

A Redescription of *Euryarthrum hastigerum* HOLZSCHUH
(Coleoptera, Cerambycidae), with Description of its
New Relative from Kalimantan, Indonesia

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Abstract *Euryarthrum hastigerum* HOLZSCHUH is redescribed in detail including the male terminalia. *Euryarthrum kalimantanense* sp. nov. is described from West Kalimantan, Indonesia. The new species closely resembles *E. hastigerum*, but is distinguished from the latter mainly by the stouter body, more strongly convex pronotum, stronger apical projection of elytral epipleuron, deep median depression on mesosternal process and stouter median lobe of male terminalia.

Introduction

Euryarthrum hastigerum, a longhorned beetle belonging to the tribe Prothemini of the subfamily Cerambycinae, was recently described by HOLZSCHUH (2008) from Sabah, East Malaysia. Among *Euryarthrum* species having two elytral bands of light-colored hairs, this species is characterized by the long antennae, with segment VI strongly dilated externally from base to apex, less-flattened elytra, light-colored hairs on scutellum, simple tibiae of fore and mid legs in male, and very long apical spines of elytral suture and unique structure of abdominal sternites in female (HOLZSCHUH, 2008). However, some important taxonomic features such as the male terminalia were not described in the original paper. In the course of our study of *Euryarthrum*, we had an opportunity to obtain a pair of peculiar species of the genus collected from West Kalimantan, Indonesia. The species in question is very similar to *E. hastigerum* in general appearance. Based on detailed examination, however, we have concluded that it is an undescribed species. In order to promote further studies of the genus, we redescribe *E. hastigerum* in detail including the male terminalia as well as describe its allied new species from Kalimantan.

Material and Methods

This study was based on specimens preserved in the National Institute for Agro-Environmental Sciences, Tsukuba (NIAES), and the private collection of T. NIISATO (PCTN). The holotype of the new species described herein is deposited at NIAES.

External structures were observed under a Nikon SMZ1500 stereoscopic microscope. Habitus photographs were taken with an Olympus E-500 digital camera. Measurements of various body parts are coded as follows: LB=length of body, from apical margin of clypeus to elytral apices; WH=maximum width of head across eyes; LG=length of gena, from upper to lower margins; LL=length of lower eye lobe, from upper to lower margins; WP=maximum width of pronotum; LP=length of pronotum, from base to apex along midline; WE=maximum width of elytra; LE=length of elytra, from basal margins to apices. All measurements are in mm.

To examine male terminalia, specimens were macerated in hot water and dissected under the stereoscopic microscope. The abdominal segment VIII was first removed from body, and then cleaned in hot 10% KOH solution for 5 to 10 minutes. Male terminalia extracted from abdominal segment VIII were mounted on slides with glycerol, studied with a Leitz Orthoplan optical microscope, and drawn in detail through an attached camera lucida. Scale bars were calibrated using a Nikon objective micrometer.

Verbatim label data indicated by quotation marks are provided for the holotype. Label breaks are indicated by a slash ("/").

Taxonomy

Euryarthrum hastigerum HOLZSCHUH, 2008

(Figs. 1, 3–9)

Euryarthrum hastigerum HOLZSCHUH, 2008, 237 (type locality: Malaysia, Sabah, Crocker Range, Keningau-Kinamis). — YOSHITAKE & NIISATO, 2009 (catalogued).

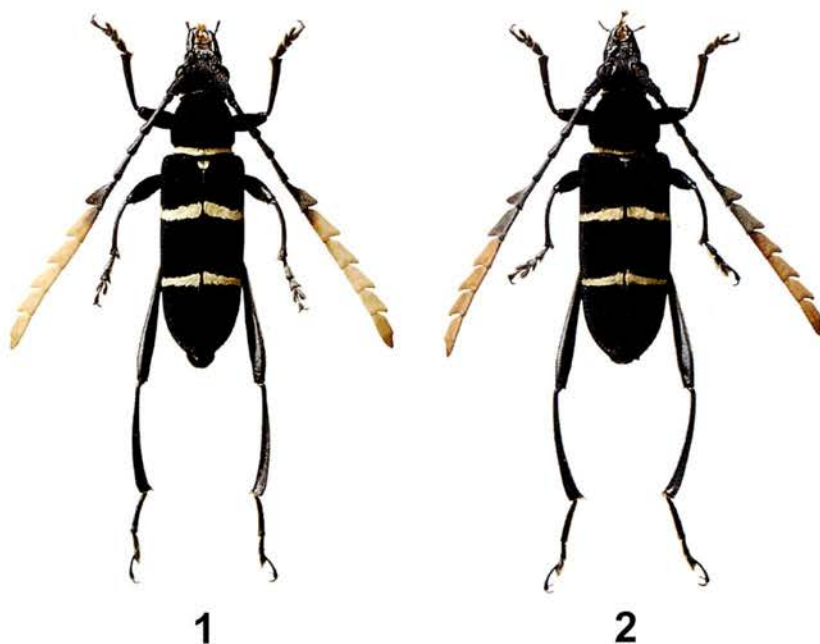
Redescription. Male. Dimensions: LB: 15.30–19.55 (holotype 15.30; mean 17.96). WH: 2.80–3.30 (2.80; 3.13). LG: 1.60–1.85 (1.60; 1.75). LL: 1.15–1.35 (1.15; 1.27). WP: 3.40–4.15 (3.40; 3.94). LP: 3.15–4.00 (3.15; 3.67). WE: 4.39–5.72 (4.39; 5.24). LE: 9.98–13.03 (9.98; 11.81). N=5 for all measurements. Habitus as in Fig. 1.

Black in general appearance; clypeus paler; antennal segments VII–XI testaceous except for base of VII tinged with black; coxae slightly tinged with red. Body surface opaque; head except for vertex and occiput more or less shiny. Body medium-sized and slender.

Head covered with shiny light-colored hairs; occiput nearly glabrous, bearing three very long hairs along posterior margin of each eye; vertex rather densely with long incurved hairs; frons with short hairs; clypeus glabrous; genae moderately with short hairs; neck sparsely with short hairs; gula moderately with long incurved hairs. Anten-

nal segments I and II moderately covered with fine short hairs; segments III–V moderately with minute hairs; segments VI–XI densely with light brown pubescence except for basal part of VI which is covered with minute hairs. Prothorax almost glabrous, provided with two pale yellow transverse bands of dense stout hairs along basal and apical margins; apical band much narrower than basal one, often obscure; apical margin fringed with a row of short golden hairs; sides with a few fine long shiny hairs on basal half; prosternum moderately with curved fine hairs, bearing three fine long shiny hairs on apical third at each side. Scutellum densely covered with shiny pale yellow stout hairs. Elytra almost glabrous, scattered with minute hairs along external margins, divided into three subequal parts by two relatively broad transverse bands of pale yellow stout hairs; ante-median band slightly arcuate posteriorly; post-median band nearly straight. Legs moderately covered with minute light-colored hairs; mid coxae rather densely with white hairs; mid femur almost glabrous on basal half of dorsal side, scattered with fine golden hairs; hind femur almost glabrous on basal half of dorsal side, fringed with suberect and subrecumbent setae on basal half along anterior margin; fore tibia internally with golden setae on dorsal side, the setae suberect, becoming longer and denser towards apex; mid and hind tibiae fringed with silver setae on apical half along internal margins; hind tibia sparsely mingled with longer suberect setae. Mesosternum moderately covered with light-colored hairs; mesepisternum moderately with fine dark hairs on basal half, mingled with white hairs, and densely with stout white hairs on apical half; mesepimeron scattered with minute dark and light-colored hairs. Metasternum moderately covered with fine dark and white hairs, rather densely with stout white hairs on disc, bearing a pair of white transverse bands of long stout hairs along apical margin; metepisternum sparsely with minute dark hairs, scattered with longer light-colored hairs, densely covered with stout white hairs on apical part. Sternite I covered with hairs as those on metasternum, with a transverse band of stout white hairs along apical margin; sternite II more sparsely with minute hairs, with a transverse band of stout white hairs along apical margin; sternites III and IV sparsely with minute hairs, almost glabrous on disc, with a pair of short transverse bands of stout white hairs along apical margins; sternite V rather densely with stout white hairs, except for basal part which are almost glabrous near middle, scattered with long golden hairs along apical margin; apical margin of sternite V fringed with stout white hairs which are replaced by short golden hairs at middle.

Head slightly narrower than pronotum, WH/WP 0.78–0.82 (mean 0.80), with a shallow median sulcus extending from occiput to base of frons; occiput densely coarsely punctured, widely prominent along median sulcus; vertex finely reticulately punctured, carinate along inner margins of antennal insertions; frons shallowly irregularly punctured; genae deeper than lower eye lobes, LG/LL 1.33–1.42 (mean 1.38); eyes large, rather strongly prominent. Antennae long, slightly extending beyond elytral apices; scape short and stout; segments III–VI moderately shiny, though apical part of VI is densely minutely punctured; segment III slender, much longer than scape; segment IV short, nearly half as long as III; segment V slightly slenderer than IV, simple, not



Figs. 1–2. *Euryarthrum* spp. — 1, *E. hastigerum* HOLZSCHUH, male; 2, *E. kalimantanense* sp. nov., holotype male.

projected externally near apex; segment VI rapidly externally widened from base to basal third, and then more weakly straightly widened to apex. Prothorax nearly as long as wide, WP/LP 1.04–1.09 (mean 1.07), reticulately punctured; punctures relatively large, more or less merged with each other; pronotum weakly rugged on interstices between punctures; sides gradually dilated from constricted base, widest at slightly produced middle, gently convergent apically, and then constricted at apex; prosternal process tuberculate at middle of apical part, the tubercle relatively large and transversely ellipsoidal from ventral view. Scutellum linguiform, finely shallowly wrinkled-punctured. Elytra long, LE/WE 2.18–2.30 (mean 2.25), moderately wider than or more than three times as long as pronotum, WE/WP 1.29–1.38 (mean 1.33), LE/LP 3.13–3.26 (mean 3.22), finely reticulately punctured; each puncture very deep, moderately shiny in bottom; disc weakly rugged on interstices between punctures, slightly flattened except weak postscutellar prominence, smoothly declivous, lacking submedian ridges; suture acutely projected at apex; apical projections moderate in length; sides widest just behind humeri, subparallel in basal half, gradually narrowed to apical fourth, then gently convergent apicad; each epipleuron becoming thin and armed with a triangular projection at apex. Mesosternal process weakly narrowly depressed along midline; apical margin moderately emarginate at middle. Metasternum finely rugosely punctured, weakly shiny; disc densely minutely punctured, strongly shiny. Sternites I–IV

with a thick glabrous part along apical margin, respectively; sternite I finely densely punctured, weakly shiny, nearly as long as II–IV combined; sternite II finely moderately punctured, slightly less than half as long as I, slightly shorter than III and IV combined; sternites III and IV sparsely minutely punctured, shiny, subequal in length to each other; sternite V sparsely minutely punctured on basal half, densely finely punctured on apical half, shiny, nearly as long as III and IV taken together. Legs slender; fore tibia weakly dilated extero-apically, gently incurved; mid tibia evenly strongly incurved, simple, not prolonged apically; external margin of fore and mid tibiae deeply emarginate near apex.

Tergite VIII (Fig. 3) elongate, nearly twice as long as wide, scattered with short setae on basal 2/3, moderately setiferous on apical third; sides subparallel in basal 2/3, thence moderately narrowed towards apex; apical margin rounded, moderately fringed with long setae. Tergite IX (Fig. 4) widely shallowly emarginate, fringed with a row of short setae at apex. Sternite VIII (Fig. 5) as long as wide, rounded, densely covered with short setae, entirely well-pigmented; basal apodemes short and wide, definitely divided from body by a black transverse ridge; apical margin broadly shallowly concave, densely setiferous. Sternite IX (Fig. 6) Y-shaped, slender, slightly longer than sternite VIII, simple, not appendiculate. Median lobe (Figs. 7, 8) slender though very thick in profile; ventral contour near apex dorsally raised in profile; median struts moderate in length, nearly as long as median lobe, weakly curved in profile; dorsal plate narrow, rounded apex; ventral plate with sides rather strongly narrowed in basal 2/3, subparallel in subapical part, thence apically strongly narrowed, bearing a small round projection at apex; median foramen located on apical third of median lobe. Tegmen (Fig. 9) slightly shorter than median lobe; lateral lobes densely covered with very long setae, widely separated from each other, broadly rounded at each apex, not attenuate, with external margins slightly laminate basally; laminae densely setiferous apically; ring part much longer than lateral lobes.

Female. Dimensions: LB: 16.63–20.88 (mean 18.81). HW: 2.85–3.30 (3.13). LG: 1.60–1.85 (1.75). LL: 1.20–1.40 (1.29). WP: 3.90–4.80 (4.30). LP: 3.55–4.25 (3.85). WE: 5.05–6.38 (5.69). LE: 11.17–14.10 (12.64). N=5 for all measurements.

Body stouter. Head narrower than pronotum, WH/WP 0.69–0.75 (mean 0.73); antennae shorter and stouter than in male, not extending to elytral apices. LG/LL 1.32–1.40. Prothorax slightly wider, WP/LP 1.09–1.13 (mean 1.12). Elytra slightly wider, widest at middle, LE/WE 2.21–2.25 (mean 2.22), LE/LP 3.15–3.35 (mean 3.28), WE/WP 1.29–1.35 (mean 1.32), with each elytron apically armed with a very slender projection, which is nearly twice as long as that in male. Prosternal process slightly narrower, with a smaller tubercle in middle of apical part. Mesosternal process slightly more strongly broadened towards apex. Sternite I slightly inflated, finely densely punctured, elongate, longer than II–V combined. Sternite II finely moderately punctured on disc, minutely sparsely punctured at sides, nearly 1/4 as long as I, slightly longer than III and IV combined, with a transverse band of white hairs near middle along basal margin of apical glabrous area. Sternites III and IV significantly reduced, subequal in length to each other, subglabrous, lacking white stout hairs, each with a pair

of distinct lateral flanges along apical margin. Sternite V minutely moderately punctured, widely depressed in apical half of disc, densely punctured, covered with fine white stout hairs in apical depression, nearly as long as II–IV combined; apical margin emarginate near middle, fringed with white stout hairs. Legs slightly shorter than in male; fore and mid tibiae more weakly incurved. Otherwise practically as in male.

Material examined. EAST MALAYSIA: SABAH. Crocker Range: 1 female, IV–1988, native collector (NIAES); 1 female, IV–1990, native collector (NIAES); 1 male, Keningau, IV–1993, native collector (NIAES); 1 male, near Keningau, 30–III~4–IV–1994, native collector (NIAES); 1 male, near Keningau, 30–III~4–IV–1995, native collector (NIAES); 1 male and 2 females, near Keningau, V–1997, native collector (NIAES); 8 males and 3 females, near Keningau, IV–1999, native collector (NIAES, PCTN); 1 female, near Keningau, V–1999, native collector (NIAES); 4 males and 2 females, near Keningau, VI–2002, native collector (NIAES); 5 males and 5 females, Kimanis Road, 16–IV–2000, native collector (NIAES); 1 female, Kimanis Road, IV–2002, native collector (NIAES); 1 male and 1 female, Kimanis Road, IX~X–2007, native collector (NIAES). Mt. Trus Madi: 5 males and 3 females, IV–1990, native collector; 1 female, III–1992, native collector (NIAES); 3 males and 1 female, V–2007, native collector (NIAES); 1 male and 4 females, IV–2008, native collector (NIAES); 53 males and 20 females, southwestern slope, ca 1,200 m, IV–1991, native collector (NIAES). Ranau: 1 male, IX–2000, native collector (NIAES). SARAWAK. Mt. Serapi: 1 male and 1 female, 10–V–1990, native collector (PCTN).

Distribution. Malaysia: Borneo.

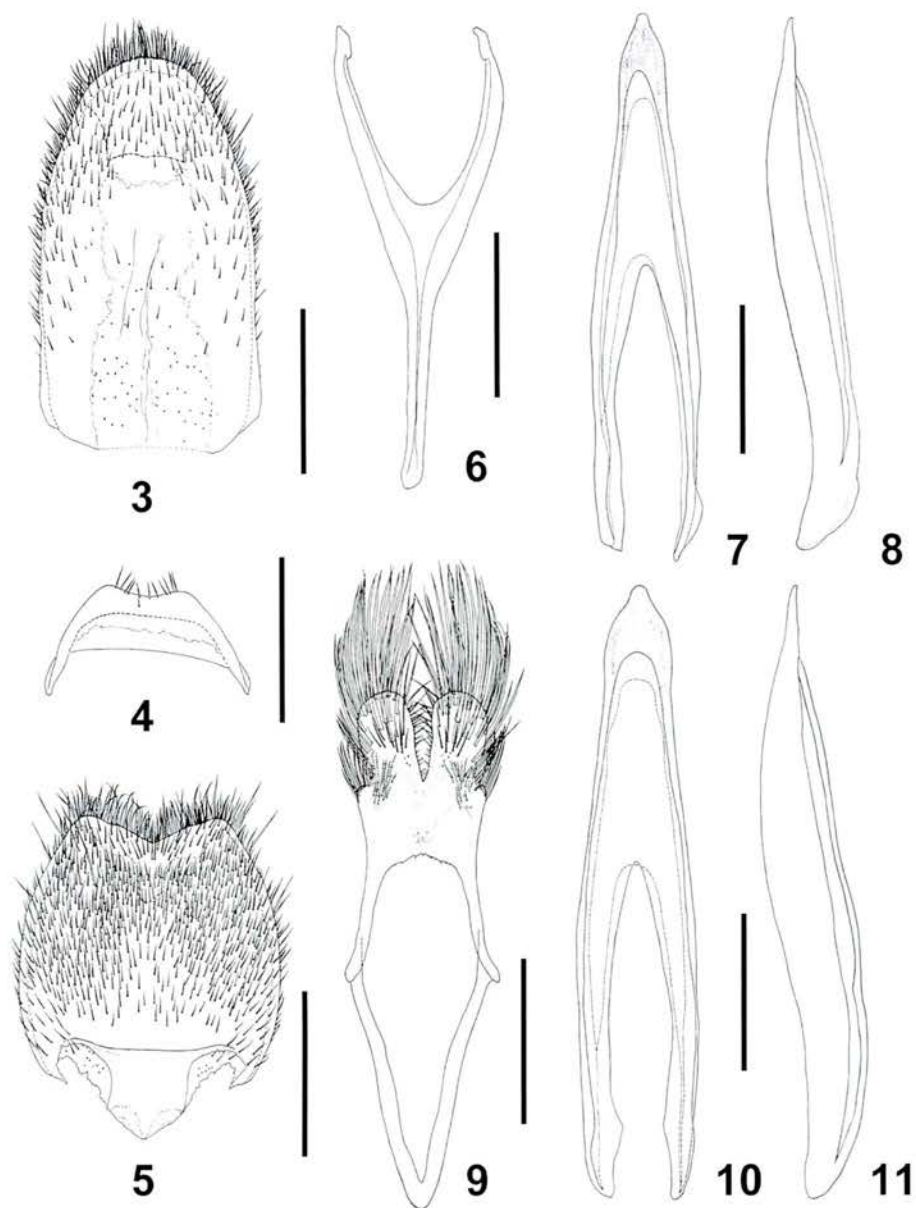
Notes. *Euryarthrum hastigerum* slightly resembles *E. bifasciatum* PASCOE, 1856 (= *E. lambi* PASCOE, 1866) in having two white transverse bands which divide elytra into three equal parts. However, *E. hastigerum* is readily distinguished from *E. bifasciatum* mainly by the following points: antennae longer, slightly extending beyond elytral apices in male; elytra dorsally more convex, lacking definite submedian ridges; elytral white bands much broader; elytral suture acutely strongly projected at the apex in female; fore and mid tibiae gently incurved in male.

Euryarthrum kalimantanense sp. nov.

(Figs. 2, 10, 11)

Description. Male. Dimensions: LB: 18.89. WH: 3.25. LG: 1.75. LL: 1.25. WP: 4.50. LP: 3.85. WE: 5.70. LE: 12.30. N=1 for all measurements. Habitus as in Fig. 2.

Antennal segments VIII–XI testaceous. Body stouter. Vertex covered with shorter hairs; genae sparsely covered with hairs in lower half. Mid and hind femora scattered with shorter hairs in basal half of dorsal surface. Fore tibiae widely covered with golden setae on dorsal surface. Mesosternum sparsely covered with fine hairs. Mesepimeron and metasternum covered with dark hairs. Metepisternum covered only with dark minute hairs, lacking light-colored hairs. Sternites densely covered with minute hairs;



Figs. 3-11. Male terminalia of *Euryarthrum* spp. — 3-9, *E. hastigerum* HOLZSCHUH; 10-11, *E. kalimantanense* sp. nov. — 3, Tergite VIII in dorsal view; 4, tergite IX in dorsal view; 5, sternite VIII in ventral view; 6, sternite IX in ventral view; 7, median lobe in dorsal view; 8, ditto in lateral view; 9, tegmen in dorsal view; 10, median lobe in dorsal view; 11, ditto in lateral view. Scale bars=1.0 mm.

apical band of white stout hairs on sternite I becoming obscure near middle; sternite II with a pair of short transverse bands of white stout hairs along apical margin; sternite V with a pair of lateral patches of white stout hairs on apical half.

Ratio width of head to prothorax slightly narrower, WH/WP 0.72. Occiput wider, nearly flat, hardly prominent along median sulcus. LG/LL 1.40. Vertex wider. Antennae slightly stouter; segments III–VI except for apical part of VI more densely punctured, weakly shiny; segment VI more strongly dilated externally from basal third to apex. Prothorax wider, WP/LP 1.17; dorsum more strongly convex; sides rapidly dilated from constricted base, subparallel in basal third, widest at strongly produced middle, more strongly convergent towards apex; prosternal process with a larger tubercle which is spherical in ventral view. Scutellum wider. Elytra slightly wider, LE/WE 2.16, LE/LP 3.19, WE/WP 1.27; disc with a more developed postscutellar prominence; epipleura more strongly projected apicad. Mesosternal process strongly depressed along midline. Sternites I and II more densely punctured. Sternite V wider, flattened and more densely punctured near middle of apical part. Fore tibia simple, not dilated externo-apically.

Tergite VIII slightly wider; sides gradually narrowed in basal 2/3. Sternite VIII wider. Median lobe (Figs. 10, 11) stouter; dorsal plate widely rounded at apex; ventral plate slightly expanded in subapical part. Tegmen with wider lateral lobes, which are narrowly separated from each other. Otherwise practically as in *E. hastigerum*.

Female. Dimensions: LB: 19.02. HW: 3.15. LG: 1.75. LL: 1.15. WP: 4.50. LP: 3.85. WE: 5.90. LE: 12.60. N=1 for all measurements.

Body stouter. Ratio width of head to prothorax slightly narrower, WH/WP 0.70. Antennae shorter and stouter, not extending to elytral apices. Genae deeper, LG/LL 1.52. Elytra slightly wider, widest at middle, LE/WE 2.14, LE/LP 3.27, WE/WP 1.31, each armed with a very slender projection at apex. Prosternal process slightly wider, more densely covered with longer hairs, with a smaller apical tubercle. Mesosternal process slightly wider. Sternite I slightly inflated, nearly as long as II–V combined. Sternite II finely densely punctured on disc, minutely sparsely punctured at sides, nearly 1/3 as long as I, nearly as long as III and IV combined, with a transverse band of white hairs near middle along basal margin of apical glabrous area. Sternites III and IV significantly reduced, subequal in length to each other, sparsely covered with minute hairs, lacking white stout hairs, each with a pair of distinct lateral flanges along apical margin. Sternite V minutely moderately punctured, widely depressed in apical half of disc, densely punctured and covered with fine glossy hairs in apical depression, slightly shorter than II–IV combined; apical margin deeply emarginate at middle, fringed with long incurved glossy hairs. Legs slightly shorter; fore and mid tibiae more weakly incurved. Otherwise practically as in male.

Type material. Holotype male (NIAES), “[INDONESIA] / West Kalimantan / nr Benkayang / IV. 1998”; “[HOLOTYPE] male / *Euryarthrum kalimantanense* / YOSHITAKE & NIISATO, 2009” (typed on red card); “NIAES COLLECTION” (typed on yellow card). Paratype. INDONESIA. 1 female, same data as the holotype

(NIAES).

Distribution. Indonesia: Kalimantan (Borneo).

Etymology. The species epithet is derived from the type locality, Kalimantan.

Notes. *Euryarthrum kalimantanense* sp. nov. is very similar to *E. hastigerum* HOLZSCHUH in general appearance. However, the new species is readily distinguished from *E. hastigerum* by the stouter body, vertex covered with shorter hairs, more strongly convex pronotum, epipleuron with a stronger projection, mesosternal process strongly depressed along midline, and fore tibia lacking apical external expansion. Besides, *E. kalimantanense* possesses stouter median lobe and wider and narrowly separated lateral lobes in male terminalia.

Acknowledgments

We thank Drs. M. TAKAKUWA (Kanagawa Prefectural Museum of Natural History, Odawara), M. HAJIKA (National Institute of Agrobiological Sciences, Tsukuba), and T. KURIHARA (Ehime University, Matsuyama) for the donation of specimens used in this study.

要 約

吉武 啓・新里達也: *Euryarthrum hastigerum* HOLZSCHUH の再記載とインドネシア・カリマンタン産近似 1 新種の記載. — *Euryarthrum hastigerum* HOLZSCHUH, 2008 を雄交尾器も含めて詳細に再記載した. また, 西カリマンタンから *E. kalimantanense* sp. nov. を記載した. 本新種は *E. hastigerum* に大変よく似ているが, 体はより幅広いうえに, 上翅の側片先端部の突起がより強く, 中胸腹板突起が正中線沿いに深く凹み, 雄交尾器中央片がより頑強であることなどによって容易に識別できる.

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