

Revision of the *Hydaticus* (*Prodaticus*) *sexguttatus* species group, and resembling species from the Palearctic, Oriental, Australian and Pacific Regions (Coleoptera: Dytiscidae)

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Abstract

The Palearctic, Oriental, Australian and Pacific species of the *Hydaticus* (*Prodaticus*) *sexguttatus* species group (Coleoptera, Dytiscidae) are revised. Fourteen species including five new ones (*H. balkei* sp.n., *H. hajeki* sp.n., *H. hendrichi* sp.n., *H. marlenae* sp.n. and *H. stasmyi* sp.n.) are described. Five species of the *H. fabricii* group including one new species and one new subspecies (*H. agaboides* SHARP, 1882, *H. ephippiiger* RÉGIMBART, 1899, *H. larsoni* sp.n., *H. pulcher* CLARK, 1863, *H. sellatus sabahensis* ssp.n. and *H. sellatus sellatus* RÉGIMBART, 1883) are also treated herein, because their elytral marks or their male genitalia are similar to those of some species of the *H. sexguttatus* group.

Lectotypes are designated for *H. bengalensis* RÉGIMBART, 1899, *H. ephippiiger* RÉGIMBART, 1899, *H. fractifer* WALKER, 1858, *H. laetabilis* RÉGIMBART, 1899, *H. macularis* RÉGIMBART, 1899, *H. nigritulus* RÉGIMBART, 1899, *H. reductus* RÉGIMBART, 1899, *H. rhanaticoides* RÉGIMBART, 1892, *H. schultzei* ZIMMERMANN, 1924, *H. sellatus* RÉGIMBART, 1883, and *H. sexguttatus* RÉGIMBART, 1899. New synonymies: *H. finus* WATTS, 1978 (= *H. ephippiiger* RÉGIMBART, 1899), *H. reductus* RÉGIMBART, 1899 (= *H. platteeuwi* SEVERIN, 1890), *H. schultzei* ZIMMERMANN, 1924 (= *H. macularis* RÉGIMBART, 1899), *H. watsi* DAUSSIN, 1980 (= *H. rhanaticoides* RÉGIMBART, 1892).

A key to the species of the *H. sexguttatus* group of the Palearctic, Oriental, Australian and Pacific Regions and resembling species of the *H. fabricii* group is provided. The known distribution of each species is outlined. Important diagnostic characters are illustrated.

Key words: Coleoptera, Dytiscidae, *Hydaticus*, new species, new synonymies, new records, taxonomy.

Introduction

Many species of the genus *Hydaticus* LEACH, 1817 from the Palearctic, Oriental, Australian and Pacific Regions have not been revised since RÉGIMBART (1899). Revisions exist for the *H. vittatus* group (WEWALKA 1975) and the *H. fabricii* group (WEWALKA 1979). Here, a group of species is revised, which GUIGNOT (1936: 53, 56; 1952: 281; 1955: 7; 1961: 779, 805) and MILLER et al. (2009: 608) called *H. sexguttatus* group, which they defined as a group of species with unicoloured elytra or decorated with defined yellow or red-brown marks without or with only few black irrorations as typical for the *H. fabricii* group. From this group it also can be separated by the aedeagus lacking a setal tuft on the tip of the median lobe, which is present in *H. agaboides* SHARP, 1882, *H. ephippiiger* RÉGIMBART, 1899, *H. larsoni* sp.n., *H. pulcher* CLARK, 1863, and *H. sellatus* RÉGIMBART, 1883 (Figs. 37–41). The latter taxa are included in this revision because their elytral marks resemble those of some species of the *H. sexguttatus* group, or because their male genitalia are very similar to species of the *H. sexguttatus* group. Further characteristics used for the *H. sexguttatus* group are: quite small size (8.5–13.7 mm) and the shape of the median lobe of the aedeagus by which it can be separated from the *H. pacificus* group (Fig. 21) and the *H. bihamatus* group (Fig. 22).

In accordance with phylogenetic research (MILLER et al. 2009) the tribe Hydatiini comprises two genera: *Hydaticus* LEACH 1817 and *Prodaticus* SHARP, 1882 (junior synonyms: *Guignotites* BRINCK, 1943, *Hydatiinus* GUIGNOT, 1950, and *Pleurodytes* RÉGIMBART, 1899). However, I treat *Prodaticus* as subgenus of *Hydaticus*, following the online world catalogue (ITIS Report 2014) and a recent publication by MILLER & BERGSTEN (2014), in order to support nomenclatural stability.

All species mentioned in this revision have in common: (i) elytral sculpture including three rows of strong punctures, the medial one quite regular and dense, the second quite irregular, consisting of groups of punctures in the anterior half and the lateral one only indicated by few groups of strong punctures, additionally with a band of strong punctures along the lateral margin; (ii) male pro- and mesotarsomeres I–III dilated, with ventral suckers: nine on protarsomere I, seven on protarsomere II, six on protarsomere III, seven on mesotarsomere I and four on mesotarsomeres II and III each; (iii) male protarsomere I with a row of few accessory spinous setae on dorsal surface; protarsomere II with a field of short dense fine setae as part of a stridulation device on dorsal surface. All species of the *H. sexguttatus* group from the Palearctic, Oriental, Australian and Pacific Regions except *H. concolor* SHARP, 1882, *H. nigrifulus* RÉGIMBART, 1899, *H. hajeki* sp.n. and *H. marlenae* sp.n. have a dense fringe of setae along the basal margin of male protarsomere I.

Molecular phylogenetic information on species of the *H. sexguttatus* group is almost completely missing so far. Only *H. watsi* DAUSSIN, 1980 (treated in the present work as junior subjective synonym of *H. rhataticoides* RÉGIMBART, 1892) was mentioned by MILLER et al. (2009).

Material and methods

The study material of about 600 specimens is deposited in the following institutions and private collections:

ANIC	Australian National Insect Collection, CSIRO, Canberra, Australia
BMNH	Natural History Museum, London, UK
CAS	Coll. André Skale, Hof/Saale, Germany
CFP	Coll. Fernando Pederzani, Ravenna, Italy
CHF	Coll. Hans Fery, Berlin, Germany (property of NMW)
CGW	Coll. Günther Wewalka, Vienna, Austria
CJS	Coll. Jaroslav Štátný, Liberec, Czech Republic
CLH	Coll. Lars Hendrich, Munich, Germany (property of NMW)
INSB	Institut Royal des Sciences Naturelles, Brussels, Belgium
MCZC	Museum of Comparative Zoology, Cambridge, Massachusetts, USA
MNB	Museum für Naturkunde, Berlin, Germany
MNHN	Muséum National d'Histoire Naturelle, general collection, Paris, France
MNHN-CG	Muséum National d'Histoire Naturelle, Coll. Guignot, Paris, France
MNHN-CL	Muséum National d'Histoire Naturelle, Coll. Legros, Paris, France
MNHN-CO	Muséum National d'Histoire Naturelle, Coll. Oberthur, Paris, France
MNHN-CR	Muséum National d'Histoire Naturelle, Coll. Régimbart, Paris, France
MZB	Museum Zoologicum Bogoriense, Cibinong, West Java, Indonesia
NHMB	Naturhistorisches Museum Basel, Switzerland
NML	National Museum of Natural History, Leiden, Netherlands
NMP	National Museum, Museum of Natural History, Prague, Czech Republic
NMW	Naturhistorisches Museum Wien, Vienna, Austria
OLM	Oberösterreichisches Landesmuseum, Linz, Austria
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
SIW	Smithsonian Institution, Washington D.C., USA
ZSM	Zoologische Staatssammlung München, Germany

Abbreviations: TL (total length of beetle), TL-h (total length without head), and MW (maximum width of beetle), UNCEN (Universitas Cendrawasih, Jayapura, Papua, Indonesia). Label data of type specimens and some historical specimens are cited between quotation marks, and comments are given in square brackets. A backslash (\) indicates separate labels.

The beetles were studied with a Wild M3 binocular at 6.4–80 × magnification. Male genitalia were studied in dry condition and median lobes of aedeagi were drawn with the help of a drawing tube, Wild # 308700. The terminology to denote the orientation of the genitalia follows MILLER & NILSSON (2003). Parameres and epipenites are not figured because they are not very useful for exact determination of the species of this group.

Checklist of the species of the *Hydaticus sexguttatus* group (and “resembling species”) of the Palearctic, Oriental, Australian and Pacific Regions

Numbers in square brackets refer to the arrangement of species in the systematic account below.

Species of the *Hydaticus sexguttatus* group s.str.

<i>balkei</i> sp.n. [7]	Indonesia
<i>bengalensis</i> RÉGIMBART [12]	India, Myanmar, China, Vietnam, Malaysia
<i>concolor</i> SHARP [1]	Laos, Vietnam, Malaysia, Singapore, Indonesia
<i>fractifer</i> WALKER [9]	Sri Lanka
<i>hajeki</i> sp.n. [13]	Indonesia
<i>hendrichi</i> sp.n. [10]	Indonesia
<i>laetabilis</i> RÉGIMBART [8]	Malaysia, Indonesia
<i>macularis</i> RÉGIMBART [6]	Philippines, Malaysia
<i>marlenae</i> sp.n. [14]	Papua New Guinea
<i>nigritulus</i> RÉGIMBART [2]	Malaysia, Indonesia
<i>platteewwi</i> SEVERIN [3]	Thailand, Laos, Malaysia, Indonesia, Brunei
<i>rhantaticoides</i> RÉGIMBART [11]	Indonesia, Papua New Guinea, Australia, Solomon Islands, Samoa
<i>sexguttatus</i> RÉGIMBART [4]	India, Myanmar, Thailand, Laos, Malaysia, Indonesia
<i>stastnyi</i> sp.n. [5]	Malaysia

“Resembling species”

<i>agaboides</i> SHARP [18]	China, Cambodia, Vietnam, Brunei
<i>ephippiiger</i> RÉGIMBART [15]	Indonesia, Papua New Guinea, Australia
<i>larsoni</i> sp.n. [19]	Papua New Guinea
<i>pulcher</i> CLARK [20]	Australia
<i>sellatus sabahensis</i> ssp.n. [17]	Malaysia, Indonesia
<i>sellatus sellatus</i> RÉGIMBART [16]	Indonesia, Papua New Guinea

Key to the species of the *Hydaticus sexguttatus* group, including “resembling species”

- 1 Pronotum almost totally black. Elytron with two indistinct marks, one postmedian near lateral margin and one apical..... 2
- Pronotum dark-brown to black with more or less broad reddish-brown to yellowish-brown lateral sides. Elytra with more extended marks 3
- 2 Habitus oblong-oval, broadest distinctly behind middle (Fig. 1), aedeagus (Fig. 23)..... *concolor*
- Habitus regularly oval, broadest almost in middle (Fig. 2), aedeagus (Fig. 24)..... *nigritulus*
- 3 Elytra dark-brown to black with distinct reddish-brown to yellowish-brown marks, without or with only few dark-brown to black irrorations apically (Figs. 3–8)..... 4
- Elytra dark-brown to black with more or less extended reddish-brown to yellowish-brown marks, with many dark-brown to black irrorations (Figs. 9–20)..... 9
- 4 Reddish-brown to yellowish-brown marks on pronotum and elytra less extended (Figs. 3–5); tip of median lobe of aedeagus straight in lateral view (Figs. 25–27)..... 5
- Reddish-brown to yellowish-brown marks on pronotum and elytra more extended (Figs. 6–8); tip of median lobe of aedeagus bent dorsally in lateral view (Figs. 28–30)..... 7
- 5 Body length 9.6–10.8 mm; body shape less regularly elliptic, less convex; often with reddish-brown transverse elytral mark near base (Fig. 3)..... *platteewi*
- Body length 11.0–13.3 mm; body shape more regularly elliptic, more convex (Figs. 4–5) 6
- 6 Body length 11.0–13.1 mm; reddish-brown transverse elytral mark near base absent (Fig. 4); median lobe of aedeagus in lateral view less slender (Fig. 26) *sexguttatus*
- Body length 12.4–13.3 mm; reddish-brown transverse elytral mark near base sometimes present (Fig. 5); median lobe of aedeagus in lateral view more slender (Fig. 27)..... *stastnyi*
- 7 Elytron besides other reddish-brown to yellowish-brown marks with two post-median marks (Fig. 6) *macularis*
- Elytron besides other reddish-brown to yellowish-brown marks with only one post-median mark near lateral margin (Figs. 7–8) 8
- 8 Body length 9.1–10.5 mm; body shape oval, elytron without reddish-brown to yellowish-brown humeral mark (Fig. 7)..... *balkei*
- Body length 10.5–12.8 mm; body shape oblong-oval, elytron with more or less extended reddish-brown to yellowish-brown humeral mark (Fig. 8)..... *laetabilis*
- 9 Body length 12.3–13.7 mm; body shape oblong-oval, elytron often with reddish-brown sub-basal transverse mark (Fig. 9)..... *fractifer*
- Body length 9.8–12.1 mm; body shape less oblong-oval (Figs. 10–20)..... 10
- 10 Tip of median lobe of aedeagus with setal tuft as in other *H. fabricii* group species (Figs. 37–41)..... 15
- Tip of median lobe of aedeagus without setal tuft (Figs. 33–36) 11
- 11 Elytron with a more or less broad light band along the lateral side continuing from a humeral mark to the apex (Figs. 10–12); male protarsomere I with a dense fringe of setae along the basal margin..... 12
- Elytron in the anterior half without a light band along the lateral side; with a humeral mark, a postmedian mark near the lateral side and an apical mark (Figs. 13–14); male protarsomere I without a fringe of setae along the basal margin 14
- 12 Elytron with humeral mark continued by broad band along lateral side; extensive dark-brown irrorations on reddish-brown ground in apical half to two apical thirds (Fig. 10); (10.1–12.1 mm)..... *hendrichi*
- Elytron with humeral mark continued by narrow band along lateral side; light mark in apical half containing many dark-brown irrorations on reddish-brown ground (Figs. 11–12) 13

- 13 Elytron with more or less broad transverse basal mark continued by irregular lateral band; body shape regularly oval, moderately convex (Fig. 11); (8.6–10.7 mm)..... *rhattaticoides*
- Elytron without transverse basal mark; with irregular lateral band, more extended at shoulder and at apex; body shape regularly oval, slightly convex (Fig. 12); (11.2–12.1 mm) *bengalensis*
- 14 Body length 10.1–10.5 mm; body shape broader-oval (Fig. 13)..... *hajeki*
- Body length 9.1–9.5 mm; body shape oblong-oval (Fig. 14)..... *marlenae*
- 15 Reddish-brown marks with dark-brown irrorations only in posterior half of elytron (Fig. 15); (9.6–11.1 mm)..... *ephippiiger*
- Reddish-brown marks with more or less extended dark-brown irrorations along whole lateral side of elytron (Figs. 16, 18–19)..... 16
- 16 Median lobe of aedeagus as in Fig. 38 17
- Median lobe of aedeagus as in Figs. 39–41 18
- 17 Pronotum predominantly dark-brown to black, more or less extended reddish-brown to yellowish-brown at lateral margins (Fig. 16); (9.8–11.1 mm)..... *sellatus sellatus*
- Pronotum predominantly reddish-brown (Fig. 17); (10.4–11.6 mm)..... *sellatus sabahensis*
- 18 Male protarsomere I with sparse fringe of setae along basal margin; median lobe of aedeagus as in Fig. 39; (9.9–11.0 mm)..... *agaboides*
- Male protarsomere I with dense fringe of setae along basal margin 19
- 19 Pronotum predominantly dark-brown to black, more or less extended reddish-brown to yellowish-brown at lateral margins (Fig. 19); median lobe of aedeagus as in Fig. 40; (9.5–12.0 mm)..... *larsoni*
- Pronotum predominantly reddish-brown (Fig. 20); median lobe of aedeagus as in Fig. 41; (10.0–12.0 mm) *pulcher*

Species of the *Hydaticus sexguttatus* group

1. *Hydaticus concolor* SHARP, 1882

Hydaticus concolor SHARP 1882: 661; BRANDEN 1885: 100; ATKINSON 1891: 145; RÉGIMBART 1899: 327; ZIMMERMANN 1920: 219, 1927a: 6, 1927b: 36, 1928: 185; VAZIRANI 1977: 76; WEWALKA 1979: 135; NILSSON 2001: 101; HENDRICH, BALKE & YANG 2004: 119; NILSSON 2015: 90.

TYPE LOCALITY: Vietnam (“Cochin China”).

TYPE MATERIAL: **Holotype** ♂ (BMNH): “Cochin China 1014 concolor [handwritten cream label] \ Type H.T. [printed circular white label with red border] \ Type 1014. D.S. *Hydaticus concolor* [handwritten cream label] \ Sharp Coll. 1905-313 [printed cream label]”.

ADDITIONAL MATERIAL EXAMINED:

VIETNAM: 15 exs.: S-Vietnam, 40 km NW An Khe Buon Luoi, 620–750 m, 14°10'N 108°30'E, 28.III.–12.IV.1995, leg. Pacholátko & Dembický (CGW, NMW); 1 ♂: S-Vietnam, Nam Cat Tien Nat. Park, 11°25'N 107°26'E, 24.–27.V.1996, leg. Pacholátko & Dembický (NHMB); 1 ♂: Tonkin [N-Vietnam] \ Samml. A. Zimmermann (ZSM); 1 ♂: V-SO, Hiep-Hoa, J. Barbier (MNHN-CL); 2 ♀♀: S-Vietnam, 120 km NNE Ho Chi Minh City, Cat Thien vill., 14.–18.VII.1996, leg. Napolov (CLH).

LAOS: 1 ♂: Laos, Champasak Prov., Ban Nam Touad, near Xe Katamtok, 500–800 m, 15°06'N 106°35'–38'E, 8.–10.VI.2010, leg. M. Geiser & D. Hauk, NHMB Basel, Laos 2010 Expedition: M. Brancucci, M. Geiser, D. Hauk (NHMB); 1 ♀: Laos, Bolikhamsai Prov., Ban Nape Kaew Nua Pass, small stream, ca. 600 m, 18.IV.–1.V.1998 (NMW); 1 ♀: S-Laos, Attapu Prov., Bolaven Plateau, 15 km SE Ban Houaykong, Nong Lom (lake), 15°02'N 106°35'E, 800 m, 18.–30.IV.1999, leg. E. Jendek & O. Šauša (CLH).

MALAYSIA: Sabah: 1 ♂: Sandakan Zone, 23 km W of Sandakan, Sepilok, 05°49'N 118°06'E, 0–100 m, lowland rain forest, at light, 5.XI.1987, RMNH N. Borneo Exp., leg. J. Huisman & R. de Jong (NML).

INDONESIA: Sumatra: 1 ♂: Bengkulu, 20 km S Muku Muku, Urwald [primary forest], Lichtfang [light trap], 20 m, 16.VIII.1981, leg. D. Erber (MNB); 1 ♀: Medan, Mjög., Samml. A. Zimmermann (ZSM); 1 ♀: Sumatra Riau,

nr. Pekan Baru, 0°21.988'S 101°25.680'E, 20 m, shaded swamp, 3.X.2009, leg. Balke & Amran (SUM023) (M. Balke 3905) (ZSM).

Java: 1 ♂: "Zuid-Preanger, Patimoean" [West Java, Patimuan], 13.–20.III.1925, leg. F.C. Drescher (NML).

Borneo: 2 ♂♂: "Borneo Occ. Pontianak 1899 [printed white label] \ nigrutilus Rég. [white handwritten label on one specimen] \ Museum Paris ex. Coll. Régimbart [printed yellow label] \ Paralectotypus Hydaticus nigrutilus Régimbart Wewalka 2011 [printed red label] \ Hydaticus concolor Sharp det. Wewalka 2014 [printed white label]" (MNHN-CR); 1 ♂, 3 ♀♀: E Kalimantan, ca. 55 km W of Balikpapan, PT Fajar Surya Swadaya area, 01°16.4'S 116°21.1'E, 82 m, 23.XI.–1.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (2 ♀♀: M. Balke 5509 and 5510) (NMP, ZSM); 1 ♂: E Kalimantan, PT Silva Rimba Lestari area, camp Limbang, 0°07.4'S 116°18.1'E, 60 m, 3.–6.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (NMP).

Moluccas: 2 ♂♂: Obi Island, 8.IV.1998, leg. R. Gerstmeier (CLH).

DESCRIPTION: Habitus: Oblong-oval, broadest distinctly behind the middle, moderately convex.

Measurements: TL: 8.8–10.6 mm; TL-h: 8.3–9.8 mm; MW: 4.6–5.2 mm.

COLOURATION (Fig. 1): Head black, sometimes clypeus and a spot between eyes dark reddish-brown. Pronotum black. Elytron black with two dark reddish-brown spots, one behind middle near lateral side and one at apex; the apical spot often contains black irrorations. Ventral side predominantly dark reddish-brown to black, epipleura dark reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additional strong punctures concentrated in two spots in anterior third and along eyes; fine microreticulation in the posterior third or half. Pronotum with fine microreticulation and with fine dense punctation and scattered stronger punctures; strong punctures along anterior and near lateral margins, less distinct near posterior margin, absent in middle. Elytron with fine punctation and scattered stronger punctures and fine microreticulation. Ventral surface: metacoxae with moderately dense punctation and few wrinkles; ventrites with scattered punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 23; protarsomere I without dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum sometimes with deeply incised wrinkles laterally.

AFFINITIES: *Hydaticus concolor* is closely related to *H. nigrutilus* having in common small size, almost black colour and lacking dense fringe of setae along the basal margin of male protarsomere I. It can be distinguished from the latter mainly by the aedeagus and by the oblong-oval body form, broadest distinctly behind middle. From other species of the *H. sexguttatus* group it can be separated by the totally black pronotum, very much reduced elytral marks, lacking a dense fringe of setae along the basal margin of protarsomere I and by the aedeagus. *Hydaticus concolor* resembles *H. agaboides* in size and body form and can be distinguished by the totally black pronotum, the less extended reddish-brown elytral marks and the male genitalia. The latter has a distinct tuft of setae on the tip of the median lobe and belongs to the *H. fabricii* group according to WEWALKA (1979).

HABITAT: Specimens have been collected in E Kalimantan, PT Silva Rimba Lestari area, in shallow pools (Fig. 42) together with *H. laetabilis* and *H. platteeuwi*. Balke and Amran found specimens in Sumatra in a water hole with thick leaf layers in a shaded black water swamp.

DISTRIBUTION (Fig. 50): Laos (first record); Vietnam; Malaysia: West Malaysia, Sabah (first record); Indonesia (first record): Sumatra, Java, Borneo (East Kalimantan), Obi Island.

HENDRICH, BALKE & YANG (2004) mentioned a questionable record of *H. concolor* from Singapore which seems plausible.

2. *Hydaticus nigrutilus* RÉGIMBART, 1899

Hydaticus nigrutilus RÉGIMBART 1899: 358; ZIMMERMANN 1920: 222, 1928: 185; VAZIRANI 1977: 79; BALKE, HENDRICH, MAZZOLDI & BISTRÖM 2002: 975; NILSSON 2001: 104, 2015: 92.

TYPE LOCALITY: Indonesia, Borneo occidental [West Kalimantan], Pontianak.

TYPE MATERIAL: **Lectotype** (by present designation) ♂ (MNHN-CO): “Borneo Occ. Pontianak 1899 [printed white label] \ *H. nigrutilus* Rég. n.sp. [handwritten white label] \ Dr Régimbt vidit 1899 [printed white label] \ Museum Paris 1952 coll. R. Oberthur [printed white label] \ Lectotypus *Hydaticus nigrutilus* Régimbart Wewalka 2011 [printed red label]”. **Paralectotypes**: 1 ♂ from same location (MNHN-CO); 2 ♀♀ from same location: “*Hydaticus nigrutilus* Rég. ? det. Wewalka 2014” (MNHN-CO). All paralectotypes are provided with red printed paralectotype labels.

ADDITIONAL MATERIAL EXAMINED:

INDONESIA: Kalimantan: 1 ♂ from same location as lectotype: “reductus var. [handwritten by Régimbart] \ Dr. Régimbart vidit 1899” (MNHN-CO).

MALAYSIA: Sarawak: 1 ♂: “Sarawak”, Samml. [collection] A. Zimmermann (ZSM).

DESCRIPTION: Habitus: Regularly oval, broadest almost in the middle, moderately convex.

Measures of body: TL: 8.5–10.6 mm; TL-h: 7.9–9.9 mm; MW: 5.0–5.5 mm.

COLOURATION (Fig. 2): Head black, sometimes with a dark reddish-brown spot between eyes. Pronotum black; in the specimen from Sarawak anterior corners of pronotum slightly brightened. Elytron black with two dark reddish-brown spots, one behind middle near lateral side and one at apex; the apical spot often contains black irrorations. Ventral side predominantly dark reddish-brown to black, epipleura dark reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additional strong punctures concentrated in two spots in anterior third and along eyes; traces of fine microreticulation. Pronotum with fine microreticulation and fine dense punctation and scattered stronger punctures; strong punctures along anterior and near lateral margins, less distinct near posterior margin, absent in middle. Elytron with fine punctation and scattered stronger punctures and fine microreticulation. Ventral surface: metacoxae with moderately dense punctation and few wrinkles; ventrites with scattered punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 24; protarsomere I without dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum sometimes with few deeply incised wrinkles laterally.

AFFINITIES: *Hydaticus nigrutilus* is closely related to *H. concolor* having in common small size, almost black colour and lacking a dense fringe of setae along the basal margin of male protarsomere I. It can be distinguished from the latter species by the aedeagus and by the more regular oval body form. From other species of the *H. sexguttatus* group it can be separated by the totally black pronotum, very much reduced elytral marks, lacking a dense fringe of setae along the basal margin of protarsomere I and by the aedeagus. *Hydaticus nigrutilus* resembles *H. agabooides* in size and body form and can be distinguished by the totally black pronotum, the less extended reddish-brown elytral marks and the male genitalia. The latter has a distinct tuft of setae on the tip of the median lobe and belongs to the *H. fabricii* group according to WEWALKA (1979).

COMMENTS: ZIMMERMANN (1928) stated that *H. nigrutilus* is a synonym of *H. concolor* but subsequent authors did not follow this opinion. Study of the type material proved that the type series contains both species. It comprises six specimens, 2 ♂♂ in MNHN-CR and 2 ♂♂ and 2 ♀♀ in MNHN-CO. The two male specimens in MNHN-CR turned out to belong to *H. concolor* (one of them carries a label “nigrutilus Rég.” handwritten by Régimbart). However, the two male specimens in MNHN-CO (one of them is also labelled “*H. nigrutilus* Rég. n.sp.” handwritten by Régimbart) are here regarded as the true *H. nigrutilus*. The two female specimens cannot be assigned to one of the two species with certainty.

In the type series of *H. reductus* RÉGIMBART (synonym of *H. platteeui*) in the MNHN-CO I found a quite big male specimen (TL: 10.6 mm) labelled “reductus var.” handwritten by Régimbart. This specimen turned out to belong to *H. nigrutilus*. This proves the similarity of *H. nigrutilus* and *H. platteeui*.

DISTRIBUTION (Fig. 48): Malaysia: Sarawak (first record); Indonesia: Borneo (West Kalimantan).

3. *Hydaticus platteeui* SEVERIN, 1890

Hydaticus platteeui SEVERIN 1890: XCVII; ZIMMERMANN 1919: 226, 1920: 223, 1927b: 37; VAZIRANI 1977: 80; NILSSON 2001: 106, 2015: 93.

Hydaticus reductus RÉGIMBART 1899: 357; ZIMMERMANN 1920: 224; VAZIRANI 1977: 80; NILSSON 2001: 105; BALKE, HENDRICH, MAZZOLDI & BISTRÖM 2002: 976; HENDRICH, BALKE & YANG 2004: 120 (partim); NILSSON 2015: 93; **syn.n.**

TYPE LOCALITY: Indonesia, Borneo, South Kalimantan, Banjarmasin.

TYPE MATERIAL of *H. platteeui*: **Holotype** ♂ (INSB): “Bandjermassin [Bandjarmasin] D^f. Platteeuw [handwritten beige label] \ n.sp. RÉGIMBART vidit [handwritten white label] \ Coll. Séverin Détermin. Severin1890 Platteeuw [printed and handwritten cream label] \ 11048 [printed white label] \ ♂ [printed cream label] \ Coll. R. I. Sc. N. B. [printed yellow label] \ Type [printed red label] \ Holotypus Hydaticus platteeui Severin Wewalka 2014 [printed red label]”.

TYPE MATERIAL of *H. reductus*: **Lectotype** (by present designation) ♂ (MNHN-CR): “Borneo Occ. Pontianak 1899 [printed white label] \ Reductus Rég. [handwritten white label] \ Museum Paris ex. Coll. Régimbart [printed yellow label] \ Lectotypus Hydaticus reductus Regimbart Wewalka 2011 [printed red label] \ Hydaticus platteeui Severin det Wewalka 2013 [printed white label]”. **Paralectotypes**: 8 ♂♂, 9 ♀♀ from same location (MNHN-CO, MNHN-CR). All paralectotypes are provided with red printed paralectotype labels.

ADDITIONAL MATERIAL EXAMINED:

THAILAND: 1 ♀: Thailand: Khon Kaen Prov., Phu Phan Kham NP, 21.XI.1995, leg. Zettel (NMW); 1 ♀: “Bangkok [white handwritten label] \ sexguttatus Rég. [white label handwritten by Régimbart] \ Hydaticus platteeui det. Wewalka 2013” (MNHN-CR).

LAOS: 1 ♀: Laos-N (Oudomxai), 17 km NEE Oudom Xai, 20°45'N 102°09'E, ~1100 m, 1.–9.V.2002, leg. V. Kubán (CLH).

MALAYSIA: 1 ♀: West Malaysia, Pahang, Kuala Lipis surroundings, small pond in secondary forest, 60 m, 13.IV.1997, leg. M. Balke & L. Hendrich (CLH).

Sabah: 4 ♂♂, 2 ♀♀: Sook, 17 m SW Keningau, 1500 ft, 15.VIII.1977, grassy pool in shade, M.E. Bacchus, B.M. 1978-48 (CGW, BMNH); 1 ♂: Sabah, Danau Biandung Besar (CLH).

INDONESIA: Borneo: 2 ♂♂, 1 ♀: Borneo Occ., Riv. Sambey near Ngabang, 1897, leg. J.B.L. Ledru (CGW, NMHN-CL); 1 ♂: Borneo, Coll. C. Müller (ZSM); 1 ♂, 1 ♀: Indonesia: E Kalimantan, PT Silva Rimba Lestari area, 0°13.5'N 116°06.7'E, 35 m, 4.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (KAL-Jiri06) (1 ♂: M. Balke 5638, 1 ♀: M. Balke 5639) (ZSM); 2 ♂♂: E Kalimantan, ca. 15 km W of Balikpapan, Sungai Wain Protected Forest, 1°08.1'S 116°49.9'E, 35 m, 8.–11.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (NMP).

Sumatra: 2 ♂♂: Indonesia, Sumatra Barat, Panti, 0°20.960'S 100°04.047'E, 260 m, 29.IX.2009, leg. Balke & Amran (SUM013), (M. Balke 3895, M. Balke 3896) (ZSM); 1 ♀: “Sumatra \ J. T. 14.8.84 \ Coll. Kraatz Régimbart det. \ Hydaticus 6-guttatus Rég. \ Hydaticus platteeui Sev. \ Zimmermann det.” (SDEI); 1 ♀:

Sumatra, Samml. A. Zimmermann (ZSM); 1 ♂: E-Sumatra, Riau Prov., Bukit Tigapuluh NP, 0°50'S 102°26'E, 18.–25.I.2000, leg. J. Bezděk (NMP).

Siberut: 2 ♂♂, 2 ♀♀: Siberut, Bakeuluk – Madobak, 18.II.1991, leg. S. Schödl (CGW, NMW).

Sulawesi: 13 ♂♂, 9 ♀♀: N Sulawesi, 23 km E Kotamobagu, Danau Moat, pools, 21.X.2001, leg. J. Šťastný (CJS).

BRUNEI: 1 ♂: Lamunin, Bukit Sulang, 4°38'N 114°34'E, 6.VIII.–12.IX.1982, at light (BMNH); 1 ♀: Borneo, Seria, forest, XII.1969–I.1970, leg. C.J. Louwerens (NML).

DESCRIPTION: Habitus: Oblong-oval, broadest distinctly behind the middle, slightly convex.

Measures of body: TL: 9.6–10.8 mm; TL-h: 8.8–9.9 mm; MW: 5.2–6.1 mm.

COLOURATION (Fig. 3): Head black, clypeus and a spot between eyes reddish-brown. Pronotum black with reddish-brown lateral sides. Elytron black with reddish-brown marks consisting of: very often a humeral mark, often a transverse mark near base, a spot behind middle near lateral side (sometimes quite big and divided into two spots), a more or less developed mark near apex; reddish-brown at lateral side in the apical half or third; the lateral band often contains black irrorations. Ventral side predominantly dark reddish-brown to black, lateral sides of pronotum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with moderately fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third and along eyes; sometimes traces of very fine microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins, less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with fine punctation and scattered stronger punctures; with fine and dense microreticulation. Ventral surface: metacoxae and ventrite I with very fine scattered punctation and few shallow wrinkles; apical ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 25; protarsomere I with dense fringe of setae along posterior margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum with more or less extended, deeply incised wrinkles laterally.

AFFINITIES: *Hydaticus platteeuwi* seems closely related to *H. sexguttatus* and can only be separated by smaller size, by slightly less regularly elliptic body outlines, by less convex body form and often by having a reddish-brown transverse elytral mark near the base, which has not been observed in *H. sexguttatus*. Differences in male genitalia are not significant. ZIMMERMANN (1919, 1927b) stated additional differences between *H. platteeuwi* and *H. sexguttatus*: claws of hind legs more curved at the tip, deeply incised wrinkles on the lateral side of pronotum in female specimens less extended, and the two basal adhesive discs of male protarsomeres larger. However, these features are not significant. From other species of the *H. sexguttatus* group *H. platteeuwi* can be distinguished by the male genitalia and by the elytral marks.

HABITAT: HENDRICH et al. (2004) stated that *Hydaticus reductus* “inhabits shaded and shallow freshwater pools in lowland forests. In general the habitat is rich in rotten leaves and wood”. Specimens from Sabah have been collected in a grassy pool in shade. Jiří Hájek collected specimens in East Kalimantan, PT Silva Rimba Lestari area, in shallow pools (Fig. 42) together with *H. concolor* and *H. laetabilis* and in Sungai Wain Protected Forest in pools with thick layer of decaying leaves in a shaded swamp. Balke and Amran found specimens in Sumatra in small shaded puddles with leaves in lowland forest, and Balke and Hendrich collected specimens in West Malaysia, Pahang, in a small pool among densely packed rotten leaves in very shallow water.

DISTRIBUTION (Fig. 50): Thailand (first record); Laos (first record); Malaysia: West Malaysia (first record), Sabah (first record); Indonesia: Sumatra, Siberut (first record), Borneo (West and South Kalimantan); Brunei (first record).

4. *Hydaticus sexguttatus* RÉGIMBART, 1899

Hydaticus sexguttatus RÉGIMBART 1899: 323; ZIMMERMANN 1919: 226, 1920: 225, 1927b: 37; VAZIRANI 1977: 81; BALKE, HENDRICH & YANG 1998: 325; NILSSON 2001: 106; HENDRICH, BALKE & YANG 2004: 120; NILSSON 2015: 94.

TYPE LOCALITY: Indonesia, West Java, Bandung.

TYPE MATERIAL: **Lectotype** (by present designation) ♂ (MNHN-CR): “Bandong Java [handwritten white label] \ sexguttatus Rég. [handwritten white label] \ Museum Paris ex. Coll. Régimbart [printed yellow label] \ Lectotypus Hydaticus sexguttatus Régimbart Wewalka 2011 [printed red label]”. **Paralectotypes**: 1 ♂ from same location (MNHN-CR); 1 ♂, 3 ♀♀: “Bandong Fruhstorfer [printed white label] \ Type [printed white label with red letters] (INSB)”; 2 ♂♂, 5 ♀♀: “Java Fruhstorfer [printed white label] \ Type [printed white label with red letters] (INSB)”; 4 ♂♂, 3 ♀♀: “Java occident. Mons Gede 4000' Aug. 1892 H. Fruhstorfer [printed white label]” (MNHN-CO, MNHN-CR); 4 ♂♂, 5 ♀♀: “Java occident. Mons Tjikorai 4000' Aug. 1892 H. Fruhstorfer [printed white label]” (MNHN-CO, MNHN-CR); 2 ♀♀: “Java [handwritten white label]” (MNHN-CR); 2 ♂♂: “Sumatra Palembang [printed white label] \ Ex Musaeo Van Lansberge [printed white label]” (MNHN-CO, MNHN-CR). All paralectotypes are provided with red printed paralectotype labels.

ADDITIONAL MATERIAL EXAMINED:

INDIA: 1 ♂: “India or. Trichinopolis [Tamil Nadu, Trichinopoly] \ Hydaticus 6 guttatus Reg. Zim. d. [white handwritten label]” (MNB).

MYANMAR: 1 ♀: Burma, Dawna, 3.I.1994, leg. Lehmann (CLH).

THAILAND: 1 ♂, 2 ♀♀: NW-Thailand, Chiang Mai, Doi Inthanon, 15.–23.V.1989, leg. Malicky (NMW); 1 ♂: Chiang Mai, Doi Inthanon NP, 1300 m, UV light, 7.V.1990, leg. Fuller (CLH); 2 ♂♂, 1 ♀: Khao Yai NP, 14.IX.1988, leg. M.A. Jäch (88) (NMW).

LAOS: 4 ♂♂, 6 ♀♀: Laos-NE, Xieng Khouang Prov., 30 km NE Phongsavan, Ban Na Lam → Phou Sane Mts., 1300–1500 m, 19°37–8'N 103°20'E, 10.–30.V.2009, M. Brancucci leg., NHMB Basel, NMPC Prague, Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauk, V. Kubáň (CGW, NHMB); 18 exs.: Attapeu Prov., Ban Vang Tai Noi, 15°03–04'N 107°24'E, 900 m, 10.–25.VI.2011, NHMB Basel, Laos Expedition, M. Brancucci, M. Geiser, D. Hauk, Z. Kraus, A. Phantala & E. Vongphachan (NHMB); 3 ♂♂, 2 ♀♀: Attapeu Prov., Annam Highlands, Dong Amphan NBCA, Nong Fa, crater lake, 15°05.9'N 107°25.6'E, ca. 1160 m, 30.VI.–6.V.2010, leg. J. Hájek (1 ♂: M. Balke 5474) (NMP, ZSM).

MALAYSIA: 2 ♂♂, 2 ♀♀: Pahang, Cameron Highlands, Tana Rata vill., Botanical Garden, 04°28.4'N 101°22.1'E, 1470 m, 17.IV.–15.V.2009, leg. J. Hájek (NMP); 2 ♂♂: Cameron Highl., Tanah Rata, forest stream, 21.IV.2004, leg. D. Trávníček (CJS).

INDONESIA: Java: 1 ♀: Java occident., Sakabumi, 2000 m, 1893, H. Fruhstorfer (MNHN-CO); 3 ♂♂, 3 ♀♀: Java occident., Mons Gede, 4000', Aug. 1892, H. Fruhstorfer (NML); 1 ♂, 1 ♀: Java occident., Mons Tjikorai, 4000', 1892, H. Fruhstorfer (NML); 2 ♂♂, 1 ♀: Java occident., Pengalengan, 4000 ft, 1893, H. Fruhstorfer (MNHN-CL, NML); 1 ♂: Java, Fruhstorfer, H.E. Andrews Bequest, B.M. 1922-221 (BMNH); 4 ♂♂, 4 ♀♀: Java, Preanger, 1901 (MNHN-CO); 1 ♀: Java, Preanger, P.F. Sijthoff (NML); 1 ♀: Java, ex Musaeo W. Rothschild, 1899 (MNHN-CO); 2 ♂♂: Java, Coll. Boucard (MNHN-CL); 1 ♂: S. E. Java, Malang (MNHN-CL); 1 ♀: Java (MNHN-CL); 1 ♀: Java Coll. Plason (NMW); 1 ♂, 3 ♀♀: West-Java, Fruhstorfer G. (MNB); 1 ♀: Java Barat [west], Gunung Salak-Halimun NP, 6°42.272'S 106°41.157'E, 980 m, 20.X.2009, leg. Balke & Amran (JVA003) (M. Balke 3993) (ZSM); 2 ♂♂, 2 ♀♀: Java, Coll. Kraatz, Régimbart det. (SDEI); 4 ♂♂, 2 ♀♀: Java, coll. Gärtner (SDEI); 5 ♂♂, 5 ♀♀: Java occident., Mons Gede, 4000 ft, VIII.1892, H. Fruhstorfer, Coll. Kraatz & Samml. A. Zimmermann (SDEI, OLM, ZSM); 1 ♂, 5 ♀♀: Java occident., Mons Tjikorai, 4000 ft, 1892, H. Fruhstorfer \ Coll. Kraatz & Samml. A. Zimmermann (SDEI, ZSM); 3 ♂♂, 3 ♀♀: Java Fruhstorfer, Coll. Kraatz (SDEI); 1 ♂, 2 ♀♀: S.E. Java, Malang, Samml. A. Zimmermann (ZSM); 1 ♂: Java merid., Palabuan, Samml. A. Zimmermann (ZSM); 1 ♂: Java (CGW).

JAPAN (doubtful records): 1 ♂: “Japon [white handwritten label]” (MNHN-CR); 1 ♀: “Japon [white handwritten label] \ Hydaticus sexguttatus Régi [white handwritten label] \ Coll. Plason [printed white label]” (NMW); 1 ♀: “Japan 6-guttatus Régi [white handwritten label] \ Collect. Plason [printed white label]” (NMW).

DESCRIPTION: Habitus: Oblong-oval, broadest shortly behind the middle, moderately convex.

Measures of body: TL: 11.0–13.1 mm; TL-h: 10.4–12.1 mm; MW: 6.1–6.9 mm.

COLOURATION (Fig. 4): Head black, clypeus and a spot between eyes reddish-brown, sometimes connected with clypeal mark. Pronotum black with broadly reddish-brown lateral sides. Elytron black with reddish-brown marks consisting of: very often with a humeral mark, a spot behind middle near lateral side, reddish-brown colouration at lateral side in the apical half or third, a lateral band, often with black irrorations. Ventral side predominantly dark reddish-brown to black; lateral sides of pronotum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with moderately fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third and along eyes; sometimes with traces of very fine microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; strong punctures along anterior and near lateral margins, less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with fine punctation and scattered stronger punctures and fine dense microreticulation. Ventral surface: metacoxae and ventrite I with very fine scattered punctation and few shallow wrinkles; apical ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 26; protarsomere I with dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum very often with more or less extended, deeply incised wrinkles laterally.

AFFINITIES: *Hydaticus sexguttatus* is very similar to *H. stastnyi* and can only be distinguished by the slightly smaller size and by the median lobe of the aedeagus in lateral view being less slender in the middle. It is also closely related to *H. platteeuwi* and can only be separated by larger size, more regular elliptic body form, more convex body and absence of a reddish-brown transverse elytral mark near the base which is often present in *H. platteeuwi*. For further differences see affinities of *H. platteeuwi*. From other species of the *H. sexguttatus* group it can be distinguished by the male genitalia and by the elytral marks.

COMMENTS: A female specimen of the type series from Bangkok (RÉGIMBART 1899) in my opinion belongs to *H. platteeuwi*. ZIMMERMANN (1927b) stated that a specimen of the type series from Sumatra, Palembang, belongs to *H. platteeuwi* but this is not true.

HABITAT: Jiří Hájek collected specimens in a small stream, 40 cm wide, completely shaded, with clay bottom and decaying leaves (Laos, Attapeu Prov., Annam Highlands) (Fig. 43), and in a shaded artificial puddle in a plastic container (Malaysia, Pahang).

DISTRIBUTION (Fig. 48): India: Tamil Nadu (first record); Myanmar (first record); Thailand; Laos (first record); Malaysia: West Malaysia (first record); Indonesia: Java, Sumatra.

In the historical collections of NMW and MNHN specimens of *H. sexguttatus* labelled “Japon, Coll. Plason” are preserved. However, this species has never been recorded from Japan, therefore these records are very doubtful.

5. *Hydaticus stastnyi* sp.n.

TYPE LOCALITY: Malaysia, Sarawak, Kelabit, Bario.

TYPE MATERIAL: **Holotype** ♂ (NMP): “Malaysia, Sarawak Kelabit, Bario, 21-25.6.2003 J. Šťastný lgt. [printed white label] \ coll. J Šťastný Liberec, CZ [printed blue label] \ Holotypus *Hydaticus stastnyi* sp.n. Wewalka 2015 [printed red label]”. **Paratypes**: 21 ♂♂, 14 ♀♀ from same location (CGW, CJS, NMW); 3 ♂♂, 1 ♀: “Malaysia, Sarawak Bario, Pa Ukat [3°44'14"N 115°30'31"E, 1100 m] 24.6.2003 J. Šťastný lgt. [printed white label] \ coll. J Šťastný Liberec, CZ [printed blue label]” (CJS); 1 ♂: “Malaysia, Sarawak Bario, Pa Umor [3°45'23"N 115°29'40"E,

1080 m] 23.6.2003 J. Šťastný lgt. [printed white label] \ coll. J Šťastný Liberec, CZ [printed blue label]" (CJS). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Oblong-oval, broadest shortly behind the middle, moderately convex.

Measures of body: TL: 12.4–13.3 mm; TL-h: 11.5–12.5 mm; MW: 6.4–7.2 mm.

COLOURATION (Fig. 5): Head black, clypeus and sometimes a spot between eyes reddish-brown. Pronotum black with reddish-brown lateral sides. Elytron black with reddish-brown marks consisting of: a more or less extended humeral mark, sometimes a transverse mark near base, a spot behind middle near lateral side, a more or less developed, reddish-brown mark near apex, reddish-brown colouration at lateral side in the apical half or third. Ventral side predominantly dark reddish-brown to black; lateral sides of pronotum and epipleura dark reddish-brown. Antennae reddish-brown. Anterior and middle legs dark reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with moderately fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third and along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; strong punctures along anterior and near lateral margins, less distinct near posterior margin, absent in middle; with fine microreticulation in posterior half. Elytron with fine punctation and scattered stronger punctures and fine dense microreticulation. Ventral surface: metacoxae and ventrite I with very fine scattered punctation and few shallow wrinkles; apical ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 27; protarsomere I with dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum with deeply incised wrinkles laterally.

AFFINITIES: *Hydaticus stastnyi* is very closely related to *H. sexguttatus* and can only be separated by slightly larger size and median lobe of aedeagus in lateral view being more slender in middle. It resembles also *H. platteeuwi* by the elytral marks but can be separated by larger size. From other species of the *H. sexguttatus* group it can be distinguished by the male genitalia and by the elytral marks.

HABITAT: The specimen from Malaysia, Sarawak, Bario, Pa Umor has been collected in a small and shallow forest pool, rich in rotten leaves, in primary rain forest (BRANCUCCI & HENDRICH 2005: fig. 61) and specimens from Sarawak, Kelabit, Bario, were found in a small shallow puddle in a creek bed with clay bottom in secondary forest together with *Lacconectus stastnyi* BRANCUCCI & HENDRICH, 2005.

ETYMOLOGY: This species is dedicated to Mgr. Jaroslav Šťastný, Liberec, Czech Republic, who collected the type specimens.

DISTRIBUTION (Fig. 50): Malaysia: Sarawak.

6. *Hydaticus macularis* RÉGIMBART, 1899

Hydaticus macularis RÉGIMBART 1899: 321; ZIMMERMANN 1920: 222, 1924: 744; VAZIRANI 1977: 79; NILSSON 2001: 103, 2015: 92.

Hydaticus schultzei ZIMMERMANN 1924: 744; NILSSON 2001: 105, 2015: 93; **syn.n.**

TYPE LOCALITY: Philippines, South Palawan.

TYPE MATERIAL of *H. macularis*: **Lectotype** (by present designation) ♂ (MNHN-CR): "Sud Palawan [handwritten white label] \ macularis Rég. [handwritten white label] \ Museum Paris Coll. Maurice Régimbart

[printed pink label] \ Lectotypus *Hydaticus macularis* Regimbart Wewalka 2011 [printed red label]". **Paralectotype** ♀ from same location (MNHN-CR). The paralectotype is provided with a red printed paralectotype label.

TYPE MATERIAL of *H. schultzei*: **Lectotype** (by present designation) ♂ (ZSM): "Palawan Rio Quinina [handwritten white label] \ W. Schultze [handwritten white label] \ ♂ \ Type [handwritten round grey label] \ Samml. A. Zimmermann [printed white label] \ Lectotypus *Hydaticus schultzei* Zimmerm. Wewalka 2013 [printed red label]". **Paralectotypes**: 1 ♀: "Palawan Taytay 1 [printed white label] \ Schultze [printed white label] \ ♀ \ Type [handwritten round grey label] \ Samml. A. Zimmermann [printed white label] \ Paralectotypus *Hydaticus schultzei* Zimmerm. Wewalka 2013 [printed red label]" (ZSM). A second paralectotype should be deposited in the collection of the Bureau of Science, Manila, Philippines (ZIMMERMANN 1924).

ADDITIONAL MATERIAL EXAMINED:

PHILIPPINES: Palawan: 1 ♀: "Süd Palawan 7341 [handwritten white label] \ Type [handwritten round grey label] \ Typus [printed red label] \ Samml. A. Zimmermann [printed white label] \ *Hydaticus macularis* Rég. no type specimen det. Wewalka 2014 [handwritten and printed white label]" (ZSM); 1 ♀: Palawan, 10 km NE Quezon, Tumarbon riv., 3.–4.IV.1994, leg. H. Zettel (NMW); 1 ♂, 1 ♀: "Sud Palawan" (MNHN-CO).

Balabac Isl: 1 ♀: Balabac (MNHN-CO).

Siargao Isl: 1 ♀: Siargao, Dapa (CGW).

MALAYSIA: Sabah: 1 ♂: Sabah, off Sg. Kinabatangan, muddy puddles near Danau Biamdung Besar, 11.IV.1994, leg. H.K. Lua & C.Y. Chang (CLH).

DESCRIPTION: Habitus: Regular-oval, broadest almost in the middle, slightly convex.

Measures of body: TL: 11.0–11.6 mm; TL-h: 10.0–10.8 mm; MW: 5.8–6.4 mm.

COLOURATION (Fig. 6): Head predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black along eyes and on vertex. Pronotum predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black in middle and narrowly along anterior and posterior margin. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a c-shaped humeral mark, a narrow transverse mark near base, two spots behind middle (one near lateral side and one nearer to suture), an apical spot, a band along lateral side in apical two thirds (sometimes only in apical third). Ventral side predominantly reddish-brown to dark reddish-brown; lateral sides of pronotum and epipleura reddish-brown to yellowish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark reddish-brown to black.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in the anterior third and along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with very fine punctation and less dense stronger punctures; with fine and very dense microreticulation. Ventral surface: metacoxae with fine punctation and few shallow wrinkles; apical ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 28; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with more or less extended moderately deep incised wrinkles.

AFFINITIES: *Hydaticus macularis* resembles *H. laetabilis* but can be separated by smaller size, by elytral marks showing two spots behind the middle, and by the male genitalia. It is also closely related to *H. balkei* but can be distinguished by slightly larger size, by elytral marks showing two spots behind middle and a humeral mark and also by the male genitalia. From other species of the *H. sexguttatus* group it can be separated by the male genitalia and by the elytral marks.

COMMENTS: ZIMMERMANN (1924) stated that *H. schultzei* “resembles *H. maculatus* Reg. from Palawan, but is quite surely distinct by the rufous colour of head, thorax and epipleura and by the much stronger sexual sculpture of the female”. The study of type specimens proved that these species are synonyms.

HABITAT: One specimen from Sabah was collected in muddy puddles.

DISTRIBUTION (Fig. 50): Philippines: Palawan, Balabac Island (first record), Siargao Island (first record); Malaysia: Sabah (first record).

7. *Hydaticus balkei* sp.n.

TYPE LOCALITY: Indonesia, West Kalimantan, Kapuas River.

TYPE MATERIAL: **Holotype** ♂ (MZB): “Indonesia: West Kalimantan, Kapuas River, 40 m, 10.iv.2011, 0 03.258S 110 09.589E, leg. Balke (KAL001) [printed white label] \ Holotypus *Hydaticus balkei* Wewalka 2014 [printed red label]”. **Paratypes**: 33 ♂♂, 48 ♀♀ from same locality (1 ♂: M. Balke 5152, 1 ♀: M. Balke 5151) (CGW, MZB, NMP, NMW, ZSM). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Oval, broadest distinctly behind the middle, slightly convex.

Measures of body: TL: 9.1–10.5 mm; TL-h: 8.4–9.5 mm; MW: 4.9–5.8 mm.

COLOURATION (Figs. 7, 47): Head often predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black along eyes and on vertex, sometimes dark-brown colour predominant. Pronotum predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black in middle and narrowly along posterior margin. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a post-humeral mark, a transverse mark near base (rarely fused with post-humeral mark), one lateral spot behind middle, an apical spot, a band along lateral side in the apical two thirds. Ventral side predominantly dark reddish-brown to black; lateral sides of pronotum and epipleura reddish-brown to yellowish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown to dark reddish-brown; posterior legs dark reddish-brown to black.

SCULPTURE: Head with fine dense punctation and less dense, stronger punctures; additional strong punctures concentrated in two spots in the anterior third and along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with very fine dense punctation and less dense, stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae and ventrites with fine punctation, scattered stronger punctures and shallow wrinkles; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 29; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with more or less extended, deeply incised wrinkles.

AFFINITIES: *Hydaticus balkei* resembles *H. macularis*, but can be separated by slightly smaller size, by elytral marks showing one spots behind middle, lacking a humeral mark and by the male genitalia. It is also closely related to *H. laetabilis* but can be distinguished by distinctly smaller size, by elytral marks showing no humeral mark and by slightly different male genitalia. From other species of the *H. sexguttatus* group it can be separated by the male genitalia and by the elytral marks.

HABITAT: Small puddles under thick leaf layer (Fig. 44) and a small artificial water hole near river margin.

ETYMOLOGY: This species is dedicated to Dr. Michael Balke (ZSM), who collected the type specimens.

DISTRIBUTION (Fig. 50): Indonesia: Borneo (West Kalimantan).

8. *Hydaticus laetabilis* RÉGIMBART, 1899

Hydaticus laetabilis RÉGIMBART 1899: 321; CHATANAY 1911: 444; ZIMMERMANN 1919: 226, 1920: 221; NILSSON 2001: 103; BALKE, HENDRICH, MAZZOLDI & BISTRÖM 2002: 975; NILSSON 2015: 91.

TYPE LOCALITY: Indonesia, West Kalimantan, Pontianak.

TYPE MATERIAL: **Lectotype** (by present designation) ♂ (MNHN-CR): “Borneo Occ. Pontianak 1898 [printed white label] \ laetabilis Rég. [handwritten white label] \ Museum Paris ex. Coll. Régimbart [printed yellow label] \ Lectotypus *Hydaticus laetabilis* Régimbart Wewalka 2011 [printed red label]”. **Paralectotypes:** 40 ♂♂, 15 ♀♀ from same location (MNHN-CG, MNHN-CO, MNHN-CR). All paralectotypes are provided with red printed paralectotype labels.

ADDITIONAL MATERIAL EXAMINED:

INDIA (doubtful record): 1 ♀: “Assam Shillong \ Samml. A. Zimmermann” (ZSM).

MALAYSIA: Sabah: 1 ♀: Sook, 17 m SW Keningau, 1500 ft, 15.VIII.1977, grassy pool in shade, M.E. Bacchus, B.M. 1978-48 (BMNH).

INDONESIA: Kalimantan: 8 ♂♂, 3 ♀♀: Borneo Occ. Riv. Sambey près Ngabang J.B. Ledru 1897 (MNHN-CL); 4 ♂♂, 2 ♀♀: Borneo Occ. Pontianak 1898 & 1899 (NML); 1 ♀: E Kalimantan, ca. 15 km N of Balikpapan Sungai Wain Protection Forest, 01°018.1'S 116°49.9'E, 35 m, 8.–11.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (KAL-Jiri09) (ZSM); 2 ♂♂: E Kalimantan, PT Silva Rimba Lestari area, 00°13.5'N 116°06.7'E, 35 m, 4.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (KAL-Jiri06) (M. Balke 5640, M. Balke 5641) (ZSM); 1 ♂: Borneo occid., Njabang, Coll. L. Borgeon (INSB).

INDONESIA or **MALAYSIA:** The following five specimens were collected from “Borneo”, but their exact provenance on that island is unknown: 2 ♂♂: “Borneo” (MNHN-CG); 1 ♂: “Borneo”, *Hydaticus laetabilis* Rég., Coll. Kraatz Régimbart det. (SDEI); 1 ♂: “Borneo”, Coll. A. Zimmermann (ZSM); 1 ♂: “Borneo”, ex. Coll. F. Schneider (OLM); 1 ♂: “Borneo”, Coll. L. Borgeon (INSB).

DESCRIPTION: Habitus: Oblong-oval, broadest distinctly behind the middle, slightly convex.

Measures of body: TL: 10.5–12.8 mm; TL-h: 9.8–11.9 mm; MW: 6.1–7.1 mm.

COLOURATION (Fig. 8): Head often predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black along eyes and on vertex, sometimes dark-brown colour predominates. Pronotum predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black in middle and along anterior and posterior margin. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a c-shaped humeral mark, a narrow transverse mark near base (sometimes reduced to a small lateral spot and sometimes fused with the humeral mark), one lateral spot behind middle, an apical spot, a band along lateral side in apical two thirds (sometimes only in apical third). Ventral side predominantly reddish-brown to dark-brown; lateral sides of pronotum and epipleura reddish-brown to yellowish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown to dark reddish-brown; posterior legs dark reddish-brown.

SCULPTURE: Head with fine dense punctation and less dense, stronger punctures; additional strong punctures concentrated in two spots in the anterior third and along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with very fine dense punctation and less dense stronger punctures; with fine and very dense microreticulation. Ventral surface:

metacoxae with fine punctation and few shallow wrinkles; apical ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 30; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with more or less extended, deeply incised wrinkles.

AFFINITIES: *Hydaticus laetabilis* resembles *H. macularis* but can be separated by larger size, by elytral marks showing one spot behind the middle, and by the male genitalia. It is also closely related to *H. balkei* but can be distinguished by larger size, by elytral marks showing a humeral mark and, by the male genitalia. From other species of the *H. sexguttatus* group it can be separated by the male genitalia and by the elytral marks.

HABITAT: The specimen from Sabah (BMNH) was collected in a “grassy pool in shade”. Jiří Hájek collected specimens in East Kalimantan, PT Silva Rimba Lestari area, in shallow pools (Fig. 42) together with *H. concolor* and *H. platteeuwi*.

DISTRIBUTION (Fig. 50): Malaysia: Sabah (first record), Indonesia: Borneo (Kalimantan).

One historical specimen of *H. laetabilis* (ZSM) is labelled: “Assam Shillong, Samml. [collection] A. Zimmermann”. However, this species has never been recorded from North-East India or neighbouring countries and therefore this record must be regarded as doubtful.

9. *Hydaticus fractifer* WALKER, 1858

Hydaticus fractifer WALKER 1858: 204; MOTSCHULSKY 1861: 109; GEMMINGER & HAROLD 1868: 465; SHARP 1890: 347 (partim); BALFOUR-BROWNE 1939: 113; VAZIRANI 1969: 264, 1970: 181, 1977: 77; WEWALKA 1982: 123; NILSSON 2001: 102; GHOSH & NILSSON 2012: 25; NILSSON 2015: 91.

Hydaticus bihamatus AUBÉ, 1838: ATKINSON 1891: 145 (partim); SHARP 1882: 657 (partim); BRANDEN 1885: 99 (partim).

Hydaticus pacificus AUBÉ, 1838: RÉGIMBART 1899: 316 (partim), 1902: 470 (partim), 1903: 334 (partim); ZIMMERMANN 1919: 226 (partim), 1920: 223 (partim); GSCHWENDTNER 1937: 21 (partim); KAMIYA 1938: 49 (partim); YOON & AHN 1988: 257 (partim).

Hydaticus andamanicus RÉGIMBART, 1899: BALFOUR-BROWNE 1939: 113; NILSSON 2001: 102; GHOSH & NILSSON 2012: 25; NILSSON 2015: 91.

TYPE LOCALITY: Sri Lanka.

TYPE MATERIAL: **Lectotype** (by present designation) ♂ (BMNH): “Ceylan [handwritten round grey label] \ Type H. T. [printed round white label with red border] \ fractifer [handwritten white label] \ Hydaticus fractifer Walker a.n.Hbt (Type) [handwritten grey label] \ Lectotypus Hydaticus fractifer Walker Wewalka 2014 [printed red label]”.

ADDITIONAL MATERIAL EXAMINED:

SRI LANKA: 1 ♂: “Ceylon. G. Lewis. 1910-320 \ Bogawantalawa, 4.900–5.200 ft. 28.II.–12.III.[18]82” (BMNH); 1 ♂: “Ceylon. G. Lewis. 1910-320 \ Hydaticus pacificus Aubé var. fractifer Walk. (dark var.:) det. J. Balfour-Browne” (BMNH); 1 ♂: “Ceylon. G. Lewis. 1910-320 \ Hydaticus bihamatus var. 3” (BMNH); 1 ♂, 2 ♀ ♀: “Ceylon. G. Lewis. \ 5. and 6. III. [18]82 \ Sharp Coll 1905-313.” (BMNH); 9 ♂ ♂, 7 ♀ ♀: Ceylon, Horton Plains, ca. 12 km SE Nuwara Eliya near Pattipola, 1890 m, 15.–22.I.1981, leg. M.A. Jäch (C58, C59) (CGW, NMW); 1 ♂: Ceylon, between Nuwara Eliya and Nanu Oya, 1650 m, 17.XI.1982, leg. M.A. Jäch (C16) (NMW); 1 ♀: Ceylon, ca. 6 km SE Nuwara Eliya, Hakgala Botanic Gardens ca. 1720 m, 17. & 21.XI.1982, leg. M.A. Jäch (C19) (NMW).

DESCRIPTION: Habitus: Regularly oblong-oval, broadest in the middle, moderately convex.

Measures of body: TL: 12.3–13.7 mm; TL-h: 11.4–12.6 mm; MW: 6.6–7.3 mm.

COLOURATION (Fig. 9): Head often predominantly dark-brown to black, clypeus and two spots between eyes reddish-brown to yellowish-brown; sometimes reddish-brown to yellowish-

brown colour predominates. Pronotum predominantly dark-brown to black medially, more or less extended reddish-brown to yellowish-brown at lateral margins, sometimes reddish-brown to yellowish-brown colour predominates. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a humeral mark, often a transverse, more or less broad mark near base not reaching suture but connected with humeral mark, an irregular lateral band along whole distance or only in apical half (the band often very broad and containing many dark-brown irrorations mostly arranged in rows), sometimes an additional longitudinal band in the middle between suture and lateral side. Ventral side dark-brown to black; lateral sides of pronotum, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior legs reddish-brown, middle and posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additional strong punctures concentrated in two spots in the anterior third; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; without microreticulation. Elytron with extremely fine, moderately dense punctation and scattered stronger punctures; with very fine dense microreticulation. Ventral surface: metacoxae with irregular punctation, ventrites almost without punctures, ventrites I and II with longitudinal striae medially; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 31; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with deeply incised wrinkles.

AFFINITIES: *Hydaticus fractifer* can be separated from all other species of the *H. sexguttatus* group by larger size, extremely fine, moderately dense elytral punctation and the male genitalia. Concerning the elytral colouration it resembles *H. pacificus* and *H. discindens* WALKER, 1858 but can be separated by smaller size and by the male genitalia.

COMMENTS: BALFOUR-BROWNE (1939) clearly stated that *H. fractifer* is a valid species and not a synonym of *H. pacificus* as mentioned by ZIMMERMANN (1920).

BALFOUR-BROWNE (1939) suspected that “one of the Ceylonese specimen [which he studied] bears Sharp’s label as in the synonymy [*Hydaticus bihamatus* var. 3, SHARP, 1882: 657]”. I was able to confirm that it belongs in fact to *H. fractifer*.

BALFOUR-BROWNE (1939) also saw a specimen from the Andamans, which in his opinion belongs to *H. fractifer* and he noted “that Sharp gave this form no name, and that *andamanicus* is due to Régimbart, who states that he named the species from Sharp’s description and without having seen any specimens”. I was able to confirm that the specimen from the Andaman Islands belongs to the *H. pacificus* group.

HABITAT: Obviously confined to higher elevation (1600–1900 m). Manfred A. Jäch found the specimens in swampy and shallow pools.

DISTRIBUTION (Fig. 48): Sri Lanka.

10. *Hydaticus hendrichi* sp.n.

TYPE LOCALITY: Indonesia, Papua, Merauke.

TYPE MATERIAL: **Holotype** ♂ (MZB): “Indonesia: Papua, Merauke, Wasur, pools, 20 m, 14 42.748S 141 36.096E, 15.–16.X.2011, UNCEN (PAP02) [printed white label] Holotypus *Hydaticus hendrichi* Wewalka 2014

[printed red label]". **Paratypes:** 8 ♂♂, 11 ♀♀ from the same locality (2 ♂♂: M. Balke 5007, 5009) (CGW, MZB, NMW, ZSM). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Oblong-oval, broadest distinctly behind the middle, moderately convex.

Measures of body: TL: 10.1–11.2 mm; TL-h: 9.4–10.3 mm; MW: 5.6–6.2 mm.

COLOURATION (Fig. 10): Head predominantly dark-brown to black, reddish-brown along clypeus and between eyes. Pronotum dark-brown to black, reddish-brown narrowly along lateral margins. Elytron predominantly dark-brown to black with reddish-brown marks consisting of: a humeral mark continuing to a band along lateral side reaching apex, lateral third to half with extensive dark-brown irrorations mostly arranged in rows on reddish-brown ground similar as in typical species of the *H. fabricii* group, a narrow sub-sutural line. Ventral side predominantly dark reddish-brown to black; lateral sides of pronotum, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown; posterior legs dark reddish-brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third and along inner margins of eyes; with traces of microreticulation posteriorly. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior margin, near lateral margins concentrated in a line near anterior corner and near posterior corner, less distinct near posterior margin, absent in middle; with traces of microreticulation. Elytron with very fine, moderately dense punctation and scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with moderately fine punctation, scattered stronger punctures and shallow wrinkles, ventrite I with similar punctation and distinct longitudinal wrinkles, ventrites II–VI with less dense punctation; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 32; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture similar to male but microreticulation on pronotum more extended; pro- and mesotarsomeres not modified. Pronotum laterally without deeply incised wrinkles.

AFFINITIES: *Hydaticus hendrichi* is similar to *H. rhantaticoides* but can be distinguished by the more elongate body shape, the elytral colouration and the male genitalia. In size and colouration *H. hendrichi* also resembles *H. sellatus sellatus* and *H. ephippiiger*, which both belong to the *H. fabricii* group because of the setal tuft on the tip of the male median lobe, but can be separated by the more extended dark-brown to black elytral marks and the male genitalia.

HABITAT: The specimens were collected in a semi-shaded puddle with very thick leaf layer in an otherwise dry eucalypt forest together with *H. rhantaticoides* and *H. ephippiiger* (Fig. 45).

ETYMOLOGY: This species is dedicated to Dr. Lars Hendrich, Zoologische Staatssammlung, Munich, Germany.

DISTRIBUTION (Fig. 49): Indonesia: Papua.

11. *Hydaticus rhantaticoides* RÉGIMBART, 1892

Hydaticus rhantaticoides RÉGIMBART 1892: 993, 1899: 327; ZIMMERMANN 1919: 227, 1920: 224; BALFOUR-BROWNE 1945: 107, 114; GUIGNOT 1956: 55; GUÉORGUIEV & ROCCHI 1993: 162; NILSSON 2001: 105, 2015: 93.

Hydaticus modestus WATTS 1978: 147 (homonym).

Hydaticus watti DAUSSIN 1980: 351 (replacement name for *H. modestus*); WATTS 1985: 26; LAWRENCE, WEIR & PYKE 1987: 356; LARSON 1993: 62; NILSSON 2001: 107; WATTS 2002: 43; NILSSON 2015: 94; **syn.n.**

Prodatiscus watti DAUSSIN: MILLER, BERGSTEN & WHITING 2009: 601 ff.

TYPE LOCALITY: Papua New Guinea, Rigo.

TYPE MATERIAL of *H. rhanaticoides*: **Lectotype** (by present designation) ♀ (MNHN-CR): “N GUINEA MER. RIGO Luglio 1889 L. LORIA [printed white label] \ Museo Civ. Genova [printed orange label] \ Rhanaticoides Rég. [handwritten white label] \ Lectotypus Hydaticus rhanaticoides Régimbart Wewalka 2014 [printed red label]”.

TYPE MATERIAL of *H. modestus*: **Holotype** ♂ (ANIC): Australia, Queensland, Cairns (not studied).

ADDITIONAL MATERIAL EXAMINED:

INDONESIA: Papua: 2 ♂♂, 3 ♀♀: Merauke, Wasur, pools, 14°42.748'S 141°36.096'E, 20 m, 15.–16.X.2011, leg. UNCEN (Pap02) (2 ♀♀: M. Balke 5030, 5031) (CGW, MZB, ZSM); 1 ♂: Asmat, Pulau river, Jinak, 13.II.1995, leg. Pljushky (CLH).

PAPUA NEW GUINEA: 1 ♂: Morobe Distr., Gosap, Markham, Valley ca. 90 m, W of Lae, 1,000 ft., 27.–30.I.1965, M.E. Bacchus, B.M. 1965-120 (BMNH); 1 ♀: S.E. New Guinea, Sharp Coll 1905-313 (BMNH); 12 ♂♂, 6 ♀♀: Madang, Alexishafen, airfield, 7.III.1991, leg. D. Larson (ANIC, CGW, NMW); 3 ♂♂, 3 ♀♀: Madang, 2 km W Alexishafen, sago swamp, 12.III.1991, leg. D. Larson (ANIC); 10 ♂♂, 7 ♀♀: Madang, 5 km N Alexishafen, sago swamp, 9.III. & 22.V.1991, leg. D. Larson (ANIC, CGW); 1 ♂, 4 ♀♀: Madang, Lea Hwy, 5°26'S 145°30'E, 3.IV.1991, leg. D. Larson (ANIC); 2 ♂♂, 1 ♀: Madang, Gogal Valley, 2 km S Baru, 10.IV.1991, leg. D. Larson (ANIC, CGW); 2 ♂♂, 4 ♀♀: Madang, Ramu Valley, 3–5 km N Brahman, 16. & 18.IV.1991, leg. D. Larson (ANIC, CGW); 1 ♂, 2 ♀♀: Madang, Nagada Riv. nr. Nobanob, 12.VI.1991, leg. D. Larson (ANIC); 1 ♀: Madang, Nobanob nr. Hagada Harbour, 9.V.1991, leg. D. Larson (ANIC); 2 ♀♀: Madang, 7 km W Bagildik, Nurnass R., 8.III.1991, leg. D. Larson (ANIC).

New Britain: 1 ♂: “Baining Berge [Mts.] \ coll. Benningens \ *Hydaticus rhanaticoides* Rég. \ Zimmermann det.” (DEI).

AUSTRALIA: 1 ♂: Australien, Samml. A. Zimmermann (ZSM); 1 ♂: Queensland, Eubenangee nr. Babinda, 2.II.1997, leg. C. Watts (CLH); 1 ♀: N Queensland, Cape Tribulation, road S of Daintree ferry station, 16°17.469'S 145°19.122'E, 12 m, forest swamp, 15.IX.2006, leg. L. & E. Hendrich (CLH); 1 ♂: QLD, Forest Marsh Innisfail 7.IX.1965, R.B. Angus BMNH(E) 2010-22 (BMNH); 1 ♀: QLD, Port by Barron, River Kuranda, R.B. Angus BMNH(E) 2010-22 (BMNH); 1 ♂: QLD, Kuranda, 20.I.1962, at light, leg. E.B. Britton, B.M. 1962-153, *Hydaticus modestus* Watts, det. C. Watts (BMNH).

SOLOMON ISLANDS: 1 ♂: Solomon Is., Guadalcanal, Kukum, 20.V.1963, 5242, P. Greenslade, B.M.1966-477 (BMNH).

SAMOA: 1 ♂, 2 ♀♀: “Samoa \ Zimmermann det.” (SDEI, ZSM).

DESCRIPTION: Habitus: Regularly oval, broadest in the middle, moderately convex.

Measures of body: TL: 8.6–10.7 mm; TL-h: 8.0–10.1 mm; MW: 4.9–6.2 mm.

COLOURATION (Fig. 11): Head often predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black along eyes and on vertex, sometimes dark-brown colour predominant. Pronotum predominantly dark-brown to black, more or less extended reddish-brown to yellowish-brown at lateral margins. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a transverse, more or less broad basal mark not reaching suture continuing into an irregular lateral band, which, in apical half, is often very broad and contains many dark-brown irrorations mostly arranged in rows, sometimes the lateral band is less broad and two spots are present behind middle, one near lateral side and one nearer to suture. Ventral side predominantly dark reddish-brown to dark brown; lateral sides of pronotum, prosternum and epipleura reddish-brown to yellowish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown; posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third; with fine microreticulation on posterior half. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with fine dense punctation and scattered stronger

punctures; with fine dense microreticulation. Ventral surface: metacoxae with fine punctation, ventrites with shallow wrinkles; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 33; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally without deeply incised wrinkles, sometimes with traces of fine wrinkles.

AFFINITIES: *Hydaticus rhanaticoides* resembles *H. bengalensis* concerning elytral colouration but can be separated by presence of a transverse basal band, smaller size, different body form, and by the male genitalia. From *H. hajeki* and *H. marlenae* it can be distinguished by a transverse, more or less broad basal elytral mark, an elytral band along total lateral side, a fringe of setae along the basal margin of male protarsomere I and the male genitalia. *Hydaticus rhanaticoides* resembles in colouration also *H. sellatus sellatus* which belongs to the *H. fabricii* group, but can be distinguished by less elongated body shape, less convex body and the male genitalia.

COMMENTS: The study of specimens from Australia, Queensland, determined as *H. watsi* by C.H.S. Watts revealed that this is a synonym of *H. rhanaticoides*.

HABITAT: One specimen from Australia was collected by L. & E. Hendrich among floating mats of grass in a forest swamp near the Daintree River (Fig. 46). Michael Balke collected specimens in Indonesia, Papua, in a semi-shaded puddle with very thick leaf layers in an otherwise dry eucalypt forest together with *H. hendrichi* and *H. ephippiiger* (Fig. 45). Specimens from Papua New Guinea were found in sago swamps by D. Larson.

DISTRIBUTION (Fig. 51): Indonesia: Papua; Papua New Guinea: main island, New Britain (first record); Australia: northern Queensland; Solomon Islands (first record); Samoa (first record).

12. *Hydaticus bengalensis* RÉGIMBART, 1899

Hydaticus bengalensis RÉGIMBART 1899: 322; ZIMMERMANN 1920: 218; VAZIRANI 1969: 266, 1977: 75; NILSSON 2001: 100; MUKHOPADHYAY & GHOSH 2010: 279; GHOSH & NILSSON 2012: 24; NILSSON 2015: 89.

TYPE LOCALITY: India, Calcutta.

TYPE MATERIAL: **Lectotype** ♂ (MNHN-CR), designated by VAZIRANI (1977): "Calcutta [handwritten white label] \ bengalensis Rég. [handwritten white label] \ LECTOTYPE [printed red label]".

ADDITIONAL MATERIAL EXAMINED:

INDIA: 1 ♀: Andaman Isl., 21.I.1904, G. Rogers, 1906-204 (BMNH).

MYANMAR: 2 ♂♂, 1 ♀: Pegu [ca. 100 km N of Rangoon] \ Museum Paris Coll. Maurice Régimbart 1908 (MNHN-CR); 1 ♂: Pegu, Coll. A. Zimmermann (ZSM); 1 ♂: Pegu (NML).

CHINA: 1 ♀: Sichuan, Emei Shan, 180 km S Chengdu, VI.1993, leg. Z. Jindra (CFP).

VIETNAM: 9 exs.: S-Vietnam, Nam Cát Tiên Nat. Park., 1.-15.V.1994, leg. Pacholátko & Dembický, (CGW, NMW); 2 ♂♂, 4 ♀♀: S-Vietnam, 120 km NNE Ho Chi Minh, Cát Tiên village, 3.-15.VII.1995, leg. Napolov (CFP, CGW, CLH, NHMB, ZSM).

MALAYSIA: 1 ♂: West Malaysia, Pahang Prov., Lake Cini, lake side north of Rimba Resort, 50 m, 17.IV.1997, leg. Balke & Hendrich (CLH).

DESCRIPTION: Habitus: Oblong-oval, broadest behind the middle, slightly convex.

Measures of body: TL: 10.5–12.1 mm; TL-h: 9.8–10.3 mm; MW: 5.9–6.9 mm.

COLOURATION (Fig. 12): Head dark-brown to black, clypeus and transverse spot between eyes, often connected with clypeal mark yellowish-brown to reddish-brown. Pronotum dark-brown to black in middle and narrowly at anterior and posterior margins; lateral sides yellowish-

brown to reddish-brown. Elytron dark-brown with a yellowish-brown to reddish-brown mark along lateral side, more extended at shoulder and apically; in the apical half the light mark contains many dark-brown irrorations mostly arranged in rows. Ventral side predominantly dark-brown to reddish-brown; yellowish-brown at lateral sides of pronotum, prosternum, epipleura and with lateral marks on ventrites III–V. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs dark-brown to black.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures not condensed along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and lateral margins and less distinct near posterior margin; posterior third with fine microreticulation. Elytron with fine dense punctation and scattered stronger punctures; with fine microreticulation. Ventral surface: metacoxae with scattered punctures and wrinkles; ventrites almost without punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 34; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with deeply incised wrinkles.

AFFINITIES: *Hydaticus bengalensis* resembles *H. rhanaticoides* concerning elytral colouration but can be separated by the absence of a transverse basal band, larger size, different body form and by the male genitalia. From other species of the *H. sexguttatus* group it can be separated by the elytral marks, the body form and the male genitalia.

HABITAT: The specimen from West Malaysia was collected in a shaded water zone at the lakeside of Lake Cini under rotten wood and densely packed rotten leaves in very shallow water, up to 10 cm depth. A habitat photo was published by HEBAUER et al. (1999: fig. 2).

DISTRIBUTION (Fig. 48): India: Uttarakhand, West Bengal, Andaman Islands; Myanmar; China: Sichuan (first record); Vietnam (first record); Malaysia: West Malaysia (first record).

13. *Hydaticus hajeki* sp.n.

TYPE LOCALITY: Indonesia, Papua, Wandammen Peninsula.

TYPE MATERIAL: **Holotype** ♂ (MZB): “Irian Jaya: Kabup. Nabire Wandammen penins., Yeretua 10 m, 17.–20.8.1998 leg. M. Balke (WA 18) [printed white label] \ Holotypus *Hydaticus hajeki* sp.n. Wewalka 2014 [printed red label]”; **Paratypes:** 1 ♂, 1 ♀ from the same locality (ZSM). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Regularly broadly-oval, broadest in the middle, distinctly convex.

Measures of body: TL: 10.1–10.5 mm; TL-h: 9.4–9.8 mm; MW: 5.7–5.8 mm.

COLOURATION (Fig. 13): Head predominantly dark-brown to black, reddish-brown along clypeus and with a transverse reddish-brown mark between eyes. Pronotum predominantly dark-brown to black, narrowly reddish-brown at lateral margins. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a humeral mark, a band along the lateral side in the posterior half, a post-median lateral mark and an apical mark often connected with lateral mark (both with dark-brown irrorations mostly arranged in rows). Ventral side predominantly dark-brown, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown; posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third medially and of eyes; with traces of fine microreticulation in posterior half. Pronotum with fine dense punctation and scattered

stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with fine dense punctation and scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with moderately fine and moderately dense punctation and shallow wrinkles; ventrites almost without punctures, ventrites I-III with shallow wrinkles; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 35; protarsomere I without a fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally without deeply incised wrinkles.

AFFINITIES: *Hydaticus hajeki* resembles very much *H. ephippiiger* and *H. marlenae* concerning elytral colouration. It can be separated from the first by slightly more broadly-oval body form and lacking a fringe of setae along the basal margin of male protarsomere I and from the second by larger size, more broadly-oval body form and from both by the male genitalia. From *H. rhantaticoides* it can be distinguished by lacking a transverse, more or less broad basal elytral mark, the elytral band along lateral side being present only in the posterior half, by lacking a fringe of setae along the basal margin of male protarsomere I, and by the male genitalia.

HABITAT: The specimens were collected in puddles in a lowland forest.

ETYMOLOGY: This species is dedicated to Dr. Jiří Hájek, National Museum, Museum of Natural History, Prague, Czech Republic.

DISTRIBUTION (Fig. 49): Indonesia: Papua.

14. *Hydaticus marlenae* sp.n.

TYPE LOCALITY: Papua New Guinea, Amboin.

TYPE MATERIAL: **Holotype** ♂ (ANIC): "New Guinea Amboin 16.10.1974 [handwritten white label] \ H. Ohlms Collector [handwritten white label] \ Holotypus *Hydaticus marlenae* sp.n. Wewalka 2014 [printed red label]"; **Paratypes**: 1 ♂ from the same locality (ZSM); 1 ♂: "Papua New Guinea Madang, Alexishafen May 11, 1991, at light D. & M. Larson [printed white label]" (ANIC); 1 ♂: "Papua New Guinea Madang Alexishafen airfield March 7, 1991 [printed white label]" (ANIC); 1 ♂: "Papua New Guinea Madang, Brahman June 21 & 27, 1991, D. & M. Larson [printed white label]" (ANIC); 1 ♂: "Papua New Guinea Madang, Ramu Villy Brahman Mission Apr 17/91 Larson [printed white label]" (CGW); 1 ♂: "Papua New Guinea Madang, Ramu Villy 3 km N Brahman C Apr 16/91 Larson [printed white label]" (ANIC). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Oblong-oval, broadest shortly behind the middle, distinctly convex.

Measures of body: TL: 9.1–9.5 mm; TL-h: 8.5–8.9 mm; MW: 4.6–5.1 mm.

COLOURATION (Fig. 14): Head predominantly dark-brown to black, reddish-brown along clypeus and with a transverse reddish-brown mark between eyes, sometimes divided into two marks. Pronotum predominantly dark-brown to black, narrowly reddish-brown at lateral margins, more extended at anterior corners. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a humeral mark, slightly extended to middle, sometimes with a band along the lateral side in the posterior half, a post-median lateral mark and a apical mark (both with dark-brown irrorations mostly arranged in rows). Ventral side predominantly dark-brown, prosternum reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third medially and of eyes; with fine

microreticulation in posterior half. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with fine, moderately dense punctation and very scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with fine, moderately dense punctation, scattered stronger punctures and shallow wrinkles; ventrites I and II with scattered punctures and shallow wrinkles; other ventrites almost without punctation; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 36; protarsomere I without a fringe of setae along basal margin.

FEMALE: Unknown.

AFFINITIES: *Hydaticus marlenae* is very similar to *H. ephippiiger* and *H. hajeki* in respect to the elytral colouration. It can be separated from both by smaller size, more oblong-oval body form and the male genitalia, and from the first also by lacking a fringe of setae along the basal margin of male protarsomere I. From *H. rhanaticoides* it can be distinguished by lacking a transverse, more or less broad basal elytral mark, smaller size, lacking a fringe of setae along the basal margin of male protarsomere I, and by the male genitalia.

HABITAT: Amboin is situated in the lowlands of the Sepik River and the specimens were collected most likely in forest puddles.

ETYMOLOGY: This species is dedicated to my niece Dr. med. Marlene Wewalka, Vienna, Austria.

DISTRIBUTION (Fig. 49): Papua New Guinea.

“Resembling species”

15. *Hydaticus ephippiiger* RÉGIMBART, 1899 stat.n.

Hydaticus sellatus var. *ephippiiger* RÉGIMBART 1899: 326; ZIMMERMANN 1920: 224; GUIGNOT 1956: 55; VAZIRANI 1977: 81; GUÉORGUEV & ROCCHI 1993: 162; NILSSON 2001: 105, 2015: 93.

Hydaticus finus WATTS 1978: 147, 1985: 26; LAWRENCE, WEIR & PYKE 1987: 356; NILSSON 2001: 102, 2015: 90; **syn.n.**

TYPE LOCALITY: Papua New Guinea, Rigo.

TYPE MATERIAL of *H. ephippiiger*: **Lectotype** (by present designation) ♀ (MNHN-CR): “N. GUINEA MER. RIGO Luglio 1889 L.LORIA [printed white label] \ Museo Civ. Genova [printed orange label] \ MUSEUM PARIS COLL MAURICE REGIMBART 1908 \ var. ephippiiger [sic!] Rég. [handwritten white label] \ Lectotypus Hydaticus ephippiiger Rég. Wewalka 2014 [printed red label]”.

TYPE MATERIAL of *H. finus*: **Holotype** ♂ (ANIC): “[Australia, Queensland] Forest Marsh Inisfail [Innisfail] 7/9/65 [handwritten white label] \ Hydaticus finus Det. C. Watts 1974 Holotype [partly handwritten white label] \ Holotype [printed red label] \ ANIC Database No. 25 018836 [printed white label] \ Hydaticus ephippiiger Rég. det Wewalka 2015 [printed white label]”.

ADDITIONAL MATERIAL EXAMINED:

INDONESIA: Papua: 1 ♂, 3 ♀ ♀: Papua, Merauke, Wasur, 14°42.748'S 141°36.096'E, pools, 20 m, 15.–16.X.2011, leg. UNCEN (PAP02) (2 ♀ ♀: M. Balke 5006, 5008) (MZB, ZSM).

PAPUA NEW GUINEA: 1 ♀: “Dutch Hllnda New Guinea \ B Malkin Jan 1945 \ Hydaticus rhanaticoides Rég det. J. Balfour-Browne det. from description” (SIW); 1 ♀: Papua Nlle Guinée, Morobe, Gurakor, I.1981, leg. W.G. Ullrich (ZSM); 1 ♀: Molint Missim, II.1974, leg. J. Sedlacek (CLH).

DESCRIPTION: Habitus: Regularly oval, broadest in the middle, moderately convex.

Measures of body: TL: 9.6–11.1 mm; TL-h: 9.0–10.4 mm; MW: 5.3–6.3 mm.

COLOURATION (Fig. 15): Head predominantly dark-brown to black, reddish-brown along clypeus and between eyes. Pronotum dark-brown to black, with a more or less narrow, reddish-brown band along lateral margins. Elytron dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a humeral mark, a band along the lateral side, sometimes from the humeral mark to apex and sometimes only in posterior half, sometimes posterior half of elytron reddish-brown with dark-brown irrorations mostly arranged in rows similar to typical species of the *H. fabricii* group, sometimes the reddish-brown mark is reduced to a more or less extended post-median lateral mark. Ventral side predominantly dark reddish-brown to black; lateral sides of pronotum, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior legs reddish-brown; middle and posterior legs reddish-brown to black.

SCULPTURE: Head with dense punctation and less dense stronger punctures; additional strong punctures concentrated in two spots in anterior third medially and of eyes; with traces of microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with fine dense punctation and less dense stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with moderately fine punctation, scattered stronger punctures and shallow wrinkles, ventrite I with similar punctation and distinct longitudinal wrinkles, ventrites II–VI with less dense punctation; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 37; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum sometimes laterally with extended, deeply incised wrinkles, sometimes with traces of wrinkles.

AFFINITIES: *Hydaticus ephippiiger* is similar to *H. sellatus sellatus* but can be distinguished by different elytral marks, and by the male genitalia. It resembles *H. hajeki* and *H. marlenae* concerning elytral marks but can be separated by slightly different body form, the presence of a fringe of setae along the basal margin of male protarsomere I, and by the male genitalia.

COMMENTS: The study of the lectotype of *H. ephippiiger* and of recently collected material proved that this is a valid species.

The lectotype is labelled “var. ephippiger” in Régimbart’s handwriting and many authors used this name (ZIMMERMANN 1920, GUIGNOT 1956, VAZIRANI 1977, GUÉORGUIEV & ROCCHI 1993). However, in the original description the species is spelled “*ephippiiger*”.

HABITAT: Michael Balke collected specimens in Indonesia, Papua, in a semi-shaded puddle with very thick leaf layer in an otherwise dry eucalypt forest (Fig. 45) together with *H. hendrichi* and *H. rhanaticoides*.

DISTRIBUTION (Fig. 51): Indonesia: Papua; Papua New Guinea; Australia: Queensland.

16. *Hydaticus sellatus sellatus* RÉGIMBART, 1883

Hydaticus sellatus RÉGIMBART 1883: 233; BRANDEN 1885: 102; RÉGIMBART 1892: 993, 1899: 326; ZIMMERMANN 1920: 224; BALL 1932: 19; VAZIRANI 1977: 81; NILSSON 2001: 105, 2015: 93.

TYPE LOCALITY: Indonesia, N Sulawesi, Toelabolo.

TYPE MATERIAL: **Lectotype** (by present designation) ♂ (NML): “Rosenberg Toelabolo Celebes [partly handwritten white label] \ *Hydaticus sellatus* Regb. [handwritten white label] \ Museum Leiden *Hydaticus sellatus* Det: Rég. [partly handwritten white label] \ Régimbart [handwritten white label] \ Type [printed red label] \

Lectotypus *Hydaticus sellatus* Régimbart Wewalka 2011 [printed red label]". **Paralectotypes:** 2 ♂♂, 5 ♀♀ from same location (MNHN-CR, NML). All paralectotypes are provided with printed red paralectotype labels.

ADDITIONAL MATERIAL EXAMINED:

INDONESIA: Sulawesi: 1 ♂: Celebes, "Manado" [Manado], ex. Musaeo van Lansberge (MNHN-CO); 2 ♂♂, 4 ♀♀: N-Sulawesi, Tasek Ria, W Manado, 13.IV.1992, leg. M.A. Jäch (6) (CGW, NMW); 2 ♀♀: N-Sulawesi, Umg. Modinding, NE Kotamobagu, 19.IV.1992, leg. S. Schödl (12) (NMW); 3 ♂♂, 2 ♀♀: N-Sulawesi, Gunung Ambang, 20.IV.1992, leg. M.A. Jäch (13) (CGW, NMW); 2 exs.: Celebes, Minahassa, Tomohon, 7.VI.1954, A.H.G. Alston, B.M. 1954-414 (BMNH); 11 ♂♂, 9 ♀♀: Sulawesi Tengah [central], Moutong, swampy pool, 43 m, 0°30.985'N 121°16.860'E, 3.IX.2011, leg. M. Balke (SUL017) (1 ♂: M. Balke 4808, 1 ♀: M. Balke 4807) (CGW, MZB, ZSM).

Togian Isl.: 7 ♂♂, 8 ♀♀: C-Sulawesi, Togian Isl., Kaldidiri Isl., north of Paradise Island Resort, 50 m, 0°21.263'S 121°50.755'E, 2.–15.II.1997, leg. J. Haft (CGW, CLH).

Morotai Island: 1 ♂, 2 ♀♀: Morotai Isl., Dutch E. I., IX.1944, leg. Darlington (MCZC).

Halmahera: 25 exs.: Jailolo Distr., Kampung Pasir Putih, 0°53'N 127°41'E, 1.–14.II. and 15.–31.V.1981, leg. A.C. Messer & P.M. Taylor (CGW, SIW); 17 exs.: Kao Distr., Air Kanin Kampung Tuguis, 1.–14.III.1981, leg. A.C. Messer & P.M. Taylor (CGW, SIW); 1 ♀: NW Halmahera, ca. 40 km SW of Tobelo, along Telaga Lina, 1°31'50"N 127°50'50"E, 150–200 m, somewhat disturbed primary rain forest, in recently logged and semi-cultivated area, at light, 26.–28.IX.1995, leg. J. van Tol (NML).

Bacan Island: 1 ♂: Mt. Sibela, 14 km SE Labuha, primary forest, 0°38'S 127°32'E, 400 m, 2.–13.II.1996, leg. V. Siniaev & E. Afonin (CLH).

Obi Island: 2 exs.: 12 km SW of Jikodolong on jogging road, 5.VIII.1981, leg. A.C. Messer (SIW).

Seram: 13 exs.: C Seram, Manusela NP., Wae Mual Plain, 25.VII.–9.IX.1987, lowland alluvial forest, Operation Raleigh, M.J.D. Brendell, B.M. 1987 – 262 (CGW, BMNH); 5 exs.: Pasohari – Kaloha, 0–300 m, 13.II.1989, leg. S. Schödl (CGW, NMW); 3 ♀♀: Umg. Wahai, 12.II.1989, leg. M.A. Jäch (12), leg. S. Schödl (10) (NMW).

Ambon: 3 ♂♂: Telaga Kodok, 3.II.1989, leg. M.A. Jäch (4), leg. Schödl (CGW, NMW).

Saparua: 1 ♀: "Saparoea", V.1923, leg. Kopstein (NML).

Batanta: 7 ♂♂, 6 ♀♀: W-Papua, Raja Ampat Prov., N Batanta Isl., Waywesar, 0°45'26"S 130°46'55"E, 12.–15.I.2004, leg. A. Skale (CAS, CGW, CHF, ZSM).

PAPUA NEW GUINEA: 1 ♂: New Guinea, Wau, II.1974, leg. J. Sedlacek (NHMB); 2 ♀♀: Madang, Nagada, VII.1979, leg. W.G. Ullrich (NHMB).

DESCRIPTION: Habitus: Oblong-oval, broadest in the middle, moderately convex.

Measures of body: TL: 9.8–11.1 mm; TL-h: 9.1–10.1 mm; MW: 5.3–5.8 mm.

COLOURATION (Fig. 16): Head predominantly reddish-brown to yellowish-brown, more or less extended dark-brown to black along eyes, between eyes and on vertex. Pronotum predominantly dark-brown to black, more or less extended reddish-brown to yellowish-brown at lateral margins. Elytron sometimes predominantly dark-brown to black with reddish-brown to yellowish-brown marks consisting of: a transverse, more or less broad basal mark, continuing into an irregular lateral band, which, in apical half is often very broad and contains many dark-brown irrorations mostly arranged in rows, sometimes the reddish-brown to yellowish-brown marks predominate, and the dark-brown to black colour is reduced to the elytral disc, similar to typical species of the *H. fabricii* group. Ventral side predominantly dark reddish-brown to dark brown; lateral sides of pronotum, prosternum and epipleura reddish-brown to yellowish-brown. Antennae reddish-brown. Anterior and middle legs reddish-brown; posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additional strong punctures concentrated in two spots in the anterior third; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with fine, moderately dense punctation and scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with

fine, moderately dense punctation and scattered stronger punctures; ventrites with similar punctation but with very few stronger punctures; with fine, distinct microreticulation.

MALE: Median lobe of aedeagus with distinct setal tuft on ventral side of tip as in Fig. 38; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum sometimes laterally with traces of incised wrinkles.

AFFINITIES: *Hydaticus sellatus sellatus* belongs to the *H. fabricii* group in respect to the setal tuft on the tip of the male median lobe, but resembles *H. rhantaticoides* concerning elytral colouration. It can be separated from this species by more elongate body form and the male median lobe of the aedeagus. From other species of the *H. sexguttatus* group and the *H. fabricii* group it can be separated by the elytral marks, and by the male genitalia. From *H. sellatus sabahensis* the nominate form can be distinguished by the colouration of the head, by the pronotum being predominantly dark-brown to black, by the slightly less broadly-oval body shape, and by the body size being on average smaller.

HABITAT: Michael Balke collected specimens in Sulawesi in shallow semi-shaded puddles in a coconut plantation, on grey clay with emergent macrophytes. The specimens from Togian Islands were collected in partly shaded and shallow lowland rainforest puddles, rich in rotten leaves, and formed by the endemic Babirusa, *Babyrousa togeanensis* (SODY, 1949). Manfred A. Jäch communicated that he collected specimens in Ambon in a shaded puddle under sago trees. André Skale found specimens on Batanta Island in a small crop-out of a spring, ca. 150 cm in diameter, with rotten leaves together with *Hydroglyphus* and *Copelatus* species.

DISTRIBUTION (Fig. 49): Indonesia: Sulawesi, Togian Islands (first record), Morotai Island (first record), Halmahera (first record), Bacan Island (first record), Obi Island (first record), Seram (first record), Ambon (first record), Saparua (first record); Batanta Island (first record); Papua New Guinea (first record).

VAZIRANI (1977) recorded *H. sellatus* from Indonesia (Papua): “Nouvelle Guinée méridionale: Rigo (L. Loria)”, but since this record refers to *H. ephippiiger* there was hitherto no confirmed record for *H. sellatus* from Indonesia (Papua).

17. *Hydaticus sellatus sabahensis* ssp.n.

TYPE LOCALITY: Malaysia, Sabah, Beaufort.

TYPE MATERIAL: **Holotype** ♂ (NML): “Museum Leiden S. Sabah. Beaufort, 105 km S of: Long Pa Sia area: confluence Sg Pia Sia – Matang. 5 Apr 1987. J. van Tol & J. Huisman. [printed white label] \ At light. Semicult. area. 1000 m asl. Near disturbed evergreen trop. rain forest. 4°24'N 115°43'E. [printed white label] \ Holotypus *Hydaticus sellatus sabahensis* ssp.n. Wewalka 2015 [printed red label]”. **Paratypes**: 15 ♂♂, 9 ♀♀ from the same locality (CGW, NML); 1 ♂, 3 ♀♀: “NNM; N. Borneo, Sabah Kg. Long Pa Sia; 1000 m. 115°43'E-4°25'N; XII-1987 J. Huisman & C. v. Achterberg [printed white label]” (NML); 1 ♂: “Museum Leiden Malaysia: Sabah Long Pa Sia I-IV-1987 NM light J. Huisman [printed white label]” (NML); 2 ♂♂, 6 ♀♀: “Sabah: 5 m. S. Mt. Trus Madi, 1800 ft, 18–28.viii.1977 [printed white label] \ grassy pool in full sun [printed white label] \ M.E. Bacchus B.M. 1978-48 [printed white label]” (CGW, BMNH); 1 ♂: “Mal., Sarawak, 1993 Kelabit HL, Bareo 26.2.-1.3., 1000-2000m leg. H. Zettel (11) [printed white label]” (NMW); 7 ♂♂, 13 ♀♀: “Malaysia, Sarawak Kelabit, Bario, 21-25.6.2003 J. Šťastný lgt. [printed white label] \ coll. J. Šťastný Liberec, CZ [printed blue label] (CGW, CJS, NMW); 1 ♂, 1 ♀: “Malaysia Sarawak Bario, Pa Umor 23.6.2003 J. Šťastný lgt. [printed white label] \ coll. J. Šťastný Liberec, CZ [printed blue label]” (CJS); 1 ♂: “Malaysia, Sarawak Bario, Pa Umor [3°45'23"N 115°29'40"E, 1080 m] 23.6.2003 J. Šťastný lgt. [printed white label] \ coll. J. Šťastný Liberec, CZ [printed blue label]” (CJS); 2 ♂♂, 1 ♀: “Indonesia Kalimantan-Timur Apokayan, Long Ampung 700 m, Sekundärwald [secondary forest] 10.-25.02.97, leg. C.u.P.Zorn [printed white label]” (CAS, CGW). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Similar to *Hydaticus sellatus sellatus*, slightly more broadly-oval.

Measures of body: TL: 10.4–11.6 mm; TL-h: 9.7–10.6 mm; MW: 5.8–6.1 mm.

COLOURATION (Fig. 17): Head predominantly reddish-brown, dark-brown to black on vertex and along eyes, sometimes with two vague dark spots between eyes. Pronotum predominantly reddish-brown, dark-brown to black, narrowly at anterior margin and in middle of posterior margin. Elytron reddish-brown to yellowish-brown with dark-brown to black irrorations as in typical species of the *H. fabricii* group; rarely with a larger dark-brown to black mark on elytral disc. Ventral side and appendages as in *H. sellatus sellatus*.

SCULPTURE: As in *Hydaticus sellatus sellatus*.

MALE: Median lobe of aedeagus not distinguishable from that of *H. sellatus sellatus* (Fig. 38); protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with traces of incised wrinkles.

AFFINITIES: *Hydaticus sellatus sabahensis* differs from *H. sellatus sellatus* by predominantly reddish-brown head and pronotum, slightly more broadly-oval body shape and on average larger size. From other species of the *H. fabricii* group with predominantly reddish-brown to yellowish-brown elytral colouration it can be separated by the male genitalia.

COMMENTS: *Hydaticus sellatus sabahensis* is treated as a subspecies of *Hydaticus sellatus* because no significant differences in external morphology and male genitalia can be observed.

HABITAT: Most specimens have been collected at light at an altitude of 1000 m. Specimens from near Mt. Trusmadi were collected in about 600 m in a grassy pool in full sun.

ETYMOLOGY: This species is named after the type locality.

DISTRIBUTION (Fig. 49): Malaysia: Sabah, Sarawak; Indonesia: East Kalimantan [Borneo].

18. *Hydaticus agaboides* SHARP

Hydaticus agaboides SHARP 1882: 663; BRANDEN 1885: 99; ATKINSON 1891: 144; RÉGIMBART 1899: 327; ZIMMERMANN 1919: 227, 1920: 218; VAZIRANI 1977: 75; WEWALKA 1979: 134; ZENG 1989: 5; NILSSON 1995: 73, 2001: 100, 2015: 89.

TYPE LOCALITY: Vietnam (“Cochin China”).

TYPE MATERIAL: **Holotype** ♀ (BMNH): “Cochin China 1011 agaboides [cream handwritten label] \ Type H.T. [printed circular white label with red border] \ Type 1011. D.S. Hydaticus agaboides [handwritten cream label] \ Sharp Coll. 1905-313 [printed cream label]”.

ADDITIONAL MATERIAL EXAMINED:

CAMBODIA: 10 ♂♂, 6 ♀♀: SW Cambodia, 20 km SE Koh Kong, Tatai riv., 50–300 m, 3.–19.V.2005, leg. E. Jendek & O. Šauša (CGW, NHMB).

VIETNAM: 1 ♂: Ho Chi Minh City (“Saigon (villè)”), 7.VIII.1903, cap. Fouquet (MNHN-CR); 2 ♀♀: Ho Chi Minh City (“Saigon”) (MNHN-CG).

BRUNEI: 1 ♂: Kota Batu, 8.X.1977, coll. M.J.S. Mut (BMNH).

DESCRIPTION: Habitus: Oblong-oval, broadest behind middle, moderately convex.

Measures of body: TL: 9.9–11.0 mm; TL-h: 9.5–10.4 mm; MW: 5.3–5.8 mm.

COLOURATION (Fig. 18): Head dark-brown to black, clypeus and a spot between eyes dark reddish-brown. Pronotum dark-brown to black, more or less extended reddish-brown at lateral margins. Elytron dark-brown to black with a reddish-brown band along lateral side, sometimes more extended at shoulder and variable apically; the light band contains many dark-brown to black irrorations mostly arranged in rows. Ventral side predominantly dark reddish-brown to

black; lateral sides of pronotum, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs reddish-brown to dark-brown.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additional strong punctures concentrated in two spots in the anterior third and along eyes; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with traces of fine microreticulation. Elytron with very fine dense punctation and scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae, ventrites I–II with dense pit-like punctation and distinct wrinkles; ventrites III–IV with distinct wrinkles at lateral sides; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 39; protarsomere I with sparse fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with traces of incised wrinkles.

AFFINITIES: *Hydaticus agaboides* belongs to the *H. fabricii* group according to WEWALKA (1979) because of the tuft of setae on the tip of the aedeagal median lobe, but resembles *H. bengalensis* regarding elytral colouration. It can be separated by smaller size, more elongate body form and aedeagal shape. *Hydaticus agaboides* also resembles *H. concolor* in size and body form and can be distinguished by the pronotum being not totally black, by the more extended reddish-brown lateral elytral marks with dark-brown to black irrorations, and by the male genitalia. From other species of the *H. sexguttatus* group it can be separated by the elytral marks and by aedeagus. From other dark species of the *H. fabricii* group (*H. sellatus sellatus* and *H. ephippiiger*) it can be distinguished by smaller size, elytral marks, and by the male genitalia.

DISTRIBUTION (Fig. 48): China: Yunnan, Hainan; Cambodia (first record); Vietnam; Brunei (first record).

19. *Hydaticus larsoni* sp.n.

TYPE LOCALITY: Papua New Guinea, Madang.

TYPE MATERIAL: **Holotype** ♂ (ANIC): “Papua New Guinea Madang, Gogal Villy nr Kokun R., May 3 1991, D. Larson [printed white label] \ ANIC Specimen [printed green label] \ Holotypus *Hydaticus larsoni* sp.n. Wewalka 2015 [printed red label]”. **Paratypes**: 37 ♂♂, 30 ♀♀ from the same locality (ANIC, CGW, NMW); 1 ♀: “Papua New Guinea Madang, 2 km W Alexishafen, bomb craters. Apr. 1/91 [printed white label] \ ANIC Specimen [printed green label]” (ANIC); 1 ♀: “Papua New Guinea Madang, 2 km W Alexishafen sago swamp, Mar. 12/91 [printed white label] \ ANIC Specimen [printed green label]” (ANIC); 1 ♂, 1 ♀: “Papua New Guinea Madang, Nagada R. nr Nobanob, June 12,1991, D. Larson [printed white label] \ ANIC Specimen [printed green label]” (ANIC); 5 ♂♂, 9 ♀♀: “Papua N. Guinea env. Madang Nagada VI.79 W.G. Ullrich [printed white label]” (CGW, NHMB); 1 ♂, 1 ♀: “Papua NG Madang 10 km N Matarak, borrow pit, March 21 1991 leg. D. Larson [printed white label] \ ANIC Specimen [printed green label]” (ANIC); 3 ♂♂, 1 ♀: “VI 79 PNG/Madang Umg. Madang [partly handwritten white label]” (CGW, ZSM). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus: Oblong-oval, broadest in the middle, distinctly convex.

Measures of body: TL: 9.5–12.0 mm; TL-h: 8.9–11.5 mm; MW: 4.9–6.5 mm.

COLOURATION (Fig. 19): Head dark-brown to black, clypeus and a spot between eyes dark reddish-brown. Pronotum dark-brown, extended reddish-brown at lateral margins. Elytron dark-brown to black with a reddish-brown band along lateral side, sometimes more extended at shoulder and variable apically; the light band contains many dark-brown to black irrorations mostly arranged in rows. Ventral side predominantly dark reddish-brown; lateral sides of

pronotum, prosternum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs reddish-brown to dark-brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures are concentrated in two spots in the anterior third and along inner margin of eyes; with fine microreticulation in posterior half. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in the middle; with fine microreticulation. Elytron with fine, moderately dense punctation and very scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae with fine, moderately dense punctation, scattered stronger punctures and shallow wrinkles; ventrite I with distinct punctures; other ventrites with few punctures; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 40; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with traces of weakly incised wrinkles.

AFFINITIES: *Hydaticus larsoni* is very similar to *H. agaboides* and *H. bengalensis* in respect to the elytral colouration. It can be separated from both by the more regular oblong-oval body form broadest in the middle, and by the male genitalia, and from the first also by presence of a dense fringe of setae along the basal margin of male protarsomere I. From *H. pulcher* it can be distinguished by the predominantly dark-brown pronotum, by the more extended dark colouration of the elytra and by the tip of the median lobe of the aedeagus.

HABITAT: David Larson found specimens in 1) pools in clear cut area in a small swale where grass remained with a lot of depressed grass and leaves, 2) bomb craters full of water with the edges heavily grown in by grasses forming dense mats, in the marginal grass mats, 3) a sago swamp with plant debris, along the pool margins, 4) rest pools of a 3rd order stream in a dry period with beetles probably having migrated in with drying up of small water bodies, 5) an artificial pool at the edge of a forest road with gelatinous algae and dense mats of grass and grass stalks along the margins.

ETYMOLOGY: This species is dedicated to Dr. David Larson, formerly at Department of Biology, Memorial University, St. John's, Newfoundland, now Maple Creek, Saskatchewan, Canada, who collected the type specimens.

DISTRIBUTION (Fig. 51): Papua New Guinea.

20. *Hydaticus pulcher* CLARK, 1863

Hydaticus pulcher CLARK 1863: 16; BRANDEN 1885: 102; SHARP 1882: 665; LEA 1899: 529; ZIMMERMANN 1919: 227, 1920: 224; WATTS 1978: 145; WEWALKA 1979: 120; WATTS 1985: 26; LAWRENCE, WEIR & PYKE 1987: 356; LARSON 1993: 55, 1997: 272; NILSSON 2001: 105, 2015: 93.

TYPE LOCALITY: South Australia.

TYPE MATERIAL: **Lectotype** (designated by WATTS 1978) ♀ (BMNH): "S Australia". **Paralectotypes**: 1 ♂: "Nova Holland [handwritten white label] \ 67.56 [printed white label] \ paralectotype [round printed label with blue border] \ Determined by Dr. Regimbart Hydaticus pulcher Clk. [printed and handwritten white label] \ *Hydaticus fabricii* Macl. Det. J. Balfour-Browne [handwritten white label] \ *Hydaticus pulcher* Clk. Det C. Watts 1979 [printed and handwritten white label]" (BMNH); 1 ♂: "67.56 [printed white label] \ paralectotype [round printed label with blue border] \ Co-type [round printed label with yellow border] \ *C. pulcher* Clark. [handwritten white label] \ *Hydaticus pulcher* Clk. Det C. Watts 1979 [printed and handwritten white label]"

ADDITIONAL MATERIAL EXAMINED:

AUSTRALIA: Queensland: 2 ♂♂: "Queensland" (MNHN-CR); 1 ♂: Millstream Falls NP, 17°39'S 145°27'E, at light, open forest, 8.–15.XI.1998, leg. T. Weir (ZSM); 1 ♂: QLD, Brisbane City, river, at light, 25.–28.XII.2003, leg. J.F. Maté & P. Fong (ZSM); 1 ♂: S QLD, 15 km S Agnes Water, entrance Eurimbula NP, 24°15.193'S 151°49.222'E, 15 m, 25.IX.2006, leg. L. Hendrich (QLD51) (M. Balke 2449) (ZSM); 1 ♂: S QLD, Tuan State Forest near Poona Creek, water point 9, Scrubby Creek, upstream, 25°44.449'S 152°51.316'E, 20 m, 29.IX.2006, leg. L. Hendrich (QLD60) (CLH). New South Wales: 1 ♂: Murillumbah, 11.V.1939 (MNHN-CG); 1 ♂: N.S.W., Cabramata, 5.I.[19]62, M.I. Nikitin, Brit. Mus. 1962-638, *Hydaticus pulcher* Clk, det. C. Watts 1977; 1 ♂, 1 ♀: N NSW, 39 km ESE Grafton, Yuraygir NP, Minnie Water Lake, lake, 29°46.586'S 153°15.528'E, 81 m, 14.X.2006, leg. L. Hendrich (1 ♂: M. Balke 2348, 1 ♀: M. Balke 2347) (ZSM); 1 ♂, 2 ♀♀: NSW, Crowdy Bay NP., Kylie Beach, 35 km NE Taree, 0 m, UV light in costal scrub forest, 26.XII.1990, leg. Pollok & Reichert (CGW, CLH). South Australia: 1 ♂: "Nov. Holdl.", Adelaide MNHN-CO).

DESCRIPTION: Habitus: oblong-oval, broadest shortly behind the middle, distinctly convex.

Measures of body: TL: 10.0–12.0 mm; TL-h: 9.3–11.1 mm; TW: 5.0–6.3 mm.

COLOURATION (Fig. 20): Head dark-brown to black, clypeus and a spot between eyes dark reddish-brown. Pronotum reddish-brown, dark-brown to black along anterior and posterior margin. Elytron with a broad reddish-brown lateral band containing many dark-brown to black irrorations as in typical species of the *H. fabricii* group with a large, dark-brown to black mark on elytral disc. Ventral side predominantly dark reddish-brown; lateral sides of pronotum and epipleura reddish-brown. Antennae reddish-brown. Anterior and middle legs predominantly reddish-brown; posterior legs reddish-brown to dark brown.

SCULPTURE: Head with fine dense punctation and less dense stronger punctures; additional strong punctures are concentrated in two spots in the anterior third and along inner margin of eyes; with fine microreticulation in posterior half. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior and near lateral margins and less distinct near posterior margin, absent in middle; with fine microreticulation. Elytron with fine, moderately dense punctation and very scattered stronger punctures; with fine dense microreticulation. Ventral surface: metacoxae and ventrite I with fine, moderately dense punctation, scattered stronger punctures and shallow wrinkles; other ventrites almost without punctation; with fine microreticulation.

MALE: Median lobe of aedeagus as in Fig. 41; protarsomere I with a dense fringe of setae along basal margin.

FEMALE: Colouration and surface sculpture as in male; pro- and mesotarsomeres not modified. Pronotum laterally with traces of weakly incised wrinkles.

AFFINITIES: *Hydaticus pulcher* is similar to *H. larsoni* in body form and male genitalia but has the pronotum predominantly reddish-brown, and the reddish-brown lateral band is much broader. It also can be distinguished by the tip of the median lobe of the aedeagus.

HABITAT: LARSON (1993) recorded the species most commonly from emergent zones of permanent ponds, dugouts and reservoirs.

DISTRIBUTION (Fig. 51): Australia: Queensland, New South Wales, South Australia.

Discussion

The *Hydaticus sexguttatus* group from the Palearctic, Oriental, Australian and Pacific Regions is less homogenous than the *H. fabricii*, *H. vittatus*, *H. pacificus* and *H. bihamatus* groups. It is a group of species having in common relatively small size, elytra unicoloured or decorated with defined yellow or red-brown marks without or with only few black irrorations, and similarities in the shape of the median lobe of the aedeagus. It can be divided into small subgroups. *Hydaticus*

concolor and *H. nigritulus* have in common almost unicoloured dorsal surface, similar male genitalia, and the dense fringe of setae along the basal margin of protarsomere I in male is lacking, while it is present in other species of the group except *H. hajeki* and *H. marlenae*. The second subgroup includes *H. platteeuwi*, *H. sexguttatus* and *H. stastnyi*. *Hydaticus macularis*, *H. balkei* and *H. laetabilis* form the third subgroup. *Hydaticus hajeki* and *H. marlenae* as the fourth subgroup show high similarities in elytral marks, male genitalia, and they lack a dense fringe of setae along the basal margin of the male protarsomere I. The other four known species of the group show some similarities but are probably less closely related.

Additional new species of the *H. sexguttatus* group from the Palearctic, Oriental, Australian and Pacific Regions can be expected. I have seen at least two female specimens, one from New Caledonia and one from Borneo, which probably belong to this group but cannot be assigned to one of the described species.

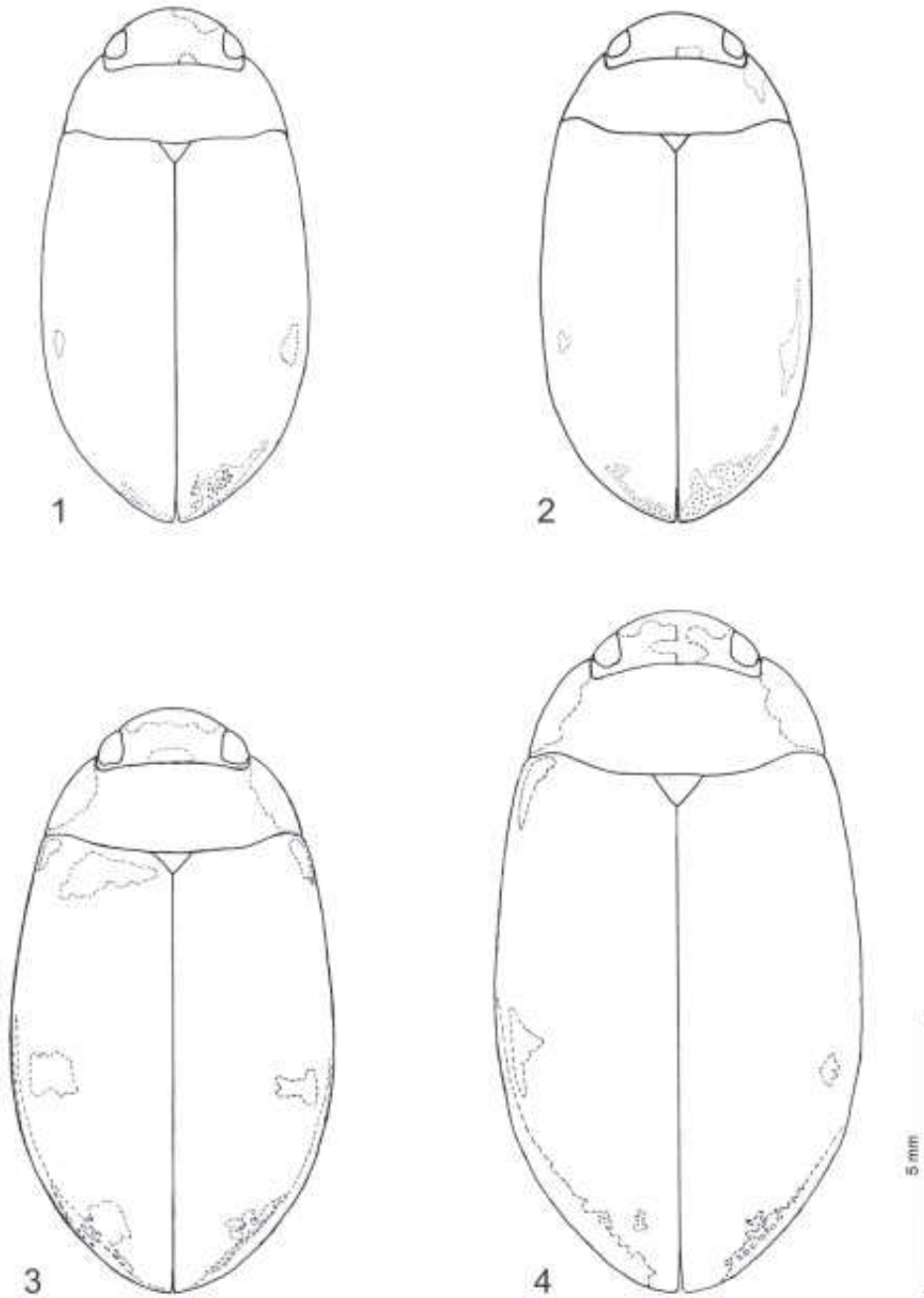
Some of the predominantly black species of the African *H. sexguttatus* group revised by GUIGNOT (1961), e.g. *H. quadriguttatus* RÉGIMBART and *H. paganus* CLARK show similar elytral colour patterns as *H. sexguttatus* but some species with more extended reddish-brown marks, e.g. *H. dregei* AUBÉ and *H. nigromarmoratus* CLARK, differ in shapes of colour patterns from *H. macularis* and related species. Also the aedeagal median lobes of the African representatives of the *H. sexguttatus* group differ from those of the species of the Palearctic, Oriental, Australian and Pacific Regions. However, the South American species of *Hydaticus* revised by TRÉMOUILLES (1996) display synapomorphies with species of the Palearctic, Oriental, Australian and Pacific Regions concerning elytral colour patterns and male genitalia.

Molecular data are available for at least seven of the fourteen Palearctic, Oriental, Australian and Pacific species of the *H. sexguttatus* group. Further analyses are necessary to verify relationships within this group and to other species groups.

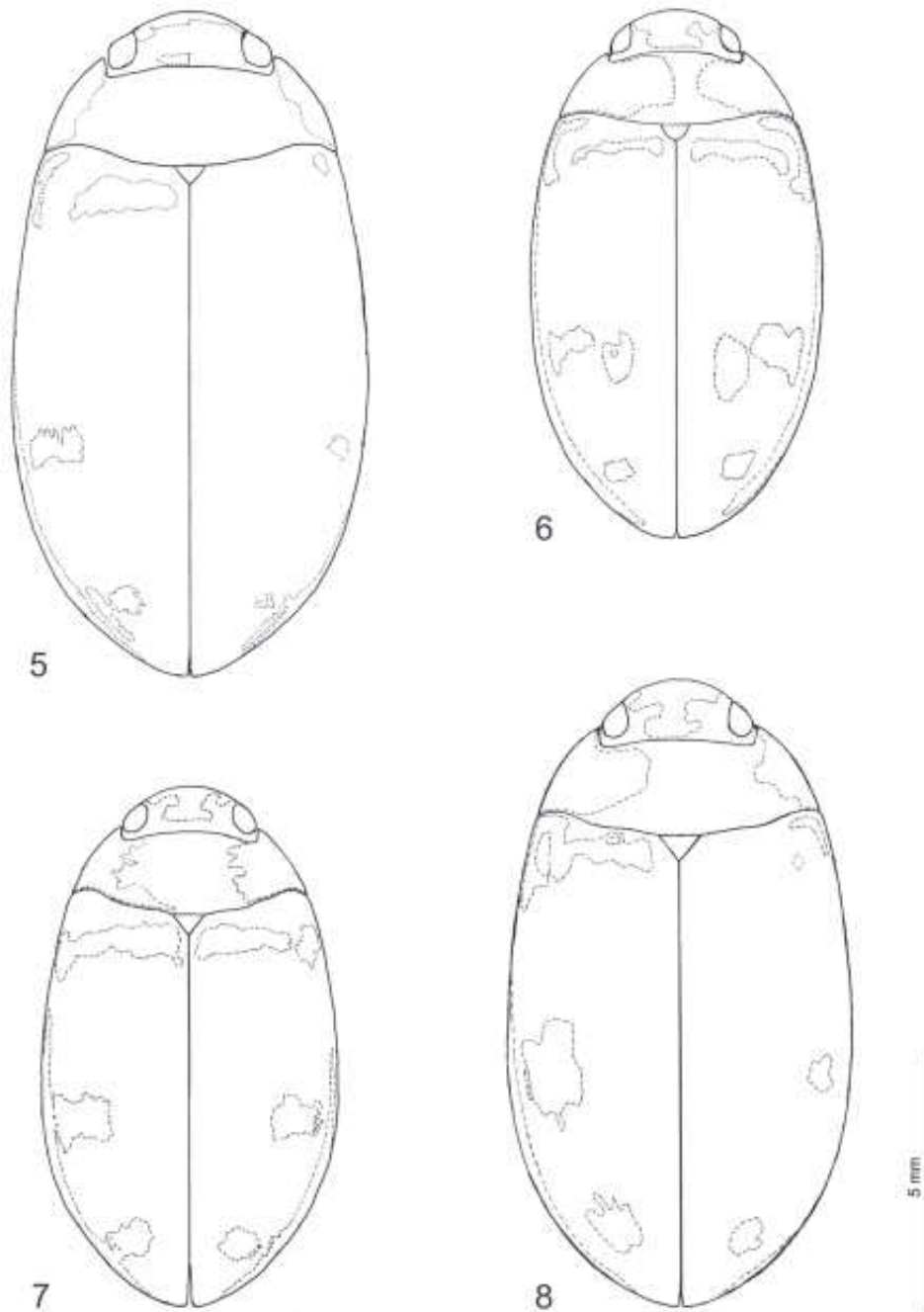
Specimens of the Palearctic, Oriental, Australian and Pacific *H. sexguttatus* group are relatively rarely represented in collections, and usually only few specimens are collected from each locality. They are found mostly in small shallow, sometimes swampy, shaded pools and puddles with leaf layers. In contrast, species of other groups e.g. the *H. fabricii* and *H. vittatus* group occur in larger water bodies, e.g. rice fields, often in great numbers. A reason could be that most species of the *H. sexguttatus* group are specialized in habitats in lowland rainforests which have been greatly destroyed or which are hardly accessible. They now seem to be restricted to remains of primary forests, while species of other *Hydaticus* groups are hemerophilous and can also be found in habitats influenced by humans.

Acknowledgements

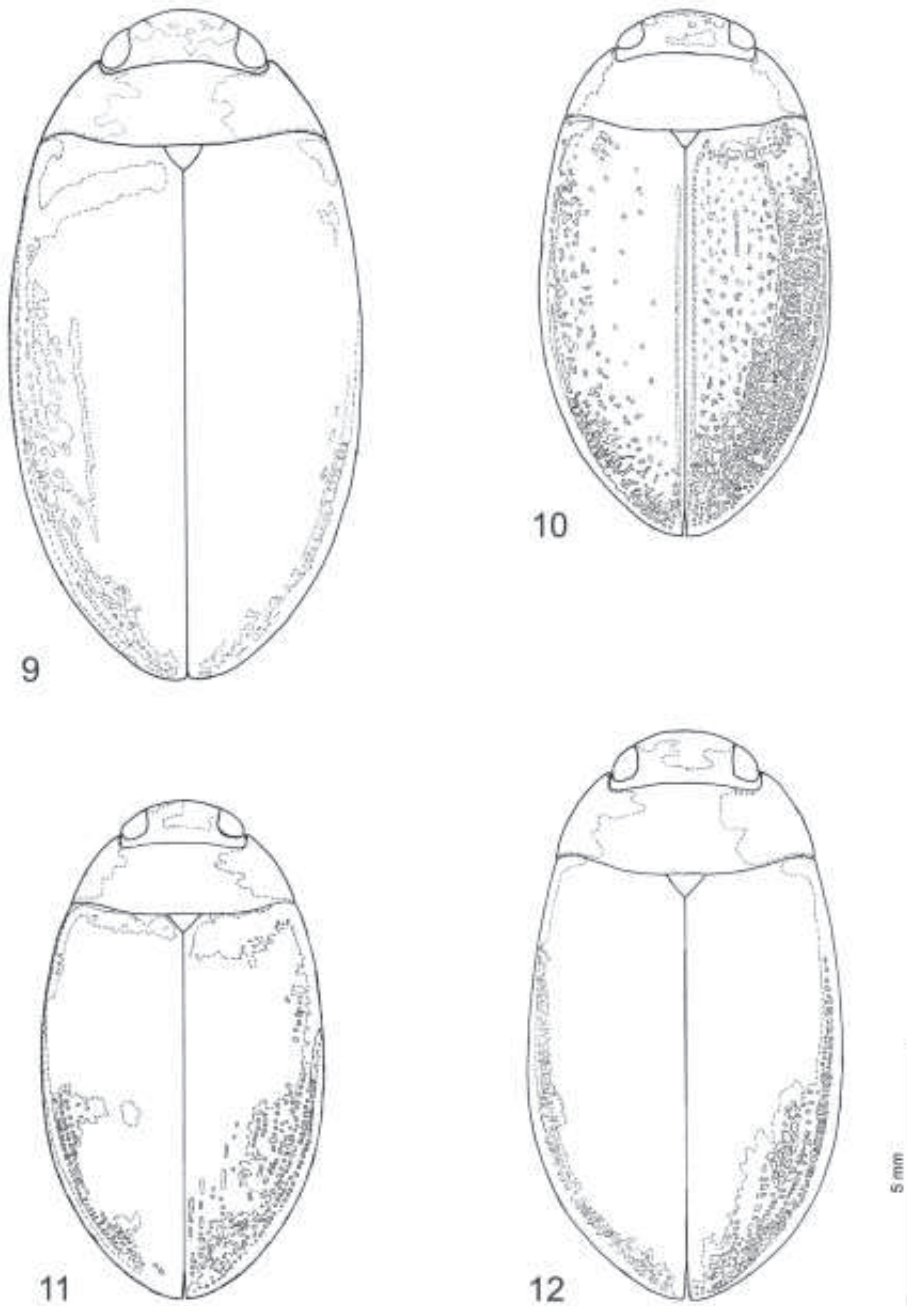
I thank Dr. Manfred A. Jäch (Vienna, Austria), Dr. Jiří Hájek (Prague, Czech Republic), Dr. Paolo Mazzoldi (Brescia, Italy), Dr. Michel Brancucci † (Basel, Switzerland), Dr. Manfred Uhlig (Berlin, Germany), Dr. Michael Balke and Dr. Lars Hendrich (Munich, Germany), Dr. W. Dekoninck (Brussels, Belgium), Mag. Fritz Gusenleitner (Linz, Austria), Christine E. Taylor (London, UK), Dr. Stephan Blank (Müncheberg, Germany), Antoine Mantilleri (Paris, France), Fred van Assen and Ben Brugge (Leiden, The Netherlands), Mgr. Jaroslav Šťastný (Liberec, Czech Republic), André Skale (Hof/Saale, Germany), Tom A. Weir (Canberra, Australia), and Ing. Fernando Pederzani (Ravenna, Italia) for putting to my proposal interesting study material. Dr. Hans Fery is acknowledged for providing valuable information for references and for reviewing an earlier version of the manuscript.



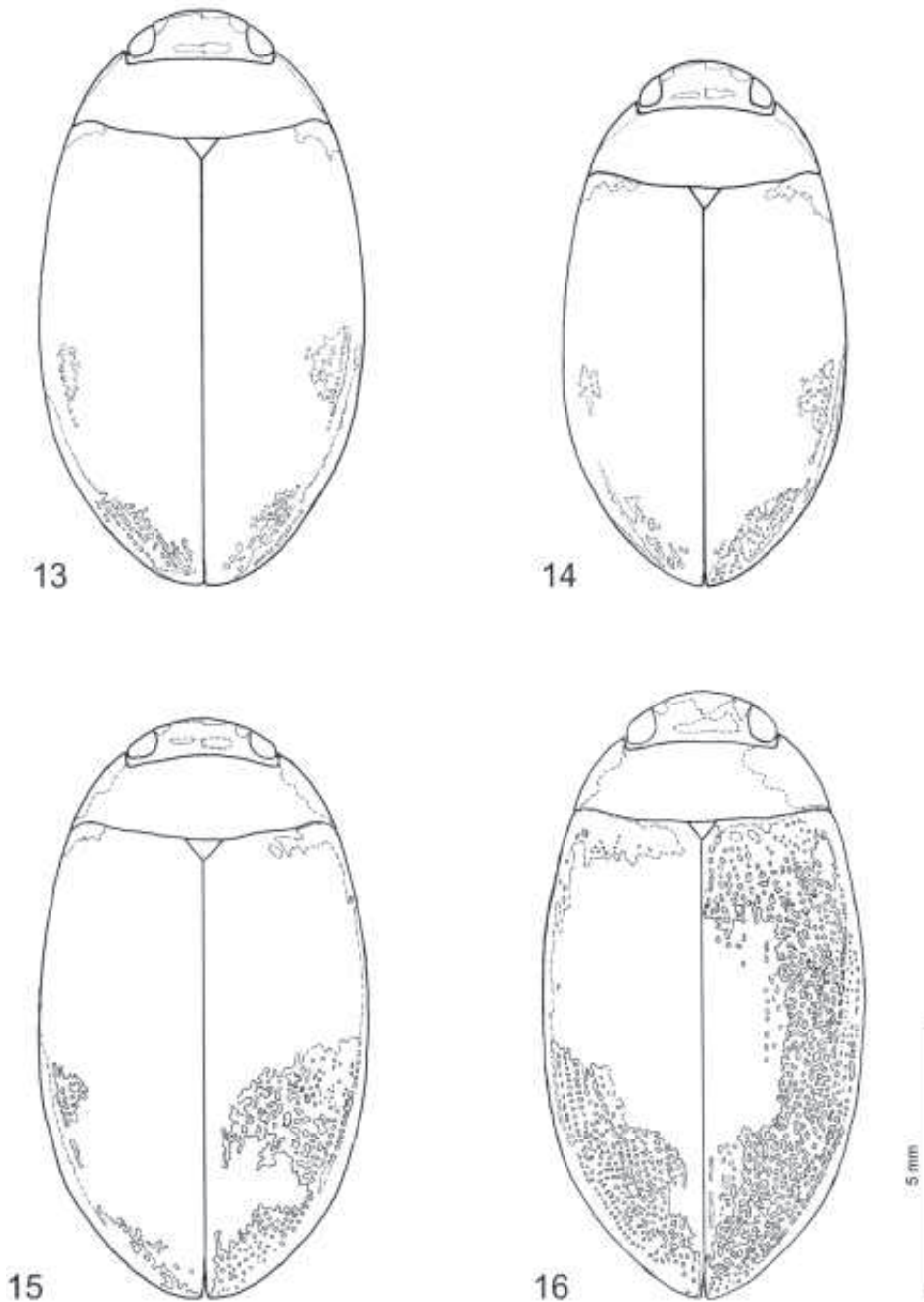
Figs. 1–4: Dorsal habitus and variation of colour patterns, 1) *Hydaticus concolor*, 2) *H. nigrutilus*, 3) *H. platteeuwi*, 4) *H. sexguttatus*.



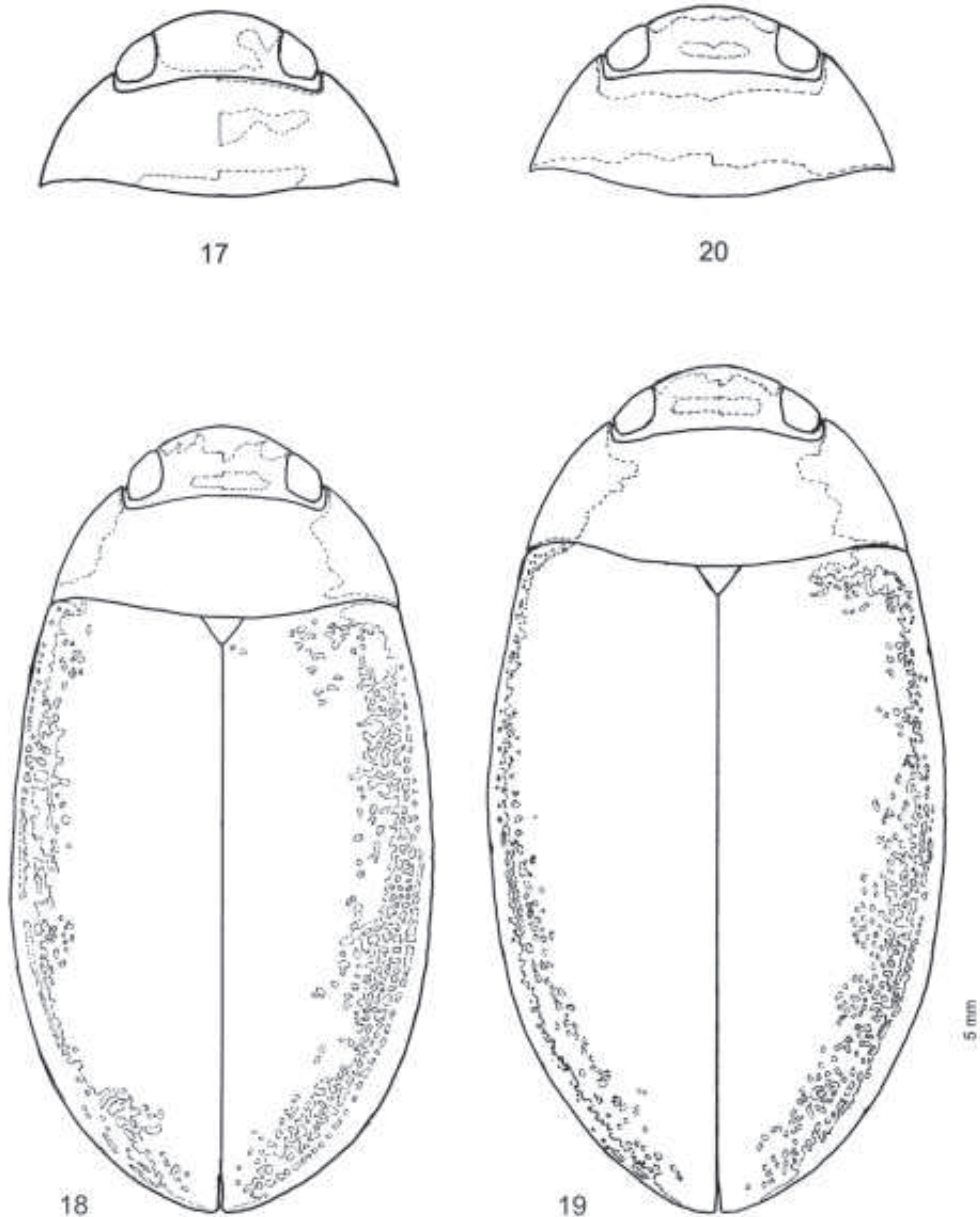
Figs. 5–8: Dorsal habitus and variation of colour patterns, 5) *Hydaticus stastnyi*, 6) *H. macularis*, 7) *H. balkei*, 8) *H. laetabilis*.



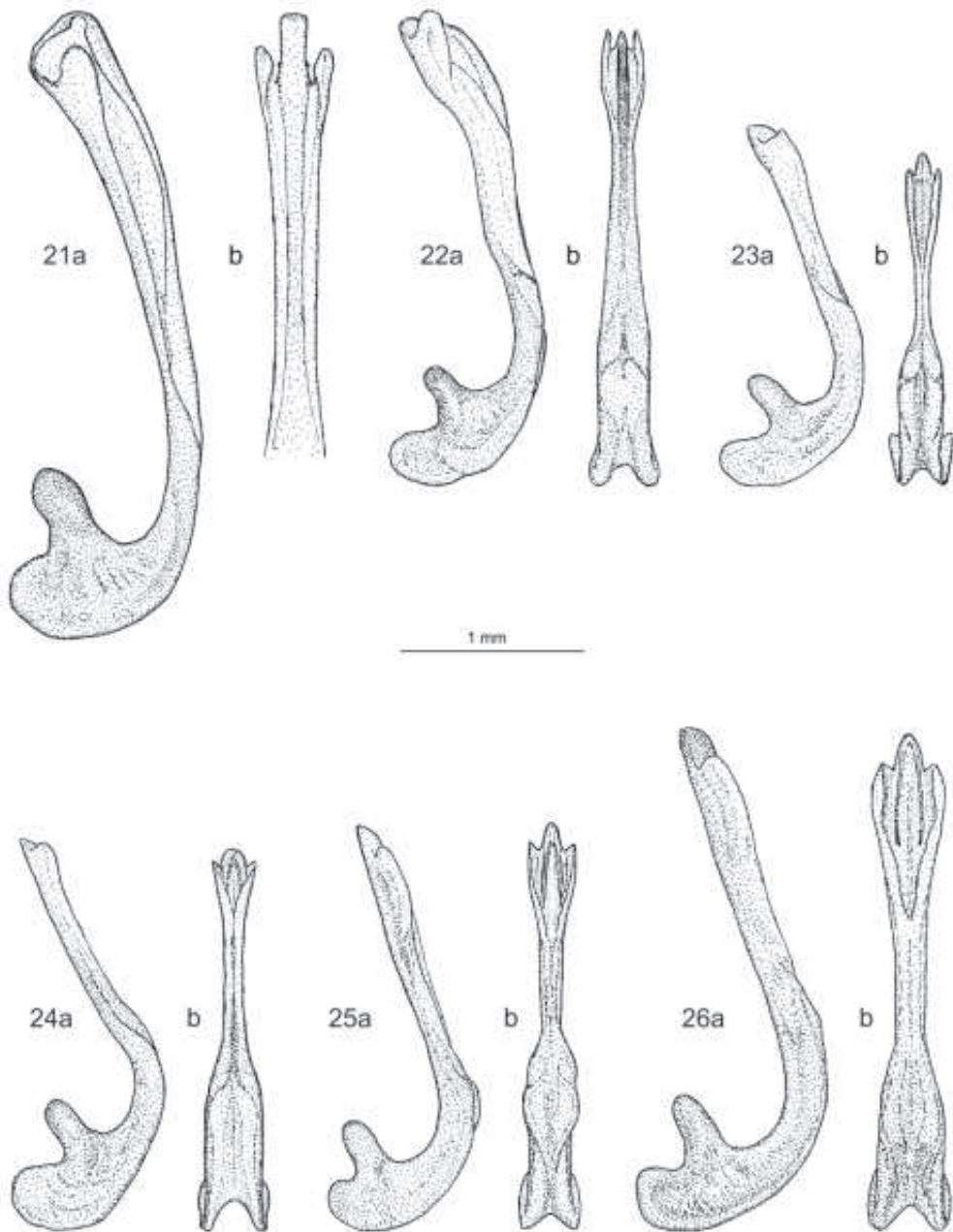
Figs. 9–12: Dorsal habitus and variation of colour patterns, 9) *Hydaticus fractifer*, 10) *H. hendrichi*, 11) *H. rhanaticoides*, 12) *H. bengalensis*.



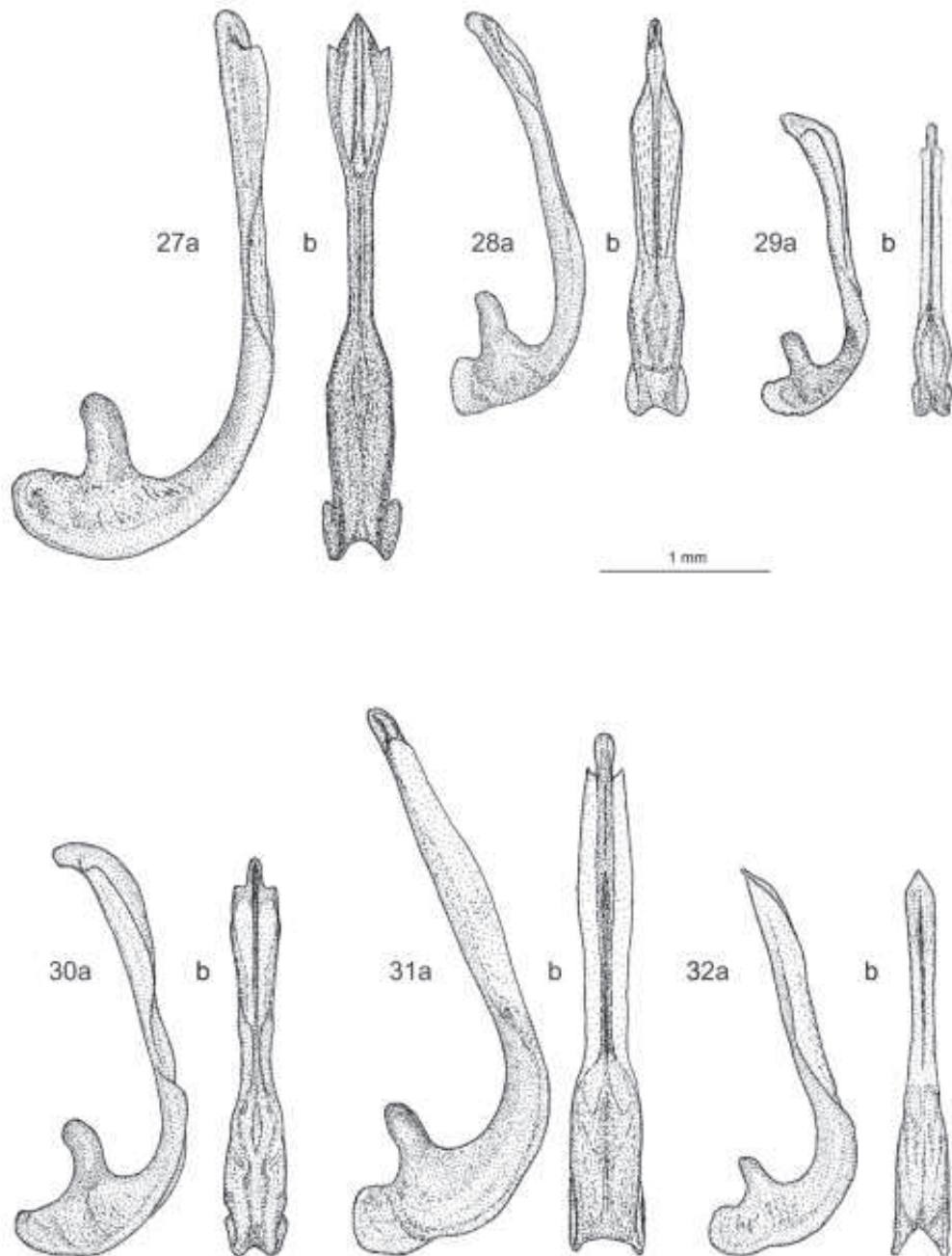
Figs. 13–16: Dorsal habitus and variation of colour patterns, 13) *Hydaticus hajeki*, 14) *H. marlenae*, 15) *H. ephippiiger*, 16) *H. sellatus sellatus*.



Figs. 17–20: Dorsal habitus and variation of colour patterns, 17) *Hydaticus sellatus sabahensis* (head and pronotum), 18) *H. agaboides*, 19) *H. larsoni*, 20) *H. pulcher* (head and pronotum).



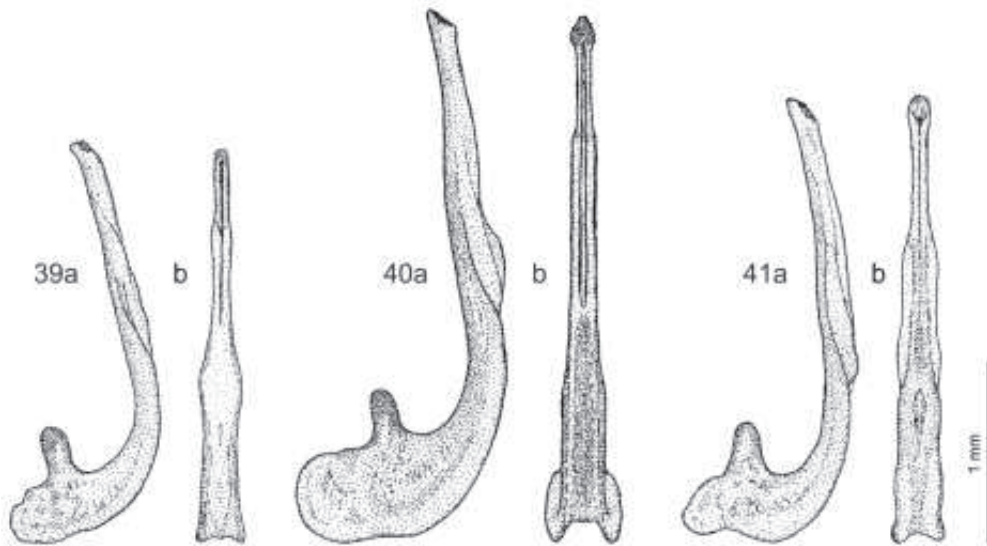
Figs. 21–26: Aedeagus, median lobe in lateral (a) and ventral view (b), 21) *Hydaticus pacificus* (holotype), 22) *H. bihamatus* (Philippines), 23) *H. concolor*, 24) *H. nigrutilus*, 25) *H. platteeuwi*, 26) *H. sexguttatus*.



Figs. 27–32: Aedeagus, median lobe in lateral (a) and ventral view (b), 27) *Hydaticus stastnyi*, 28) *H. macularis*, 29) *H. balkei*, 30) *H. laetabilis*, 31) *H. fractifer*, 32) *H. hendrichi*.



Figs. 33–38: Aedeagus, median lobe in lateral (a) and ventral view (b), 33) *Hydaticus rhantaticoides*, 34) *H. bengalensis*, 35) *H. hajeki*, 36) *H. marlenae*, 37) *H. ephippiiger*, 38) *H. sellatus sellatus* and *H. sellatus sabahensis*.



Figs. 39–41: Aedeagus, median lobe in lateral (a) and ventral view (b), 39) *Hydaticus agaboides*, 40) *H. larsoni*, 41) *H. pulcher*.



Fig. 42: Indonesia, East Kalimantan, PT Silva Rimba Lestari, habitat of *H. concolor*, *H. laetabilis* and *H. platteeui* (photo J. Hájek).



Fig. 43: Laos, Attapeu Prov., Annam Highlands, Nong Fa, habitat of *Hydaticus sexguttatus* (photo J. Hájek).

Fig. 44: Indonesia, West Kalimantan, near Kapuas River, type locality of *Hydaticus balkei* (photo M. Balke).



Fig. 45: Indonesia: Papua, Merauke, type locality of *Hydaticus hendrichi* and habitat of *H. rhantaticoides* and *H. ephippiiger* (photo M. Balke).

Fig. 46: Australia, North Queensland, forest swamp near the Daintree River; habitat of *Hydaticus rhantaticoides* (photo L. Hendrich).



Fig. 47: Paratype of *Hydaticus balkei* (photo H. Schillhammer).

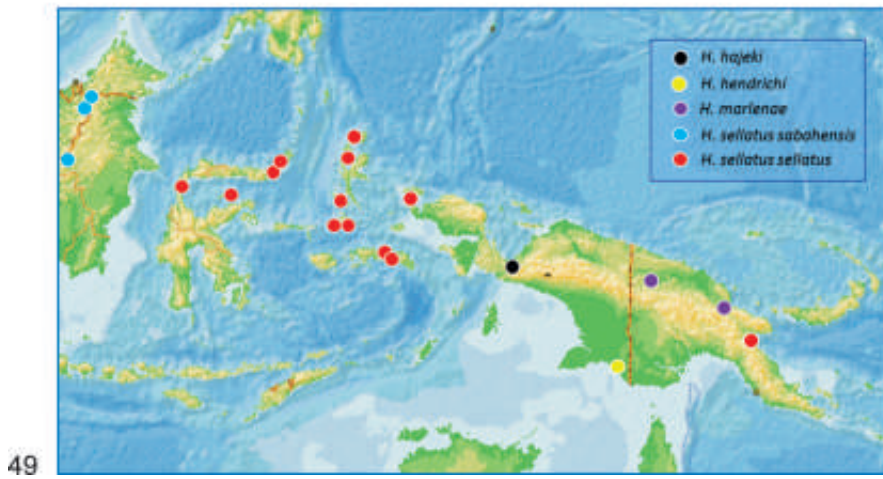
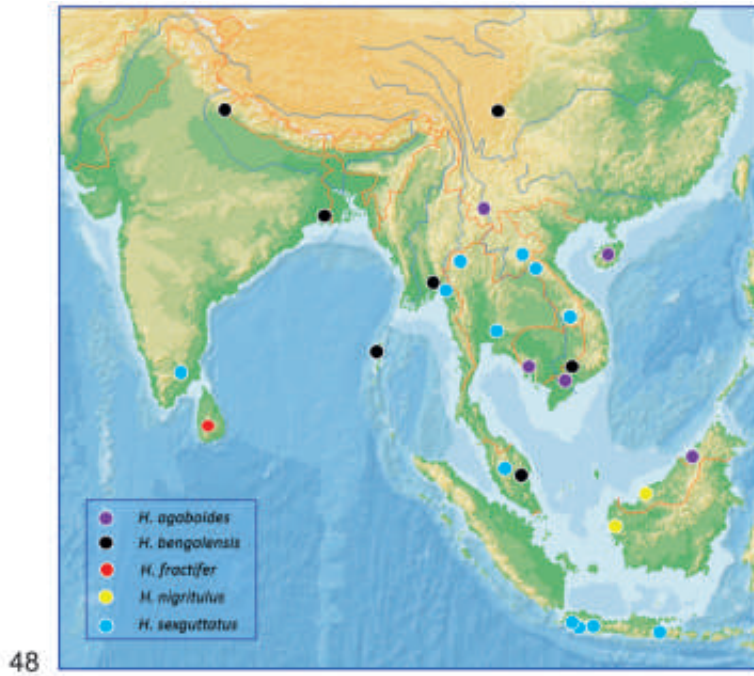


Fig. 48: Distribution of *Hydaticus agaboides*, *H. bengalensis*, *H. fractifer*, *H. nigrifolius*, and *H. sexguttatus*.

Fig. 49: Distribution of *Hydaticus hajeki*, *H. hendrichi*, *H. marlenae*, *H. sellatus sabahensis*, and *H. sellatus sellatus*.

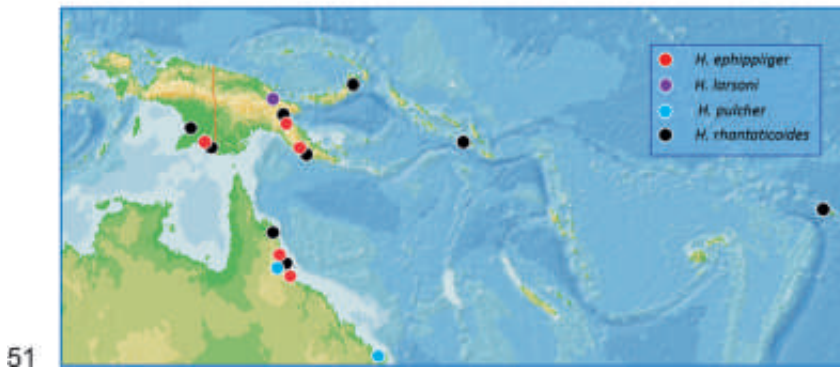
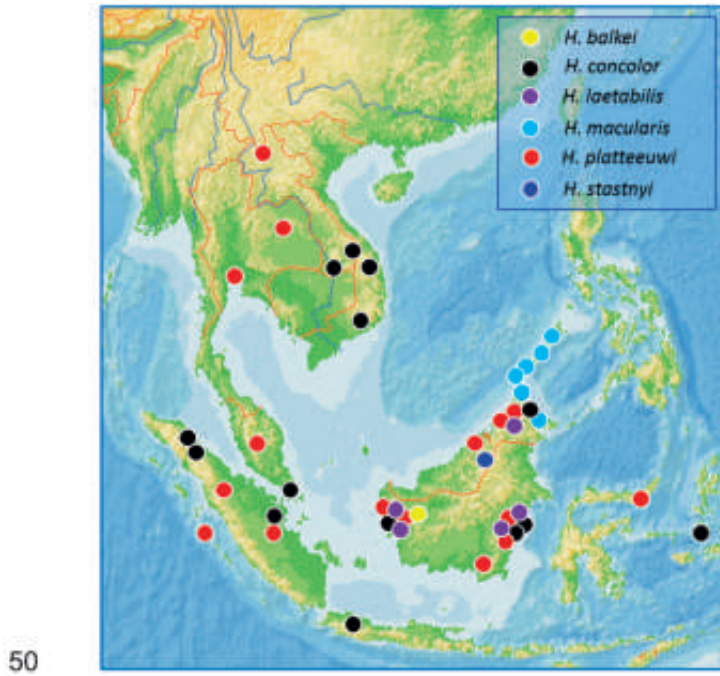


Fig. 50: Distribution of *Hydaticus balkei*, *H. concolor*, *H. laetabilis*, *H. macularis*, *H. platteeuwi*, and *H. stastnyi*.

Fig. 51: Distribution of *Hydaticus ephippiiger*, *H. larsoni*, *H. pulcher*, and *H. rhanaticoides*.

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Buchbesprechung

HÁJEK, J. & BEZDĚK, J. (Hrsg.): Insect biodiversity of the Socotra Archipelago, vol. I 2012: 557 pp., vol. II 2014: 439 pp. – Acta Entomologica Musei Nationalis Pragae 52 (suppl. 2), 54 (suppl.).

Die Insel Sokotra (auch Socotra; arabisch Suqutrā) beherbergt eine einzigartige Fauna und Flora. In den Jahren 1999–2012 hatten mehrere tschechische Naturforscher die Gelegenheit, auf dieser entlegenen Insel im Indischen Ozean Insekten zu sammeln. Das reichhaltige Material befindet sich im Národní muzeum in Prag.

In zwei Supplementbänden der im Internet frei zugängigen „Acta Entomologica Musei Nationalis Pragae“ werden die entomologischen Ergebnisse dieser Aufsammlungen präsentiert. Band 1 umfasst 40 Publikationen, davon 35 über Käfer, im Band zwei sind es 20 Publikation (16 über Käfer). 19 neue Gattungen und 156 neue Arten werden beschrieben. Mehrere Käferfamilien bzw. -unterfamilien werden erstmals für die Insel Sokotra nachgewiesen: z.B. Colydiinae, Hydraenidae, Linnichidae, Phalacridae, Ripiphoridae, Scydmaeninae. Zahlreiche Habitat-Fotos bereichern die beiden Bände.

Obgleich politische Wirren im Jemen Reisen nach Sokotra momentan erschweren, hoffen die Herausgeber, weitere Bände dieser hochinteressanten Serie folgen zu lassen.

M.A. JÄCH

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