

Review of the *Hydaticus fabricii* group and the newly established *H. grammicus* group (Coleoptera: Dytiscidae)

G. WEWALKA

Abstract

The species of the *Hydaticus (Prodaticus) fabricii* group (Coleoptera: Dytiscidae) are reviewed on the basis of the aedeagal median lobes and the elytral colour patterns; eighteen species (including two new species: *H. geiseri* sp.n. and *H. mazzoldii* sp.n.) and one subspecies of the *H. fabricii* group are treated. The *H. grammicus* species group is newly established. It is distinguished from the *H. fabricii* group by the male genitalia. Besides *H. grammicus* (GERMAR, 1827), this group includes *H. thermo-nectoides* SHARP, 1884 and two new species (*H. schoenleithneri* sp.n., *H. shaverdoae* sp.n.). *Hydaticus parallelus* CLARK, 1864, *H. chrisi* NILSSON, 2001 and another undescribed species, *H. borneensis* sp.n., are also included in this review, because their elytral colour patterns are similar to those of some species of the *H. fabricii* and *H. grammicus* groups, but their male genitalia are distinctly different.

A lectotype is designated for *Dytiscus varius* FABRICIUS, 1801 (= *Hydaticus fabricii* (MACLEAY, 1825)). *Hydaticus fabricii loeffleri* WEWALKA, 1979 and *H. fabricii confusus* BOHEMAN, 1858 are elevated to species rank, and *H. tibetanus* SHAVERDO et al., 2012 is synonymized with *H. vaziranii* WEWALKA, 1979.

Checklists and keys to the species treated herein, as well as distribution maps and numerous new faunistic records are provided. Significant diagnostic characters are illustrated.

Key words: Coleoptera, Dytiscidae, *Hydaticus*, new species, lectotype designation, new synonymy, taxonomy, new faunistic records.

Introduction

The *Hydaticus (Prodaticus) fabricii* species group has been revised by WEWALKA (1979), and some brief contributions to this group were eventually published by SHAVERDO, WEWALKA & LI (2012) and WEWALKA (2015).

The following taxa are currently included in the *H. fabricii* species group: *H. agaboides* SHARP, 1882, *H. consanguineus* AUBÉ, 1838, *H. ephippiiger* RÉGIMBART, 1899, *H. fabricii fabricii* (MACLEAY, 1825), *H. fabricii confusus* BOHEMAN, 1858, *H. fabricii loeffleri* WEWALKA, 1979, *H. incertus* RÉGIMBART, 1888, *H. larsoni* WEWALKA, 2015, *H. mexaformis* WEWALKA, 1979, *H. ponticus* SHARP, 1882, *H. pulcher* CLARK, 1863, *H. rhantoides* SHARP, 1882, *H. ricinus* WEWALKA, 1979, *H. rivanolis* WEWALKA, 1979, *H. sellatus sellatus* RÉGIMBART, 1883, *H. sellatus sabahensis* WEWALKA, 2015, *H. tibetanus* SHAVERDO, WEWALKA & LI, 2012, and *H. vaziranii* WEWALKA, 1979. Two new species are described herein, and two subspecies are elevated to species rank.

All species treated in this review are relatively small (8.4–15.0 mm), and they share a similar colour pattern. In most species, the pronotum is yellowish-brown with narrowly black anterior and posterior margins. The elytra are predominantly yellowish-brown with black irrorations, which are often condensed to more or less distinct longitudinal lines or patches along the suture. Only in *H. agaboides*, *H. ephippiiger*, *H. larsoni*, *H. mazzoldii* sp.n. and *H. sellatus sellatus*, the pronotum is predominantly black with yellowish-brown lateral sides, and the elytra are predominantly black with more or less extended, yellowish-brown lateral sides containing black

irrorations. In all species, the male protibiae are dilated, the male pro- and mesotarsomeres I–III are strongly enlarged and provided with adhesive discs on the ventral side.

The species of the *H. fabricii* group are characterized by the presence of a tuft of setae at the tip of the aedeagal median lobe (Figs. 1–18). *Hydaticus grammicus* (GERMAR, 1827) and *H. thermonectoides* SHARP, 1884, lack the apical tuft of setae (Figs. 19, 22), but these two species are also treated herein, because they share a similar elytral colour pattern with the species of the *H. fabricii* group; they are here placed in the newly established *H. grammicus* group, together with two new species described below.

Two Australian species, *H. parallelus* CLARK, 1864 and *H. chrisi* NILSSON, 2001, as well as a new species from Borneo, are also included in this review, because they share a similar elytral colouration with the *H. fabricii* and *H. grammicus* groups, but their median lobes (Figs. 23–25) are different. These three species are not assigned to any particular species group.

Hydaticus leander (ROSSI, 1790) and *H. servillianus* AUBÉ, 1838, which also have a similar elytral colouration, are not included here, because they are obviously not related to the *H. fabricii* and the *H. grammicus* groups (MILLER et al. 2009). According to GUIGNOT (1961), these two species belong to the *H. leander* group.

Specimens of the *H. fabricii* and *H. grammicus* groups are usually well represented in collections, but they are often incorrectly identified. In many cases, species of this group cannot be separated by external characters. Their identification has to be based primarily on the aedeagal median lobe. A key to all species treated herein is provided, but in most cases, female specimens cannot be securely identified, because the key is based mainly on aedeagal characters.

The species treated herein live in a range of habitats, from small puddles, pools, slowly flowing parts of streamlets and paddy fields, and they are also frequently collected at light. Sometimes they occur in large numbers.

Material and methods

This revision is based on about 4,850 specimens, which are deposited in the following institutions and private collections:

ADMU	Ateneo de Manila University, Quezon City, Philippines
AMNH	American Museum of Natural History, New York, USA
ANIC	Australian National Insect Collection, Canberra, Australia
CAS	coll. André Skale, Gera, Germany
CGW	coll. Günther Wewalka, Vienna, Austria
CHF	coll. Hans Fery, Berlin, Germany (property of NMW)
CHZ	coll. Herbert Zettel, Wien, Austria
CJS	coll. Jaroslav Štátný, Liberec, Czechia
CLH	coll. Lars Hendrich, Munich, Germany (property of NMW)
CPM	coll. Paolo Mazzoldi, Irma, Italy
CRO	coll. Ryohei Okada, National Museum of Nature and Science, Tsukuba, Japan
HNHM	Hungarian Natural History Museum, Budapest, Hungary
IRSNB	Institut royal des Sciences naturelles de Belgique, Brussels, Belgium
MCG	Museo Civico di Storia Naturale Giacomo Doria, Genova, Italy
MEM	Mississippi Entomological Museum, Starkville, Mississippi, USA
MNB	Museum für Naturkunde, Berlin, Germany
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
MZH	Finnish Museum of Natural History, Helsinki, Finland
NHMB	Naturhistorisches Museum Basel, Switzerland
NHML	Natural History Museum, London, UK

NHRS	Swedish Museum of Natural History, Stockholm, Sweden
NKME	Naturkundemuseum Erfurt, Germany
NKML	Naturkundemuseum Leipzig, Germany
NML	National Museum of Natural History, Leiden, Netherlands
NMP	National Museum, Museum of Natural History, Prague, Czechia
NMW	Naturhistorisches Museum Wien, Vienna, Austria
OLM	Oberösterreichisches Landesmuseum, Linz, Austria
SAMA	South Australian Museum, Adelaide, Australia
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
SIW	Smithsonian Institution, Washington D.C., USA
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany
STCT	St. Thomas' College (Autonomous), Thrissur, Kerala, India
ZMK	Zoologisches Museum der Universität Kiel, Germany
ZMUC	Zoological Museum, University of Copenhagen, Denmark
ZRCS	Zoological Reference Collection, National University of Singapore, Singapore
ZSM	SNSB-Zoologische Staatssammlung München, Germany

Abbreviations: TL (total length of beetle), TL-H (total length without head), MW (maximum width of beetle).

Label data of type specimens and some historical specimens are cited in quotation marks, a backslash (\) indicates separate labels. Comments of the author are given in square brackets.

Male genitalia were studied in dry condition. The median lobes were drawn with the help of a Wild # 308700 drawing tube. The terminology to denote the orientation of the genitalia follows MILLER & NILSSON (2003). Parameres and epipenites are not figured, because they do not provide significant distinguishing characters in these groups.

The single record from the Indian union territory of Puducherry (historically known as Pondicherry) is here listed under Tamil Nadu.

Detailed locality data (incl. some habitat photographs) for specimens collected in the course of the China Water Beetle Survey (CWBS) were published by JÄCH & JI (1995, 1998, 2003).

Checklists of the species of the *H. fabricii* and the *H. grammicus* groups, with inclusion of three externally similar species incertae sedis

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

***Hydaticus fabricii* group**

<i>agaboides</i> SHARP, 1882 [14]	China (Hainan), Cambodia, Vietnam, Brunei
<i>confusus</i> BOHEMAN, 1858 [3]	Philippines
<i>consanguineus</i> AUBÉ, 1838 [10]	Australia, Solomon Isls., New Zealand, New Caledonia, Fiji, Tonga, West Samoa, American Samoa, French Polynesia
<i>ephippiiger</i> RÉGIMBART, 1899 [13]	Indonesia, Papua New Guinea, Australia
<i>fabricii</i> (MACLEAY, 1825) [1]	India, Myanmar, China (Yunnan), Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia
<i>geiseri</i> sp.n. [4]	Laos, Vietnam
<i>incertus</i> RÉGIMBART, 1888 [9]	Nepal, India, Myanmar, China
<i>larsoni</i> WEWALKA, 2015 [15]	Papua New Guinea
<i>loeffleri</i> WEWALKA, 1979 [2]	Malaysia (Sabah)
<i>mazzoldii</i> sp.n. [16]	Thailand
<i>mexaformis</i> WEWALKA, 1979 [8]	Nepal, India, Bangladesh

<i>ponticus</i> SHARP, 1882 [12]	Turkey, Azerbaijan, Iraq, Saudi Arabia, Iran, Turkmenistan, Uzbekistan, Tajikistan, Afghanistan, Pakistan, India
<i>pulcher</i> (CLARK, 1863) [17]	Australia
<i>rhantoides</i> SHARP, 1882 [7]	China, South Korea, Japan, Taiwan, Laos, Vietnam
<i>ricinus</i> WEWALKA, 1979 [11]	Afghanistan, Pakistan, India, Sri Lanka, Nepal, Bhutan, Myanmar, China, Thailand, Laos, Cambodia, Vietnam, Malaysia, Indonesia
<i>rivanolis</i> WEWALKA, 1979 [6]	Indonesia, Papua New Guinea, Solomon Isls., Australia, Micronesia
<i>sellatus sabahensis</i> WEWALKA, 2015 [19]	Malaysia (Sabah, Sarawak), Indonesia (Kalimantan)
<i>sellatus sellatus</i> RÉGIMBART, 1883 [18]	Indonesia (Papua), Papua New Guinea
<i>vaziranii</i> WEWALKA, 1979 [5]	India (Andaman Isls., Nicobar Isls.), Thailand, Laos, Cambodia, Vietnam

***Hydaticus grammicus* group**

<i>grammicus</i> (GERMAR, 1827) [20]	France, Italy, Switzerland, Germany, Poland, Czechia, Austria, Slovakia, Hungary, Slovenia, Croatia, Serbia, Bosnia and Herzegovina, North Macedonia, Greece, Romania, Bulgaria, Ukraine, Russia, Turkey, Georgia, Armenia, Azerbaijan, Iran, Turkmenistan, Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan, Afghanistan, China, North Korea, South Korea, Japan
<i>schoenleithneri</i> sp.n. [21]	China (Sichuan, Yunnan)
<i>shaverdoae</i> sp.n. [22]	Myanmar
<i>thermonectoides</i> SHARP, 1884 [23]	China, South Korea, Japan

species incertae sedis

<i>borneensis</i> sp.n. [24]	Borneo
<i>chrisi</i> NILSSON, 2001 [26]	Australia
<i>parallelus</i> CLARK, 1864 [25]	Australia

Key to males of the *H. fabricii* and *H. grammicus* groups, including three externally similar species incertae sedis

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

- 1 Median lobe with a distinct apical tuft of setae (Figs. 1–18)..... *fabricii* group 2
- Median lobe without an apical tuft of setae (Figs. 19–25) *grammicus* group and species incertae sedis 20
- 2 Elytra predominantly yellowish-brown to reddish-brown with dark brown to black, irrorations often merging along suture (Figs. 26, 40)..... 3
- Elytra predominantly dark brown to black with yellowish-brown to reddish-brown lateral sides and apex with irrorations (Figs. 27–30, 32, 41)..... 15
- 3 Tufted area on apex of median lobe larger (Figs. 1–10, 18)..... 4
- Tufted area on apex of median lobe smaller (Figs. 11, 12) 14
- 4 In lateral view, apical third of median lobe slim and strongly curved (Fig. 18a)..... [19] *sellatus sabahensis*
- In lateral view, apical third of median lobe wider and less strongly curved (Figs. 1a–10a) 5
- 5 In lateral view, apex of median lobe acute (Figs. 1a–7a) 6
- In lateral view, apex of median lobe less acute (Figs. 8a–10a) 12

- 6 In median lobe, distance from tip to apices of lateral lobes (see arrows in Figs. 1–4) quite long (ca. 35–37 % of total length of median lobe) 7
- In median lobe, distance from tip to apices of lateral lobes (see arrows in Figs. 5–7 shorter (ca. 26–28 % of total length of median lobe) 10
- 7 In lateral view, apical third of median lobe broader (Figs. 1a, 4a) 8
- In lateral view, apical third of median lobe slenderer (Figs. 2a, 3a) 9
- 8 In lateral view, ventral margin of median lobe in apical third slightly convex (Fig. 1a) [1] *fabricii*
- In lateral view, ventral margin of median lobe in apical third strongly convex (Fig. 4a) ... [4] *geiseri*
- 9 In lateral view, apical third of median lobe almost straight (Fig. 3a) [3] *confusus*
- In lateral view, apical third of median lobe curved (Fig. 2a) [2] *loeffleri*
- 10 In lateral view, apical third of median lobe wider (Fig. 7a) [7] *rhantoides*
- In lateral view, apical third of median lobe slenderer (Figs. 5a, 6a) 11
- 11 In lateral view, apical third of median lobe slender and apex less distinctly convex dorsally (Fig. 5a) [5] *vaziranii*
- In lateral view, apical third of median lobe wider and apex distinctly convex dorsally (Fig. 6a) [6] *rivanolis*
- 12 In ventral view, median lobe in apical part of lateral lobes distinctly widened (see arrow in Fig. 9) [9] *incertus*
- In ventral view, median lobe in apical part of lateral lobes slightly widened (see arrow in Figs. 8, 10) 13
- 13 In lateral view, apex of median lobe broad (Fig. 8a); Nepal, India, Bangladesh [8] *mexaformis*
- In lateral view, apex of median lobe slender (Fig. 10a); Australian and Pacific Region [10] *consanguineus*
- 14 In lateral view, median lobe in apical two thirds quite straight and slender; ventral margin slightly emarginate subapically (Fig. 12a) [12] *ponticus*
- In lateral view, median lobe in apical two thirds less straight and slender; ventral margin not emarginate (Fig. 11a) [11] *ricinus*
- 15 In lateral view, apical third of median lobe slim and strongly curved (Fig. 18a) [18] *sellatus sellatus*
- In lateral view, apical third of median lobe less slim and not strongly curved (Figs. 13a–17a) 16
- 16 Pronotum predominantly yellowish- to reddish-brown; dark brown to black at anterior and posterior margins and sometimes vaguely delimited in middle (Figs. 30–31) 17
- Pronotum predominantly dark brown to black; yellowish- to reddish-brown only at lateral sides (Figs. 27–29) 18
- 17 In median lobe, distance from tip to lateral lobes (see arrow in Fig. 17) quite long (ca. 32 % of total length); Australia [17] *pulcher*
- In median lobe, distance from tip to lateral lobes (see arrow in Fig. 16) shorter (ca. 28 % of total length); Thailand [16] *mazzoldii*
- 18 In ventral view, apex of median lobe spoon-shaped (Fig. 15b) [15] *larsoni*
- Apex of median lobe not spoon-shaped (Figs. 13b, 14b) 19
- 19 Tufted area on apex of median lobe longer (Fig. 13) [13] *ephippiiger*
- Tufted area on apex of median lobe shorter (Fig. 14) [14] *agaboides*
- 20 In lateral view, apex of median lobe broadly rounded (Figs. 19a–22a) *grammicus* group 21

- In lateral view, apex of median lobe pointed (Figs. 23a–25a)..... species incertae sedis 24
- 21 Elytral irrorations less dense but condensed to a transverse band in middle and a transverse band near elytral apex (Fig. 36)..... [23] *thermonectoides*
- Elytral irrorations dense with distinct longitudinal yellowish-brown lines lacking irrorations (Figs. 34–35, 42)..... 22
- 22 Elytra with broader longitudinal yellowish-brown lines (Fig. 42); dual elytral micropunctuation in middle of anterior third consisting of very small and rather numerous distinctly larger micropunctures [20] *grammicus*
- Longitudinal yellowish-brown lines of elytra less broad (Figs. 34–35, 43–44); larger micropunctures in middle of anterior third less numerous and smaller..... 23
- 23 Elytra with a distinct yellowish-brown band lateral of the subsutural line of irrorations (Fig. 34); apex of median lobe more curved (Fig. 20a); China (Sichuan, Yunnan)..... [21] *schoenleithneri*
- Elytra with a narrow yellowish-brown band lateral of the subsutural line of irrorations (Fig. 35); apex of median lobe less curved (Fig. 21a); Myanmar [22] *shaverdoae*
- 24 Black irrorations on elytra condensed to various black spots (Fig. 39)..... [26] *chrisi*
- Black irrorations more numerous, not condensed to black spots..... 25
- 25 In lateral view, apical third of median lobe broader (Fig. 24a); body length: 13.5–15.0 mm; Australia..... [25] *parallelus*
- In lateral view, apical third of median lobe less broad (Fig. 23a); body length: 11.5–11.7 mm; Borneo [24] *borneensis*

Systematic account

The species are arranged according to their similarities in elytral colour patterns and aedeagal median lobes.

Hydaticus fabricii group

1. *Hydaticus fabricii* (MACLEAY, 1825)

Dytiscus varius FABRICIUS 1801: 267 (preoccupied by FABRICIUS 1775: 233); SCHÖNHERR 1808: 22; PERTY 1831: 12; HOPE 1838: 141.

Colymbetes fabricii MACLEAY 1825: 31 (replacement name for *Dytiscus varius* FABRICIUS, 1801); CLARK 1863: 17.

Hydaticus fabricii: WHITE 1847: 13 (partim); SHARP 1882: 663 (partim); BRANDEN 1884: 102; RÉGIMBART 1888: 618; SEVERIN 1890: CXIII (partim); ATKINSON 1891: 145 (partim); RÉGIMBART 1891: 544, 1899: 324 (partim), 1903: 334 (partim); ZAITZEV 1915: 276 (partim); ZIMMERMANN 1919: 227 (partim), 1920: 220 (partim), 1927a: 6; FENG 1932: 31 (partim), 1933: 123 (partim); GUIGNOT 1936: 57 (partim); WU 1937: 219 (partim); ZAITZEV 1953: 312 (partim); GUIGNOT 1954a: 566; SATŌ 1961: 10 (partim), 1965: 126 (partim); GUÉORGUIEV 1967: 474 (partim); FRANCISCOLO 1968: 56 (partim); VAZIRANI 1969a: 266 (partim), 1969b: 403 (partim), 1971: 446 (partim), 1972a: 82 (partim), 1972b: 121; (partim); WEWALKA 1972: 116 ff. (partim); SATŌ 1972: 152 (partim); VAZIRANI 1974: 20 (partim); ROCCHI 1976: 179 (partim); VAZIRANI 1977b: 76 (partim); WEWALKA 1979: 121; LAWRENCE et al. 1987: 355 (partim); ZENG 1989: 5; HENDRICH & BALKE 1995: 46; NILSSON 1995: 72, 2001: 101; HUA 2002: 37 (partim); NILSSON 2003: 8; MUKHOPADHYAY & GHOSH 2003: 31 (partim), 2004: 367 (partim); HENDRICH et al. 2004: 120; HÁJEK & FERY 2004: 33; HÁJEK 2006: 49; MUKHOPADHYAY & GHOSH 2007: 453 (partim), 2010: 278 (partim); GHOSH 2012: 140 (partim); GHOSH & NILSSON 2012: 25 (partim); SHARMA & BAMO 2012: 500; JÄCH et al. 2012: 66; MUKHOPADHYAY & GHOSH 2015: 471 (partim); DASH & ROY 2017: 87; GHOSH et al. 2018a: 440, 2018b: 27; NILSSON & HÁJEK 2022a: 96, 2022b: 23.

Hydaticus fabriciusi [unjustified emendation]: JACOBSON 1908: 434 (partim); BALL 1932: 19; NILSSON 2001: 102, 2003: 8.

Hydaticus fabrici [incorrect subsequent spelling]: WATTS 1978: 146 (partim), 1985: 26 (partim); LARSON 1993: 55 (partim), 1997: 272 (partim); WATTS 2002: 43 (partim).

Prodtaticus fabricii: MILLER et al. 2009: 596 ff. (partim).

Hydaticus rufulus AUBÉ 1838: 199; SHARP 1873:48 (partim).

Hydaticus leander: ZIMMERMANN 1927c: 36 (partim).

Hydaticus incertus: VAZIRANI 1969a: 269 (partim).

TYPE LOCALITY: Indonesia, Sumatra.

TYPE MATERIAL of *Dytiscus varius*: **Lectotype** ♂, by present designation (ZMK): “varius” [handwritten grey label] \ “Penis of Type of *Dytiscus varius* F. = *Hydaticus fabricii* MacLeay prep. Wewalka 1977” [handwritten white label] \ “This species *Dytiscus varius* F. (1801) (Sumatra, Coll. Daldorff) is a Homonym of *D. varius* F. (1792) from Patagonien [Patagonia]. It is now called *Hydaticus fabricii* MacLeay det. Wewalka 1977” [handwritten white label] \ “LECTOTYPUS *Dytiscus varius* Fabricius 1801 design. Wewalka 2017” [printed red label].

ADDITIONAL MATERIAL EXAMINED:

INDIA: West Bengal: 1 ♂: Calcutta [Kolkata], 1933, Wickham Collection (CGW).

Assam: 1 ♂: Kaziranga, Pan Bari Forest, 100 m, 12.XI.1997, leg. V. Siniaev & S. Murzin (CJS).

MYANMAR: Sagaing Region: 2 ♂♂: Alaungdaw Kathapa NP, Khaung Din Stream, between 22°18.360'N 94°25.937'E and 22°19.650'N 94°25.768'E, ca. 450 m, 11.V.2003, leg. D. Boukal et al. (119) (NMW); 1 ♀: Alaungdaw Kathapa NP, 22°19.094'N 94°28.823'E, ca. 350 m, 9.–10.V.2003, leg. D. Boukal et al. (118) (NMW).

Shan State: 1 ♂: N Aungban, Pindaya – Ye'ngan, puddle, 20°58.271'N 96°32.488'E, ca. 1240 m, 24.VI.2004, leg. H. Shaverdo (145) (NMW); 3 ♂♂, 3 ♀♀: NE Mintaingbin Forest Camp, puddles, 20°55.640'N 96°33.643'E, 1290 m, 14.–20.VI.2004, leg. H. Shaverdo (150) (CGW, NMW); 1 ♂, 1 ♀: NE Mintaingbin Forest Camp, puddles, 20°55.97'N 96°33.805'E, ca. 1270 m, 13.–17.VI.2004, leg. H. Shaverdo (147) (NMW); 1 ♂: rockpools in dried out waterfall, road Kalaw – Thazi, km 23, 20°42.378'N 96°30.218'E, 720 m, 24.X.1998, leg. H. Schillhammer (30) (NMW).

Yangon Region: 6 exs.: Rangoon, X.1996, leg. M. Kliča (CPM); 1 ♂: “Rangoon Birmania Fea V.1885” (IRSNB); 1 ♂: Insein, at light, 11.–12.V.1999, leg. R. Schuh & H. Schillhammer (NMW).

Kayah State: 1 ex.: Dawna, 6.III.1991, leg. J. Fiebig (NKML); 1 ♂: Dawna, III.1994, leg. G. Lehmann (CLH).

CHINA: Yunnan: 1 ♂: Pe Yen Tsin [Yanfeng, SE Yunnan (SCHÜTZE & KLEINFELD 1995)], date and collector unknown (IRSNB); 1 ♂: Xishuangbanna, Jinghong – Mengyang, ca. 500 m, 12.XI.1999, leg. M.A. Jäch et al. (CWBS 380) (NMW).

THAILAND: Mae Hong Son Prov.: 1 ex.: Mae Hong Son, 1000 m, 16.–23.VI.1993, leg. J. Schneider (NMW).

Chiang Mai Prov.: 1 ♂: Mae Wang, Huay Kho Stream, 12.II.2005, leg. P. Chen & N. Nieser (NML); 1 ♂: Chiang Mai, at light, 5.–15.IV.1997, leg. G. Hangay (CHF); 1 ex.: Doi Suthep near Chiang Mai, 21.V.1980, leg. T. Senoh (NHMB).

Nan Prov.: 1 ♂: Doi Phu Kha NP, 50 km NE Nan, 28.VI.–I.VII.1997, leg. J. Rejsek (CJS).

Sukhothai Prov.: 5 exs.: Sukhothai, I.1992, leg. M. Holecova (NMW).

Phetchabun Prov.: 7 exs.: Lom Sak, 40 km N Phetchabun, ca. 120 m, VIII.1987, leg. W. Thielen (SMNS).

Khon Kaen Prov.: 1 ♂: Khon Kaen University, blackwater pool, 23.II.1994, leg. W. Shepard (NMW).

Sakon Nakhon Prov.: 1 ex.: Charoen Sin Distr., Thung Kae, Huai Nok Khao, stn. 207, 190 m, 28.XII.2021, leg. R. Okada (CGW).

Nakhon Ratchasima Prov.: 1 ex.: Pak Chong, peripheral area of Khao Yai NP, 14°36.78'N 101°24.29'E, 400 m, 14.–22.II.2006, leg. T. Ihle (CAS); >80 exs.: Nakhon Ratchasima, I.–III.1989, leg. S. Steinke (CLH); 16 exs.: Sida Distr., road Khon Kaen – Bangkok, near bridge across Sathaet River, 15°16'22"N 102°25'7"E, 21.III.2017, leg. H. Shaverdo (2017-Th-07) (NMW, ZSM).

Uthai Thani Prov.: 4 exs.: 55 km W Uthai Thani, 2 km SW Pak Muang, 120 m, IX.1991, leg. W. Thielen (MNB); 17 exs.: 25 km NW Lan Sak, 110 m, at light, VIII.–IX.1990, leg. W. Thielen (CGW, MNB, SMNS); 6 exs.: 25 km NW Lan Sak, 110 m, light trap, II.1989, leg. W. Thielen (NMW).

Chainat Prov.: 5 exs.: 10 km W Han-Kha, 90 m, at light, VII.1990, leg. W. Thielen (NMW).

Kanchanaburi Prov.: 1 ♂: Sangkhlaburi, 29.X.1994, leg. J. Rejsek (CJS).

Saraburi Prov.: 1 ♂: Saraburi, III.–IV.1989, collector unknown (SMNS).

Bangkok Prov.: 1 ex.: Bangkok, 14.XI.1988, leg. M.A. Jäch (1) (NMW).

Prachinburi Prov.: 2 exs.: Mueng Prachinburi Distr., Noen Hom, stn. 177, 80 m, 29.VIII.2020, leg. R. Okada (CGW).

Chonburi Prov.: 7 exs.: Ban Bueng Distr., Khlong Kiu, Nong Nam Khieo, stns. 7, 119, 127, 199, 80 m, 22.VII.2018, 16.V., 13.VI. & 21.XI.2020, leg. R. Okada (CGW).

Ranong Prov.: 1 ex.: Mueang Ranong Distr., Ratchakrut, 10 m, 28.VII.2019, leg. R. Okada (CGW).

Pattani Prov.: 2 exs.: Sai Buri, 23.–28.IV.1993, leg. J. Strnad & J. Horák (NHMB, NMW).

Yala Prov.: 10 exs.: Betong, Gunung Cang Dun vill., 25.III.–22.IV.1993, leg. J. Horák (NMW).

LAOS: 1 ♂: Luang Namtha Prov.: 15 km NW Luang Namtha, 21°7.5'N 101°21.0'E, ca. 750 m, 13.–24.V.1997, leg. M. Štrba & R. Hergovits (CLH); 1 ♂: 20 km NW Luang Namtha, 21°9.2'N 101°18.7'E, ca. 900 m, 5.–

- 11.V.1997, leg. M. Štrba & R. Hergovits (CLH); 1 ♂: NW of Muang Sing, 20.–22.XI.2011, leg. J. Štátný (CJS); 1 ♂, 2 ♀♀: Nam Ha NBCA [National Biodiversity Conservation Area], 20 km N Luang Namtha, Lakkhammai vill., Nam Leung Stream, ca. 750 m, light trap, loc. 29, 30.IV.2005, leg. N. Jönsson, T. Malm & B. Viklund (NHRS); 1 ♀: Tong Om vill. [near Luang Namtha Airport], ca. 550 m, light trap, loc. 30, 1.V.2005, leg. N. Jönsson, T. Malm & B. Viklund (NHRS); 45 exs.: Namtha – Muang Sing, 900–1200 m, 21°9'N 101°19'E, 3.–31.V.1997, leg. V. Kubáň (CGW, NHMB).
- Phongsaly Prov.: 1 ex.: Boun Tai, ca. 580 m, 21°24'N 102°58'E, 18.V.2004, leg. M. Brancucci (NHMB).
- Bokeo Prov.: 1 ex.: 5 km W Ban Toup, Bokeo Nature Reserve, 500–700 m, 20°27'–28'N 100°45'E, 4.–18.V.2011, leg. M. Brancucci et al. (NHMB).
- Bolikhamsai Prov.: 7 exs.: Borikhan env., 20 km N Muang Pakxan, 16.–20.V.2003, leg. O. Šafránek (CJS).
- Khammuan Prov.: 2 ♂♂: Nakai env., Route No. 8, 17°42.8'N 105°8.9'E, ca. 560 m, 4.–8.V.1998, leg. E. Jendek & O. Šauša (CPM).
- CAMBODIA: 2 exs.: “Cambodia (2047), 67.56” (NHML).
- Koh Kong Prov.: 1 ex.: 20 km SE Koh Kong, Tatai River, 11°34'N 103°7'E, 50–300 m, 17.X.–15.XI.2011, leg. Z. Linek (CGW); 24 exs.: Cardamon Mts., Trapeang Rung, 5 m, 28.I.–4.II.2010, leg. S. Murzin (NMW).
- VIETNAM: 1 ♂: Red River Delta Region: Ninh Binh, 23.V.1986, leg. A. Olexa (CGW).
- Central Highlands Region: 42 exs.: 120 km NNE Ho Chi Minh City, Cat Tien vill. env., 3.–18.VII.1995, leg. A. Napolov (CGW, CLH, NHMB); 86 exs.: Nam Cat Tien NP, 1.–15.V.1994, 24.–27.V.1996, leg. P. Pacholátko & L. Dembický (CGW, NMW).
- MALAYSIA: Kedah: 2 exs.: Langkawi Isl., Pantai Kok, 30.I.1992, leg. M.A. Jäch (14) (NMW); 2 exs.: Penang, Sharp Coll. 1905-313 (NHML); 1 ♂: Penang, Batu Ferringhi, 27.I.1981, leg. T.-E. Leiler (NHRS).
- Perak: 1 ♂, 1 ♀: Pangkor Isl., Teluk Nipah, 25.I.1992, leg. M.A. Jäch (NMW).
- Pahang: 6 exs.: Endau-Rompin NP, Selendang, 100 m, 28.II.–12.III.1995, leg. M. Štrba & R. Hergovits (NMW); 31 exs.: Endau-Rompin NP, Pulau Jasin, 2.31°N 103.21°E, 50–400 m, 19.III.1998, leg. L. Dembický & P. Pacholátko (NHMB).
- Malacca: 7 exs.: “Malacca [Malacca State or Malacca City], Sharp Coll., 1905-513” (NHML); 3 exs.: “Malaya, 67.56” (NHML).
- Johor: 1 ♂: Layang Layang, stream, sandy bottom, 6.II.1991, leg. C.M. Yang (ZRCS); 2 ♂♂: Endau, confluent of Endau and Jasmin rivers, campsite, stagnant pool with leaf litter, 5.IV.1992, leg. H.K. Lua (ZRCS); 1 ♂: Pekan Nanas – Pontian, 4.III.1992, leg. K.L. Yeo (ZRCS).
- Selangor: 1 ♂: Nacan, peat swamp, 18.VI.1991, leg. C.M. Yang (ZRCS).
- Sarawak: 1 ex.: Sarawak, 1865-66, coll. G. Doria (NHML); 1 ex.: 25 km E Kapit, III.1993, leg. J. Kodada (NMW).
- Sabah: 1 ex.: Kinabalu NP, Mt. Kinabalu, Telecom hut, 10.VII.1982, 7500 ft., leg. N.E. Stork (NHML); 9 exs.: Kampung Takala env., branch of Kinabatangan River, 5.VI.1998, leg. J. Kodada & F. Čiampor (NMW); 1 ♂, 1 ♀: Kinabatangan River, Uncle Tan's camp, 8.–15.VI.2003, leg. J. Štátný (CJS).
- SINGAPORE: 2 ♂♂: Sungai Buloh, mud pool, 4.XII.1990, leg. C.M. Yang & K.L. Yeo (ZRCS); 1 ex.: Turut Track near Kranji Reservoir, 18.VIII.2004, leg. M.A. Jäch (SGP 5) (NMW).
- BRUNEI: 1 ♂: Seria env., forest, XII.1969, I.1970, leg. C.J. Louwerens (NML); 3 exs.: Seria, at light, VI.–VII.1978, leg. P.M. Hammond & J.E. Marshall (NHML).
- MALAYSIA (Sabah, Sarawak), BRUNEI or INDONESIA (Kalimantan): 5 exs.: “Borneo 1881 Post II” (IRSNB, NMW).
- INDONESIA: West Kalimantan: 15 exs.: “Borneo Occ., Pontianak 1899” (MNHN-CO); 6 exs.: “Pontianak Borneo Holland” (IRSNB); 1 ♂: “Bornéo Occ., Sambeh River, 7.II.1897, leg. Fr. Buffat” (MNHN-CO); 9 exs.: “Borneo occ., Sambay River, près. [near] Ngabang, 1887, J.B. Ledru” (CGW, MNHN-CL, MNHN-CO); 1 ♂: Pontianak env., 0°0.468'N 109°21.461'E, 2 m, 11.IV.2011, leg. M. Balke (KAL 2) (Balke 5158) (ZSM); 1 ex.: Nanga Sarawai env., Tontang, 24.VII.–2.VIII.1993, leg. J. Schneider (NMW); 1 ♂: foot of Gunung Bawang, 0°51.151'N 109°21.564'E, 100 m, 12.IV.2011, leg. M. Balke (KAL 5) (Balke 5182) (ZSM).
- East Kalimantan: 3 ♂♂, 4 ♀♀: ca. 55 km W Palikpapan, Fajar Surya Swadaya, 1°16.4'S 116°21.1'E, ca. 80 m, 23.XI.–1.XII.2011, leg. J. Hájek, J. Schneider & P. Votruba (2 ♀♀: Balke 5507, 5508) (ZSM); 1 ♂, 2 ♀♀: Silva Rimba Lestari, Camp Limbang, 0°7.4'N 116°18.1'E, 60 m, 3.–6.XII. 2011, leg. J. Hájek, J. Schneider & P. Votruba (ZSM).
- Riau Archipelago: 76 exs.: costal area of Indragiri Hilir, 0–50 m, III.–VI.2006, leg. S. Jäckl (CGW, CLH); 2 exs.: “Riouw-Arch.” [Riau Archipelago], Dorian, No. 11, 12.VI.1923, leg. K.W. Dammerman (NHML).
- Sumatra: 1 ex.: Sumatra, 1887, leg. B. Hagen (NMW).
- Aceh: 1 ♂: Alas Valley, Kutacane, Tanah Merah, 3°31'N 97°47'E, ca. 200 m, Malaise trap, 8.VI.1972, leg. J. Kriksen (NML).
- North Sumatra: 3 exs.: Doué, Sharp coll. 1905-313 (NHML); 1 ♂: Medan, 20 m, 24.IX.1921, leg. J.B. Corporaal (MNHN-CO); 2 ♂♂, 1 ♀: Tebing Tinggi, 24.X.1884, leg. B. Schultheiss (SDEI); 9 exs.: Prapat, 1100 m, 12.–20.VI.1982, 28.X.1983–22.I.1984, leg. E.W. Diehl (NHMB, SMNS); 10 exs.: Lake Toba, Samosir, ca. 900 m,

- 3.II.1990, leg. S. Schödl (CGW, NMW); 3 exs.: Dolok Merangir, 21.II.1991, leg. H. Malicky (NMW); 15 exs.: Dolok Merangir, 1982–1983, leg. E.W. Diehl (NHMB, SMNS); 1 ♀: Dolok Merangir, 1.X.–14.XI.1984, leg. Kern (CGW); 2 ♂♂, 6 ♀♀: Gunung Semangat, 1500 m, 15.III.1992, at light, leg. B. Gustafsson, H. & H. Hippa & G. Sellerholm (NHRS); 7 exs.: Balighe [Balige], X.1890–III.1891, leg. E. Modigliani (MNHN-CO, SDEI); 2 ♂♂: Pemantang Siantar, 1000 m, IV.–IX.1986, leg. E.W. Diehl (SMNS).
- West Sumatra: 1 ♂: “Sumatra Occident, ex Musæo van Lansberge” (MNHN-CO); 48 exs.: Fort de Kock [Bukittinggi], 920 m, I.1922 & 1926, leg. F. Jacobson (MNB, NML, NMW, SDEI); 1 ♂: Kaju Tanam, VIII.–IX.1878, leg. O. Beccari (IRSNB); 8 exs.: “Padang Van Bennecom” (IRSNB); 5 ♂♂, 1 ♀: Bukit Barisan, above Padang Creek, 0°56.386'S 100°32.485'E, ca. 930 m, 8.IX.2011, leg. M. Balke (UN 2) (1 ♂: Balke 5709) (ZSM); 1 ♂, 3 ♀♀: Padang – Solok, Lubuk Liangan, puddle, 0°57.312'S 100°36.589'E, 960 m, 9.IX.2011, leg. M. Balke (SUM 39) (1 ♂: Balke 5710) (ZSM); 3 exs.: Sicincin, 50 km NW Padang, 13.II.1991, leg. S. Schödl (15) (NMW); 2 exs.: Lake Maninjau, 8.II.1991, leg. M.A. Jäch (9) (NMW); 3 exs.: W Danau di Atas, 70 km SE Padang, 24.II.1991, leg. M.A. Jäch & S. Schödl (27) (NMW); 1 ♂: Danau di Atas, 1°4.600'S 100°46.159'E, 1500 m, 18.XII.2007, leg. M. Balke, S. Prativi & D. Amran (Balke 2826) (ZSM); 8 exs.: Talu, Simpangempat, VII.1992, leg. G.W. Ullrich (CHF, NHMB); 3 ♂♂: Panti, 0°20.960'S 100°4.047'E, 260 m, 29.IX.2009, leg. M. Balke & D. Amran (SUM 15) (ZSM); 6 ♂♂, 3 ♀♀: Talawi, Ombilin River, 0°35.379'S 100°43.684'E, 210 m, 25.IX.2009, leg. M. Balke (SUM 5) (Balke 3972) (ZSM); 1 ex.: Lemba Harau Nature Reserve, 15 km NE Payakumbuh, 11.II.1991, leg. M.A. Jäch (12a) (NMW); 5 exs.: same data, but leg. S. Schödl (12a) (NMW); 1 ex.: Harau Nature Reserve, 90 km of Padang Panjang, 1991, leg. W. Bujang (NKML); 8 ♂♂, 4 ♀♀: Harau Canyon, swamp, 0°4.986'S 100°38.244'E, 520 m, 27.IX.2009, leg. M. Balke & D. Amran (SUM 8) (1 ♂: Balke 3885) (ZSM); 3 ♀♀: Harau Canyon, stream near Ikkal's Cottage, 0°6.438'S 100°40.369'E, 520 m, 23.IX.2012, leg. M. Balke (UN 11) (ZSM); 1 ♂: Harau Valley, 600 m, 5.–7.I.2006, leg. S. Jäckl (CLH); 1 ex.: “G.[unung] Singgalang, 1939, local collector” (NML).
- Bengkulu: 8 ex.: 20 km S Muko Muko, 20 m, at light, 16.VIII.1991, leg. G. Ebert (MNB, SMNS).
- South Sumatra: 5 exs.: Palembang, leg. M. Knappert (IRSNB, NML, NMW); 5 exs.: “Sumatra Palembang” (IRSNB).
- Nias: 7 exs.: German Mission, coll. Fry, 1905–100 (NHML); 10 exs.: Telukdalam, 8.II.1990, leg. S. Schödl (5) (NMW); 1 ex.: 40 km N Telukdalam, 13.II.1990, leg. S. Schödl (10) (CGW, NMW).
- Siberut: 2 exs.: Muarasiberut, 15.II.1991, leg. S. Schödl (24) (NMW); 4 exs.: Saliguma, 30.VIII.1992, leg. W. Barries & P.C. Cate (NMW); 56 exs.: Mt. Malancan, 100–300 m, 18.–21.I.2005, leg. S. Jäckl (CGW, CLH); 2 ♂♂, 1 ♀: Bojakan vill., 150 m, V.2004, leg. S. Jäckl (CGW, CLH); 9 exs.: Salappa vill., 20–100 m, X.2005, II.2006, leg. S. Jäckl (CGW, CLH).
- Enggano: 1 ♂, 1 ♀: Enggano Isl., Meok, V.–VII.1936, leg. J.K. de Jong (IRSNB).
- Java (without precise locality data): 1 ex.: Java, I.1882, leg. H. Breitenstein (NMW); 1 ex.: “Java” \ “coll. Gory, 2029, rufulus Chev.[rolat] 67.56” (NHML); 20 exs.: “Java Fruhstorfer” (IRSNB, SDEI); 1 ♀: “Java Pasteur” (IRSNB); 1 ♀: “Java Coll. Chevrolet” (IRSNB).
- Jakarta: 1 ♀: Jakarta, 1967, leg. Blabensteiner (NMW); 1 ex.: Jakarta Airport, 1.II.1994, leg. M. Štrba (NMW); 4 exs.: Jakarta Zoo, 13.I.1987, leg. M.A. Jäch (J 3) (NMW); 1 ♀: “Batavia” [Jakarta] (IRSNB); 8 exs.: “Batavia” [Jakarta], X.1949, leg. C. v. Nidek (NML) 3 ♀♀: “Geb. bei [mountains near] Batavia [Jakarta] coll. [F.] Gärtner” (SDEI).
- West Java: 1 ex.: “Mons Gede 4000 [feet] VIII.1898 H. Fruhstorfer” (MNHN-CO); 1 ♂, 3 ♀♀: “Java occident. Pengalengan [Pangalengan] 4000' 1893 H. Fruhstorfer” (SDEI); 1 ♂: “Buitenzorg” [Bogor], 1922, leg. W.C. van Heurn (NML); 2 ♂♂, 2 ♀♀: Tjiomas, “Buitenzorg” [Bogor], 9.XII.1936, leg. J. v.d. Vecht (NML); 1 ♀: Djampang Tengah, 1800 m, 28.V.1939, leg. J.M.A. v. Groenendael (NML); 1 ♀: Djampang Tengah, 600–800 m, IX.1933, Mt. Tjisoeroe [Cisuru], leg. M.E. Walsh (IRSNB); 2 exs.: Bogor, Dj. Tjikurai [Cikuray], 14.IV.1956, at light, leg. H.H.F. Hamann (OLM); 1 ex.: Bogor, Bot. Garden, 250 m, 1956, leg. H.H.F. Hamann (OLM); 28 exs.: “Bandong [Bandung] Fruhstorfer” (IRSNB); 3 exs.: “Java Wynkoopsbay [Pelabuhan Bay] ii.1937” (IRSNB); 3 ♂♂, 2 ♀♀: “Soekaboemi” [Sukabumi], VII.1934, leg. M.E. Walsh (IRSNB).
- Central Java: 11 exs.: “Gunung Oengaran” [Mt. Ungaran], 1906, leg. F.C. Drescher (NML); 4 ♂♂, 2 ♀♀: “Samarang” [Semarang], leg. P.H. von Doesburg (IRSNB, NML); 3 ♂♂, 1 ♀: Cepu town, 50 m, 8.IX.1995, leg. S. Jäckl (CLH).
- East Java: 13 exs.: “Tenggergeb.” [Tengger Mountains], X.1898, leg. F.C. Drescher (NML); 1 ex.: rice field, ca. 60 km E Jember, Glenmore env., 1.X.1995, leg. H. Schillhammer (8) (NMW); 2 ♀♀: Meru Betiri, Sukamade, brackish pool at beach, 10 m, 29.II.1996, leg. H. Huijbregts (NML); 2 ♂♂: Surabaya [Surabaya] env., 1927 & 1936, leg. W.C. van Heurn (NML); 1 ♀: “Bajoekidoel” [Bayukidul] near “Banjoewangi” [Banyuwangi], 1930, leg. H. Lucht (IRSNB); 4 exs.: Baluran NP., Wonorejo, 50 m, 24.–25.II.1994, leg. BOLM (SMNS).
- Bali: 2 exs.: Ubud, 15.II.1988, leg. M.A. Jäch (31) (NMW); 2 exs.: Ubud, 7.IX.2002, leg. W. Supantschitsch (NMW); 1 ex.: Ubud, 8°30.5635'S 115°15.1765'E, 170 m, 29.IV.–6.V.2011, leg. M. Balke (BLI 13) (ZSM); 1 ♀: Ubud, 8°31.923'S 115°15.502'E, 210 m, 29.VIII.2008, leg. M. Balke & D. Amran (Balke 4173) (ZSM); 1 ♂:

- Ubud, ca. 300 m, paddy field, 26.VIII.1990, leg. L. Hendrich (BA3) (CLH); 3 exs.: Sanur, at light, II.1987, leg. G. de Rougemont (NMW); 1 ♂: Tabanan Reg., 10 km S Bedugul, Apuan, ca. 700 m, paddy field, 23.X.2013, leg. G. Wewalka (CGW); 1 ♂, 1 ♀: Yeh Ho River, 6 km NW Tabanan, stagnant pool, 400 m, 3.XI.1991, leg. H. Huijbregts & R. de Vries (NML); 6 ♂♂, 4 ♀♀: Bali, 8°14.702'S 114°32.794'E, ca. 130 m, 27.IV.2011, leg. M. Balke (BLI 9) (2 ♀♀: Balke 5260, 5261) (ZSM); 3 ♂♂, 1 ♀: Bedugul – Batu Karu, 8°21.787'S 115°8.413'E, ca. 660 m, 28.IV.2011, leg. M. Balke (BLI 11) (ZSM); 1 ♀: SE of Semarang, swamp near river mouth, 8°33.490'S 115°25.688'E, 5 m, 19.IX.2011, leg. M. Balke (BLI 14) (ZSM); 3 ♂♂: Jatiluwih, paddy field, 650 m, 29.X.1991, leg. H. Huijbregts & J. Krikken (NML); 1 ♀: Tamblingan Lake, 1200 m, 18.–28.II.2004, leg. S. Jäckl (CLH).
- Lombok: 1 ♂: swamp at costal road, 8°15.852'S 116°14.760'E, 55 m, 22.IV.2011, leg. M. Balke (LOM 002) (Balke 5227) (ZSM); 3 ♂♂: Senaru area, 8°19.326'S 116°24.989'E, ca. 830 m, 22.IV.2011, leg. M. Balke (LOM 004) (Balke 5200) (ZSM); 1 ♂, 4 ♀♀: Senaru Waterfall, 470 m, 13.X.1991, leg. H. Huijbregts & J. Krikken (NML); 1 ♂: Suranadi, 3.II.1988, leg. M.A. Jäch (14) (NMW).
- Sumbawa: 1 ♂: Bima – Dompu, restpools, 8°0.177'S 118°33.647'E, 130 m, 13.IX.2011, leg. M. Balke (SUMB 1) (1 ♂: Balke 4658) (ZSM); 2 ♂♂: Dompu – Huu, restpools, 8°35.421'S 118°29.318'E, 50 m, 14.IX.2011, leg. M. Balke (SUMB 2) (Balke 4659) (ZSM); 2 ♂♂, 1 ♀: Dompu – Huu, restpools, 8°37.724'S 118°29.624'E, 70 m, 14.IX.2011, leg. M. Balke (SUMB 3) (ZSM); 2 ♂♂, 2 ♀♀: Dompu – Huu, slow river, 8°38.542'S 118°30.309'E, 120 m, 14.IX.2011, leg. M. Balke (SUMB 4) (ZSM); 1 ♂: Sumbawa Besar – Batu Dulang, creek near Semongkat, 8°33.707'S 117°19.601'E, 360 m, 16.IX.2011, leg. M. Balke (SUMB 7) (ZSM).
- Sumba: 1 ♂, 2 ♀♀, 1 intersex ♀: Waitabula env., waterholes near limestone well, 9°26.059'S 119°18.531'E, 150 m, 26.IX.2011, leg. M. Balke (SUA 01) (1 ♀, 1 intersex ♀ Balke 4561, 4562) (ZSM); 1 ♂, 1 ♀: forest stream, 9°38.615'S 119°40.925'E, 470 m, 27.IX.2011, leg. M. Balke (SUA 07) (ZSM); 3 ♂♂, 2 ♀♀: road Waingapu – Kannangar, pools around stream, 760 m, 28.IX.2011, leg. M. Balke (SUA 10) (ZSM); 1 ♂, 1 ♀: stream, red clay, pools, 10°2.83'S 120°18.86'E, 950 m, 28.IX.2011, leg. M. Balke (SUA 11) (1 ♀: Balke 4637) (ZSM); 2 ♂♂: Melolo, 2.VI.1949, leg. A. Bühler & E. Sutter (IRSNB).
- Komodo: 1 ♂: “W. Flores I. J.K. de JONG VII.1937 Komodo I.[sland]” (IRSNB).
- Flores: 2 ♀♀: Ruteng, Lake Ranamese, ca. 8°38.2014'S 120°33.3652'E, 1250 m, 4.IX.2008, leg. M. Balke & D. Amran (1 ♀: Balke 3564) (ZSM).
- West Timor: 1 ♀: Soe – Niki Niki, creek, 9°52.841'S 124°19.244'E, 760 m, 2.X.2011, leg. M. Balke (TIM 5) (ZSM); 1 ♀: Soe – Niki Niki, creek, 9°51.936'S 124°20.719'E, 650 m, 2.X.2011, leg. M. Balke (TIM 6) (ZSM); 1 ♂, 1 ♀: Niki Niki area, stream in bamboo forest, 9°44.216'S 124°28.734'E, 400 m, 2.X.2011, leg. M. Balke (TIM 09) (ZSM); 3 ♂♂, 1 ♀: Oesa, swampy area near coast, 10°5.259'S 123°46.018'E, 30 m, 3.X.2011, leg. M. Balke (TIM 10) (2 ♂♂: Balke 4544, 4545) (ZSM); 1 ♂, 1 ♀: Naikliu area, residual pools in dry forest, 9°58.425'S 123°41.439'E, 130 m, 3.X.2011, leg. M. Balke (TIM 11) (1 ♀: Balke 4490) (ZSM).

DOUBTFUL LABEL DATA:

SOLOMON ISLANDS: 1 ♂: Bougainville Isl., Buin, coll. E. Gowing-Scopes, BMNH(E)2005-4 (NHML).

CHINA: Tibet: 8 exs.: Zayu County, Xiachayu, 28°29'44"N 97°1'26"E, 1500 m, bank of Ganri Karpo-chu (river), at light, 5.–11.XI.2011, don. J. Li (NMW).

DESCRIPTION: Oblong-oval, broadest shortly behind the middle, moderately convex. TL: 8.4–10.3 mm; TL-H: 7.8–9.6 mm; MW: 4.8–5.7 mm.

COLOURATION (Fig. 26): Head yellowish-brown, black on vertex and narrowly along eyes, sometimes with two black oblique narrow lines near clypeal margin. Pronotum yellowish-brown, narrowly black to dark brown along posterior margin, often broader dark brown in middle of posterior margin; sometimes also narrowly dark brown along anterior margin and with a transverse row of small dark brown to black spots near anterior margin. Scutellum black. Elytron yellowish-brown with dark brown to black irrorations, narrowly black along suture and scutellum, lateral of suture and scutellum with a narrow band without irrorations, lateral of this band irrorations are condensed to a black longitudinal line; near the first and second irregular striae lines of coarser punctures there are more or less distinct lines with fewer irrorations; irrorations are missing also along lateral margin and are sparser along base; in many specimens, irrorations condensed along suture, forming a patch in middle and preapically. Ventral side predominantly dark reddish-brown; pronotum and epipleura yellowish-brown. Antennae, anterior and middle legs yellowish-brown; hind legs reddish-brown to dark brown.

STRUCTURES: Clypeus truncate, clypeal margin and lateral margins of pronotum without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex, process distinctly bordered laterally, apex rounded.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additionally with strong punctures in two dimples at medial margin of eyes near middle and near posterior corner; with a pair of pits on fronto-clypeal suture; surface usually 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 very fine microreticulation. Elytron with fine dense punctation and sparse, slightly stronger punctures; with three irregular stria lines of coarser punctures and strong punctures along lateral margin; 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: Protibiae, pro- and mesotarsi modified. Protarsomere I with a dense fringe of setae along basal margin. Median lobe almost straight in apical half; with a long plate with a tuft of setae at tip (Fig. 1).

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

AFFINITIES: *Hydaticus fabricii* resembles most species of the *H. fabricii* group in colouration except *H. agaboides*, *H. ephippiiger*, *H. larsoni*, *H. mazzoldii* and *H. sellatus sellatus*, which have darker elytra.

From the other species, *H. fabricii* can be distinguished with certainty only by the median lobe. The distance from the tip to the lateral lobes (see arrow in Fig. 1a) is quite long (ca. 35 % of total length). *Hydaticus fabricii* is also similar in colouration to *H. schoenleithneri* and *H. shaverdoae* (*H. grammicus* group), from which it can be separated by the median lobe having a distinct apical tuft of setae.

WEWALKA (1979) noted that the setae on the notch on the dorsum of the metatarsomeres are of medium length (reaching almost half the length of the first tarsomere), and that they are shorter in *H. ponticus* and longer in some other species of the group. But this feature is not distinctive enough to allow a reliable identification.

COMMENTS: In their phylogenetic analysis, MILLER et al. (2009) sequenced a specimen of “*Prodaticus fabricii*” from the Philippines, which obviously belongs to *H. confusus* (see below).

According to M. Balke (pers. comm.), an unpublished neighbour joining tree of *Hydaticus* species derived from mitochondrial *cox1* sequences revealed that specimens tentatively identified as *H. fabricii* clustered in three groups: 1) Sumatra, Bali, 2) Lombok, Sumbawa, Sumba, Flores and Timor, 3) Borneo. No morphological characteristics have been found to separate these three groups.

DISTRIBUTION (Fig. 46): India: Assam, Dadra & Nagar Haveli, Gujarat, Maharashtra, Uttarakhand, Uttar Pradesh, West Bengal; Myanmar; China: Tibet (doubtful record), Yunnan; Thailand; Laos; Cambodia; Vietnam; Malaysia: Sabah, Sarawak, West Malaysia; Singapore; Brunei; Indonesia: Bali, Java, Kalimantan, Lombok, Nias, Siberut, Sumatra, Sumba, Sumbawa, Timor; Solomon Isls. (doubtful record).

The specimens recorded from Tibet were donated by the insect dealer Jingke Li from Laos (JÄCH et al. 2012). The credibility of locality data of material distributed by Li has already been

regarded as doubtful by JÁKL & BEZDĚK (2016: 17) and SHAVERDO et al. (2021: 194). They stated that specimens allegedly collected in China originate in fact from Laos or Thailand.

The data of the single specimen from the Solomon Islands are here regarded as doubtful as well, because there are no confirmed records for this species east of Timor (Indonesia).

Records from India (Andaman and Nicobar Islands, Andhra Pradesh, Delhi, Goa, Manipur, Rajasthan, Sikkim and Tamil Nadu, and some other Indian states) need confirmation. In many cases, specimens have probably been incorrectly identified and may well belong to other species of the *H. fabricii* group. For instance, PRABHAKARAN & KAKKASSERY (2018) recorded *H. fabricii* from Kerala, but a closer examination revealed that the specimen belongs to *H. ricinus* (P. Prabhakaran, pers. comm.).

2. *Hydaticus loeffleri* WEWALKA, 1979 stat.n.

Hydaticus fabricii: WEWALKA 1972: 116 ff. (partim).

Hydaticus fabricii loeffleri WEWALKA 1979: 123; NILSSON 2001: 101; NILSSON & HÁJEK 2022a: 96.

TYPE LOCALITY: Malaysia, Sabah, Mt. Kinabalu.

TYPE MATERIAL: **Holotype** ♂ (NMW): “Nord-Borneo [northern Borneo] Kinabalu III.1969” [printed white label] \ “*Hydaticus fabricii* M.L. det. Wewalka 70” [handwritten white label] \ “HOLOTYPUS *Hydaticus fabricii* Mac Leay loeffleri n.ssp. det Wewalka 77” [handwritten red label]. **Paratypes**: 10 exs. from the Kinabalu area (see WEWALKA 1979).

ADDITIONAL MATERIAL EXAMINED:

MALAYSIA, Sabah: 2 ♂♂, 1 ♀: Tambunan, 29.–30.III.1984, leg. G. Hangay (CGW, HNHM); 4 ♂♂, 4 ♀♀: Crocker Range, Tambunan, 6.VI.2003, leg. J. Šťastný (CGW, CJS); 2 exs.: Kinabatangan, at light, 22.VIII.2005, leg. W. Mey & G. Ebert (MNB); 1 ex.: Danum Valley, Sungai Palum Tambun, at light, 15.–17.VIII.2005, leg. W. Mey & G. Ebert (MNB); 2 ♂♂: Tawau Hills, 4°24'53"N 117°53'15"E, 23.–27.XI.2006, leg. J. Deckert (MNB); 2 ♂♂: Poring Hot Springs, 26.V.1999, leg. J. Bačovský (NMP); 1 ♂: Crocker Range NP, NW Keningau, 900–1200 m, at light, 16.XI.1996, leg. D. Grimm (SMNS).

MEASUREMENTS: TL: 9.6–10.8 mm; TL-H: 9.0–10.2 mm; MW: 5.3–5.9 mm.

AFFINITIES: *Hydaticus loeffleri* resembles *H. fabricii* and many other species of the *H. fabricii* group externally and can only be separated by the median lobe (Fig. 2), which, in lateral view, is slimmer in the apical third, and the tip is more distinctly curved than in *H. fabricii*. The distance from the tip to the lateral lobes (see arrow in Fig. 2a) is quite long (ca. 37 % of total length). The median lobe of *H. confusus* (Fig. 3) is also slender in lateral view, but its tip is less distinctly curved.

COMMENTS: The differences in the male genitalia of *H. loeffleri* and *H. fabricii* are constant, and their distribution areas are overlapping. Therefore, *H. loeffleri* is here elevated to species rank. The median lobe of *H. fabricii* depicted by WEWALKA (1972: fig. 2) in fact represents *H. loeffleri*.

DISTRIBUTION (Fig. 46): Malaysia: Sabah.

3. *Hydaticus confusus* BOHEMAN, 1858 stat.n.

Hydaticus confusus BOHEMAN 1858: 21.

Hydaticus fabricii: SHARP 1882: 663 (partim); RÉGIMBART 1899: 324 (partim); ZIMMERMANN 1920: 220 (partim); SATŌ 1965: 126; GUÉORGUEV 1967: 474 (partim).

Hydaticus leander: BAER 1886: 104 (partim).

Hydaticus fabricii confusus: WEWALKA 1979: 124; NILSSON 2001: 101; FREITAG & PANGANTHON 2010: 150; FREITAG et al. 2016: 184; NILSSON & HÁJEK 2022a: 96.

Prodicus fabricii: MILLER et al. 2009: 596 ff. (partim).

TYPE LOCALITY: Philippines, Manila.

TYPE MATERIAL: **Lectotype** ♂, designated by WEWALKA (1979) (NHRS): “Manilla” [handwritten white label] \ “157 76” [partly handwritten red label] \ “LECTOTYPUS *Hydaticus fabricii* MacLeay ssp. confusus Boh. det. Wewalka 77” [partly handwritten red label] \ “6965 E91” [printed blue label] \ “NHRS-LKGB 000027568” [printed white label]. **Paralectotype** ♀ (NHRS): same label data as lectotype (see WEWALKA 1979).

ADDITIONAL MATERIAL EXAMINED:

- PHILIPPINES: Luzon: 2 exs.: “Luzon, Ch. Semper” (NMHN-CO); 1 ♂, 2 ♀ ♀: Cagayan, Gonzaga, Pateng, 11.IV.2005, leg. C.V. Pangantihon (CGW, CHZ); 3 exs.: Ifugao Prov., Banaue, 2.IV.1988, leg. K. Martin (NMW); 1 ♂, 1 ♀: Ifugao Prov., Banaue, 20.II.2000, leg. O. Šafránek (CJS); 1 ♂, 1 ♀: Benguet Prov., W Baguio, Asin Hot Springs, 17.II.1999, leg. S. Schödl (NMW); 1 ♀: Mountain Prov., Chico River, Gonogon, 1100 m, 21.II.1999, leg. F. Seyfert (CGW); 1 ex.: Laguna Prov., Luisiana, 24.XI.1992, leg. M.A. Jäch (13) (NMW); 1 ♀: Laguna Prov., Los Baños, Mt. Makiling, mud spring, 13.–14.I.1999, leg. H. Zettel (CHZ); 1 ♂: Rizal, Montalban, 2.I.1916, collector unknown (CGW); 5 ♂ ♂, 2 ♀ ♀: Zambales (CGW, IRSNB); 1 ♀: Cavite, Calabarzon, Palay NP, Mt. Palay, small creek, 16.IV.1993, leg. J. Mendoza (Balke 5450) (ZSM); 2 ♂ ♂, 1 ♀: Camarines Sur, Lupi, Sooc, 27.–30.IV.2009, leg. C.V. Pangantihon (CHZ); 1 ♂, 1 ♀: Camarines Sur, Lupi, Sooc, 100 m, at light, 22.–27.II.2008, leg. H. Zettel (CHZ).
- Mindoro: 2 exs.: E Puerto Galera, Sabang, Balaitigi, 13. & 19.XI.1992, leg. M.A. Jäch (1, 7) (NMW); 2 exs.: 4 km SE Puerto Galera, 14.XI.1992, leg. M.A. Jäch (4) (NMW); 1 ex.: 10 km W Puerto Galera, 24.–25.XI.1992, leg. H. Schillhammer (12) (NMW); 1 ♂, 2 ♀ ♀: Victoria, Malayas River (Lake Naujan tributary), littoral gravel pool, 13°9'13"N 121°18'35"E [data corrected], 10 m, 22.II.2010, leg. H. Freitag (308c)M (1 ♀, Balke 4024) (ADMU); 1 ♂, 1 ♀: Baco, residual pools of small river, 13°21'49"N 121°5'30"E, ca. 25 m, 24.VIII.2014, leg. H. Freitag, C.V. Pangantihon & A. Baylon (353e1)M (ADMU); 1 ♂, 1 ♀: Baco, small Lantuyan River tributary, ca. 13°16'N 121°3'E, ca. 450 m, 2.IV.2019, leg. H. Freitag (313b)M (ADMU); 1 ♀: Puerto Galera, Calsapa, lower Bisaan River, pool with sand bottom and algae, ca. 13°25'0"N 120°58'23"E, ca. 30 m, 6.VII.2014, leg. H. Freitag (339b)M (ADMU); 1 ♂: Roxas, San Vicente, Taugad River tributary, upper Taugad Daka River, 12°38'0"N 121°19'15"E, 700 m, 8.II.2016, leg. H. Freitag (TDR 4)M (ADMU); 1 ♀: Roxas, San Vicente, Hinundungan River, Sitio Quirao, 12°36'23"N 121°23'29"E, ca. 120 m, 28.XI.2017, leg. H. Freitag (HR 1)M (ADMU); 4 ♂ ♂, 5 ♀ ♀: Bulalacao, Bagonsikat, Paluguan River, pool with lime sand bottom and leaves, 12°21'22"N 121°17'3"E, ca. 100 m, 29.XII.1994, leg. J. Mendoza (361e & p)M (ADMU).
- Sibuyan: 30 exs.: España, 1985, collector unknown (CGW, CHF, CJS, NMW, SMNS).
- Masbate: 1 ♂: Uson, Del Carmen, 5.–6.VI.2009, leg. C.V. Pangantihon (CHZ).
- Samar: 2 exs.: San Mateo, Borongan, 40 m, 26.IV.1997, leg. W. Mey & W. Speidel (MNB).
- Panay: 11 exs.: Antique Prov., 50 km NE San Jose, 20.III.1994, leg. S. Schödl (6) & H. Zettel (43) (NMW); 1 ex.: Antique Prov., San Remigio, 50 km N San Jose, 20.III.1994, leg. H. Zettel (44) (NMW); 5 ♂ ♂, 1 ♀: Antique Prov., Pandan, Sta. Cruz, Sapa Suba, 11°45'43"N 122°5'54"E, 23.II.2014, leg. C.V. Pangantihon (602b)M (ADMU); 5 exs.: Ilo-Ilo Prov., 10 km N Igbarass, ca. 400 m, 22.III.1994, leg. S. Schödl (8) (CGW, NMW); 2 exs.: Sebaste, 19.–23.I.1994, leg. M. Graindl & F. Seyfert (8) (NMW); 1 ex.: Libertad, 21.I.1994, leg. M. Graindl & F. Seyfert (11) (NMW); 1 ex.: 8 km E Bontol, 200 m, 10.–11.XII.1990, leg. BOLM (NHMB).
- Negros: 10 exs.: Caliban River, SE Murcia, ca. 250 m, 18.III.1994, leg. S. Schödl (5) (CGW, NMW); 1 ex.: SE Murcia, Caliban River, ca. 200 m, 18.III.1994, leg. H. Zettel (41) (NMW); 6 exs.: Mt. Kanlaon, Mambukal, ca. 900 m, 15.–16.III.1994, leg. H. Zettel (39a) (CGW, NMW); 6 exs.: Mambukal, Seven Falls, ca. 900 m, 16.III.1994, leg. S. Schödl (2) (CGW, NMW); 7 exs.: Lizares, W Bacolod, Bago River, ca. 500 m, 17.III.1994, leg. S. Schödl (4) (NMW); 1 ♀: Lake Balinsasayao – Lake Danao, Sibulan, spring, marsh puddles, 30.X.2004, leg. C.V. Pangantihon (CHZ).
- Cebu: 1 ♂, 3 ♀ ♀: Sogod, Bagatayam River, 10°45'48.2"N 123°59'31.5"E, 30 m, 8.XI.1989, leg. J. Mendoza (M601) (ADMU).
- Bohol: 1 ♀: “Philippines, Bohol, leg. C. Semper” (NMHN-CO).
- Camiguin: 1 ♀: Agoho, 26.II.2007, leg. A. Lukeneder (NMW); 2 ♂ ♂, 2 ♀ ♀: W Mambajao, Katibawasan Falls, 350–400 m, 13.–15.III.2010, leg. H. Zettel & C.V. Pangantihon (CHZ).
- Busuanga: 1 ♀: Coron, Tagumpay, bridge, 1 km E of road junction to Borac and Marcilla, pool with leaf litter in small lowland river, ca. 50 m, 12°1'0"N 120°17'14"E, 21.XII.2019, leg. H. Freitag (171b)M (ADMU).
- Palawan: 1 ex.: Cabayugan, degraded rainforest, 150 m, 2.XII.1995, leg. J. Kodada & B. Rigová (NMW); 3 exs.: Ulangan River, 18 km NE San Rafael, 6.XII.1995, leg. J. Kodada & B. Rigová (NMW); 1 ex.: Tarabanan River, ca. 13 km NE San Rafael, ca. 30 m, 7.XII.1995, leg. J. Kodada & B. Rigová (NMW); 1 ♀: Puerto Princesa, Conception, Tarabanan River, residual pools, 10°0'31"N 119°1'10"E, 10 m, 30.IV.1995, leg. H. Freitag (16)M (NMW); 1 ♀: Puerto Princesa, SSW Martapi, Cabayugan River, shallow turbid pond with muddy bottom and leaf litter between limestones, 10°9'23"N 118°53'20"E, 19.VIII.2001, leg. H. Freitag (LSP 1e)M (ADMU);

1 ex.: 10 km S Brooke's Point, Caingaran River, 1.IV.1994, leg. H. Zettel (56) (NMW); 5 exs.: Brooke's Point, Mate, 31.III.1994, leg. H. Zettel (54) (CGW, NMW); 1 ♀: Brooke's Point, Salogón, S Sitio Tagbinacao, small temporary creek, 8°43'49"N 117°42'27"E, 85 m, 24.II.2020, leg. C. Pangantihon (149)M (Balke 3701) (ZSM). Mindanao: 4 ♂♂: Lake Sebu area, bank of small stream, 3.XII.1993, leg. N. Nieser (NML).

MEASUREMENTS: TL: 8.5–10.3 mm; TL-H: 7.9–9.6 mm; MW: 4.6–5.6 mm.

AFFINITIES: *Hydaticus confusus* resembles *H. fabricii* and many other species of the *H. fabricii* group in all external characters and can only be separated by the male genitalia. In lateral view, the median lobe (Fig. 3) is slimmer in the apical third, and the apical plate with the tuft of setae is distinctly shorter than in *H. fabricii*. The distance from the tip to the lateral lobes (see arrow in Fig. 3a) is quite long (ca. 36 % of total length). The median lobe is very similar to that of *H. loeffleri* (Fig. 2), which is also slender in lateral view but its tip is more distinctly curved.

COMMENTS: Mitochondrial cox1 sequence data suggest that *H. confusus* is a distinct species (M. Balke, pers. comm.).

MILLER et al. (2009) sequenced a specimen of "*Prodaticus fabricii*" from the Philippines, which obviously represents *H. confusus*. The slim apex of the median lobe depicted by MILLER et al. (2009: fig. 19) corroborates this assumption.

DISTRIBUTION (Fig. 46): Philippines: Bohol, Boracay, Busuanga, Camiguin, Cebu, Luzon, Masbate, Mindanao, Mindoro, Negros, Palawan, Panay, Samar, Sibuyan.

The record from Romblon in FREITAG et al. (2016) refers to specimens from Sibuyan Island; no records from Romblon Island are known so far.

4. *Hydaticus geiseri* sp.n.

TYPE LOCALITY: Vietnam, Central Highlands Region, Lam Dong Prov., Lang Bian.

TYPE MATERIAL: **Holotype** ♂ (NMW): "S-VIETNAM 17.–21.4. 12 km N Dalat [Lam Dong Prov.] 1995 Lang Bian" \ "12°03'N 108°27'E 1580–1750 m P. Pacholatko & L. Dembicky" [printed white labels] \ "HOLOTYPUS *Hydaticus geiseri* sp.n. Wewalka 2022" [printed red label]. **Paratypes**: 16 ♂♂, 15 ♀♀: same locality data as holotype (CGW, NMW); 13 ♂♂, 13 ♀♀: "S-VIETNAM 40 km NW An Khe Buon Luoi [Gia Lai Prov.], 620–750 m" \ "14°10'N 108°30'E 28.3.–12.4.1995 Pacholatko & Dembicky" [printed white labels] (CGW, NMW); 1 ♂, 1 ♀: "S-VIETNAM [Lam Dong Prov.] 28.–30.4. 12 km N Dalat 1994 Lang Bian Pacholatko & Dembicky" [printed white label] (NMW); 1 ♂: "S-VIETNAM 15.4.1995 16 km N Dalat – Ankroet 1400 m [Lam Dong Prov.] 12°5'N 108°24'E, P. Pacholatko & L. Dembicky" [printed white label] (NMW); 1 ♂, 1 ♀: "VIET NAM, Lam Dong Prov. Da Lat. No. 285 14.X.1988 leg. Mahunka S. & Vásárheylí T." [printed white label] (HNHM); 2 ♂♂, 3 ♀♀: "LAOS-NE, Xieng Khouang prov., 19°37'–[3]8'N 103°20'E, 30 km NE Phongsavan, Ban Na Lam → Phou Sane Mts., 1300–1500 m, 10–30.v.2009, M. Brancucci leg." \ "NHMB Basel, NMPC Prague Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubán" [printed white labels] (CGW, NHMB); 2 ♀♀: "LAOS-NE, Xieng Khouang prov., ~19°37'–[3]8'N 103°20'E, Phongsavan (30 km NE): Phou Sane Mts., ~1400–1500 m, 10–30.v.2009, Z. Kraus leg." \ "NHMB Basel, NMPC Prague Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubán" [printed white labels] (NHMB); 1 ♀: "LAOS-NE, Xieng Khouang prov., 19°38.2'N 103°20.2'E, Phongsavan (30 km NE): PHOU SANE Mt., 1420 m, 10–30.v.2009, D. Hauck leg." \ "NHMB Basel, NMPC Prague Laos 2009 Expedition: M. Brancucci, M. Geiser, Z. Kraus, D. Hauck, V. Kubán" [printed white labels] (NHMB); 1 ♂: "LAOS, Champasak Prov., 15°10'–12'N/106°7'–8'E, Dong Hua Xao NBCA [National Biodiversity Conservation Area], Tad Fane env., (10–14 km W Pagsong), 900–1000 m, 2–4.vi.2010, M. Geiser & D. Hauck leg." \ "coffee plantations, secondary forest and small leftovers of primary forest at a canyon, hand collecting, sweeping, beating, collecting at flowering trees and small streams" \ "NHMB Basel, Laos 2010 Expedition: M. Brancucci, M. Geiser, D. Hauck" [printed white labels] (NHMB); 2 ♂♂: "LAOS, Champasak Prov., 15°06'N/106°35'–38'E, Ban Nam Touad env., (near Xe Katamtok), 500–800 m, 8–10.vi.2010, M. Geiser & D. Hauck leg." \ "village, agricultural lands, old secondary and degraded primary forest; hand collecting, beating, light trapping" \ "NHMB Basel, Laos 2010 Expedition, M. Brancucci, M. Geiser, D. Hauck" [printed white labels] (NHMB); 1 ♂, 1 ♀: "LAOS, Champasak Prov., 15°02'N/106°31'–34'E, Ban Nong Panouan env., 770–800 m, 10–17.vi.2010 M. Geiser & D. Hauck leg." \ "coffee plantations, secondary and degraded primary forest; hand collecting, sweeping, beating, collecting at flowering trees, in small water puddles, light trapping" \ "NHMB Basel,

Laos 2010 Expedition, M. Brancucci, M. Geiser, D. Hauck" [printed white labels] (NHMB); 1 ♂: "LAOS, CHAMPASAK prov. Bolavens [Bolaven] plateau ca. 3 km SE Ban Lak 40 coffee plantation/forest (at light) 15°09.8'N, 106°09.5'E, 1070 m, Jiří Hájek leg. 9.v.2010" [printed white label] (NMP); 1 ♂: "LAOS, Champasak Prov., Ban Nong Luang (village), 12 km S Pakxong [Paksong], 15°6'N 106°12'E" \ "800 m, at light, No. 39, 6.IV.1998, leg. O. Merkl & G. Csorba" [printed white label] (CHF); 1 ♂: "LAOS, Champasak prov., Paksong env., 6.12.2011, Tad Yuang water fall, 1125 m a.s.l., J. Štátný lgt." [printed white label] (CJS); 6 ♂♂, 2 ♀♀: "LAOS, ATTAPEU prov. Annam Highlands Mts. Dong Amphan NBCA [National Biodiversity Conservation Area], ca. 1160 m NONG FA (crater lake), env. 15°05.9'N, 107°25.6'E Jiří Hájek leg. 30.iv.–6.v.2010" [printed white labels] (CGW, NMP); 1 ♂, 1 ♀: "LAOS south, Attapeu prov., Bolaven Plateau, 18–30.IV.1999, 15 km SE of Ban Houaykong, NONG LOM (lake) env., N 15°02', E 106°35', alt. 800 m, E. Jendek & O. Šauša leg." [printed white label] (CLH); 15 ♂♂, 8 ♀♀: "LAOS, Attapeu prov., Thong Kai Ohk, Ban Kachung (Mai) env., 1200–1450 m, 15°01–02'N/107°26–27'E, 10.–24.VI.2011" \ "NHMB Basel, Laos 2011 Expedition: M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phantala & E. Vongphachan" [printed white labels] (CGW, NHMB); 103 ♂♂, 92 ♀♀: "LAOS, Attapeu prov., Ban Vang Tat Noi env., 900 m, 15°03–04'N/107°24'E, 10.–25.VI.2011" \ "NHMB Basel, Laos 2011 Expedition: M. Brancucci, M. Geiser, D. Hauck, Z. Kraus, A. Phantala & E. Vongphachan" [printed white labels] (CGW, NHMB, NMW); 1 ♂, 1 ♀: "LAOS, SEKONG prov. ca. 51 km N Sekong (at light) HO CHI MINH trail, ca. 580 m 15°48.1'N, 106°39.4'E, Jiří Hájek leg. 13.–15.v.2010" [printed white label] (NMP). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus oblong-oval, broadest almost in middle, quite convex. TL: 10.1–11.8 mm; TL-H: 9.6–11.1 mm; MW: 5.5–6.4 mm. Holotype: TL: 10.9 mm; TL-H: 10.3 mm; MW: 5.8 mm.

COLOURATION (Fig. 40): Head predominantly yellowish-brown, dark brown to black on vertex and narrowly along eyes; sometimes with two black oblique narrow lines near clypeal margin. Pronotum yellowish-brown, narrowly dark brown to black along anterior and posterior margins, sometimes with some small dark brown to black irrorations in middle of posterior margin and with a transverse row of small dark brown to black spots near anterior margin. Scutellum dark brown to black. Elytron yellowish-brown with quite regular dark brown to black irrorations, narrowly dark brown to black along suture and scutellum, lateral of suture and scutellum with a narrow band without irrorations, lateral of this band irrorations condensed to a dark brown to black line; near the three irregular striae lines of coarser punctures there are more or less distinct lines with fewer irrorations; irrorations sparse along base, missing along lateral margin. Ventral side predominantly dark reddish-brown, lateral sides of pronotum and epipleura yellowish-brown. Antennae and anterior legs yellowish-brown, middle legs reddish-brown, hind legs reddish-brown to dark reddish-brown.

STRUCTURES: Clypeus truncate, clypeal margin and lateral margins of pronotum without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex, process distinctly bordered laterally, apex rounded.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additionally with strong punctures in dimples at medial margin near posterior corner and along posterior margin of eyes; with a pair of pits on fronto-clypeal suture; surface without 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 fine microreticulation. Elytron with very fine dense punctation and scattered, slightly stronger punctures; with three irregular striae rows of strong punctures and strong punctures along lateral margin; with fine dense microreticulation. Ventral surface: prosternal process with very fine and dense punctation and scattered stronger punctures, without microreticulation. Metaventricle, metacoxal plates and abdominal ventrites with irregular sparse punctation and dense microreticulation. Metacoxal plates covered with short longitudinal striae and some shallow transverse wrinkles; abdominal ventrites with more or less dense, longitudinal and oblique shallow wrinkles.

MALE: Protibiae, pro- and mesotarsi modified. Protarsomere I with a dense fringe of setae along basal margin. Median lobe as in Fig. 4.

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

AFFINITIES: *Hydaticus geiseri* (Fig. 40) resembles *H. fabricii* in most external characters, but it is distinctly larger, slightly broader in anterior half and slightly more convex; dark brown to black elytral irrorations not condensed along suture, not forming a patch in middle and preapically. *Hydaticus geiseri* resembles *H. incertus* in size and colouration, but it is less broad.

In lateral view, the median lobe of *H. geiseri* is similar to that of *H. fabricii*, but in apical third it is distinctly broader. The distance from the tip to the lateral lobes (see arrow in Fig. 4a) is quite long (ca. 37 % of total length). Its median lobe is also similar to that of *H. rhantoides*, which, in lateral view, is also broad in apical part, but the distance from the tip to the lateral lobes (see arrow in Fig. 7a) is much shorter (ca. 26 % of total length).

HABITAT: Some specimens have been collected in muddy puddles, but most specimens were captured at light traps. The paratypes from Nong Fa (Laos) were found in pools of a small unshaded stream with muddy bottom without submerged vegetation (Fig. 50).

DISTRIBUTION (Fig. 47): Laos; Vietnam (Central Highlands Region).

ETYMOLOGY: This species is dedicated to Dr. Michael Geiser (NHML), who collected some of the paratypes. The epithet is a proper noun in the genitive singular.

5. *Hydaticus vaziranii* WEWALKA, 1979

Hydaticus fabricii: SHARP 1882: 663 (partim); RÉGIMBART 1899: 324 (partim); GUIGNOT 1954b: 201 (partim); GUÉORGUIEV 1967: 475 (partim).

Hydaticus vaziranii WEWALKA 1979: 126; NILSSON 2001: 106; GHOSH 2012: 138; GHOSH & NILSSON 2012: 27; NILSSON & HÁJEK 2022a: 100.

Hydaticus tibetanus SHAVERDO et al. 2012: 77; JÄCH et al. 2012: 67; NILSSON & HÁJEK 2022a: 100, 2022b: 24; **syn.n.**

TYPE LOCALITY: India, Andaman Islands.

TYPE MATERIAL of *H. vaziranii*: **Holotype** ♂ (NHML): “Andamans (Roepstorff) [leg. F.A. de Roepstorff]” [printed cream label] \ “BMNH 1884-15” [printed white label] \ “Holotypus *Hydaticus vaziranii* det. Wewalka 77” [partly handwritten red label]. **Paratypes**: 6 exs.: same label data as holotype (CGW, NHML); 1 ♂: “And Is” (MNHN-CR); 1 ♂: “Süd-Andaman [South Andaman] 22.12.1976 Bimblton, Lichtfang am Bach [at light, near rivulet], leg. [F.] Starmühlner” (CGW).

TYPE MATERIAL of *H. tibetanus*: **Holotype** ♂ (NMW): “CHINA: Tibet Zayu county Xiachayu July 2011 don. Li Jingke” [printed white label] \ “Holotype *Hydaticus tibetanus* sp.n. des. Shaverdo, Wewalka & Li 2012” [printed red label]. **Paratype** ♀: same locality data as holotype (NMW).

ADDITIONAL MATERIAL EXAMINED:

INDIA: Andaman and Nicobar Islands: 1 ex.: “Andaman Islands, Sharp coll. 1905-313” (NHML); 6 exs.: “Nicobars (Roepstorff) [leg. F.A. de Roepstorff]” (NHML, ZSM).

THAILAND: Bueng Kan Prov.: 4 exs.: Bueng Khong Long, stn. 204, 190 m, 27.XII.2021, leg. R. Okada (CGW, CRO); 3 exs.: Seka Distr., Ban Tong, stn. 206, 190 m, 28.XII.2020, leg. R. Okada (CGW).

Sakon Nakhon Prov.: 1 ex.: Charoen Sin Distr., Thung Kae, Huai Nok Khao, stn. 207, 190 m, 28.XII.2021, leg. R. Okada (CGW).

Phetchabun Prov.: 1 ♂: Lom Kao Distr., Wang Ban, stn. 295, 190 m, 19.IV.2022, leg. R. Okada (CRO).

Khon Kaen Prov.: 1 ♂: Khon Kaen, at light, 1.IX.1980, leg. S. Saowakontha (CGW).

Mukdahan Prov.: 8 exs.: Phu Pha Thoep NP, small pools in dry stream bed, 31.XII.1999, leg. P. Mazzoldi (CGW, CPM).

Kanchanaburi Prov.: 2 exs.: Sangkhlaburi, pond at road to Ban Sane Pang (Karen village), 26.XII.1996, leg. P. Mazzoldi (CPM).

Nakhon Ratchasima Prov.: 3 exs.: Corat [Korat], II.1991, collector unknown (SMNS).

Ubon Ratchathani Prov.: 2 ♂♂: Det Udong Distr., Klang, stn. 283, 160 m, 20.III.2022, leg. R. Okada (CRO).

Chonburi Prov.: 1 ex.: Banbueng Distr., Khlong Kiu, Nong Nam Khico, stn. 7, 80 m, 22.VII.2018, leg. R. Okada (CGW).

Chumphon Prov.: 5 exs.: Pha To env., 9°48'N 98°47'E, I.III.–14.IV.1996, leg. K. Majer (NHMB).

Ranong Prov.: 1 ♂: Ban Na env., 9°34'N 98°42'E, 22.–26.III.1996, leg. K. Majer (NHMB).

Phang Nga Prov.: 27 exs.: Khao Sok Rainforest, 38 km E Takua Pa, 21.XI.1996, leg. J. Rejssek (CGW, CJS).

Trang Prov.: 1 ex.: Na Yong Distr., Na Khao Sia, stn. 218, 30 m, 7.II.2021, leg. R. Okada (CGW).

Songkhla Prov.: 1 ♂: Ban Ko Muang, 13 km W Hat Yai, 50 m, 6°59'N 100°22'E, 10.V.1993, leg. H. Malicky (NMW).

CAMBODIA: Stung Treng Prov.: 1 ♂: Stung Treng, 13°32'N 105°58'E, at light, 18.–22.IV.1999, leg. J. Mlíkovský (NMP).

LAOS: Vientiane Prov.: 29 exs.: Lao Pako env., 55 km NE Vientiane, 1.–4.V.2004, leg. F. & L. Kantner (CGW, NHMB); 3 ♂♂: same label data, but leg. J. Bezděk (CJS, NMP); 4 exs.: Phou Khao Khouay, near strongly disturbed primary rainforest, at light, 18°20.369'N 102°48.523'E, 700–800 m, 25.–30.V.2008, leg. A. Solodovnikov & J. Pedersen (ZMUC); 1 ♂: Phou Khao Khouay NP, Tad Leuk, 18°23'N 103°4'E, 150–200 m, at light, 15.–21.V.2001, leg. E. Jendek & O. Šauša (CAS).

Bolikhamsai Prov.: 2 exs.: Pakkading, ca. 300 m, 18°20'N 104°0'E, 26.–27.V.2003, leg. M. Brancucci (CGW, NHMB); 1 ♂: same label data, but leg. P. Pacholátko (NHMB); 5 exs.: 70 km NEE Vientiane, 150 m, 18°16'N 103°11'E, 27.–30.IV.1997, leg. V. Kubáň (CGW, NHMB); 2 ♂♂, 1 ♀: Nape – Kae Wan Pass, 18°22.3'N 105°9.1'E, 600 m, 18.IV.–1.V.1998, leg. E. Jendek & O. Šauša (NMP); 2 ♂♂: Phou Khao Khouay NBCA [National Biodiversity Conservation Area], Tad Leuk Waterfall, 280 m, 11.–12.IV.1998, leg. O. Merkl & G. Csorba (No. 50) (CHF).

Khammouang Prov.: 11 exs.: Ban Khoun Ngeun, ca. 200 m, 18°7'N 104°29'E, 24.–29.IV.2001, 19.–31.V.2001, leg. V. Kubáň & P. Pacholátko (CGW, NHMB); 3 ♂♂, 1 ♀: Nakai env., ca. 70 km NNE Muang Khammouang 17°43'N 105°9'E, 500–600 m, 7.–25.V.2002, leg. M. Štrba (CGW, CLH); 11 ♂♂, 2 ♀♀: Nakai env., 17°43'N 105°9'E, 500–600 m, 22.V.–8.VI.2001, leg. E. Jendek & O. Šauša (CGW, NMP).

Savannakhet Prov.: 8 exs.: 10 km E Savannakhet, Dong Natad Forest, 4.XII.2011, leg. J. Šřastný (CGW, CJS).

Sekong Prov.: 3 ♂♂, 4 ♀♀: ca. 12 km S Sekong, Tad Faek Waterfalls, 15°14.7'N 106°45.1'E, ca. 120 m, at light, 8.+12.V.2010, leg. J. Hájek (NMP).

LAOS or VIETNAM (without precise locality data): 2 ♂♂, 1 ♀: “Laos Tonkin Coll. Kraatz” (SDEI).

VIETNAM: 1 ♂: “Tonkin” [North Vietnam] (OLM).

Central Highlands Region: 1 ♂: 120 km NNE Ho Chi Minh City, Cat Tien vill. env., 3.–15.VII.1995, leg. A. Napolov (NHMB).

MEASUREMENTS: TL: 8.6–10.3 mm; TL-H: 8.0–9.5 mm; MW: 4.9–5.5 mm.

AFFINITIES: *Hydaticus vaziranii* resembles *H. fabricii* in all external characters, but it can be distinguished by the shape of the median lobe. In lateral view, the median lobe is slimmer in the apical part, and the distance from the tip to the lateral lobes (see arrow in Fig. 5a) (ca. 27 % of total length), as well as the apical plate with the tuft of setae are distinctly shorter. The median lobe is also similar to that of *H. rivanolis* (Fig. 6), but in lateral view, the apical part is slenderer and less distinctly bent.

SYNONYMY: The holotype of *H. tibetanus* agrees in all significant external and aedeagal features with *H. vaziranii*.

DISTRIBUTION (Fig. 47): India: Andaman Isls., Nicobar Isls.; Thailand (first record); Laos (first record); Cambodia (first record); Vietnam (first record).

The record from Tibet (type locality of *H. tibetanus*) must be regarded as most doubtful. For more details, see above, under *H. fabricii*.

6. *Hydaticus rivanolis* WEWALKA, 1979

Hydaticus fabricii: SHARP 1882: 663 (partim); RÉGIMBART 1892: 993 (partim), 1899: 324 (partim); GUIGNOT 1954b: 201 (partim), 1956: 55 (partim); GUÉORGUEV 1967: 475 (partim).

Hydaticus fabricii [incorrect subsequent spelling]: WATTS 1978: 146 (partim), 1985: 26 (partim); LARSON 1993: 55 (partim) WATTS 2002: 43 (partim).

Hydaticus rivanolis WEWALKA 1979: 125; GUÉORGUIEV & ROCCHI 1993: 162; NILSSON 2001: 105; NILSSON & HÁJEK 2022a: 99.

Prodaticus rivanolis: MILLER et al. 2009: 597 ff.

TYPE LOCALITY: Indonesia, South Sulawesi, Bantimurung.

TYPE MATERIAL: **Holotype** ♂ (MNB): “S. Celebes. [South Sulawesi] Bantimurung. [Bantimurung] [leg.] O. Ribbe 1882” [printed white label with black frame] \ “Holotypus *Hydaticus rivanolis* det. Wewalka 78” [partly handwritten red label]”. **Paratypes**: 10 exs. from Sulawesi (see WEWALKA 1979).

ADDITIONAL MATERIAL EXAMINED:

INDONESIA: North Sulawesi: 7 exs.: 1 km W Toraut, Dumoga Bone NP, 0°34'17"N 123°54'19"E, 1.–2.II.2006, 200–300 m, UWP + riverside, leg. A. Skale (CAS); 3 exs.: 5 km NE Tabulo, Manangga vill., 0°32'75"N 122°10'10"E, 50–200 m, leg. A. Skale (013) (1 ♂: Balke 3713) (CAS, ZSM); 1 ex.: Dumoga-Bone NP, new base camp site, 200 m, 28.I.1985, leg. J.D. Holloway, R. Ent. Soc. Lond., Project Wallace (NHML).

Central Sulawesi: 4 exs.: 47 km SE Palu, 1°11'S 120°8'E, leg. J. Haft (5) (CGW, NMW); 1 ex.: ca. 20 km NE Palu, ca. 3 km W Tawaeli, 0°43'56"S 119°55'30"E, river valley, 3.III.2009, leg. A. Skale (020) (Balke 3707) (CAS, ZSM); 1 ♀: Palu – Moutong, swamp, 0°7.814'S 120°2.193'E, 60 m, 2.IX.2011, leg. M. Balke (SUL 015) (Balke 4965) (ZSM); 9 ♂♂, 16 ♀♀: Moutong, swampy pool, 0°30.985'S 121°16.860'E, 43 m, 3.IX.2011, leg. M. Balke (SUL 017) (2 ♀♀: Balke 4809, 4810) (CGW, ZSM); 1 ♂: Palu – Moutong, waterhole near stream, 0°34.575'S 120°2.567'E, 80 m, 2.IX.2011, leg. M. Balke (SUL 014) (Balke 4954) (ZSM); 14 exs.: Poso Lake, Pendolo env., 9.X.2001, leg. J. Štátný (CGW, CJS); 1 ♀: Poso Lake, Tonusu, near Tentena, at light, 21.–26.IV.1994, leg. R. Gerstmeier, M. Hiermeier & S. Romig (CLH); 1 ♀: Poso Distr., Sawidago, 19.IV.–3.V.1994, leg. M. Hiermeier (CLH); 49 exs.: Morowali, Ranu River area, 27.I.–20.IV.1980, leg. M.J.D. Brendell (CGW, NHML).

West Sulawesi: 1 ♂: 7 km E Polewali, 3°25.163'S 119°24.362'E, 6.IV.2012, leg. P. Schüle & N. Rusdi (Balke 5824) (ZSM).

South Sulawesi: 1 ex.: Bantimurung, 28.IV.1992, leg. M.A. Jäch (25) (NMW); 1 ex.: Malino, Takapala Waterfall, 30.IV.1992, leg. S. Schödl (29) (NMW); 2 exs.: N of Bulukumba, 2.V.1992, leg. S. Schödl (35) (NMW); 1 ex.: Bantaeng – Bulukumba, 2.V.1992, leg. S. Schödl (36) (NMW); 7 exs.: 8 km W Mamasa, 2°56'13"S 119°20'32"E, 850 m, 18.–21.VII.1999, leg. BOLM (SMNS); 1 ♂, 1 ♀: 4 km W Mamasa, small pools with plants, 1.X.2001, leg. J. Štátný (ZSM); 1 ♂, 2 ♀♀: Maros area, 5°2.352'S 119°44.343'E, 310 m, 29.X.2011, leg. M. Balke (SUL 022) (1 ♂, 1 ♀: Balke 4985, 4986) (ZSM); 2 ♂♂, 1 ♀: 20 km NE Sabbang, 2°28'56"S 120°12'00"E, 400 m, 5.–7.VII.2001, leg. BOLM (SMNS).

Togian Isls.: 1 ♂, 2 ♀♀: Malenge Isl., pools in primary forest, 13.–15.X.2001, leg. J. Štátný (CJS). 1 ♂: Kadidiri Isl., 0°21.351'S 121°50.959'E, 30 m, 28.VIII.2011, leg. M. Balke (Balke 4844) (ZSM).

Buru: 1 ♀: “Buru [ex coll.] Deyrolle” (IRSNB).

Seram: 10 exs.: Wahi, 12.II.1989, leg. S. Schödl (10) & M.A. Jäch (12) (CGW, NMW); 1 ex.: Pasohari [Pasahari] – Kaloha, 0–300 m, 13.II.1989, leg. S. Schödl (NMW); 1 ex.: Manusela NP, Wae Mual Plain, 25.VII.–9.IX.1987, lowland, alluvial forest, leg. O. Raleigh & M.J.D. Brendell (NHML).

Tanimbar Isls.: 2 ♂♂, 4 ♀♀: Yamdena Isl., Lorulun env., 20 km NE Saumlaki, 150 m, 25.XI.–24.XII.2006, leg. S. Jäckl (CGW, CLH).

West Papua: Manokwari Distr.: 1 ex.: 15 km NE Ransiki, Oransbari, Kali Oransbari, 1°20.21'S 134°13.42'E, 2.III.2007, leg. A. Weigel (CAS); 1 ex.: ca. 20 km W Manokwari, Prafi, Kali Prafi, 80 m, 0°54.40'S 133°55.14"E, 8.III.2007, leg. A. Skale (CAS).

Papua: Nabire Distr.: 12 exs.: Wandamen Peninsula, Yeretua, 10 m, 17.–20.VIII.1998, leg. M. Balke (WA 18) (CGW; NMW); 2 exs.: Kali Bobo, 100 m, IX.1991, leg. M. Balke & L. Hendrich (IR 91#10) (CLH, NMW); 1 ex.: Nabire – Ilaga, km 30, Pemukiman, 200 m, 26.VIII.1996, leg. M. Balke (IR 96#3) (NMW); 32 exs.: Nabire – Ilaga, km 34, 120 m, 23.VII.1991, leg. M. Balke & L. Hendrich (IR 22 & 23) (CLH, NMW); 1 ex.: road Nabire – Ilaga, km 35, Kali Cemara, 100 m, 27.IX.1997, leg. M. Balke (IR 97#5) (NMW); Paniai Distr.: 42 exs.: Enarotali, 1900 m, 29.VII.–4.VIII.1991, leg. M. Balke & L. Hendrich (IR 25) (CGW, CLH, NMW); 1 ex.: road Nabire – Ilaga, km 90, 150 m, 1.IX.1996, leg. M. Balke (IR 96#11) (NMW); Jayawijaya Distr.: 11 exs.: Baliem Valley, Wamena, 1600 m, 31.VII.–6.IX.1990, leg. M. Balke & L. Hendrich (IR 1, IR 6) (CLH, NMW); 13 exs.: Baliem Valley, Wamena, 1700 m, 20.–27.IX.1992, leg. M. Balke (52, 54, 57) (CGW, NMW); 28 exs.: Wamena, pool near runway, 4°6.323'S 138°57.693'E, 1600 m, 18.X.2011, leg. M. Balke (PAP 4) (1 ♂: Balke 5089, 1 ♀: Balke 5088) (CGW, ZSM); 2 ♂♂, 2 ♀♀: Wamena – Jiwika, limestone creek, 3°56.953'S 138°54.375'E, 1620 m, 18.X.2011, leg. M. Balke (PAP 5) (ZSM); Jayapura Distr.: 1 ex.: Sentani, Cyclops Mts., 400 m, 8.–9.VIII.1992, leg. M. Balke (5) (NMW); 9 exs.: Kalibiru vill., 40 m, 11.–13.IV.2009, leg. S. Vashchenko (CGW, CHF); Merauke Distr.: 7 ♂♂, 6 ♀♀: Wasur, pools, 14°42.748'S 141°36.096'E, 20 m, 15.–16.X.2011, leg. M. Balke (PAP 2) (2 ♀♀: Balke 5004, 5005) (CGW, ZSM).

PAPUA NEW GUINEA.: Sandaun Prov.: 1 ♂: Vanimo, III.1975, leg. H. Ohlms (ANIC).

Western Prov.: 1 ♀: Morehead, 8°43'S 141°38'E, 1.V.1971, leg. Balderson & Baker (ANIC).

Western Highlands: 1 ♂, 1 ♀: Mt. Hagen town area, 5°51.491'S 144°20.194'E, 1600 m, 7.XII.2006, leg. M. Balke & A. Kinibel (PAP 130) (Balke 1 ♂: 3118, 1 ♀: 3119) (ZSM).

Morobe Prov.: 3 exs.: Gusap, Markham, valley, ca. 90 miles W Lae, 1,000 ft., 27.–30.I.1965, leg. M.E. Bacchus (CGW); 1 ex.: Garaina, 700 m, 21.III.1998, leg. A. Riedel (NMW); 2 ♂♂, 3 ♀♀: Garaina, 7°51.032'S 147°7.007'E, 720 m, VI.2008, leg. S. Ibalim & G. Sosanika (PNG 216) (ZSM); 14 exs.: Garaina, 7°52.516'S 147°10.427'E, 770 m, VI.2008, leg. S. Ibalim & G. Sosanika (PNG 219) (CGW, ZSM); 41 exs.: Garaina, 7°52.669'S 147°7.196'E, 800 m, 7.VI.2009, leg. S. Ibalim & G. Sosanika (PNG 220) (1 ♂: Balke 3843) (CGW, ZSM); 2 ♂♂, 2 ♀♀: Garaina, 7°53.089'S 147°8.911'E, 780 m, 28.VI.2009, leg. S. Ibalim & G. Sosanika (PNG221) (ZSM); 2 ♂♂, 2 ♀♀: Garaina, 7°50.859'S 147°8.614'E, 770 m, 25.VI.2008, leg. S. Ibalim & G. Sosanika (PNG 222) (ZSM); 7 ♂♂, 8 ♀♀: Garaina, 7°52.287'S 147°6.297'E, 820 m, 24.VI.2008, leg. S. Ibalim & G. Sosanika (PNG 224) (ZSM).

Eastern Highlands: 3 ♂♂: Bena – pass to Goroka Valley, 6°14.567'S 145°29.643'E, 1550 m, 5.IV.2006, leg. M. Balke & K. Sagata (PNG 33) (1 ♂: Balke 1344) (ZSM); 3 ♂♂, 2 ♀♀: Unggai Bena, Bena Bridge, ca. 1400 m, 27.VIII.2005, leg. K. Sagata (WB 136) (ZSM); 5 ♂♂, 6 ♀♀: Bena Bridge, 6°10.781'S 145°26.034'E, ca. 1400 m, 8.XII.2007, leg. K. Sagata (WB 164) (ZSM); 2 ♀♀: Goroko, III.1974, leg. H. Ohlmus (ANIC).

Central Prov.: 4 ♀♀: “N. Guinea Mer., Rigo, Luglio [July], 1889, L. Loria” (IRSNB, MNHN-CO); 2 exs.: SE New Guinea (NHML); 1 ♂: Moregina, 16.VIII.2008, leg. A. Posman (PNG 183) (Balke 3817) (ZSM).

Madang Prov.: 2 ♂♂: Madang env., Nagada, VI.1979, leg. W.G. Ullrich (CLH).

SOLOMON ISLANDS: Ontong Java Atoll: 1 ♂: “Leuanuia” [Luaniua], 27.I.1955, leg. E.S. Brown (CGW).

Guadalcanal: 4 exs.: Tutumu, 15 km E Honiara, stagnant brook, 12.IX.1994, leg. J. Haft (NMW); 1 ♂: Tenaru, 15.I.1956, leg. E.S. Brown (CGW); 1 ♂: Konga, 15.VI.1955, leg. E.S. Brown (CGW); 2 exs.: 2 ♂♂: Ilu, 29.V.1962, leg. P.J.M. Greenslade (CGW).

Malaita: 1 ♂: Sikiana, 4.X.1963, leg. M. McQuillan & P.J.M. Greenslade (NHML).

AUSTRALIA: Western Australia: 2 ♂♂, 1 ♀: East Kimberley, Gibb River Road, King Edward River Crossing, 280 m, 15.VIII.1999, leg. L. Hendrich (10/110) (CLH); 4 ♂♂, 2 ♀♀: East Kimberley, Kalumburu Road, Meelaria Creek, 5 km N Drysdale Crossing, 350 m, 19.VI.1999, leg. L. Hendrich (15/115) (CGW, CLH).

Northern Territory: 1 ♂, 1 ♀: Litchfield NP, Tapletop Swamp, 13°10.489'S 130°44.757'E, ca. 220 m, 21.VIII.2006, leg. L. Hendrich (NT 5) (1 ♂: Balke 1661) (ZSM); 2 ♂♂, 1 ♀: Litchfield NP, creek near Waggi Falls, 13°11.221'S 130°43.327'E, ca. 190 m, 20.VIII.2006, leg. L. Hendrich (NT 4) (ZSM); 3 ♂♂, 2 ♀♀: Anniversary Creek, 12 km S Adelaide River Scenic Route, 13°19.252'S 131°8.271'E, ca. 40 m, 22.VIII.2006, leg. L. Hendrich (NT 7) (CGW, ZSM); 1 ♂, 1 ♀: Kakadu NP, Gungurul Lookout, creek, 13°59.359'S 132°19.904'E, ca. 50 m, 1.XI.1996, leg. L. Hendrich (11) (CLH); 1 ♀: Kakadu NP, Gunlom Waterfall area, 13°26.026'S 132°25.141'E, ca. 70 m, 25.VIII.2006, leg. L. Hendrich (NT 17) (CLH); 3 ♂♂: Kakadu NP, Muriella, 12°51'15"S 132°45'16"E, ca. 40 m, at light, 10.V.2006, leg. M. Berger & A. Dostal (3/06) (CGW); 1 ♂: Katherine Gorge, Butterfly Gorge Walk, 150 m, 4.VII.1999, leg. L. Hendrich (33/133) (CLH); 1 ♂, 1 ♀: creek on track to Umbrawarra Gorge, 13°51.528'S 131°49.216'E, ca. 60 m, 23.VIII.2006, leg. L. Hendrich (NT 11) (CLH); 1 ♂, 1 ♀: East Arnhem Land, Mainoru Stn., 13°57'5.7"S 133°57'52.8"E, 26.XI.1981, leg. A. Walford-Huggins (CLH); 1 ♂: Watarrka NP, near Kathleen Springs, 24°18'S 131°34'E, 620 m, 6.–8.I.2009, leg. S. Jákl (NMP).

Queensland: 1 ♂: Cape Tribulation Road S of ferry station, forest swamp, 16°17.469'S 145°19.122'E, ca. 10 m, 15.IX.2006, leg. L. Hendrich (QLD 35) (Balke 1873) (ZSM); 1 ♂, 1 ♀: 20 km NE Mareeba, Hodzig Road, 16°49.556'S 145°27.211'E, ca. 360 m, 12.XI.2006, leg. L. Hendrich (QLD 28) (1 ♂: Balke 2142) (ZSM); 2 ♂♂, 3 ♀♀: 17 km NE Mareeba, Hodzig Road, 16°51.209'S 145°25.503'E, ca. 360 m, 12.XI.2006, leg. L. Hendrich (QLD 29) (ZSM); 1 ♂: Flying Fish Pt., at light, 17.I.1965, leg. E.C. Dahms (CLH); 6 exs.: 10 km S Tully, S Innisfail, ca. 30 m, 25.I.1993, leg. G. Wewalka (26) (CGW); 1 ♂: Stuart Hwy., Scenic Drive, Robin Falls, creek, 50 m, 7.VII.1999, leg. L. Hendrich (37/137) (CLH); 2 ♂♂, 1 ♀: Stuart Hwy., Scenic Drive, Anniversary Creek near Adelaide River, 50 m, 8.VII.1999, leg. L. Hendrich (38/138) (CLH).

MICRONESIA: 1 ♂: Caroline Isls., Yap, 1905, leg. A. Senft (CGW); 1 ♂: “Ins Yap” \ “[coll.] Godeffroy” (MNHN-CO).

MEASUREMENTS: TL: 8.5–11.0 mm; TL-H: 8.0–10.2 mm; MW: 5.1–6.0 mm.

AFFINITIES: *Hydaticus rivanolis* resembles *H. fabricii* in all external characters, but it can be distinguished by the shape of the median lobe, which, in lateral view, is slimmer in the apical part, the distance from the tip to the lateral lobes (see arrow in Fig. 6a) is much shorter (ca. 28 % of total length), and the apical plate with the tuft of setae is also distinctly shorter. The median lobe is similar to that of *H. vaziranii* (Fig. 5), but in lateral view, the apical part is less slender.

DISTRIBUTION (Fig. 46): Indonesia: Buru, Papua, Seram, Sulawesi, Tanimbar Isls., Togian Isls., West Papua; Papua New Guinea; Solomon Isls.: Ontong Java, Guadalcanal, Malaita; Australia: Northern Territory, Queensland, Western Australia; Micronesia: Yap.

7. *Hydaticus rhantoides* SHARP, 1882

Hydaticus rhantoides SHARP 1882: 664, 1884: 463 (partim); BRANDEN 1884: 102; SHARP 1890: 346 (partim); ATKINSON 1891: 146; HEYDEN 1898: 15; GUIGNOT 1954b: 201; NAKANE 1964: 10; GUÉORGUEV 1967: 477; VAZIRANI 1977b: 80; WEWALKA 1979: 127; YANO et al. 1983: 108; SATŌ 1983: 108; SATŌ & KUISU 1989: 8; ZENG 1989: 5; NAKANE 1990: 29; SATŌ et al. 1994: 277; NILSSON et al. 1995: 368; NILSSON 1995: 73, 2001: 105; MORI & KITAYAMA 2002: 147; HUA 2002: 37; LEE & AHN 2018: 75; NAKAJIMA et al. 2020: 96; ROCCHI & POGGI 2020: 189; NILSSON & HÁJEK 2022a: 99, 2022b: 24.

Hydaticus fabricii: RÉGIMBART 1899: 325 (partim); ZIMMERMANN 1920: 220 (partim); WINKLER 1924: 235 (partim); FENG 1932: 31; FALKENSTRÖM 1936: 236; KAMIYA 1938: 49 (partim); ZAITZEV 1953: 312 (partim); SATŌ 1961: 10, 1965: 126 (partim).

Hydaticus leander: FENG 1932: 32 (partim).

? *Hydaticus fengi* FALKENSTRÖM 1936: 236; WEWALKA 1979: 127 (syn.?).

Prodatiscus rhantoides: MILLER et al. 2009: 597 ff.

TYPE LOCALITY: Japan (no other details known).

TYPE MATERIAL: **Lectotype** ♂, designated by WEWALKA (1979) (NHML): “Japan 1009 rhantoides” [handwriting of D. Sharp on mounting card] \ “LECTO-TYPE” [round printed white label with navy blue margin] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [handwritten white label] \ “Lectotypus Hydaticus rhantoides SHARP Wewalka 1978” [handwritten red label]. **Paralectotypes** (examined, all deposited in NHML): 1 ♂: “Chin bor. [northern China] 1009” [handwritten white label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]; 1 ex.: “Manchu-ria [Heilongjiang, Jilin, or Liaoning]” [handwritten oval yellow label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]; 1 ex.: “Formosa [Taiwan] 1009” [handwritten white label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]; 1 ex.: “Formosa [Taiwan]” [handwritten oval yellow label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]; 1 ex.: “Japan” [handwritten oval yellow label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]; 1 ex.: “Japan 1009” [handwriting of D. Sharp on mounting card] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 1977” [partly handwritten white label]; 1 ex.: “Japan 1009” [handwriting of D. Sharp on mounting card] \ “1009 Type - Hydaticus rhantoides Japan” [handwritten white label] \ “Sharp Coll. 1905-313” [printed white label]; 1 ex.: “Japan Mus. Castelnau 1009” [handwritten white label] \ “Sharp Coll. 1905-313” [printed white label] \ “Hydaticus rhantoides Sh. det. Wewalka 77” [partly handwritten white label]. All paralectotypes are provided with round printed white labels (“PARA-LECTO-TYPE”) with light blue margin.

ADDITIONAL MATERIAL EXAMINED:

CHINA (without precise locality data): 1 ex.: “N China, Sharp Coll. 1905-313” (NHML).

Sichuan: 6 exs.: „Su-Tchuen [Sichuan], 1903, chasseurs indigènes [local collectors]“ (MNHN-CO).

Chongqing: 1 ♂, 2 ♀♀: You-yang, 7.VI.1995, ex coll. L.J. Kha (CLH).

Shaanxi: 1 ♂: Lueyang, 20.–30.VII.2010, leg. E. Kučera (CJS).

Hunan: 2 exs.: SW Huitong, Guangping env., near Paotuan vill., 350 m, 2.XI.1993, leg. H. Schillhammer (8) (CWBS 28) (NMW); 9 exs.: SW Huitong, Guangping env., near Moshao vill., 350 m, 4.XI.1993, leg. H. Schillhammer (10a) (CWBS 31) (CGW, NMW).

Jiangxi: 4 exs.: Kiukiang [Jiujiang], VI.1887, leg. A.E. Pratt (MNHN-CO); 2 ♂♂: Jinggang Shan Mts., Baiyinhu vill. env., 26°36.8'N 114°11.1'E, 800 m, leg. M. Fikáček & J. Hájek (1 ♂: Balke 5467) (NMP, ZSM).

Guangxi: 1 ex.: 10 km N Liuzhou, 150–200 m, 11.XI.1993, leg. H. Schillhammer (CWBS 40) (NMW); 3 exs.: 18 km S Liuzhou, Duleyan Park, 30 m, 10.I.1996, leg. L. Ji & M. Wang (CWBS 169) (NMW); 1 ex.: Yulin Distr., Liawan Mts., SW Yulin, 350–400 m, 16.XI.1993, leg. H. Schillhammer (CWBS 40) (NMW); 2 ♂♂: 15 km N Yangshou, 5 km SW Xingping, 450 m, sandy stream with pools, 5.XI.1999, leg. J. Šťastný (CJS).

Fujian: 1 ♂: Wuyishan Mts. National Nature Reserve, Sangang vill., 27°45.0'N 117°40.7'E, 720 m, at light, 22.V.–3.VI.2018, leg. J. Hájek, D. Král, J. Růžicka & L. Sekerka (NMP); 1 ♂: Wuyishan Mts. NNR, Xianfeng Mt., 27°42.7'N 117°39.1'E, 1185 m, at light, 1.VI.2018, leg. J. Hájek, D. Král, J. Růžicka & L. Sekerka (NMP).

- Guangdong: 2 exs.: Chengjia – Ruyuan rd., ca. 40 km E Chengjia, 5.XI.2001, leg. M.A. Jäch & A. Komarek (CWBS 471) (NMW); 5 exs.: 35 km NE Huajii, 24°0'25"N 112°26'9"E, ca. 130 m, 3.XI.2001, leg. M.A. Jäch & A. Komarek (CWBS 463) (CGW, NMW); 1 ex.: Nanling NP, Yao Shan, 24°52'11"N 112°56'45"E, ca. 800 m, 4.XI.2001, leg. M.A. Jäch & A. Komarek (CWBS 466) (NMW); 1 ex.: 50 km E Fengkai, 23°27'36"N 111°54'36"E, ca. 150 m, 31.X.–2.XI.2001, leg. M.A. Jäch & A. Komarek (CWBS 455) (NMW); 1 ex.: Ruyuan, 24°45'3"N 113°18'38"E, ca. 50 m, 6.XI.2001, leg. M.A. Jäch & A. Komarek (CWBS 474) (NMW); 2 exs.: Dinghu Nat. Res., ca. 20–40 m, 29.X.2001, leg. M.A. Jäch & A. Komarek (CWBS 452) (NMW); 1 ex.: 40 km ENE Zengsheng, 23°17'10"N 114°42'E, ca. 140 m, 11.XI.2001, leg. A. Komarek & M. Wang (CWBS 490) (NMW); 1 ♂: "Kanton [Guangdong (province) or Guangzhou (city)], China mer., ex coll. Heyrovsky" (CJS).
- Hong Kong: 2 exs.: Hong Kong, J.J. Walker, G.C. Champion coll. (NHML); 1 ex.: New Town, Plover Cove Country Park, 1 km E Wu Kau Tang, 60 m, 14.I.1996, leg. M.A. Jäch (CWBS 171) (NMW); 1 ♂, 1 ♀: Tai Po Kau, upstream, 18.X.1983, 12.–13.IV.1984, leg. D. Dudgeon (NMW); 1 ♂: Kuk Po Marsh, 15.XI.1994, leg. D. Dudgeon (NMW); 1 ♂: University Campus, at light, 1996, leg. G. de Rougemont (NMW).
- Macao: 1 ♂: Peninsula Friendship Monument Gateway, 1998–1999, leg. E. Easton (NMW).
- LAOS: Bolikhamsai Prov.: 9 exs.: 8 km NE Ban Nape, ~600 m, 18°21'N 105°8'E, 1.–18.V.2001, leg. V. Kubán (CGW, NHMB).
- VIETNAM: Northwest Region: 7 exs.: Sa Pa, 22°20'N 103°50'E, 25.V.–10.VI.1991, leg. E. Jendek (CGW, NMW); 1 ♀: Sa Pa Distr., Cát Cát vill., 22°19'36.4"N 103°49'46.1"E, 1250 m, at light, 26.–27.VIII.1998, leg. A. Kun (CHF); 17 exs.: Hoang Lien Son, 10.V.1990, leg. J. Picka & P. Pacholátko (CGW, NHMB); 2 exs.: Ha Son Binh, Than Loc, at light, 30.I.1986, leg. S. Mahunka & J. Oláh (HNHM); 1 ex.: Ha Son Binh, Hoa Binh, at light, 23.X.1986, leg. F. Mészáros, J. Oláh & T. Vásárhelyi (HNHM); 1 ex.: Hoa Binh, 26.–27.V.1989, leg. S. Brantlová (NHMB); 4 ♂♂, 2 ♀♀: Hoa Bink [Hoa Binh], I.1917, leg. V. de Salvaza (IRSNB).
- Northeast Region: 1 ♂: Thin Tuc, Son Dong, Nul Pia Oac Nat. Res., 22°37'55"N 105°52'98"E, 850–1300 m, 9.–15.V.2014, leg. A. Skale (CAS); 7 ♂♂: Vin Den, Son Dong, Nul Pia Oac Nat. Res., 22°33'53"N 105°52'53"E, 900–1300 m, 6.–10.V.2014, leg. A. Skale (2 ♂♂: Balke 6047 & 6048) (CAS, CGW, ZSM); 2 exs.: Quang Chu, Bac Thai, 22°0'N 105°50'E, 500 m, 24.–25.V.1987, leg. I. Matskási, J. Oláh & G. Topál (CGW, HNHM); 1 ex.: Bac Thai, 21°24'N 105°50'E, 40 m, at light, 23.V.1987, leg. I. Matskási, J. Oláh & G. Topál (HNHM); 3 ♂♂: Ba Bè NP, near entrance, 22°25'7"N 105°38'9"E, 180–220 m, 16.–20.V.2014, leg. A. Skale (1 ♂: Balke 6671) (CAS, ZSM); 4 ♂♂, 3 ♀♀: Ba Be NP, Nam Man, 22.411612°N 105.626792°E, ca. 190 m, at light, 17.–18.IV.2010, leg. L. Papp, L. Peregovits, Z. Soltész & G. Lengyel (HNHM).
- Red River Delta Region: 6 exs.: Tam Dao, 21°26'N 105°38'E, 900 m, at light, 20.I.1986–10.V.1987, leg. I. Matskási, J. Oláh & G. Topál (HNHM); 16 exs.: Tam Dao, 17.–21.V.1990, leg. J. Picka, V. Kubán & M. Dudycha (CGW, CJS, NHMB); 3 exs.: Tam Dao, 20.–27.VI.1990, leg. A. Olexa (NHMB); 1 ex.: Tam Dao, 12.–24.V.1989, leg. P. Pacholátko (NHMB); 1 ♂: Tam Dao, 21°27'N 105°35'E, 900–1200 m, 1.–8.VI.1996, leg. P. Pacholátko & L. Dembičký (NHMB); 1 ♂, 1 ♀: Tam Dao, 900 m, 16.–23.V.1991, leg. J. Strnad (CPM); 1 ♂: Tam Dao NP, 21°27'N 105°36'E, 700–1000 m, 2.–5.V.2013, leg. A. Skale (Balke 6051) (ZSM); 5 exs.: Hanoi, at light, 7.–25.V.1987, leg. I. Matskási, J. Oláh & G. Topál (HNHM); 5 exs.: Hanoi, VI.1991, leg. J. Strnad (CPM); 1 ♂: Hanoi, 30.VI.1990, leg. A. Olexa (NHMB); 14 exs.: Cuc Phuong NP, 100 km S Hanoi, 2.–12.V.1991, leg. E. Jendek (CGW, NMW); 1 ♀: 90 km SW Hanoi, Cuc Phuong NP, 20°14'N 105°42'E, at light, 190 m, 25.IV.2012, leg. A. Weigel (CAS); 5 ♂♂, 1 ♀: Cuc Phuong NP, 20°17.572'N 105°40.052'E, 270 m, 22.–25.V.2015, leg. A. Skale (CAS); 4 ♂♂, 1 ♀: Cuc Phuong NP, 20°15.586'N 105°42.320'E, ca. 150 m, 30.IV.–1.V.2005, leg. A. Kun (HNHM); 2 ♂♂, 5 ♀♀: Cuc Phuong NP, 20°20.991'N 105°35.614'E, 360 m, 4.–11.V.2017, leg. R. Gerstmeier (CGW, CLH).
- North Central Coast Region: 1 ♂: Que Phong Distr., Ban Khom, 19°24'19.5"N 104°32'29.3"E, 230 m, at light, 21.I.1999, leg. L. Peregovits & L. Ronkai (CHF).
- JAPAN: Kagoshima Pref.: 1 ♂: Kyushu, Satsuma, V.1886, leg. J.H. Leech (MNHN-CO).
- Okinawa Pref.: 26 exs.: Iriomote Is., Ohara, 27.IV.1981, leg. S. Morita (CGW, NMW); 4 exs.: Iriomote Is., Ohara, 19.III.1985, leg. K. Nemoto (NHMB); 1 ♂: Yonaguni Isl., Mt. Urabu-dake, 1.IV.1990, leg. Y. Ueda (CHF); 11 ♂♂, 12 ♀♀: Ishigaki Isl., 20.–22.XII.1986, 17.–19.XII.1987, leg. Y. & T. Abe (CHF, MZH, NMW); 1 ♂: Okinawa Isl., Nago City, Koyoda Hamlet, 7.I.1989, leg. Y. & T. Abe (ZSM).
- TAIWAN: 1 ♀: Taipei, Gongliao, 12.XI.1995, leg. L.-J. Wang (CJS); 1 ♂: Kaohsiung, "Kosempo" [Jiasian District], 1909, leg. H. Sauter (SDEI).

MEASUREMENTS: TL: 8.8–10.6 mm; TL-H: 8.2–9.8 mm; MW: 4.9–5.8 mm.

AFFINITIES: *Hydaticus rhantoides* is similar to *H. fabricii* in most external characters but it is slightly more rounded, slightly more convex and the elytral irrorations are less confluent. In female specimens, incised wrinkles on pronotum are almost missing.

The median lobe is characterized by a quite short apical part; the distance from the tip to the lateral lobes (see arrow in Fig. 7a) accounts for ca. 26 % of the total length; the apical plate with the tuft of setae is quite short, and in lateral view, the apical part is relatively broad.

DISTRIBUTION (Fig. 48): China: Chongqing (first record), Fujian, Guangdong, Guangxi (first record), Guizhou, Hainan, Heilongjiang, Hong Kong, Hubei, Hunan, Jiangsu, Jiangxi (first record), Macao (first record), Shaanxi (first record), Shandong, Shanghai, Sichuan, Yunnan, Zhejiang; South Korea; Japan; Taiwan; Laos (first record); Vietnam.

8. *Hydaticus mexaformis* WEWALKA, 1979

Hydaticus fabricii: VAZIRANI 1969a: 266 (partim), 1970: 45 (partim).

Hydaticus mexaformis WEWALKA 1979: 129; NILSSON 2001: 103; GHOSH & NILSSON 2012: 26; GHOSH & MANDAL 2013: 94; GHOSH 2021: 585; NILSSON & HÁJEK 2022a: 97.

TYPE LOCALITY: India, New Delhi.

TYPE MATERIAL: **Holotype** ♂ (SIW): “India New Delhi” \ “9-X-1967 KE Gibson light trap” [printed white labels] \ “Holotypus *Hydaticus mexaformis* det. Wewalka 78” [partly handwritten red label]. **Paratypes**: 23 exs. from New Delhi (see WEWALKA 1979).

ADDITIONAL MATERIAL EXAMINED:

NEPAL: Lumbini Zone: 7 ♂♂, 1 ♀: Bheri Distr., Banke, Nepalganj, 28°2'53"N 81°36'54"E, at light, 125 m, 5.VII.2009, leg. A. Weigel & A. Kopetz (CAS, CGW, NKME).

Sagarmatha Zone: 6 ♂♂, 4 ♀♀: Narayani Distr., Sauraha, Rapti River, 27°34'N 84°29'E, 180 m, 18.IV.2000, leg. A. Skale (CAS, CHF); 1 ♂: same locality, but 14.–15.VII.2001, leg. A. Weigel (CAS); 1 ♂: Narayani Distr., Chitwan, Sauraha, Rapti River, riverside, 27°34'29"N 84°29'55"E, 160 m, 6.–8.VII.2009, leg. A. Weigel (CHF).

INDIA: Rajasthan: 2 ♂♂, 1 ♀: Udaipur, Fateh Sagar Lake, 550 m, 9.IV.2009, leg. G. Wewalka (CGW); 1 ♂: Jaipur, 25.X.1997, leg. J. Štátný (CJS); 2 ♂♂: Bharatpur, Keoladeo NP, 29.X.1997, leg. J. Štátný (CJS).

Delhi: 5 ♂♂: New Delhi, light trap, 28.IX.1967, 5.X.1967, leg. K.E. Gibson (CGW, SIW).

Uttar Pradesh: 1 ♂: Fatahpur Sikri, 31.X.1997, leg. J. Štátný (CJS).

West Bengal: 6 exs.: Darjeeling Distr., Gaya Ganga, 600 m, 10.XII.1983, leg. B. Bhakta (NHMB); 32 exs.: Darjeeling Distr., Algarah, VI.1982, leg. C.J. Rai (CGW, NHMB); 1 ex.: Jalpaiguri Distr., Bagra Kote, 200–300 m, 16.–22.XII.1985, leg. B. Bhakta (NHMB); 2 exs.: “W. Dinajpur” [Uttar Dinajpur District], Dumdangari, 130 m, 15.XII.1981, leg. B. Bhakta (NHMB); 2 exs.: “W. Dinajpur” [Uttar Dinajpur District], Sonapur, 100 m, 12.XII.1981, leg. B. Bhakta (NHMB); 2 ♂♂, 4 ♀♀: Kanchrapara, 19.VI.–5.VIII.1944, leg. M.A. Cazier (CGW, AMNH).

Meghalaya: 1 ♂: 1 km E Tura, 25°30'N 90°14'E, 500–600 m, 2.–5.V.2002, leg. M. Trýzna & P. Benda (CAS).

BANGLADESH: 1 ♂: “India, Dacca [Dhaka, Bangladesh], D. Leston 20.vii.1945, B.M. 1945-86” (NHML).

MEASUREMENTS: TL: 9.5–10.4 mm; TL-H: 8.8–9.8 mm; MW: 5.2–6.0 mm.

AFFINITIES: *Hydaticus mexaformis* resembles *H. fabricii* in most external characters but the elytral irrorations are less confluent. *Hydaticus mexaformis* is usually smaller, less rounded and less convex than *H. incertus*.

Hydaticus mexaformis can be identified with certainty only by the shape of the median lobe (Fig. 8), which is most similar to that of *H. incertus*, but in lateral view, the apical part is broader, and in ventral view, the apices of the lateral lobes (see arrow in Fig. 8b) are only slightly enlarged.

DISTRIBUTION (Fig. 47): Nepal (first record); India: Delhi, Himachal Pradesh (GHOSH 2021), Meghalaya (first record), Rajasthan (first record), Uttar Pradesh (first record), West Bengal; Bangladesh (first record).

The literature records of *H. fabricii* from India must be checked; some specimens may well refer to *H. mexaformis*.

9. *Hydaticus incertus* RÉGIMBART, 1888

Hydaticus incertus RÉGIMBART 1888: 617; ATKINSON 1891: 145; RÉGIMBART 1891: 545, 1899: 326; ZIMMERMANN 1920: 221; VAZIRANI 1977a: 129, 1977b: 77; WEWALKA 1979: 130; BRANCUCCI 1979: 207; VAZIRANI 1980: 30; BRANCUCCI 1981: 184; ZENG 1989: 5; NILSSON 1995: 73, 2001: 102; HUA 2002: 37; BRANCUCCI & WEWALKA 2007: 83; GHOSH & NILSSON 2012: 25 (partim); SHARMA & BAMO 2012: 500; GHOSH 2021: 584; NILSSON & HÁJEK 2022a: 96, 2022b: 23.

Hydaticus fabricii: VAZIRANI 1968: 110, 1969a: 266, 1969b: 403.

Hydaticus martensi WEWALKA 1972: 115, 1979: 130 (synonymy).

TYPE LOCALITY: Myanmar, Kachin State, Bhamò.

TYPE MATERIAL: **Holotype** ♂ (MCG): “Bhamò Birmania Fea VII 1886” [printed white label with black frame] \ “TYPUS” [red printed white label with red frame] \ “incertus Reg.” [handwritten white label with black frame] \ “Hydaticus incertus Rég. typus” [handwritten cream label].

ADDITIONAL MATERIAL EXAMINED:

NEPAL: Gandaki Zone: 1 ex.: Lumle, 20 km NW Pokhara, 1600 m, 2.V.1984, leg. G. Wewalka (N2) (CGW); 1 ex.: Modi Khola, Pothana, 1900 m, 5.–7.V.1984, leg. C.J. Rai (NHMB).

Sagarmatha Zone: 17 exs.: Kathmandu Valley, II.1981, leg. M.A. Jäch (N 7, N 28) (CGW, NMW); 1 ex.: Khasi Bazar, Balkhu River, leg. S. Sharma (142) (NMW); 1 ♂: Godavari, 3.–17.VIII.1996, leg. B.K. Silval (CGW); 7 exs.: Godavari, 16.–17.V.1992, leg. I. Jeniş (NMW); 4 exs.: Godavari, 15 km S Kathmandu, 1500 m, 29.IV.1984, leg. G. Wewalka (CGW); 2 exs.: Godavari, 1500 m, 19.V.1989, leg. M. Brancucci (NHMB); 12 exs.: Godavari, 1500–1700 m, 11.VI.1992, leg. J. Moravec (CGW, NHMB); 1 ♂: Godavari, 1500–1700 m, 21.V.1977, leg. W. Wittmer & M. Brancucci (CGW); 2 exs.: Kathmandu, Baneshwar, 1350 m, 18.–24.VI.2000, leg. W. Schawaller (CHF); 1 ex.: Kathmandu Distr., Kakani, 6800 ft., at light, 23.V.–20.VI.1983, leg. M.J.D. Brendell (NHML); 5 exs.: Kathmandu 16.V.1983, leg. M. Brancucci (NHMB); 1 ♂: Bagmati Prov., Nagarjun Forest, 27°45'N 85°17'E, ca. 1390 m, 19.VII.2000, leg. J. Farkač (NHMB); 2 exs.: Kathmandu, Pashupatinath, Bagmati River, 27°43'N 85°21'E, 1350 m, 15.IV.2000, leg. A. Skale (CAS); 15 exs.: Kathmandu, British Embassy, 4500 ft., at light, 20.V.–23.VI.1983, leg. M.J.D. Brendell (NHML); 1 ex.: Koteswar [Koteshwor], Manahara River, leg. B. Pradhan (B 9) (NMW); 1 ex.: Punyamata Khola near Banepa, 27°37'54"N 85°32'35"E, 1650 m, IX.2004, leg. H. Neseemann (NMW); 1 ex.: Arun River, Tumlingtar, 450 m, 26.V.1983, leg. M. Brancucci (NHMB).

Janakpur Zone: 1 ♂: Chitwan NP, Sauraha env., 27.35N 84.30E, ca. 166 m, 21.–27.VII.2000, leg. J. Farkač (NHMB).

Koshi Zone: 1 ex.: Thampur V., Dhankuta, 1150 m, 23.V.1983, leg. M. Brancucci (NHMB).

BHUTAN: 1 ♀: Punakha Prov.: Lhaku, ca. 5 km NNW Punakha, residual pool on gravel bank of Mo Chhu River, ca. 1250 m, 27°37'4"N 89°50'20"E, 24.XI.2005, leg. M.A. Jäch (NMW); 2 ♂♂, 1 ♀: ca. 2 km NW Punakha, pools in meadow, ca. 1230 m, 27°35'46"N 89°51'17"E, 28.XI.2005, leg. M.A. Jäch (NMW).

INDIA: Utarakhand: 2 exs.: Rishikesh, 450 m, VIII.1988, leg. K. Werner (CPM).

Maharashtra: 1 ♂: Bhushi Dam, 4 km S Lonavla, 500 m, 24.–28.IX.2005, leg. F. & L. Kantner (SMNS); 9 exs.: 70 km S Pune, Wai, 2.–7.X.2005, leg. J. Bezděk, F. & L. Kantner (NMP, SMNS); 1 ♀: Mahabaleshwar, 70 km SSW Pune, 1400 m, 30.IX.–2.X.2005, leg. F. & L. Kantner (NMP, SMNS); 2 exs.: Mulshi, 40 km W Pune, 7.–11.X.2005, leg. F. Kantner (SMNS). 1 ♂: Tamhini, 18°23'54.6"N 73°23'47.3"E, 29.X.2014, collector unknown (NMP).

Kerala: 1 ♂: Idukki District, Cheriya, 9°56'35"N 77°13'4"E, 1240 m, small pool on the rocky bed of a drying stream, 23.II.2020, leg. P. Prabhakaran (STCT); 2 ♂♂, 3 ♀♀: Thrissur Distr., Murukkumpara, ca. 10°29'46"N 76°19'46"E, ca. 100 m, small rock pools, 11. & 14.X.2021, leg. P. Prabhakaran (STCT) – all records by P. Prabhakaran (pers. comm.).

Jharkand: 1 ♂, 3 ♀♀: “Barway [Jashpur District, Chainpur, ca. 23°8'N 84°14'E] [leg.] P. Cardon” (IRSNB).

Assam: 1 ♂: Dibru Saikhowa NP, Tinsukia, 26°55'N 94°20'E, ca. 120 m, 1.–5.XII.1997, leg. V. Sinaev & S. Murzin (CJS).

Meghalaya: 2 exs.: W Garo Hills, Nokrek NP, 25°29.6'N 90°19.5'E, ca. 1100 m, 9.–17.V.1995, leg. E. Jendek & O. Šauša (NMW); 3 exs.: W Garo Hills, Bagmara, 25°11.5'N 90°38.5'E, ca. 100 m, 19.–21.V.1996, leg. E. Jendek & O. Šauša (NMW); 2 exs.: Jantia Hills, 25°27'N 92°12'E, ca. 1350 m, 6.–8.VI.1996, leg. E. Jendek & O. Šauša (NMW).

CHINA: 3 exs.: Yunnan: Gejiu Pref., 30 km S Gejiu, Tian Ba Shi env., 1300 m, 23.XI.1999, leg. H. Schönmann & M. Wang (CWBS 401) (CGW, NMW); 2 exs.: 100 km W Kunming, Diaolin Nat. Res., 22.V.–2.VI.1993, leg. E. Jendek & O. Šauša (NMW); 1 ex.: 60 km S Xiaguan, 12 km S Weishan, Weiobaoshan, 2500–3000 m, 1.–17.VII.1993, leg. L. Ji (CWBS 14 or 15) (NMW); 1 ♂: Jinsha River, 26.24°N 101.28°E, 1400 m, 21.V.1993, leg. V. Kubáň (NHMB); 1 ♀: Baoshan Pref., Gaoligong Shan, 65 km NNE Tengchong, 25°53'20"N 98°49'40"E,

- 1750 m, small brook at edge of secondary mixed forest, 27.VIII.2009, leg. D.W. Wrase (CLH); 2 ♂♂, 1 ♀: Gaoligong Shan, ca. 30 km E Tengchong, 2800 m, meadow, muddy pools, 24.X.1999, leg. J. Šťastný (CJS); 1 ♂: Lincang Pref., Bangma Shan, 20 km NW Lincang, 23°58'36"N 99°54'36"E, 2210 m, 9.IX.2009, leg. D.W. Wrase (CLH); 1 ♂: Lincang Pref., 17 km N Lincang, 24°2'11.9"N 100°4'56.8"E, ca. 1290 m, loamy/sandy soil, under vegetation, 10.IX.2009, leg. D.W. Wrase (CLH); 1 ♂, 1 ♀: Lincang Pref., Xua Shan, 48 km N Lincang, 24°19'3"N 100°7'13"E, 2070 m, small flat pond, 12.IX.2009, leg. D.W. Wrase (CLH); 1 ♀: Dali Bai Auton. Pref., Babian Jiang riverbank, 24°49'1.1"N 100°32'29.7"E, ca. 1700 m, 13.IX.2009, leg. D.W. Wrase (CLH); 5 ♂♂, 5 ♀♀: Behai Wetland, Zing Hai Lake env., 10 km NE Tengchong, gravelly stream with muddy pools, 27.X.1999, leg. J. Šťastný (CJS); 2 exs.: Xishuangbanna, 23 km NW Jinghong, Na Ban – Man Fei, 630 m, at light, 6.VI.2008, leg. A. Weigel (CAS).
- Guizhou: 1 ex.: 10 km W Lipanshui [Liupanshui] City, 1800 m, 27.VII.1997, leg. M. Wang (CWBS 267) (NMW).
- MYANMAR: Shan State: 4 exs.: ca. 35 km N Aungban, 20°55.2'N 96°33.6'E, ca. 1320 m, 31.V.–6.VI.2002, leg. H. Schillhammer et al. (81e) (CGW, NMW).
- LAOS: Luang Namtha Prov.: 28 exs.: Namtha – Muang Sing, 900–1200 m, 21°9'N 101°19'E, 3.–31.V.1997, leg. V. Kubáň (CGW, NHMB); 2 ♂♂: Nam Ha NBCA [National Biodiversity Conservation Area], 20 km N Luang Namtha, Lakkhammai, Nam Leung Stream, ca. 750 m, loc. 29, light trap, 30.IV.2005, leg. N. Jönsson, T. Malm & B. Viklund (NHRS).
- Phongsaly Prov.: 7 exs.: Ban Sano Mai, 21°21'N 102°3'E, 19.–26.V.2004, leg. M. Brancucci & V. Kubáň (NHMB).
- Udomxai Prov.: 4 exs.: Pak Beng, 450 m, 19°53'37"N 101°7'51"E, 18.–27.V.2001, leg. J. Kolibáč (NHMB).
- Luang Prabang Prov.: 15 exs.: 5 km W Ban Song Cha, ca. 1200 m, 20°33'–34'N 102°14'E, 24.IV.–16.V.1999, leg. V. Kubáň (NHMB).
- Houa Phanh Prov.: 3 exs.: Ban Saluei – Phou Pane Mts., 1340–1870 m, 20°12'–13.5'N 103°59.5'–104°1.0'E, 10.V.–16.VI. 2009, leg. M. Brancucci (CGW, NHMB); 4 exs.: Ban Saluei, Phou Pane Mts. env., 1300–2000 m, 20°13'N 103°59'E, 6.–18.V.2004, leg. F. & L. Kantner (NHMB); 1 ♂: same data, but leg. J. Bezděk (NMP); 27 exs.: Phou Pane Mts., 1350–1500 m, ca. 20°13'N 104°0'E, 1.V.–16.VI.2009, leg. M. Brancucci (CGW, NHMB); 13 exs.: Phou Phan Mts., 1500–1900 m, ca. 20°12'N 104°1'E, 17.V.–3.VI.2007, leg. M. Brancucci (CGW, NHMB); 1 ex.: Meuang Hiam Hot Springs, 680 m, 15.–16.V.2007, leg. M. Brancucci (CGW, NHMB); 2 exs.: Phou Pane Mts., 1480–1550 m, 20°13'9–19"N 103°59'54"–104°0'3"E, 1.V.–16.VI. 2009, leg. Z. Kraus (CGW, NHMB); 2 ♂♂ 3 ♀♀: Ban Saluei – Phou Pane Mt., 20°12'–13.5'N 103°59'–104°1'E, 1340–1870 m, 15.IV.–15.V.2008, local collector (NMP). 1 ♂, 1 ♀: Phou Pane Mt., 20°13'9–19"N 103°59'54"E, 1480–1510 m, 22.IV.–14.V.2008, leg. V. Kubáň (NMP).
- Xiang Khouang Prov.: 39 exs.: 30 km NE Phongsavan, Ban Na Lam – Phou Sane Mts., 1300–1500 m, 19°37'–8'N 103°20'E, 10.–30.V. 2009, leg. M. Brancucci (CGW, NHMB); 19 exs.: 30 km NE Phongsavan, Phou Sane Mts., 1400–1500 m, 19°37'–38'N 103°20'E, 10.–30.V. 2009, leg. Z. Kraus & D. Hauck (CGW, NHMB).
- Khammouan Prov.: 2 ♂♂: Nakai vill. env., ca. 70 km NNE Muang Khammouan, 17°43'N 105°9'E, 500–600 m, 22.V.–8.VI.2001, leg. E. Jendek & O. Šauša (NMP), 7.–25.V.2002, leg. M. Štrba (CLH).
- VIETNAM: Northwest Region: 6 exs.: Hoang Lien Son, Sa Pa, 11.–15.V.1990, leg. P. Pacholátko (CGW, NHMB); 1 ex.: same locality, but 1500 m, 11.–19.VI.1990, leg. J. Strnad (NHMB); Lao Cai Prov.: 1 ♂: Hoang Lien NP, Tram Ton, 22°21.197'N 103°46.513'E, 1800–2050 m, 13.–15.V.2015, leg. A. Skale (NKME).

MEASUREMENTS: TL: 10.2–11.8 mm; TL-H: 9.6–10.9 mm; MW: 5.8–6.6 mm.

AFFINITIES: *Hydaticus incertus* resembles *H. fabricii* and *H. incertus* in most external characters, but it is usually larger, broader, and slightly more convex; in *H. fabricii*, the elytral irrorations are usually more confluent. In size and colouration *H. incertus* resembles *H. geiseri*, but it is broader.

Hydaticus incertus can be distinguished with certainty only by the shape of the median lobe (Fig. 9), which is most similar to that of *H. mexaformis*, but in lateral view, the apical part is less broad, and in ventral view, the lateral lobes are much broader, especially in their apical part (see arrow in Fig. 9b).

DISTRIBUTION (Fig. 47): Nepal; Bhutan; India: Assam, Delhi, Gujarat, Himachal Pradesh, Jharkand (first record), Kerala (first record), Madhya Pradesh (GHOSH 2021), Maharashtra, Meghalaya (first record), Uttarakhand (first record), Uttar Pradesh (GHOSH 2021); China: Guizhou, Yunnan; Myanmar; Laos (first record); Vietnam.

10. *Hydaticus consanguineus* AUBÉ, 1838

Hydaticus consanguineus AUBÉ 1838: 160; GEMMINGER & HAROLD 1868: 465; SHARP 1882: 664; FAUVEL 1883: 344; BRANDEN 1884: 100; MASTERS 1886: 597; FAUVEL 1903: 251; ZAITZEV 1915: 277; HELLER 1916: 240; ZIMMERMANN 1920: 219, 1922: 4; FRIEDERICH 1922: 148; ZIMMERMANN 1927b: 19; BALFOUR-BROWNE 1947: 452; SATÔ 1966: 2; WATTS 1978: 145; WEWALKA 1979: 133; WATTS 1985: 26; LAWRENCE et al. 1987: 355; GUÉORGUIEV & ROCCHI 1993: 162; LARSON 1993: 55, 1997: 272; NILSSON 2001: 101; WATTS 2002: 43; HENDRICH et al. 2010: 185; NILSSON & HÁJEK 2022a: 95.

Colymbetes dorsalis MONTROUZIER 1860: 243.

Colymbetes adumbratus CLARK 1863: 17.

Prodaticus consanguineus: MILLER et al. 2009: 597 ff.

TYPE LOCALITY: Australia (no other details known).

TYPE MATERIAL: **Holotype** ♂: Australia (“Nouvelle-Hollande”). The depository of the single specimen (ex coll. Dupont) is unknown; it could not be traced in the MNHN-CO (A. Mantilleri, pers. comm., August 2022).

MATERIAL EXAMINED:

AUSTRALIA: Western Australia: 3 ♂♂, 2 ♀♀: West Kimberley, Garunji Creek near Geikie Gorge, 350 m, 26.VI.1999, leg. L. Hendrich (26/126) (CLH); 1 ♂, 3 ♀♀: East Kimberley, East Gibb River Road, Sanke Creek, 10 km E Hann River, 470 m, 19.VI.1999, leg. L. Hendrich (16/116) (CLH); 1 ♂, 2 ♀♀: East Kimberley, East Gibb River Road, Durack River, Crossing, 250 m, 13.VI.1999, leg. L. Hendrich (6/106) (CLH); 1 ♀: East Kimberley, King Leopold Ranges [Wunaamin Miliwundi Ranges], Gibb River Road, 5 km NW Mount Bell, intermittent creek, 500 m, 23.VI.1999, leg. L. Hendrich (22/122) (CLH); 1 ♂: East Kimberley, Gibb River Road, 10 km NW Bindoola Creek, 13.VI.1999, leg. L. Hendrich (5/105) (CLH); 9 ♂♂, 10 ♀♀: East Kimberley, Kalumburu Road, Meelaria Creek, 5 km N Drysdale Crossing, 350 m, 19.VI.1999, leg. L. Hendrich (15/115) (CGW, CLH); 2 ♂♂, 1 ♀: Pilbara, Newman, Eaglehead Falls, 26.I.2007, leg. C.H.S. Watts (1 ♂, Balke 1892) (ZSM); 1 ♂, 4 ♀♀: Pilbara, Millstream Chichester NP, McKenzie Springs, 21°18'S 117°12'E, 200 m, 25.VIII.2002, leg. L. Hendrich (WA 3/167) (CLH); 2 ♂♂: Pilbara, Millstream Chichester NP, Gregory Gorge, Palm Pool at River Crossing, 21°33'S 117°3'E, 26.VIII.2002, leg. L. Hendrich (WA 5/169) (CLH); 3 ♂♂, 2 ♀♀: Pilbara, De Grey River, 72 km E Port Hedland, 20°10'S 119°11'E, 24.VIII.2002, leg. L. Hendrich (WA 1/165) (CLH); 4 ♂♂, 1 ♀: Pilbara, Hamersley River, Karijini NP, Fortescue Falls, 22°29'S 118°35'E, 400 m, 28.VIII.2002, leg. L. Hendrich (WA 10/174) (CLH); 2 ♂♂: Pilbara, Hamersley River, Karijini NP, Kalamina Gorge, 22°25'S 118°23'E, 450 m, 29.VIII.2002, leg. L. Hendrich (WA 11/175) (CLH); 1 ♂: Pilbara, Hamersley River, Karijini NP, Knox Gorge, 22°21'S 118°18'E, 450 m, 29.VIII.2002, leg. L. Hendrich (WA 12/176) (CLH).

Northern Territory: 3 ♂♂, 1 ♀: Cullen River near Cullen, at Stuart Hwy., 14°2.052'S 131°56.561'E, ca. 100 m, 23.VIII.2006, leg. L. Hendrich (NT 13) (ZSM); 2 ♂♂: Kakadu Hwy, Harriet Creek, 13°44.512'S 131°54.012'E, ca. 150 m, 24.VIII.2006, leg. L. Hendrich (Balke 2801, 2802) (ZSM); 3 ♂♂, 1 ♀: temporary creek at Scenic Route, 25 km S Adelaide River, 13°22.337'S 131°9.065'E, 5 m, 22.VIII.2006, leg. L. Hendrich (NT 8) (1 ♂: Balke 1685) (ZSM); 1 ♂: Victoria Hwy., Lilly Creek, 150 km E Kununurra, 50 m, 12.VI.1999, leg. L. Hendrich (3/103) (CLH); 1 ♂: Kakadu NP, Gunlom Camp area, pool in monsoonal forest, 13°26.082'S 132°24.929'E, ca. 50 m, leg. L. Hendrich (15) (CLH); 3 ♀♀: Kakadu NP, Gungurul Lookout, creek, 13°59.359'S 132°19.904'E, ca. 50 m, 1.XI.1996, leg. L. Hendrich (11) (CLH); 1 ♂, 1 ♀: Kakadu Hwy., Bowerbird Creek, 5 km W Mary River Road, large pool, 13°38.142'S 132°10.345'E, 20 m, 24.VIII.2006, leg. L. Hendrich (NT 15b) (CLH); 1 ♂: Kakadu NP, small creek at road to Gunlom, 13°30.422'S 132°26.191'E, ca. 100 m, 25.VIII.2006, leg. L. Hendrich (NT 16) (CLH); 2 ♂♂: Timber Creek, 290 km SW Katherine, 31.XII.1996, leg. L. Hendrich (CLH); 10 exs.: 80 km W Roper Bar, 14°54'18.8"S 133°57'28.1"E, ca. 80 m, at light, 14.V.2006, leg. M. Berger & A. Dostal (7/06) (CGW).

Northern Territory or Queensland: 2 ♂♂, 1 ♀: “Nov: Holl: bor: [northern Australia]” \ “Thorey 1867” (NMW).

Queensland: 1 ex.: “Queensland” (NMW); 1 ♂: “Nov. Holld. [New Holland] Cap York Dame [E. Dämel (ca. 1821–1900)]” (MNHN-CO); 1 ♂: Cape York, leg. E. Mjöberg (NHRS); 3 exs.: Richmond, Glenlyon, 26.I.1918, leg. “F.M.” (NHML, NMW); 1 ♂: “Queensland Coll: Kraatz” (SDEI); 1 ♂: “Bowen Queensland A. Simson” (SDEI); 3 exs.: Townsville, 10 m, 17.I.1993, leg. G. Wewalka (8) (CGW); 3 exs.: Dalrymple, 30 km N Charters Towers, 300 m, 18.I.1993, leg. G. Wewalka (10, 11) (CGW); 1 ex.: 10 km S Tully, S Innisfail, 30 m, 25.I.1993, leg. G. Wewalka (26) (CGW); 1 ♂: Cardstone, near Tully Falls, 8.I.1962, leg. E.B. Britton, M.B. 1962-153 (NHML); 2 exs.: Greenvale, 150 km NW Charters Towers, 600 m, 19.I.1993, leg. G. Wewalka (12–14) (CGW); 1 ♂: Marlborough, 1.XI.1984, leg. M. Sécaly (NHMB); 2 exs.: Brookfield, XI.1981, leg. J. Sedlacek (NHMB); 2 ♂♂: Mackay, 33 km S Sarina, Bolingbroke Road at railway crossing, 21°38.378'S 149°8.183'E, ca. 220 m, 24.IX.2006, leg. L. Hendrich (QLD 48) (Balke 1997, 1998) (ZSM); 7 ♂♂, 7 ♀♀: 10 km S Mizani, 500 m S Lake Kinchant Camping Area, 21°12.599'S 148°54.153'E, ca. 45 m, 24.IX.2006, leg. L. Hendrich (QLD 47) (ZSM); 7 ♂♂, 13 ♀♀: 10 km S Mizani, Lake Kinchant, 21°11.581'S 148°53.522'E, ca. 50 m, 24.IX.2006, leg. L.

- Hendrich (QLD 46) (ZSM); 1 ♂, 2 ♀♀: Cape Tribulation, Daintree NP, Turpentine Road, 100 m, 9.XI.1996, leg. L. Hendrich (19) (CLH); 6 ♂♂, 4 ♀♀: Atherton Tableland, 30 km NNW Mareeba, near Mitchell Lake, 9.XI.1996, leg. L. Hendrich (20) (CLH); 1 ♂: Kinilworth, Obi Creek, 150–200 m, 18.XI.1996, leg. L. Hendrich (27) (CLH); 1 ♂, 1 ♀: Mt. Surprise, I.1996, leg. S. Hamond (CLH); 1 ♂: “Australia Brisbane 1008 Sharp Coll. 1905-313” (NHML); 1 ♂, 1 ♀: Brisbane (IRSNB); 1 ♂, 1 ♀: Brisbane, Moggill, II.1987, leg. A. Speer (CLH); 1 ♂, 1 ♀: 40 miles W Mt. Garnet, 18.II.1974, leg. A. Walford-Huggins (CLH); 1 ♂: “Rockhampton, Sharp Coll. 1905-313” (NHML); 1 ♂: North Stradbroke Isl., Brown Lake, 27°29'37.09"S 153°25'50.08"E, 60 m, rush swamp, 18.X.2014, leg. L. Hendrich (QLD 1/14) (Balke 7166) (ZSM).
- New South Wales: 1 ♂: creek, 4 miles N Murrurundi, 11.XII.1948, collector unknown, B.M. 1950-18 (NHML); 1 ex.: Marrabui, 10.III.1965, leg. E. Heys (NHML).
- South Australia: 1 ex.: Adelaide (NHML).
- NEW CALEDONIA (in addition to the data provided by HENDRICH et al. 2010): North Province: 1 ♂: Hienghiène, 22.XI.2001, leg. K.A. Johanson, T. Pape & B. Viklund (NHRS); 1 ♀: Rivière Néhoué, camp Amenage de Néhoué, 20°25.037'S 164°13.222'E, light trap, 19.XII.2003, leg. K.A. Johanson (loc#90) (ZSM); 3 ♂♂, 2 ♀♀: Koumac, 20 m, 6.–12.I.1991, leg. J. Wiesner & I. Worm (NMW); 1 ♀: Canala, V.1956 (IRSNB); 2 ♂♂, 1 ♀: Pouébo (IRSNB).
- South Province: 1 ♂: Thio, V.1955, leg. J. Rageau, coll. Guignot (CGW); 1 ♂: forest above Sarramea, 17.–20.XI.2001 (NHRS); 3 ♂♂, 1 ♀: artificial lake, 2.6 km S summit of Mt. Mè Tu Novia, Pocquereux, 21°43.859'S 165°54.034'E, ca. 30 m, light trap, 19.I.2004, leg. K.A. Johanson (loc#123) (ZSM); 1 ♂, 1 ♀: Tamoia River, 22°45.18'S 166°16.592'E, 700 m, light trap, 19.X.2003, leg. K.A. Johanson (loc#33) (1 ♂: Balke 4356) (ZSM); 1 ♂: Nouméa (IRSNB); 1 ♂, 4 ♀♀: Mt. Koghi, 400 m, black light trap, 12.–14.XI.1986, leg. R.L. Brown (MEM); 1 ♂, 4 ♀♀: Mt. Koghi, 400 m, black light trap, 12.–14.XI.1986, leg. R.L. Brown (MEM); 1 ♂: Mont Dore, road CR7 1.8 km E of road CR9, 22°18'32.7"S 166°48'35.7"E, pond, 146 m, 19.VIII.2008, leg. E.A. Gervais (D2) (Balke 6426) (ZSM).
- Île des Pins: 1 ♀: without precise locality data (IRSNB).
- FIJI: Rotuma Isl.: 3 exs.: Rotuma, 17.–27.IV.1971, leg. G.S. Robinson (CGW, NHML); 11 exs.: Noa'tau, 26.IV.1971, leg. G.S. Robinson (CGW, NHML).
- Viti Levu: 1 ♂: 12 km NE Nandi, 15.X.1985, leg. G.F. Bornemissza (NMW); 3 exs.: E Raraimatuku Plateau, Serea – Naitavoli, 150 m, 7.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 03) (1 ♂: Balke 4206) (CGW, ZSM); 3 exs.: Rakiraki, Rewasa, 100 m, 10.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 09) (CGW, NMW, ZSM); 6 exs.: Rakiraki, Navara, 50 m, 10.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 11) (Balke 3085–3087) (CGW, ZSM); 30 exs.: road Nadi – Vatutu/Nausori, 50 m, 12.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 14) (CGW, NMW, ZSM); 1 ex.: Suva, 3.VII.1990, leg. R.A. Beaver (CGW); 1 ♂: Suva, X.1924, leg. H.S. Evans (CGW); 8 ♂♂, 6 ♀♀: Pacific Harbour, black light trap, 5.XII.1986, leg. R.L. Brown (MEM, ZSM).
- Vanua Levu: 3 exs.: 5 km S Natua, 50 m, 15.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 21) (CGW); 1 ex.: 10 km E Savusavu, 5 m, 16.XI.2003, leg. G. Wewalka, M. Balke & K. Mailautoka (Fi 22a) (CGW).
- TONGA: 1 ♀: “Ins. Tonga [Tonga Island], Godeffroy” (MNHN-CO); 1 ♀: “Tonga” (IRSNB).
- WEST SAMOA: Savai'i: 1 ♀: Savai'i, 1905, leg. K. Reching (NMW); 1 ♂: Savai'i, leg. K. Reching (IRSNB); 4 ♂♂, 3 ♀♀: ca. 4 km NW Pua'pu'a, 13.552713°S 172.238074°W, 10 m, puddle on gravel with grass mats, 17.VIII.2017, leg. G. Wewalka & M. Balke (SAM 12) (CGW, ZSM).
- Upolu: 1 ex.: “Apia, VIII.1931” (CGW); 2 exs.: Papaseea, road near Apia, ca. 20 m, small river, 4.VIII.2017, leg. M. Balke (SAM 04) (ZSM).
- AMERICAN SAMOA: 1 ♂, 5 ♀♀: Tutuila, Tula, swampy pond in village, full sun, 14.250353°S 170.568316°W, 3 m, 10.VIII.2017, leg. G. Wewalka & M. Balke (AmSam 08) (CGW, ZSM).
- FRENCH POLYNESIA: 2 ♂♂, 2 ♀♀: Rimatara, Maunutu Swamp, 22°38'35"S 152°48'39"W, 10 m, 27.II.2008, leg. N. Porch (Balke 3668–3671) (ZSM).

COMMENT: It should be kept in mind, that the identity of this species is unconfirmed as long as the holotype has not been examined.

MEASUREMENTS: TL: 9.5–10.8 mm; TL-H: 8.9–10.1 mm; MW: 5.2–6.1 mm.

AFFINITIES: *Hydaticus consanguineus* resembles *H. fabricii* in habitus, size and most other external characters. The elytral irrorations are constantly condensed along the suture, forming a patch in the middle, a small spot lateral of it and a transverse band of separated spots preapically.

Hydaticus consanguineus can be distinguished with certainty only by the shape of the median lobe (Fig. 10), which is in lateral view most similar but smaller in *H. mexaformis* and *H. incertus*. In ventral view, the apices of the lateral lobes (see arrow in Fig. 10b) are hardly enlarged.

DISTRIBUTION (Fig. 49): Solomon Isls.; Australia: New South Wales, Northern Territory, Queensland, South Australia, Western Australia; New Zealand: Kermadec Isls.; New Caledonia; Vanuatu; Fiji; Tonga; West Samoa; American Samoa; French Polynesia (first record).

11. *Hydaticus ricinus* WEWALKA, 1979

Hydaticus fabricii: SHARP 1882: 663 (partim); RÉGIMBART 1899: 324 (partim); GUIGNOT 1954b: 201 (partim); GUÉORGUIEV 1967: 475 (partim); VAZIRANI 1969a: 266 (partim); PRABHAKARAN & KAKKASSERY 2018: 2065 (partim).

Hydaticus rhantoides: WEWALKA 1972: 118 (partim).

Hydaticus ricinus WEWALKA 1979: 128; BRANCUCCI 1979: 208; ROCCHI 1982: 59, 1986: 33; NILSSON 2001: 105; ROCCHI 2001: 71; HÁJEK & FERY 2004: 34; GHOSH & NILSSON 2012: 27; GHOSH & HEGDE 2013: 63; JAISWAL et al. 2014: 93; GHOSH et al. 2014: 107; GHOSH 2015: 82, 2018: 158; GHOSH et al. 2020: 229; GHOSH 2021: 585; NILSSON & HÁJEK 2022a: 99, 2022b: 24.

Prodaticus ricinus: MILLER et al. 2009: 597 ff.

TYPE LOCALITY: India, Tamil Nadu, Nilgiri Hills.

TYPE MATERIAL: **Holotype** ♂ (NHML): “Nilgiri Hills” [printed white label] \ “477” [handwritten cream label] \ “H.E. Andrews Bequest B.M. 1922–221” [printed white label] \ “Holotypus *Hydaticus ricinus* n.sp. det. Wewalka 77” [partly handwritten red label]. **Paratypes**: 10 exs., same label data as holotype (see WEWALKA 1979).

ADDITIONAL MATERIAL EXAMINED:

PAKISTAN: Azad Kashmir: 1 ♂: 20 km S Muzaffarabad, Nara vill., 750 m, 30.IV.1998, leg. G.M. László & G. Ronkay (CHF); 1 ♂: Indus Valley between Chilas and Dassu, 15.V.1998, leg. G.M. László & G. Ronkay (CHF); 1 ♂: Poonch Distr., Bagh, resthouse, at light, 1200 m, 22.VI.2001, leg. K. Staven (CAS).

NEPAL: Gandaki Zone: 1 ♂: Myagdi Distr., Tatopani, 1100–1400 m, 14.–17.VI.1986, leg. J. Probst (NMW); 3 exs.: Tatopani, 55 km NW Pokhara, 1200 m, 5.V.1984, leg. G. Wewalka (CGW); 4 exs.: Landrung, 25 km NW Pokhara, 1500–2000 m, 12.V.1984, leg. G. Wewalka (CGW); 1 ♂, 1 ♀: Pokhara, Phewa Lake, 28°12'18"N 83°57'73"E, 900 m, 25.IV.2000, leg. A. Skale (CAS); 4 exs.: Tatopani – Kopchepani, 1100–1500 m, 17.VI.1986, leg. C. Holzschuh (NHMB); 1 ex.: Kashi Distr., Chandrakot – Hille, 1000–1600 m, 6.VI.1986, leg. C. Holzschuh (NHMB); 1 ex.: Kavre, Dhad Khola, 600 m, 31.V.1989, leg. C. Holzschuh (NHMB); 1 ♀: Tanahu, Bimalnagar, Chudi Khola, 30 m, 10.XI.1993, leg. Moog et al. (13) (NMW).

Sagarmatha Zone: 3 exs.: Hetauda env., 19.II.1981, leg. M.A. Jäch (N 22) (CGW, NMW); 1 ♂: Dolakha Distr., lower Amatal Khola, 1700 m, 9.VI.2000, leg. W. Schawaller (CHF); 58 exs.: Janakpur, Dolakha, Tamakoshi, 850–1100 m, 24.–29.V.1989, leg. M. Brancucci (NMHB); 2 exs.: Sankhua Sabha Distr., Arun Valley, Bhotebas – Darapangma, 1400–1800 m, 20.VI.1988, leg. J. Martens & W. Schawaller (SMNS); 3 exs.: Arun Valley, Tumlingtar, 450 m, 12.VI.1983, leg. M. Brancucci (NMHB); 8 exs.: Arun Valley, Chichila, 1950 m, 31.V.1983, leg. M. Brancucci (NMHB); 1 ♂: Khatmandu Valley, Pothana – Landrung, 1600–1900 m, 7.V.1984, leg. B. Bhakta (NHMB); 1 ex.: Kathmandu Valley, Godavari, 1500 m, 19.V.1989, leg. M. Brancucci (NHMB); 2 ♂♂, 5 ♀♀: Kathmandu, ca. 1972 [respectively location notebook not traced in NMW], leg. H. Franz (Pa 258, Pa 277) (NMW); 1 ex.: Bagmati, Sindhupalchok, Parahang, 1700 m, 9.VI.1989, leg. M. Brancucci (NHMB); 1 ♂: Sauraha, Hotel Sweet Home, 27°35'9"N 84°29'30.5"E, 180 m, at light, 4.–7.VII.2017, leg. A. Kopetz (CAS).

Koshi Zone: 1 ex.: Koshi – Mangmaya, 27°7'N 87°15'E, 300–400 m, 30.V.2001 (NHMB); 1 ♂: Dharan env., 13.II.1981, leg. M.A. Jäch (12) (NMW).

Mechi Zone: 3 exs.: Kangchenjunga Himal Mts., Chiruwa, 27°29'N 87°45'E, 1260 m, 30.VI.2000, leg. J. Farkač (NHMB).

BHUTAN: 15 exs.: Phuntsholing, 400 m, 21.III.–15.IV.1983, leg. C.J. Rai (NHMB); 23 exs.: Sargham, 1000 m, VIII.1982, leg. C.J. Rai (CGW, NHMB).

INDIA: Himachal Pradesh: 1 ex.: Kulu Valley, ca. 20 km N Kulu, Nishalla Stream, 1800 m, 23.VIII.1996, leg. A. Stauder (NMW).

Uttarakhand: 15 exs.: Barkot, 1100–1200 m, 5.–12.VI.1983, leg. M. Brancucci (NHMB); 12 exs.: Bhimtal, 1300–1500 m, 20.V.1981, leg. M. Brancucci (NHMB); 3 exs.: Bhimtal, 1500 m, 5.IV.1978, leg. M. Brancucci (NHMB); 1 ex.: Thalari, 24.VII.1994, leg. M. Snižek (CPM); 2 ♂♂: Garhwal, “Kyliani” [Kalyani], paddy fields, 2200 m, 30°42'12.8"N 78°13'57.5"E, 16.X.1997, leg. J. Štátný (CJS).

Bihar: 2 ♀♀: "Mandar (Berg) [Mandar Hill] P. Cardon 7/[18]91" (IRSNB).

Jharkhand: 3 ♂♂, 1 ♀♀: "Konbir P. Cardon" (IRSNB); 1 ♂, 4 ♀♀: "Barway [Jashpur District, Chainpur env., ca. 23°8'N 84°14'E] [leg.] P. Cardon" (IRSNB).

West Bengal: 4 ♂♂, 3 ♀♀: Darjeeling Distr., Sukna, 180 m, at light, 21.–23.V.1980, leg. G. Topál (HNHM); 29 exs.: Pudung, 1000 m, 23.IV.1983, leg. B. Narayan (NHMB); 15 exs.: Pedong, 27.–30.IV.1987, leg. B. Bhakta (NHMB); 1 ♂: Pedong, leg. A. Desgodins (SDEI); 22 exs.: Kagay, 850 m, 21.–24.IV.1983, leg. B. Bhakta (CGW, NHMB); 15 exs.: Chivo Busty, 21.IV.1985, leg. B. Narayan (NHMB); 35 exs.: Rang, 580 m, 23.–24.III.1983, leg. B. Bhakta (NHMB); 1 ex.: Sakyong, 1140 m, 25.IX.1981, leg. B. Bhakta (NHMB); 13 exs.: Ralli [Relly] River, 700 m, 3.VI.1985, leg. B. Narayan (NHMB); 88 exs.: Relly, 600–800 m, 18.III.1985, 16.IV.1987, 11.III.1990, leg. B. Bhakta (NHMB); 2 exs.: Khani Khola, 600 m, 1.IV.1983, leg. B. Bhakta (NHMB); 11 exs.: Chawa Khola, 600 m, 29.III.1986, leg. B. Bhakta (NHMB); 45 exs.: Tista, 200 m, 26.IV.1985, 18.IV.1987, 14.III.1990, leg. B. Bhakta (NHMB); 2 exs.: Durpin, 9.V.1985, leg. B. Bhakta (NHMB); 21 exs.: Renok, 7.–11.IV.1989, leg. B. Bhakta (NHMB); 12 exs.: Alghera, ca. 2750 m, 19.IV.1984, leg. C.J. Rai (NHMB); 10 exs.: Algarah, 1900 m, IV.1982, leg. C.J. Rai (NHMB); 21 exs.: Kalimpong, Burbong, 950 m, VI.1982, leg. C.J. Rai (NHMB); 2 exs.: Kalimpong, 1180 m, VII.–VIII.1983, leg. B. Bhakta (NHMB); 4 exs.: Kalimpong, Chebo, 1120 m, 3.IV.1984, leg. C.J. Rai (NHMB); 10 exs.: Foreign Res. Silk Center, 1200 m, 29.III.1984, leg. B. Bhakta (NHMB); 12 exs.: Bong Busty, 900 m, 5.IV.1984, 11.IV.1985, leg. B. Bhakta (NHMB); 1 ex.: Sonapur, Mahahandra River, 9.–15.IX.1984, leg. B. Bhakta (NHMB); 7 exs.: Anbegh Kaman, 1.–4.IV.1987, leg. B. Bhakta (NHMB); 5 exs.: Manshong Kaman, 20.–21.IV.1987, leg. B. Bhakta (NHMB); 7 exs.: Lola, 14.III.1990, leg. B. Bhakta (NHMB); 2 exs.: Malli [Melli], 22.IV.1987, leg. B. Bhakta (NHMB); 26 exs.: Jalpaiguri Distr., Bagra Kote, 200–300 m, 16.–22.XII.1985, leg. B. Bhakta (NHMB); 1 ♂: Kurseong, leg. P. Braet (IRSNB).

Sikkim: 31 exs.: Rishi Khola, 700 m, 3.XII.1981, leg. B. Bhakta (NHMB).

Assam: 9 exs.: Bhalukpong, 27°2'N 92°35'E, 150 m, 26.V.–3.VI.2006, leg. L. Dembický & P. Pacholátko (NHMB); 54 exs.: 20 km N Guwahati, 5.VII.1995, leg. K. Werner (CPM).

Meghalaya: 3 exs.: Jaintia Hills Reg., Jowai, 25°27'N 92°12'E, 1350±100 m, 6.–10.VI.1996, leg. E. Jendek & O. Šauša (NMW); 3 exs.: West Garo Hills, Nokrek NP, 25°29.6'N 90°19.5'E, 1100±150 m, 9.–17.V.1996, leg. E. Jendek & O. Šauša (CGW, NMW); 8 exs.: West Garo Hills, Bagmara, 25°11.5'N 90°38.5'E, 100 m, 19.–21.V.1996, leg. E. Jendek & O. Šauša (CGW, NMW); 3 exs.: West Garo Hills, Balphakram NP, 25°11'N 90°51'E, 300–500 m, 22.–27.V.1996, leg. E. Jendek & O. Šauša (NMW); 3 exs.: SW of Cherrapunjee, 25°13'N 91°40'E, 900 m, 1.–24.V.2005, leg. L. Dembický (NHMB); 1 ♂: 1 km E Tura, 25°30'N 90°14'E, 500–600 m, 2.–5.V.202, leg. M. Trýzna & P. Benda (CJS).

Arunachal Pradesh: 49 exs.: 8 km S Jamiri, near Sessa, 27°7'–9'N 92°34'E, 350 m, 26.V.–4.VI.2005, leg. P. Pacholátko (NHMB); 1 ♂, 2 ♀♀: Along [Aalo], 30.V.2006, leg. G. de Rougemont (NMW).

Madhya Pradesh: 2 ♂♂: Bhopal Distr., near Amchhakala, ca. 40 km SSE Bhopal, N of Ratapani Sanctuary, pools, 22°57'6"N 77°35'45"E, 440 m, 22.II.2008, leg. M.A. Jäch & S. & P. Sharma (NMW).

Odisha: 11 exs.: Similipal NP, Lulung, 21°56'N 86°32'E, 25.V.–13.VI.1998, leg. K. & S. Majer (NHMB).

Telangana: 1 ex.: Hyderabad, VI.1976, leg. M. Halua (NHMB).

Karnataka: 1 ♂: W Ghats Mts., Kollur env., 30 km SE Bhatkal, 26.–28.V.2005, leg. O. Šafránek (CJS); 3 exs.: Sulja, Madikeri, 15 m, 12°32'N 75°29'E, 24.IV.2005, leg. M. Halada (OLM); 1 ♂, 1 ♀: Coorg, Madikeri env., Abbi Falls Road, 12°30'N 75°45'E, 900–1200 m, 20.XII.1998, leg. D. Boukal (8) (NMW).

Kerala: 1 ♂: Thekkady, Periyar Lake, 9°34'N 77°10'E, 900–1000 m, 19.–27.IV.1997, leg. L. Dembický & P. Pacholátko (NHMB); 1 ♂: 70 km N Trivandrum, Thaimala [Thenmala], near Shenkottai, 150 m, 5.IV.1997, leg. A. Schintlmeister & V. Siniaev (CLH); 4 ♂♂, 1 ♀: Shimoga, 1865 ft., Tunga River, V.–VII.1936, leg. P.S. Nathan (IRSNB).

Tamil Nadu: 14 exs.: Shevaroy Hills, 5 km SE Cauvery Peak, 11°48'N 78°16'E, 1200 m, 26.I.1999, leg. D. Boukal (CGW, NMW); 1 ex.: 5 km E Nagercoil, 8°12'N 77°28'E, 16.I.1994, leg. D. Boukal & Z. Kejval (NMW); 4 exs.: Nilgiri Hills, 15 km SE Kotagiri, 11°22'N 76°56'E, 17.–28.XI.1993, leg. D. Boukal, Z. Kejval & D. Hauck (CJS, NMW); 24 exs.: Nilgiri Hills, 11 km SE Kotagiri, Kunchappanai, 11°24'N 76°56'E, ca. 1000 m, 3.–15.V.2002, leg. P. Pacholátko (NHMB); 2 ♂♂, 1 ♀: Tanjore [Thanjavur], Nedungadu, II.–VI.1938, leg. P.S. Nathan (IRSNB); 1 ♂: Coimbatore, XI.1935, collector unknown (IRSNB); 2 ♂♂: "Dingdul [Dindigul] S. India Coll. Kraatz" (SDEI); 1 ♂: "Pondkherly" [Puducherry] (IRSNB).

SRI LANKA: North Western Prov.: 5 exs.: Chilaw – Puttalam, 27.III.–1.IV.1994, leg. A. Senft (CPM).

Western Prov.: 7 ♂♂, 5 ♀♀: Colombo env., XI.1980, leg. M.A. Jäch (C 1, C 5) (NMW); 2 ♀♀: Colombo, 20.IV.1974, leg. E. Heiss (CGW); 1 ♂, 1 ♀: Negombo, 25.II.1974, leg. B. Gustafsson (NHRS); 6 ♂♂, 4 ♀♀: Negombo, Talahena, XI.–XII.1985, leg. T.-E. Leiler (NHRS); 1 ex.: Kalutara, 6°36'N 79°57'E, 4.–22.II.1998, leg. A. Pütz (NMW).

Sabaragamuwa Prov.: 2 ♂♂, 1 ♀: Ratnapura env., 4.I.1081, leg. M.A. Jäch (C 53) (CGW, NMW); 2 ♂♂, 3 ♀♀: Ratnapura env., II.1994, leg. C. Kutzscher (SDEI).

- Central Prov.: 6 ♂♂, 2 ♀♀: Nuwara Elyia env., 17.XI.–5.XII.1980, leg. M.A. Jäch (CGW, NMW); 12 exs.: Haputale env., Beragala, XI.–XII.1980, leg. M.A. Jäch (C 34) (CGW, NMW); 1 ♂, 1 ♀: Horton Plains, 15.I.1981, leg. M.A. Jäch (C 58) (NMW); 2 exs.: Dambulla env., 20.–22.XII.2003, leg. F. Kantner (OLM).
- Southern Prov.: 3 ♂♂: Hikkaduwa, IV.1984, leg. A. Puchner (NMW).
- MYANMAR: Sagaing Prov.: 10 exs.: Chatthin Wildlife Sanctuary, San Myaung Camp, 23°32'5"N 95°38'53"E, ca. 200 m, at light, 15.–20.VI.2002, leg. H. Schillhammer, M. Hlaing & A. Moe (15) (CGW, NMW).
- Shan State: 5 ♂♂, 4 ♀♀: "Carin Asciiui Chebá [Kayah-Karen Mts.] 1200–1300 m. L. Fea. I.[18]88" (IRSNB, SDEI); 1 ex.: Nyaungshwe, View Point Inn, pond, ca. 920 m, 20°39.696'N 96°55.500'E, 6.–7.VI.2004, leg. H. Shaverdo & H. Schillhammer (NMW); 1 ♂, 1 ♀: Kalaw env., 20.6320°N 96.5619°E, ca. 1350 m, 8.–20.VI.2015, leg. W. Grosser (NMW).
- CHINA: Yunnan: 2 ♂♂: Tongbiguan, 24°36.7'N 97°39.4'E, 1340 m, at light in village near river, 24.–26.VI.2016, leg. J. Hájek & J. Růžička (NMP); 7 exs.: Xishuangbanna, ca. 12 km NW Menghai, ca. 1000 m, 11.XI.1999, leg. M.A. Jäch et al. (CWBS 376) (CGW, NMW); 1 ex.: Xishuangbanna, E Mengyang to Menglun, ca. 800 m, 10.XI.1999, leg. M.A. Jäch et al. (CWBS 372) (NMW); 1 ♂: Xishuangbanna, 23 km NW Jinghong, Na Ban, 22°10.4'N 100°39.52'E, 680 m, 18.V.2008, leg. A. Weigel (CAS).
- Hainan: 1 ex.: Mao'an, rice fields, 250 m, 20.I.1996, leg. M.A. Jäch (CWBS 200) (NMW); 1 ex.: Sanya, 20.I.1996, leg. M.A. Jäch (CWBS 201) (NMW); 3 exs.: 6 km W Dongxing, 50 m, 25.I.1996, leg. M.A. Jäch (CWBS 217) (NMW).
- THAILAND: Mae Hong Son Prov.: 3 exs.: 29.–30.IV.1992, leg. J. Horák (NMW); 1 ♂: Huai Mae Sa, 17 km S Pai, 19°12'N 98°26'E, 500 m, 17.X.2003, leg. H. Malicky (CGW); 1 ♂: Muang Pai Resort, 19°23'N 98°24'E, 800 m, 3.–16.V.2005, leg. H. Malicky (CGW); 1 ♂: 5 km E Pai, 700 m, 19.IV.2004, leg. W. Schwallier (SMNS).
- Chiang Mai Prov.: 3 exs.: Soppong – Pai, 1800 m, 1.–8.V.1992, leg. P. Pacholátko & L. Dembický (NMW); 26 exs.: Chiang Dao, 19°22'N 98°57'E, 350 m, 9.–14.V.1991, leg. D. Král (NHMB); 3 exs.: Fang, 19°55'N 99°12'E, 300 m, 25.V.1991, leg. D. Král (NHMB); 1 ex.: Muang Khong, 19°24'N 98°45'E, 600 m, 20.V.1991, leg. D. Král (NHMB); 37 exs.: Chom Thong, 18°26'N 98°41'E, 24.–27.IV.1991, leg. P. Pacholátko, L. Dembický, J. Farkač & S. Bílý (NHMB, NMW); 1 ex.: Chiang Dao Distr., Mueang Khong, stn. 267, 1070 m, 14.XI.2021, leg. R. Okada (CGW).
- Lampang Prov.: 4 exs.: Thoen Distr., Mae Mok, stn. 198, 280 m, 15.XI.2020, leg. R. Okada (CGW).
- Nan Prov.: 14 exs.: S Pai, Mae Nam Pai, NE Ban Sop Sa, 500 m, 19°15'57"N 98°26'52"E, at light, 13.IV.2000, leg. H. Rausch (OLM); 30 exs.: Ban Pha Khap, 15.–20.V.1992, leg. P. Pacholátko (CGW, NMW).
- Uttaradit Prov.: 2 exs.: Nam Pat Distr., Saen To, stn. 184, 210 m, 12.VI.2021, leg. R. Okada (CGW).
- Loei Prov.: 1 ex.: Phu Kradueng NP, upstream of Pen Bob Waterfall, small pool with moss, ca. 1150 m, 29.XII.1999, leg. P. Mazzoldi (CPM).
- Khon Kaen Prov.: 1 ♂: Noon Huachang, upstream of Nam Phong Dam, rock pools at small stream, 21.XI.1995, leg. N. Nieser (NML).
- Bueng Kan Prov.: 1 ex.: Seka Distr., Ban Tong, stn. 206, 190 m, 28.XII.2020, leg. R. Okada (CGW).
- Sakon Nakhon Prov.: 1 ex.: Charoen Sin Distr., Thung Kae, Huai Nok Khao, stn. 207, 190 m, 28.XII.2021, leg. R. Okada (CGW).
- Sukhothai Prov.: 1 ♂: Old Sukhothai, 26.V.1999, leg. R. Grimm (SMNS).
- Tak Prov.: 2 exs.: Umphang Distr., Mae Chang/Mae Klong confluence, Thung Yai Wildlife Sanctuary, 15°30'N 98°48'E, 300 m, 27.IV.–6.V.1988, leg. M.J.D. Brendell (NHML); 6 exs.: Umphang, 16°4'N 98°53'E, 500 m, 26.IV.–6.V.1991, leg. D. Král (NHMB); 7 exs.: Lansang NP, 16°48'N 98°57'E, 500 m, 18.–24.IV.1991, leg. D. Král (NHMB).
- Uthai Thani Prov.: 23 exs.: 25 km NW Lan Sak, 110 m, at light, VIII.1989, VIII.–IX.1990, leg. W. Thielen (CGW, MNB, NMW, SMNS); 3 exs.: 55 km W Uthai Thani, 2 km SW Pak Muang, 120 m, at light, IX.1991, leg. W. Thielen (MNB); 1 ♂, 3 ♀♀: 3 km W Ban Rai, 150 m, at light, XI.1991, leg. W. Thielen (MNB).
- Chainat Prov.: 4 exs.: 10 km W Han-Kha, 90 m, at light, VII.1990, leg. W. Thielen (NMW).
- Kanchanaburi Prov.: 1 ex.: NW Kanchanaburi, Sai Yok Yai NP, 3.XII.1990, leg. M.A. Jäch (8) (NMW); 1 ex.: farmland near Kwai River, 400 m, 25.–27.III.1988, leg. M.J.D. Brendell (NHML); 1 ♂: Kanchanaburi, 14°1'N 99°31'E, 50 m, 28.VI.1993, leg. V. Kubán (SMNS).
- Nakhon Ratchasima Prov.: 1 ex.: Pak Chong, peripheral area of Khao Yai NP, 14°36.78'N 101°24.29'E, 400 m, 14.–22.II.2006, leg. T. Ihle (CAS); 4 exs.: Nakhon Ratchasima, I.–III.1989, leg. S. Steinke (CLH); 26 exs.: road Nakhon Ratchasima – Khon Kaen, 15°19'53"N 102°26'19"E, roadside ditch, 19.II.2017, leg. H. Shaverdo (2017-Th-02) (NMW, ZSM).
- Petchabun Prov.: 3 exs.: near Nam Nao NP, route 2216, small road off Khlong Choen, 16°40'29"N 101°44'1"E, puddles of dried up river, 21.III.2017, leg. H. Shaverdo (2017-Th-05A) (NMW, ZSM).
- Prachuap Khiri Khan Prov.: 1 ♂, 1 ♀: Khao Sam Roi NP near Phimai, 29.VIII.2002, leg. K.-G. Bernhardt (NMW).
- LAOS: Bokeo Prov.: 10 exs.: 5 km W Ban Tou, Bokeo Nature Reserve, 500–700 m, 20°27'–28'N 100°45'E, 4.–18.V.2011, leg. M. Brancucci et al. (NHMB).

- Luang Namtha Prov.: 2 exs.: Muang Sing, 600 m, at light, 9.–13.VI.1996, leg. H. Schillhammer (18) (NMW).
 Phongsaly Prov.: 11 exs.: 4 km E Boun Neua, ca. 1000 m, 21°38'N 101°57'E, 20.VI.2003, leg. P. Pacholátko (CGW, NHMB).
 Udomxai Prov.: 10 exs.: Pak Beng, 450 m, 19°53'37"N 101°7'51"E, 18.–27.V.2001, leg. J. Kolibáč (CGW, NHMB).
 Luang Prabang Prov.: 4 exs.: Thong Khan, ca. 750 m, 19°35'N 101°58'E, 11.–21.V.2002, leg. V. Kubáň (CGW, NHMB); 1 ex.: Thong Khang, 700 m, 19°34'N 101°57'E, light trap, 30.VI.2010, leg. M. Brancucci & M. Geiser (NHMB); 1 ex.: Muang Ngoy, 500 m, 20°43'N 102°41'E, 22.IV.1999, leg. V. Kubáň (NHMB); 7 exs.: Khan River, 300 m, 19°53'N 102°9'E, 21.IV.1999, leg. V. Kubáň (NHMB); 9 exs.: 10 km N Luang Prabang, near Mekong Hills, ca. 250 m, at light, XI.1992, V.1993, leg. I. Somsy (CLH, MNB).
 Houa Phan Prov.: 7 exs.: Phou Pane Mts., 1350–1500 m, ca. 20°13'N 104°0'E, 1.V.–16.VI.2009, leg. M. Brancucci (NHMB); 10 exs.: Phou Pane Mts., 1500–1900 m, ca. 20°12'N 104°1'E, 17.V.–3.VI.2007, leg. M. Brancucci (CGW, NHMB); 1 ♂: Phou Pane Mts., 20°13'9–19"N 103°59'54"E, 1480–1510 m, 22.IV.–14.V.2008, leg. V. Kubáň (NMP); 15 exs.: Phou Pane Mts., Ban Saluei env., 1220–1900 m, 20°12'N 103°59'E, 10.–22.V.2011, leg. S. Jäckl (CGW, CLH); 1 ♂: Ban Saluei – Phou Pane Mts., 20°12–13.5'N 103°59'–104°1'E, 1340–1870 m, 15.IV.–15.V.2008, local collector (NMP); 1 ♂: 25 km SE Vieng Xai (by road), Ban Kangpabong env., 28°19'N 104°25'E, 14.–18.V.2001, leg. J. Bezděk (NMP).
 Saiyabuli Prov.: 4 exs.: Hongsa env., 550–750 m, 19°40–44'N 101°20'E, 2.–3.VII.2010, leg. D. Hauck (CGW, NHMB).
 Vientiane Prov.: 1 ex.: Cat Tien vill, Vang Vieng, bank of Nam Song River, 280 m, at light, 21.III.1998, leg. O. Merkl & G. Csorba (6) (CHF); 28 exs.: Vang Vieng, 300 m, 18°55'23"N 102°26'55"E, 10.–15.V.2001, 1.–6.VI.2001, leg. J. Kolibáč (CGW, NHMB); 14 exs.: Viang Vieng, 10.–13.V.2003, leg. O. Šafránek (CGW, CJS).
 CAMBODIA: 1 ex.: “Cambodia (2047), 67.56” (NHML).
 Siem Reap Prov.: 1 ♂: Angkor Thom, ca. 20 m, pool, 29.I.2012, leg. G. Wewalka (CGW).
 Koh Kong Prov.: 1 ex.: 20 km SE Koh Kong, Tatai River, 11°34'N 103°7'E, 50–300 m, 17.X.–15.XI.2011, leg. Z. Linek (CGW).
 Mondolkiri Prov.: 2 ♂♂: Sen Moronom, 12°30'N 107°12'E, 600 m, 22.–26.I.2006, leg. S. Bečvář & R. & H. Fouqué (CJS).
 VIETNAM: Central Highlands Region: 3 exs.: 40 km NW An Khe, Buon Luoi, 14°10'N 108°30'E, 620–750 m, 28.III.–12.IV.1995, leg. P. Pacholátko & L. Dembický (NMW); 60 exs.: Nam Cat Tien NP, 1.–15.V.1994, leg. P. Pacholátko & L. Dembický (CGW, NMW); 57 exs.: 120 km NNE Ho Chi Minh City, Cat Tien vill. env., 3.–18.VII.1995, leg. A. Napolov (CGW, CLH, NHMB).
 MALAYSIA: Malacca: 1 ♂: “Malacca [Malacca State or Malacca City]” (IRSNB).
 INDONESIA: Sumatra (without precise locality data): 1 ♂: “Sumatra coll. [F.] Gärtner” (SDEI); 1 ♂: “Sumatra Coll. Kraatz” (SDEI).
 Aceh: 1 ex.: Blangkejeren, 1000 m, 10.X.1991, leg. W. Barries (NMW); 1 ♂, 4 ♀♀: Alas Valley, Soldok, 3°42'N 97°40'E, rice fields, 23.–25.VI.1972, leg. J. Krikken (NML).
 North Sumatra: 1 ♂: Dolok Merangir, 8.V.–10.VI.1983, leg. E.W. Diehl (NHMB).
 Riau Archipelago: 1 ♂: upper part of Indragiri River, 0°14'36.2"S 101°30'31.7"E, 25.XI.1996, leg. T.H. Hui (ZRCS).
 West Sumatra: 1 ♂: Solok, ex coll. P. Schneider (IRSNB).

MEASUREMENTS: TL: 8.7–10.4 mm; TL-H: 8.2–9.7 mm; MW: 4.6–5.6 mm.

AFFINITIES: *Hydaticus ricinus* resembles *H. fabricii* in most external characters, but the elytral irrorations are less confluent.

Hydaticus ricinus can be identified with certainty only by the shape of the median lobe (Fig. 11). In lateral view, the median lobe is quite straight and slender in apical two thirds, and the ventral margin is not emarginate subapically. In ventral view, the apical tuft of setae is separated along midline. The median lobe is very similar to that of *H. ponticus* (Fig. 12), which, in lateral view, is also straight and slender, but the ventral margin is slightly emarginate subapically and bears a small undivided tuft of setae.

DISTRIBUTION (Fig. 46): Afghanistan; Pakistan; Nepal; Bhutan (first record); India: Arunachal Pradesh (first record), Assam, Bihar (first record), Chhattisgarh (GHOSH 2021), Himachal Pradesh, Jharkhand (first record), Karnataka (first record), Kerala (first record), Madhya Pradesh, Maharashtra, Meghalaya (first record), Odisha (first record), Sikkim (first record), Tamil Nadu (incl. Puducherry), Telangana (first record), Uttarakhand (first record), West Bengal (first

record); Sri Lanka; Myanmar; China (first record): Hainan, Yunnan; Thailand; Laos; Vietnam; Malaysia; Indonesia: Sumatra.

Many literature records of *H. fabricii* from India probably refer to *H. ricinus*.

12. *Hydatiscus ponticus* SHARP, 1882

Hydatiscus ponticus SHARP 1882: 662; MARSEUL 1882: 117; BRANDEN 1884: 102; RÉGIMBART 1899: 325; JACOBSON 1908: 434; WINKLER 1924: 235; ZAITZEV 1927: 32; GUIGNOT 1936: 58; GSCHWENDTNER 1937: 76; ZAITZEV 1953: 312; GUIGNOT 1959: 11; DERWESH 1963: 25; GUÉORGUEV 1965c: 110 (partim), 1967: 476 (partim); FRANCISCOLO 1968: 56; VAZIRANI 1969a: 269; WEWALKA 1972: 118; ALFIERI 1976: 37; VAZIRANI 1977b: 80; ALI 1978: 12; WEWALKA 1979: 131; BALKE & HENDRICH 1988: 15; ALI & ABDULKARIM 1989: 19; NILSSON 1995: 94; ZALAT et al. 2000: 43; KIREJTSHUK 2001: 227; NILSSON 2001: 105, 2003: 8; AHMED 2004: 36; HÁJEK 2006: 50; DARILMAZ & KIYAK 2009: 1606; SALAH & RÉGIL CUETO 2014: 150; SHAVERDO et al. 2021: 8; NILSSON & HÁJEK 2022a: 99, 2022b: 24.

Hydatiscus fabricii: GUÉORGUEV 1967: 474 (partim).

TYPE LOCALITY: “Mesopotamia” [possibly Iraq].

TYPE MATERIAL: **Lectotype** ♂, designated by WEWALKA (1979) (NHML): “LECTO-TYPE” [round printed white label with navy blue margin] \ “Mesopotamia, Milligan 1012 ponticus” [handwritten white label] \ “Sharp Coll. 1905-313” [printed white label] \ “Lectotypus Hydatiscus ponticus Wewalka 1978” [handwritten red label].

Paralectotypes: 1 ♀: same locality data as lectotype (NHML).

ADDITIONAL MATERIAL EXAMINED:

TURKEY: Muğla Prov.: 1 ♂: Kargıçay River (ca. 10 m wide), near Yanıklar, 15 km NW Fethiye, 27.V.1991, leg. H. Schönmann & H. Schillhammer (NMW); 1 ♂: Köyceğiz – Muğla, 4 km E Çiftlik, pool, 27.V.1991, leg. S. Schödl (49) (NMW).

Antalya Prov.: 1 ♂: Kızılot, NW Alanya, 27.VII.1990, leg. S. Schödl (10) (NMW); 1 ♂: Manavgat, Kızılot, Karpuzçay River, VII.2005, leg. G. Katschak (NMW).

Mersin Prov.: 3 exs.: Erdemli, I.IX.1981, leg. M.A. Jäch (CGW, NMW).

Adana Prov.: 1 ♂: Adana, V.1955, leg. G. Friedel (NMW).

CAUCASUS REGION (without precise locality data, possibly Azerbaijan): 2 ♂♂, 2 ♀♀: “Caucase col. A. Jean” (NMW).

AZERBAIJAN: 2 exs.: “Tr. Caucasus [Transcaucasus], Geok-Tapa, M. Burr, G.C. Champion coll., B.M. 1927-409” (NHML).

IRAQ: Basrah Prov.: 1 ex.: Al-Basrah, Al Kabaish, 27.–28.VI.1980, leg. R.E. Linnavouri (CGW); 1 ex.: Basrah City, at light, 30.VIII.1984, leg. G. Merkl (CHF).

SAUDI ARABIA: Eastern Prov.: 5 exs.: “Dharam” [Dharan], Al Jubail, V.–VI.1999, III.2001, leg. R. Valdinazzi (CHF).

IRAN: Gilan Prov.: 1 ex.: Rasht, 37°16'N 49°35'E, 15.VI.2001, leg. T. Osten (CHF).

Razavi-Chorasan Prov.: 1 ex.: Khorasan, Lotfabad, 15.VI.1994, leg. R.E. Linnavouri (CGW).

TURKMENISTAN: Mary Prov.: 1 ex.: 60 km NE Mary, Sachmet env., at light, 22.IV.1995, leg. V.G. Dolin (NMW); 1 ex.: Badhyz State Nature Reserve, 19.–20.IV.1993, leg. V.G. Dolin & P.C. Cate (8) (NMW).

Lebap Prov.: 1 ex.: Kuhitangtau [Köytendag Range], E Karljuk [Kap-Kutan], Keinar Baba River, 27.IV.1995, leg. V.G. Dolin (9) (NMW); 1 ♀: Dargan Ata env., 5.VI.1992, leg. M. Snížek (CLH); 1 ex.: Chardzhou [Türkmenabat], 39°N [no minutes quoted on label] 63°30'E, 200 m, leg. M. Danilevsky (CHF); 1 ♂: “Tschardschui [Türkmenabat] 59 ? Kisilkum Wüste [Kyzylkum Desert] [leg.] [E.N.] Fischer u. [&] [E.] Willberg” (MNB).

UZBEKISTAN: Bukhara Region: 1 ex.: Bukhara [Bukhara], Kogon, “Ekoc. Džejran” [Jayron ecocenter], 23.V.1992, leg. M. Snížek (OLM).

TAJKIKISTAN: Sughd Region: 10 exs.: Ura-Tyube [Istaravshan], 600–900 m, 20.VI.–10.VII.1987, leg. W.H. Muehe (CHF, CLH); 2 ♂♂, 3 ♀♀: Khatlon Vakhsh River, Tigrovaya Balka Reserve, 37°23.001'N 68°30.147'E, ca. 330 m, 20.V.2017, leg. B. Benedek & S. Ilniczky (HNHM).

Khatlon Region: 1 ♂: Kurgan Tjube [Bokhtar], 6.VI.1966, leg. J. Král (CGW); 1 ex.: Kumsangir Distr., Karaul Tepe, at light, 29.VII.1983 (CGW); 1 ♂: Kumsangir Distr., Tigrovaya Balka Nature Reserve, 31.VII.–8.VIII.2000, leg. V. Perepechaenko (NMW).

AFGHANISTAN: Herat Prov.: 1 ♂: “Afghanistan Kushke [Kushk] Coll. Hauser 1896” (NMW).

Kabul Prov.: 1 ♀: Kabul River, Tang-e Gharu Gorge, 1600 m, 22.–23.V.1977, leg. L. de Freina (CLH).

PAKISTAN: Punjab: 2 exs.: Rawalpindi, Ayub Park, 7.–8.IX.1988, leg. W. Heinz (NHMB); 1 ex.: “Murree Hills [Rawalpindi Distr.] Thobba H. Roberts coll. 1926-395.” (NHML).
 Baluchistan: 20 exs.: 90 km SSE Quetta, Kundlani, 20.–23.II.1995, leg. D. Hauck & L. Čížek (CGW, NMW).
 Sindh: 1 ♂: “Sind, acq. 1891, ex Musæo Fred Moore” (MNHN-CO).
 INDIA: Punjab: 2 ♂♂: Hoshiarpur Distr., Rormazara, 31°11'50.7"N 76°12'58.0"E, ca. 280 m, 6.–9.VII.2004, leg. M. Uhler (CGW).
 Rajasthan: Bharatpur, 11.VIII.1989, leg. A. Riedel (CLH); 1 ♂: Bharatpur, Keoladeo NP, 29.X.1997, leg. J. Štátný (CJS).
 Delhi: 2 ♂♂: New Delhi, light trap, 12.VIII.1967, leg. K.E. Gibson (SIW); 2 ♂♂: New Delhi, IARI [Indian Agricultural Research Institute New Delhi], field light trap 3, 13.VIII.1968, leg. K.E. Gibson (SIW); 1 ♂, 2 ♀♀: New Delhi, Oberoi Hotel, at light, 1.VIII.1970, leg. H. Franz (Pa 1) (NMW).
 Uttar Pradesh: 1 ♂: Fatehpur Sikri, 31.X.1997, leg. J. Štátný (CJS).

MEASUREMENTS: TL: 9.6–11.1 mm; TL-H: 8.9–10.4 mm; MW: 5.4–6.2 mm.

AFFINITIES: *Hydaticus ponticus* resembles *H. fabricii* in most external characters but it is slightly shorter oval and more convex. The elytral irrorations are less confluent and the setae on the notch on the dorsum of the metatarsomeres are shorter (reaching ca. 1/3 of the length of the first tarsomere).

Hydaticus ponticus can be identified with certainty only by the median lobe (Fig. 12). In lateral view the median lobe is quite straight and slender in apical two thirds, and the ventral margin is slightly emarginate subapically and bears a small undivided tuft of setae; in ventral view, the median lobe is slender. The median lobe of *H. ricinus* (Fig. 11) is also straight and slender in lateral view, but lacks a ventral emargination and possesses a short divided tuft of setae.

DISTRIBUTION (Fig. 48): Turkey; Azerbaijan; Iraq; Saudi Arabia; Iran; Turkmenistan; Uzbekistan; Tajikistan; Afghanistan; Pakistan; India: Delhi, Punjab, Rajasthan, Uttar Pradesh.

SHAVERDO et al. (2021) stated that *H. ponticus* was previously often confused with *H. leander* and other species of the *H. fabricii* group. Confirmed records of *H. ponticus* are known only from Asia. The occurrence of *H. ponticus* in North Africa (Egypt, Libya) and the Sinai Peninsula (NILSSON & HÁJEK 2022b) is highly questionable.

13. *Hydaticus ephippiiger* RÉGIMBART, 1899

Hydaticus sellatus ephippiiger RÉGIMBART 1899: 326; ZIMMERMANN 1920: 224; GUIGNOT 1956: 55; VAZIRANI 1977b: 81; GUÉORGUIEV & ROCCHI 1993: 162; NILSSON 2001: 105.

Hydaticus ephippiiger: WEWALKA 2015: 29; NILSSON & HÁJEK 2022a: 96.

Hydaticus finus WATTS 1978: 147, 1985: 26; LAWRENCE et al. 1987: 356; NILSSON 2001: 102; WEWALKA 2015: 29 (synonymy).

TYPE LOCALITY: Papua New Guinea, Rigo.

TYPE MATERIAL: **Lectotype** ♀, designated by WEWALKA (2015) (MNHN-CR): “N. GUINEA MER. RIGO Luglio [July] 1889 L. LORIA” [printed white label] \ “Museo Civ. Genova” [printed orange label] \ “MUSEUM PARIS COLL MAURICE REGIMBART 1908” [printed white label] \ “var. ephippiiger [sic!] Rég.” [handwritten white label] \ “Lectotypus Hydaticus ephippiiger Rég. Wewalka 2014” [printed red label].

MEASUREMENTS: TL: 9.6–11.1 mm; TL-H: 9.0–10.4 mm; MW: 5.3–6.3 mm.

AFFINITIES: *Hydaticus ephippiiger* (Fig. 27) resembles *H. agaboides*, *H. larsoni*, *H. mazzoldii*, *H. pulcher* and *H. sellatus sellatus* in the predominantly dark brown to black colouration of the elytra; as in *H. agaboides*, *H. larsoni* and *H. sellatus sellatus*, the pronotum is predominantly dark brown to black. *Hydaticus ephippiiger* can be distinguished from all these species by the male genitalia (Fig. 13).

DISTRIBUTION (Fig. 49): Indonesia: Papua; Papua New Guinea; Australia: Queensland.

14. *Hydaticus agaboides* SHARP, 1882

Hydaticus agaboides SHARP 1882: 663; BRANDEN 1884: 99; ATKINSON 1891: 144; RÉGIMBART 1899: 327; ZIMMERMANN 1919: 227, 1920: 218; VAZIRANI 1977b: 75; WEWALKA 1979: 134; ZENG 1989: 5; NILSSON 1995: 73, 2001: 100; WEWALKA 2015: 33; NILSSON & HÁJEK 2022a: 94, 2022b: 23.

TYPE LOCALITY: Vietnam (“Cochin China”).

TYPE MATERIAL: **Holotype** ♀ (NHML): “Cochin China 1011 agaboides” [handwritten cream 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:

VIETNAM: Southeast Region: 1 ♀: “Hydaticus Fabricii M.L. affinis vicinus Saigon [Ho Chi Minh City] Collection [E.J.-B.] Fleutiaux” (SDEI).

MEASUREMENTS: TL: 9.9–11.0 mm; TL-H: 9.5–10.4 mm; MW: 5.3–5.8 mm.

AFFINITIES: *Hydaticus agaboides* (Fig. 28) resembles *H. ephippiiger*, *H. larsoni*, *H. mazzoldii*, *H. pulcher* and *H. sellatus sellatus* in the predominantly dark brown to black elytra; as in *H. ephippiiger*, *H. larsoni* and *H. sellatus sellatus*, the pronotum is predominantly dark brown to black. From these species *H. agaboides* can be distinguished by the absence of a dense fringe of setae along the basal margin of the male protarsomere I, and by the male genitalia (Fig. 14). In size and body form, *H. agaboides* also resembles *H. concolor* SHARP, 1882 of the *H. sexguttatus* group, from which it can be distinguished by the pronotum being not totally black, by the more extended reddish-brown lateral elytral markings with dark brown to black irrorations, and by the shape of the median lobe.

DISTRIBUTION (Fig. 46): China: Hainan, Yunnan; Cambodia; Vietnam; Brunei.

15. *Hydaticus larsoni* WEWALKA, 2015

Hydaticus larsoni WEWALKA 2015: 34; NILSSON & HÁJEK 2022a: 97.

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**: 91 exs. from Madang area (see WEWALKA 2015).

MEASUREMENTS: TL: 9.5–12.0 mm; TL-H: 8.9–11.5 mm; MW: 4.9–6.5 mm.

AFFINITIES: *Hydaticus larsoni* (Fig. 29) resembles *H. agaboides*, *H. ephippiiger*, *H. mazzoldii*, *H. pulcher* and *H. sellatus sellatus* in the predominantly dark brown to black colouration of the elytra, and it shares the predominantly dark brown to black pronotum with *H. agaboides*, *H. ephippiiger*, and *H. sellatus sellatus*. From these species, it can be distinguished by the spoon-shaped apex of the median lobe (Fig. 15).

DISTRIBUTION (Fig. 49): Papua New Guinea.

16. *Hydaticus mazzoldii* sp.n.

TYPE LOCALITY: Thailand, Loei Prov., Phu Kradueng National Park.

TYPE MATERIAL: **Holotype** ♂ (NMW): “THAILAND: Loei Prov., Phu Kradueng NP, 1250 m, 28.XII.1999, leg. P. Mazzoldi (13)” [printed white label] \ “HOLOTYPUS *Hydaticus mazzoldii* sp.n. Wewalka 2022” [printed red label]. **Paratypes**: 7 ♂♂, 10 ♀♀: same locality data as holotype (CGW, CPM, NMW). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus oblong-oval, broadest shortly behind the middle, distinctly convex. TL: 10.2–11.9 mm; TL-H: 9.6–11.2 mm; MW: 5.5–6.7 mm. Holotype: TL: 11.7 mm; TL-H: 11.1 mm; MW: 6.3 mm.

COLOURATION (Figs. 30, 41): Head predominantly dark reddish-brown, black on vertex and narrowly along eyes; with two black oblique narrow lines near clypeal margin; yellowish-brown on clypeus and two antero-lateral spots near eyes. Pronotum yellowish-brown, narrowly black to dark brown along anterior and posterior margin, broader dark brown in middle of posterior margin; with a transverse row of small black spots near anterior margin and a vaguely limited brown patch in middle of pronotum merging with the dark anterior margin. Scutellum black. Elytron with extensive, dark brown to black irrorations completely merging in median two thirds; with dense but not completely merging irrorations in lateral third; completely yellowish-brown without irrorations only along lateral margin in posterior two thirds. Ventral side predominantly dark reddish-brown; pronotum and epipleura yellowish-brown. Antennae, anterior and middle legs yellowish-brown; hind legs reddish-brown to dark brown.

STRUCTURES: Clypeus truncate, without bead. Lateral margins of pronotum evenly rounded, without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex; prosternal process distinctly bordered laterally; apex rounded.

SCULPTURE: Head with fine dense punctation and scattered stronger punctures; additionally with strong punctures in dimples at medial margin near posterior corner, and with a pair of pits on fronto-clypeal suture; surface with fine microreticulation in middle. 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 very fine microreticulation. Elytron with fine dense punctation and sparse, slightly stronger punctures; with three irregular striae and a submarginal row of coarser punctures; with fine dense microreticulation. Ventral surface: metacoxae with scattered fine and stronger punctures; with shallow wrinkles, denser near posterior margins; ventrite I with similar punctation; ventrites II–VI with less dense punctation and distinct longitudinal wrinkles; with distinct microreticulation.

MALE: Protibiae, pro- and mesotarsi modified. Protarsomere I with a dense fringe of setae along basal margin. Median lobe in lateral view slightly curved near apex, slightly bisinuate in middle; with a plate with a tuft of setae at tip (Fig. 16).

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

AFFINITIES: *Hydaticus mazzoldii* (Figs. 30, 41) resembles *H. pulcher* in size, habitus and colouration but can be separated by the male genitalia. In the median lobe, the distance from the tip to the lateral lobes (see arrow in Fig. 16a) is short (ca. 28 % of total length), while in *H. pulcher* the distance from the tip to the lateral lobes (see arrow in Fig. 17a) is quite long (ca. 32 % of total length). *Hydaticus mazzoldii* is also similar to *H. larsoni* in size, habitus and elytral colouration, but the irrorations on the shoulders are more extended, and the pronotum is much more yellowish-brown, only narrowly black to dark brown along posterior margin, and with a vaguely limited brown patch in the middle of the pronotum merging with the anterior margin. *Hydaticus larsoni* can be distinguished from *H. mazzoldii* also by the spoon-shaped apex of the median lobe (Fig. 15b). The median lobe of *H. mazzoldii* is very similar to that of *H. incertus* but the elytral colouration of this species is significantly different.

HABITAT: The specimens were collected in a small stream in a possibly man-made ditch with walls of peat and muddy bottom flowing into a large pool (Anodat Pool, 16°52'36"N 101°45'36"E) on the summit plateau of Phu Kradueng National Park.

DISTRIBUTION (Fig. 47): Thailand.

ETYMOLOGY: This species is dedicated to Paolo Mazzoldi (Irma, Italy), who collected the type material. The epithet is a proper noun in the genitive singular.

17. *Hydaticus pulcher* (CLARK, 1863)

Colymbetes pulcher CLARK 1863: 16.

Hydaticus pulcher: SHARP 1873: 48; BRANDEN 1884: 102; SHARP 1882: 665; LEA 1899: 529; ZIMMERMANN 1919: 227, 1920: 224; WATTS 1978: 145; WEWALKA 1979: 120; WATTS 1985: 26; LAWRENCE et al. 1987: 356; LARSON 1993: 55, 1997: 272; NILSSON 2001: 105, WATTS 2002: 43; WEWALKA 2015: 35; NILSSON & HÁJEK 2022a: 99.

TYPE LOCALITY: South Australia.

TYPE MATERIAL: **Lectotype** ♀, designated by WATTS (1978) (NHML): “59-24” [printed white label] \ “S. Austral. [South Australia] (Bakewell)” [handwritten white label] \ “LECTO-TYPE” [round printed white label with navy blue margin] \ *Hydaticus pulcher* Clark Det. C. Watts 1974 [partly handwritten white label]. **Paralectotypes**: 2 exs.: “67-56” [which indicates the collection of Hamlet Clark] [printed white label] \ “Nov. Holland” [white label in the handwriting of Alexander Fry (personal communication by Max Barclay)] (NHML); 1 ex.: “67-56” [printed white label]; the tree specimens are labelled: “PARA-LECTO-TYPE” [round printed white label with light blue margin] (NHML); 1 ex.: “Mor. Bay [Moreton Bay] [handwritten white label] \ “67-56” [printed white label] (NHML); 3 exs.: “67-56” [printed white label] (NHML).

MATERIAL EXAMINED:

AUSTRALIA: Queensland: 1 ♂: “Brisbane [leg. H.] Hacker” (SDEI).

MEASUREMENTS: TL: 10.0–12.0 mm; TL-H: 9.3–11.1 mm; TW: 5.0–6.3 mm.

AFFINITIES: *Hydaticus pulcher* (Fig. 31) resembles *H. mazzoldii* in size, habitus and colouration but can be separated by the male genitalia. In the median lobe, the distance from the tip to the lateral lobes (see arrow in Fig. 17a) is quite long (ca. 32 % of total length), while in *H. mazzoldii* the distance from the tip to the lateral lobes (see arrow in Fig. 16a) is shorter (ca. 28 % of total length). *Hydaticus pulcher* is also similar to *H. larsoni* in size, body form and elytral colouration, but the pronotum is predominantly reddish-brown, and the median lobe is different.

DISTRIBUTION (Fig. 49): Australia: New South Wales, Queensland, South Australia.

18. *Hydaticus sellatus sellatus* RÉGIMBART, 1883

Hydaticus sellatus RÉGIMBART 1883: 233; BRANDEN 1884: 102; RÉGIMBART 1892: 993, 1899: 326; ZIMMERMANN 1920: 224; BALL 1932: 19; VAZIRANI 1977b: 81; NILSSON 2001: 105.

Hydaticus sellatus sellatus: WEWALKA 2015: 30; NILSSON & HÁJEK 2022a: 99.

TYPE LOCALITY: Indonesia, North Sulawesi, Tulabolo.

TYPE MATERIAL: **Lectotype** ♂, designated by WEWALKA (2015) (NML): “Rosenberg [C.B.H. von Rosenberg] Toelabolo [Tulabolo] Celebes [Sulawesi]” [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” \ “Lectotypus *Hydaticus sellatus* Régimbart Wewalka 2011” [printed red label]. **Paralectotypes**: 7 exs., same label data as lectotype (see WEWALKA 2015).

ADDITIONAL MATERIAL EXAMINED (see also WEWALKA 2015: 31):

INDONESIA: Sangihe Isls.: 2 ♀ ♀: Sangir Isl., pond at roadside, 27.VI.1993, 17.XI.1993, leg. N. Nieser (NML).

MEASUREMENTS: TL: 9.8–11.1 mm; TL-H: 9.1–10.1 mm; MW: 5.3–5.8 mm.

AFFINITIES: *Hydaticus s. sellatus* (Fig. 32) resembles *H. agaboides*, *H. ephippiiger*, *H. larsoni* and *H. mazzoldii* in the predominantly dark brown to black colouration of the elytra, but often a subbasal transverse reddish-brown band is present, missing in the other species.

Hydaticus s. sellatus can be separated from all other species of the *H. fabricii* group by the median lobe (Fig. 18), which, in lateral view, is slim and strongly curved in the apical third.

DISTRIBUTION (Fig. 46): Indonesia: Ambon, Bacan, Batanta, Halmahera, Morotai, Obi, Saparua, Sangihe Isls. (first record), Seram, Sulawesi, Togian Isls.; Papua New Guinea.

19. *Hydaticus sellatus sabahensis* WEWALKA, 2015

Hydaticus sellatus sabahensis WEWALKA 2015: 32; NILSSON & HÁJEK 2022a: 99.

TYPE LOCALITY: Malaysia, Sabah, Beaufort.

TYPE MATERIAL: **Holotype** ♂ (NML): “Museum Leiden S. Sabah. Beaufort, 105 km S of: Long Pa Sia area: confluence Sg [Sungai] 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**: 64 exs. from Sabah, Sarawak and North Kalimantan (see WEWALKA 2015).

ADDITIONAL MATERIAL EXAMINED:

MALAYSIA: Sarawak: 5 ♂♂, 2 ♀♀: Kelabit Highlands, Bario, 1000 m, 26.II.1993, leg. M.A. Jäch (14) (CGW, NMW); 1 ♂: Kelabit Highlands, Bario, 21.–25.VI.2003, leg. J. Štastný (CJS); 1 ♂, 1 ♀: Kelabit Highlands, Bario, 22.VI.2018, leg. J. Kodada & D. Selnekovič (NMW); 1 ♂: Kelabit Highlands, Pa Ukat near Bario, 24.VI.2003, leg. J. Štastný (CJS).

INDONESIA: North Kalimantan: 27 ♂♂, 25 ♀♀: “O. Borneo, Long Navang [1°83.8'N 114°90.2'E], [leg. E.] Mjöberg” (CGW, NHRS).

MEASUREMENTS: TL: 10.1–11.6 mm; TL-H: 9.5–10.6 mm; MW: 5.6–6.1 mm.

AFFINITIES: *Hydaticus s. sabahensis* (Fig. 33) differs from the nominate subspecies in the predominantly reddish-brown head, pronotum and elytra (predominantly dark brown to black in *H. s. sellatus*), and in the slightly more broadly oval body shape. No differences could be recognized in the shape of the median lobe.

DISTRIBUTION (Fig. 46): Malaysia: Sabah, Sarawak; Indonesia: North Kalimantan; this species is not known from any other Indonesian province; the record from “East Kalimantan, Long Ampung” by WEWALKA (2015) also refers to North Kalimantan (formed in 2012).

Hydaticus grammicus group

20. *Hydaticus grammicus* (GERMAR, 1827)

Dytiscus grammicus GERMAR 1827: pl. 1.; GEMMINGER & HAROLD 1868: 465.

Dytiscus lineolatus MÉNÉTRIÉS 1832: 140.

Hydaticus nigrovittatus CLARK 1864: 222.

Hydaticus grammicus: STURM 1834: 56; AUBÉ 1838: 202; WHITE 1847: 13; CLARK 1864: 217; HEYDEN 1880: 59; SHARP 1882: 660, 1884: 463; BRANDEN 1884: 101; JACOBSON 1908: 434; APFELBECK 1904: 386; ZAITZEV 1915: 276; ZIMMERMANN 1919: 227, 1920: 220; WINKLER 1924: 235; ZAITZEV 1927: 32; GUIGNOT 1932: 677; FENG 1932: 32, 1933: 123; FALKENSTRÖM 1936: 236; WU 1937: 219; KAMIYA 1938: 49; GSCHWENDTNER 1937: 70; HORION 1941: 432; BRINCK 1946: 150; CSIKI 1946: 678; BALFOUR-BROWNE 1947: 452; ZAITZEV 1953: 310; GUÉORGUIEV 1958: 46, 1960a: 448, 1960b: 36, 1962: 11, 1964: 302; NAKANE 1964: 10; GUÉORGUIEV 1965a: 500, 1965b: 118, 1965c: 110; FRANCISCOLO 1968: 55; CHO 1969: 181; PEEZ & KAHLEN 1977: 89; MAZZOLDI 1987: 225; SCHAEFLEIN & WEWALKA 1982: 17; SCHAEFLEIN 1983: 31; YOON & AHN 1988: 257; ZENG 1989: 5; PEDERZANI 1990: 69; NAKANE 1990: 29; NILSSON 1995: 72; BAMEUL 1997: 434; ROCCHI 1999: 208; KHOLIN & NILSSON 2000: 95; KIREJTSHUK 2001: 226; NILSSON 2001: 102; MORI & KITAYAMA 2002: 146, 174; HUA 2002: 37 (partim); NILSSON 2003: 8; HÁJEK & FERY 2004: 34; HAN et al. 2011: 211; BREKHOV et al. 2013: 44; LEE & AHN 2018: 72; NAKAJIMA et al. 2020: 95; ROCCHI & POGGI 2020: 189; SAZHNEV et al. 2022: 5; NILSSON & HÁJEK 2022a: 96, 2022b: 23.

Hydaticus grammicus nigrovittatus: MORI 1932: 52.

Prodaticus grammicus: MILLER et al. 2009: 596 ff.

TYPE LOCALITY: Germany, Rheinland-Pfalz, Odenbach.

TYPE MATERIAL: Not located.

MATERIAL EXAMINED:

FRANCE: Alsace: 1 ♂, 1 ♀: “Elsass [Alsace], [leg.] O. Koechlin” (NMP).

Var: 1 ♀: Le Lavandou, 1930, leg. J. Obenberger (NMP).

Corsica: 1 ♂, 2 ♀ ♀: “Corsica coll. [F.] Gärtner” (SDEI).

ITALY: Lombardy: 3 ♂ ♂: “Mailand [Milano] Dr. Rosenhr. [W.G. Rosenhauer] Collect. Hauser” (NMW); 1 ♂, 3 ♀ ♀: “Mailand [Milano] Coll. Kraatz” (SDEI).

Emilia-Romagna: 1 ♂, 2 ♀ ♀: Modena, don. [donated by] M. Bernhauer (NMW); 1 ♀: Albareto, 12.X.1893, leg. A. Fiori (SDEI).

SWITZERLAND: 2 ♂ ♂: Valais (Wallis): Fully 24.V. & 10.VI.1890, coll. G. Stierlin (SDEI).

GERMANY: Rheinland-Pfalz: 1 ex.: Speyer, leg. I.M. Linz (NMW).

Bavaria: 1 ♀: Upper Bavaria, Miesbach, VI.1905, collector unknown (NMP).

AUSTRIA: Vorarlberg: 8 exs.: Bregenz, 16.VII.1947, coll. J. Moosbrugger (NMW).

Tyrol: 2 ♂ ♂, 1 ♀: Innsbruck env., date unknown, leg. O. Reiss (NMW); 2 ♂ ♂, 1 ♀: Innsbruck env., Amras, 6.VI.1925, leg. A. Wörndle (NMW); 10 exs.: “Umg. Innsbruck Ti. [Innsbruck env., Tyrol] [leg. or coll.] Strupi” (CGW, NMW).

Wien: 1 ♂: Untere Lobau, Eberschüttwasser (Mittelwasser), ca. 150 m, 48.1603°N 16.5605°E, 5.VII.2022, leg. M. Brojer (project no 54-VC-276551/20 OV) (NMW).

SLOVAKIA: Nitra Region: 1 ♀: Stúrovo, 10.–15.VI.1956, leg. Kralík (CGW).

HUNGARY: Csongrád-Csanád County: 1 ♂: Hódmezővásárhely, VII.1957, leg. H. Eckerlein (NMW). 1 ♂: 9 km W Hortobágy, Lake Pince-lapos, 26.V.2002, leg. O. Hovorka (NMP).

ROMANIA: 1 ♂: Konstanza [Constanța], Mamaia, 4.VII.1986, leg. Kepler (CJS).

GREECE: Central Macedonia: 1 ♂: Amfipolis, 40°48'N 23°50'E, 15.VII.–12.VIII.2007, leg. Z. Kraus (NMP); 1 ♂, 2 ♀ ♀: Modi, 40°37'N 23°36'E, 65 m, 10.–25.VII.2018, leg. Z. Kraus (NMP).

East Macedonia and Thrace: 3 ♂ ♂, 1 ♀: Lake Vistonis, 26.VII.1988, leg. M.A. Jäch (22) (CGW, NMW); 1 ♀: Lira near Alexandroupolis, 22.IV.1985, leg. Pallich (CGW); 2 ♂ ♂ 2 ♀ ♀: Evros, Koufóvouno, Eridropótamos River, 13.V.2001, leg. J. Rejsek (CJS).

RUSSIA: Rostov Oblast: 1 ♀: 250 km W Volgograd, Morozovsk, 140 m, 20.VI.1998, leg. M. Danilevskiy (NMW); 1 ♀: Rostov, 30 m, 30.VI.1967, leg. A. Vartian (CGW).

Dagestan: 1 ♂, 1 ♀: Kiziyar Distr., Komsomolskiy vill., at light, 28.–29.VII.2006, leg. G.M. Nakhibasheva (NMP).

Primorye: 1 ♂: Arsenev, VII.1991, leg. O. Šauša (NMW); 2 ♂ ♂: Atyom Town env., 25.VII.–5.XIII.2006, leg. A. Plutenko (CGW).

TURKEY: Ordu: 1 ♂, 2 ♀ ♀: Ünye, VIII.1971, leg. F. Schubert (NMW).

Erzurum: 1 ♂, 1 ♀: Oltu – Olur, 9.VI.1989, leg. M.A. Jäch (73) (CGW, NMW).

ARMENIA: Armavir: 1 ♂: 12 km SE of Armavir, Arazap env., “Araratskaya Koshenil Reserve” [Vordan Karmir Sanctuary], salt marsh, 40°3'48"N 44°7'46"E, ca. 850 m, 13.VI.2017, leg. J. Šumpich (NMP).

AZERBAIJAN: Astara: 1 ♂, 1 ♀: Talysch Mts., Astara env., 31.V.1999, leg. V.G. Dolin (NMW).

IRAN: Gilan Prov.: 2 ♀ ♀: Mordab, 28.X.1954, leg. F. Schäufler (CGW).

KAZAKHSTAN: Kyzylorda Reg.: 4 ♂ ♂, 2 ♀ ♀: Kyzylorda, 130 m, 9.VII.1999, leg. M. Danilevskiy (NMW); 1 ♂: Kazalinsk [Kazaly], Syr Darya (river), date missing [probably collected during World War I], leg. Š. Jureček [1877–1940] (NMP).

Zhambyl Reg.: 3 ♂ ♂, 2 ♀ ♀: Karatau, Kenes, 400 m, 2.VII.1999, leg. M. Danilevskiy (NMW).

Altay Reg.: 3 ♀ ♀: 30 km S Koktal, Ili River, 700 m, 3.VII.1992, leg. Dr. Beneš (CGW).

UZBEKISTAN: 1 ♂: Samarkand, VII.1991, leg. J. Šťastný (CJS).

TAJKISTAN: Sughd Prov.: 1 ex.: Pendzhakent Reg., VI.2000, leg. V. Gurko (OLM).

Chatlon Prov.: 2 ♂ ♂, 2 ♀ ♀: “Prov. Kuliab [Kulob] Ak-sou-Thal [Yakhsu River Valley] F. Hauser 1889” \ “Collect. Hauser” (CGW, NMW); 1 ♂: Kurgan Tjube [Bokhtar], 6.VI.1966, leg. J. Král (CJS).

KYRGYZSTAN: Chüy Reg.: 1 ♂: Bishkek, Manas, 630 m, 1.VI.1997, leg. M. Danilevskiy (NMW).

CHINA: Xinjiang: 1 ♂, 1 ♀: “Ost-Turkestan Aksu 1067 m. 5.1903. Coll. Hauser.” (NMW).

Heilongjiang: 1 ♂, 1 ♀: “Harbin-Tuchiatien, 28.9.1930, leg. S.V. v. Jettmar” (CGW).

Hebei: 1 ♂: Hopei [Hebei], Peitaiho [Beidaihe], 23.VIII.1965, leg. P.M. Hammond (CGW).

Shandong: 1 ♂: “Tsingtau [Qingdao] Prof. Hoffmann” (SDEI).

Beijing: 1 ♂: northern suburbs of Beijing, 30.VIII.1980, leg. P.M. Hammond (NHML).

Sichuan: 2 ♂ ♂, 2 ♀ ♀: “Su-Tchuen [Sichuan] 1903 Chasseurs Indigènes [local collectors]” (MNHN-CO).

Shaanxi: 4 ♂ ♂, 3 ♀ ♀: Xi'an, Bahe River, pools, 34°21.2'N 109°0.6'E, 365 m, 11.V.2011, leg. M. Balke & J. Hájek (CN 3) (NMP, ZSM).

Shanghai: 3 ♂♂, 2 ♀♀: “Shanghai China [probably V.1901] E. Deschamps Collector” (CGW).

SOUTH KOREA: Incheon: 2 ♀♀: Kanghwa-gun [Ganghwa County], Samsan-myeon, Seokmo-do (island), 7.X.2009, leg. S.W. Jung (NMW).

Gyeonggi Prov.: 4 ♂♂, 1 ♀: “Suweon” [Suwon], 17.–26.X.1975 (AMNH).

JAPAN (without precise locality data): 2 ♂♂: “Japan” \ “Coll. Plason” (NMW).

Gunma Pref.: 1 ♂, 2 ♀♀: Numata, 22.V.1950, leg. T. Takei (CJS).

Tochigi Pref.: 1 ♀: Nasu-Yumoto Spa, 12.VIII.1986, leg. T. Abe & A. Sasai (NHMB).

Saitama Pref.: 3 ♂♂, 1 ♀: Kitamoto City, “Ishidojyuku”, 11.V.1986, leg. K. Akiyama (NMW); 1 ♂, 4 ♀♀: Kitamoto City, “Ishidoshuku” Park, 6.VIII.1986, leg. T. Abe (NMW).

Kanagawa Pref.: 1 ♂, 1 ♀: Yokohama, date and collector unknown, coll. J. Moosbrugger (NMW); 1 ♂: Yokohama, date and collector unknown (NMP).

Kyoto Pref.: 1 ♂, 1 ♀: Kyoto, date unknown, leg. J. Baum (NMP).

Wakayama Pref.: 1 ♂, 1 ♀: Shagawa, Shirama chō, 10.V.1986, leg. S. Morita (NMP).

Tokushima Pref.: 1 ♂: Myozai Distr., Yorii, “Zinruyo”, 4.X.1946, leg. M. Chūjō (CJS).

Nagasaki Pref.: 1 ♀: “Ransont 1871 Nagasaki” (NMW).

MEASUREMENTS: TL: 9.1–10.7 mm; TL-H: 8.4–10.4 mm; TW: 5.1–6.5 mm.

AFFINITIES: *Hydaticus grammicus* (Fig. 42) agrees with other species in the predominantly yellowish-brown elytral colouration with dark brown to black irrorations. In *H. grammicus*, these irrorations form a broad sutural line, laterally followed by a distinct yellowish-brown line, and several more or less distinctly defined and more or less distinctly separated lines of irrorations of which the admedian ones are more strongly condensed; irrorations are missing along the lateral margin. The habitus is broad-oval and moderately convex. Median lobe as in Fig. 19.

In *H. grammicus* and *H. thermonectoides* the coarser punctures of the dual punctation in the middle of the anterior elytral third are slightly larger than in other species; from *H. thermonectoides* it can easily be distinguished by the elytral colour pattern, habitus, rounded apex of prosternal process, and by the median lobe having a broader apical part in lateral view. *Hydaticus grammicus* can be separated from *H. shaverdoae* and *H. schoenleithneri* by the coarser punctures in the middle of the anterior third of the elytra, by the elytral colouration, and by the median lobe having a broader apical part in lateral view.

DISTRIBUTION (Fig. 48): France; Italy; Switzerland; Germany; Austria; Poland; Czechia; Slovakia; Hungary; Slovenia; Croatia; Serbia; Bosnia and Herzegovina; North Macedonia; Greece (first record); Romania; Bulgaria; Ukraine; Russia: South European Territory, Far East; Turkey; Georgia; Armenia; Azerbaijan; Iran; Turkmenistan; Kazakhstan; Uzbekistan; Tajikistan (first record); Kyrgyzstan; Afghanistan; China: Beijing, Hainan (?), Hebei, Heilongjiang, Hubei, Jiangsu, Jilin, Liaoning, Ningxia, Shaanxi (first record), Shandong (first record), Shanghai (first record), Sichuan, Xinjiang (first record), Yunnan (?); North Korea; South Korea Japan.

Confirmed records from Yunnan and Hainan (China) are not known to me; literature records need confirmation. MILLER et al. (2009) included in their phylogenetic study a specimen of “*Prodaticus grammicus*” from Yunnan, which might actually belong to *H. schoenleithneri* described below.

DISCUSSION: The distribution of *H. grammicus* is remarkably disjunct, with a gap of more than 2000 km between Xinjiang and Sichuan. Comprehensive molecular analyses would be helpful to clarify, whether the western and the eastern populations are really conspecific. MORI (1932) regarded *H. nigrovittatus*, described from Japan, as a subspecies of *H. grammicus*.

21. *Hydaticus schoenleithneri* sp.n.

TYPE LOCALITY: China, Yunnan, Dali Bai Autonomous Prefecture, northwest of Dali.

TYPE MATERIAL: **Holotype** ♂ (NMP): “CHINA: Yunnan province, 5 km S Dali (Old Town), 14.VI. 2007, 2 km NW Guanyintang (temple), 25°39.5'N 100°09.7'E, 2200 m, (small flooded stonepit), J. Hájek & J. Růžička leg.”

[printed white label] \ “HOLOTYPEUS *Hydaticus schoenleithneri* sp.n. Wewalka 2022” [printed red label].
Paratypes: 2 ♂♂, 1 ♀: “CHINA, YUNNAN Prov. Zizhi vill., 29.vi.-2.vii.2016 25°43.7'N 98°34.1'E, 1995 m at light in village J. Hájek & J. Růžička leg.” [printed white label] (CGW, NMP); 2 ♂♂: “CHINA: Yunnan, Cuxiong Pref. 30 km N Lufang [Lufeng], 26.11.1999 Wu Tai Shan F.P., ca. 2100 m Schönmann & Wang (CWBS 406)” [printed white label] (NMW); 1 ♂: “CHINA: Yunnan, Cuxiong Pref. 25 km N Yipinglang Gao Feng env. 27.11.1999, 2100 m Schönmann & Wang (CWBS 410)” [printed white label] (NMW); 1 ♂: “CHINA, Yunnan S Xiaguan 12 km s Weishan Weibaoshan” \ “2500 - 3000m 1.-17.7.1993 leg. L. Ji [CWBS 14 or 15]” [printed white label] (NMW); 1 ♂: “YUNNAN 2000–2500m 25.42N 100.08E CANGSHAN mts. [Diancang Mts.] E slope 21/6.92 David Král leg.” [printed white label] (NHMB); 1 ♂, 1 ♀: “China, Yunnan prov., 2600 m a.s.l. E ZHONGDIAN; 27°47'N/100°12'E muddy pool – decomp. walnut foliage 15.10.1999, leg. J. Štátný” \ “*Hydaticus grammicus* Germar, 1827 J. Štátný det. 2017” [printed white labels] (CJS); 1 ♀: “China, Yunnan prov. Ancient DALI env., 2200 m a.s.l. polluted stream with macrophyta 6.10.1999, leg. J. Štátný” \ “*Hydaticus grammicus*. cf. ♀ Germar, 1827 J. Štátný det. 2017” [printed white labels] (CJS); 1 ♂: “Siao-Lou-Lou-Chan [between Kangding and Ya'an, Sichuan (SCHÜTZE & KLEINFELD 1995)] Chasseurs Thibétains [Tibetan collectors] 1896” [printed white label] \ “n.sp. attendre d'autres” [handwritten white label] \ “Dr Régimb' vidit 1898” [printed white label] (MNHN-CO). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus oblong-oval, broadest shortly behind middle, distinctly convex. TL: 10.1–10.9 mm; TL-H: 9.3–10.3 mm; MW: 5.6–6.3 mm. Holotype: TL: 10.9 mm; TL-H: 10.1 mm; MW: 6.3 mm.

COLOURATION (Figs. 34, 43): Head yellowish-brown, dark brown to black on vertex and very narrowly along eyes, with two black oblique narrow lines near clypeal margin and brown shadows between eyes. Pronotum yellowish-brown, narrowly dark brown to black along anterior and posterior margins, slightly broader in middle of posterior margin; with a transverse row of small dark brown spots near anterior margin and brown shadows lateral of middle. Scutellum dark brown to black. Elytron predominantly yellowish-brown with dark brown to black irrorations; dark brown to black very narrowly along base, with a dark brown to black sutural line followed by a narrow yellowish-brown subsutural line, a line of condensed irrorations and another subsutural yellowish-brown band (Fig. 34b); near the first and second irregular striae lines of coarser punctures there are more or less distinct lines with fewer irrorations, along the whole lateral margin irrorations are missing. Ventral side predominantly dark reddish-brown; pronotum, prosternum and epipleura yellowish-brown. Antennae, anterior and middle legs yellowish-brown; hind legs predominantly reddish-brown to dark brown.

STRUCTURES: Clypeus truncate, clypeal margin and lateral margins of pronotum without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex; process distinctly bordered laterally, apex rounded.

SCULPTURE: Head with dense punctation and scattered stronger punctures; additional strong punctures in dimples at medial margin of eyes at anterior third, and with a pair of pits on fronto-clypeal suture; 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 fine dense punctation and scattered, slightly stronger punctures, with three irregular striae-lines and a submarginal row of coarser punctures; with fine dense microreticulation. Ventral surface with fine microreticulation; metacoxae with moderately dense, irregular punctation and shallow wrinkles; ventrites with scattered punctation.

MALE: Protibiae, pro- and mesotarsi modified; protarsomere I with a dense fringe of setae along basal margin. Median lobe (Fig. 20) in lateral view almost straight in the middle part, dorsally curved only at apex.

FEMALE: Colouration and surface sculpture as in male but pronotum laterally with deep wrinkles; protibiae, pro- and mesotarsomeres not modified.

VARIATION: In some paratypes, irrorations are more condensed almost covering the first yellowish-brown subsutural line, and the lines with fewer irrorations near the irregular striae lines of coarser punctures are almost missing (Fig. 34a), and in one paratype irrorations form a dark brown to black patch on the elytral disc.

AFFINITIES: Within the *H. grammicus* species group, *H. schoenleithneri* is most similar to *H. shaverdoae*, from which it can be distinguished by a second yellowish-brown subsutural line, broader and more convex habitus, and slight differences in the median lobe (apical part more distinctly bent in lateral view). From *H. grammicus* and *H. thermonectoides* it can be separated by the elytral colouration, habitus, less coarse punctation in middle of anterior third of elytra and by the apical part of the median lobe.

COMMENTS: In their phylogenetic study, MILLER et al. (2009) used a specimen of “*Prodatiscus grammicus*” from Yunnan which possibly belongs to the new species.

HABITAT: According to the label data, some specimens were found at ca. 2000–3000 m a.s.l. in a small flooded quarry (Fig. 51), in a muddy pool with leaf debris, in a polluted stream with macrophytes, and at light.

DISTRIBUTION (Fig. 48): China: Sichuan, Yunnan.

ETYMOLOGY: This species is dedicated to the late Wolfgang Schönleithner, who worked for many years as a volunteer in the water beetle collection of the NMW (JÄCH 2021).

22. *Hydatiscus shaverdoae* sp.n.

TYPE LOCALITY: Myanmar, Yangon Region, Hlawga Wildlife Park.

TYPE MATERIAL: **Holotype** ♂ (NMW): “MYANMAR (161) near Yangon Hlawga Wildlife Park two ponds in the forest 26.11.2004, leg. H. Shaverdo” [printed white label] \ “HOLOTYPUS *Hydatiscus shaverdoae* sp.n. Wewalka 2022” [printed red label]. **Paratypes:** 1 ♂, 1 ♀: “MYANMAR: Sagaing Division Alaungdaw Katthapa NP 22°19.113'N 94°28.518'E 13.5.2003, ca. 350 m leg. Schillhammer et al. (122)” [printed white label] (NMW); 3 ♂♂: “MYANMAR: Sagaing Division Alaungdaw Katthapa NP 22°19.094'N 94°28.823'E 9./10.5.2003, ca. 350 m leg. Boukal et al. (118)” [printed white label] (CGW, NMW); 3 ♂♂: “MYANMAR: Sagaing Div. Monywa, at light 2.5.2003 leg. Boukal & Schillhammer (99)” [printed white label] (CGW, NMW); 1 ♂: “MYANMAR: Sagaing Div. Chatthin Wildlife Sanctuary 15.–20.6.2002, 200 m San Myaung Camp at light [23°32'5"N 95°38'53"E, leg. H. Schillhammer, M. Hlaing & A. Moe] (MBS 88)” [printed white label] (NMW); 1 ♂, 1 ♀: “MYANMAR (98) Sagaing Division ca. 60 km SE Monywa, Nyaung-Bin-Wung vill. 2.5.2003 leg. Schillhammer, Boukal et al.” [printed white label] (CGW, NMW); 1 ♂: “Myanmar: Mandalay (47) Mandalay Hill 17.5.1999 leg. Schillhammer & Schuh” [printed white label] (NMW); 1 ♂, 1 ♀: “MYANMAR: Yangon Insein, at light 11./12.5.1999, leg. Schuh & Schillhammer (38)” [printed white label] (NMW). All paratypes are provided with printed red paratype labels.

DESCRIPTION: Habitus oblong-oval, broadest shortly behind the middle, moderately convex. TL: 9.5–10.5 mm; TL-H: 8.8–9.6 mm; MW: 5.0–5.5 mm. Holotype: TL: 10.1 mm; TL-H: 9.3 mm; MW: 5.3 mm.

COLOURATION (Figs. 35, 44): Head predominantly yellowish-brown, dark brown to black on vertex and along eyes; with two small longitudinal oblique black lines near clypeal margin. Pronotum yellowish-brown, narrowly dark brown to black along anterior and posterior margins, slightly broader in middle of posterior margin; with a transverse row of small, dark brown spots near anterior margin. Scutellum dark brown to black. Elytra predominantly yellowish-brown with dark brown to black irrorations; dark brown to black very narrowly along base, with a dark brown to black sutural line followed by a yellowish-brown longitudinal line and a line of condensed irrorations; near the first and second irregular striae lines of coarser punctures there are more or less distinct lines with fewer irrorations; along the whole lateral margin irrorations are missing. Ventral side predominantly dark reddish-brown; pronotum, prosternum and epi-

pleura yellowish-brown. Antennae, anterior and middle legs yellowish-brown; hind legs predominantly reddish-brown to dark brown.

STRUCTURES: Clypeus truncate, clypeal margin and lateral margins of pronotum without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex, distinctly bordered laterally, apex rounded.

SCULPTURE: Head with dense punctation and scattered stronger punctures; additional strong punctures in dimples at anterior third of medial margin of eyes, and with a pair of pits on fronto-clypeal suture; 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 fine dense punctation and scattered, slightly stronger punctures, with three irregular strial lines and a submarginal row of coarser punctures; with fine dense microreticulation. Ventral surface with fine microreticulation; metacoxal plates with moderately dense and fine punctation, scattered stronger punctures and shallow wrinkles; ventrites only with very scattered punctation.

MALE: Protibiae, pro- and mesotarsi modified; protarsomere I with a dense fringe of setae along basal margin. Median lobe (Fig. 21) in lateral view almost straight in the middle part, slightly curved in apical third, tip rounded.

FEMALE: Colouration and surface sculpture as in male but pronotum laterally with very few wrinkles; protibiae, pro- and mesotarsomeres not modified.

VARIATION: In some specimens, the irrorations are condensed near the suture forming a patch on the elytral disc; the yellowish-brown subsutural longitudinal line is visible only in the anterior third, and the inner line with fewer irrorations is almost missing. In some specimens, the pronotum possesses a shadow of a brown spot on the disc.

AFFINITIES: Within this group, *H. shaverdoae* is most similar to *H. schoenleithneri*. It can be distinguished from the latter by the absence of a distinct narrow yellowish-brown band lateral of the subsutural line of irrorations, less broad and less convex habitus, and by slight differences in the median lobe (apical part less distinctly bent in lateral view). From *H. grammicus* and *H. thermonectoides* it can be separated by the elytral colouration, habitus, less coarse punctation in middle of anterior third of elytra, and by the apical part of the median lobe.

HABITAT: The holotype was collected in a shaded forest pond with sand bottom and some white clay, much leaf litter and no aquatic vegetation. Some paratypes were found in a stream, ca. 8 m wide and ca. 10 cm deep, bottom with bare rock and some gravel and stones, few exposed roots and accumulated plant debris (Fig. 52); other specimens were sifted from large heaps of accumulated plant debris after heavy rainfall; six specimens were collected at light.

DISTRIBUTION (Fig. 48): Myanmar.

ETYMOLOGY: This species is dedicated to Dr. Helena Shaverdo (NMW), who collected the holotype.

23. *Hydaticus thermonectoides* SHARP, 1884

Hydaticus thermonectoides SHARP 1884: 447; JACOBSON 1908: 434; ZIMMERMANN 1920: 226; WINKLER 1924: 235; MORI 1932: 52; GSCHWENDTNER 1937: 77; KAMIYA 1938: 50; ZAITZEV 1953: 312; NAKANE 1964: 10; FRANCISCOLO 1968: 47; CHO 1969: 181; YOON & AHN 1988: 258; ZENG 1989: 5; NAKANE 1990: 29; NILSSON 1995: 73, 2001: 106; KIREJTSHUK 2001: 227; MORI & KITAYAMA 2002: 146, 174; NILSSON 2003: 8; HAN et al. 2011: 211; LEE & AHN 2018: 76; NAKAJIMA et al. 2020: 95; NILSSON & HÁJEK 2022a: 100, 2022b: 24.

TYPE LOCALITY: Japan, Honshu, Nagano, Wada Pass (according to original description).

TYPE MATERIAL: **Holotype** ♀ (NHML): “Hydaticus thernonectoides Type D.S.” [handwritten on mounting card] \ “Type H.T.” [round printed label with red margin] \ “Naka Sendo [Nakasendō, historical route (today: Nakasendo Trail) connecting Tokyo and Kyoto, passing through Wada Pass] 1881” [handwritten white label] \ “Japan G. Lewis 1910–320” [printed white label with yellow line].

ADDITIONAL MATERIAL EXAMINED:

SOUTH KOREA: Gyeonggi Prov.: 2 ♂♂: “Suweon” [Suwon], 17.X.1975 (CGW, AMNH).

CHINA: Shaanxi: 1 ♂: 15 km N Luejiang, 20.–28.V.2007, leg. E. Kučera (CJS).

Hubei: 1 ♀: Yingshan, Wujiashan, 800–1000 m, 12.VII.2006, leg. S. Lei (NMP).

Zhejiang: 1 ♂: “Taichow” [Taizhou], leg. D.F. Wu, coll. L. Gschwendtner (OLM).

Guizhou: 1 ♀: Leigongshan, Xijiang, 1200–1900 m, 29.V.–2.VI.1997, leg. BOLM (NHMB).

MEASUREMENTS: TL: 8.5–10.1 mm; TL-H: 7.8–9.3 mm; TW: 5.0–6.0 mm.

AFFINITIES: With the other species treated in this paper, *H. thernonectoides* (Fig. 36) shares the predominantly yellowish-brown elytral colouration with black elytral irrorations. The habitus is short-oval and slightly convex. According to the median lobe (Fig. 22), *H. thernonectoides* belongs to the *H. grammicus* species group. The pronotal and elytral punctation is like that of *H. grammicus*.

Externally, this species can be distinguished from all other species of the *H. grammicus* group by the less dense elytral irrorations, which condense to a transverse band in the middle and near the apex. Furthermore, the prosternal process is apically flattened and pointed. Within the group, the median lobe (Fig. 22) is characterized by the broadly rounded apex in lateral view.

DISTRIBUTION (Fig. 48): China: Guizhou (first record), Hubei (first record), Jiangsu, Shaanxi (first record), Yunnan, Zhejiang; South Korea; Japan.

Species incertae sedis

24. *Hydaticus borneensis* sp.n.

TYPE LOCALITY: Borneo.

TYPE MATERIAL: **Holotype** ♂ (OLM): “Borneo” [handwritten white label] \ “coll. [F.] Gärtner” [printed white label] \ *Hydaticus sellatus* Rég. var. nov. det. Gschwendt.[ner]” \ “HOLOTYPUS *Hydaticus borneensis* sp.n. Wewalka 2022” [printed red label]. **Paratype** ♀: “Borneo” [handwritten white label] \ “coll. [F.] Gärtner” [printed white label] \ “*Hydaticus sellatus* Rég. var. nov. det. Gschwendt.[ner]” \ *Hydaticus sellatus sabahensis* Wew. det. Wewalka 2021” \ “DEI Müncheberg Col – 03542” [printed green label] \ “PARATYPUS *Hydaticus borneensis* sp.n. Wewalka 2022” [printed red label] (SDEI).

DESCRIPTION: Habitus oblong-oval, broadest in middle, moderately convex. TL: 11.5–11.7 mm; TL-H: 10.9–11.0 mm; MW: 6.4–6.5 mm. Holotype: TL: 11.7 mm; TL-H: 11.0 mm; MW: 6.4 mm.

COLOURATION (Figs. 37, 45): Head yellowish-brown, dark brown to black on vertex, narrowly along eyes, two arcuate and a transverse marking between eyes and with two black, oblique narrow lines near clypeal margin. Pronotum yellowish-brown, narrowly black along anterior and posterior margin, broader dark brown in middle of posterior margin vaguely limited anteriorly, with a transverse row of small black spots near anterior margin. Elytron predominantly yellowish-brown with dark brown to black irrorations forming a narrow black sutural line, followed by a narrow yellowish-brown line, a black line and in middle of elytron a second yellowish-brown line; near the first and second irregular striae lines of coarser punctures there are more or less distinct lines with fewer irrorations; along the whole lateral margin and on shoulder irrorations are missing. Ventral side predominantly dark reddish-brown; abdomen reddish-brown; pronotum, prosternum and epipleura yellowish-brown. Antennae, anterior and middle legs yellowish-brown; hind legs predominantly reddish-brown to dark brown.

STRUCTURES: Clypeus truncate, clypeal margin and lateral margins of pronotum without beads. Prosternum sinuate anteriorly, obtusely keeled medially. Prosternal process shortly lanceolate, in cross-section convex, finely bordered laterally, apex obtusely pointed.

SCULPTURE: Head with dense punctation and scattered stronger punctures; additionally with strong punctures in dimples at medial margin, near posterior corner and along posterior margin of eyes and also with a pair of pits on fronto-clypeal suture; without microreticulation. Pronotum with fine dense punctation and scattered stronger punctures; with strong punctures along anterior margin, near lateral margins and near posterior margin but absent in middle; with fine microreticulation. Elytron with fine dense punctation and scattered, slightly stronger punctures; with three irregular striae lines of coarser punctures concentrated in spots and a submarginal row of coarser punctures; with fine dense microreticulation. Ventral surface with fine microreticulation; metacoxae with moderately dense, irregular punctation and shallow wrinkles; ventrites with scattered punctation.

MALE: Protibiae, pro- and mesotarsi modified; protarsomere I without a dense fringe of setae along basal margin. Median lobe (Fig. 23) in lateral view almost straight in apical two thirds, slender in apical third; in ventral view slender in apical third, with small lateral lobes.

FEMALE: Colouration and surface sculpture as in male but pronotum with distinct lateral wrinkles; protibiae, pro- and mesotarsomeres not modified.

AFFINITIES: With the other species treated in this paper, *H. borneensis* shares the predominantly yellowish- or reddish-brown elytral colouration and the presence of dark brown to black elytral irrorations. It can be distinguished from the species of the *H. fabricii* group by the median lobe lacking a tuft of setae and from the species of the *H. grammicus* group by the apex of the median lobe being pointed and not broadly rounded in lateral view. In contrast to the species of the *H. fabricii* and the *H. grammicus* groups, the dark brown to black markings on the head are more complex (Fig. 37). *Hydaticus borneensis* resembles *H. parallelus* in habitus and colouration but can be separated by the smaller size and the median lobe (Fig. 23a), which, in lateral view, is less broad in apical third.

DISTRIBUTION (Fig. 46): Borneo.

ETYMOLOGY: This species is named after the island of Borneo, where it has been collected. The specific epithet is an adjective in the nominative singular.

25. *Hydaticus parallelus* CLARK, 1864

Hydaticus parallelus CLARK 1864: 219; GEMMINGER & HAROLD 1868: 466 (partim); BRANDEN 1884: 102; SHARP 1882: 665; ZIMMERMANN 1920: 223; WATTS 1978: 141, 1985: 26; LAWRENCE et al. 1987: 356; LARSON 1993: 55, 1997: 272; NILSSON 2001: 104; WATTS 2002: 43; NILSSON & HÁJEK 2022a: 98.

Hydaticus consimilis RÉGIMBART 1887: 244; ZIMMERMANN 1920: 219; WATTS 1978: 141 (synonymy).

Prodatiscus parallelus: MILLER et al. 2009: 596 ff.

TYPE LOCALITY: Australia, New South Wales.

TYPE MATERIAL: **Lectotype** ♂, designated by WATTS (1978) (NHML): “NSW [New South Wales]” [handwritten white label] \ “LECTO-TYPE” [round printed white label with navy blue margin] \ *Hydaticus parallelus* Clark Det. C. Watts 1974 [partly handwritten white label]. **Paralectotypes:** 5 exs.: “Moreton Bay” [handwritten white label] \ “67-56” [printed white label] (NHML).

MATERIAL EXAMINED:

AUSTRALIA: Queensland: 9 exs.: Manorina NP, Mt. Nebo Road, goat track, Cedar Creek tributary, 27°23'9.6"S 152°46'57.6"E, 540 m, 10.X.2006, leg. L. & E. Hendrich (QSL 63) (CGW, CLH, NHML, ZSM); 1 ♂: North Stradbroke Isl., 1 km SE Brown Lake, creek crossing Trans-Island Road, 27°30'8.4"S 153°26'10.8"E, 18.X.2014, leg. L. Hendrich (QLD 2/14) (CGW); 10 exs.: North Stradbroke Island, Amity Point, 10 m, Wallum Creek, swamp, 27°24'6.57"S 153°26'35.94"E, 5.IV.2015, leg. L. Hendrich (QLD 2/15) (CLH).

North South Wales: 5 exs.: Boonoo Boonoo NP, Morgans Gully Picnic Area, ca. 940 m, 12.X.2006, 28°51'11.7"S 152°9'7.5"E, leg. L. & E. Hendrich (NSW 68) (CLH, NHML, ZSM); 1 ex.: Cabramatta, 1.1959, leg. N.N. Nikitin (NHML).

MEASUREMENTS: TL: 13.5–15.0 mm; TL-H: 12.5–13.9 mm; TW: 7.2–8.0 mm.

AFFINITIES: *Hydaticus parallelus* agrees with the other species in the predominantly yellowish- or reddish-brown elytral colouration with dark brown to black elytral irrorations. It is characterized by the elongate-oval habitus, almost parallel-sided in middle; head reddish-brown with black markings (Fig. 38); pronotum reddish-brown with narrowly black anterior and posterior margin and a black transverse central patch; elytron reddish-brown with quite regular, dense black irrorations, slightly more condensed in medial half, missing in a subsutural line and along lateral side, and less dense near the first and second irregular stria lines of coarser punctures.

Hydaticus parallelus can be distinguished from the species of the *H. fabricii* and *H. grammicus* groups by the habitus, larger size and male genitalia. *Hydaticus parallelus* resembles *H. chrisi* in habitus but can be separated by the larger size, colouration and male genitalia. The median lobe (Fig. 24) is quite simple, in lateral view almost straight in apical two thirds and broader than in *H. borneensis*, apex pointed; in ventral view very slender, lacking lateral lobes.

DISTRIBUTION (Fig. 49): Australia: Queensland, New South Wales, Victoria (C. Watts, pers. comm.: 2 exs.: Halls Gap, 4.X.2011, leg. C. Watts (SAMA)).

26. *Hydaticus chrisi* NILSSON, 2001

Hydaticus variegatus WATTS 1978: 144 (preoccupied by LAPORTE 1835: 97), 1985: 26; LAWRENCE et al. 1987: 356. *Hydaticus chrisi* NILSSON 2001: 101 (replacement name); WATTS 2002: 43; NILSSON & HÁJEK 2022a: 95.

TYPE LOCALITY: Australia, South Australia, 50 miles north of Coober Pedy.

TYPE MATERIAL: **Holotype** ♂ (ANIC): “50 m [miles] N. Coober Pedy S.A. 2/68 C. Watts” [handwritten white label] \ “HOLOTYPE” [printed pink label] \ “Holotype *Hydaticus variegatus* Det. C. Watts 1976” [partly handwritten white label] \ “*Hydaticus chrisi* Nilsson det. Wewalka 2017” [partly handwritten white label].

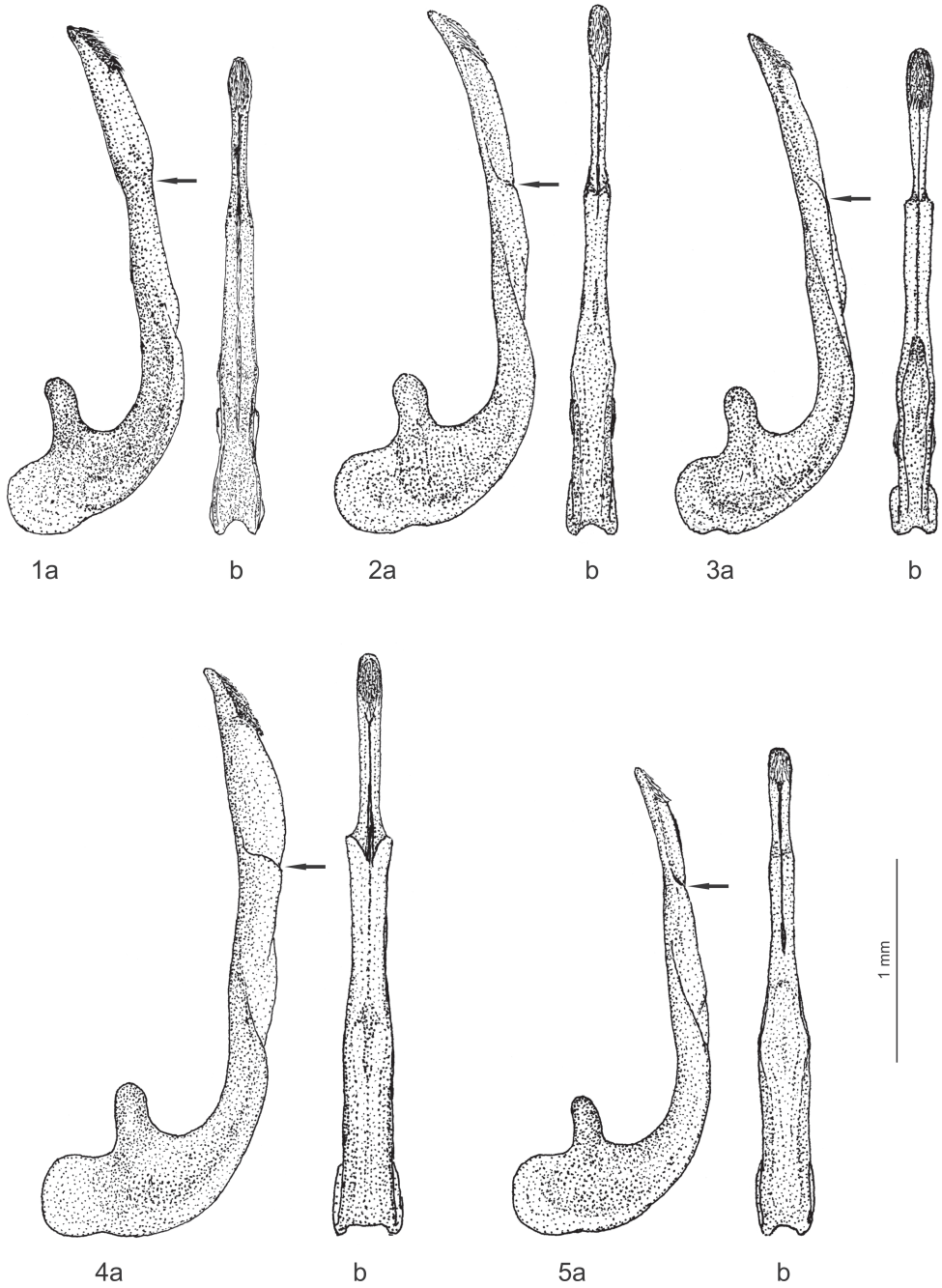
Paratypes: 4 exs. from the type locality; 2 exs. from South Australia, NNE of Billa Kalina, and 2 exs. from Queensland, W of Kihee (see WATTS 1978).

MEASUREMENTS: TL: 12.5 mm; TL-H: 11.2 mm; MW: 6.6 mm.

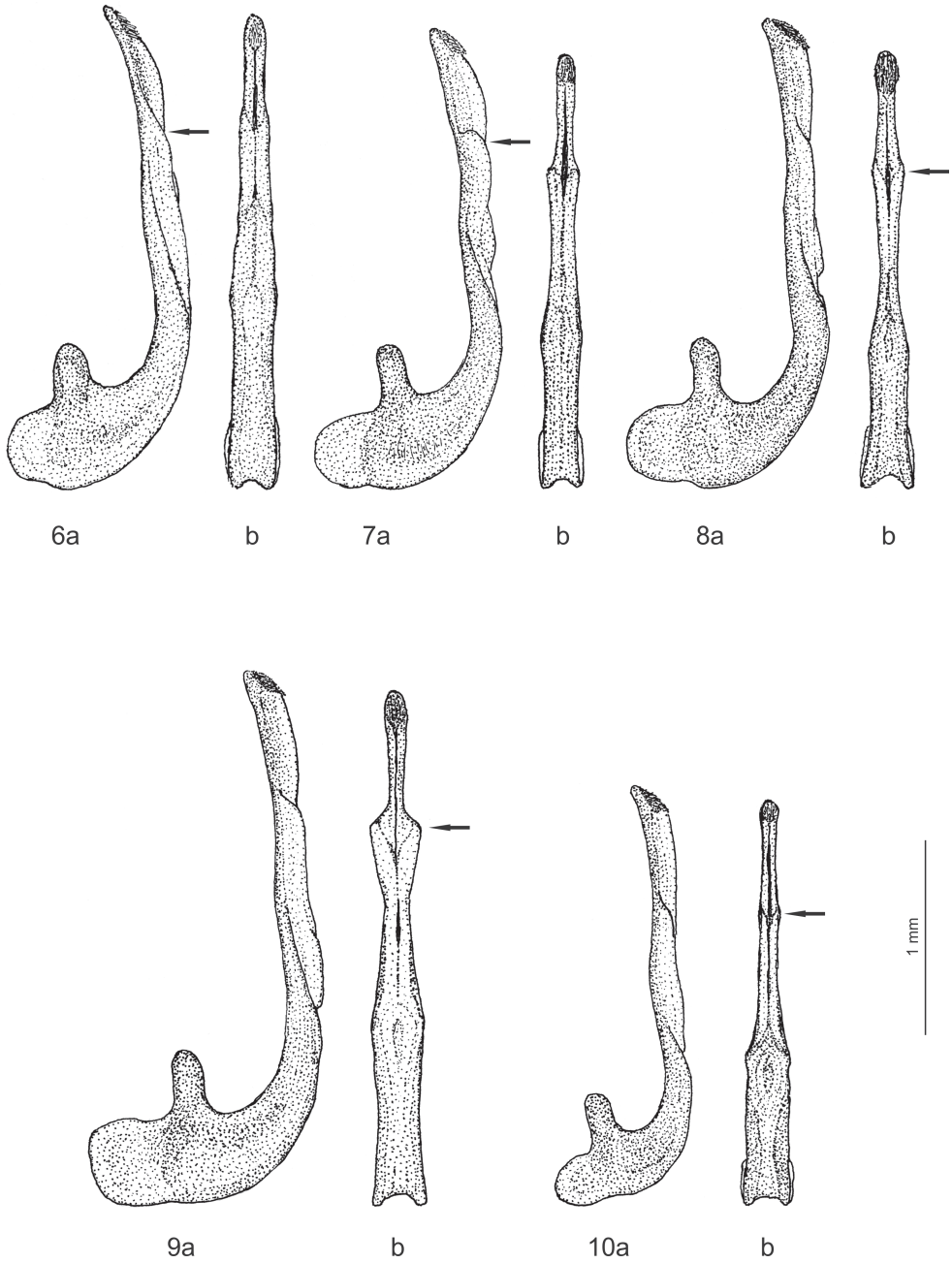
AFFINITIES: *Hydaticus chrisi* (Fig. 39) agrees with other species treated in this paper in the predominantly yellowish-brown elytral colouration with dark brown to black elytral irrorations. It is characterized by an elongate-oval habitus, almost parallel-sided in middle; head yellowish-brown with few black markings; pronotum reddish-brown with narrowly black anterior and posterior margins; elytron yellowish-brown with black irrorations, which are partly forming black spots. *Hydaticus chrisi* can be distinguished from the species of the *H. fabricii* and the *H. grammicus* groups by the habitus, elytral markings and male genitalia. In habitus, *H. chrisi* resembles *H. parallelus* from which it can be separated by smaller size, colouration and the median lobe (Fig. 25), which is quite simple, in lateral view almost straight in apical two thirds, with pointed apex; lateral lobes missing; apex arrowhead-like in ventral view.

DISTRIBUTION (Fig. 49): Australia: so far confirmed only for Queensland (additional localities, C. Watts, pers. comm.: 1 ex.: Werewilka Creek nr. Lake Wyhra, 15.II.1989, leg. B. Timms (SAMA); 1 ex.: SW Lake Numalia [part of Paroo River system north of Hungerford], II.2004, leg. B. Timms (SAMA)), and South Australia. Confirmed records for New South Wales are not yet known (C. Watts, pers. comm. 2022).

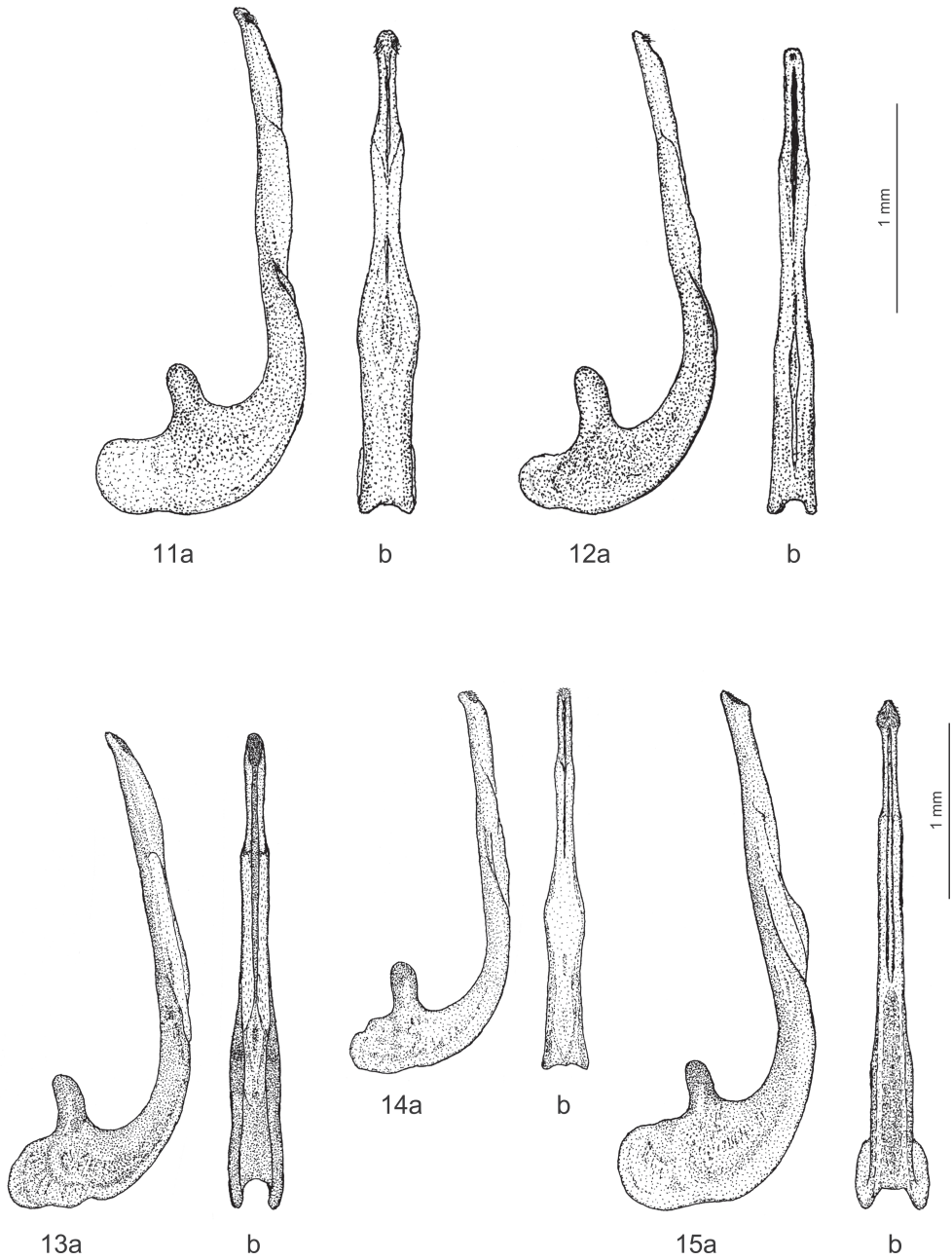
Hydaticus chrisi obviously is a very rare species. Only few specimens are known so far. It seems to be confined to desert areas in the interior of the Australian continent.



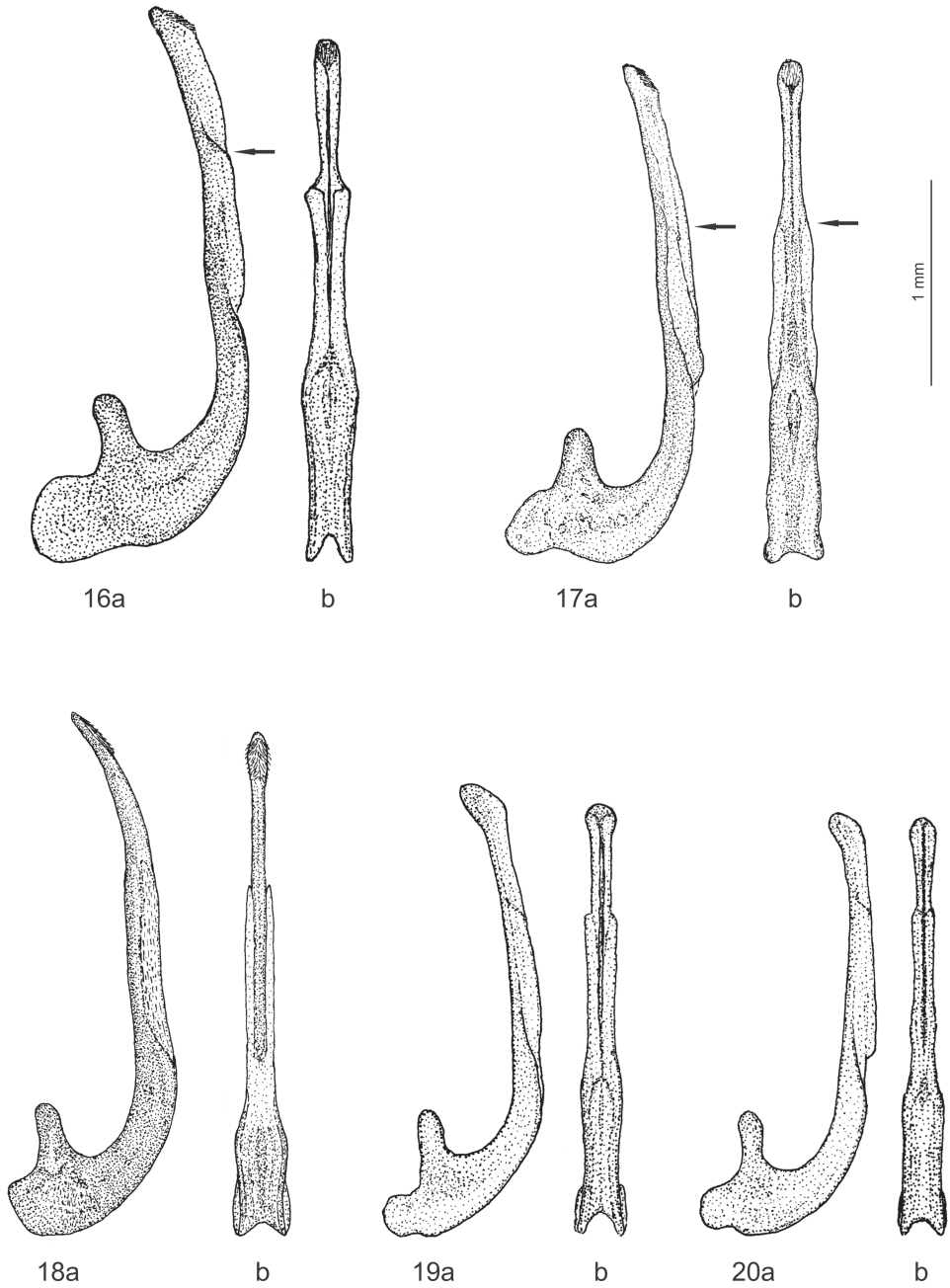
Figs. 1–5: Aedeagus, median lobe in (a) lateral and (b) ventral view: 1) *Hydaticus fabricii*, 2) *H. loeffleri*, 3) *H. confusus*, 4) *H. geiseri*, 5) *H. vaziranii*.



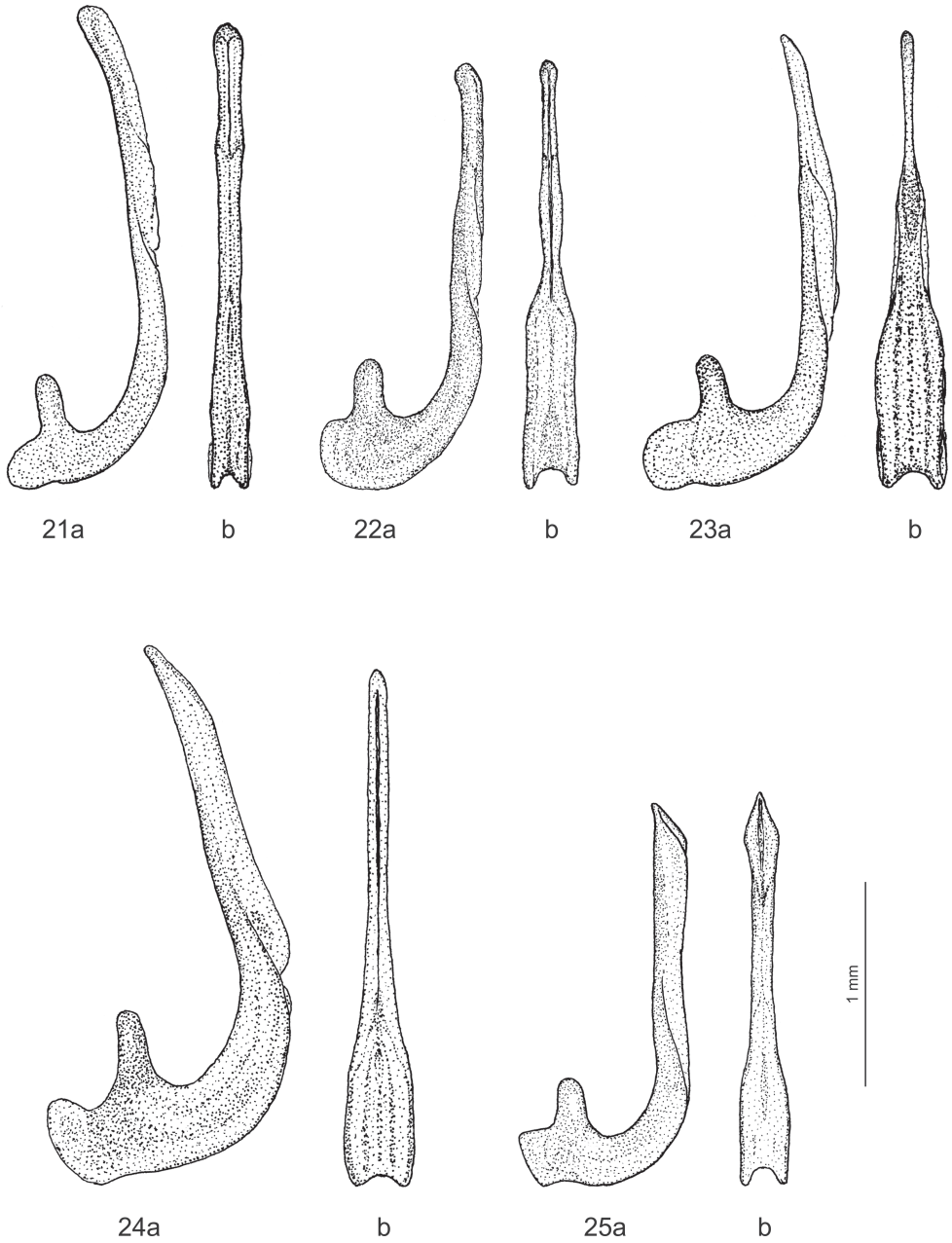
Figs. 6–10: Aedeagus, median lobe in (a) lateral and (b) ventral view: 6) *Hydaticus rivanolis*, 7) *H. rhan-toides*, 8) *H. mexaformis*, 9) *H. incertus*, 10) *H. consanguineus*.



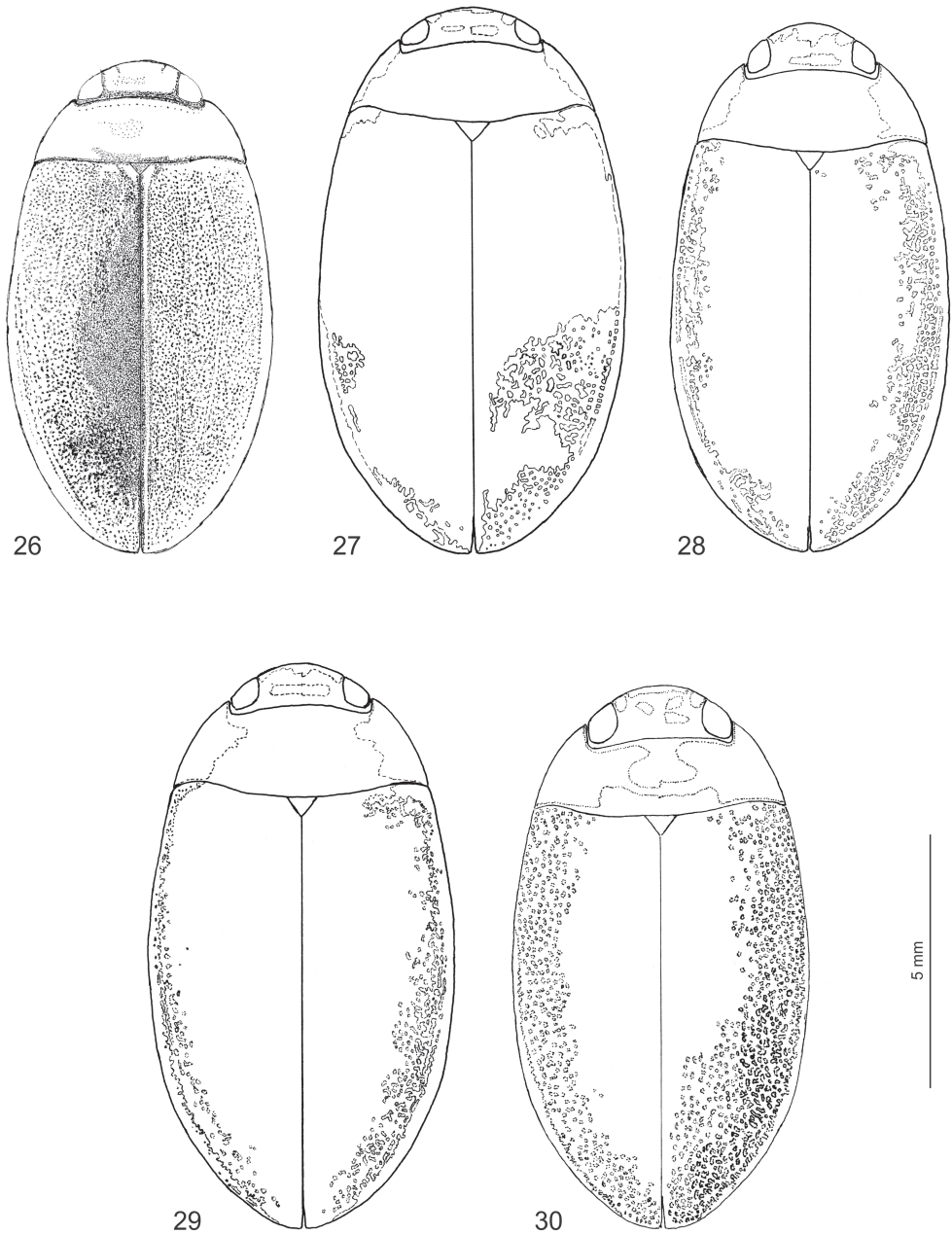
Figs. 11–15: Aedeagus, median lobe in (a) lateral and (b) ventral view: 11) *Hydaticus ricinus*, 12) *H. ponticus*, 13) *H. ephippiiger*, 14) *H. agaboides*, 15) *H. larsoni*.



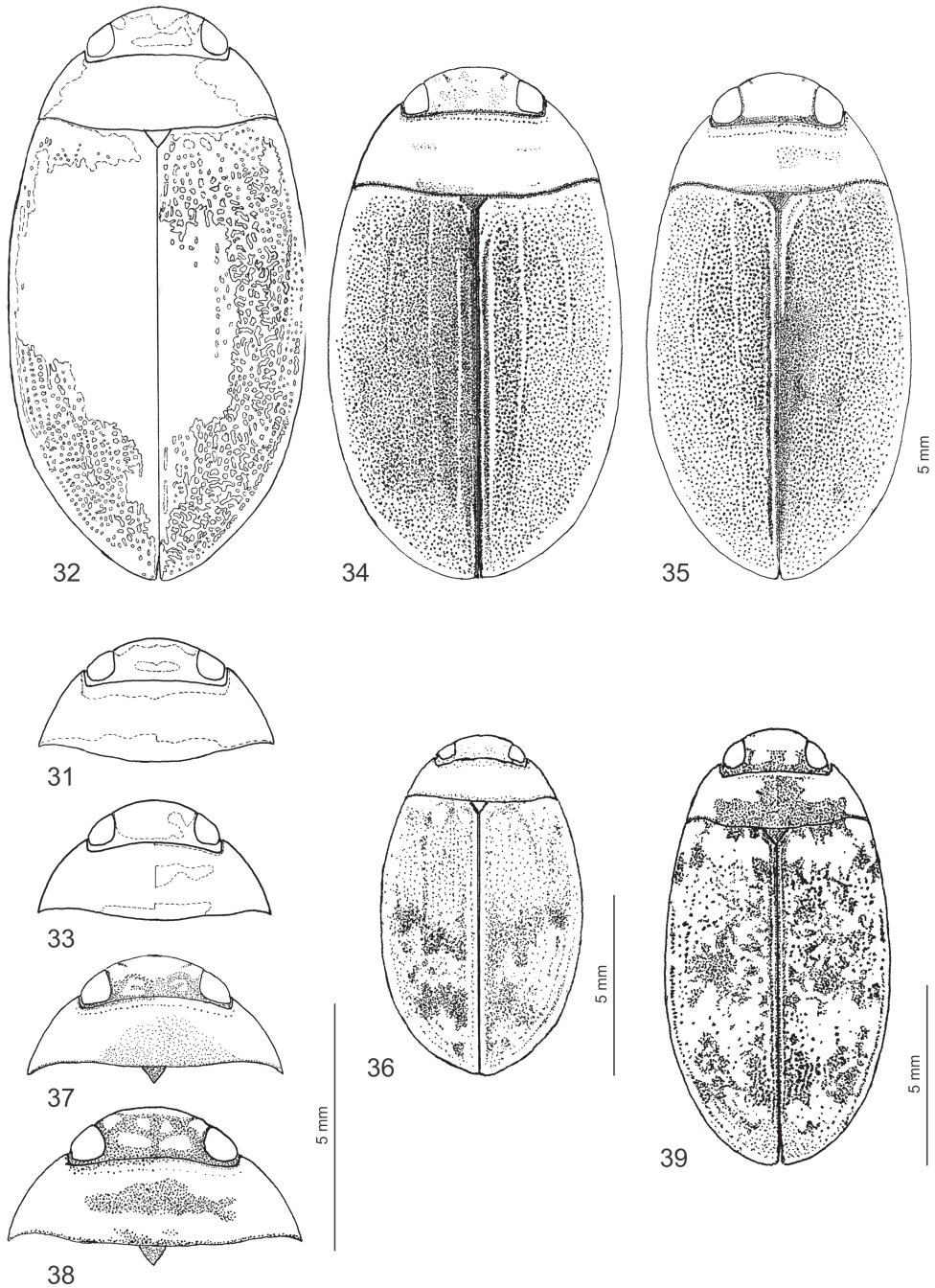
Figs. 16–20: Aedeagus, median lobe in (a) lateral and (b) ventral view: 16) *Hydaticus mazzoldii*, 17) *H. pulcher*, 18) *H. sellatus*, 19) *H. grammicus*, 20) *H. schoenleithneri*.



Figs. 21–25: Aedeagus, median lobe in (a) lateral and (b) ventral view: 21) *Hydaticus shaverdoae*, 22) *H. thermonectoides*, 23) *H. borneensis*, 24) *H. parallelus*, 25) *H. chrisi*.



Figs. 26–30: Dorsal habitus and variation of colour patterns: 26) *Hydaticus fabricii*, 27) *H. ephippiger*, 28) *H. agaboides*, 29) *H. larsoni*, 30) *H. mazzoldii*.



Figs. 31–39: Dorsal habitus and variation of colour patterns: 31) *Hydaticus pulcher* (head and pronotum), 32) *H. sellatus sellatus*, 33) *H. s. sabahensis* (head and pronotum), 34) *H. schoenleithneri*, 35) *H. shaverdoae*, 36) *H. thernonectoides*, 37) *H. borneensis* (head and pronotum), 38) *H. parallelus* (head and pronotum), 39) *H. chrisi*.



Fig. 40: Habitus of *Hydaticus geiseri* (paratype).



Fig. 41: Habitus of *Hydaticus mazzoldii* (holotype).



Fig. 42: Habitus of *Hydaticus grammicus* (Austria).



Fig. 43: Habitus of *Hydaticus schoenleithneri* (holotype).



Fig. 44: Habitus of *Hydaticus shaverdoae* (holotype).



Fig. 45: Habitus of *Hydaticus borneensis* (holotype).

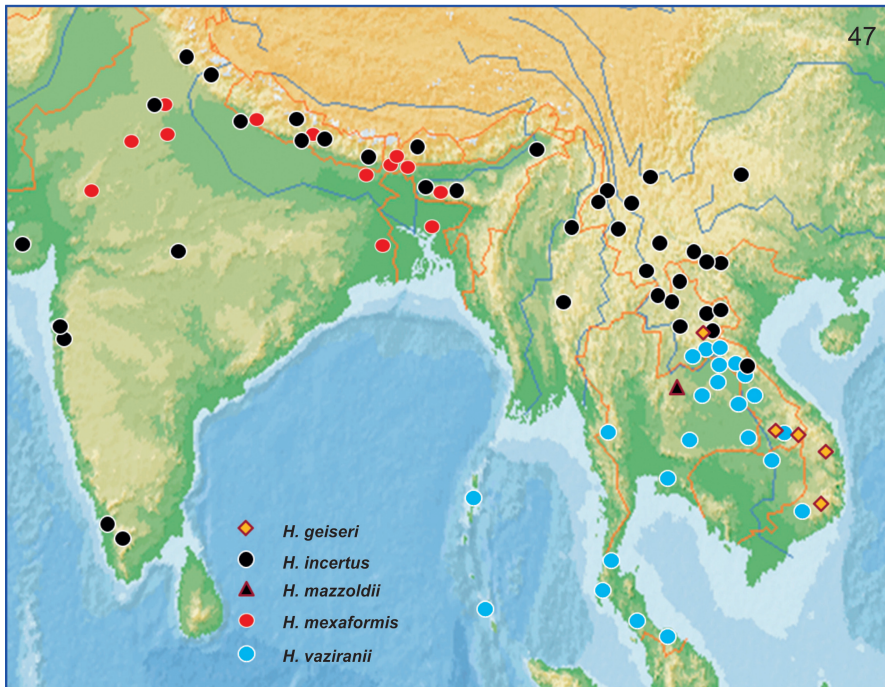
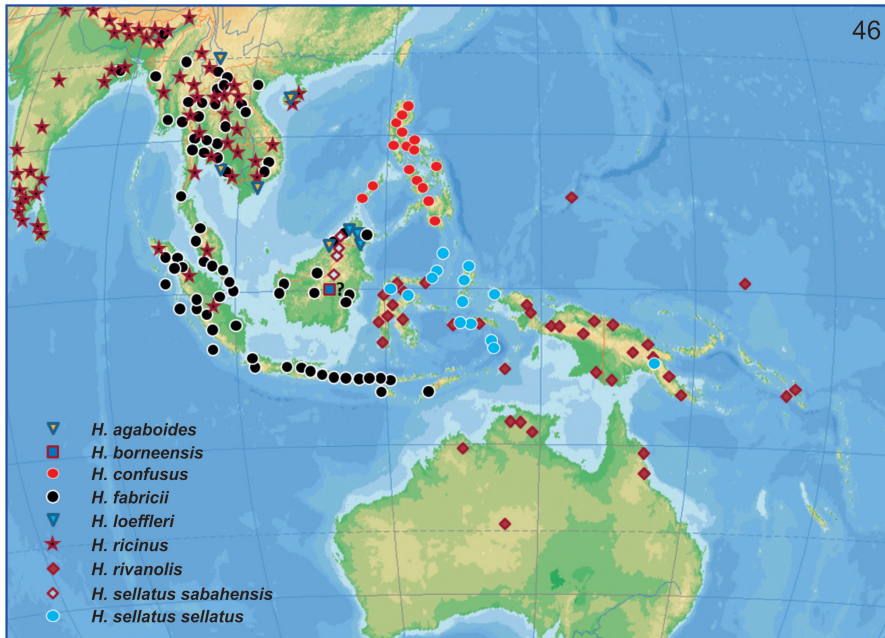


Fig. 46: Distribution of *Hydaticus agaboides*, *H. borneensis*, *H. confusus*, *H. fabricii*, *H. loeffleri*, *H. ricinus*, *H. rivanolis*, *H. sellatus sellatus*, *H. s. sabahensis*.

Fig. 47: Distribution of *Hydaticus geiseri*, *H. incertus*, *H. mazzoldii*, *H. mexaformis*, *H. vaziranii*.

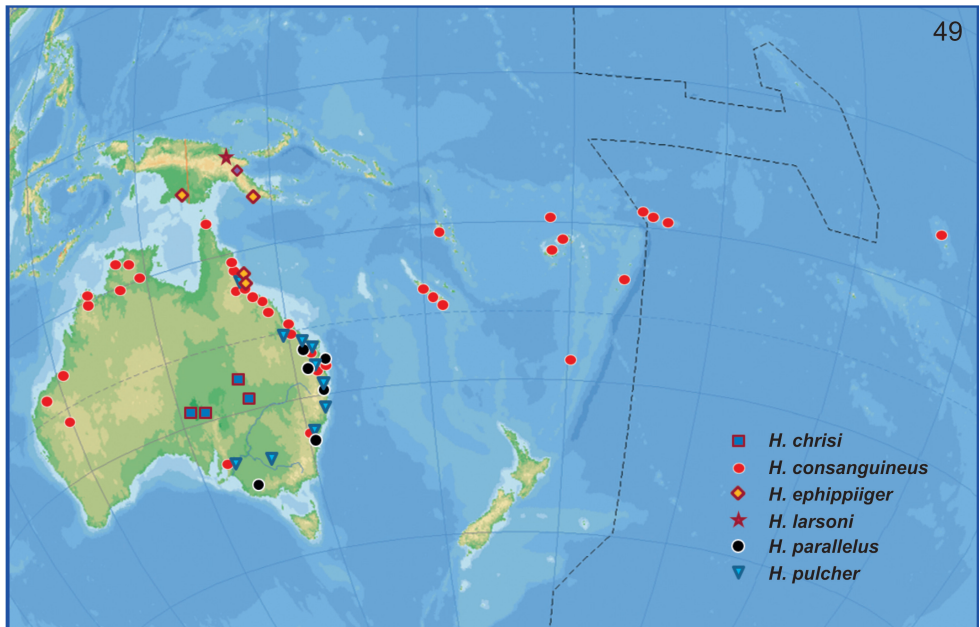
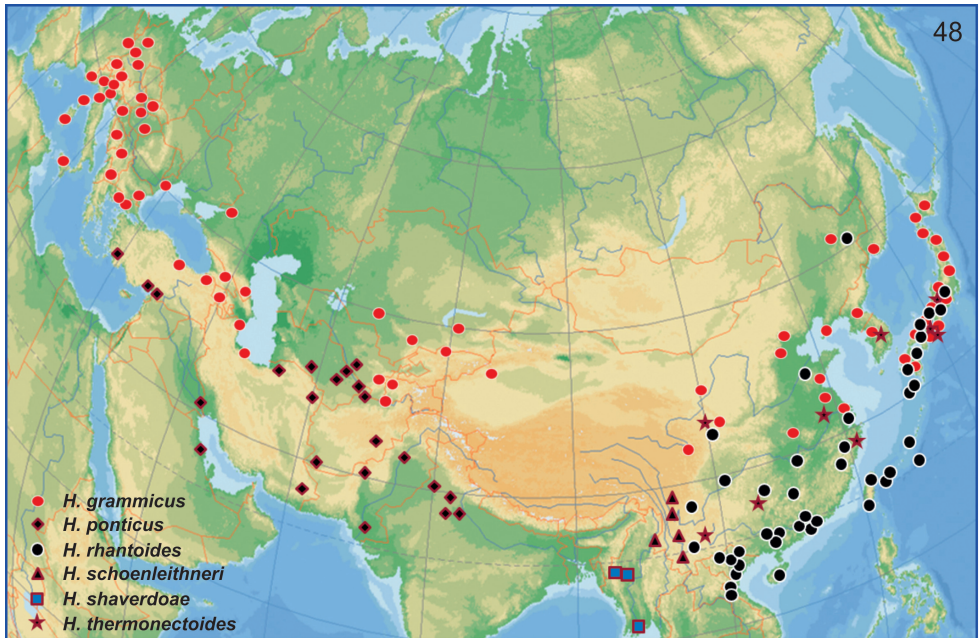


Fig. 48: Distribution of *Hydaticus grammicus*, *H. ponticus*, *H. rhantoides*, *H. schoenleithneri*, *H. shaverdoae*, *H. thermonectoides*.

Fig. 49: Distribution of *Hydaticus chrisi*, *H. consanguineus*, *H. ephippiiger*, *H. larsoni*, *H. parallelus*, *H. pulcher*.



Figs. 50: Habitat of *Hydaticus geiseri*: Laos, Attapeu Province, Annam Highlands, Dong Amphan, Nong Fa, 1160 m (photograph by Jiří Hájek).

Fig. 51: Habitat of *Hydaticus schoenleithneri*: China, Yunnan Province, 5 km S Dali (Old Town), 2200 m (photograph by Jiří Hájek).

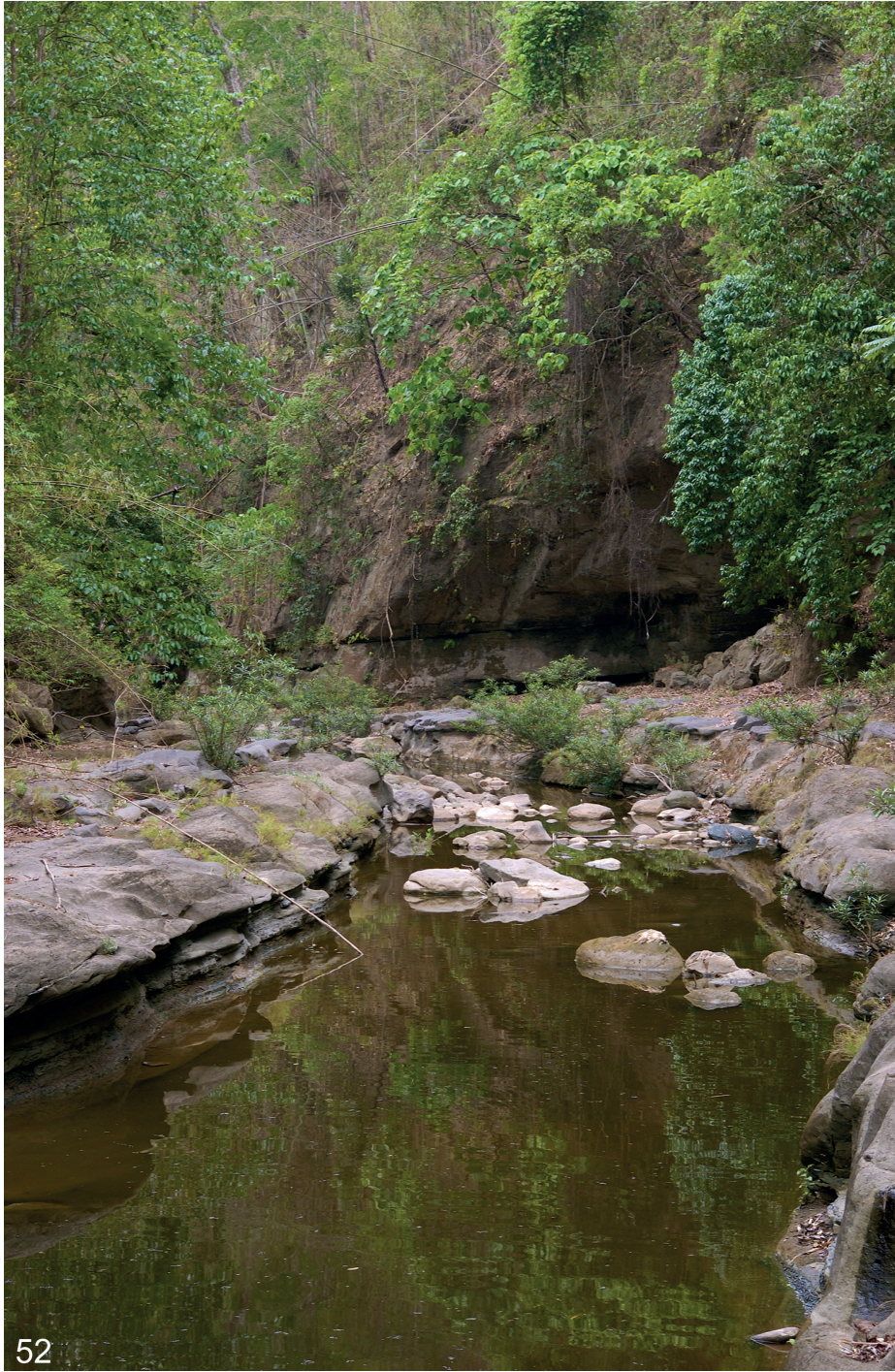


Fig. 52: Habitat of *Hydaticus shaverdoae*: Myanmar, Sagaing Division, Alaungdaw Katthapa National Park, ca. 350 m (photograph by Harald Schillhammer).

Phylogeny

MILLER et al. (2009) included five species of the *H. fabricii* group in their molecular phylogenetic analyses of the genus *Hydaticus* LEACH, 1817: *H. consanguineus* + (*H. rhantoides* + (*H. ricinus* + (*H. fabricii* [= *H. confusus*] + *H. rivanolis*))).

Hydaticus rhantaticoides RÉGIMBART, 1892, the only member of the *H. sexguttatus* group (sensu WEWALKA 2015) included in their analyses (under the name *H. watsi* DAUSSIN, 1980, a junior synonym of *H. rhantaticoides*), was resolved as sister to the *H. fabricii* group, and *H. grammicus* as sister to the *H. fabricii* group + *H. rhantaticoides*.

Hydaticus parallelus, the only species of the “Species incertae sedis” (as defined herein) included in the phylogenetic analyses by MILLER et al. (2009) is neither closely related to the *H. fabricii* group nor to the *H. grammicus* group, it is obviously more closely related to the Madagascan *H. nigrotaeniatus* RÉGIMBART, 1895.

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