

Taxonomic revision of the genus *Trictenotoma* Gray, 1832 (Coleoptera: Trictenotomidae). Part 3 – species from the Philippine Archipelago, with description of a new species

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Abstract.— The species of *Trictenotoma* Grey, 1832 from the Philippine Archipelago are critically assessed, description of *T. boudanti* Drumont et Telnov sp. nov. from Balabac and Palawan, and a redescription of *T. cindarella* Kriesche, 1921 from Mindanao are provided. A key to the Philippine Trictenotomidae Blanchard, 1845 is presented for the first time.

Key words.— Trictenotomidae, Philippine Archipelago, taxonomy, morphology, identification, distribution.

Running title. — Revision of *Trictenotoma* from the Philippines

Introduction

This is the third publication in a series devoted to the taxonomic revision of the enigmatic genus *Trictenotoma* Gray, 1832 (see also Telnov & Drumont 2020a; Telnov, Hu & Drumont 2020), which is focused on the taxa from the Philippine Archipelago.

Trictenotomidae is a small family of tenebrionoid Coleoptera represented by two extant genera – *Autocrates* Thomson, 1860 and *Trictenotoma* Gray, 1832 – with 5 and (up to this study) 11 extant species respectively (Gebien 1911, Telnov 1999, Drumont 2006, 2016, Telnov & Drumont 2020a). This family appears through most of southern and eastern Asia from the southern foothills of the Himalaya, central and eastern China (inclusive Hainan Island) and Korean Peninsula in the north towards Sri Lanka, Greater Sunda Islands (Java) and the Philippine Archipelago in the south and southeast (Telnov 1999, Telnov & Lee 2008, Pollock 2008, Drumont & Telnov 2009, Telnov & Drumont 2020a, Telnov & Drumont 2020b).

Trictenotoma cindarella Kriesche, 1921 originally described from a single female specimen collected in north-western Mindanao, was long considered the only *Trictenotoma* and the sole trictenotomid in the Philippine Archipelago. This species was never redescribed and no additional data on its distribution were hitherto available. Extensive material provided by various museums and private collections (see ‘Material and Methods’) allowed redescription of, and new distributional data for *T. cindarella*, as well as discovery of a new *Trictenotoma* from Balabac and Palawan in western Philippines. This new species, *T. boudanti* Drumont et Telnov sp. nov., is described and illustrated and its possible relationships discussed below. The first Trictenotomidae records from Balabac, Dinagat and Palawan islands are presented.

The objectives of this paper are to summarize data on the Philippine trictenotomids, redescribe and illustrate the adult of *T. cindarella*, describe the new species, and to provide a key to identification of Philippine Archipelago *Trictenotoma*.

Addition to the publication by Telnov *et al.* (2020) is also provided (see Fig. 66, distribution map of Taiwan endemic *T. formosana* Kriesche, 1919).

Material and Methods

A Leica S6D stereomicroscope was used for dissection and study. Genitalia and terminal abdominal segments were photographed using a Canon EOS 77D SLR camera attached to the stereomicroscope. CombineZP software was used for stacking genital images (Hadley 2010). Habitus photographs were taken with a Canon EOS 70D DSLR camera and 105 mm F2.8 Sigma EX DG Macro OS lens (for detailed photographs supplemented with Raynox DCR-250 lens). Image stacking was done using Zerene Stacker software.

Total body length does not include partially exposed abdominal ventrites.

Data from all specimen labels are reproduced verbatim, without additions. If not stated, all labels are printed. Authors’ comments are given in square brackets. Labels (if there are multiple labels on a specimen) are separated by a slash. Each studied specimen of the new species is provided with a black-framed label on red paper ‘HOLOTYPUS’ or ‘PARATYPUS’, respectively.

The material discussed below is housed in the following collections (responsible curator's name is given in parentheses for each public institution):

ADC – Alain Drumont, private collection, Brussels, Belgium;
BMNH – Natural History Museum, London, United Kingdom (D. Telnov);
DTC – Dmitry Telnov, private collection, Rīga, Latvia;
ERC – Enrico Ruzzier, private collection, Mirano (VE), Italy;
EVC – Eduard Vives, private collection, Barcelona, Spain;
DUBC – Daugavpils University Coleoptera Research Center, Ilgas, Latvia (A. Anichtchenko);
JPSC – Jochen-P. Saltin, private collection, Dornum, Germany;
NME – Naturkundemuseum Erfurt, Germany (M. Hartmann);
MSNM – Museo Civico di Storia Naturale di Milano, Italy (F. Rigato);
NMNS – National Museum of Natural Science, Taichung city, Taiwan (J.-F. Tsai);
PAC – Patrick Arnaud, private collection, Saintry / Seine, France;
RBINS – Royal Belgian Institute of Natural Sciences, Brussels, Belgium (A. Drumont);
SIC – Sergei Ivanov, private collection, Vladivostok, Russia;
SNSD – Senckenberg Naturhistorische Sammlungen Dresden, Germany (O. Jäger).

Taxonomy

***Trictenotoma boudanti* Drumont et Telnov sp. nov.** (Figs 1–25, 53–54 & 65)
<http://zoobank.org/230F56B2-D4E9-444E-AB8E-0F1759BEEED1>

Holotype ♂ RBINS: Philippines, Palawan Isl., Brooke's point area, on Mount Mantalingajan, 19.I.2002, leg. J.-L. Boudant / coll. RBINS, don A. Drumont, I.G.: 34.221.

Paratypes 53 specimens: same labels as holotype [2♂ & 1♀ ADC, 1♀ *ex* ADC in SNSD]; PHILIPPINES Palawan 1973 Brookes [sic!] Rodrigo Rodriguez B.M. 1975–177 [printed] / *Trictenotoma cindarella* Kriesche [handwritten] C.R.Smith det 19 [printed] 75 [handwritten] / NHMUK014093127 [1♂ BMNH]; Palawan, Philippines, IV. 1977 [handwritten] / NMNS ENT 5503-3285 [1 specimen NMNS]; (PHILIPPINES), Mainit, near Brooks Point, Island Palawan, V-VIII. 1980, Collected by Natives / NMNS ENT 4881-33839 [1 specimen NMNS]; (PHILIPPINES), Mainit, near Brooks Point, Island Palawan, V-VIII. 1980, Collected by Natives / NMNS ENT 4881-33840 [1 specimen NMNS]; Philippines, Palawan, Quezon district, IX.1983, leg. Rodriguez [1♂ PAC]; PHILIPPINES N PALAWAN OLANGUAN [= Olangoan] mt 400 [m] XII.1994 [handwritten] [1♀ ERC]; Mt. Mantalingjan [sic! correct name is Mantalingajan], S. Palawan, Philippines, IV~VI-1995 / NMNS ENT 4881-33838 [1 specimen NMNS]; Mt. Mantalingjan [sic! correct name is Mantalingajan], S. Palawan, Philippines, III-1996, D. Mohagan leg. / NMNS ENT 4881-33832 [1 specimen NMNS]; Philippines Balabac Is. Palawan 19 [printed] 97 [handwritten] / E. Gowing-Scopes collection BMNH(E) 2005-4 / NHMUK014093122, NHMUK014093123, NHMUK014093124 & NHMUK014093125 [3♂ & 1♀ BMNH]; PALAWAN Isl., PHILIPPINES 19.I.2002 Leg J.-L. Boudant [handwritten, black framed] [2♂ DTC]; PHILIPPINES Palawan Balabac Island No date (assumed 1990s) / E. Gowing-Scopes collection BMNH(E) 2005-4 / NHMUK014093126 [1♂ BMNH]; Philippines, Palawan Isl., Brooke's point area, X.1996, leg. local collector [2♀ ADC]; same locality but

22.VII.1997, leg. J.-L. Boudant [1♂ & 2♀ ADC]; same locality but IV.2000, leg. J.-L. Boudant [4♀ ADC]; same locality but VI.2003, leg. local collector [1♂ ADC]; same locality but VII.2011, leg. N. Mohagan [1♀ ADC]; same locality but IX.2011 [2♀ ADC]; same locality but III.2012, leg. local collector [2♂ & 3♀ ADC]; same locality but IV.2012 [1♂ ADC]; same locality but V.2012 [1♂ & 1♀ ADC]; same locality but VII.2012 [1♀ ADC]; Philippines, Palawan Isl., Brooke's point area, IV.2000, leg. J.-L. Boudant / coll. RBINS, don A. Drumont, I.G.: 34.221 [1♀ RBINS] (allotype); PALAWAN Isl., PHILIPPINES IV.2000 leg. J.-L. BOUDANT [1♀ NME]; Brooke's point Palawan isl., IX.2011 PHILIPPINES leg. N. Mohagan [black framed] [1♀ DTC]; Philippines, Palawan Isl., Magara Roxas, VII.2012, leg. N. Mohagan [5♀ ADC]; PHILIPPINES, Palawan, Brooke's Point, VI.2014, leg. local collector [1♀ DUBC]; Philippines, Palawan Isl., Brooke's point area, 500-800m, 10.VII.2014, leg. local collector [1♀ ADC]; Filipp. [Philippines], S. Palawan, Brooke's Point [1♂ MSNM]; Philippines, Palawan, Brooke's point, VIII.2014 / Coll.RBINS, material purchased from I. Lumawig, I.G.32.820 [1♂ RBINS].

Etymology. Patronymic. Named after Jean-Louis Boudant (Bacilly, France), our colleague, who provided us with most of the type specimens of this new species. Jean-Louis started his work on Palawan in 1987 in a Vietnamese refugee camp, first for a private Philippine school, and later for “Écoles Sans Frontières” (“Schools Without Borders”) under the aegis of UNHCR (United Nation's High Commission for Refugees) where he spent several years.

Measurements. Holotype, total body length 49.5 mm. Head inclusive mandibles 13.5 mm long, across eyes 10.5 mm wide. Pronotum 9 mm long, maximum width across middle 17.5 mm. Elytra 28 mm long, maximum combined width (in basal third) 18.5 mm. Male paratypes 33–50.5 mm long (n = 6), selected ♀♀ paratypes 34–52 mm long (n = 24).

Description. Dorsum and venter uniformly black, subopaque. Dorsum slightly flattened. Dorsal and ventral vestiture of distinct, rather long strongly appressed pale greyish setae, leaving mandibles, antennae, most of tibiae and tarsi, variably broad median part and lateral humps of pronotum glabrous. Venter with broadly glabrous area all along midline. Head much narrower than pronotum, with maximum width across vertex. Labrum strongly transverse, short, anterior margin broadly emarginate, anterior and lateral margins with dense fringe of short thick setae. Clypeus with anterior margin subtruncate. Compound eye moderately large, vertically oriented, about 2.5-2.6x higher than long, deeply emarginate at insertion of antenna. Compound eyes separated by slightly more than their height. Frons slightly impressed mesally at the insertion of clypeus. Dorsal punctures dense, delicate, generally denser around compound eyes on both head dorsum and venter; intervening spaces smaller than to 2-3x as large as punctures, delicately microreticulate, moderately glossy to subopaque. Head ventral punctures similar to those of dorsum. Mentum with long, clustered pale setae (directed centrally) arising from large circular flat punctures, and somewhat shorter median, erect setae. Gula posterior to the posterior margin of compound eyes with pair of large ovoid pores (glandular release), each internally supplemented with thick scale-like distally subtruncate seta. Pores separated by glossy unpunctured glabrous area with irregular transverse subconcentric lines. Male mandible opaque, about as long as head length measured from anterior margin of labrum towards base (and slightly longer

than head length from insertion of mandible to base), apices acute, unidentate. Inner margins of male mandible with strong terebral teeth: one acute (median) on left, two nearly equally large obtuse (median and subapical) on right mandible. Outer margin of mandible in large males irregularly transversely wrinkled basally and medially, with mediolateral dorsal impression. In small males outer margin of mandible delicately wrinkled (at base) to punctate. Female mandible opaque, as long as head length measured from mandibular insertion towards base and slightly shorter than head length along midline, apex acute, unidentate. Inner margin of female mandible as in male, outer margin as in small male. Terminal maxillary palpomere subtriangular, about as long as penultimate palpomere. Genal ridges on either side of mentum shorter, produced anteriorly and subacute in male, comparatively more strongly produced anteriorly and acute to subacute in female (Figs 53–54). Antennae 11-segmented, in male extending towards the second visible abdominal ventrite, in female hardly reaching posterior margin of metaventrite. Basal antennomere elongate, distinctly widened distally (clavate), much greater than combined length of antennomeres 2–3 combined; antennomere 2 short, submoniliform; antennomeres 3–8 filiform, elongate and flattened in dorsoventral aspect, only slightly widened distally. Antennomere 3 slightly less than twice as long as antennomere 2; antennomeres 9–10 flabellate, terminal antennomere of irregular asymmetrical shape, almost as long as antennomere 10. Surface of all antennomeres glabrous, except for distal surfaces of antennomeres 9–10 (except narrow longitudinal glabrous median area) and terminal antennomere completely covered with very dense sensillar fields.

Pronotum strongly transverse, nearly twice as wide as long, dorsally flattened to slightly convex, with a pair of circular to slightly transverse ovoid glabrous raised lateral areas (humps). Lateral margin of pronotum rounded, in both sexes with acute anteriorly-produced anterolateral angle, followed posteriorly by a smooth area or a series of small sinuous notches, broadly rounded and obtuse median angulation, inconspicuous postmedian lateral angulation, and with obtuse to subacute posterolateral angle which is slightly produced laterally in some specimens (Figs 1–2). Maximum pronotal width across median or postmedian lateral pronotal angulations. Pronotal dorsal punctures as those on head but generally denser, with in part delicately microreticulate intervening spaces. Dorsal setae of pronotum directed transversely towards midline in mesal part of pronotal disc. Prosternal intercoxal process large and broad, not widened posteriorly, broadly U-shaped emarginate apically, with delicate arched longitudinal stria opposite each procoxa on either lateral margin. Hypomeron large, densely delicately punctate. Anterior part of mesoventrite overlapped by prosternal intercoxal process. Anterior intercoxal process of metasternum slightly to moderately strongly elevated, in lateral view not or moderately angulate (Fig. 3). Scutellar shield triangular, not longer than basal width, rounded apically and sparsely minutely punctate.

Elytron with humeral angle rounded (obtusely dentate in a few largest specimens), elytral apices not meeting at the suture, each armed with small obtuse tooth. Lateral margin of elytron straight; laterodorsal edge of elytron margined by delicate groove which disappears at apex; epipleuron broad, distinct to about half length of elytron. Elytral punctures denser and more delicate than those on pronotum, intervening spaces glossy to delicately microreticulate or wrinkled. All setae generally directed apically.

Male abdominal ventrite V broadly and moderately deeply U-shaped emarginate mesally

and densely setose on posterior margin (Fig. 4), female – broadly rounded, subtruncate medially (Fig. 21). Male tergite V subtriangular, broadly V-shaped emarginate and densely setose apically (Fig. 5), female – subtriangular, rather broad, shallowly U-shaped emarginate mesally on posterior margin and with comparatively broad flattened and glabrous median area (Fig. 22). Male abdominal ventrite VI strongly bilobate, with very deep U-shaped median emargination and dense setae, which are longer on the outer lateral side of each lobe (Fig. 6). Male tergite VI elongate but rather stout, apically broadly rounded (Fig. 7). Male tergites IX–X fused together, their apical lobes slender elongate, each preapically with a small group of 3–5 short setae (Figs 8–11). Aedeagus with moderately long basale, apex of apicale slightly widened, apical lobes slender, not curved in lateral aspect, slightly diverged in dorsoventral aspect, with moderately long V-shaped median notch (Figs 12–15 & 19–20). Apical portion of apicale with sparse short setae laterally (Figs 19–20) and ventrally. Accessory lateral lobes of aedeagus with long and moderately broad, apically rounded and long setose apical spatulae (Figs 12–13, 15 & 19–20). Median lobe slender, apically narrowed, pointed and shortly curved in lateral aspect (Figs 16–18). Female tergite VIII and abdominal ventrite VIII as in figs 23–24. Female spiculum ventrale long and slender, apically triangularly spatulate; base of the spatula tetratomic. Ovipositor long and slender, its whole surface densely very shortly setose; gonostyli short, lateral (Fig. 25).

Sexual dimorphism. Female antennae comparatively shorter, mandibles smaller than in large males, genal ridges longer and stronger acute in female than in male.

Variability. Both males and females significantly vary in body length (see measurements above). Small males appear generally female-like with short, rounded mandibles which are not depressed mesally on their outer margins.

Differential diagnosis. The new species externally strongly resembles similarly whitish- to greyish-setose congeners from mainland Asia and Hainan and (*Trictenotoma davidi* Deyrolle, 1875 (grey morph), *T. mouhoti* Deyrolle, 1875, *T. pollocki* Drumont et Telnov, 2020) and the Philippine *T. cindarella* Kriesche, 1921. The apicale of the aedeagus with its peculiar V-shaped apex and slender (not thickened or widened), in dorsal / ventral aspect slightly diverging apical lobes, which are, additionally, not curved in lateral aspect is, indeed, unique for *T. boudanti* Drumont et Telnov sp. nov. Compared with most congeners, the dorsal outline of the body is comparatively less elongate in *T. boudanti* Drumont et Telnov sp. nov. (Figs 1–2) and antennae – comparatively shorter in both sexes. Most *Trictenotoma formosana* Kriesche, 1919 (Taiwan) specimens have yellowish-grey dorsal vestiture, slightly similar but never as pale greyish as in *T. boudanti* Drumont et Telnov sp. nov., except an aberrant female paratype on the fig. 2 which appears somewhat similar to *T. formosana*.

Ecology. Most of the studied specimens were collected in lower- to mid-montane rainforest around the Palawan's highest peak, Mount Mantalingajan in Brooke's Point municipality.

Phenology. The main period of adult activity is from January (holotype) till October (only two females recorded for this month).

Distribution. Based on the material examined, the new species is endemic to the Province of Palawan in the western Philippines and known to inhabit islands of Balabac and Palawan (Fig. 65). Single records known from both northern (Mt. Olangoan) and central (“Quezon district” without exact locality) Palawan.

***Trictenotoma cindarella* Kriesche, 1921** (Figs 26–52, 55–56 & 65)

Kriesche (1921: 278) original description (Mindanao).

Telnov (1999: 95–96) checklist (Philippines), biogeography.

Telnov (2000: no pagination) on-line checklist (Philippines).

Holotype ♀ [the original description is based on a single female specimen] SNSD: Mindanao, Lanao, Iligan, coll. W. Schultze [printed, label white] / coll. W. Schultze Ankauf 1942 [printed, label pale yellow] / Staatl. Museum für Tierkunde Dresden 1942 [printed, label pale yellow] / *Trictenotoma cindarella* Kriesche Type [handwritten, label red] / Type [printed, label red] / HOLOTYPE [printed, label red] (Figs 26–27).

Type locality. [Philippines] “Mindanao, Ort Iligan, Prov. Lanao” (Kriesche 1921).

Kriesche (1921) stated the type is deposited in collection of M. Schultze (Manila), but in 1942 part of Willy Carl Max Schultze’s collection moved to the Staatliches Museum für Tierkunde in Dresden (now SNSD) (Horn *et al.* 1990); the holotype of *T. cindarella* is in this latter collection.

New records. Philippines, Mindanao Isl., Bukidnon, 22.VII.1997 [1♂ JPSC]; Philippines, Mindanao Isl., Bukidnon, VII.1997, leg. J.-L. Boudant [9♂ & 5♀ ADC]; same locality and collector but 3.XII.2001 [1♀ ADC]; same locality and collector but 18.VII.2003 [3♂ ADC, 1♂ *ex* ADC in SNSD]; *Trictenotoma cindarella* ♀ Kriesche, 1921 [handwritten] Det. A. DRUMONT, 2005 [printed, label black framed] / COLLECTION DRUMONT / Bukidnon Nord MINDANAO PHILIPPINES 22.VII.1997 / BMNH {E} 2005-139 A. Drumont / NHMUK 014093129 [1♀ BMNH]; BUKIDNON North MINDANAO PHILIPPINES Isl 22 / VII / 1997 [1♀ DTC]; Bukidnon Nord MINDANAO PHILIPPINES 22.VII.1997 [2♂ DTC]; Philippines, Mindanao Isl., Mont Kitanglad, VII.2000, coll. E. Jiroux, J Ph. Legrand [1♂ ADC]; Philippines, Mindanao Isl., Mt. Apo, II.2002, leg. I. Lumawig [1♂ ADC]; same locality and collector but VI.2004 [2♂ & 1♀ ADC]; *Trictenotoma cindarella* ♂ Kriesche, 1921 [handwritten] Det. A. DRUMONT, 2005 [printed, label black framed] / BUKIDNON, Nord MINDANAO Isl PHILIPPINES 18.VII.2003 leg J-L. BOUDANT / COLLECTION DRUMONT / BMNH {E} 2005-139 A. Drumont / NHMUK 014093128 [1♂ BMNH]; Philippines, Mindanao Isl., Bukidnon, VII.2004, leg. local collector [1♂ & 2♀ EVC]; Philippines, Mindanao Isl., Bukidnon, Fernando, III.2014, leg. I. Lumawig [1♂ ADC]; Philippines, Mindanao Isl., Bukidnon, Mt. Bulacao, IV.2014, leg. I. Lumawig [1♂ ADC]; Philippines, Mindanao Isl., Bukidnon, Cabanglasan, III.2014 [1♂ & 1♀ SIC]; Philippines, Mindanao Isl., Bukidnon, Cabanglasan, IV.2014, leg. I. Lumawig [2♂ & 3♀ ADC]; same

locality and collector but V.2014 [3♂ & 1♀ ADC]; same locality and collector but VI.2014 [2♂ ADC]; PHILIPPINES, Mindanao, Bukidnon Prov., Cabanglasan municipality, V.2014, leg. local collector [1♂ DUBC]; same locality but VI.2014, leg. local collector [2♂ & 3♀ DUBC]; PHILIPPINES, Mindanao, Bukidnon Prov., Panamokan, V.2014, leg. local collector [1♀ DUBC]; Philippines, Mindanao Isl., Bukidnon, Cabanglasan, VIII.2014 / Coll.RBINS, material purchased from I. Lumawig, I.G.32.820 [2♂ & 1♀ RBINS]; PHILIPPINES, Mindanao, Bukidnon Prov., Cabanglasan municipality, VIII.2014, leg. local collector [1♂ DUBC]; PHILIPPINES, Mindanao, Zamboanga del Norte Prov., Siocon municipality, IV.2019, leg. local collector [1♂ DUBC]; Philippines, Mindanao Isl. [without further locality and date] [1♂ PAC].

Redescription is based on ♂♀ from Bukidnon Province in central Mindanao, Philippines. Males, total body length measured from tip of mandible to apex of elytra 29–55 mm (n = 20); females 32–53 mm (n = 15) (♀ holotype is 39.5 mm long).

Dorsum and venter uniformly black, glossy. Dorsal and ventral vestiture of distinct, rather long pale greyish to whitish setae.

Head much narrower than pronotum, with maximum width across vertex. Labrum very broadly emarginate on anterior margin. Clypeus with anterior margin subtruncate to truncate. Compound eye moderately large, vertically oriented, about 2.6x higher than long, deeply emarginate at insertion of antenna. Compound eyes separated by slightly more than their height. Dorsal punctures dense, delicate; intervening spaces smaller than to twice as large as punctures, glossy but in part delicately microreticulate. Head ventral punctures similar to those of dorsum. Gular pores separated by glossy unpunctured glabrous area with irregular transverse subconcentric lines. Male mandible glossy to subopaque, longer than head length measured from anterior margin of labrum towards base (and longer than head length from insertion of mandible to base), apices acute, unidentate. Inner margins of male mandible with strong terebral teeth: one large acute (median) on left, two nearly equally large obtuse (median and subapical) on right mandible. Outer margin of mandible in large males irregularly transversely wrinkled basally and medially, with mediolateral dorsal impression. In small males outer margin of mandible delicately wrinkled (at base) to punctate. Female mandible glossy to subopaque, longer than head length measured from mandibular insertion towards base and along midline, apex acute, unidentate. Inner margins of female mandibles with one larger acute subapical and 2-3 smaller obtuse median teeth, outer margin – as in small male. Genal ridges on either sides of mentum shorter and subacute in male, comparatively longer producing anterior and acute to subacute in female (Figs 55–56). Antennae 11-segmented, in male extending towards the second visible abdominal ventrite, in female – towards midlength of the first abdominal ventrite. Basal antennomere much greater than combined length of antennomeres 2–3; male antennomere 3 slightly less than twice as long as antennomere 2, female – twice as long or slightly longer.

Pronotum strongly transverse, nearly twice as wide as long. Lateral margin of pronotum similar to that of *T. boudanti* Drumont et Telnov sp. nov. (Figs 26, 28 & 31). Maximum pronotal width across median or postmedian lateral pronotal angulations. Pronotal dorsal punctures generally as those on head. Prosternal intercoxal process large and broad, not widened posteriad, broadly U-shaped emarginate apically, with delicate arched longitudinal

stria opposite each procoxa on either lateral margin. Anterior intercoxal process of metasternum in lateral view rather strongly angulate (Fig. 30).

Elytron with humeral angle obtusely dentate, elytral apices nearly meeting at the suture, each armed with small acute tooth. Elytral punctures significantly denser and more delicate than those on pronotum.

Male abdominal ventrite V broadly and moderately U-shaped emarginate mesally and densely setose on posterior margin (Fig. 32), female – subtruncate, somewhat flattened mesally on ventral side (Fig. 49). Male tergite V subtriangular, broadly V-shaped emarginate and densely setose apically (Fig. 33), female – subtriangular, shallowly V-shaped emarginate mesally on posterior margin (Fig. 50). Male abdominal ventrite VI strongly bilobate, with comparatively short broad lateral lobes and deep U-shaped median emargination and dense setae (Fig. 34). Male tergite VI elongate, apically broadly rounded (Fig. 35). Male tergites IX–X fused together, their apical lobes elongate, each preapically with a small group of 5–6 moderately long setae (Figs 36–39). Aedeagus with moderately long basale, apex of apicale widened, apical lobes not curved in lateral aspect but strongly curved in ventral / dorsal aspect, with moderately long, narrow median notch (Figs 40–45). Accessory lateral lobes of aedeagus with narrow, apically rounded and long setose apical spatulae (Figs 40–43 & 45). Median lobe slender, apically narrowed, pointed and shortly curved in lateral aspect (Figs 46–48). Female tergite VIII and abdominal ventrite VIII as in figs 51–52.

Variability. Small males appear generally female-like with short, rounded mandibles which are not depressed mesally on their outer margins.

Differential diagnosis. This species morphologically appears most close to *T. boudanti* Drumont et Telnov sp. nov. (described above) and can be primarily distinguished on base of male and female terminalia and genital organs, as well as length of antenna and dorsal outline of the body..

Ecology. No data available.

Phenology. The main period of adult activity is from February to August and in December (only one female recorded for this month).

Distribution. Currently only known from Mindanao Island, Philippines (Fig. 65). No records available from South and East Mindanao, single record available from Zamboanga Peninsula.

***Trictenotoma* sp. (Figs 57–65)**

Single ♀ [ADC] from “DINAGAT ISL. Philippines 7.XI.1999” [handwritten], with total body length of 41 mm, differs from both *T. boudanti* Drumont et Telnov sp. nov. and *T. cindarella* primarily in ochre dorsal and yellowish-grey ventral vestiture and slightly in shape of the female abdominal ventrite V and tergite V and therefore yet cannot be certainly assigned to any of the Philippine congeners. Additional comparative specimens,

preferable males, are necessary to properly classify this specimen.

Female abdominal ventrite V subtruncate on posterior margin, slightly impressed mesally in posteroventral aspect (Fig. 60). Female tergite V narrowly subtriangular, shortly and broadly U-shaped emarginate on posterior margin (Fig. 61). Female tergite VIII and abdominal ventrite VIII as in figs 62–63. Female spiculum ventrale long and slender, apically triangularly spatulate. Ovipositor long and slender, its whole surface densely very shortly setose; gonostyli short, lateral (Fig. 64).

Distribution. Known only from the Province of Dinagat, Dinagat Island in the eastern Philippines (Fig. 65).

Key to *Trictenotoma* Gray, 1832 from the Philippine Archipelago

- 1 Body dorsal vestiture of ochre, ventral vestiture of pale yellowish-grey setae
..... *Trictenotoma* sp. (Dinagat)
- Body dorsal and ventral vestiture of pale grey setae 2
- 2 Aedeagus with apical lobes of apicale curved laterally and moderately broadly notched medially, apical portion of the apicale somewhat T-shaped (Figs 40–43); lobes of male abdominal ventrite VI comparatively more wide, median emargination between the two lobes narrower than lobe's width (Fig. 34); outer lateral margins of male abdominal ventrite VI with short setae only (Fig. 34); antennae in both sexes comparatively longer, the ratio of elytral length covered by antenna to the total length of elytra ~0.53 in males and ~0.32 in females; body in dorsal view comparatively slender (Figs 26, 28 & 31)
..... *T. cindarella* (Mindanao)
- Aedeagus with apical lobes of apicale slightly widened laterally and moderately broadly notched medially, apical portion of the apicale nearly V-shaped (Figs 12–13 & 19–20); lobes of male abdominal ventrite VI comparatively slender, median emargination between the two lobes at least as wide or wider than lobe's width (Fig. 6); outer lateral margins of male abdominal ventrite VI with some elongate setae among short ones (Fig. 6); antennae in both sexes comparatively shorter, the ratio of elytral length covered by antenna to the total length of elytra ~0.38 in males and ~0.23 in females; body in dorsal view comparatively stouter (Figs 1–2)
..... *T. boudanti* Drumont et Telnov sp. nov. (Balabac, Palawan)

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FIGURE CAPTIONS

Figures 1–3. *Trictenotoma boudanti* Drumont et Telnov sp. nov.: (1) holotype ♂, habitus, dorsal view, body length 49.5 mm; (2) paratype ♀ (allotype), body length 47.5 mm; (3) holotype ♂, pro- and metasternal intercoxal processes, lateral view (photographs courtesy N. Mal). Not to scale.

Figures 4–11. *Trictenotoma boudanti* Drumont et Telnov sp. nov., paratype ♂ from Palawan: (4) abdominal ventrite V, ventral view; (5) tergite V, dorsal view; (6) abdominal ventrite VI, ventral view; (7) tergite VI, dorsal view; (8–9) fused tergites IX–X, dorsal and ventral view; (10–11) apical portion of fused tergites IX–X, dorsal and ventral view. Not to scale.

Figures 12–20. *Trictenotoma boudanti* Drumont et Telnov sp. nov., paratype ♂ from Palawan: (12–13) aedeagus, ventral and dorsal view; (14) basale of aedeagus, lateral view; (15) aedeagus, apical portion of apicale and accessory lateral lobe, lateral view; (16–17) aedeagus, median lobe, dorsal and lateral view; (18) apical portion of median lobe, lateral view; (19–20) aedeagus, apical portion of apicale and accessory lateral lobes, ventral and dorsal view. Not to scale.

Figures 21–25. *Trictenotoma boudanti* Drumont et Telnov sp. nov., paratype ♀ from Palawan, Brooke's Point: (21) abdominal ventrite V, ventral view; (22) tergite V, dorsal view; (23–24) tergite VIII and abdominal ventrite VIII, dorsal and ventral view; (25) apical half of ovipositor. Not to scale.

Figures 26–31. *Trictenotoma cindarella* Kriesche, 1921: (26–27) holotype ♂, body length 39.5 mm, habitus and original labels; (28) ♂, from North Mindanao, Bukidnon, body length 50.5 mm, habitus, dorsal view; (29) ditto, head in dorso-lateral view; (30) ♀ from North Mindanao, Bukidnon, body length 48 mm, pro- and metasternal intercoxal process, lateral view; (31) ditto, habitus, dorsal view (photographs courtesy N. Mal). Not to scale.

Figures 32–39. *Trictenotoma cindarella* Kriesche, 1921, ♂ from North Mindanao, Bukidnon: (32) abdominal ventrite V, ventral view; (33) tergite V, dorsal view; (34) abdominal ventrite VI, ventral view; (35) tergite VI, dorsal view; (36–37) fused tergites IX–X, dorsal and ventral view; (38–39) apical portion of fused tergites IX–X, dorsal and ventral view. Not to scale.

Figures 40–48. *Trictenotoma cindarella* Kriesche, 1921, ♂ from North Mindanao, Bukidnon: (40–41) aedeagus, ventral and dorsal view; (42–43) aedeagus, apical portion of apicale and accessory lateral lobes, ventral and dorsal view; (44) basale of aedeagus, lateral view; (45) aedeagus, apical portion of apicale and accessory lateral lobes, lateral view; (46–47) aedeagus, median lobe, dorsal and lateral view; (48) apical portion of median lobe, lateral view. Not to scale.

Figures 49–52. *Trictenotoma cindarella* Kriesche, 1921, ♀ North Mindanao, Bukidnon: (49) abdominal ventrite V, ventral view; (50) tergite V, dorsal view; (51–52) tergite VIII and abdominal ventrite VIII, dorsal and ventral view. Not to scale.

Figures 53–56. Philippine *Trictenotoma*, head (consider genal ridges), ventral view: (53) *T. boudanti* Drumont et Telnov sp. nov., holotype ♂; (54) ditto, paratype ♀ from Palawan, Brooke's Point; (55) *T. cindarella* Kriesche, 1921, ♂ from North Mindanao, Bukidnon; (56) ditto, ♀ from same locality (photographs courtesy N. Mal). Not to scale.

Figures 57–59. *Trictenotoma* sp., ♀ from Dinagat, body length 41 mm in dorsal (57), ventral (58) and lateral (59) view (photographs courtesy J. Constant).

Figures 60–64. *Trictenotoma* sp., ♀ from Dinagat: (60) abdominal ventrite V, ventral view; (61) tergite V, dorsal view; (62–63) tergite VIII and abdominal ventrite VIII, dorsal and ventral view; (64) apical half of ovipositor. Not to scale.

Figure 65. Distribution map of *Trictenotoma* species in the Philippine Archipelago. Yellow-filled circles – *T. boudanti* Drumont et Telnov sp. nov.; black-filled circles – *T. cindarella* Kriesche, 1921; yellow-filled diamond – *Trictenotoma* sp. Prepared with ArcGIS 10.3.

Figure 66. Locality map for *Trictenotoma formosana* Kriesche, 1919 (prepared by F.-S. Hu, submitted for Telnov *et al.* (2020) but omitted and not published for unstated reason).

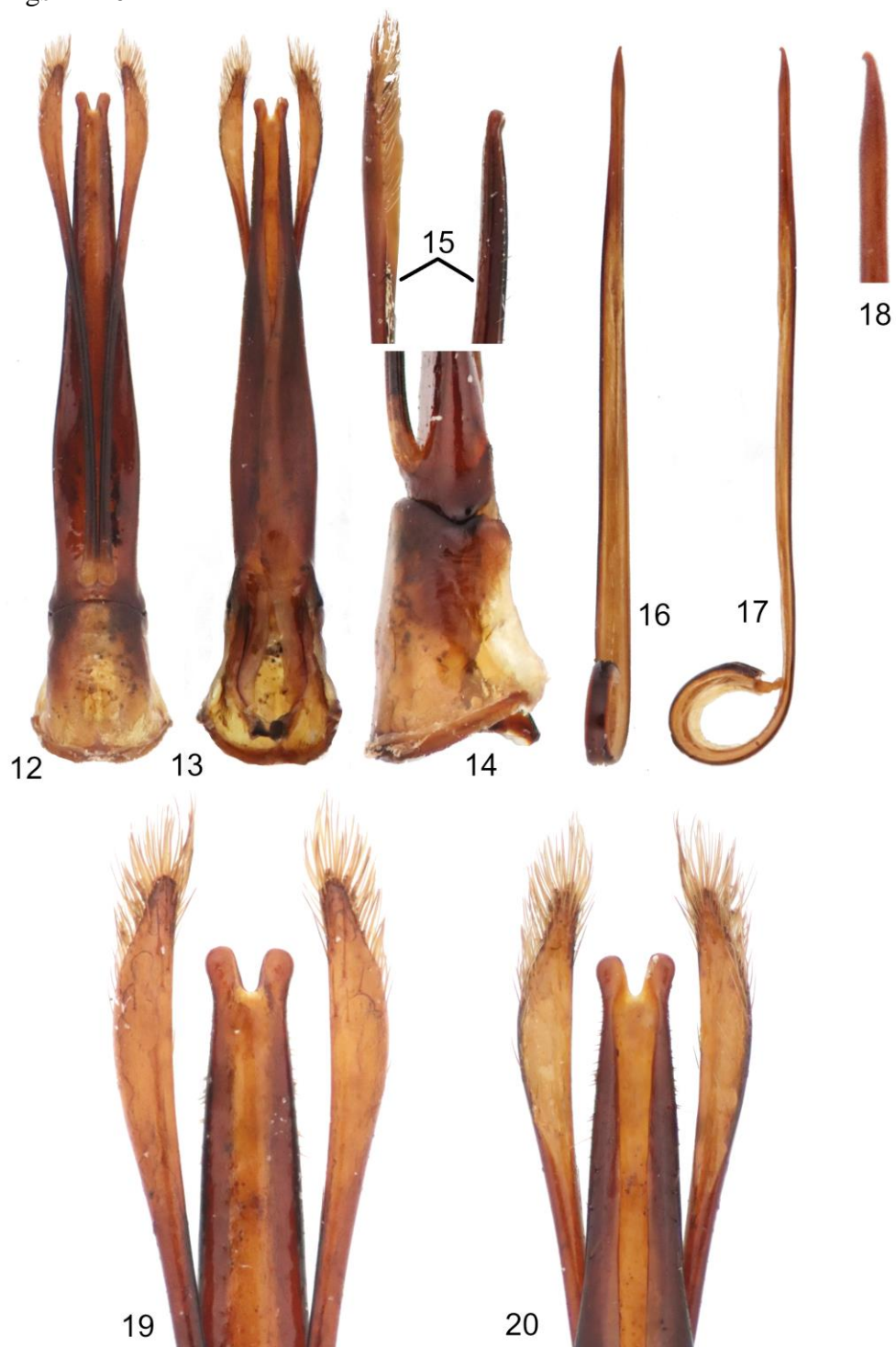
Figs 1-3



Figs 4-11



Figs 12-20



Figs 21-25



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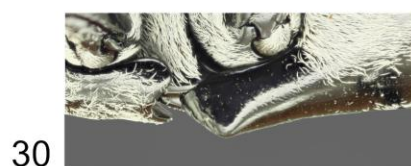


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Figs 26-31



Figs 32-39



Figs 40-48



Figs 49-52



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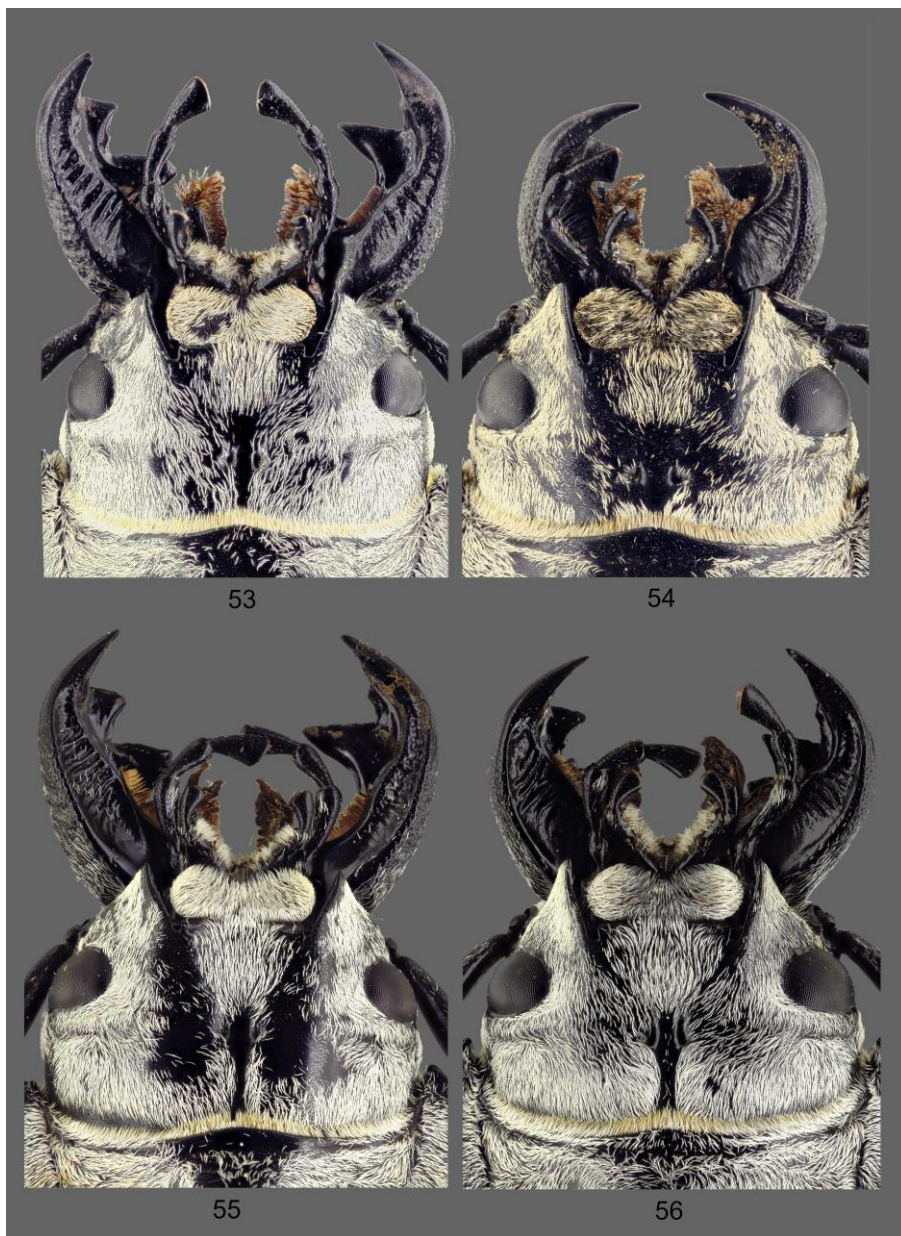


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Figs 53-56



Figs 57-59



Figs 60-64



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64



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Fig 65

