



Far Eastern Entomologist

Дальневосточный энтомолог

Journal published by Far East Branch
of the Russian Entomological Society
and Laboratory of Entomology, Federal
Scientific Center of the East Asia
Terrestrial Biodiversity, Vladivostok

Number 473: 1-19

ISSN 1026-051X (print edition)
ISSN 2713-2196 (online edition)

March 2023

<https://doi.org/10.25221/fee.473.1>

<https://elibrary.ru/eklvkb>

<https://zoobank.org/References/E3519841-F78A-417F-B5F3-ACD59F84A622>

AN ANNOTATED CHECKLIST OF THE SPECIES OF THE SUBGENUS *IFASINA* JEANNEL, 1946, GENUS *CYLINDERA* WESTWOOD, 1831 (COLEOPTERA, CICINDELIDAE), FROM THE PHILIPPINES, WITH THE DESCRIPTION OF A NEW SPECIES

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Summary. An annotated checklist of the species the subgenus *Ifasina* Jeannel, 1946 of the genus *Cylindera* Westwood, 1831 presently known to occur in the Philippines is given. The lectotype and paralectotype of *Cicindela macilenta* Schaum, 1862 are designated. *Cylindera (Ifasina) klimenkoi* sp. n. is described from Aurora Province, Luzon Island. The new species is distinguished from the probably most similar *C. (Ifasina) macilenta* by the white elytral pattern, particularly the shape of the apical lunule in both sexes and the large, metallic purple-bronze, basodiscal subsutural mirror in females, as well as by the shape of the aedeagus. A key to and a distribution map of all 12 species of the subgenus *Ifasina* heretofore recorded from the Philippines is also given.

Key words: tiger beetles, taxonomy, new species, key, distribution map, Luzon Island, Aurora Province.

А. В. Маталин Аннотированный список видов подрода *Ifasina* Jeannel, 1946 рода *Cylindera* Westwood, 1831 (Coleoptera, Cicindelidae) Филиппин с описанием нового вида // Дальневосточный энтомолог. 2023. N 473. С. 1-19.

Резюме. Приведен аннотированный список видов подрода *Ifasina* Jeannel, 1946 рода *Cylindera* Westwood, 1831 (Coleoptera, Cicindelidae) Филиппин. Выделены лектотип и паралектотип *Cicindela macilenta* Schaum, 1862. Из провинции Аурора (о-в Лусон) описан *Cylindera (Ifasina) klimenkoi* sp. n. От близкого *C. (Ifasina) macilenta* новый вид отличается светлым рисунком надкрылий, особенно формой апикального пятна у особей обоих полов и крупным металлическим пурпурно-бронзовым пришовным пятном в основной трети надкрылий у самок, а также формой эдеагуса. Даны определительная таблица и карта распространения 12 филиппинских видов подрода *Ifasina*.

INTRODUCTION

Initially, the subgenus *Ifasina* was established by Jeannel (1946) within *Cicindela* Linnaeus, 1758 for three Malagasy species based on the coarse puncturation and very sparse pubescence of the episterna, as well as on the shapes of the labrum and internal sac of the aedeagus. Later, Rivalier transferred *Ifasina* to *Cylindera* Westwood, 1831, again as subgenus which included eight African-Malagasy (Rivalier, 1958), 27 Indo-Malay (Rivalier, 1961) and three Australian species (Rivalier, 1963). At present the species diversity of this subgenus has more than doubled to amount to 82 species (Wiesner, 2020; Dheurle, 2021). Of them, 11 occur in the Philippines (Dheurle, 2015, 2016, 2017, 2021; Cabras *et al.*, 2016; Wiesner, 2020), nine being endemic to the islands (Wiesner, 2020; Dheurle, 2021).

The current paper presents an annotated checklist of the species of *Ifasina* known to occur in the Philippines, also describing still one more, new species found in Luzon Island. The distinctions of the new species from the related species are discussed, as well as a key to and a distribution map to *Ifasina* species from the Philippines is also given.

MATERIAL AND METHODS

The specimens used for this study are kept in the following public and private collections: Moscow State Pedagogical University, Moscow, Russia (MSPU); Museum für Naturkunde, Berlin, Germany (MFNB); A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia (SIEE); Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIN); Zoological Museum, M.V. Lomonosov State University, Moscow, Russia (ZMUM); Siberian Zoological Museum, Novosibirsk, Russia (SZM); Daugavpils University Beetles collection, Daugavpils, Latvia (DUBC); Jürgen Wiesner, Wolfsburg, Germany (JW).

Measurements were taken as follows: TL – total body length without labrum (from the anterior margin of the clypeus to the apex of the elytra); HW – width of head with

eyes (in the widest place); LL – length of labrum without apical teeth (from the anterior margin of the clypeus to the base of the apical teeth); LW – width of labrum (in the widest place); PL – length of pronotum (along the midline); PW – width of pronotum (in the widest place); EL – length of elytra (from the base of the scutellum to the elytral apex); EW – width of the elytra (in the widest place); AL – length of the aedeagus (from the base to the apex in left lateral view); MSq and BDSq – square of subsutural mirror and of basodiscal spot, respectively (as the product of maximum length and width).

The description of a white elytral pattern follows Moravec (2010); the nomenclature of the female genitalia follows Freitag (1972).

Statistical analyses were performed using STATISTICA 8.0 software. Differences between mean values were tested using Mann–Whitney U-test.

Photographs of the habitus and individual structural details were taken using a Canon EOS 40D camera with a MP-E 65 mm macro lens. The images of the aedeagus were taken with a Canon EOS 6D camera attached to a Carl Zeiss AXIO Scope.A1 microscope. All pictures were processed using Zerene Stacker software.

AN ANNOTATED CHECKLIST OF *CYLINDERA (IFASINA)* SPECIES OF PHILIPPINES WITH DESCRIPTION OF A NEW SPECIES

Cylindera (Ifasina) foveolata (Schaum, 1863)

DISTRIBUTION. India, Nepal, Bangladesh, Myanmar, Thailand, Laos, Cambodia, Vietnam, China (Yunnan), Indonesia (?Sumatra, Java, Sulawesi), Philippines (Wiesner, 2020). Until now only three specimens of this widespread, but sporadic species have been recorded from the Philippines. – **Palawan:** Brooke's Point (Wiesner, 2019); Roxas (Johnson, 2021); **Luzon:** Manila (Schultze, 1916) (Fig. 48).

Cylindera (Ifasina) viduata (Fabricius, 1801)

- = *Cicindela triguttata* Herbst, 1806.
- = *Cicindela chlorochila* Chaudoir, 1852.
- = *Cicindela myrrha* Thomson, 1857.

DISTRIBUTION. DISTRIBUTION. One of the most common and abundant species among the Asiatic *Ifasina* species, known from India, Nepal, Bangladesh, Myanmar, Thailand, Laos, Cambodia, Vietnam, China (Guangdong, Hainan, Hong Kong, Shanghai, Yunnan), Malaysia (Malacca, Borneo), Indonesia (Sumbawa, Java, Bali, Sumatra, Sulawesi, Papua New Guinea), Philippines (Wiesner, 2020). In the Philippines, *C. viduata* has been found virtually on all larger, as well as several smaller islands – **Palawan:** Brooke's Point (Wiesner, 2019); **Tawi-Tawi:** without exact locality (Wiesner, 1980, as *triguttata*); **Mindanao:** Bukidnon (as Bukidon) (Acciavatti & Pearson, 1989), San Miguel (Suba River), Mt. Agtuuganon (Cassola,

2000), Santa Cruz (Medina *et al.*, 2019), Mt. Kitanglad, Barangay Bonbonon, Barangay Esperanza, Barangay Mati, Barangay San Isidro, Mambuntan Falls (Acal *et al.*, 2021); **Camiguin**: Sagay River (Acal *et al.*, 2021); **Negros**: Bago (Schultze, 1916, as *triguttata*); **Samar**: Lope de Vega (Johnsom, 2021); **Leyte**: without exact locality (Wiesner, 1980, as *triguttata*), 1992, 2020); **Biliran**: without exact locality (Acciavatti & Pearson, 1989); **Panay**: Tangalan (as Tangcolan) (Acciavatti & Pearson, 1989); **Romblon**: without exact locality (Schultze, 1916, as *triguttata*); **Katanduanes**: Pandan (Johnson, 2021); **Luzon**: Olongapo (Schultze, 1916, as *triguttata*), Los Baños (Acciavatti & Pearson, 1989), Mt. Makiling (Acciavatti & Pearson, 1989; Kavanaugh *et al.*, 2014), Mariveles, Tineg (Johnsom, 2021) (Fig. 48).

NOTE. It seems noteworthy that for a long time *Cylindera (Ifasina) holosericea* (Fabricius, 1801) was listed in the fauna of the Philippines (Horn, 1915, 1926, 1929; Wiesner, 1986, 1992, 2020). However, until now no reliably confirmed records of this species from the Philippines are available. Perhaps all previous records are in fact misidentifications of *C. viduata* which was regarded for a long time as a synonym of *C. holosericea* (see Acciavatti & Pearson, 1989).

***Cylindera (Ifasina) semperi* (W. Horn, 1893)**

DISTRIBUTION. Philippines (endemic to the northern Philippines). – **Mindoro**: Mt. Halion (Dheurle, 2021); **Marinduque**: Bio Boac (Johnson, 2021); **Luzon**: without exact locality (Wiesner, 1980) (Fig. 48).

NOTE. In the original description (Horn, 1893), “Ins. Philippin” was indicated as the type locality.

***Cylindera (Ifasina) fabiocassolai* Wiesner, 1989**

DISTRIBUTION. Philippines (endemic to the northern Luzon). – **Luzon**: Mountain Province (Wiesner, 1989), Santa Fe, (Dalton Pass) (Cassola, 2000), Tanglagan, Parina (Medina *et al.*, 2020), Conner (Anichtchenko, 2022) (Fig. 48).

***Cylindera (Ifasina) balabacensis* Naviaux et Sawada, 1996**

DISTRIBUTION. Philippines (endemic to Balabac). – **Balabac**: without exact locality (Naviaux & Sawada, 1996) (Fig. 48).

***Cylindera (Ifasina) rizali* Dheurle, 2021**

DISTRIBUTION. Philippines (endemic to the northern Philippines). This species was described based on two specimens found very far from each other, a male from northern **Panay**: Culasi (Dheurle, 2021) and a female from northern **Luzon**: Pudtol (Dheurle, 2021) (Fig. 48).

***Cylindera (Ifasina) discreta elaphroides* (Dokhtouroff, 1882)**

DISTRIBUTION. This very common Philippine endemic subspecies occurs virtually on all larger islands, as well as some smaller ones. – **Palawan:** without exact locality (Horn, 1926; Wiesner, 1992, 2019, 2020; Cabras *et al.*, 2016; Acak *et al.*, 2021); **Mindanao:** Agusan River (Schultze, 1916), Mt. Agtuuganon, San Miguel (Suba River) (Cassola, 2000), Cabalinan, San Isidro, Mayaon, Pasian (Cabras *et al.*, 2016), Banahaw Creek (Mati Protected Landscape) (Cabras & Wiesner, 2016), Mt. Hamiguitan Range, Davao City (Medina *et al.*, 2019), Montevista (Barangay Linoan), Mt. Candalaga Range (Medina, 2020), Mt. Kitanglad, Mt. Kalatungan, Sitio Bato, Barangay Kalasungay, Barangay Canayan, Barangay Bonbonon, Barangay Merila (Tubod River), Barangay Baraas (Tubod River), Barangay Tubod (Tubod River), Barangay Tipanoy (Tubod River), Barangay Pugaan (Pugaan River), Barangay Esperanza, Barangay Mati, Barangay Rogongon, Malasag Cugman, Barangay Upper Talacogon, Barangay Lower Talacogon, Barangay Aya-Aya (Acal *et al.*, 2021), Dapitan City, Opao (J. Wiesner, pers. com.); **Negros:** without exact locality (Cabrera *et al.*, 2019b); **Cebu:** Barangay Lower Becerril (Lusapon River) (Cabrera *et al.*, 2019a, b); **Bohol:** Loboc (J. Wiesner, pers. com.; Cabrera *et al.*, 2019b); **Leyte:** Libas (Bagong River) (Cassola, 2000); **Samar:** Hinabangan, Arizona (Mining Company) (Cassola, 2000); **Mindoro:** Baco (Alag river) (J. Wiesner, pers. com.), **Luzon:** Manila (Dokhtouroff, 1882), Cabanatuan (Schultze, 1916; Johnson, 2021); Dingalan (Johnson, 2021) (Fig. 48).

***Cylindera (Ifasina) dilatotarsa* (W. Horn, 1924)**

DISTRIBUTION. Philippine (endemic to the northern Philippines). – **Mindoro:** Mindoro oriental (J. Wiesner, pers. com.); **Luzon:** without exact locality (Horn, 1924) (Fig. 48).

NOTE. In the original description, Horn (1924) failed to indicate any locality in Luzon, giving only “Luzon bor.?”. No exact locality has been indicated in subsequent publications either (Horn, 1926; Wiesner, 1980, 1992; 2020; Dheurle, 2016).

***Cylindera (Ifasina) mouthiezi* Dheurle, 2015**

DISTRIBUTION. Philippines (endemic to Mindanao). – **Mindanao:** Cabanglasan (Dheurle, 2015, 2017; Acal *et al.*, 2021), Panamokan (Dheurle, 2017; Acal *et al.*, 2021), Barangay Kalasungay (Acal *et al.*, 2021), Cagan, Mayaon, Pasian (Cabras *et al.*, 2016), Montevista (Barangay Linoan) (Medina *et al.*, 2019; Medina, 2020) (Fig. 48).

NOTE. Records of *C. mouthiezi* in Dingalan, Aurora and in Lagonoy, Bicol, both in Luzon Island (Johnson, 2021) are very doubtful and could be mislabelling. Thus, these localities are not mapped in the present paper.

***Cylindera (Ifasina) richouxi* Dheurle, 2016**

DISTRIBUTION. Philippines (endemic to Samar). – **Samar:** Lope de Vega (Dheurle, 2016) (Fig. 48).

NOTE. Record of *C. richouxi* in Mt. Kalatungan, Bukidnon, Mindanao Island (Johnson, 2021) virtually in the type-locality of *C. mouthiezi* seems very doubtful and could be mislabelling. Thus, this locality is not mapped in the present paper.

***Cylindera (Ifasina) macilenta* (Schaum, 1862)**

Figs 1–3, 6–8, 12, 14, 15, 18, 19, 22–29, 37–40.

TYPE MATERIAL EXAMINED (digital images from the web-site <https://carabidae.org/>). Lectotype – ♂, **the Philippines**: Luzon (MNFB), here designated; paralectotype – 1♀, same labeled (MNFB), here designated.

OTHER MATERIAL EXAMINED. Luzon, Imugan, 1.X 1921, 3♂; Luzon, Mt. Banachao (= Banahaw), 21.XI 1921, 1♂; Philippines, N Luzon, Nueva Vizcaya, Santa Fe, h~1200 m, 16.V 2015, 1♂, 1♀, A. Klimenko leg. (all MSPU); N Luzon, Nueva Vizcaya, Imugan, V. 2014 1♀ (digital image from the web-site <https://carabidae.org/>) (DUBC).

DISTRIBUTION. Philippines (endemic to the eastern Philippines). – **Leyte**: without exact locality (Cabras *et al.*, 2016; Dheurle, 2016; Wiesner, 2020); **Luzon**: Montalban Gorge (Schultze, 1916), Tanglagan, Parina (Medina *et al.*, 2020), Mt. Makiling, Banaue, Laguna (J. Wiesner, pers. com.), Imugan, Santa Fe, Mt. Banahaw, San Mariano, Maddela (Fig. 48).

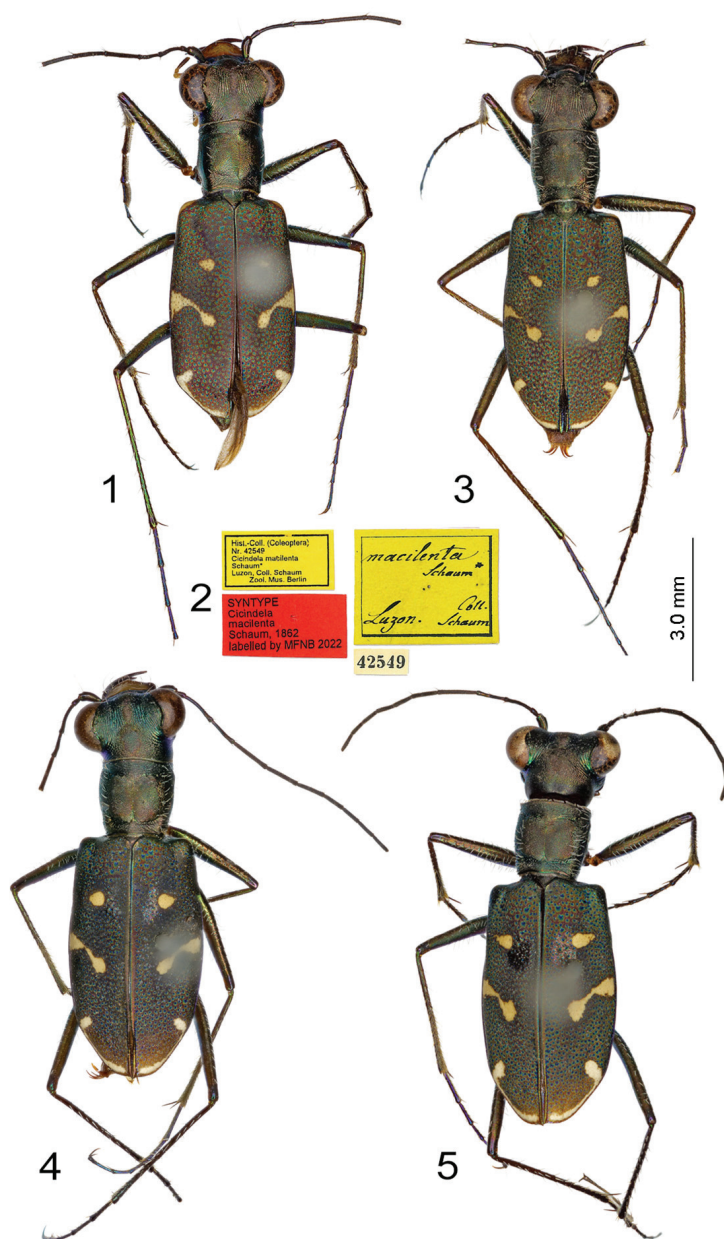
NOTE. This species was described from Luzon Island without exact locality (Schaum, 1862). In the collection of MNFB four syntypes of *C. macilenta* from Philippines are housed (<https://carabidae.org/>). However, only male and one female are corresponded to the original description of Schaum (1862). Two other females belong to the new species which is described below. Due to the series of the syntypes of *C. macilenta* is mixed as well as the holotype was not designate by Schaum (1862), according to the Articles 61.1, 72 and 74 of the Code (ICZN, 1999) a male with the labels “42549” [white typeset label], “Hist.-Coll. (Coleoptera), Nr 42459, Cicindela macilenta Schaum*, Luzon, Coll. Schaum, Zool. Muz. Berlin” [yellow printed label], “SYNTYPE, Cicindela macilenta Schaum, 1862, labelled by MFNB 2022” [red printed label] “macilenta Schaum*. Luzon. Coll. Schaum” [yellow handwritten label] is designated here as the lectotype (Figs 1, 2), and a female with the same labels is designated here as the paralectotype (Fig. 3); two other females (Figs 4, 5) are excluding from the syntypes of *C. macilenta*.

***Cylindera (Ifasina) klimenkoi* Matalin, sp. n.**

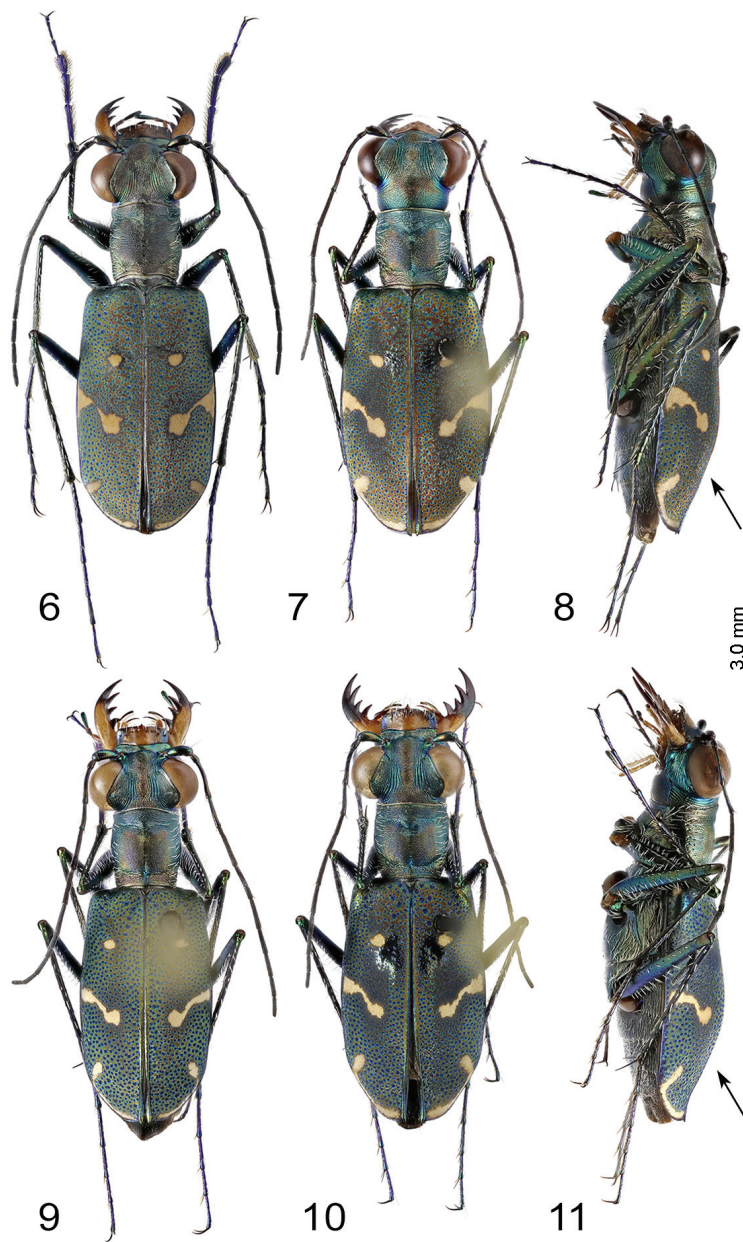
<https://zoobank.org/NomenclaturalActs/E3A67286-64B9-46DF-B6F8-FB53524D2E41>

Figs 4, 5, 9–11, 13, 16, 17, 20, 21, 30–36, 41–44

TYPE MATERIAL. Holotype – ♂, **the Philippines**: N Luzon, Aurora, 15 km NW Dingalan, h = 60 m, 20.V 2015, leg. A. Klimenko. Paratypes: 29♂, 10♀ with same labels as holotype; 2♀ (digital images from the web-site <https://carabidae.org/>) with labels “Hist.-Coll. (Coleoptera), Nr 42459, Cicindela macilenta Schaum*, Luzon, Coll. Schaum, Zool. Muz. Berlin” [yellow printed label], “SYNTYPE, Cicindela macilenta Schaum, 1862, labelled by MFNB 2022” [red printed label].

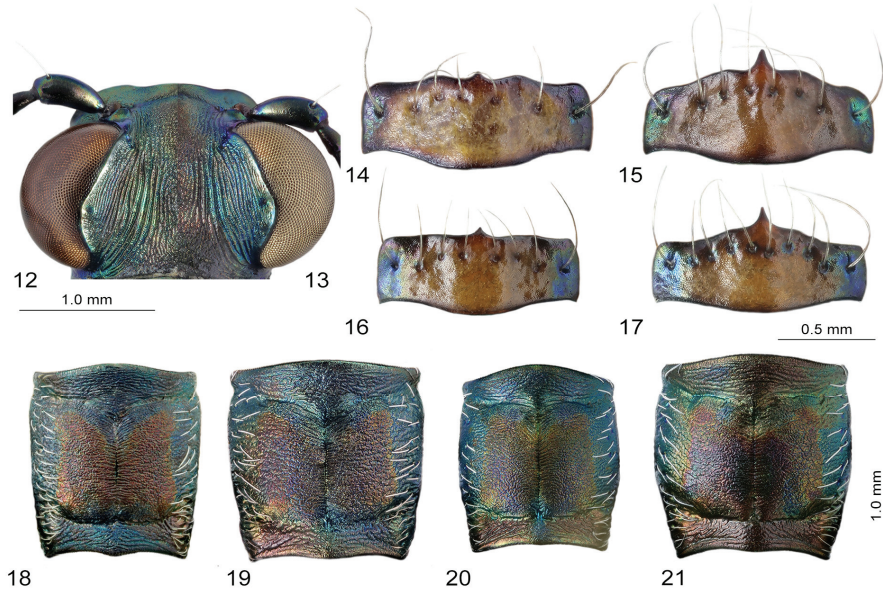


Cylindera (Ifasina) spp, habitus, dorsal view (digital images from the web-site <https://carabidae.org/>): 1–3 – *C. macilentata*; 4, 5 – *C. klimenkoi* sp. n.; 1, 3–5 – habitus; 2 – labels; 1 – male; 3–5 – females; 1, 2 – lectotype; 3 – paralectotype; 4, 5 – paratypes.



Figs 6–11. *Cylindera (Ifasina)* spp, habitus: 6–8 – *C. macilenta* (Luzon, Nueva Vizcaya, Santa Fe); 9–11 – *C. klimenkoi* sp. n.; 6, 9 – males; 7, 8, 10, 11 – females; 9 – holotype; 10, 11 – paratypes; 6, 7, 9, 10 – dorsal view; 8, 11 – left lateral view.

TYPE DEPOSITION. The holotype and 11 paratypes (9♂, 2♀) are deposited in the collection of ZIN; 13 paratypes (10♂, 3♀) – in the collection of MSPU; six paratypes (4♂, 2♀) – in the collection of ZMMU; four paratypes (2♂, 2♀) – in the collection of SIEE; two paratypes (2♂) – in the collection of SZM; three paratypes (2♂, 1♀) – in the collection of JW; two paratypes (2♀) – in the collection of MFNB.

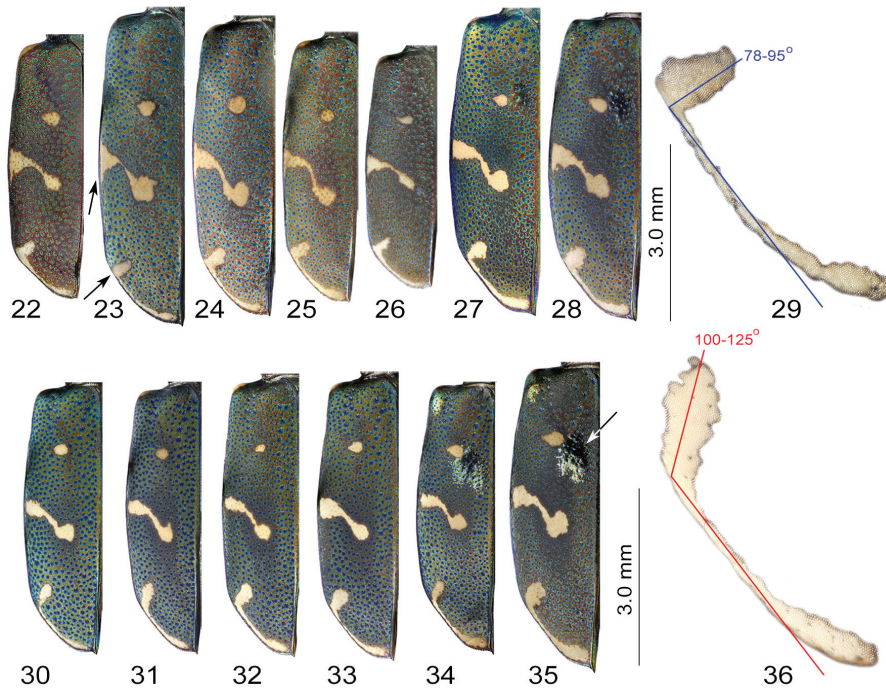


Figs 12–21. *Cylindera (Ifasina)* spp, details: 12, 14, 15, 18, 19 – *C. macilenta* (12, 14, 15, 19 – Luzon, Nueva Vizcaya, Santa Fe; 18 – Luzon, Nueva Vizcaya, Imugan); 13, 16, 17, 20, 21 – *C. klimenkoi* sp. n.; 12, 13 – head (12 – left half; 13 – right half); 14–17 – labrum; 18–21 – pronotum, dorsal view; 12–14, 16, 18, 20 – males; 15, 17, 19, 21 – females; 16, 20 – holotype; 13, 17, 21 – paratypes.

DIAGNOSIS. The new species seems to be particularly similar to *C. (I.) macilenta*, but it can easily be distinguished by the apical part of the elytra being much more strongly, roof-like elevated along the suture, especially so in females in *C. (I.) klimenkoi* sp. n. (Fig. 11), vs. only slightly elevated in *C. (I.) macilenta* (Fig. 8); by the colouration and white pattern of the elytra: an evenly delated middle band without lateral portion and the ante-apical portion of the apical lunule connected to the marginal portion at an obtuse angle (100–125°) in *C. (I.) klimenkoi* sp. n. (Figs 4, 5, 9, 10, 30–36), vs. the middle band usually narrow in the centre and with a short lateral portion, as well as the ante-apical portion of the apical lunule connected to the marginal portion at an acute or virtually right angle (78–95°) in *C. (I.) macilenta* (Figs 1, 3, 6, 7, 22–29); by the large basodiscal metallic mirror in females of *C. (I.) klimenkoi* sp. n. (Figs 4, 5, 10, 34, 35, 47), vs. small or extremely to even entirely

reduced in females of *C. (I.) macilenta* (Figs 3, 7, 27, 28, 47); and by the longer and more strongly curved basal portion of the aedeagus in *C. (I.) klimenkoi* sp. n. (Figs 41–44, 46), vs. shorter and poorly curved in *C. (I.) macilenta* (Figs 37–40, 46).

From *C. (I.) mouthiezi* Dheurle, 2015, the new species clearly differs by a complete apical lunule (Figs 4, 5, 9–11, 30–36), vs. incomplete in the former species (Dheurle, 2015: fig. 3; 2017: figs 1–2), as well as by a pale central area of the labrum (Figs 16, 17), vs. black in the former species (Dheurle, 2015: fig. 1).



Figs 22–36. *Cylindera (Ifasina)* spp, left elytron: 22–29 – *C. macilenta* (specimens from: 22 – Luzon; 23, 28, 29 – Luzon, Nueva Vizcaya, Santa Fe; 24, 25, 27 – Luzon, Nueva Vizcaya, Imugan; 26 – Luzon, Quezon, Mt. Banachao); 30–36 – *C. klimenkoi* sp. n.; 22–26, 29, 30–33, 36 – males; 27, 28, 34, 35 – females; 22 – lectotype; 30 – holotype; 31–36 – paratypes; 29, 36 – apical lunule.

From *C. (I.) richouxi* Dheurle, 2016, the new species is reliably different by the humeral lunule separated into a humeral and a basodiscal spot (Figs 4, 5, 9, 10, 30–35), vs. immaculate shoulders in females (Dheurle, 2016: fig. 3) or only a small humeral spot in males (Dheurle, 2016: fig. 1).

Unlike *C. (I.) dilatotarsa* (Horn, 1893), the new species has a rounded, basodiscal white elytral spot (Figs 4, 5, 9, 10, 30–35) and a narrow, not widely dilated second fore-tarsomere in males.

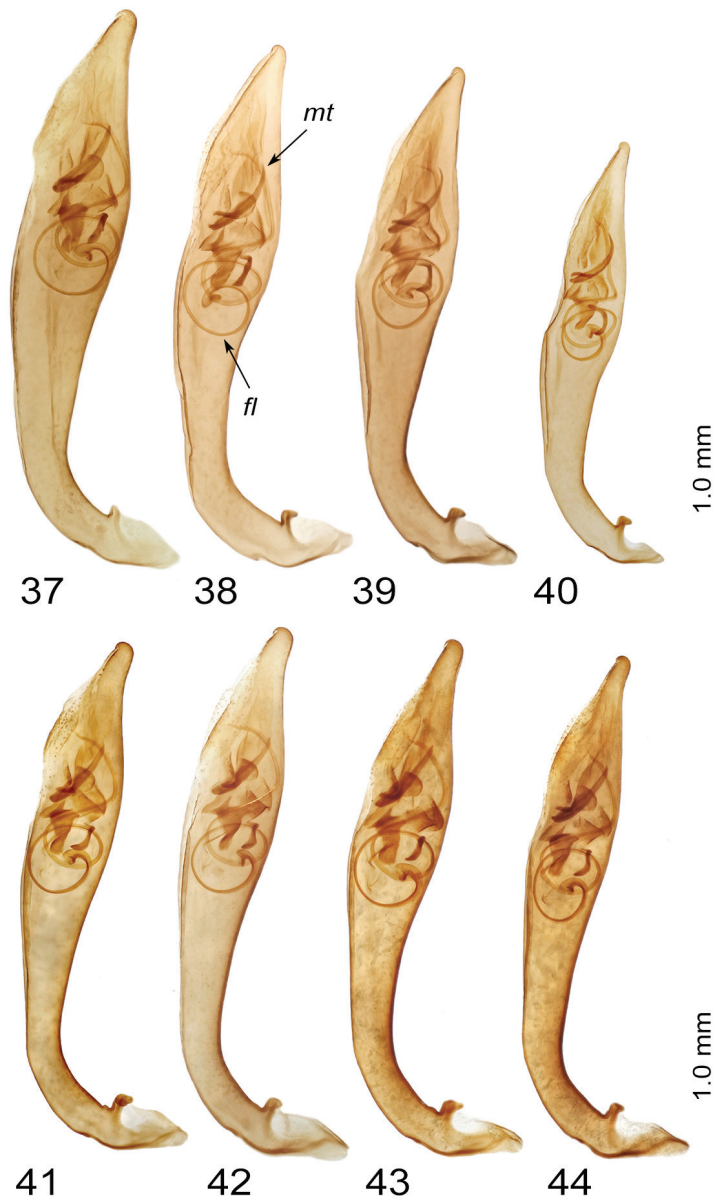
DESCRIPTION. TL in males 7.0–7.7 mm (mean – 7.39 mm, n = 31), in females 7.4–8.2 mm (mean – 7.89 mm, n = 12).

Head metallic bluish-green with distinct golden-bronze tinge on finely rugulose vertex and supraorbital plates; frons, antennal plates and clypeus with copper-gold reflection; genae finely striolate, metallic greenish-blue with light golden tinge. Eyes large, protruding, globose, HW/PW (Fig. 45) in males 1.5–1.67 (mean – 1.59, n = 31), in females 1.44–1.61 (mean – 1.55 mm, n = 10), supra-orbital plates with 3–4 deep and wide, and 9–10 shallow and narrow furrows, and two setae near each eye: the first seta at anterior edge, the second seta at posterior third (Fig. 13). Labrum pale with a narrow, black-brown, anterior edge and very broad, violet metallic lustered, lateral margins, entirely covered with isodiametric microsculpture, short and transverse, LW/LL in males 2.5–2.86 (mean – 2.56, n = 31), in females 2.2–2.56 (mean – 2.38, n = 10), with an indistinctly curved anterior edge, a small central tooth and 8–11 (mean – 9, n = 41) submarginal setae placed far away from anterior margin, with neither basal dimples nor a central carina (Figs 16, 17). Mandibles black with greenish-golden-violet tinge at base of molars, pale in basal two-thirds. Labial and maxillary palpi pale (sometimes pre-apical palpomeres darker, yellowish brown) except for metallic, green, apical palpomeres. Antennae very long, extended posteriorly more than two-thirds the length of elytra, black, antennomeres 1–4 metallic greenish blue, 1st antennomere with copper-gold while 2nd–4th ones with purple-violet reflection; scape with a single, long, apical seta, antennomeres 3 and 4 with 4–5 and 1–2 short white spiniform setae, except apical ones, respectively, antennomeres 5–11 black, regularly covered with short yellow pubescence.

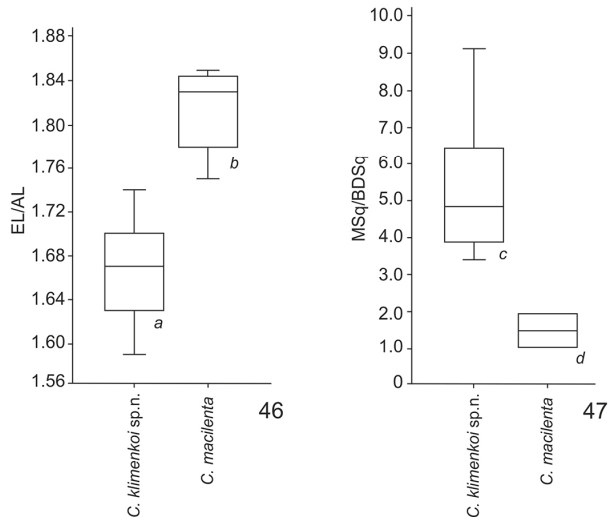
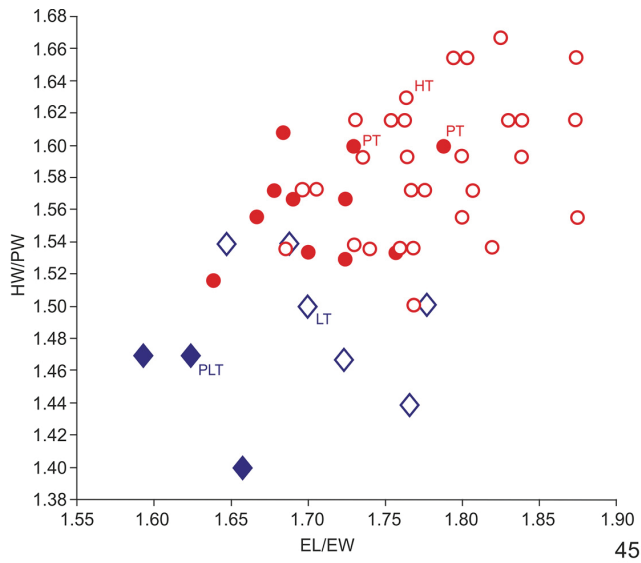
Pronotum longitudinal, PL/PW in males 1.11–1.19 (mean – 1.14, n = 31), in females 1.0–1.07 (mean – 1.05, n = 12), with two irregular rows of sparse, white, decumbent setae along indistinctly rounded lateral sides and 5–6 setae at each anterior angle; pronotal disc finely and shallowly rugulose, metallic bronze with copper-green reflection; midline shallow and indistinct with a small depression anteriorly; anterior and posterior transverse grooves relatively deep, the latter with small basal pits (Figs 20, 21). Pro-episternum metallic greenish blue basally and copper-bronze with golden luster apically; with sparse white semi-erect hairs. Thoracic sternites metallic bluish green with golden shine, pro- and mesosternum glabrous, metathorax covered with white decumbent hairs.

Legs long and slender, entirely violet except for light brown trochanters, with greenish-gold reflection along anterior surface of femora and at the base of tibiae; femora, as well as fore and hind tibiae with sparse, white, erect setae, apical half of mid-tibiae with numerous, very dense, white, erect setae along bottom surface; tarsomeres with short setae on bottom surface, in males fore-tarsomeres 1–3 distinctly thickened, 3rd one clearly dilated, 4th and 5th ones very thin; claws thin and moderately long.

Elytra elongated oval; tapering towards apex; strongly elevated roof-like, especially so in females, along the suture in apical part of elytra (Fig. 11); EL/EW in males 1.69–1.88 (mean – 1.79, n = 32), in females 1.64–1.83 (mean – 1.72, n = 12); copper-bronze with golden reflection except for a dull central area and numerous,



Figs 37–44. *Cylindera (Ifasina)* spp, aedeagus, left lateral view: 37–40 – *C. macilenta* (specimens from: 37 – Luzon, Nueva Vizcaya, Santa Fe; 38, 39 – Luzon, Nueva Vizcaya, Imugan; 40 – Luzon, Quezon, Mt. Banachao); 41–44 – *C. klimenkoi* sp. n.; 41 – holotype; 42–44 – paratypes; *f* – flagellum; *mt* – median tooth.



Figs 45–47. Morphometric features of *Cylindera (Ifasina)* spp: 45 – relation of the proportions elytra, head and pronotum (circles – *C. klimenkoi* sp. n.; rhombus – *C. macilenta*; open symbols – males; solid symbols – females; HT – holotype of *C. klimenkoi* sp. n.; LT – lectotype of *C. macilenta*; PLT – paralectotype of *C. macilenta*; PT – paratype of *C. klimenkoi* sp. n., former syntype of *C. macilenta*); 46 – relation of the proportions elytra and aedeagus; 47 – relation of the square of subsutural mirror and basodiscal spot; rectangle – 25–75 percentiles; horizontal line in rectangle – median; whiskers – SD; significantly different samples are marked with different lower case letters, according to Mann–Whitney U-test, $p < 0.05$ (46 – $U = 0$, $z = -3.546$, $p = 0.000$, Monte Carlo $p = 0.0001$; 47 – $U = 0$, $z = -2.528$, $p = 0.012$, Monte Carlo $p = 0.0045$).

evenly spaced, bright, blue points; suture with blue tinge, subsutural area green, scutellum bronze with greenish copper edges; a very narrow marginal edge deep blue, apical margin narrowly rounded, finely serrulate, sutural tooth small, epipleura brown with greenish blue tinge in basal quarter; white elytral pattern consisting of a disrupted humeral lunule separated into small a humeral and a basodiscal spot, a relatively narrow, clearly sinuate, median band with a distinct, rounded, apical knob, but without marginal portion, and a complete, narrow, apical lunule with its ante-apical portion connected to marginal portion at an obtuse angle – 100–125° (Figs 4, 5, 9, 10, 30–36); in females additionally with a metallic golden-green patch behind humeral spot and a large, metallic, purple-bronze, subsutural mirror, 3.43–9.2 (mean – 5.32, n = 12) times large than the white basodiscal spot (Figs 4, 5, 10, 34, 35, 47).

Abdominal sternites metallic greenish blue, regularly covered with white decumbent hairs. Aedeagus slender, moderately expanded in apical third, with a short, relatively broad apex and a long, thin, clearly curved, basal portion; AL 2.6–2.8 mm (mean – 2.7, n = 31), EL/AL (Figs 45, 46) 1.59–1.74 (mean – 1.67, n = 31); internal sack with ten sclerites, including a long flagellum forming 2.5 turns and a relatively long, slightly curved, median tooth (Figs 41–44).

A V-shaped posterior emargination of sternum VIII of female with 3–4 thick setae on each broadly rounded apex and 5 very small and thin setae along lateral margins. Syntergum 9 and 10 weakly sclerotized, 1.25–1.3 times longer than wide, with 25–27 long lateral setae. Second gonapophyses strongly curved; ventral notch of second gonacoxa shallow, with a sparse row of very small and thin setae, the largest four being anterior ones. Bursa copulatrix ovoid, oviduct sclerite medium-sized.

ETYMOLOGY. The new species is dedicated to Alexei Klimenko, a Russian entomologist and my late good friend, (1970–2017) who collected the type series of this new species.

DISTRIBUTION. Known only from the type locality – environs of the town of Dingalan, Aurora Province, Luzon Island (Fig. 48).

NOTE. Due to a new species is similar with *C. macilenta* the specimens of the later one should be re-examined for clarification of the distribution area of these species.

Key to the *Cylindera* species of the subgenus *Ifasina* known from the Philippines

1. Elytra immaculate, with coarse and distinctive microsculpture; head and pronotum coarsely rugose; labrum long and pale, with large, metallic, submarginal pores *C. (I.) foveolata* (Schaum, 1863)
- Elytra clearly maculate, with humeral and apical lunules, and a middle band which in some species is broken into several spots; head and pronotum finely rugulose; labrum without large, metallic, submarginal pores 2

2. Labrum shorter, non-metallic, entirely or partly pale with dark metallic tinged margins, with or without indistinct median carina 3
 – Labrum longer, entirely metallic, with a distinct median carina 8
3. Elytra without white basodiscal spot 4
 – Elytra with a white basodiscal spot 5
4. Labrum with narrow, dark, lateral and anterior margins; elytra in both sexes copper-green with blue lateral margins; fore tarsomeres 2–3 in males very large and dilated
 *C. (I.) dilatotarsa* (W. Horn, 1924)
 – Labrum with broad, dark, lateral and anterior margins; elytra in males bright blue, in females bronze-brown; fore tarsomeres 1–3 in males long and cylindrical, 3rd one slightly dilated *C. (I.) richouxi* Dheurle, 2016
5. Labrum with a black central area; apical lunule incomplete and broken into a large and rounded ante-apical and a small and oval apical spot *C. (I.) mouthiezi* Dheurle, 2015
 – Labrum only with dark brown margins; apical lunule complete 6
6. Labrum with a narrow, dark brown, anterior margin; middle band incomplete and broken into a sublateral and a discal spots; elytra of females clearly dilated in anterior third
 *C. (I.) discreta elaphroides* (Dokhtouroff, 1882)
 – Labrum with broad, dark brown, anterior and lateral margins; middle band complete, slightly oblique or sinuate; elytra of females only slightly dilated in anterior third 7
7. Elytra slightly elevated roof-like along suture in apical part; middle band with short lateral portion, ante-apical portion of apical lunule connected to marginal portion at an acute or virtually right angle (not more than 95°); elytra of females additionally at most with only a small, often missing metallic basodiscal mirror; aedeagus with a shorter basal portion
 *C. (I.) macilenta* (Schaum, 1862)
 – Elytra, especially so in females, strongly elevated roof-like along suture in apical part; middle band without lateral portion, ante-apical portion of apical lunule connected to marginal portion at an obtuse angle (more than 100°); elytra of females additionally with a very large, metallic basodiscal mirror; aedeagus with a longer basal portion
 *C. (I.) klimenkoi* sp. n.
8. Humeral lunule entirely absent *C. (I.) viduata* (Fabricius, 1801)
 – Humeral lunule present 9
9. Humeral lunule as very small, virtually invisible, basodiscal spot; ante-apical portion of apical lunule long and thin *C. (I.) fabiocassolai* Wiesner, 1989
 – Humeral lunule as rounded, clearly visible, basodiscal spot; ante-apical portion of apical lunule short and broad, comma-shaped 10
10. Elytra shorter, distinctly broad in apical third (EL/EW = 1.6–1.65); aedeagus short, broadened in middle part *C. (I.) rizali* Dheurle, 2021
 – Elytra longer, indistinctly broad in apical third (EL/EW = 1.75–1.9); aedeagus long, not broadened in middle part 11
11. Colour of top surface, including labrum, copper-bronze; elytra with narrower, sharply convergent apices; apical third without metallic lustre
 *C. (I.) balabacensis* Naviaux et Sawada, 1996
 – Colour of top surface, including labrum, greenish blue; elytra with broader and gradually rounded apices; apical third and lateral margins with bright metallic lustre
 *C. (I.) semperi* (W. Horn, 1893)

CONCLUSION

At present, 12 species or subspecies of the subgenus *Ifasina* have reliably been recorded from the Philippines (Fig. 48). Among them, ten species (83.3%) are endemic to various parts of the archipelago. Only *C. discreta elaphroides* is a widespread Philippine endemic which occurs both on all larger and several smaller islands. In contrast, *C. richouxi*, *C. balabacensis* and *C. klimenkoi* sp. n. are known only from

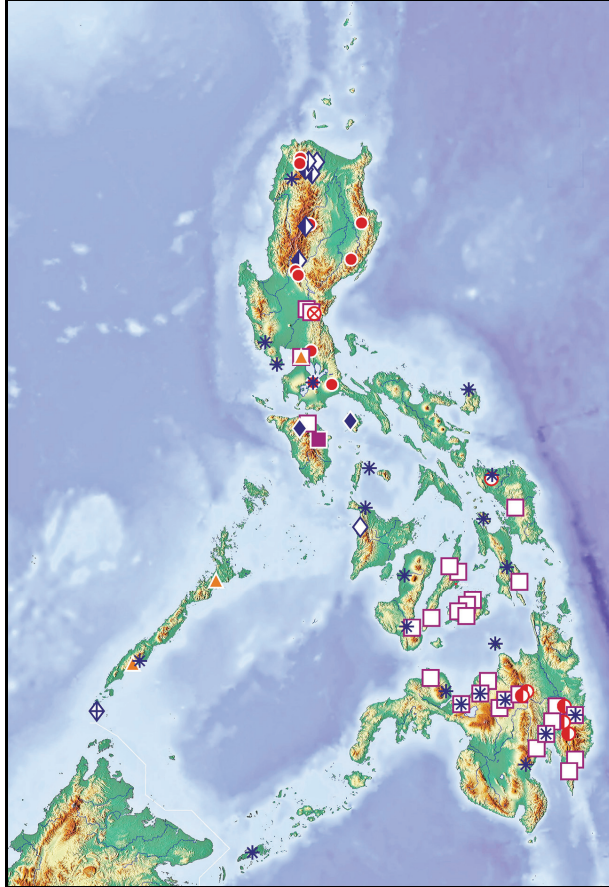


Fig. 48. Distribution of *Cylindera (Ifasina)* spp. in the Philippines: red solid circle – *C. macilentata*; red half-solid circle – *C. mouthiezi*; red crossed-circle – *C. klimenkoi* sp. n.; red open circle – *C. richouxi*; orange solid triangle – *C. foveolata*; blue solid rhomb – *C. semperi*; blue half-solid rhomb – *C. fabiocassolai*; blue crossed-rhomb – *C. balabacensis*; blue open rhomb – *C. rizali*; blue asterisk – *C. viduata*; lilac solid quadrat – *C. dilatotarsa*; lilac open quadrat – *C. discreta elaphroides*. Map source: https://en.wikipedia.org/wiki/Philippines#/media/File:Relief_Map_Of_The_Philippines.png

the type localities within a single island. The greatest species diversity is encountered on the largest and simultaneously most populous Luzon Island. Eight species of *Ifasina* are found there, six of them being Philippine endemics, while *C. fabiocassolai* and *C. klimenkoi* sp. n. are both endemic to Luzon. On Mindanao, the second largest island, only three species from this subgenus have been recorded. Two of them are Philippine endemics, among which *C. mouthiezi* is endemic to Mindanao. Generally, the fauna of Philippine tiger beetles still remains studied rather fragmentarily. Objectively, this is also due to the huge number of islands (more than 7.100) in the archipelago, the prospection of which may takes many years.

ACKNOWLEDGEMENTS

I am very grateful to the late Alexey Klimenko (Tver, Russia) who kindly lent material for this study, to Alexander Anichtchenko (Daugavpils, Latvia) for the kind permission to use the digital images of *C. macilenta* from the web-site <https://carabidae.org/>, to Jürgen Wiesner (Wolfsburg, Germany) for the information on the distribution of some *Cylindera* (*Ifasina*) species in the Philippines, and to Sergei Golovatch (Moscow, Russia) who checked the English.

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