but differs by the shapes of spots on pronotum and elytra: lateral sides of the pronotum with wide band of greenish, pink, yellow or white scales and dorso-lateral portions of disc of pronotum with large spot of similar scales; two dorsal spots on elytra are relatively round, and two apical spots are elongated; elytra with relatively larger spots and second lateral spot situated behind the middle of elytra (Fig. 10). Lateral sides of the pronotum of *D. duodecimpunctata* with small spot of yellow or yellow greenish scales and without any spots on the median part of the disc of pronotum; elytra with relatively smaller spots and lateral spot situated before the middle or in the middle of elytra (Fig. 7).

Etymology. The new subspecies is named after Mindoro Island where the type specimens was collected.



Fig. 11. Aedeagus of *Doliops mindoroensis* sp. n. (holotype)



Fig. 12. Distribution of *Doliops mindoroensis* sp. n.

***Doliops santossilvai* sp. n.**

(Fig.13)

Type material. Holotype, female: Philippines: Mindanao Isl., Surigao del Sur, San Miguel, 07.2015, local collector leg.; Holotype | *Doliops* | *santossilvai* sp. n. | A.Barševskis det. 2017 | <red rectangular label, handwritten>

Distribution. Philippines: Mindanao Island (Fig. 14).

Description. Body black, very shining, with metallic bronza luster. Elytra with six spots of yellow scales. Body length: 13.3 mm, maximum width: 5.1 mm.

Part of head between eyes and antennal bases with impressed longitudinal band of yellow scales and very thin, fine median line. The longitudinal band of greenish scales starts from antennal bases, where is wider and ends up between the eyes in the middle of the forehead, where it is much narrower than at the beginning. Thin median line of frontal longitudinal band continues from basal part of head to clypeus. Frontal part of head behind clypeus convex, glossy, with very delicate punctation and fine reticulate microsculpture. Cheeks under eyes with wide spot of yellow scales. Mandibles and genae furnished with long lateral setae. Labrum convex, glossy, with concaved apical margin, with pubescence, small punctures and long setae. Clypeus short, shiny, transverse, red-brown. Head black and glossy, with very fine microsculpture, punctation and fine tomentum. Basal area of head around antennae weakly protruding, with green metallic luster. Antennae long and slender, with short pubescence and a brush of setae internally at apex of antennomere 3 and with some long setae at antennomeres 4-7. Antennomeres 1-2 black, with metallic bronza luster and with very fine pubescence. Antennomere 3 dark brown basally, black and widened apically, pubescent. Antennomere 4 brown basally and darkened apically. Remaining segments testaceous and pubescent except last a little darkened segment.

Pronotum subcylindrical, square, about as wide as long, anterior portion of pronotum convex, posterior margin double, sinuous; pronotum very shiny, with transverse lateral microsculpture and very sparse punctation in basal portion. Disc of pronotum glossy, with very fine punctures. Lateral margin of pronotum with small spot of yellow scales, dorso-lateral portions of pronotum with small, slightly transverse oval spot of yellow scales behind middle.

Scutellum wide rounded apically, shiny and tomentose, black. Pars stridens not visible.

Elytra convex, very shiny, with bronze luster and six spots of yellow scales; surface of elytra with microsculpture. First two dorsal spots elongated, oval, apical spot almost square, both lateral spots almost rounded (Fig. 11). Width of elytra at shoulders: 4.7 mm. Maximum width of elytra behind middle: 5.1 mm. Dorsal and lateral portions of elytra with sparse and coarse punctures, fine microsculpture and pubescence. Meso-, metaepimera and sternites with lateral spots, covered by yellow scales. Legs comparatively short and robust, with metallic luster. Femora strongly widened at apical third, with small elongate yellow apical spot, more or less pubescent. Tibia flattened at external margin, with fringe of dark setae. Dorsal surface of tarsomeres with dark pubescence.

Male unknown.

Differential diagnosis. By the general shape of the body, *Doliops santossilvai* sp. n. is similar to *Doliops duodecimpunctata* (Mindanao Island), from which it differs by the square-shaped pronotum and coloration of pronotum and elytra: lateral margin of pronotum with small yellow spot and with small transverse spot behind medio-lateral portions of the pronotum, and elytra with elongated two dorsal spots, almost square apical and more or less rounded lateral spots (Fig. 13). Pronotum of *D. duodecimpunctata* distinctly wider than long, with yellow spot on lateral portions; elytra with three dorsal spots and two first lateral spots more or less rounded and with third



A



Fig. 14. Distribution of *Doliops santossilvai* sp. n.



B

Fig. 13. *Doliops santossilvai* sp. n. (A - dorsal view, B - lateral view)

latero-apical irregular spot sometimes confluent with lateral apical spot (Fig. 7).

Etymology. The species named after my colleague cerambycidologist Antonio Santos-Silva (San-Paulu, Brazil) in appreciation of cooperation.

ACKNOWLEDGEMENTS

I wish to express my gratitude to my colleagues Alexey Shavrin (Daugavpils, Latvia) for valuable comments and suggestions and Alexander Anichtchenko for help in preparation of photographs of beetles. I am grateful to Olaf Jäger (SMTD, Dresden, Germany) for the providing of the type material of *D. duodecimpunctata* for the study.

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Received: 02.12.2017.

Accepted: 20.12.2017.

Published: 31.12.2017.

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