

# An Updated Checklist of the Insect and Other Arthropods Type Specimens Deposited in the Collection of Natural History Museum of the National Science Museum, Thailand

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## ABSTRACT

An updated checklist of the insect and other arthropod type specimens housed in the Natural History Museum of the National Science Museum, Thailand is presented for research and scientific communication. Included are 66 holotypes and 1,153 paratypes of 203 species and six subspecies belonging to 33 families and ten orders. With 137 species and one subspecies, Formicidae has the largest representation. The specimens were collected mainly in Thailand and neighboring countries in the past 50 years.

## INTRODUCTION

The Natural History Museum of the National Science Museum in Thailand (THNHM: THNHMC when referring to the collection) was established in 1995 belonging to the Ministry of Higher Education, Science, Research and Innovation. The museum maintains a large collection of plant, bird, amphibian, reptile, mammal, animal horn, antler, and insect specimens which is one of the most important collections in Southeast Asia. The most important part of the collection is the type specimens. As the International Code of Zoological Nomenclature encourages institutions to catalogue and make accessible the type material in their care (ICZN, 1999: Recommendation 72F), the curators of THNHM have started cataloguing the types in the THNHMC to improve the knowledge about the collections and provide information to the taxonomic community. Recently, catalogues of the type specimens of amphibians and reptiles (Chan-ard and Makchai, 2011) and insects (Jeenthong *et al.*, 2013) were published. Since the late 2011, the number of insect type specimens have increased substantially. In the present catalogue, all the insect and the other arthropod type specimens in the THNHMC are listed and updated from Jeenthong *et al.* (2013).

## MATERIALS AND METHODS

Every insect type specimen deposited in the THNHMC was examined and their labels (Figure 1) compared with

data include in the original descriptions. Localities have been corrected when they were misspelled in the original labels; some additional locality information taken from specimen labels missing in the original description is also provided.

The list of type materials is arranged alphabetically by order, family, genus and species, following the format:

*Specific name* author, publication date  
*Journal* volume. pages of the original description [publication date].

Holotype. Sex (**THNHM code**), locality, date (months in Roman numerals), collector (leg.), codes given in the original description (if available).

Total number of paratype. Number of specimens, sex (**THNHM code**), locality, date (months in Roman numerals), collector (leg.), codes given in the original description.

Current status. Valid name.

Type terms used in the checklist (see Lincoln *et al.*, 1998):

**Holotype** The single specimen designated or indicated as the type specimen of a nominal species by the original author at the time of publication or the single when no type was specified but only one specimen was present (Figure 1B).

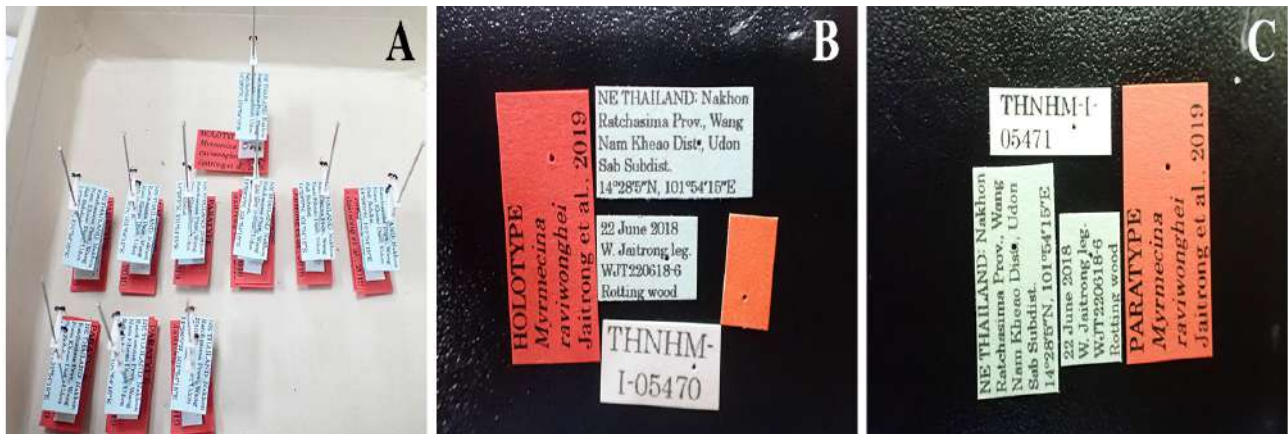
**Paratype** Any specimen from the type series remaining after the designation of the holotype (Figure 1C).

**Allotype** A paratype of opposite sex to the holotype.

The following abbreviations are used:

**B.G.** Botanical Garden  
**CMU** Chiang Mai University, Thailand  
**Dist.** District  
**ERS** Environmental Research Station  
**leg.** Legit (a Latin for collector)

**N.P.** National Park  
**Prov.** Province  
**THNHM** Natural History Museum, National Science Museum, Thailand  
**UMC** University of Missouri Columbia, U.S.A.  
**WJT** Weeyawat Jaitrong  
**W.S.** Wildlife Sanctuary



**Figure 1.** Type specimens and labels of type specimens. A, type specimens of *Myrmecina raviwonghei*; B, holotype label of *Myrmecina raviwonghei*; C, paratype label of *Myrmecina raviwonghei*.

## Checklist

This checklist is the insect and other arthropod type specimens deposited in THNHMC, which includes 66 holotypes, 1,153 paratypes of 203 species, and six subspecies in 33 families and ten orders. It is composed mainly of Formicidae, with 137 species and one subspecies (ca. 67% of the total species). The numbers of the type specimens are updated from Jeenthong *et al.* (2013) with an addition of 54 holotypes, 835 paratypes, and 148 species. The type specimens were collected mainly in Thailand and other countries in Southeast Asia in the past 50 years.

## ORDER COLEOPTERA

### Family Curculionidae

***Cnestus quadrispinosus* Sittichaya & Beaver, 2018** (Figure 2A–B)

*ZooKeys* 795: 32–35 [published on 5 November 2018]. Two paratypes. Two females (**THNHM-I-02390** and **THNHM-I-02391**), S Thailand, Narathiwat Prov., Hala-Bala W.S., Lowland Tropical Rainforest, 5°47'44"N, 101°50'07"E, 1.III.2014, W. Sittichaya leg.

Current status. Valid as *Cnestus quadrispinosus* Sittichaya & Beaver, 2018.

### Family Gyrinidae

***Dineutus sitesi* Gustafson, Hajek & Miller, 2016** (Figure 2C–D)

*Acta Entomologica Musei Nationalis Pragae* 56(2): 637–640 [published on 15 November 2016].

One paratype. One specimen (**THNHM-I-00300**, unknown sex), Thailand, Pitsanulok [Phitsanulok] Prov., Phu Hin Rongkla N.P., Waterwheel Falls, 16°59'N, 101°60'E, 1280 m, 21.IV.2002, Kick pool., N. Chanthong leg.

Current status. Valid as *Dineutus sitesi* Gustafson, Hajek & Miller, 2016.

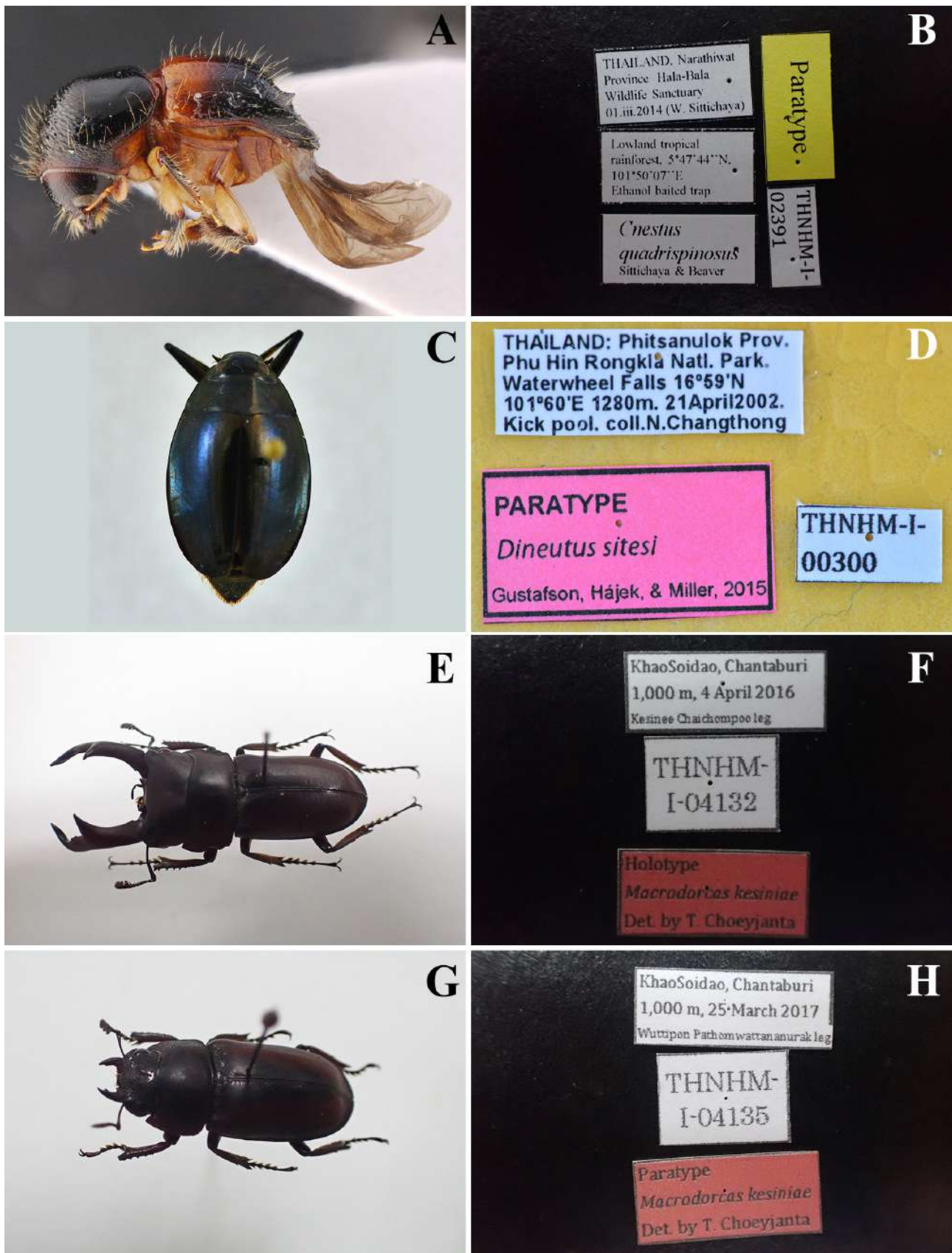
### Family Lucanidae

***Macrodorcas kesinia* Choeyjanta, Pathomwattana-nurak & Chantapoon, 2018** (Figure 2E–H)

*Beetles World* 17: 2–7 [published on 31 July 2018].

Holotype. Male (**THNHM-I-04132**), E Thailand, Chanthaburi Prov., Khao Soi Dao, 1000 m, 4.IV.2016, K. Chaichompoo leg.

Seven paratypes. Three males (**THNHM-I-04134**, **THNHM-I-04136**, **THNHM-I-04138**) and 4 females (**THNHM-I-04133**, **THNHM-I-04135**, **THNHM-I-04137**, **THNHM-I-04139**), E Thailand, Chanthaburi Prov., Khao Soi Dao, 1000 m,



**Figure 2.** Type specimens and labels of type specimens of Coleoptera deposited in THNHMC. A–B, *Cnestus quadrispinosus*, (Curculionidae), paratype (Sittichaya and Beaver, 2018); C–D, *Dineutus sitesi* (Gyrinidae), paratype (Hajek and Miller, 2016); E–F, *Macrodorcas kesiniaie*, male (Lucanidae), holotype (Choeyjanta *et al.*, 2018); G–H, *Macrodorcas kesiniaie*, female (Lucanidae), paratype (Choeyjanta *et al.*, 2018).



25.III.2017, W. Pathomwattananurak leg.

Current status. Valid as *Macrodorcas kesinia* Choeyjanta, Pathomwattananurak & Chantapoon, 2018.

## ORDER DIPTERA

### Family Psychodidae

#### *Alexandria thailandensis* Wagner, Rulik & Polseela, 2018 (Figure 3A–B)

*Insect systematics & evolution* 50(5): 4–8 [published in December 2018].

Holotype. Male (THNHM-I-02388), Phitsanulok Prov., Noen Maprang Dist., Naresuan Cave, 16.30271°N, 103.39749°E, slide mounted.

One paratype. Female (THNHM-I-02389), same data as holotype.

Current status. Valid as *Alexandria thailandensis* Wagner, Rulik & Polseela, 2018.

### Family Tabanidae

#### *Atylotus cryptotaxis* Burton, 1978 (Figure 3C–D)

*Entomological Reprint Specialists*: 125 [published on 1 January 1978].

One paratype. Female (THNHM-I-00302), NE Thailand, Loei Prov., Loei & vicinity, 17°29'N, 101°44'E, water buffalo, 30.V.1969, C. Dettongchai leg.

Current status. Valid as *Atylotus cryptotaxis* Burton, 1978.

#### *Atylotus lotus* Burton, 1978 (Figure 3E–F)

*Entomological Reprint Specialists*: 126–127 [published on 1 January 1978].

One paratype. Female (THNHM-I-00301), NE Thailand, Loei Prov., Loei & vicinity, 17°29'N, 101°44'E, about water buffalo, 12.V.1969, altitude about 250 m, C. Dettongchai leg.

Current status. Valid as *Atylotus lotus* Burton, 1978.

#### *Tabanus alumnus* Burton, 1978 (Figure 3G–H)

*Entomological Reprint Specialists*: 54–55 [published on 1 January 1978].

One paratype. Female (THNHM-I-00303), N Thailand, Chiang Mai Prov., Huai Kao (ca. 4 km NW of Chiang Mai), 18°48'N, 98°57'E, altitude about 350 m, 17.VI.1969, Kao Somporn leg.

Current status. Valid as *Tabanus alumnus* Burton, 1978.

#### *Tabanus firmus* Burton, 1978 (Figure 3I–J)

*Entomological Reprint Specialists*: 122–124 [published on 1 January 1978].

One paratype. Female (THNHM-I-00304), N Thailand, Chiang Mai Prov., Huai Kao (ca. 4 km NW of

Chiang Mai), 18°48'N, 98°57'E, altitude about 350 m, 22–23.V.1969, Kao Somporn leg.

Current status. Valid as *Tabanus firmus* Burton, 1978.

#### *Tabanus geographicus* Burton, 1978

*Entomological Reprint Specialists*: 46–47 [published on 1 January 1978].

Three paratype. One female (THNHM-I-00305), N Thailand, Chiang Mai Prov., Huai Kao (ca. 4 km NW of Chiang Mai), 18°48'N, 98°57'E, altitude about 350 m, 15.VI.1969, Kao Somporn leg.; 1 female (THNHM-I-00306), same locality and collector, 12.VI.1969; 1 female (THNHM-I-00307), same locality and collector, 5.VI.1969.

Current status. Valid as *Tabanus geographicus* Burton, 1978.

#### *Tabanus helvinus* Burton, 1978

*Entomological Reprint Specialists*: 67–68 [published on 1 January 1978].

Five paratypes. Three females (THNHM-I-00308 to THNHM-I-00310), NE Thailand, Loei Prov., Loei & vicinity, 17°29'N, 101°44'E, about water buffalo, 12.V.1969, altitude about 250 m, C. Dettongchai leg.; 1 female (THNHM-I-00312), same locality and collector, 24.VI.1969; 1 female (THNHM-I-00311), Thailand, Loei Prov., Dan Sai Dist., Dan Sai & vicinity, 17°16'N, 101°09'E, about water buffalo, 22.V.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus helvinus* Burton, 1978.

#### *Tabanus jeanae* Burton, 1978

*Entomological Reprint Specialists*: 117–118 [published on 1 January 1978].

One paratype. Female (THNHM-I-00313), N Thailand, Mae Hong Son Prov., 19°17'N, 97°158'E (vicinity SW of Mae Hong Son), about water buffalo, 13.V.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus jeanae* Burton, 1978.

#### *Tabanus oxybeles* Burton, 1978

*Entomological Reprint Specialists*: 103–104 [published on 1 January 1978].

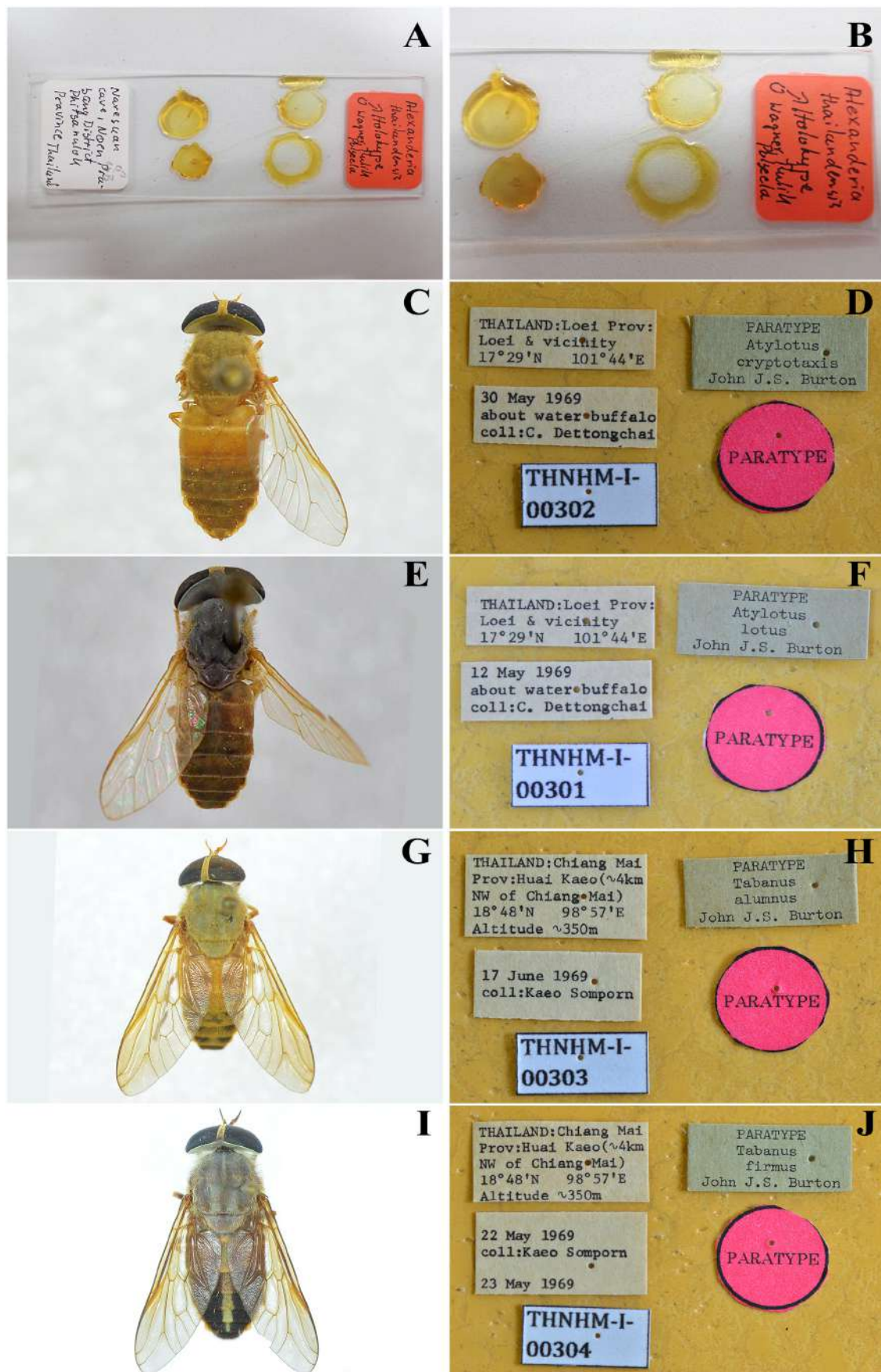
One paratype. Female (THNHM-I-00314), E Thailand, Chanthaburi Prov., Tha Mai Dist. (23 km NW of Chanthaburi), 12°43'N, 101°59'E, from malaise trap, 20.VI.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus oxybeles* Burton, 1978.

#### *Tabanus pristinus* Burton, 1978

*Entomological Reprint Specialists*: 84–86 [published on 1 January 1978].

One paratype. Female (THNHM-I-00315), N Thailand, Chiang Mai Prov., Huai Kao (ca. 4 km NW of



**Figure 3.** Type specimens and labels of type specimens of Diptera deposited in THNHMC. A–B, *Alexandreria thailandensis* (Psychodidae), holotype (Wagner *et al.*, 2018); C–D, *Atylotus cryptotaxis* (Tabanidae), paratype (Burton, 1978); E–F, *Atylotus lotus* (Tabanidae), paratype (Burton, 1978); G–H, *Tabanus alumnus* (Tabanidae), paratype (Burton, 1978); I–J, *Tabanus firmus* (Tabanidae), paratype (Burton, 1978).

Chiang Mai), 18°48'N, 98°57'E, altitude about 350 m, 10–15.V.1969, Kaeo Somporn leg.

Current status. Valid as *Tabanus pristinus* Burton, 1978.

***Tabanus quadrifocus* Burton, 1978**

*Entomological Reprint Specialists*: 89–91 [published on 1 January 1978].

One paratype. Female (**THNHM-I-00316**), NE Thailand, Loei Prov., Loei & vicinity, 17°29'N, 101°44'E, about water buffalo, altitude about 250 m, 25.IV.1969, C. Dettongchai leg.

Current status. Valid as *Tabanus quadrifocus* Burton, 1978.

***Tabanus rusticatus* Burton, 1978**

*Entomological Reprint Specialists*: 88–89 [published on 1 January 1978].

One paratype. Female (**THNHM-I-00317**), N Thailand, Chiang Mai Prov., Huai Kaeo (~4 km NW of Chiang Mai), 18°48'N, 98°57'E, altitude about 350 m, 13.VI.1969, Kaeo Somporn leg.

Current status. Valid as *Tabanus rusticatus* Burton, 1978.

***Tabanus symmetrus* Burton, 1978**

*Entomological Reprint Specialists*: 92–94 [published on 1 January 1978].

Three paratypes. Two females (**THNHM-I-00318** and **THNHM-I-00319**), NE Thailand, Chanthaburi Prov., Tha Mai Dist. (23 km NW of Chanthaburi), 12°43'N/101°59'E, 20.VI.1969, John J.S. Burton leg.; 1 female (**THNHM-I-00320**), Thailand, Nakhon Sawan Prov., 15°36.38'N, 101°07.08'E (ca. 10 km S of Nakhon Sawan), 27.VI.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus symmetrus* Burton, 1978.

***Tabanus tamthaiorum* Burton, 1978**

*Entomological Reprint Specialists*: 65–66 [published on 1 January 1978].

One paratype. Female (**THNHM-I-00321**), Thailand, Tak Prov., Mae Sot Dist., Huai Muang [Mueang] Canton, 16°40'N, 98°31'E, 11.VI.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus tamthaiorum* Burton, 1978.

***Tabanus thermarum* Burton, 1978**

*Entomological Reprint Specialists*: 108–109 [published on 1 January 1978].

One paratype. Female (**THNHM-I-00322**), N Thailand, Chiang Mai Prov., Fang Dist. (ca. 10 km W of Fang), 19°56'N, 99°07'E, 4.V.1969, John J.S. Burton leg.

Current status. Valid as *Tabanus thermarum* Burton,

1978.

**ORDER HETEROPTERA**

**Family Aphelocheiridae**

***Aphelocheirus karen* Sites & Zettel, 2005** (Figure 4A–B)

*Aquatic Insects* 27(2): 100–103 [published in June 2005].

Two paratypes. Two specimens (**THNHM-I-00323** and **THNHM-I-00324**, unknown sex), N Thailand, Mae Hong Son Prov., 17 rd. km N. Mae Hong Son, Mok Cham Pae, nr. Fish Cave, 11.XI.1995, H. Zettel leg., Zettel (12b).

Current status. Valid as *Aphelocheirus karen* Sites & Zettel, 2005.

***Aphelocheirus kra* Sites, 2005** (Figure 4C–D)

*Natural History Bulletin of the Siam Society* 53(2): 216–222 [published on 25 July 2006].

Two paratypes. Two specimens (**THNHM-I-00325** and **THNHM-I-00326**, unknown sex), Thailand, Nakhon Si Thammarat Prov., Tambol Krung Ching, Khlong Nob, 16.VI.2004, 08°44'N/99°39'E, 89 m, L-772, Sites, Vitheepradit and Prommi leg.

Current status. Valid as *Aphelocheirus kra* Sites, 2005.

***Aphelocheirus maehongsonus* Sites & Zettel, 2005** (Figure 4E–F)

*Aquatic Insects* 27(2): 103–107 [published in June 2005].

Two paratypes. Two specimens (**THNHM-I-00327** and **THNHM-I-00328**, unknown sex), Thailand, Mae Hong Son Prov., 17 rd. km N Mae Hong Son, Mok Cham Pae, nr Fish Cave, 11.XI.1995, H. Zettel leg., Zettel (12b).

Current status. Valid as *Aphelocheirus maehongsonus* Sites & Zettel, 2005.

***Aphelocheirus monthathanus* Sites & Zettel, 2005** (Figure 4G–H)

*Aquatic Insects* 27(2): 107–111 [published in June 2005].

Two paratypes. Two specimens (**THNHM-I-00329** and **THNHM-I-00330**, unknown sex), Thailand, Chiang Mai Prov., Doi Suthep N.P., Nam Tok Monthathan, 18°49'N, 98°55'E, 700 m, 5.V.2002, L-403, CMU team leg.

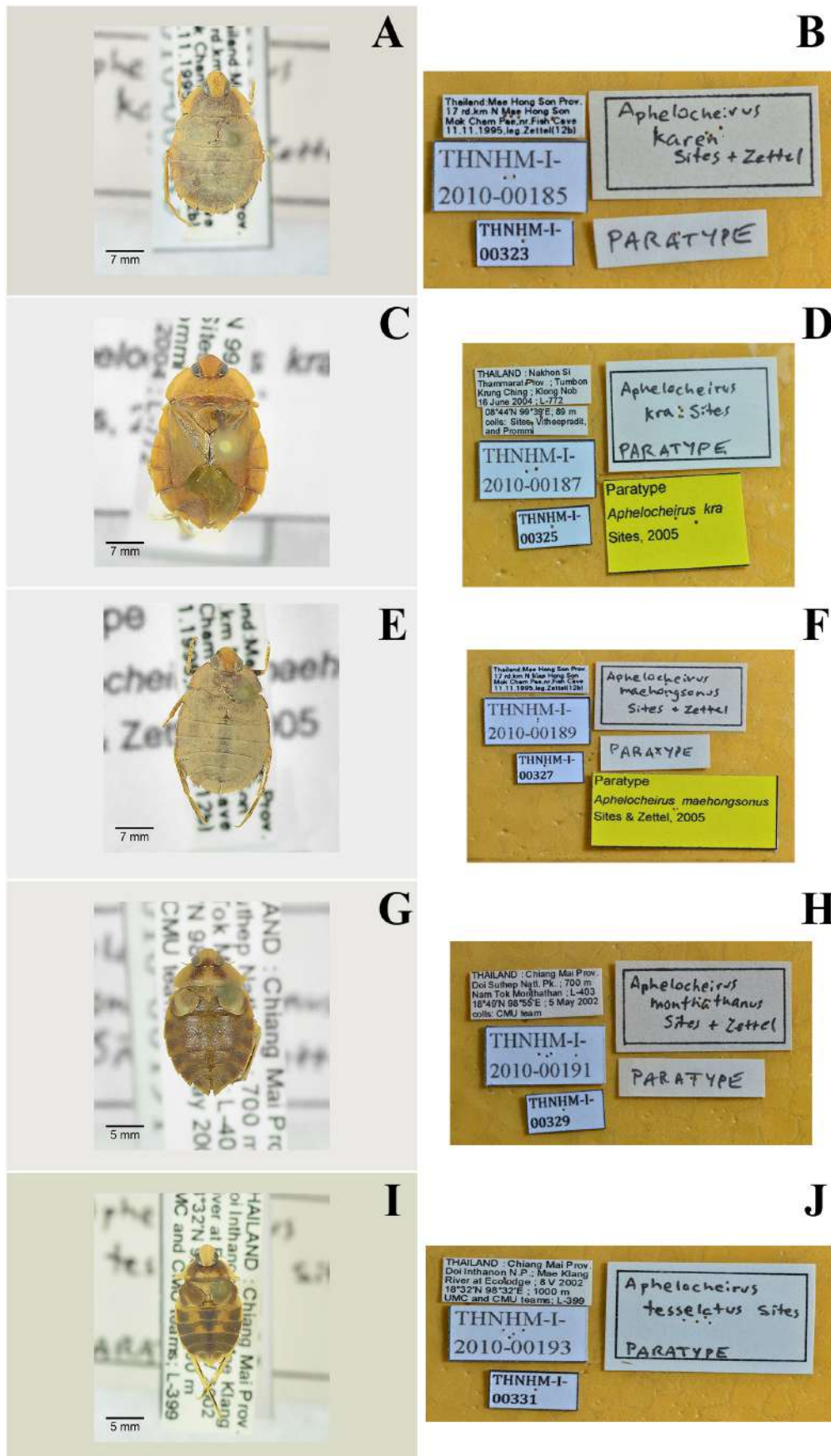
Current status. Valid as *Aphelocheirus monthathanus* Sites & Zettel, 2005.

***Aphelocheirus tessellatus* Sites, 2005** (Figure 4I–J)

*Natural History Bulletin of the Siam Society* 53(2): 227–233 [published on 25 July 2006].

Two paratypes. Two nymphs (**THNHM-I-00331** and **THNHM-I-00332**), Thailand, Chiang Mai Prov., Doi Inthanon N.P., Mae Klang River at Ecolodge,





**Figure 4.** Type specimens and labels of type specimens of Hemiptera (Aphelocheiridae) deposited in THNHMC. A–B, *Aphelocheirus karen*, paratype (Sites and Zettel, 2005); C–D, *Aphelocheirus kra*, paratype (Sites, 2005); E–F, *Aphelocheirus maehongsonus*, paratype (Sites and Zettel, 2005); G–H, *Aphelocheirus monthathanus*, paratype; I–J, *Aphelocheirus tessellatus*, paratype (Sites, 2005).

L-399, 18°32'N, 98°32'E, 1000m, 8.V.2002, UMC and CMU team leg.

Current status. Valid as *Aphelocheirus tessellatus* Sites, 2005.

### Family Gerridae

***Amemboa aquafrigida* Zettel & Chen, 1997** (Figure 5A–B)

*Annales Historico-Naturales Musei Nationalis Hungarici* 89: 94–97 [published in 1997].

One paratype. One specimen (**THNHM-I-00886**, unknown sex), NE Thailand, Petchabun [Phetchabun] Prov., Nam Nao N.P., Huai Ya Krua, 14.III.1994, W.D. Shepard (1039) leg.; 1 specimen (**THNHM-I-00887**, unknown sex), same locality, 24.XI.1995, H. Zettel (22) leg.

Current status. Valid as *Amemboa aquafrigida* Zettel & Chen, 1997.

***Metrocoris nieseri* Chen & Zettel, 1999** (Figure 5C–D)  
*Annalen des Naturhistorischen Museums in Wien* 101B: 14–19 [published in December 1999].

Three paratypes. Two specimens (**THNHM-I-00883** to **THNHM-I-00884**, unknown sex), N Thailand, Chiang Mai Prov., Doi Suthep N.P., Montathan Water Falls, 750–800 m, 2.XI.1995, H. Zettel (4) leg.; 1 specimen (**THNHM-I-00885**, unknown sex), same locality, 24.III.1994, W.D., Shepard (1044) leg.

Current status. Valid as *Metrocoris nieseri* Chen & Zettel, 1999.

### Family Hebridae

***Nieserius subaquaticus* Zettel, 1999** (Figure 6A–B)  
*Aquatic Insects* 21: 43–46 [published in January 1999].

One paratype. One specimen (**THNHM-I-00911**, unknown sex), N Thailand, Mae Hong Son Prov., 3 km SE Mae Hong Son, 13.XI.1995 H. Zettel leg. (14a).

Current status. Valid as *Nieserius subaquaticus* Zettel, 1999.

***Hyrcaeus shepardi* Zettel, 1998a** (Figure 6C–D)  
*Stapfia* 55: 598–599 [published on 11 September 1998].

One paratype. One specimen (**THNHM-I-00909**, unknown sex), Thailand, Phetchabun Prov., Nam Nao N.P., Prom Laeng, 22.III.1994, W.D. Shepard leg. (1040).

Current status. Valid as *Hyrcaeus shepardi* Zettel, 1998.

***Hyrcaeus draculus* Zettel, 1998a** (Figure 6E–F)  
*Stapfia* 55: 594–596 [published on 11 September 1998].

One paratype. One specimen (**THNHM-I-00910**,

unknown sex), N Thailand, Mae Hong Son Prov., 3 km SE Mae Hong Son, 13.XI.1995, H. Zettel leg. (14a).

Current status. Valid as *Hyrcaeus draculus* Zettel, 1998.

### Family Helotrephidae

***Helotrephes incisus* Zettel & Polhemus, 1998** (Figure 7A–B)

*Annalen des Naturhistorischen Museums in Wien* 100B: 121–123 [published in December 1998].

Two paratypes. Two specimens (**THNHM-I-00900** and **THNHM-I-00903**, unknown sex), Thailand, Phetchabun Prov., 36 km SE Sila, N Ban Nam Nao, Ban Pala Yai, 25.XI.1995, H. Zettel (27) leg.

Current status. Valid as *Helotrephes incisus* Zettel & Polhemus, 1998.

***Hydrotrepes yupae* Zettel, 1998b** (Figure 7C–D)  
*Entomological Problems* 29(2): 130–131 [published in December 1998].

Three paratypes. One specimen (**THNHM-I-00904**, unknown sex), Thailand, Phetchabun, 5 km E sila, Mae Nam Pa Sak, 2.III.1994, W.D. Shepard (1025) leg.; 1 specimen (**THNHM-I-00905**, unknown sex), Thailand, Phetchabun, 5 km E sila, Mae Nam Pa Sak, 3.IV.1994, W.D. Shepard (1050) leg.; 1 specimen (**THNHM-I-00906**, unknown sex), N Thailand, Lampang, 7 km SW Sop Prop [Sop Prap], Mae Nam Wang, 23.III.1994, W.D. Shepard (1041) leg.

Current status. Valid as *Hydrotrepes yupae* Zettel, 1998.

***Idiotrepes shepardi* Papáček & Zettel, 2000** (Figure 7E–F)

*European Journal of Entomology* 97(2): 209 [published in 2000].

Two paratypes. Two specimens (**THNHM-I-00907** and **THNHM-I-00908**, unknown sex), Thailand, Phetchabun Prov., Nam Nao N.P., Prom Laeng, 22.III.1994, W.D. Shepard (1040) leg.

Current status. Valid as *Idiotrepes shepardi* Papáček & Zettel, 2000.

### Family Micronectidae

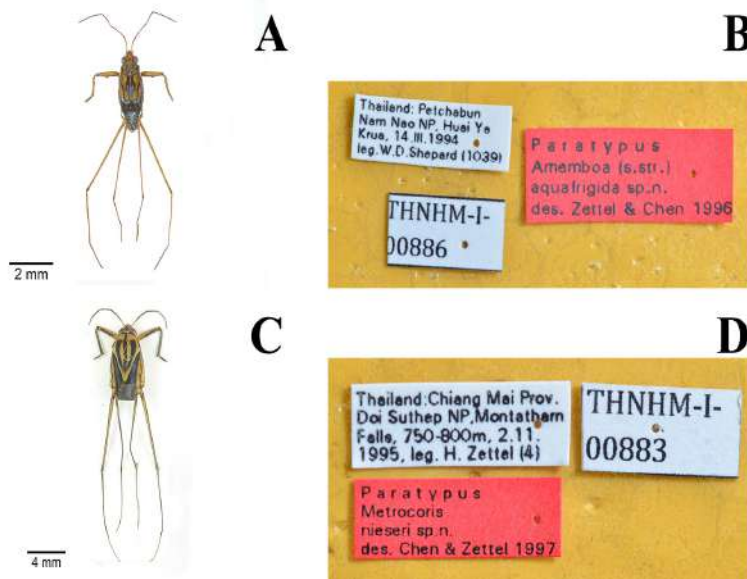
***Micronecta crinita* Chen, Nieser & Wattanachaiyingcharoen, 2002** (Figure 8A–B)

*Tijdschrift voor Entomologie* 145: 194–197 [published on 1 January 2001].

One paratype. One specimen (**THNHM-I-00912**, unknown sex), NE Thailand, Khon Kaen Prov., Phu Phan Kham N.P., Bon Noon, Hua Chang, Huai Sam Caen, 21.XI.1995, H. Zettel (20a) leg.

Current status. Valid as *Micronecta crinita* Chen, Nieser

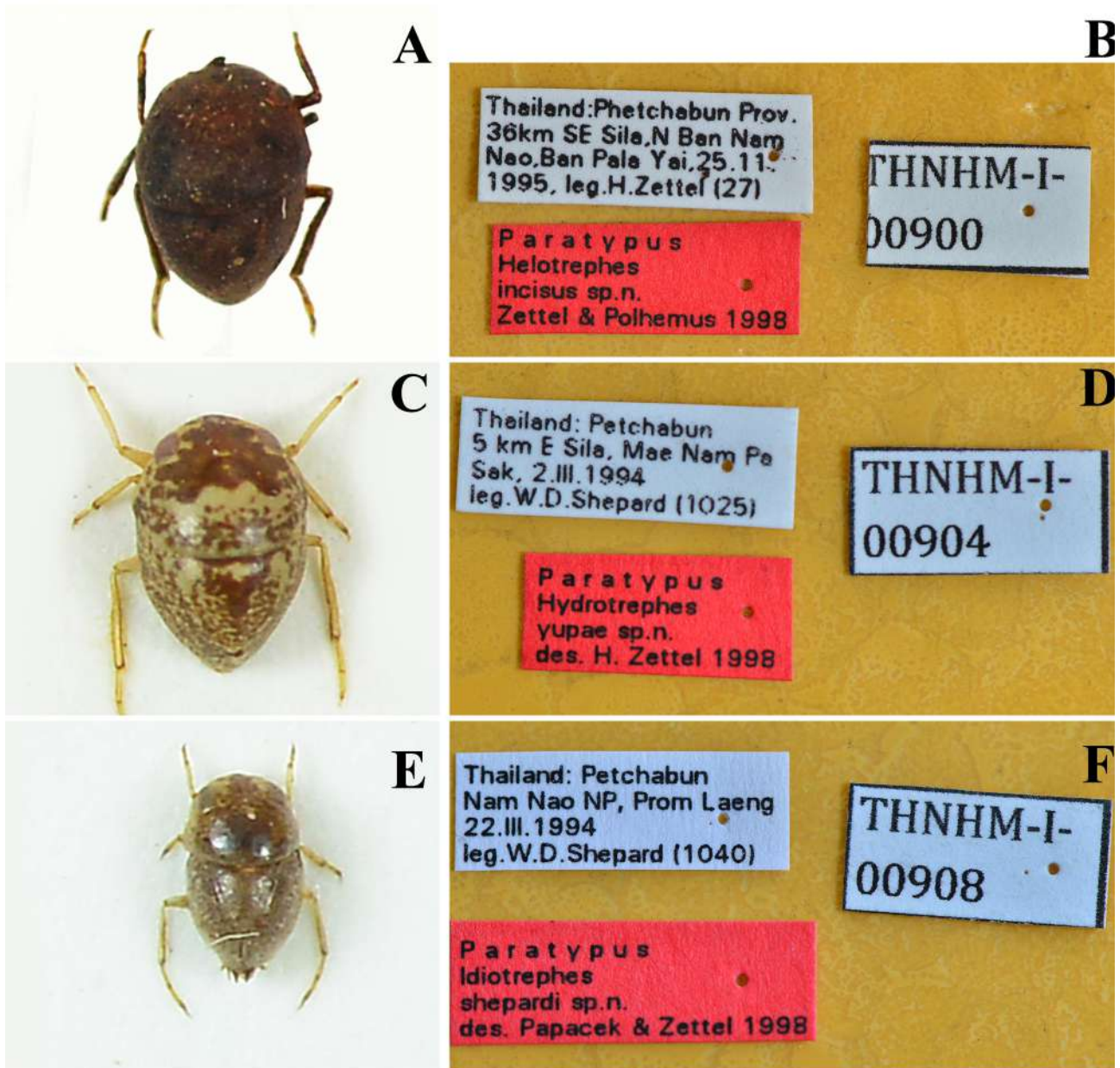




**Figure 5.** Type specimens and labels of type specimens of Hemiptera (Gerridae) deposited in THNHMC. A–B, *Amemboa aquafrigida*, paratype (Zettel and Chen, 1997); C–D, *Metrocoris nieseri*, paratype (Chen and Zettel, 1999).



**Figure 6.** Type specimens and labels of type specimens of Hemiptera (Hebridae) deposited in THNHMC. A–B, *Nieserius subaquaticus*, paratype (Zettel, 1999); C–D, *Hyrcanus shepardi*, paratype (Zettel, 1998a); E–F, *Hyrcanus draculus*, paratype (Zettel, 1998a).



**Figure 7.** Type specimens and labels of type specimens of Hemiptera (Helotrephidae) deposited in THNHMC. A–B, *Helotrephes incisus*, paratype (Zettel and Polhemus, 1998); C–D, *Hydrotrepes yupae*, paratype (Zettel, 1998b); E–F, *Idiotrepes shepardi*, paratype (Papáček and Zettel, 2000).

& Wattanachaiyingcharoen, 2002.

***Micronecta drepani* Nieser, 1999**

*Journal of the New York Entomological Society* 107(2/3): 278–281 [published on 1 March 2000].

Two paratypes. Two specimens (THNHM-I-00913 and THNHM-I-00914, unknown sex), Thailand, Phetchabun Prov., Nam Nao N.P., Huai Phrom Laeng, 24.XI.1995, H. Zettel (22) leg.

Current status. Valid as *Micronecta drepani* Nieser, 1999.

**Family Naucoridae**

***Gestroiella siamensis* Polhemus, Polhemus & Sites,**

**2008** (Figure 8C–D)

*The Raffles Bulletin of Zoology* 56(2): 275–278 [published on 31 August 2008].

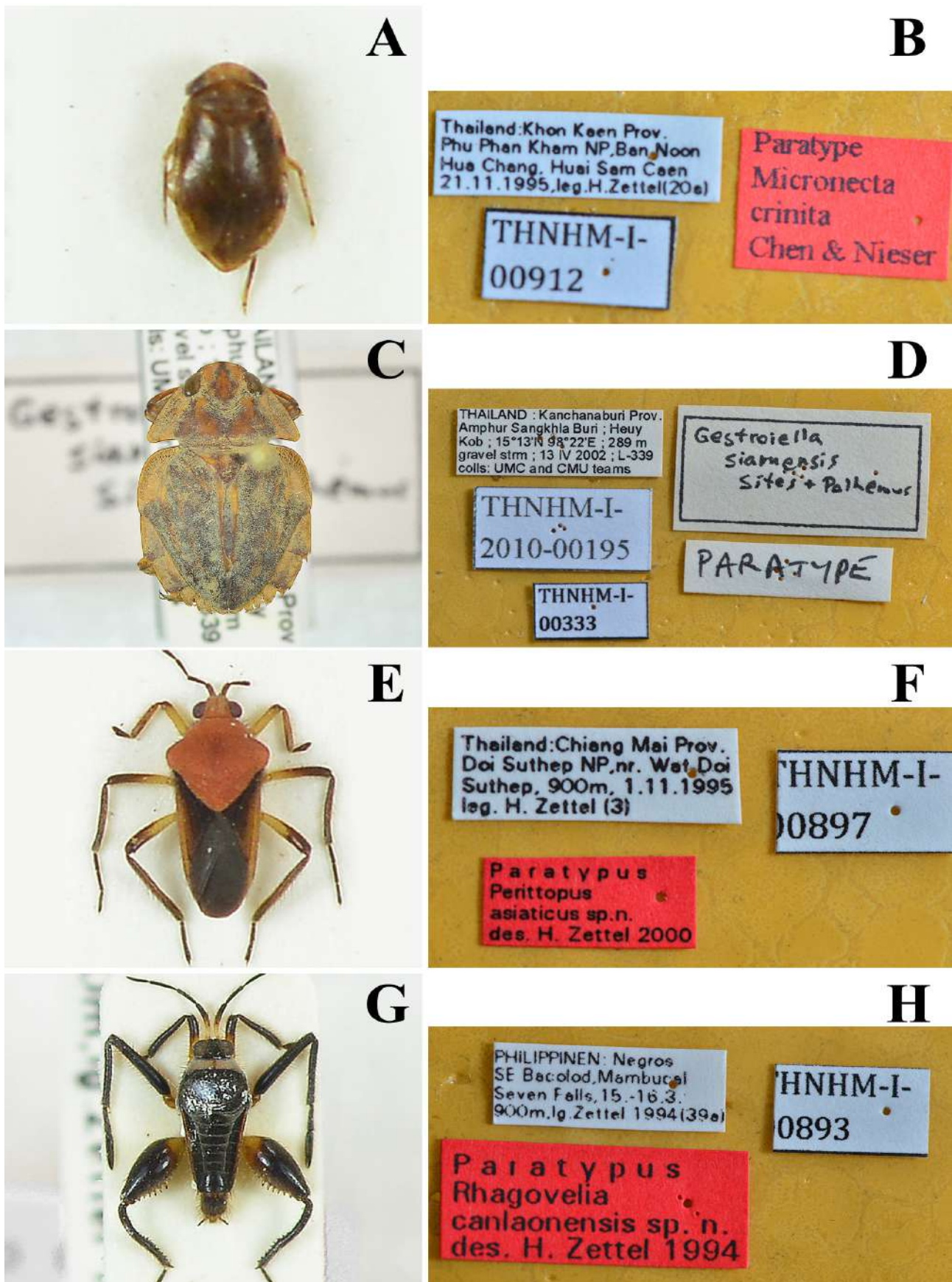
Two paratypes. Two specimens (THNHM-I-00333 and THNHM-I-00334, unknown sex), Thailand, Kanchanaburi Prov., Sangkhla Buri District, Heuy Kob, 15°13'N/ 98°22'E, 289 m, gravel stream, 13.IV.2002, UMC and CMU teams' leg., L-339.

Current status. Valid as *Gestroiella siamensis* Polhemus, Polhemus & Sites, 2008.

**Family Veliidae**

***Perittopus asiaticus* Zettel, 2001** (Figure 8E–F)





**Figure 8.** Type specimens and labels of type specimens of Hemiptera deposited in THNHMC. A–B, *Micronecta crinita* (Micronectidae), holotype (Nieser and Wattanachaiyingcharoen, 2002); C–D, *Gestroiella siamensis* (Naucoridae), paratype (Polhemus *et al.*, 2008); E–F, *Perittopus asiaticus* (Veliidae), paratype (Zettel, 2001); G–H, *Rhagovelia canlaonensis* (Veliidae), paratype (Zettel, 1996).



*The Raffles Bulletin of Zoology* 49(1): 110–113 [published on 15 July 2001].

Four paratypes. One specimen (**THNHM-I-00896**, unknown sex), Thailand, Phetchabun Prov., Nam Nao N.P., Huai Ya Krua, 14.III.1994, W.D. Shepard leg. (WDS-A-1039); 3 specimens (**THNHM-I-00897** to **THNHM-I-00899**, unknown sex), Thailand, Chiang Mai Prov., Doi Suthep N.P., near Wat Doi Suthep, 900 m, 1.XI.1995, H. Zettel (3) leg.

Current status. Valid as *Perittopus asiaticus* Zettel, 2001.

**Rhagovelia canlaonensis** Zettel, 1996 (Figure 8G–H) *Entomological Problems* 27: 113 [published in December 1996].

Two paratypes. One specimen (**THNHM-I-00893**, unknown sex), Philippines, Negros SE Bacolod, Mambucal, Seven Falls, 15-16.III.1994, 900 m. lg. H. Zettel leg. (39a); 1 specimen (**THNHM-I-00894**, unknown sex), Philippines, Negros, Umg., Canlaon City, Pula, 9.II.1994, Seyfert & Graindl leg.

Current status. Valid as *Rhagovelia canlaonensis* Zettel, 1996.

**Rhagovelia graindli** Zettel, 2012

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 64: 84 [published in November 2012].

One paratype. One specimen (**THNHM-I-00895**, unknown sex), Philippines, Camiguin, Tupsan, Macao Cold Spring, 18.XI.1996, H. Zettel (99) leg.

Current status. Valid as *Rhagovelia graindli* Zettel, 2012.

**Rhagovelia inexpectata** Zettel, 2000

*Entomological Problems* 31(2): 176–178 [published in December 2000].

Three paratypes. One specimen (**THNHM-I-00890**, unknown sex), Thailand, Phrae Prov., 50 km NE Phrae, Huai Kaet, 17.XI.1995, H. Zettel (17a) leg.; 1 specimen (**THNHM-I-00891**, unknown sex), Thailand, Phrae Prov., 50 km NE Phrae, 5 km SE Huai Kaet, 18.XI.1995, H. Zettel (18a) leg.; 1 specimen (**THNHM-I-00892**, unknown sex), Thailand, Mae Sot – Umphang Road, 60 km from Mae Sot, 1200 m, 29.XII.1996, Mazzoldi leg.

Current status. Valid as *Rhagovelia inexpectata* Zettel, 2000.

## ORDER HYMENOPTERA

### Family Formicidae

**Acanthomyrmex malikuli** Jaitrong & Asanok, 2019 (Figure 9A–C)

*ZooKeys* 842: 116–124 [published on 7 May 2019].

Holotype. Female, major worker (**THNHM-I-00124**), W Thailand, Tak Prov., Umphang Dist., Thung Yai W.S.,

Thung Nanoi Forest Ranger Station, 18.II.2015, W. Jaitrong leg., TH15-WJT-321.

Sixty-five paratypes. One female, queen (**THNHM-I-00115**), 2 females, major workers (**THNHM-I-00121** and **THNHM-I-00122**), 48 females, minor workers (**THNHM-I-00119** to **THNHM-I-00120**, **THNHM-I-00125** to **THNHM-I-00130**, **THNHM-I-00133** to **THNHM-I-00144**, and **THNHM-I-00151** to **THNHM-I-00178**), same data as holotype; 3 ergatoid queens (**THNHM-I-01195**), 10 females, minor workers (**THNHM-I-01196**), and 1 male (**THNHM-I-01194**), W Thailand, Tak Prov., Umphang Dist., Thung Yai W.S., Bae Ki Station.

Current status. Valid as *Acanthomyrmex malikuli* Jaitrong & Asanok, 2019.

**Acanthomyrmex mizunoi** Jaitrong & Asanok, 2019 (Figure 9D–F)

*ZooKeys* 842: 124–132 [published on 7 May 2019].

Holotype. Female, major worker (**THNHM-I-01197**), central Thailand, Nakhon Nayok Prov., Muang [Mueang] Dist., Ban Hin Tang, 14°24'22"N, 101°22'17"E [E], 22.X.2017, W. Jaitrong leg., WJT221017-12.

Seventy-seven paratypes. Three females, queens (**THNHM-I-01200**), 4 females, major workers (**THNHM-I-01198**), and 56 females, minor workers (**THNHM-I-01199**), same data as holotype; 4 females, ergatoid queens (**THNHM-I-00054**, **THNHM-I-00061**, **THNHM-I-00063**, **THNHM-I-00065**), 8 females, minor workers (**THNHM-I-00055**, **THNHM-I-00057** to **THNHM-I-00060**, **THNHM-I-00062**, **THNHM-I-00064**, **THNHM-I-00066**) and 1 male (**THNHM-I-00056**), NE Thailand, Nakhon Ratchasima Prov., Pak Chong Dist., evergreen forest, 31.V.2000, W. Jaitrong leg., WJT310500-1; 1 female, ergatoid queen (**THNHM-I-00053**), NE Thailand, Nakhon Ratchasima Prov., Khao Yai N.P., hill evergreen forest, 30.V.2000, C. Bourmas leg.

Current status. Valid as *Acanthomyrmex mizunoi* Jaitrong & Asanok, 2019.

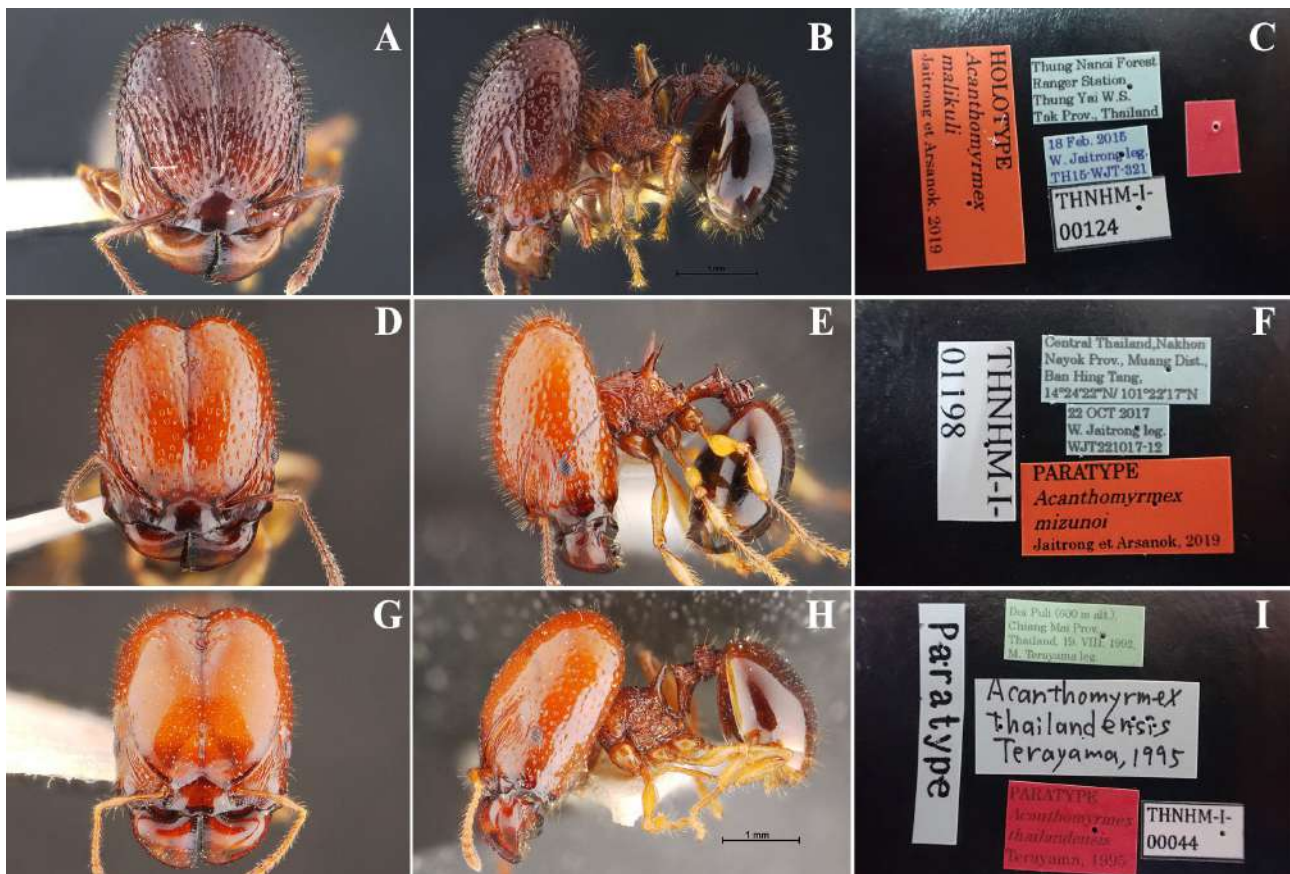
**Acanthomyrmex thailandensis** Terayama, 1995 (Figure 9G–I)

*Japanese Journal of Entomology* 63(3): 551–555 [published on 25 September 1995].

Four paratypes. Four females, workers (**THNHM-I-00044** to **THNHM-I-00045** and **THNHM-I-00901** to **THNHM-I-00902**), N Thailand, Chiang Mai Prov., 19.VIII.1992, M. Terayama leg.

Current status. Valid as *Acanthomyrmex thailandensis* Terayama, 1995.

**Aenictus appressipilosus** Jaitrong & Yamane, 2013



**Figure 9.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Acanthomyrmex malikuli*, holotype (Jaitrong and Asanok, 2019); D–F, *Acanthomyrmex mizunoi*, paratype (Jaitrong and Asanok, 2019); G–I, *Acanthomyrmex thailandensis*, paratype (Terayama, 1995).

*Journal of Hymenoptera Research* 31: 172–174 [published on 20 March 2013].

Two paratypes. Two females, workers (THNHM-I-00335 and THNHM-I-00336), E Malaysia, Borneo, Sabah, Tawau Hills N.P., 7.VII.1996, Sk. Yamane leg., SB96-SKY-01.

Current status. Valid as *Aenictus appressipilosus* Jaitrong & Yamane, 2013.

***Aenictus baliensis* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 174–176 [published on 20 March 2013].

Four paratypes. Two females, workers (THNHM-I-00337 and THNHM-I-00338), Indonesia, Bali, Ubud, Aji Lodge, 23.IV.1998, K. Eguchi leg., Eg98-BALI-650; 2 females, workers (THNHM-I-00339 and THNHM-I-00340), Indonesia, Bali, Ubud, Aji Lodge, 23–24.IV.1998, Sk. Yamane leg.

Current status. Valid as *Aenictus baliensis* Jaitrong & Yamane, 2013.

***Aenictus bodongjaya* Jaitrong & Yamane, 2011**

*Zootaxa* 3128: 30–32 [published on 13 December 2011].

Five paratypes. Five females, workers (THNHM-I-00341 to THNHM-I-00345), Indonesia, S Sumatra,

Lampung Barat, Sumberjaya, Bodong Jaya, coffee plantation, 10.IX.2007, Sk. Yamane leg., SU07-SKY-189.

Current status. Valid as *Aenictus bodongjaya* Jaitrong & Yamane, 2011.

***Aenictus brevipodus* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 176–178 [published on 20 March 2013].

Three paratypes. Three females, workers (THNHM-I-00346 to THNHM-I-00347 and THNHM-I-11272), N Vietnam, Lao Cai Prov., Van Ban Dist., Liem Phu (450–650 m alt.), 28.IX.2006, K. Eguchi leg., Eg28ix06-10.

Current status. Valid as *Aenictus brevipodus* Jaitrong & Yamane, 2013.

***Aenictus brevinodus* Jaitrong & Yamane, 2011**

*Zootaxa* 3128: 33 [published on 13 December 2011].

Fifteen paratypes. Fifteen females, workers (THNHM-I-00348 to THNHM-I-00362), Indonesia, S. Sulawesi, Laiya Labbang, Roadside, 24.I.2010, Sk. Yamane leg., CE10-SKY-15.

Current status. Valid as *Aenictus brevinodus* Jaitrong & Yamane, 2011.

***Aenictus carolianus* Zettel & Sorger, 2010**

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 62: 121–124 [published on 19 November 2010].

Two paratypes. Two females, workers (**THNHM-I-00363** to **THNHM-I-00364**), Philippines, Cebu City, Cantipla-Uno, Forest Reserve, 800 m., 1.III.2008, H. Zettel & C.V. Pangantihon (512) leg. *Aenictus jarujini*

Current status. Valid as *Aenictus carolianus* Zettel & Sorger, 2010.

***Aenictus concavus* Jaitrong & Yamane, 2013** (Figure 10A–C)

*Journal of Hymenoptera Research* 31: 178–180 [published on 20 March 2013].

Holotype. Female, worker (**THNHM-I-00365**), E Thailand, Chanthaburi Prov., Pong Nam Ron Dist., Khao Soi Dao W.S., Hin Dad Waterfall, 15.V.2008, W. Jaitrong leg., WJT08-E094.

Four paratypes. Four females, workers (**THNHM-I-00366** to **THNHM-I-00369**), same data as holotype.

Current status. Valid as *Aenictus concavus* Jaitrong & Yamane, 2013.

***Aenictus cylindripetiolus* Jaitrong & Yamane, 2013** (Figure 10D–I)

*Journal of Hymenoptera Research* 31: 180–183 [published on 20 March 2013].

Holotype. Female, worker (**THNHM-I-00370**), S Thailand, Trang Prov., Nayong Dist., Khao Chong B.G., Evergreen Forest, under rotten log, 10.VIII.2009, W. Jaitrong leg., WJT09-TH-2023.

Eleven paratypes. Eleven females, workers (**THNHM-I-00371** to **THNHM-I-00381**), same data as holotype.

Current status. Valid as *Aenictus cylindripetiolus* Jaitrong & Yamane, 2013.

***Aenictus doydeei* Jaitrong & Yamane, 2011** (Figure 10J–L)

*Journal of Asia-Pacific Entomology* 14: 319–321 [published on 4 January 2011].

Holotype. Female, worker (**THNHM-I-00382**), Laos, Vientiane, Naxaythong Dist., Sivilay Village, a plantation, 211 m alt., 10.VI.2010, W. Jaitrong leg., WJT10-LAO013.

Twenty-seven paratypes. Twenty-seven females, workers (**THNHM-I-00383** to **THNHM-I-00405** and **THNHM-I-11267**), same data as holotype.

Current status. Valid as *Aenictus doydeei* Jaitrong & Yamane, 2011.

***Aenictus duengkaei* Jaitrong & Yamane, 2012**

*ZooKeys* 193: 55–57 [published on 14 May 2012].

Holotype. Female, worker (**THNHM-I-00406**), E Thailand, Chachoengsao Prov., Khao Ang Reu Nai W.S., Lumchangwat Station., dry evergreen forest, 22.VIII.2003, Sk. Yamane leg., TH03-SKY-79.

Three paratypes. Three females, workers (**THNHM-I-00407** to **THNHM-I-00409**), same data as holotype.

Current status. Valid as *Aenictus duengkaei* Jaitrong & Yamane, 2012.

***Aenictus eguchii* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 183–185 [published on 20 March 2013].

Four paratypes. Four females, workers (**THNHM-I-00410** to **THNHM-I-00413**), N Vietnam, Ha Tai Prov., Ba Vi N.P. (ca. 400 m alt.), 12.XI.1999, K. Eguchi leg., Eg99-VN-126.

Current status. Valid as *Aenictus eguchii* Jaitrong & Yamane, 2013.

***Aenictus fulvus* Jaitrong & Yamane, 2011** (Figure 10M–O)

*Zootaxa* 3128: 34 [published on 13 December 2011].

Holotype. Female, worker (**THNHM-I-00414**), S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., rubber tree plantation, 28.IX.2008, W. Jaitrong leg., WJT08-S1101.

Forty-eight paratypes. Forty-eight females, workers (**THNHM-I-00415** to **THNHM-I-00419**; **THNHM-I-00421** to **THNHM-I-00453** and between **THNHM-I-00455** to **THNHM-I-00460** and **THNHM-I-11271**), same data as holotype.

Current status. Valid as *Aenictus fulvus* Jaitrong & Yamane, 2011.

***Aenictus glabratus* Jaitrong & Nur-Zati, 2010**

*Sociobiology* 56(2): 450–453 [published in June 2010].

Two paratypes. Two females, workers (**THNHM-I-00461** and **THNHM-I-00462**), W Malaysia, Selangor, Semangkok Forest Reserve (550 m alt.), RS0415966/400467, 21.XI.2007, Nur-Zati *et al.* leg., WSM0167.03.

Current status. Valid as *Aenictus glabratus* Jaitrong & Nur-Zati, 2010.

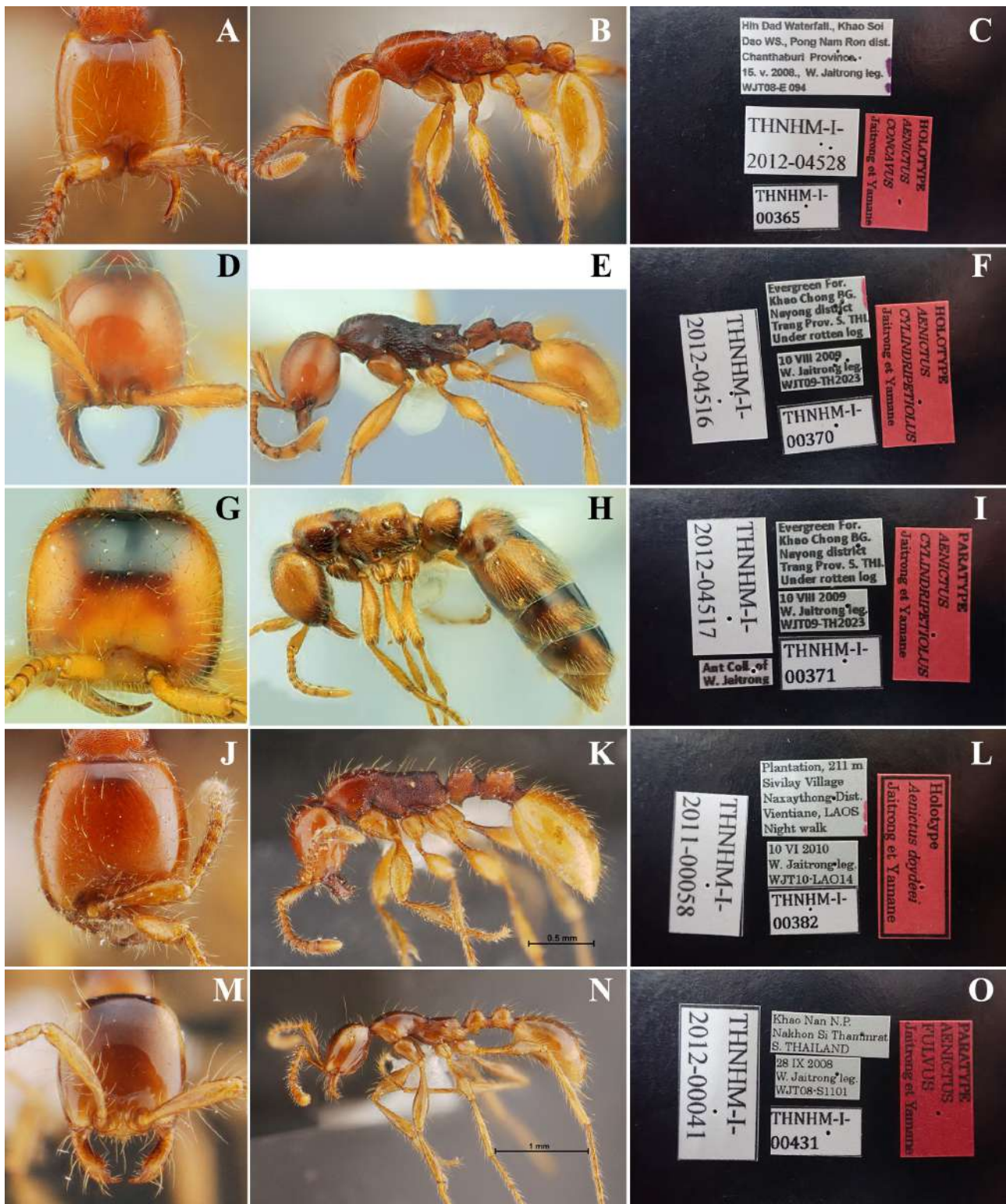
***Aenictus glabrinotum* Jaitrong & Yamane, 2011**

*Zootaxa* 3128: 16 [published on 13 December 2011].

Two paratypes. Two females, workers (**THNHM-I-00463** and **THNHM-I-00464**), E Malaysia, Borneo, Sabah, Danum Valley, 29.IV.2000, C. Brühl leg., CB-00-05.

Current status. Valid as *Aenictus glabrinotum* Jaitrong & Yamane, 2011.





**Figure 10.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Aenictus concavus*, holotype (Jaitrong and Yamane, 2013); D–F, *Aenictus cylindripetiolus*, worker, holotype (Jaitrong and Yamane, 2013); G–I, *Aenictus cylindripetiolus*, queen, paratype (Jaitrong and Yamane, 2013); J–L, *Aenictus doydeei*, holotype; M–O, *Aenictus fulvus*, paratype (Jaitrong and Yamane, 2011).

*Aenictus inflatus* Yamane & Hashimoto, 1999 *Tropics* 8(4): 428–430 [published in May 1999].  
Five paratypes. Five females, workers (THNHM-I-00465 to THNHM-I-00469), Malaysia, Borneo, Sarawak, Miri,

Lambir N.P., Old Tower R., 2.III.1997, Sk. Yamane leg., A-6.  
Current status. Valid as *Aenictus inflatus* Yamane & Hashimoto, 1999.

***Aenictus jarujini* Jaitrong & Yamane, 2010** (Figure 11A–C)

*Entomological Science* 13: 329–331 [published on 26 September 2010].

Holotype. Female, worker (THNHM-I-00470), N Thailand, Mae Hong Son Prov., Huai Nam Dang N.P., disturbed area, 7.III.2008, W. Jaitrong leg., WJT08-HND20.

Nineteen paratypes. Nineteen females, workers (THNHM-I-00471 to THNHM-I-00488 and THNHM-I-11265), same data as holotype.

Current status. Valid as *Aenictus jarujini* Jaitrong & Yamane, 2010.

***Aenictus jawadwipa* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 193–194 [published on 20 March 2013].

Six paratypes. Six females, workers (THNHM-I-00285 to THNHM-I-00290), Indonesia, West Java, Cibodas, Botanical Garden, 29.XI.2009, W. Jaitrong leg., WJT09-ID16.

Current status. Valid as *Aenictus jawadwipa* Jaitrong & Yamane, 2013.

***Aenictus khaoyaiensis* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 194–196 [published on 20 March 2013].

Holotype. Female, worker (THNHM-I-00489), NE Thailand, Nakhon Ratchasima Prov., Khao Yai N.P., tropical rainforest, 31.V.2000, Sk. Yamane leg., TH00-SKY-35.

Fourteen paratypes. Fourteen females, workers (THNHM-I-00490 to THNHM-I-00503), same data as holotype.

Current status. Valid as *Aenictus khaoyaiensis* Jaitrong & Yamane, 2013.

***Aenictus kutai* Jaitrong & Wiwawitaya, 2013**

*The Raffles Bulletin of Zoology* 61(1): 97–98 [published on 28 February 2013].

Three paratypes. Three females, workers (THNHM-I-00504 to THNHM-I-00506), Indonesia, Borneo, E. Kalimantan, Kutai N.P., Teluk Kabah (0°22'N, 117°16'E), 19.IX.1993, Sk. Yamane leg., SKY93-09-1.

Current status. Valid as *Aenictus kutai* Jaitrong & Wiwawitaya, 2013.

***Aenictus leptotyphlatta* Jaitrong & Eguchi, 2010**

*The Thailand Natural History Museum Journal* 4(1): 14–17 [published on 31 May 2010].

Holotype. Female, worker (THNHM-I-00512), N Thailand, Chiang Mai Prov., Campus of Chiang Mai University, 10.VI.2001, W. Jaitrong leg., WJT01-

CMU01.

Forty-one paratypes. Thirty-six females, workers (THNHM-I-00508 to THNHM-I-00511, THNHM-I-00514 to THNHM-I-00516, THNHM-I-00518, THNHM-I-00520 to THNHM-I-00525, THNHM-I-00527 to THNHM-I-00546 and THNHM-I-11264), same colony as holotype; 5 females, workers (THNHM-I-00507, THNHM-I-00513, THNHM-I-00517, THNHM-I-00519, THNHM-I-00526) from the same colony as holotype by K. Eguchi on the same date (Eg01-TH-158).

Current status. Valid as *Aenictus leptotyphlatta* Jaitrong & Eguchi, 2010.

***Aenictus lifuiaie* Terayama, 1984**

*Bulletin of the Biogeographical Society of Japan*: 13–15 [published on 20 December 1984].

One paratype. Female, worker (THNHM-I-00547), Taiwan, Kahoieung Hsien, Taoyuan Xiang, Meishan Cun (alt. ca. 800 m), 25.VIII.1980, M. Terayama leg.

Current status. Valid as *Aenictus lifuiaie* Terayama, 1984.

***Aenictus longicephalus* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 199–201 [published on 20 March 2013].

Four paratypes. Four females, workers (THNHM-I-00548 to THNHM-I-00551), Indonesia, W Lombok, near Semaya, Kopi house, 26.X.1998, K. Eguchi leg., Eg98-LMB-1041.

Current status. Valid as *Aenictus longicephalus* Jaitrong & Yamane, 2013.

***Aenictus longinodus* Jaitrong & Yamane, 2012**

*ZooKeys* 193: 59–61 [published on 14 May 2012].

Holotype. Female, worker (THNHM-I-00552), S Thailand, Trang Prov., Khao Chong Botanical Garden, evergreen forest, 8.XI.2003, W. Jaitrong leg., WJT03-TH 713 (=THNHM-I-2003-942).

Nine paratypes. Nine females, workers (THNHM-I-00553 to THNHM-I-00561), same data as holotype.

Current status. Valid as *Aenictus longinodus* Jaitrong & Yamane, 2012.

***Aenictus maneerati* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 201–203 [published on 20 March 2013].

Holotype. Female, worker (THNHM-I-00562), W Thailand, Tak Prov., Umphang Dist., Thung Yai W.S., 25.V.2000, W. Jaitrong leg., WJT00-TY01.

Seven paratypes. Seven females, workers (THNHM-I-00563 to THNHM-I-00569), same data as holotype.



Current status. Valid as *Aenictus maneerati* Jaitrong & Yamane, 2013.

***Aenictus minimus* Jaitrong & Hashimoto, 2012**

*Zootaxa* 3426: 34–36 [published on 16 August 2012].  
One paratype. Female, worker (THNHM-I-00570), N Vietnam, Thai Nguyen, Na Hau Village, My Yen Comm. Forest, 21°35'N, 105°36'E, 8.XI.2001, Sk. Yamane leg., VN01-SKY-29.

Current status. Valid as *Aenictus minimus* Jaitrong & Hashimoto, 2012.

***Aenictus minipetiolus* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 203–205 [published on 20 March 2013].

One paratype. Female, worker (THNHM-I-00571), Indonesia, N Lombok, near Senaru, 27.X.1998, I.K.T. Ginarsa leg., KT-100.

Current status. Valid as *Aenictus minipetiolus* Jaitrong & Yamane, 2013.

***Aenictus montivagus* Jaitrong & Yamane, 2011**

*Zootaxa* 3128: 41 [published on 13 December 2011].

Seven paratypes. Three females, workers (THNHM-I-00572 to THNHM-I-00574), E Malaysia, Borneo, Sabah, Taman Kinabalu, 1500 m alt., 7.I.1998, Sk. Yamane leg., SB98-SKY-05; 4 females, workers (THNHM-I-00575 to THNHM-I-00578), E Malaysia, Borneo, Sabah, Kinabalu Park, 1600 m alt., 6.II.2001 [21.II.2001], Sk. Yamane leg., SB01-SKY-03.

Current status. Valid as *Aenictus montivagus* Jaitrong & Yamane, 2011.

***Aenictus nuchiti* Jaitrong & Ruangsittichai, 2018**

*ZooKeys* 775: 106–109 [published on 19 July 2018].

Holotype. Female, worker (THNHM-I-02612), N Thailand, Chiang Mai Prov., Omkoi Dist., Omkoi Forest, 16.VII.2016, W. Jaitrong leg., TH16-WJT-859.

Forty-eight paratypes. One female, queen (THNHM-I-02613) and 47 females, workers (THNHM-I-02614), same data as holotype.

Current status. Valid as *Aenictus nuchiti* Jaitrong & Ruangsittichai, 2018.

***Aenictus pangantihoni* Zettel & Sorger, 2010** (Figure 11D–F)

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 62: 120–121 [published on 19 November 2010].

Two paratypes. Two females, workers (THNHM-I-00596 and THNHM-I-00597), Philippines, Camiguin, West of Mambajao, Katibawasan area, 350–400 m, 13/15.

III.2010, H. Zettel & C.V. Pangantihon (515) leg.  
Current status. Valid as *Aenictus pangantihoni* Zettel & Sorger, 2010.

***Aenictus paradentatus* Jaitrong & Yamane, 2012** (Figure 11G–I)

*Myrmecological News* 16: 136–137.

Holotype. Female, worker (THNHM-I-00579), N Thailand, Chiang Mai Prov., Mueang Dist., Doi Suthep-Pui N.P., 20.VIII.1998, W. Jaitrong leg., WJT98-DP01.

Seven paratypes. Seven females, workers (THNHM-I-00580 to THNHM-I-00585 and THNHM-I-11266), same data as holotype.

Current status. Valid as *Aenictus paradentatus* Jaitrong & Yamane, 2012 (in Jaitrong *et al.*, 2012).

***Aenictus parahuonicus* Jaitrong & Yamane, 2011** (Figure 11J–L)

*Zootaxa* 3128: 19–20 [published on 13 December 2011].

Holotype. Female, worker (THNHM-I-00586), S Thailand, Trang Prov., Yan Takhao [Yan Ta Khao] Dist., Thung Khai B.G., near Headquarters, night walk, 9.VIII.2009, W. Jaitrong leg., WJT09-TH2007.

Ten paratypes. Ten females, workers (THNHM-I-00587 to THNHM-I-00595 and THNHM-I-11268), same data as holotype.

Current status. Valid as *Aenictus parahuonicus* Jaitrong & Yamane, 2011.

***Aenictus pfeifferi* Zettel & Sorger, 2010**

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 62: 116–120 [published on 19 November 2010].

Two paratypes. Two females, workers (THNHM-I-00598 and THNHM-I-00599), Malaysia, Borneo, Sarawak, Gunung Mulu N.P., Alluvial for along Moonmilk Trail, 4°2'30"N, 114°48'46"E, 13.XI.2009, D.M. Sorger leg.

Current status. Valid as *Aenictus pfeifferi* Zettel & Sorger, 2010.

***Aenictus pilosus* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 205–207 [published on 20 March 2013].

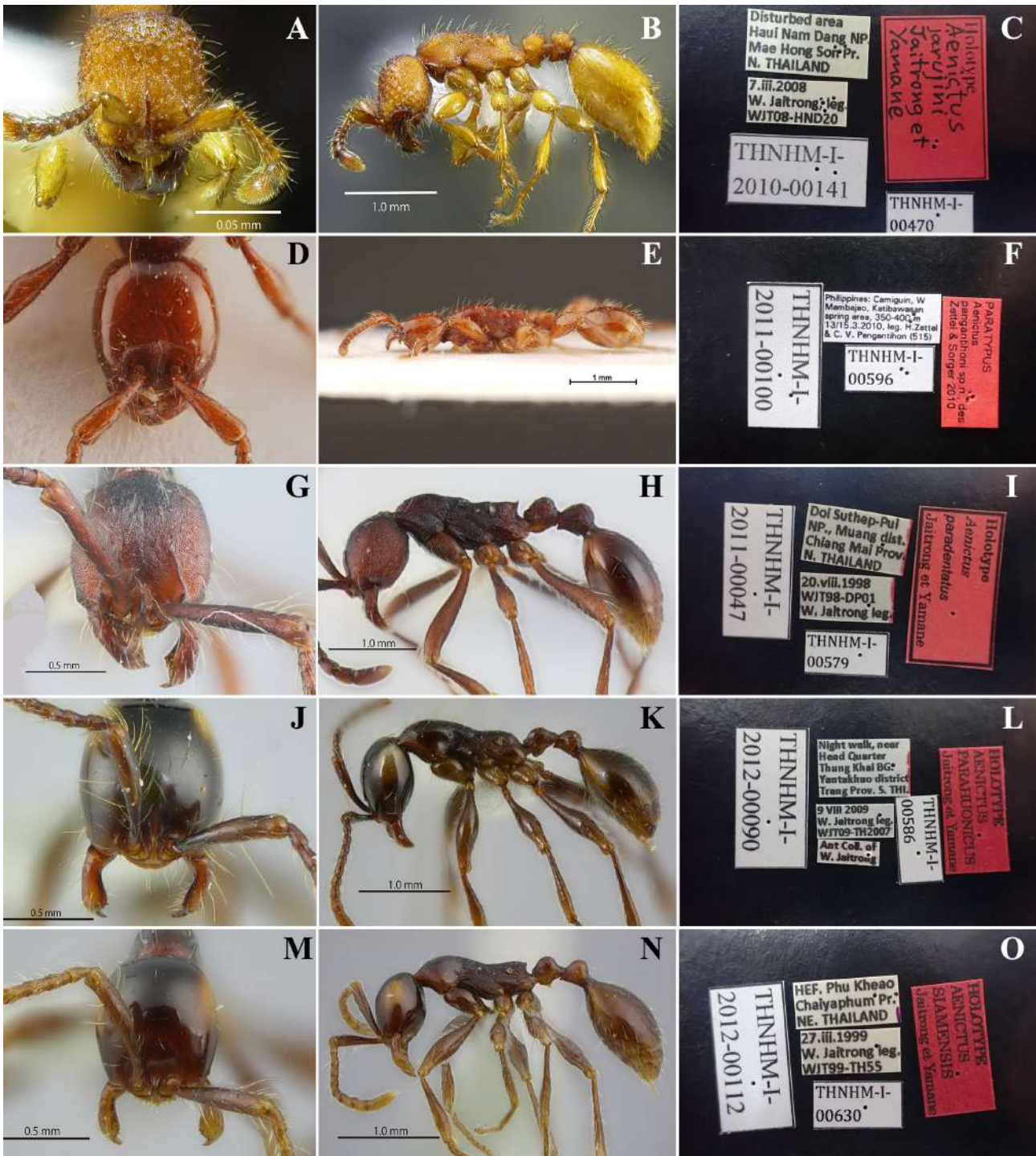
One paratype. Female, worker (THNHM-I-00600), Philippines, Luzon, Mountain Prov., Sagada, Bokong waterfalls, 1400 m alt., 19.II.1999, A. Schulz [Schodl (14)] leg.

Current status. Valid as *Aenictus pilosus* Jaitrong & Yamane, 2013.

***Aenictus pinkaewi* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 207–209 [pub-





**Figure 11.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Aenictus jarujini*, holotype (Jaitrong and Yamane, 2010); D–F, *Aenictus pangantihoni*, paratype (Zettel and Sorger, 2010); G–I, *Aenictus paradentatus*, holotype (Jaitrong and Yamane, 2012); J–L, *Aenictus parahuonicus*, holotype (Jaitrong and Yamane, 2011); M–O, *Aenictus siamensis*, holotype (Jaitrong and Yamane, 2011).

lished on 20 March 2013].

Holotype. Female, worker (THNHM-I-00601), N Thailand, Chiang Mai Prov., Mueang Dist, near Chiang Mai University, secondary forest, VI. 2000, W. Jaitrong leg., WJT00-CM01.

Fifteen paratypes. Fifteen females, workers (THNHM-I-00602 to THNHM-I-00616), same

data as holotype.

Current status. Valid as *Aenictus pinkaewi* Jaitrong & Yamane, 2013.

***Aenictus punctatus* Jaitrong & Yamane, 2012**

*ZooKeys* 193: 72–74 [published on 14 May 2012].

Five paratypes. Five females, workers (THNHM-I-00617

- to **THNHM-I-00621**), Brunei, Tasek Merimbun, 13.II.1999, K. Eguchi leg., Eg99-BOR-078.  
Current status. Valid as *Aenictus punctatus* Jaitrong & Yamane, 2012.
- Aenictus rotundicollis* Jaitrong & Yamane, 2011**  
*Zootaxa* 3128: 41–42 [published on 13 December 2011].  
Seven paratypes. Seven females, workers (**THNHM-I-00623** to **THNHM-I-00629**), Malaysia, Borneo, Sarawak, Niah N.P., Canopy Ecol., 28.I.1993, Sk. Yamane leg.  
Current status. Valid as *Aenictus rotundicollis* Jaitrong & Yamane, 2011.
- Aenictus samungi* Jaitrong & Ruangsittichai, 2018**  
*ZooKeys* 775: 109–112 [published on 19 July 2018].  
Holotype. Female, worker (**THNHM-I-02615**), W Thailand, Tak Prov., Umphang Dist., Thung Yai W.S., Yuyi Junction, dry evergreen forest, (DEF), 25.IX.2016, W. Jaitrong leg., TH16-WJT-1069.  
Ten paratypes. Ten females, workers (**THNHM-I-02616**), same data as holotype.  
Current status. Valid as *Aenictus samungi* Jaitrong & Ruangsittichai, 2018.
- Aenictus shilintongae* Jaitrong & Schultz, 2016**  
*The Thailand Natural History Museum Journal* 10(2): 69–73 [published on 31 December 2016].  
One paratype. Female, worker (**THNHM-I-00915**), SE China, Mokanshan, W.M. Mann leg., 1954, USNMENT01125074.  
Current status. Valid as *Aenictus shilintongae* Jaitrong & Schultz, 2016.
- Aenictus siamensis* Jaitrong & Yamane, 2011** (Figure 11M–O)  
*Zootaxa* 3128: 42–43 [published on 13 December 2011].  
Holotype. Female, worker (**THNHM-I-00630**), NE Thailand, Chaiyaphum Prov., Phu Kheao [Khiao] Dist., hill evergreen forest, 27.III.1999, W. Jaitrong leg., WJT99-TH55.  
Six paratypes. Six females, workers (**THNHM-I-00631** to **THNHM-I-00635** and **THNHM-I-11273**), same data as holotype.  
Current status. Valid as *Aenictus siamensis* Jaitrong & Yamane, 2011.
- Aenictus sirenicus* Yamane & Wang, 2015**  
*Asian Myrmecology* 7: 53–56 [published in August 2015].  
One paratype. Female, worker (**THNHM-I-00641**), E Malaysia, Borneo, Sabah, Lahad Datu Dist., Danum Valley, VII.2012, W. Wang leg., BRL2WF3.  
Current status. Valid as *Aenictus sirenicus* Yamane & Wang, 2015.
- Aenictus soncheangi* Jaitrong & Yamane, 2011**  
*Zootaxa* 3128: 43–44 [published on 13 December 2011].  
Holotype. Female, worker (**THNHM-I-00636**), S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., 12.XII.2007, W. Jaitrong leg., WJT07-KN01.  
Five paratypes. Five females, workers (**THNHM-I-00637** to **THNHM-I-00640** and **THNHM-I-11269**), same data as holotype.  
Current status. Valid as *Aenictus soncheangi* Jaitrong & Yamane, 2011.
- Aenictus stenocephalus* Jaitrong & Yamane, 2010**  
*Japanese Journal of Systematic Entomology* 16(1): 41–43 [published on 30 June 2010].  
Holotype. Female, worker (**THNHM-I-00656**), NE Thailand, Chaiyaphum Prov., near Phu Khieo [Khiao] W.S., agricultural area, 30.I.1999, W. Jaitrong leg., WJT99-AG20.  
One paratype. Female, worker (**THNHM-I-00657**), same data as holotype.  
Current status. Valid as *Aenictus stenocephalus* Jaitrong & Yamane, 2010.
- Aenictus subterraneus* Jaitrong & Hashimoto, 2012**  
*Zootaxa* 3426: 40 [published on 16 August 2012].  
Two paratypes. Two females, workers (**THNHM-I-00642** and **THNHM-I-00643**), Malaysia, Borneo, Sabah, Maliau Basin, 8.V.2001, Y. Hashimoto leg. (7-24).  
Current status. Valid as *Aenictus subterraneus* Jaitrong & Hashimoto, 2012.
- Aenictus sulawesiensis* Jaitrong & Wiwawitaya, 2013**  
*The Raffles Bulletin of Zoology* 61(1): 98–99 [published on 28 February 2013].  
Eight paratypes. Eight females, workers (**THNHM-I-00644** to **THNHM-I-00651**), Indonesia, S Sulawesi, Barru, Taneterilau, Cipukasi, Forest Complex Coppo (4°30'N, 119°37'E), 8.I.2011, Sk. Yamane leg., CE11-SKY-21.  
Current status. Valid as *Aenictus sulawesiensis* Jaitrong & Wiwawitaya, 2013.
- Aenictus thailandianus* Terayama & Kubota, 1993**  
*Bulletin of the Biogeographical Society of Japan*: 71–72 [published on 30 December 1993].  
Five paratypes. Five females, workers (**THNHM-I-00652** to **THNHM-I-00655** and **THNHM-I-11263**), N Thailand, Chiang Mai Prov., Doi Step [Doi Suthep], 1500 m alt., 18.VIII.1992, M. Terayama & S. Kubota leg.  
Current status. Valid as *Aenictus thailandianus* Terayama & Kubota, 1993.



***Aenictus vieti* Jaitrong & Yamane, 2010**

*Japanese Journal of Systematic Entomology* 16(1): 44–45 [published on 30 June 2010].

Three paratypes. Three females, workers (THNHM-I-00658 to THNHM-I-00660), N Vietnam, Lao Cai, Sa Pa, 4.V.2002, K. Eguchi leg., Eg02-VN-272.

Current status. Valid as *Aenictus vieti* Jaitrong & Yamane, 2010.

***Aenictus watanasiti* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 213–215 [published on 20 March 2013].

Holotype. Female, worker (THNHM-I-00661), N Thailand, Chiang Mai Prov., Mueang Dist., Doi Suthep-Pui N.P., 7.VI.2001, W. Jaitrong leg., WJT01-DST02.

Ten paratypes. Nine females, workers (THNHM-I-00662 to THNHM-I-00670), same data as holotype; 1 female, worker (THNHM-I-0671), same locality and date as holotype, K. Eguchi leg., Eg01-TH-080.

Current status. Valid as *Aenictus watanasiti* Jaitrong & Yamane, 2013.

***Aenictus wayani* Jaitrong & Yamane, 2011**

*Zootaxa* 3128: 22–23 [published on 13 December 2011].

Twenty-seven paratypes. Twenty-seven females, workers (THNHM-I-00672 to THNHM-I-00698), Indonesia, Sulawesi, Gorontalo, Mt. Tilongkabila, 800 m alt., night walk, 30.I.2010, Sk. Yamane leg., CE10-SKY-64.

Current status. Valid as *Aenictus wayani* Jaitrong & Yamane, 2011.

***Aenictus wilaiiae* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 215–217 [published on 20 March 2013].

Holotype. Female, worker (THNHM-I-00699), E Thailand, Chachoengsao Prov., Thatakiab [Tha Takiap] Dist., Khao Ang Reu Nai W.S., 29.V.2005, W. Jaitrong leg., WJT05-E203.

Eleven paratypes. Eleven females, workers (THNHM-I-00700 to THNHM-I-00710), same data as holotype.

Current status. Valid as *Aenictus wilaiiae* Jaitrong & Yamane, 2013.

***Aenictus wiwatwitayai* Jaitrong & Yamane, 2013**

*Journal of Hymenoptera Research* 31: 218–220 [published on 20 March 2013].

Holotype. Female, worker (THNHM-I-00711), NE Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station, dry evergreen forest, 9.VII.1999, Sk. Yamane leg., TH99-SKY-05.

Seven paratypes. Seven females, workers (THNHM-I-00712 to THNHM-I-00718), same data as holotype.

Current status. Valid as *Aenictus wiwatwitayai* Jaitrong & Yamane, 2013.

***Aenictus yamanei* Wiwatwitaya & Jaitrong, 2011**

*Sociobiology* 58(3): 562–564 [published in 2011].

Three paratypes. Three females, workers (THNHM-I-00719, THNHM-I-00720, and THNHM-I-11270), Malaysia, Borneo, Sarawak, Hiah N.P., 9.I.1993, Sk. Yamane leg.

Current status. Valid as *Aenictus yamanei* Wiwatwitaya & Jaitrong, 2011.

***Aphaenogaster concolor* Watanabe & Yamane, 1999** (Figure 12A–C)

*Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., Identification Guide to the Aculeata of the Nansai Islands, Hokkaido University Press, Sapporo: 730–731* [published in December 1999].

Three paratypes. Female, worker (THNHM-I-00721), Japan, the Ryukyus, Okinawa Island, Kume-jima, Chinen-son, Seipha-utaki (30 m alt.), 13.V.1991, H. Watanabe leg., Colony 91041; female, alate queen (THNHM-I-00722), Japan, the Ryukyus, Okinawa Island, Kume-jima, Chinen-son, Seipha-utaki (30 m alt.), 13.V.1991, H. Watanabe leg., Colony 91041; male (THNHM-I-00723), Japan, the Ryukyus, Okinawa Island, Kume-jima, Chinen-son, Seipha-utaki (30 m alt.), 13.V.1991, H. Watanabe leg., Colony 91041.

Current status. Valid as *Aphaenogaster concolor* Watanabe & Yamane, 1999.

***Aphaenogaster donann* Watanabe & Yamane, 1999** (Figure 12D–F)

*Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., Identification Guide to the Aculeata of the Nansai Islands, Hokkaido University Press, Sapporo: 736* [published in December 1999].

Two paratypes. female, worker (THNHM-I-00724), Okinawa-ken, Tindabana, Sonai, Yoakuin-jima, 18.III.1991, H. Watanabe leg., Colony 91006; female, alate queen (THNHM-I-00725), same locality and collector, 5.V.1991.

Current status. Valid as *Aphaenogaster donann* Watanabe & Yamane, 1999.

***Aphaenogaster edentula* Watanabe & Yamane, 1999** (Figure 12G–I)

*Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., Identification Guide to the Aculeata of the Nansai Islands, Hokkaido University Press, Sapporo: 728–729* [published in December 1999].





**Figure 12.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Aphaenogaster concolor*, paratype (Watanabe and Yamane, 1999); D–F, *Aphaenogaster donann*, paratype (Watanabe and Yamane, 1999); G–I, *Aphaenogaster edentula*, paratype (Watanabe and Yamane, 1999); J–L, *Aphaenogaster famelica erabu*, paratype (Nishizono and Yamane, 1990); M–O, *Aphaenogaster gracillima*, paratype (Watanabe and Yamane, 1999).

Five paratypes. Four females, workers (THNHM-I-00726 to THNHM-I-00729) and 1 male (THNHM-I-00730), Japan, Tokyo-to, Ogasawara Island, Sekimon, Haha-jima, 12.VII.1990, H. Watanabe leg. Current status. Valid as *Aphaenogaster edentula* Watanabe & Yamane, 1999. *Aphaenogaster famelica erabu* Nishizono & Yamane,

1990 (Figure 12J–L)

Reprinted from *Faculty of Science, Kagoshima University* 23: 29–31 [published in on 10 September 1990].

One paratype. Female, worker (THNHM-I-00733), Japan, Kagoshima, Kuchinoerabu-jima, 21.VII.1989, Sk. Yamane leg., SKY; Ap89039.

Current status. Raised to species, *A. erabu* Nishizono et Yamane, 1990 (See Watanabe and Yamane, 1999: 734).

***Aphaenogaster gracillima* Watanabe & Yamane, 1999**  
(Figure 12M–O)

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 735–736 [published in December 1999].

One paratype. Female, worker (THNHM-I-00736), Japan, Yayeyama Island, Iriomote-jima, Komi (30 m alt.), 26.III.1991, H. Watanabe leg., Colony 91019.

Current status. Valid as *Aphaenogaster gracillima* Watanabe & Yamane, 1999.

***Aphaenogaster irrigua* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 734–735 [published in December 1999].

Two paratypes. Two females, workers (THNHM-I-00737 and THNHM-I-00738), Japan, Kagoshima-ken, Amami Island, Tokuno-shima, Inokawa-dake (370 m alt.), 27.V.1991, H. Watanabe leg., Colony 91072.

Current status. Valid as *Aphaenogaster irrigua* Watanabe & Yamane, 1999.

***Aphaenogaster kumejimana* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 731–732 [published in December 1999].

One paratype. Female, worker (THNHM-I-00739), Japan, the Ryukyus, Okinawa Island, Kume-jima, Chinen-son, Seipha-utaki (30 m alt.), 19.V.1991, H. Watanabe leg., Colony 91050.

Current status. Valid as *Aphaenogaster kumejimana* Watanabe & Yamane, 1999.

***Aphaenogaster luteipes* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 733–734 [published in December 1999].

One paratype. Female, worker (THNHM-I-00740), Japan, Kagoshima-ken, Amami-oshima, Mt. Yuwan-dake, 4.VI-14.IX.1991, H. Watanabe leg., Colony 91073.

Current status. Valid as *Aphaenogaster luteipes* Watanabe & Yamane, 1999.

***Aphaenogaster minutula* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama,

*M.*, *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 732–733 [published in December 1999].

One paratype. Female, worker (THNHM-I-00741), Japan, Kyushu, Kagoshima-ken, Amami-oshima, Sato-rindo (220 m alt.), 31.V.1991, H. Watanabe leg., Colony 91087.

Current status. Valid as *Aphaenogaster minutula* Watanabe & Yamane, 1999.

***Aphaenogaster rugulosa* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 729 [published in December 1999].

One paratype. Female, worker (THNHM-I-00742), Japan, Okinawa-ken, Yonaguin-jima, 26.X-4.XII.1991, H. Watanabe leg.

Current status. Valid as *Aphaenogaster rugulosa* Watanabe & Yamane, 1999.

***Aphaenogaster tokarainsulana* Watanabe & Yamane, 1999**

Reprinted from Yamane, Sk., Ikudome, S. & Terayama, M., *Identification Guide to the Aculeata of the Nansai Islands*, Hokkaido University Press, Sapporo: 729–730 [published in December 1999].

Two paratypes. Two females, workers (THNHM-I-00743 and THNHM-I-00744), Japan, Kagoshima-ken, Tokara Island, Nakano-shima, 30.IV.1900, H. Watanabe leg.

Current status. Valid as *Aphaenogaster tokarainsulana* Watanabe & Yamane, 1999.

***Carebara panhai* Jaitrong, Pitaktunsakul & Jantarit, 2021**

*Far Eastern Entomologist* 425: 9–13 [published on 2 February 2021].

Holotype. Female, major worker (THNHM-I-14191), W Thailand, Kanchanaburi Prov., Thong Pha Phum Dist., Sahakhon Nikhom Community Forest, 14.76255556°N, 98.80966667°E, 3 m from a cave entrance, 27.XI.2019, W. Jaitrong leg.

Sixty paratypes. Three females, major workers (THNHM-I-14192, THNHM-I-19032, and THNHM-I-19033) and 57 females, minor workers (THNHM-I-14193, THNHM-I-19035 to THNHM-I-19090), same data as holotype.

Current status. Valid as *Carebara panhai* Jaitrong, Pitaktunsakul & Jantarit, 2021

***Calyptomyrmex laotius* Jaitrong & Yamane, 2018**

(Figure 13A–C)

*Natural History Bulletin of the Siam Society* 62(2):



17–18 [published on 2 February 2021].

Holotype. Female, worker (**THNHM-I-00208**), central Laos, Vientiane, Pak Ngum District, Ban Phang Dang, Dry Evergreen Forest, 13.VI.2010, W. Jaitrong leg.

Four paratypes. Two females, workers (**THNHM-I-00209** and **THNHM-I-00210**), same data as holotype; 2 females, workers (**THNHM-I-00211** and **THNHM-I-00212** Laos, Vientiane Prov., Pak-Gnam [Pak Ngum] Dist., Phang Dang Village (= Ban Phang Dang), 450 m alt., 13.VI.2010, Sk. Yamane leg., leaf litter & surface soil, GC.

Current status. Valid as *Calypatomyrmex laotius* Jaitrong & Yamane, 2018.

***Cladomyrma sirindhornae* Jaitrong, Laedprathom & Yamane, 2013** (Figure 13D–F)

*Species Diversity* 18: 15–21 [published on 25 May 2013].

Holotype. Female, queen (**THNHM-I-00745**), E Thailand, Chanthaburi Prov., Khlung Dist., Ban Ang-Ed Community Forest Development Project (Chaipattana Foundation), 20.XI.2012, K. Leadprothom leg., TH12-KL-01.

Sixty-nine paratypes. Sixty-nine females, workers (**THNHM-I-00746** to **THNHM-I-00814**), same data as holotype.

Current status. Valid as *Cladomyrma sirindhornae* Jaitrong, Laedprathom & Yamane, 2013.

***Crematogaster chhangii* Hosoishi & Ogata, 2014** (Figure 13G–I)

*ZooKeys* 374: 61–62 [published on 29 January 2014].

Holotype. Female, worker (**THNHM-I-00815**), Cambodia, Koh Kong, 11°31'N, 103°09'E, 19.V.2012, S. Hosoishi leg., SH12-Cam-70.

Current status. Valid as *Crematogaster chhangii* Hosoishi & Ogata, 2014.

***Crematogaster fumikoe* Hosoishi, 2015** (Figure 13J–L)  
*Asian Myrmecology* 7: 14–15 [published in August 2015].

Holotype. Female, worker (**THNHM-I-00816**), N Thailand, Doi Suthep, near Chiang Mai, 21.XII.1997, F. Yamane leg.

Current status. Valid as *Crematogaster fumikoe* Hosoishi, 2015.

***Crematogaster hashimi* Hosoishi, 2015** (Figure 13M–O)  
*Journal of Hymenoptera Research* 42: 80–82 [published on 18 March 2015].

One paratype. Female, worker (**THNHM-I-00817**), Malaysia, Selangor, Ulu Gombak N.P., 3°19'N, 101°45'E, 15.III.2010, S. Hosoishi leg. SH10-Mal-67.

Current status. Valid as *Crematogaster hashimi* Hosoishi, 2015.

***Crematogaster imperfecta* Hosoishi, 2015**

*Journal of Hymenoptera Research* 42: 82–84 [published on 18 March 2015].

One paratype. Female, worker (**THNHM-I-00818**), Malaysia, Borneo, Sarawak, Miri, Lambir N.P., Tower Region, Canopy Ecol., 26.I.1983, Sk. Yamane leg.

Current status. Valid as *Crematogaster imperfecta* Hosoishi, 2015.

***Crematogaster simboloni* Hosoishi & Ogata, 2014**

*ZooKeys* 374: 64–66 [published on 29 January 2014].

One paratype. Female, worker (**THNHM-I-00819**), Indonesia, Rakata Is., Krakatau Islands, 06°09'S, 105°28'E, 11.X.2000, H. Simbolon leg.

Current status. Valid as *Crematogaster simboloni* Hosoishi & Ogata, 2014.

***Diacamma caeruleum* Laciny, Pal & Zettel, 2015**

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 67: 128–131 [published in December 2015].

Two paratypes. Two females, workers (**THNHM-I-00927** and **THNHM-I-00928**), Philippines, Mindoro Oriental, 28 km S. Calapan, environment of Balete, 100–700 m a.s.l., 27–29.XI.1992, H. Zettel (#18) leg.

Current status. Valid as *Diacamma caeruleum* Laciny, Pal & Zettel, 2015.

***Diacamma carbonarium* Laciny, Pal & Zettel, 2015** (Figure 14A–C)

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 67: 131–134 [published in December 2015].

Two paratypes. Two females, workers (**THNHM-I-00925** and **THNHM-I-00926**), Philippines, Luzon Island, Quezon Prov., W. Atimonan, Quezon N.P., Old Zigzag Road, 12–13.II.1996, H. Zettel (#79a) leg.

Current status. Valid as *Diacamma carbonarium* Laciny, Pal & Zettel, 2015.

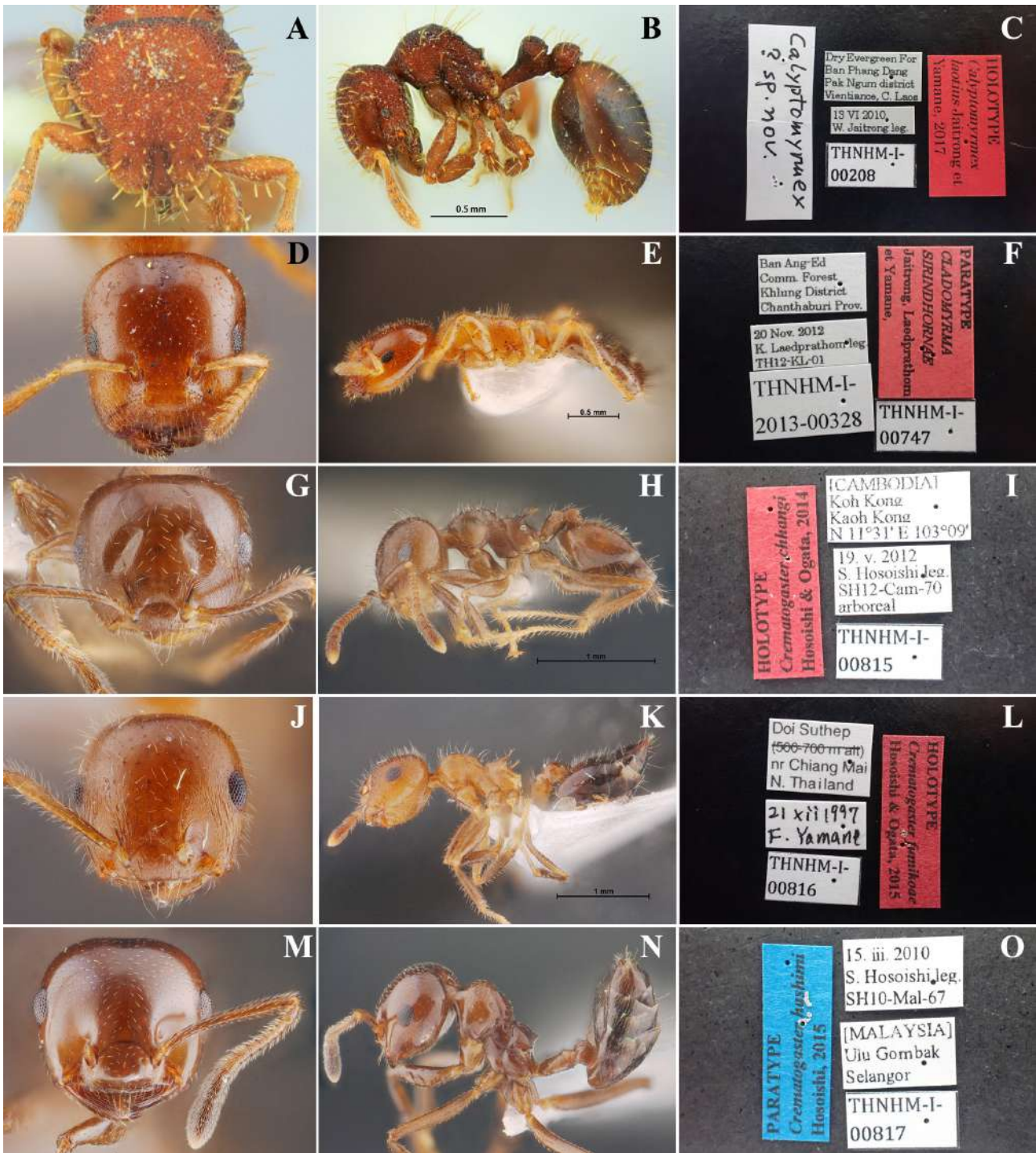
***Diacamma excellens* Zettel, Pal & Laciny, 2016** (Figure 14D–F)

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 68: 155–157 [published in November 2016].

One paratype. Female, worker (**THNHM-I-00923**), Philippines, Biliran, Almeria, Ilihan, 13.XI (unknown collecting year), Pangantihon leg.

Current status. Valid as *Diacamma excellens* Zettel, Pal & Laciny, 2016.





**Figure 13.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Calyptomyrmex laotius*, holotype (Jaitrong and Yamane, 2018); D–F, *Cladomyrma sirindhornae*, paratype (Jaitrong *et al.*, 2013); G–I, *Crematogaster chhangii*, holotype (Hosoishi and Ogata, 2014); J–L, *Crematogaster fumikoae*, holotype (Hosoishi, 2015); M–O, *Crematogaster hashimi*, paratype (Hosoishi, 2015).

*Diacamma jaitrongi* Zettel, Pal & Laciny, 2016 (Figure 14G–I)  
*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 68: 141–144 [published in November 2016].  
 Holotype. Female, worker (THNHM-I-00932), N Thailand, Chiang Mai Prov., Fang Dist., Pha Hom

Pok N.P., 29.V.2008, W. Jaitrong leg., WJT08-N62. Eleven paratypes. Eleven females, workers (THNHM-I-00933 to THNHM-I-00943), same data as holotype.  
 Current status. Valid as *Diacamma jaitrongi* Zettel, Pal & Laciny, 2016.

*Diacamma leyteense* Zettel, Pal & Laciny, 2016 (Figure

14J–L)

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 68: 149–152 [published in November 2016].

One paratype. Female, worker (**THNHM-I-00924**), Philippines, W Sarma Prov., E Basey, Sohoton N.P., 29.I.2000, S. Schödl (#2) leg.

Current status. Valid as *Diacamma leyteense* Zettel, Pal & Laciny, 2016.

***Diacamma reductostriatum* Zettel, Pal & Laciny, 2016** (Figure 14M–O)

*Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 68: 157–106 [published in November 2016].

One paratype. Female, worker (**THNHM-I-00929**), Philippines, Camiguin, W of Mambajao, Katibawasan spring area, 350–400 m a.s.l., 13–15.III. H. Zettel & C. V. Pangantitihon leg.

Current status. Valid as *Diacamma reductostriatum* Zettel, Pal & Laciny, 2016.

***Echinopla charernsomi* Tanansathaporn & Jaitrong, 2018** (Figure 15A–C)

*Far Eastern Entomologist* 370: 3–6 [published in November 2018].

Holotype. Female, worker (**THNHM-I-01365**), NE Thailand, Nakhon Ratchasima Prov., Wang Nam Kheao [Khiao] Dist., Sakaerat Environmental Research Station (ERS), dry evergreen forest (DEF), hand collecting, 14.5097222°N, 101.9319444°E, 17.VIII.2009, W. Jaitrong leg.

Two paratypes. One female, worker (**THNHM-I-01366**), same data as holotype; 1 female, worker (**THNHM-I-01367**), central Thailand, Nakhon Nayok Prov., Muang [Mueang] Nakhon Nayok, Hin Tang Subdist., 14.437222°N, 101.7358333°E, dry evergreen forest, hand collecting, 25.III.2000, W. Jaitrong leg.

Current status. Valid as *Echinopla charernsomi* Tanansathaporn & Jaitrong, 2018.

***Echinopla jeenthongi* Tanansathaporn & Jaitrong, 2018**

*Far Eastern Entomologist* 370: 6–10 [published in November 2018].

Holotype. Female, worker (**THNHM-I-01368**), S Thailand, Nakhon Si Thammarat Prov., Sichon Dist., Khao Noi Subdist., nr Yod Nam Waterfall, hand collecting, 8.90916667°N, 99.73194444°E, 1.XI.2008, T. Jeenthong leg.

One paratype. Female, queen (**THNHM-I-08495**), S Thailand, Phang-nga Prov., Muang [Mueang] Phang-nga, Song Prang Subdist., lower vegetation,

8.6111111°N, 98.5505556°E, 200–300m alt., 9.XI.2005, N. Noon-anant leg., NW091105-3.

Current status. Valid as *Echinopla charernsomi* Tanansathaporn & Jaitrong, 2018.

***Lasiomyrma wiwatwitayai* Jaitrong, 2010** (Figure 15D–F)

*Sociobiology* 55: 428–431 [published in 2010].

Holotype. Female, worker (**THNHM-I-11262**), NE Thailand, Nakhon Ratchasima Prov., Khao Yai N.P., hill evergreen forest, 30.V.2000, D. Wiwatwitaya leg.

One paratype. Female, worker (**THNHM-I-00820**), E Thailand, Chanthaburi Prov., Soi Dao Dist., Bueng Si To, 900–1400 m alt., 22.I.2008, W. Jaitrong leg., WJT 08-TH.

Current status. Valid as *Lasiomyrma wiwatwitayai* Jaitrong, 2010.

***Leptogenys atra* Arimoto & Yamane, 2018** (Figure 15G–I)

*Asian Myrmecology* 10: 10–20 [first published online: 1 August 2018].

Four paratypes. One female, worker (**THNHM-I-01241**), N Vietnam, Ha Tai prov., Ba Vi N.P., 400–600 m alt., 11.XII.1999, K. Eguchi leg., Eg99-VN-086; 1 female, worker (**THNHM-I-01242**), N Vietnam, Ninh Binh Prov., Nho Quan Dist., Cuc Phuong N.P., 10–11.VIII.1998, Sk. Yamane leg.; 1 female, worker (**THNHM-I-01243**), N Vietnam, Ninh Binh Prov., Nho Quan Dist., Cuc Phuong N.P., 11–13.VIII.1998, Sk. Yamane leg.; 1 female, worker (**THNHM-I-012444**), central Vietnam, Nghe An Prov., Pu Hoat, VI.1999, B.T. Viet leg., VN9902.

Current status. Valid as *Leptogenys atra* Arimoto & Yamane, 2018.

***Leptogenys cyanicatena* Arimoto & Yamane, 2018** (Figure 15J–L)

*Asian Myrmecology* 10: 22–25 [first published online: 1 August 2018].

Holotype. Female, worker (**THNHM-I-01235**), Cambodia, Siem Reap Prov., Siem Reap Dist., 13.4°N, 103.9°E, 24.VIII.2012, K. Arimoto leg., AK75.

Five paratypes. Two females, workers (**THNHM-I-01236** and **THNHM-I-01237**), Kanchanaburi Prov., Srisawat [Si Sawat] Dist., Srinakarin Dam N.P., 150–200 m alt., 29.VI.2002, Sk. Yamane leg., TH02-SKY-15; 1 female, worker (**THNHM-I-01238**), Kanchanaburi Prov., Srisawat [Si Sawat] Dist., Srinakarin Dam N.P., 150–200 m alt., 29.VI.2002, Sk. Yamane leg., TH02-SKY-07; 1 female, worker (**THNHM-I-01239**), central Thailand, Pechaburi Prov., Kaeng Krachan N.P., 28.VI.2014, S. Hasin &





**Figure 14.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Diacamma carbonarium*, paratype (Laciny *et al.*, 2015); D–F, *Diacamma excellens*, paratype (Zettel *et al.*, 2016); G–I, *Diacamma jaitrongi*, holotype (Zettel *et al.*, 2016); J–L, *Diacamma leyteense*, paratype (Zettel *et al.*, 2016); M–O, *Diacamma reductostriatum*, paratype (Zettel *et al.*, 2016).



M. Maruyama leg., TH14-SKY-92; 1 female, worker (**THNHM-I-01240**), E Thailand, Chachoengsao Prov., Tha Takeab [Tha Takiap] Dist., Khao Ang Reu Nai W.S., Lumchangwat Station, dry evergreen forest, 21.VIII.2003m, Sk. Yamane leg., TH03-SKY-26.

Current status. Valid as *Leptogenys cyanicatena* Arimoto & Yamane, 2018.

***Lophomyrmex indosiensis* Yamane & Hosoishi, 2014**  
(Figure 15M–O)

*Halteres* 5: 65–67 [first published online: 30 December 2014; Print: 9 January 2015].

One paratype. Female, worker (**THNHM-I-00821**), S Vietnam, Khánh Hòa, Hon Ba N.P. (900 m alt.), ex leaf litter, 12°06'N/108°58'E, 21.II.2014, S. Hosoishi leg., SH14-Vie-24.

Current status. Valid as *Lophomyrmex indosiensis* Yamane & Hosoishi, 2014.

***Myopias etsukoae* Jaitrong, Wiwatwitaya & Yamane, 2020** (Figure 16A–C)

*Raffles Bulletin of Zoology* 68: 609–611 [published on 6 July 2020].

Two paratypes. Two females, workers (**THNHM-I-24001** [= BOR-JWY-11] and **THNHM-I-24002** [= BOR-JWY-12]), East Malaysia, Borneo, Sabah, Danum Valley, 30.IV.2000, C. Brühl leg.

Current status. Valid as *Myopias etsukoae* Jaitrong, Wiwatwitaya & Yamane, 2020.

***Myopias minima* Jaitrong, Tasen & Guénard, 2018**  
(Figure 16D–F)

*Zootaxa* 4526 (2): 162–165 [published on 29 November 2018].

Holotype. Female, worker (**THNHM-I-00242**), S Thailand, Phattalung Prov., Sribanpot [Si Banphot] Dist., Rieng Thong Waterfall, 7.70782500°N, 99.81130000°E, Rotting wood, 250 m alt., 24.VIII.2002, W. Jaitrong leg., Colony no. WJT07-TH-2041.

Three paratypes. Two females, workers (**THNHM-I-00243** and **THNHM-I-00244**), and 1 female, queen (**THNHM-I-00245**), same colony as holotype.

Current status. Valid as *Myopias minima* Jaitrong, Tasen & Guénard, 2018.

***Myopias sakaeratensis* Jaitrong, Tasen & Guénard, 2018** (Figure 16G–I)

*Zootaxa* 4526 (2): 166–168 [published on 29 November 2018].

Holotype. Female, worker (**THNHM-I-00291**), NE Thailand, Nakhon Ratchasima Prov., Wang Nam Kheao [Khiao] Dist., Sakaerat Environmental

Research Station (ERS), dry evergreen forest, 14.51013900°N, 101.95238900°E, 270 m a.s.l., 7.V.2002, D. Wiwatawitaya leg., colony no. WJT070502-1.

Three paratypes. Two females, workers (**THNHM-I-00292** and **THNHM-I-00293**), same data as holotype; 1 female, worker (**THNHM-I-00294**), NE Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station, 12.V.2002, C. Bourmas leg.

Current status. Valid as *Myopias sakaeratensis* Jaitrong, Tasen & Guénard, 2018.

***Myopias sonthichaiiae* Jaitrong, Tasen & Guénard, 2018** (Figure 16J–L)

*Zootaxa* 4526 (2): 168–173 [published on 29 November 2018].

Holotype. Female, worker (**THNHM-I-00946**), N Thailand, Chiang Mai Prov., Doi Ang Khang, 19.87111111°N, 99.05250000°E, 1780 m a.s.l., 24.VIII.2002, S. Hasin leg., Colony no. TH-02 SH-052.

Three paratypes. Two females, workers (**THNHM-I-00947**) and 1 female, queen (**THNHM-I-00948**), same data as holotype.

Current status. Valid as *Myopias sonthichaiiae* Jaitrong, Tasen & Guénard, 2018.

***Myopias striaticeps* Jaitrong, Wiwatwitaya & Yamane, 2020** (Figure 16M–O)

*Raffles Bulletin of Zoology* 68: 611–614 [published on 6 July 2020].

One paratype. Female, dealate gyne (**THNHM-I-24003** [= BOR-JWY-14]), Borneo, East Malaysia, Sabah, Crocker Range N.P., Mahua Waterfall area, 4–5. XI.2000, Sk. Yamane leg.

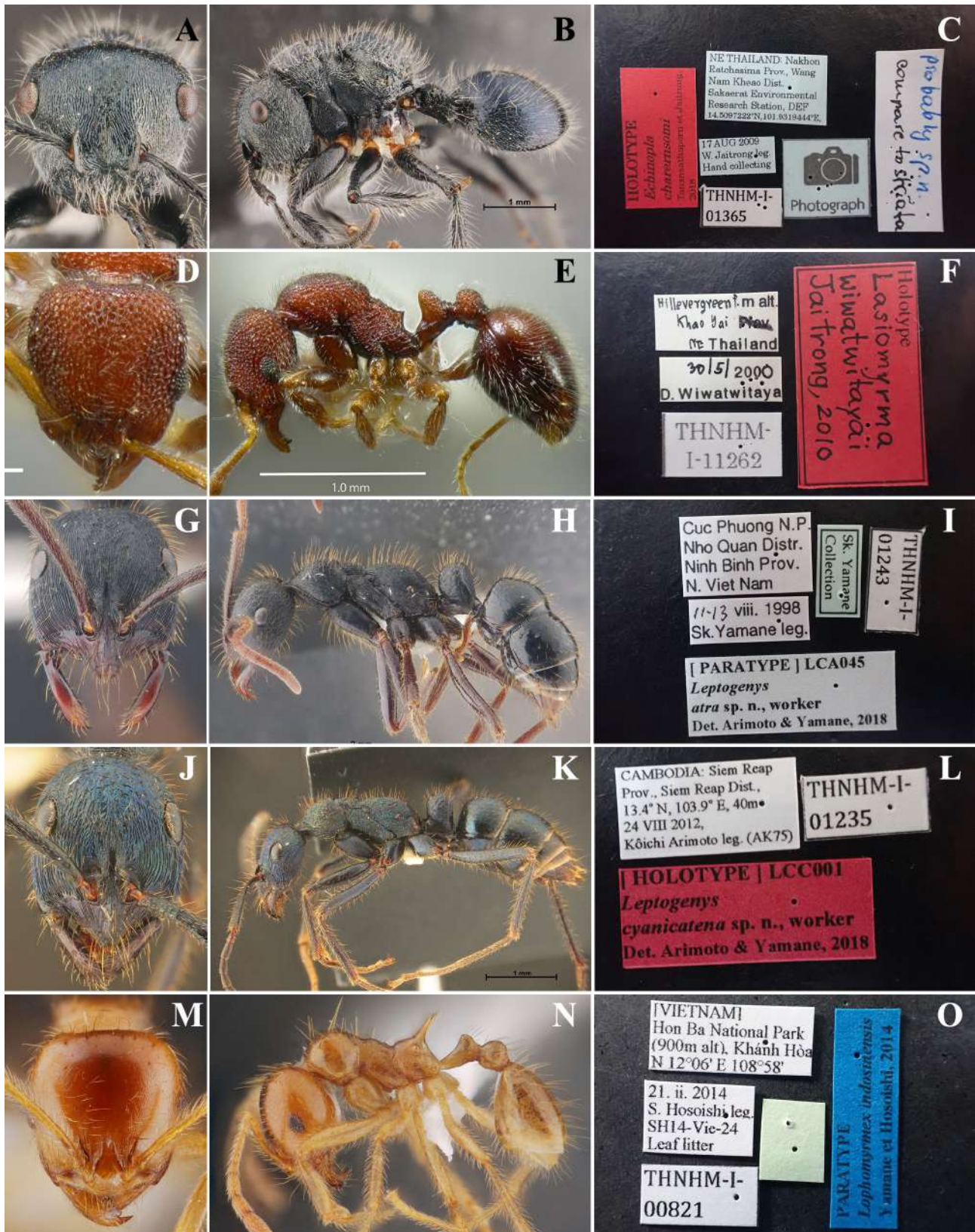
Current status. Valid as *Myopias striaticeps* Jaitrong, Wiwatwitaya & Yamane, 2020.

***Myopias suwannaphaki* Jaitrong, Wiwatwitaya & Yamane, 2020**

*Raffles Bulletin of Zoology* 68: 614–617 [published on 6 July 2020].

Three paratypes. One female, dealate gyne (**THNHM-I-24004** [= BOR-JWY-26]), East Malaysia, Borneo, Sabah, Maliau Basin, buffer zone, leaf litter, 270–300 m alt., 19.XI.2011, Sk. Yamane leg.; 2 females, workers (**THNHM-I-24005** [= BOR-JWY-24] and **THNHM-I-24006** [= BOR-JWY-25]), East Malaysia, Borneo, Sabah, Maliau Basin, buffer zone, leaf litter, 270–300 m alt., 19.XI.2011, Sk. Yamane leg.

Current status. Valid as *Myopias suwannaphaki* Jaitrong, Wiwatwitaya & Yamane, 2020.



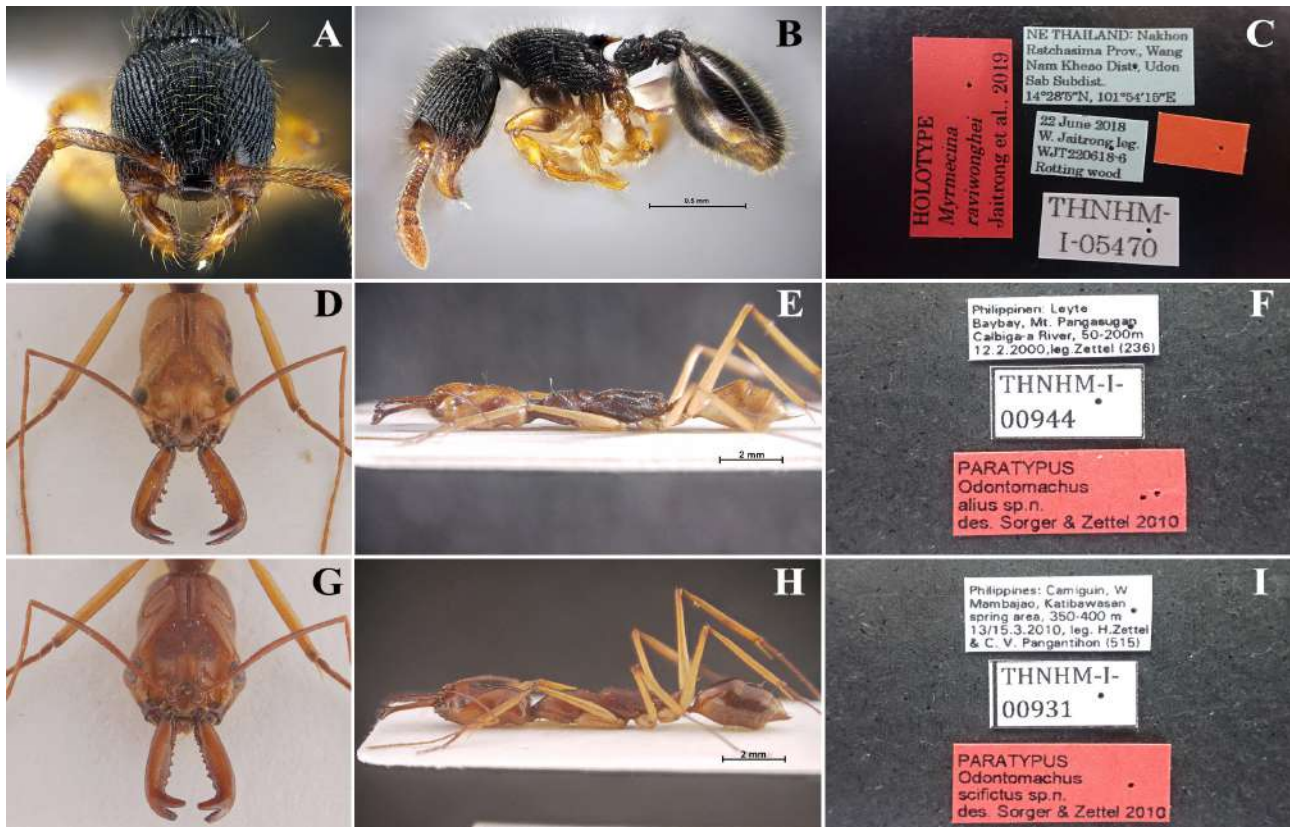
**Figure 15.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Echinopla charernsomi*, holotype (Tanansathaporn et al., 2018); D–F, *Lasiomyrma wiwatwitayai*, holotype (Jaitrong, 2010); G–I, *Leptogenys atra*, paratype (Arimoto and Yamane, 2018); J–L, *Leptogenys cyanicata*, holotype (Arimoto and Yamane, 2018); M–O, *Lophomyrmex indosiensis*, paratype (Yamane and Hosoishi, 2014).





**Figure 16.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Myopias etsukoae*, paratype (Jaitrong *et al.*, 2020); D–F, *Myopias minima*, holotype (Jaitrong *et al.*, 2018); G–I, *Myopias sakaeratensis*, holotype (Jaitrong *et al.*, 2018); J–L, *Myopias sonthichaiiae*, holotype (Jaitrong *et al.*, 2018); M–O, *Myopias striaticeps*, queen, paratype (Jaitrong *et al.*, 2020).





**Figure 17.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Myrmecina raviwonghei*, holotype (Jaitrong *et al.*, 2019); D–F, *Odontomachus alius*, paratype (Sorger and Zettel, 2011); G–I, *Odontomachus scifictus*, paratype (Sorger and Zettel, 2011).

***Myrmecina raviwonghei* Jaitrong, Samung, Waengsothorn & Okido, 2019** (Figure 17A–C)

*Far Eastern Entomologist* 383: 3–6 [published in June 2019].

Holotype. Female, worker (THNHM-I-05470), NE Thailand, Nakhon Ratchasima Prov., Wang Nam Kheao [Kheiao] Dist., Udom Sab Subdist., rotting wood, 14°28'5"N, 101°54'15"E, 23.VI.2018, W. Jaitrong leg., WJT230618-6.

Eighteen paratypes. Eighteen females, workers (THNHM-I-05471), same data as holotype.

Current status. Valid as *Myrmecina raviwonghei* Jaitrong, Samung, Waengsothorn & Okido, 2019.

***Myrmecina spinosa* Okido, Ogata & Hosoishi, 2020** *Bulletin of the Kyushu University Museum* 17: 90–92 [published on 25 June 2020].

One paratype. Female, worker (THNHM-I-23983), Malaysia: Mahua Waterfall area, ca. 1000 m alt., Crocker Range N. P., Sabah, 4. XI. 2000, H. Okido leg. (UMS), MA00-HO-005.

Current status. Valid as *Myrmecina spinosa* Okido, Ogata & Hosoishi, 2020.

***Myrmoterus concolor* Bui, Eguchi & Yamane, 2013**

(Figure 18A–C)

*Zootaxa* 3666: 550 [published on 4 June 2013].

Holotype. Female, worker (THNHM-I-00822), E Thailand, Chanthaburi Prov., Khao Soi Dao W.S., rainforest [evergreen forest], 4.VI.2001, Sk. Yamane leg., TH01-SKY-47.

Five paratypes. One female, worker (THNHM-I-00823), same data as holotype, TH01-SKY-53; 4 females, workers (THNHM-I-00824 to THNHM-I-00827), E Thailand, Chanthaburi Prov., Khao Soi Dao W.S., Soi Dao Waterfall, 13.V.2008, W. Jaitrong leg., WJT08-E020.

Current status. Valid as *Myrmoterus concolor* Bui, Eguchi & Yamane, 2013.

***Myrmoterus jaitrongi* Bui, Eguchi & Yamane, 2013** (Figure 18D–F)

*Zootaxa* 3666: 551–553 [published on 4 June 2013].

Holotype. Female, worker (THNHM-I-00829), S Thailand, Narathiwat Prov., Bala-Hala W.S., tropical rainforest, 7.XI.2002, W. Jaitrong leg., WJT02-TH325.

Current status. Valid as *Myrmoterus jaitrongi* Bui, Eguchi & Yamane, 2013.

***Myrmoterus glabrum* Zettel & Sorger, 2011** (Figure





**Figure 18.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Myrmoterus concolor*, holotype (Bui *et al.*, 2013); D–F, *Myrmoterus jaitrongi*, holotype (Bui *et al.*, 2013); G–I, *Myrmoterus glabrum*, paratype (Zettel and Sorger, 2011); J–L, *Myrmoterus opalinum*, paratype (Bui *et al.*, 2013); M–O, *Myrmoterus tomimasai*, queen, paratype (Bui *et al.*, 2013).

18G–I)  
*The Raffles Bulletin of Zoology* 56: 62–64 [published on 4 June 2013].  
 One paratype. Female, worker (THNHM-I-00972), Philippines, Camiguin Island, municipality of Mambajao, Tupsan, Macaw Cold Spring, 10–15 m, 09°11'N, 124°46'E, 17.III.2010, H. Zettel & C.V.

Pangantihon leg. (517).  
 Current status. Valid as *Myrmoterus glabrum* Zettel & Sorger, 2011.  
*Myrmoterus opalinum* Bui, Eguchi & Yamane, 2013 (Figure 18J–L)  
*Zootaxa* 3666: 553–555 [published on 4 June 2013].  
 Holotype. Female, worker (THNHM-I-00830), S

Thailand, Surat Thani Prov., Tai Rom Yen N.P., Datfa Waterfall, nest in soil, 12.X.2011, Sk. Yamane leg., TH11-SKY-045.

Two paratypes. Two females, workers (**THNHM-I-00831** and **THNHM-I00832**), same data as holotype. TH11-SKY-050.

Current status. Valid as *Myrmoteras opalinum* Bui, Eguchi & Yamane, 2013.

***Myrmoteras tomimasai* Bui, Eguchi & Yamane, 2013** (Figure 18M–O)

*Zootaxa* 3666: 557–558 [published on 4 June 2013].

One paratype. Female, queen (**THNHM-I-00833**), Vietnam, Nghe An Prov., Tuong Duong Dist., Sang Le Forest, 19°10–11'N, 104°37–38'E, 3.IV.2006, K. Eguchi leg., Eg03iv06-03.

Current status. Valid as *Myrmoteras tomimasai* Bui, Eguchi & Yamane, 2013.

***Odontomachus alius* Sorger & Zettel, 2011** (Figure 17D–F)

*Myrmecological News* 14: 152–153 [published in January 2011].

Two paratypes. Two females, workers (**THNHM-I-00944** and **THNHM-I-00945**), Philippines, Leyte, Baybay, Mt. Pangasugan, Calbiga-a River, 50–200 m, 12.II.2000, H. Zettel (236) leg.

Current status. Valid as *Odontomachus alius* Sorger & Zettel, 2011.

***Odontomachus scifictus* Sorger & Zettel, 2011** (Figure 17G–I)

*Myrmecological News* 14: 153 [published in January 2011].

Two paratypes. Two females, workers (**THNHM-I-00930** and **THNHM-I-00931**), Philippines, Camiguin, W Mambajao, Katibawasan spring area, 350–400 m, 13–15.III.2010, H. Zettel & C. V. Pangantihon (515) leg.

Current status. Valid as *Odontomachus scifictus* Sorger & Zettel, 2011.

***Pachycondyla batak* Yamane, 2007** (Figure 19A–C)

*Memoirs of American Entomological Institute* 80: 656–657 [published in July 2007].

Two paratypes. One female, worker (**THNHM-I-00835**), and 1 female, queen (**THNHM-00836**), Indonesia, N. Sumatra, near Danau Toba, Parabat (900 m alt.), 19.VIII.2002, Sk. Yamane leg., SU02-SKY-91.

Current status. Valid as *Brachyponera batak* (Yamane, 2007) (See Schmidt and Shattuck, 2014: 80).

***Pachycondyla flavipes* Yamane, 2007** (Figure 19D–F)

*Memoirs of American Entomological Institute* 80: 658 [published in July 2007].

One paratype. Female, worker (**THNHM-I-00837**), Myanmar, Chin State, between Kampetlet and Natmataung N.P. (1760 m alt.), 21°13'N, 93°56'E, 27.II.2002, Sk. Yamane leg., MM02-SKY-33.

Current status. Valid as *Brachyponera flavipes* (Yamane, 2007) (See Schmidt and Shattuck, 2014: 80).

***Pachycondyla pilidorsalis* Yamane, 2007** (Figure 19G–I)

*Memoirs of American Entomological Institute* 80: 655–656 [published in July 2007].

One paratype. Female, worker (**THNHM-I-00838**), Malaysia, Selangor Prov., Ulu Gombok N.P. (ca. 250 m alt.), 5.VII.1999, F. Ito leg., FI99-291.

Current status. Valid as *Brachyponera pilidorsalis* (Yamane, 2007) (See Schmidt and Shattuck, 2014: 80).

***Pachycondyla wallacea* Yamane, 2007** (Figure 19J–L)

*Memoirs of American Entomological Institute* 80: 659–660 [published in July 2007].

One paratype. Female, worker (**THNHM-I-00841**), Indonesia, West Lombok, near Semaya, Kopi house, 29.X.1998, K. Eguchi leg., Eg98-LMB-1077.

Current status. Valid as *Brachyponera wallacea* (Yamane, 2007) (See Schmidt and Shattuck, 2014: 81).

***Pheidole angulicollis* Eguchi, 2001**

*Tropics* (Monograph Series 2): 30–32 [published in July 2001].

One paratype. Female, minor worker (**THNHM-I-11233**), Malaysia, Crocker Range N.P., Mahua Waterfall area, ca. 1000 m alt., under a stone, 4.XI.2000, Eg00-BOR-100, K. Eguchi leg.

Current status. Valid as *Pheidole angulicollis* Eguchi, 2001.

***Pheidole cariniceps* Eguchi, 2001**

*Tropics* (Monograph Series 2): 41–43 [published in July 2001].

Two paratypes. One female, major worker (**THNHM-I-11234**) and 1 female, minor worker (**THNHM-I-11235**), E Malaysia, Sabah, Logging area nr Ranau, 2.VI.1998, Eg98-BOR-840, K. Eguchi leg.

Current status. Valid as *Pheidole cariniceps* Eguchi, 2001.

***Pheidole clypeocornis* Eguchi, 2001** (Figure 20A–C)

*Tropics* (Monograph Series 2): 44–45 [published in July 2001].

Two paratypes. One female, major worker (**THNHM-I-11236**) and 1 female, minor worker (**THNHM-I-11237**), E Malaysia, Borneo, Sabah, Tawau N.P., 12.VII.1996, K. Eguchi leg., Eg96-





**Figure 19.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Pachycondyla bataka*, paratype (Yamane, 2007); D–F, *Pachycondyla flavipes*, paratype (Yamane, 2007); G–I, *Pachycondyla pilidorsalis*, paratype (Yamane, 2007); J–L, *Pachycondyla wallacea*, paratype (Yamane, 2007).

BOR-035.

Current status. Valid as *Pheidole clypeocornis* Eguchi, 2001.

***Pheidole deltae* Eguchi, 2001** (Figure 20D–F)

*Tropics* (Monograph Series 2): 47–48 [published in July 2001].

Two paratypes. One female, major worker (THNHM-I-11238) and 1 female, minor worker (THNHM-I-11239), Malaysia, Sabah, Gunong Rara, 14.XII.1996, K. Eguchi leg., Eg96-BOR-374.

Current status. Valid as *Pheidole deltae* Eguchi, 2001.

***Pheidole inornata* Eguchi, 2001** (Figure 20G–I)

*Tropics* (Monograph Series 2): 66–67 [published in July 2001].

Two paratypes. One female, major worker (THNHM-I-11275) and 1 female, minor worker (THNHM-I-11276), E Malaysia, Borneo, Sabah, Sayap Kinabalu, ca. 1000 m alt., 15.VII.1996, K. Eguchi leg., Eg96-BOR-064.

Current status. Valid as *Pheidole inornata* Eguchi, 2001.

***Pheidole orophila* Eguchi, 2001**

*Tropics* (Monograph Series 2): 85–86. [published in July 2001]

Two paratypes. One female, major worker





**Figure 20.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Pheidole clypeocornis*, paratype (Eguchi, 2001); D–F, *Pheidole deltae*, paratype (Eguchi, 2001); G–I, *Pheidole inornata*, paratype (Eguchi, 2001); J–L, *Pheidole rugifera*, paratype (Eguchi, 2001).

(THNHM-I-11240) and 1 female, minor worker (THNHM-I-11241), Malaysia Peninsula, Cameron Highlands, 1500 m alt., 25.IV.2000, K. Eguchi leg., Eg00-WM-001.

Current status. Valid as *Pheidole orophila* Eguchi, 2001.

***Pheidole parvicorpus* Eguchi, 2001**

*Tropics* (Monograph Series 2): 86–88 [published in July 2001].

One paratype. Female, minor worker (THNHM-I-11242), Malaysia, Sabah, Gunong Rara, 25.II.1997, K. Eguchi leg., Eg97-BOR-584.

Current status. Valid as *Pheidole parvicorpus* Eguchi, 2001.

***Pheidole quinata* Eguchi, 2001**

*Tropics* (Monograph Series 2): 100–102 [published in July 2001].

One paratype. Female, minor worker (THNHM-I-11250), E Malaysia, Borneo, Sabah, Sayap Kinabalu, ca. 1000 m alt., 15.VI.1996, K. Eguchi, HD-106.

Current status. Valid as *Pheidole quinata* Eguchi, 2001.

***Pheidole retivertex* Eguchi, 2001**

*Tropics* (Monograph Series 2): 104–106 [published in July 2001].

One paratype. Female, minor worker (THNHM-I-11243), Malaysia, Borneo, Sabah, Sepilok Forest, 3.VII.1998, K. Eguchi leg., Eg98-BOR-865.

Current status. Valid as *Pheidole retivertex* Eguchi, 2001.

***Pheidole rugifera* Eguchi, 2001** (Figure 20J–L)



*Tropics* (Monograph Series 2): 106–108 [published in July 2001].

Two paratypes. One female, major worker (THNHM-I-11246) and 1 female, minor worker (THNHM-I-11245), E Malaysia, Sarawak, Miri, Lambir N.P., 24.VI.1998, K. Eguchi leg., Eg98-BOR-836.

Current status. Valid as *Pheidole rugifera* Eguchi, 2001.

***Pheidole sayapensis* Eguchi, 2001**

*Tropics* (Monograph Series 2): 114–115 [published in July 2001].

One paratype. Female, minor worker (THNHM-I-11247), E Malaysia, Borneo, Sabah, Sayap Kinabalu, ca. 1000 m alt., 16.VII.1996, K. Eguchi leg., Eg96-BOR-051.

Current status. Valid as *Pheidole sayapensis* Eguchi, 2001.

***Pheidole tenebricosa* Eguchi, 2001**

*Tropics* (Monograph Series 2): 121–123 [published in July 2001].

Two paratypes. One female, major worker (THNHM-I-11248) and 1 female, minor worker (THNHM-I-11249), Malaysia, Borneo, Sabah, Mt. Kinabalu, near park headquarters, 1500 m alt., 19.I.1997, K. Eguchi leg., Eg97-BOR-394.

Current status. Valid as *Pheidole tenebricosa* Eguchi, 2001.

***Platythyrea janyai* Phengsi, Jaitrong, Ruangsittichai & Khachonpisitsak, 2018** (Figure 21A–C)

*ZooKeys* 729: 89–92 [published on 16 January 2018].

Holotype. Female, worker (THNHM-I-02392), S Thailand, Phatthalung Prov., Si Banphot Dist., Riang Thong Waterfall, Khao Pu Khao Ya N.P., 28.IX.2007, W. Jaitrong leg., Colony no. WJT07-TH-2060.

Three paratypes. Three females, workers (THNHM-I-02393 to THNHM-I-02395), same data as holotype.

Current status. Valid as *Platythyrea janyai* Phengsi, Jaitrong, Ruangsittichai & Khachonpisitsak, 2018.

***Polyrhachis (Hemioptica) boltoni* Dorow & Kohuot, 1995** (Figure 22A–C)

*Zoologische mededeelingen* (Leiden) 69: 96–98 [published on 30 July 2015].

Two paratypes. Two females, workers (THNHM-I-11257 and THNHM-I-11258), Malaysia, N Sembilan, Pasoh Forest Research Centre, 28.I.1987, W.H.O. Dorow leg., #890.

Current status. Valid as *Polyrhachis boltoni* Dorow & Kohuot, 1995.

***Polyrhachis foreli* Kohuot, 1989** (Figure 22D–F)

*Memoirs of the Queensland Museum* 27(2): 510–513 [published on 13 November 1989].

One paratype. Female, worker (THNHM-I-11259), Australia, Queensland, 6km W South Mission Beach, 17.56°S, 146.02°E, 18-19.VII.1980, R.J. Kohuot leg., R.J. Kohuot Accession80.60.

Current status. Valid as *Polyrhachis foreli* Kohuot, 1989.

***Polyrhachis pirata* Sorger & Zettel, 2009** (Figure 22G–I)

*Zootaxa* 2174: 33–36 [published on 3 August 2009].

One paratype. Female, worker (THNHM-I-00865), Philippines, Luzon, Quezon Prov., Atimonan, Quezon N.P., Old Zigzag Road, 24-30.III.1998, H. Zettel (165) leg.

Current status. Valid as *Polyrhachis pirata* Sorger & Zettel, 2009.

***Polyrhachis taylori* Kohuot, 1988** (Figure 22J–L)

*Memoirs of the Queensland Museum* 25: 422–426 [published on 7 November 1988].

Two paratypes. Two females, workers (THNHM-I-11260 and THNHM-I-11261), Papua New Guinea, West Sepik Prov., Torricelli Mountains Lumi, 400–550 m, 03.28°S, 142.02°E, 4–13.VIII.1984, R.J. Kohuot leg., R.J. Kohuot Accession84.249.

Current status. Valid as *Polyrhachis taylori* Kohuot, 1988.

***Pristomyrmex leleji* Yamane & Dias, 2016** (Figure 21D–F)

*Euroasian Entomological Journal* 15(1): 189–190 [published in February 2016].

Holotype. Female, worker (THNHM-I-00949), Thailand, Nakhon Ratchasima Prov., Khao Yai N.P., Dry Evergreen Forest, 1.VI.2000, Sk. Yamane leg.

One paratype. Female, worker (THNHM-I-00950), E Thailand, Chanthaburi Prov., Khao Kid Chakud N.P., hill evergreen forest, 19.I.2006, Watana leg., WJT 06-E-1007.

Current status. Valid as *Pristomyrmex leleji* Yamane & Dias, 2016.

***Pristomyrmex schoedli* Zettel, 2006** (Figure 21G–I)

*Myrmecologische Nachrichten* 8: 64–65 [published in September 2006].

Four paratypes. Four females, workers (THNHM-I-00919 to THNHM-I-00922), Philippines, Leyte State University, Baybay, LSU, 50-100 m, Calbiga-a River, 20-21.III.2005, H. Zettel & C. Pangantihon leg. (422).

Current status. Valid as *Pristomyrmex schoedli* Zettel, 2006.



**Figure 21.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Platythyrea janyai*, holotype (Phengsi *et al.*, 2018); D–F, *Pristomyrmex leleji*, holotype (Yamane and Dias, 2016); G–I, *Pristomyrmex schoedli*, paratype (Zettel, 2006).

***Recurvidris chanapaithooni* Jaitrong & Wiwatwitaya, 2015** (Figure 23A–C)

*Halteres* 6: 106–108 [first published online: 13 October 2015].

Holotype. Female, worker (THNHM-I-00181), E Thailand, Chanthaburi Prov., Soi Dao Dist., Khao Soi Dao W.S., Honey baiting trap, 17.I.2008, W. Jaitrong leg., WJT170108-1.

Three paratypes. Three females, workers (THNHM-I-00182 to THNHM-I-00184), same data as holotype.

Current status. Valid as *Recurvidris chanapaithooni* Jaitrong & Wiwatwitaya, 2015.

***Recurvidris lekakuli* Jaitrong, Tokeeree & Pitaktunsakul, 2019** (Figure 23D–F)

*ZooKeys* 830: 55–58 [published on 14 March 2019].

Holotype. Female, worker (THNHM-I-01219), W Thailand, Kanchanaburi Prov., Thong Pha Phum Dist., Ban Sahakorn Nikhom, dry evergreen forest (DEF), 14.76255556°N, 98.80966667°E, 13.VII.2018, W. Jaitrong leg., WJT130718-07.

Seven paratypes. Three females, workers (THNHM-I-01220 to THNHM-I-01222),

same data as holotype; 1 female, worker (THNHM-I-01249), W Thailand, Kanchanaburi Prov., Thong Pha Phum Dist., dry evergreen forest (DEF), 26.VIII.2018, C. Sthiandee leg.; 2 females, workers (THNHM-I-02617), W Thailand, Kanchanaburi Prov., Thong Pha Phum Dist., Ban Sahakorn Nikhom, dry evergreen forest (DEF), 14.76255556°N, 98.80966667°E, 6.XI.2018, W. Jaitrong leg., WJT061118-12; 1 female, worker (THNHM-I-02618), W Thailand, Kanchanaburi Prov., Thong Pha Phum Dist., Ban Sahakorn Nikhom, dry evergreen forest (DEF), 14.76255556°N, 98.80966667°E, 13.VII.2018, W. Jaitrong leg., WJT1/5.

Current status. Valid as *Recurvidris lekakuli* Jaitrong, Tokeeree & Pitaktunsakul, 2019.

***Rhopalomastix glabricephala* Wang, Yong & Jaitrong, 2018** (Figure 24A–C)

*Zootaxa* 4532(3): 308–310 [published on 19 December 2018].

Seven paratypes. Seven females, workers (THNHM-I-02380), Singapore, Mandai Road, 1.4138°N, 103.798°E, nest behind bark of tembusu tree, 16.XI.2016, G.W. Yong & K.H. Pwa leg.





**Figure 22.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Polyrhachis (Hemioptica) boltoni*, paratype (Dorow and Kohuot, 1995); D–F, *Polyrhachis foreli*, paratype (Kohuot, 1989); G–I, *Polyrhachis pirata*, paratype (Sorger and Zettel, 2009); J–L, *Polyrhachis taylora*, paratype (Kohuot, 1988).

Current status. Valid as *Rhopalomastix glabricephala* Wang, Yong & Jaitrong, 2018.

***Rhopalomastix impithuksai* Wang & Jaitrong, in Wang *et al.*, 2021**

*European Journal of Taxonomy* 739: 123–128 [published on 17 March 2021].

Holotype. Female, worker (THNHM-I-21751), NE Thailand, Sakhon Nakhon Prov., Phu Phan Ratchaniwet Palace, nest in bark of mango tree, 17.VI.2018, W. Jaitrong leg., colony no. WJT170618-

5.

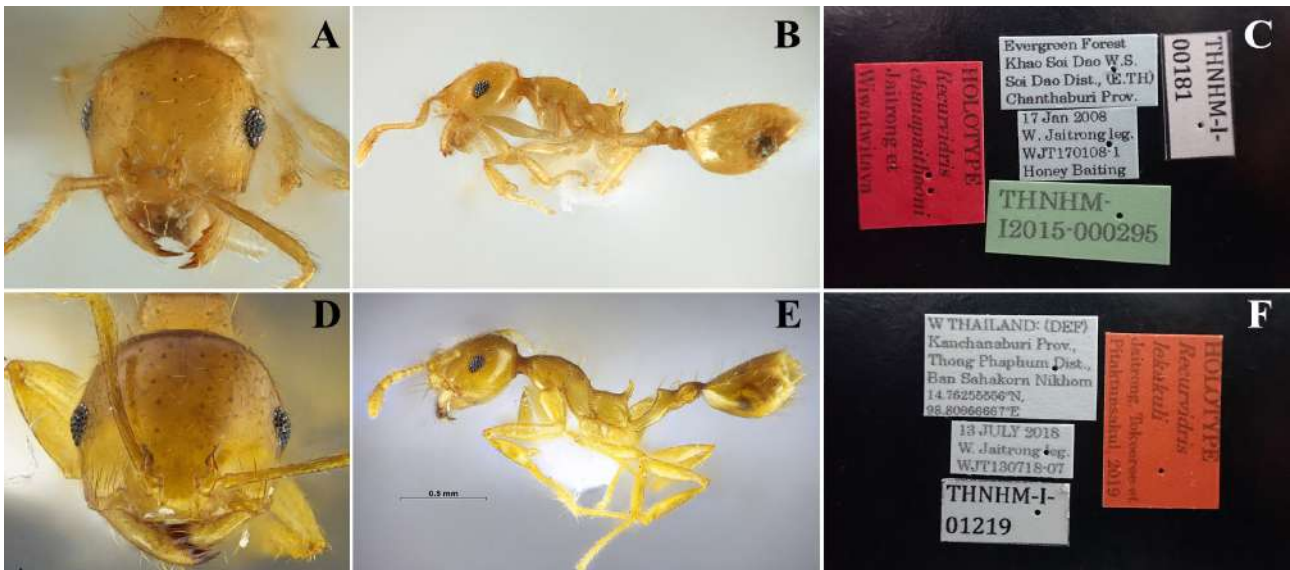
Seven paratypes. Females, workers (THNHM-I-21752 to THNHM-I-217528), same data as holotype.

Current status. Valid as *Rhopalomastix impithukai* Wang & Jaitrong, 2021.

***Rhopalomastix murphyi* Wang, Yong & Jaitrong, 2018** (Figure 24D–F)

*Zootaxa* 4532(3): 323–327 [published on 19 December 2018].

Thirteen paratypes. One female, queen



**Figure 23.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Recurvidris chanapaithooni*, holotype (Jaitrong and Wiwatwitaya, 2015); D–F, *Recurvidris lekakuli*, holotype (Jaitrong *et al.*, 2019).

(**THNHM-I-02381**), 3 males (**THNHM-I-02382**) and 9 females, workers (**THNHM-I-02383**), Singapore, Upper Thomson Nature Park, under bark of durian tree, 24.X.2016, G.W. Yong & S.X. Chui leg.

Current status. Valid as *Rhopalomastix murphyi* Wang, Yong & Jaitrong, 2018.

***Rhopalomastix parva* Wang & Jaitrong, in Wang *et al.*, 2021**

*European Journal of Taxonomy* 739: 145–149 [published on 17 March 2021].

Holotype. Female, worker (**THNHM-I-21759**), central Thailand, Nakhon Nayok Prov., Muaeng Dist., 14°26'14"N, 101°22'33"E, 927 m a.s.l., hill evergreen forest, nest in bark of large dipterocarp tree, 18.XI.2019, W. Jaitrong leg., colony no. WJW-THL 19-006.

Twenty-two paratypes. Twenty females, workers (**THNHM-I-21760** to **THNHM-I-21779**), same data as holotype; 2 females, queens (**THNHM-I-21780** and **THNHM-I-21781**), same data as holotype.

Current status. Valid as *Rhopalomastix para* Wang & Jaitrong, 2021.

***Rhopalomastix robusta* Wang & Jaitrong, in Wang *et al.*, 2021**

*European Journal of Taxonomy* 739: 150–155 [published on 17 March 2021].

Holotype. Female, worker (**THNHM-I-21782**), central Thailand, Nakhon Nayok Prov., Muaeng Dist., 14°26'14"N, 101°22'33"E, 927 m a.s.l., hill evergreen forest, nest in bark of *Toona ciliata* M. Roem.,

8.I.2018, W. Jaitrong leg., colony no. WJT080118-1. Nineteen paratypes. Nineteen females, workers (**THNHM-I-21783** to **THNHM-I-21801**), same data as holotype.

Current status. Valid as *Rhopalomastix robusta* Wang & Jaitrong, 2021.

***Rhopalomastix striata* Wang, Yong & Jaitrong, 2018**

(Figure 24G–I) *Zootaxa* 4532(3): 327–332 [published on 19 December 2018].

Eight paratypes. Two males (**THNHM-I-02384**, previous number was ZRC HYM 00000290) and 6 females, workers (**THNHM-I-02385**, previous number was ZRC HYM 00000290), Singapore, Mandai Road, 1.4143°N, 103.7987°E, nest in Dipterocarp bark, secondary forest, 18.XI.2016, G.W. Yong & K.H. Chui leg.

Current status. Valid as *Rhopalomastix striata* Wang, Yong & Jaitrong, 2018.

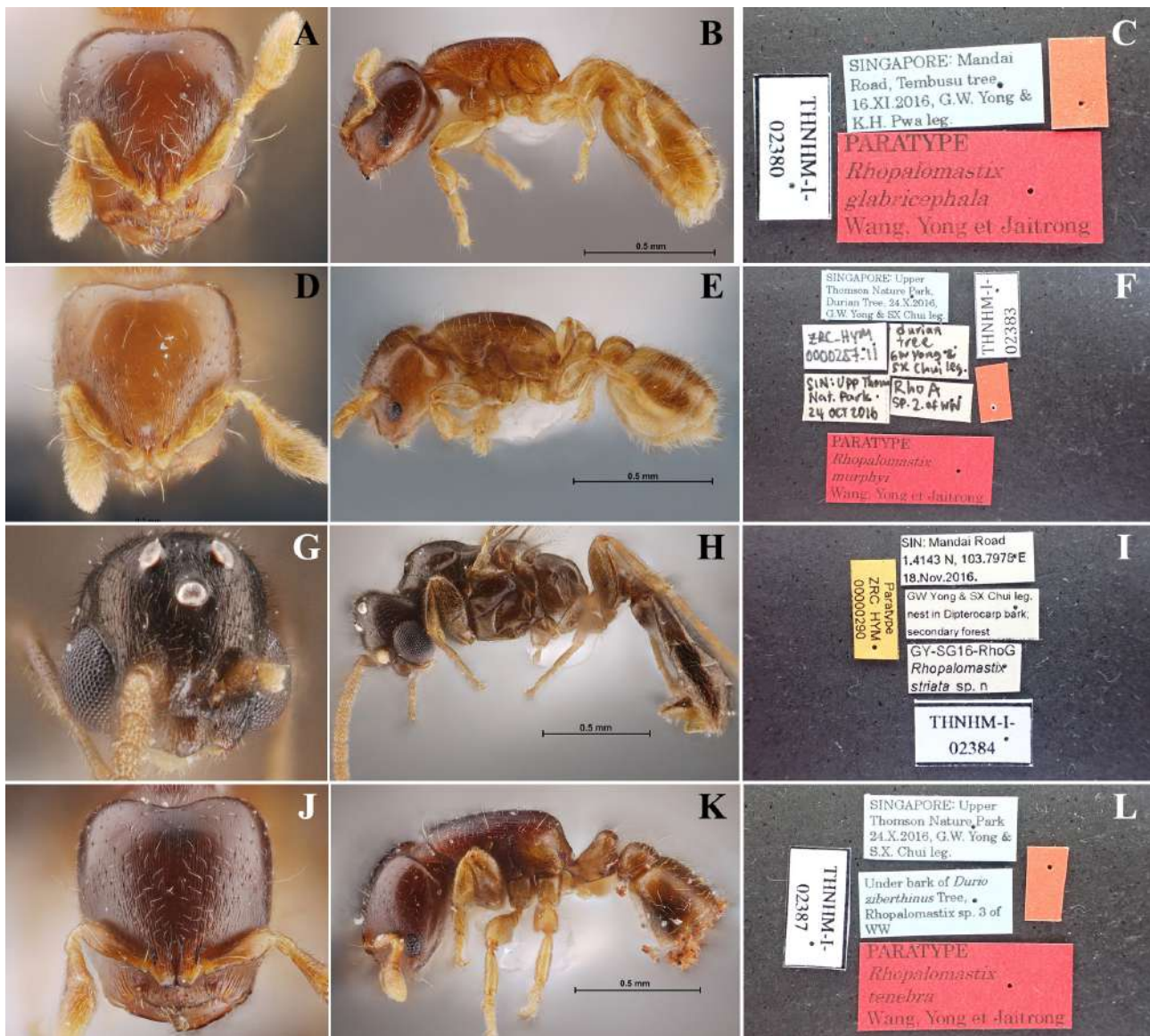
***Rhopalomastix tenebra* Wang, Yong & Jaitrong, 2018**

(Figure 24J–L) *Zootaxa* 4532(3): 332–336 [published on 19 December 2018].

Seven paratypes. One female, queen (**THNHM-I-02386**) and 6 females, workers (**THNHM-I-02387**), Singapore, Upper Thomson Nature Park, under bark of Durian tree, 24.X.2016, G.W. Yong & S.X. Chui leg.

Current status. Valid as *Rhopalomastix tenebra* Wang, Yong & Jaitrong, 2018.





**Figure 24.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Rhopalomastix glabriccephala*, paratype (Wang *et al.*, 2018); D–F, *Rhopalomastix murphyi*, paratype (Wang *et al.*, 2018); G–I, *Rhopalomastix striata*, male, paratype; J–L, *Rhopalomastix tenebra*, paratype (Wang *et al.*, 2018).

***Sphinctomyrmex siamensis* Jaitrong, in Jaitrong *et al.*, 2016** (Figure 25A–C)

*Far Eastern Entomologist* 305: 6–7 [published in January 2016].

Holotype. Female, worker (THNHM-I-00007), N Thailand, Chiang Mai Prov., Mae Tang Dist., secondary forest, 26.IV.2000, W. Jaitrong leg., WJT00-TH-01.

Five paratypes. Five females, workers (THNHM-I-00008 to THNHM-I-00012), same data as holotype.

Current status. Valid as *Zasphectus siamensis* (Jaitrong, 2016) (See Borowiec, 2016: 243).

***Syscia chaladthanyakiji* Jaitrong, Wiwatwitaya *et Yamane*, 2020** (Figure 25D–F)

*Far Eastern Entomologist* 411: 3–6 [published in July 2020].

Holotype. Female, worker (THNHM-I-05483), worker, W Thailand, Tak Prov., Umphang Dist., Thung Yai Wildlife Sanctuary, Kangae, Headquarters, 26.II.2016, W. Jaitrong leg., Colony no. TH16-WJT-0145.

Eighteen paratypes. Seventeen females, workers (THNHM-I-05484, THNHM-I-19537 to THNHM-I-19551, and THNHM-20300 to THNHM-I-20302, same data as holotype; 1 female, worker (THNHM-I-24007), same colony as holotype collected by Sk. Yamane, TH16-SKY-113.

Current status. Valid as *Syscia chaladthanyakiji* Jaitrong, Wiwatwitaya *et Yamane*, 2020.





**Figure 25.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Sphinctomyrmex siamensis*, holotype (Jaitrong *et al.*, 2016); D–F, *Syscia chaladthanyakiji*, holotype (Jaitrong *et al.*, 2020); G–I, *Syscia reticularis*, male, holotype (Jaitrong *et al.*, 2020); J–L, *Technomyrmex yamanai*, paratype (Bolton, 2007); M–O, *Tetramorium hasinae*, holotype (Yamane and Jaitrong, 2011).

***Syscia reticularis* Jaitrong, Wiwatwitaya et Yamane, 2020** (Figure 25G–I)  
*Far Eastern Entomologist* 411: 6–9 [published in July 2020].

Holotype. Female, worker (THNHM-I-02624), S Thailand: Nakhon Si Thammarat Prov., Noppitam Dist., Krung Ching Waterfall, 20.V.2003, W. Jaitrong leg., Colony no. WJT03-TH-332.  
 Ten paratypes. Ten females, workers (THNHM-I-02625,



**THNHM-I-19552** to **THNHM-I-19559** and **THNHM-I-20303**), same data as holotype.  
Current status. Valid as *Syscia reticularis* Jaitrong, Wiwatwitaya *et* Yamane, 2020.

***Technomyrmex yamanai* Bolton, 2007** (Figure 25J–L) *The American Entomological Institute* 35(1): 107–108 [published in 2007].

One paratype. Female, worker (**THNHM-I-00864**), N Thailand, near Chiang Mai, Doi Chiang Dao, 700–800 m alt., 3.IV.2005, Sk. Yamane leg.

Current status. Valid as *Technomyrmex yamanai* Bolton, 2007.

***Tetramorium hasinae* Yamane & Jaitrong, 2011** (Figure 25M–O)

*Insecta Matsumurana New Series* 67: 65–68 [published in October 2011].

Holotype. Female, worker (**THNHM-I-00842**), S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., Papra Station, 14.III.2007, Sk. Yamane leg., TH07-SKY-44.

One paratype. Female, worker (**THNHM-I-00843**), same data as holotype.

Current status. Valid as *Tetramorium hasinae* Yamane & Jaitrong, 2011.

***Tetramorium polymorphum* Yamane & Jaitrong, 2011** *Insecta Matsumurana New Series* 67: 68–71 [published in October 2011].

Twenty paratypes. Eighteen females, workers (**THNHM-I-00845** to **THNHM-I-00847** and between **THNHM-I-00849** to **THNHM-I-00863**), Laos, Vientiane Prov., Pak Ngum Dist., Phang Dang Village, dry evergreen forest, 12.VI.2010, W. Jaitrong leg., WJT10-LAO114; 2 females, workers (**THNHM-I-00844** and **THNHM-I-00848**), same locality and date, Sk. Yamane leg., LA10-SKY-100.

Current status. Valid as *Tetramorium polymorphum* Yamane & Jaitrong, 2011.

***Tetraponera connectens* Ward, 2001** (Figure 26A–C) *Invertebrate Taxonomy* 15: 611 [published on 5 November 2001].

One paratype. Female, worker (**THNHM-I-11251**), Thailand, Phang-nga Prov., Khao Lak N.P., Thone Chang Fa Fall 300 m, 8°40'N, 98°18'E, 15/15.I.1998, A. Schulz & K. Vock leg., 16 canopy forest, dipterocarp forest, semi-primary.

Current status. Valid as *Tetraponera connetens* Ward, 2001.

***Tetraponera inversinodis* Ward, 2001** (Figure 26D–F) *Invertebrate Taxonomy* 15: 629–630 [published on 5

November 2001].

One paratype. Female, worker (**THNHM-I-11252**), Sabah, Kota Kinabalu, 5°59'N, 116°04'E, 14.X.1978, BBLowery, ex mangrove twig, ANIC Ants 53.93.

Current status. Valid as *Tetraponera inversinodis* Ward, 2001.

***Tetraponera extenuata* Ward, 2001** (Figure 26G–I) *Invertebrate Taxonomy* 15: 164–165 [published on 5 November 2001].

One paratype. Female, worker (**THNHM-I-11253**), Singapore, Bukit Timah 100m, 1°21'N, 103°47'E, 20.XI.1988, P.S. Ward#9570, ex dead twig.

Current status. Valid as *Tetraponera extenuata* Ward, 2001.

***Tetraponera notabilis* Ward, 2001** (Figure 26J–L) *Invertebrate Taxonomy* 15: 639–640 [published on 5 November 2001].

One paratype. Female, worker (**THNHM-I-11254**), NE Thailand, Nakhon Ratchasima Prov., Wang Nam Khiao Dist., Sakaerat ERS, lowland, 10.VII.1999, Sk. Yamane leg.

Current status. Valid as *Tetraponera notabilis* Ward, 2001.

***Tetraponera rotula* Ward, 2001** (Figure 26M–O) *Invertebrate Taxonomy* 15: 644–645 [published on 5 November 2001].

One paratype. Female, worker (**THNHM-I-11255**), Australia, Queensland (QLD), 4km ENE, Cairns 5m, 16°55'S, 145°48'E, 17.I.1989, P.S. Ward#10002, dead twig.

Current status. Valid as *Tetraponera rotula* Ward, 2001.

***Tetraponera tucurua* Ward, 2001**

*Invertebrate Taxonomy* 15: 645–647 [published on 5 November 2001].

One paratype. Female, worker (**THNHM-I-11256**), Australia, Queensland (QLD), 11km SSE Miriam Vale, 24°26'S, 151°36'E, 120m, 5.I.1989, P.S. Ward#9884, ex live team.

Current status. Valid as *Tetraponera tucurua* Ward, 2001.

## ORDER LEPIDOPTERA

### Family HesperIIDae

***Polytremsis kittii* Saito & Inayoshi, 2016** (Figure 27A–B)

*Butterflies* 71: 38–40 [published in 2016].

Two paratypes. One male (**THNHM-I-22730**), Thailand, Nan Prov., Doi PhuKa, 26.III.1993, K. Phongpiyarnit leg.; 1 male (**THNHM-I-22731**), Thailand, Nan Prov., Doi PhuKa, 28.III.1993, K. Phongpiyarnit leg.



**Figure 26.** Type specimens and labels of type specimens of Hymenoptera (Formicidae) deposited in THNHMC. A–C, *Tetraponera connetens*, paratype (Ward, 2001); D–F, *Tetraponera inversinodis*, paratype (Ward, 2001); G–I, *Tetraponera extenuata*, paratype (Ward, 2001); J–L, *Tetraponera notabilis*, paratype (Ward, 2001); M–O, *Tetraponera rotula*, paratype (Ward, 2001).





**Figure 27.** Type specimens and labels of type specimens of Lepidoptera deposited in THNHMC. A–B, *Polytremis kittii* (Hesperiidae), paratype (Saito and Inayoshi, 2016); C–D, *Celastrina hersilia sudjaii* (Lycaenidae), paratype (Saito and Inayoshi, 2018).

Current status. Valid as *Polytremis kittii* Saito & Inayoshi, 2016.

#### Family Lycaenidae

***Celastrina hersilia sudjaii* Saito & Inayoshi, 2018**  
(Figure 27C–D)

*Butterflies* 79: 34 [published in 2018].

Four paratypes. One male (THNHM-I-22726), Thailand, Chiang Mai Prov., Fang, Doi Pha Hom Pok, 9.III.1991, Y. Inayoshi leg.; 1 male (THNHM-I-22727), Thailand, Chiang Mai Prov., Fang, Doi Pha Hom Pok, 25.II.2018, A. Giudici leg.; 1 male (THNHM-I-22728), Thailand, Chiang Mai Prov., Doi Pumeun, 26.II.2013, P. Sukkit leg.; 1 male (THNHM-I-22729), Thailand, Chiang Mai Prov., Doi Pumeun, 25.II.2013, P. Sukkit leg.

Current status. Valid as *Celastrina hersilia sudjaii* Saito & Inayoshi, 2018.

#### Family Nymphalidae

***Athyma cama thailandica* Saito & Inayoshi, 2018**  
(Figure 28A–B)

*Butterflies* 79: 31 [published in 2018].

Five paratypes. One male (THNHM-I-22718), Thailand, Nakhon Nayok Prov., Khao Yai N.P., 1.X.2016, K.

Yano leg.; 1 male (THNHM-I-22717), Thailand, Loei Prov., Na Haeo, Phu Suan Sai, 28.IX.2016, Y. Inayoshi leg.; 1 male (THNHM-I-22716), Thailand, Nakhon Nayok Prov., Khao Yai, 10.IX.2016, K. Yano leg.; 1 male (THNHM-I-22715), Thailand, Nakhon Nayok Prov., Khao Yai, 16.IX.2016, K. Yano leg.; 1 male (THNHM-I-22716), Thailand, Phetchabun Prov., Nam Nao, 5.IV.2012, P. Skkit leg.

Current status. Valid as *Athyma cama thailandica* Saito & Inayoshi, 2018.

***Mycalesis inayoshii* Aoki & Yamaguchi, 1995** (Figure 28C–D)

*Transactions of the Lepidopterological Society of Japan* 46(4): 247–250 [published in December 1995].

Four Paratypes. One male (THNHM-I-22710), Thailand, Nan Prov., Doi Phu Kha, 31.III.1992, unknown collector; 1 male (THNHM-I-22711), same locality, 08.IV.1992; 1 male (THNHM-I-22712), same locality, 16.IV.2002, C. Pensri leg.; 1 male (THNHM-I-22713), same locality, 13.IV.2002, C. Pensri leg.

Current status. Valid as *Mycalesis inayoshii* Aoki & Yamaguchi, 1995.

***Neptis miah thaithummakulorum* Saito & Inayoshi,**



**Figure 28.** Type specimens and labels of type specimens of Lepidoptera (Nymphalidae) deposited in THNHMC. A–B, *Athyma cama thailandica*, paratype (Saito and Inayoshi, 2018); C–D, *Mycalesis inayoshii*, paratype (Aoki and Yamaguchi, 1995); E–F, *Neptis miah thaithummakulorum*, paratype (Saito and Inayoshi, 2014); G–H, *Neptis zaida inayoshii*, paratype (Saito, 2014).

**2014** (Figure 28E–F)  
*Butterflies (Teinopalpus)* 65: 10–11 [published in 2014].  
 Five paratypes. One male (THNHM-I-22721), N  
 Thailand, Nan Prov., Doi Phu Kha N.P., 11.III.1991, Y.

Inayoshi leg.; 1 male (THNHM-I-22722), Thailand,  
 Nan Prov., Doi Phu Kha, 18.III.1992, P. Sukkit leg.;  
 1 male (THNHM-I-22723), Thailand, Nan Prov.,  
 Doi Phu Kha, 13.III.1991, Y. Inayoshi leg.; 1 male





**Figure 29.** Type specimens and labels of type specimens of Lepidoptera (Papilionidae) deposited in THNHMC. A–B, *Graphium ramaceus inayoshii*, paratype (Cotton and Saito, 2016); C–D, *Losaria neptunus manasukkiti*, paratype (Cotton *et al.*, 2005).

(**THNHM-I-22724**), Thailand, Nan Prov., Doi Phu Kha, 17.III.1993; 1 male (**THNHM-I-22725**), Thailand, Nan Prov., Doi Phu Kha, 6.III.1993, P. Sukkit leg.

Current status. Valid as *Neptis miah thaithummakulorum* Saito & Inayoshi, 2014.

***Neptis zaida inayoshii* Saito, 2014** (Figure 28G–H) *Butterflies (Teinopalpus)* 65: 9–10 [published in 2014]. Two paratypes. One male (**THNHM-I-22719**), N Thailand, Chiang Mai Prov., Doi Inthanon, 24.III.1985, A. Motonu leg.; 1 male (**THNHM-I-22720**), Thailand, Chiang Mai Prov., Fang Dist., Doi Meun, V.1991, A. Motonu leg.

Current status. Valid as *Neptis zaida inayoshii* Saito, 2014.

#### Family Papilionidae

***Graphium ramaceus inayoshii* Cotton & Saito, 2016** (Figure 29A–B)

*Butterflies* 73: 25–28 [published in December 2016].

Two paratypes. Two males (**THNHM-I-22708** and **THNHM-I-22709**), S Thailand, Ranong Prov., Khlong Nakha, 12.IV.1983, Y. Inayoshi leg.

Current status. Valid as *Graphium ramaceus inayoshii*

Cotton & Saito, 2016.

***Losaria neptunus manasukkiti* Cotton, Racheli & Sukhumalind, 2005** (Figure 29C–D)

*Fragmenta Entomologica, Roma* 37(1): 130–136 [published in 2005].

Four paratypes. One male (**THNHM-I-22704**), S Thailand, Ranong Prov., Muang [Mueang] Chone, 6.IV.1995, S. Ruangrit leg.; 1 male (**THNHM-I-22705**), S Thailand, Ranong Prov., Muang [Mueang] Chone, 5.IV.1995, S. Ruangrit leg.; 1 male (**THNHM-I-22706**), S Thailand, Ranong Prov., Kampuan, 28.III.1988, Y. Inayoshi leg.; 1 male (**THNHM-I-22707**), S Thailand, Ranong Prov., Kampuan, 20.III.1991, Y. Inayoshi leg.

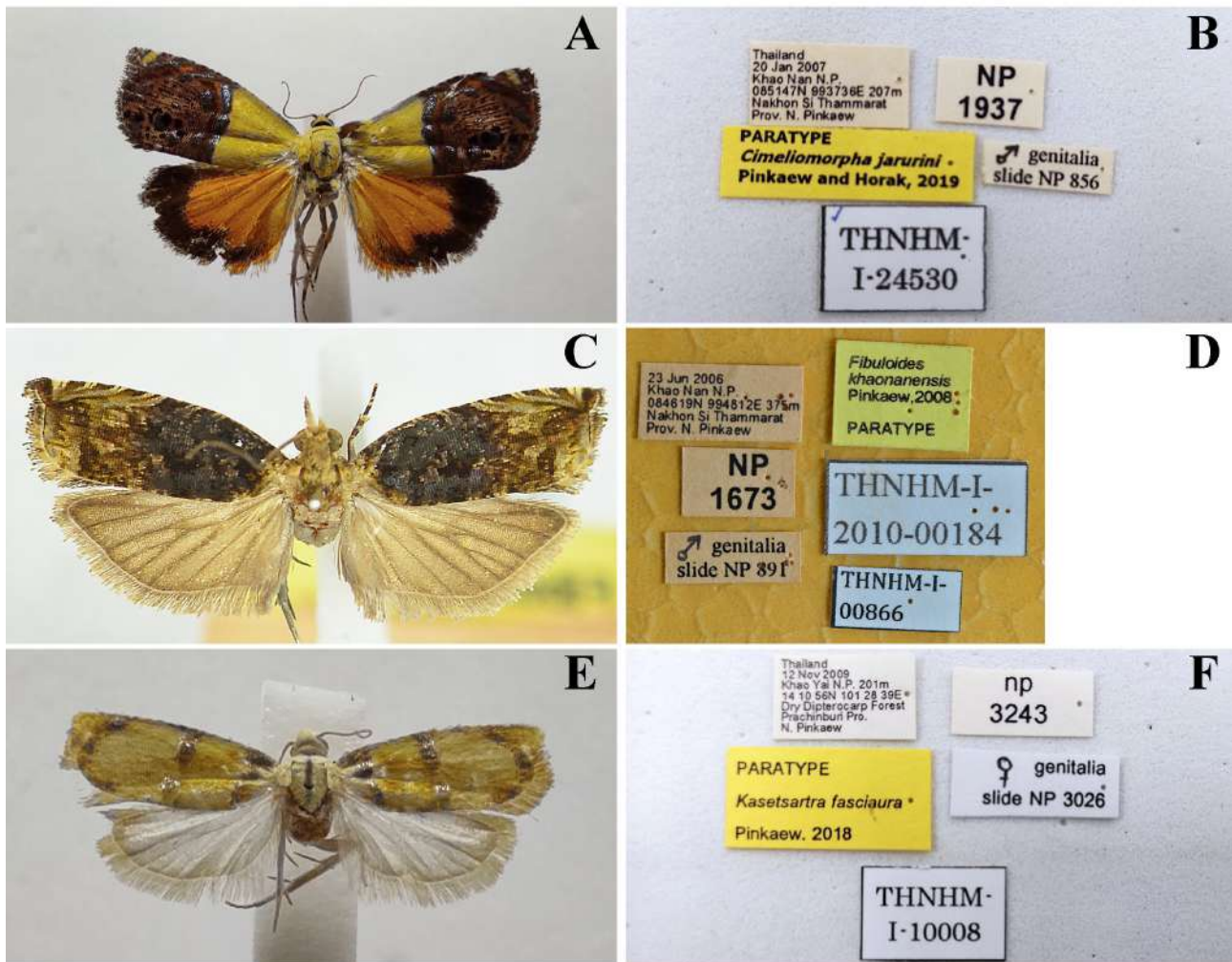
Current status. Valid as *Losaria neptunus manasukkiti* Cotton, Racheli & Sukhumalind, 2005.

#### Family Tortricidae

***Cimeliomorpha jarujini* Pinkaew & Horak, 2019** (Figure 30A–B)

*Zootaxa* 4615(3): 457–480 [published on 14 June 2019].

Two paratypes. One male (**THNHM-I-24529**), S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., 8°5147N 99°3736E, 207 m., 24.VII.2006,



**Figure 30.** Type specimens and labels of type specimens of Lepidoptera (Tortricidae) deposited in THNHMC. A–B, *Cimeliomorpha jarujini*, paratype (Pinkaew and Horak, 2019); C–D, *Fibuloides khaonanensis*, paratype (Pinkaew, 2008); E–F, *Kasetsartra fasciaura*, paratype (Pinkaew, 2018).

specimen no. np1799 (genitalia slide NP816), N. Pinkaew leg.; 1 female (**THNHM-I-24530**) S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., 8°55'25"N 99°39'49"E, 131 m., 20.I.2007, specimen no. np1937 (genitalia slide NP856), N. Pinkaew leg.

Current status. Valid as *Cimeliomorpha jarujini* Pinkaew & Horak, 2019

***Fibuloides khaonanensis* Pinkaew, 2008** (Figure 30C–D)

*Zootaxa* 1688: 62–65 [published on 23 January 2008]. One paratype. Male (**THNHM-I-00866**), S Thailand, Nakhon Si Thammarat Prov., Khao Nan N.P., 08°46'19"N, 99°48'12"E, 375 m. alt, 23.VI.2006, N. Pinkaew leg., NP1673.

Current status. Valid as *Fibuloides khaonanensis* Pinkaew, 2008.

***Kasetsartra fasciaura* Pinkaew, 2018** (Figure 30E–F)

*Zootaxa* 4532(1): 102–103 [published on 17 December 2018].

Two paratypes. One female (**THNHM-I-10008**), Thailand, Prachinburi Prov., Khao Yai N.P., 14°10'56"N, 101°28'39"E, 201m, 12.XI.2009, specimen no. np3243 (genitalia slide NP3026); 1 male (**THNHM-I-10009**), Thailand, Prachinburi Prov., Khao Yai N.P., 14°10'56"N, 101°28'39"E, 201m, 23.I.2010, specimen no. np3387 (genitalia slide NP3031).

Current status. Valid as *Kasetsartra fasciaura* Pinkaew, 2018.

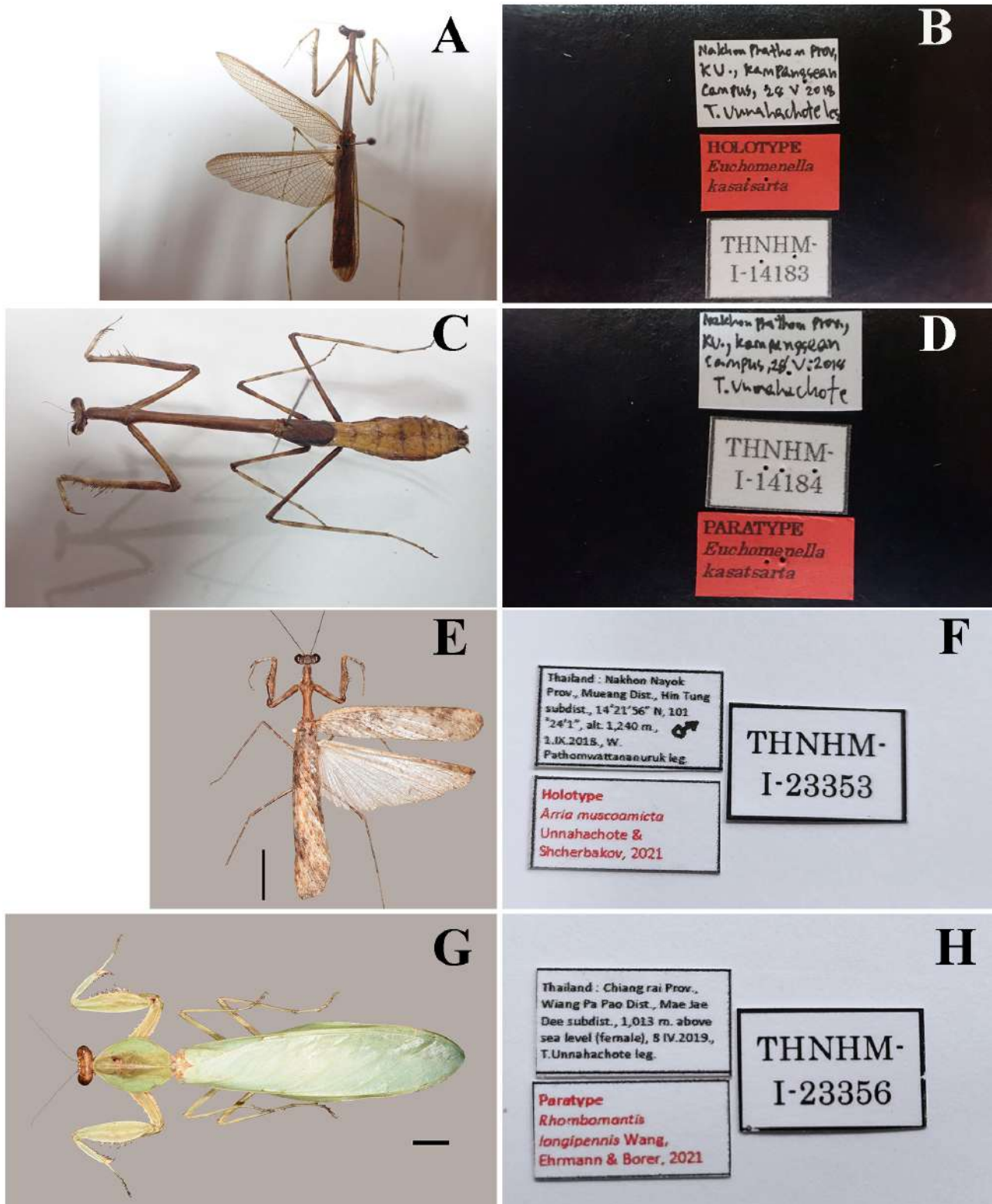
## ORDER MANTODEA

### Family Deropltyidae

***Euchomenella kasetsart* Unnahachote, Samung & Jaitrong, 2020** (Figure 31A–D)

*Far Eastern Entomologist* 419: 20–26 [published in November 2020].





**Figure 31.** Type specimens and labels of type specimens of Mantodea deposited in THNHMC. A–B, *Euchomenella kasetsart* (Deroplatyidae), male, holotype (Unnahachote *et al.*, 2020); C–D, *Euchomenella kasetsart* (Deroplatyidae), female, paratype (Unnahachote *et al.*, 2020); E–F, *Arria muscoamicta* (Haandiidae), holotype (Unnahachote *et al.*, 2021); G–H, *Rhombomantis longipennis* (Mantidae), paratype (Wang *et al.*, 2021).

Holotype. Male (THNHM-I-14183), pinned specimen, Thailand, Nakhon Pathom Prov., Kasetsart University Kamphaeng Saen Campus, 14°02'N, 99°58'E, 28.V.2018, T. Unnahachote leg.

One paratype. Female (THNHMI-14184), same data as holotype.  
Current status. Valid as *Euchomenella kasetsart* Unnahachote, Samung & Jaitrong, 2020.

## Family Haaniidae

### *Arria muscoamicta* Unnahachote & Shcherbakov, in Unnahachote *et al.*, 2021 (Figure 31E–F)

*Zookeys* 1028: 49–60 [published on 5 April 2021].

Holotype. Male (THNHM-I-23353), pinned specimen, central Thailand, Nakhon Nayok Prov., Mueang Dist., Hin Tung Subdist., 14°21'56"N, 101°24'1"E, 1,230 m alt., 01.IX.2018, W. Pathomwattananuruk leg.

Current status. Valid as *Arria muscoamicta* Unnahachote & Shcherbakov, 2021.

## Family Mantidae

### *Rhombomantis longipennis* Wang, Ehrmam & Borer, 2021 (Figure 31G–H)

*Faunitaxys* 9(8): 2–4.

Three paratypes. One male (THNHMI-I-23354), N Thailand, Nan Prov., Bo Klua dist., Bo Klua Tai Subdist., 1,023 m a.s.l., 16–18.X.2020 [in the publication cited as 31.III.2020], T. Unnahachote leg.; 1 female (THNHMI-I-23355), same locality and collector, 31.III.2020; 1 female (THNHMI-I-23356), N Thailand, Chiang Rai Prov., Wiang Pa Pao Dist., Mae Jae SubDist., 1,013 m a.s.l., 8.IV.2019, T. Unnahachote leg.

Current status. Valid as *Rhombomantis longipennis* Wang, Ehrmam & Borer, 2021.

## ORDER MEGALOPTERA

### Family Corydalidae

### *Nevromus jeenthongi* Piraonapicha, Jaitrong, Liu & Sangpradub, 2021 (Figure 36C–D)

*Tropical Natural History* 21(1): 107–114 [published on 18 March 2021].

Holotype. One male (THNHM-I-21545), S Thailand, Nakhon Si Thammarat Prov., Sichon Dist., Huai Kiew Waterfall, 8°55'09.2"N, 99°40'34.8"E, 1.XI.2008, T. Jeenthong leg.

Twenty-six paratypes. Two males (THNHM-I-21520 and THNHM-I-21521), 1 female (THNHM-I-21522), S Thailand, Nakhon Si Thammarat Prov., Sichon Dist., 47–360 m.s.l., 21.XI.2006. Jin [Jarujin Nabhitabhata] *et al.* leg.; 1 male (THNHM-I-21523), 3 females (THNHM-I-21524 to THNHM-I-21526), same locality and collector, 47 m a.s.l., 22.XI.2006; 4 females (THNHM-I-21527 to THNHM-I-21530), same locality and collector, 23.XI.2006; 1 female (THNHM-I-21531), same locality and collector, 1.XI.2006; 2 males (THNHM-I-21532 and THNHM-I-21533), same locality and collector, 1.XI.2008; 1 female (THNHM-I-21544),

same locality, date and collector; 4 females (THNHM-I-21534 to THNHM-I-21537), same locality, 10.I.2008, W. Jaitrong leg; 2 females (THNHM-I-21538 and THNHM-I-21539), S Thailand, Nakhon Si Thammarat Prov., 240 m a.s.l., 25.XI.2006, Jin [Jarujin Nabhitabhata] *et al.* leg.; 2 females (THNHM-I-21541 and THNHM-I-21542), same locality and collector, 22.XI.2008; 2 females (THNHM-I-21543 and THNHM-I-21544), S Thailand, Nakhon Si Thammarat Prov., Sichon Dist. 8°54'32.6"N, 99°43'55.3"E, 2.XI.2008, W. Jaitrong leg.; 1 female (THNHM-I-21519), S Thailand, Nakhon Si Thammarat Prov., 8°79'62.2"N, 99°55'31.1"E, 1,363 m a.s.l., 16.IV.2007, W. Jaitrong and T. Jeenthong leg.

Current status. Valid as *Nevromus jeenthongi* Piraonapicha, Jaitrong, Liu & Sangpradub, 2021.

## Family Sialidae

### *Indosialis siamensis* Piraonapicha, Sangpradub, Jaitrong & Liu, 2020 (Figure 36A–B)

*Zootaxa* 4786(2): 246–252 [published on 2 June 2020].

Holotype. Male (THNHM-I-16801), pinned specimen, NE Thailand, Loei Prov., Wang Saphung Dist., Huai Lek Stream, 17°21'9.76"N, 101°39'23.78"E, 336 m a.s.l., 30.III.2020, K. Piraonapicha leg.

Five paratypes. Three males (THNHM-I-16802 to THNHM-I-16804); 1 female (THNHMI-16805), same locality and collector as holotype, 13.V.2019; 1 female (THNHM-I-16806), same locality and collector as holotype, 28.V.2019.

Current status. Valid as *Indosialis siamensis* Piraonapicha, Sangpradub, Jaitrong & Liu, 2020.

## ORDER ORTHOPTERA

### Family Acrididae

### *Anasedulia maejophræ* Dawwrueng, Storozhenko & Asanok, 2015 (Figure 32A–D)

*Far Eastern Entomologist* 299: 5–6 [published in September 2015].

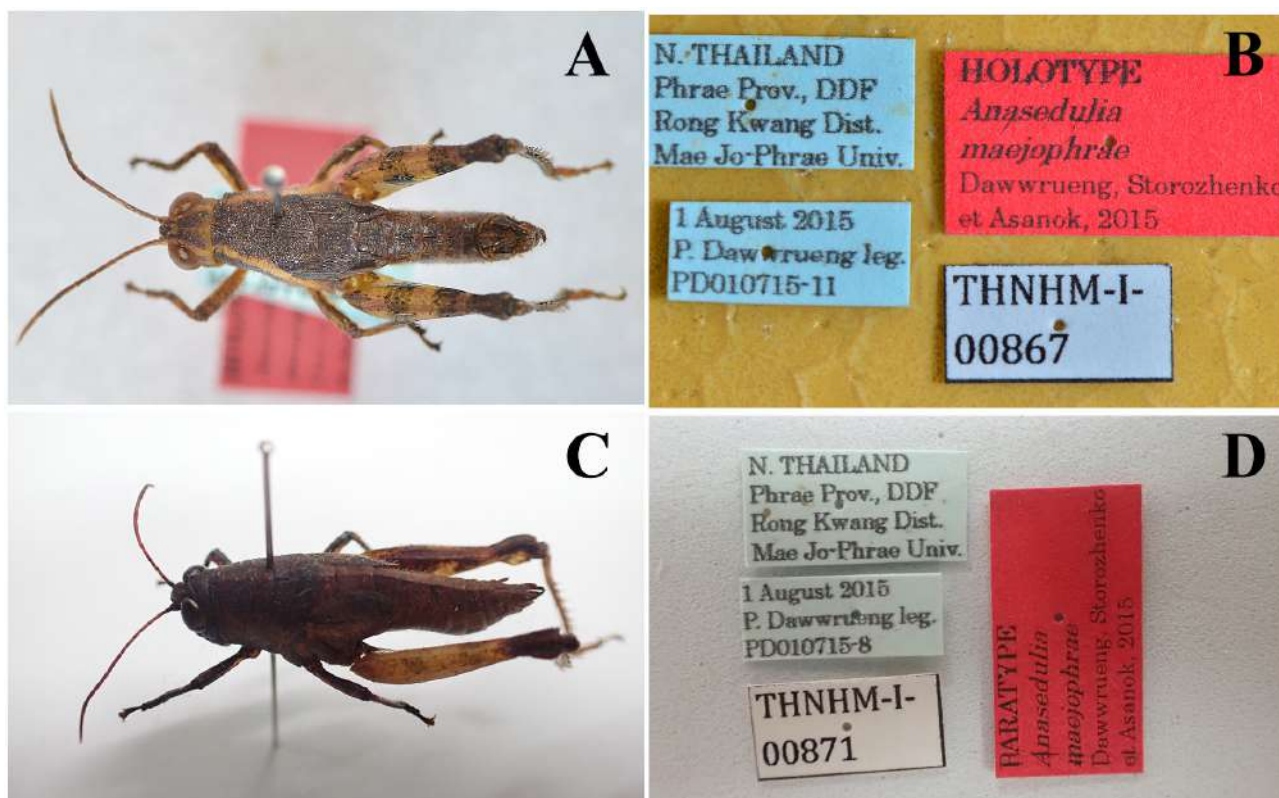
Holotype. Male (THNHM-I-00867), N Thailand, Phrae Prov., DDF (dry deciduous forest), Rong Kwang Dist., Mae Jo-Phrae Univ., 1.VIII.2015, P. Dawwrueng leg.

Six paratypes. Three males (THNHM-I-00868 to THNHM-I-00870) and 3 females (THNHM-I-00871 to THNHM-I-00873), same data as holotype.

Current status. Valid as *Anasedulia maejophræ* Dawwrueng, Storozhenko & Asanok, 2015.

## Family Stenopelmatidae





**Figure 32.** Type specimens and labels of type specimens of Orthoptera (Acrididae) deposited in THNHMC. A–B, *Anasedulia maejophræ*, male, holotype (Dawwrueng *et al.*, 2015); C–D, *Anasedulia maejophræ*, female, paratype (Dawwrueng *et al.*, 2015).

***Capnogryllacris sakaerat* Dawwrueng, Gorochov & Artchawakom, 2015b** (Figure 33A–B)

*Zootaxa* 4021(4): 569–570 [published on 29 September 2015].

Holotype. Male (THNHM-I-00877), NE Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station, 12–15.IX.2014, P. Dawwrueng *et al.* leg.

One paratype. Male (THNHM-I-00878), same data as holotype.

Current status. Valid as *Capnogryllacris sakaerat* Dawwrueng, Gorochov & Artchawakom, 2015.

***Diaphanogryllacris panitvongi* Gorochov, Dawwrueng & Artchawakom, 2015a** (Figure 33C–D)

*Zoosystematica Rossica* 24(2): 224–226 [published on 25 December 2015].

Holotype. Male (THNHM-I-00956), Thailand, Nakhon Ratchasima Prov., Sakaerat ERS, from branch of tree in forest, 400–500 m, 23–26.V.2014, P. Dawwrueng, T. Dowwiangkan & K. Jiaranaisakul leg.

One paratype. Female (THNHM-I-00954), same data as holotype.

Current status. Valid as *Diaphanogryllacris panitvongi* Gorochov, Dawwrueng & Artchawakom, 2015.

***Diaphanogryllacris laeta makbuni* Gorochov & Dawwrueng, 2015**

*Zoosystematica Rossica* 24(2): 228–230 [published on 25 December 2015].

Holotype. Male (THNHM-I-00953), Thailand, Kanchanaburi Prov., Srisawat [Si Sawat] Dist., Ban Khao Jod, 200–300 m, at light beside main road in Town, 1.V.2015, K. Makbun leg.

Current status. Valid as *Diaphanogryllacris laeta makbuni* Gorochov & Dawwrueng, 2015 (in Gorochov *et al.*, 2015a).

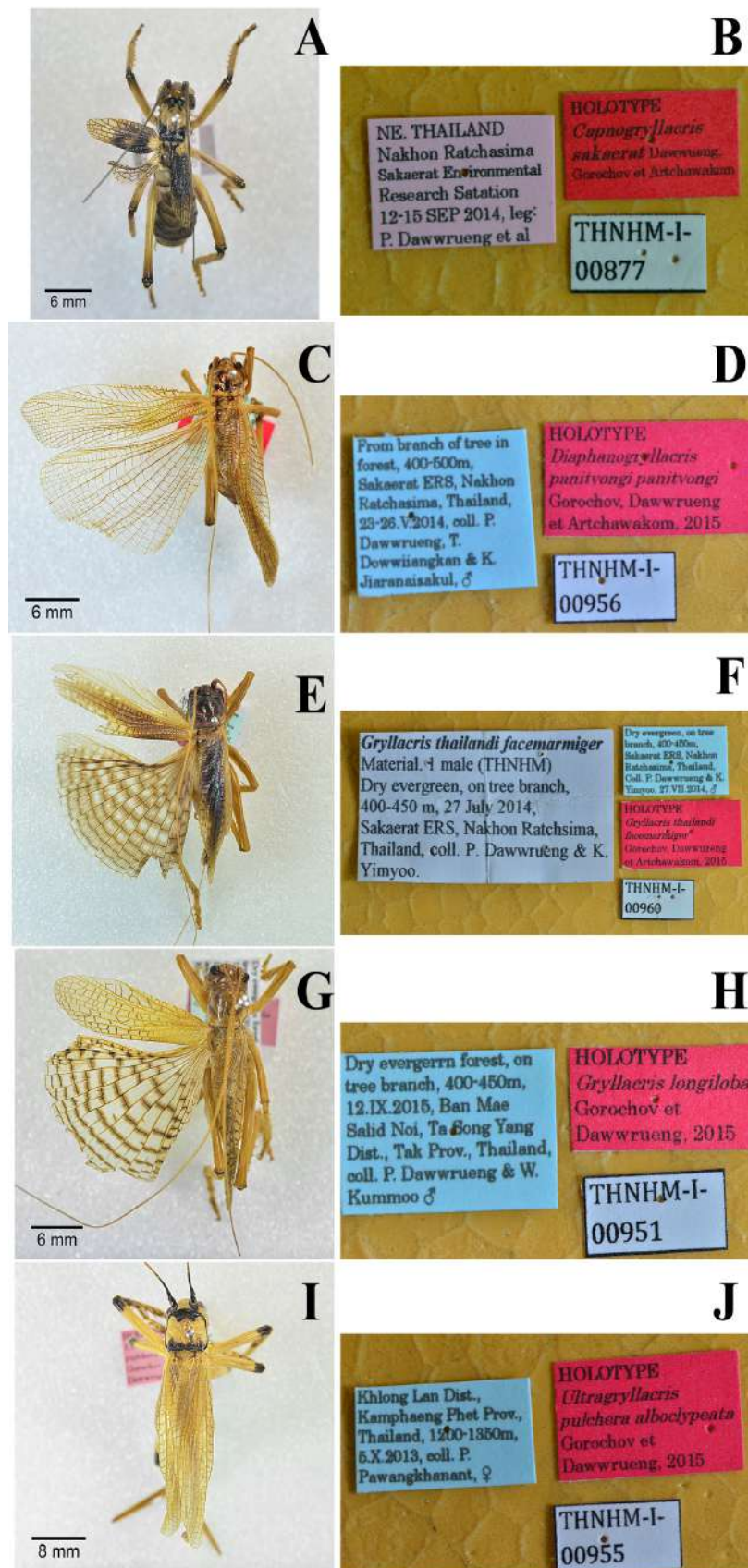
***Gryllacris longiloba* Gorochov & Dawwrueng, 2015** (Figure 33G–H)

*Zoosystematica Rossica* 24(2): 232–234 [published on 25 December 2015].

Holotype. Male (THNHM-I-00951), Thailand, Tak Prov., Ta Song Yang [Tha Song Yang] Dist., Ban Mae Salid Noi, dry evergreen forest, on tree branch, 400–450 m, 12.IX.2015, P. Dawwrueng & W. Kummoo leg.

One paratype. Female (THNHM-I-00952), same data as holotype.

Current status. Valid as *Gryllacris longiloba* Gorochov



**Figure 33.** Type specimens and labels of type specimens of Orthoptera (Stenopelmatidae) deposited in THNHMC. A–B, *Capnogryllacris sakaerat*, holotype (Dawwrueng et al., 2015); C–D, *Diaphanogryllacris panitvongi*, holotype (Gorochov et al., 2015a); E–F, *Gryllacris thailandi facemarmiger*, holotype (Gorochov et al., 2015a); G–H, *Gryllacris longiloba*, holotype (Gorochov et al., 2015a); I–J, *Ultragryllacris pulchra alboclypeata*, holotype (Gorochov et al., 2015a).



& Dawwrueng (in Gorochov *et al.*, 2015a).

***Gryllacris thailandi facemarmiger* Gorochov, Dawwrueng & Artchawakom, 2015a** (Figure 33E–F) *Zoosystematica Rossica* 24(2): 230–232 [published on 25 December 2015].

Holotype. Male (**THNHM-I-00960**) Thailand, Nakhon Ratchasima Prov, Sakaerat ERS, dry evergreen forest, on tree branch 400–450 m, 27.VII.2014, P. Dawwrueng & K. Yimyoo leg.

One paratype. Female (**THNHM-I-00961**), same data as holotype.

Current status. Valid as *Gryllacris thailandi facemarmiger* Gorochov, Dawwrueng & Artchawakom, 2015.

***Ultragryllacris pulchra alboclypeata* Gorochov & Dawwrueng, 2015** (Figure 33I–J)

*Zootaxa* 4021(4): 567 [published on 29 September 2015].

Holotype. Female (**THNHM-I-00955**) Thailand, Kamphaeng Phet Prov., Khlong Lan Dist., 1200–1350 m, 5.X.2013, P. Dawwrueng leg.

Current status. Valid as *Ultragryllacris pulchra alboclypeata* Gorochov & Dawwrueng, 2015 (in Gorochov *et al.*, 2015b).

#### Family Gryllidae

***Velarifictorus (Pseudocoiblemmus) bilobus* Tan, Dawwrueng & Artchawakom, 2015c** (Figure 34A–B)

*Zootaxa* 3981(1): 139–142 [published on June 2015].

Three paratypes. Three males (**THNHM-I-00874** to **THNHM-I-00876**), Thailand, Nakhon Ratchasima Prov., Sakaerat ERS, Trail to Lower Dam, DEF, 400–450 m alt., 25.VII.2014, P. Dawwrueng & K. Yimyoo leg.

Current status. Valid as *Velarifictorus bilobus* Tan, Dawwrueng & Artchawakom, 2015.

#### Family Mogoplistidae

***Ornebius dowwiangkanae* Tan, Dawwrueng & Artchawakom, 2015a** (Figure 34C–D)

*Zootaxa* 4032(4): 386–391 [published on 19 October 2015].

Two paratypes. Two males (**THNHM-I-00970** to **THNHM-I-00971**), Thailand, Nakhon Ratchasima Prov., Sakaerat ERS, main road, dry evergreen, on treelet, 400–450 m, 18.I.2014, P. Dawwrueng, Y. Tubsee & O. Srinawakorn leg.

Current status. Valid as *Ornebius dowwiangkanae* Tan, Dawwrueng & Artchawakom, 2015.

***Terraplistes ingrischi* Tan, Dawwrueng & Artchawakom, 2015a** (Figure 34E–F)

*Zootaxa* 4032(4): 391–393 [published on 19 October 2015].

Two paratypes. One male (**THNHM-I00968**) and 1 female (**THNHM-I-00969**), Thailand, Nakhon Ratchasima Prov., Sakaerat ERS, beside main road, dry evergreen forest, under leaf litter, 400–450 m, 29.III.2015, P. Dawwrueng, N. Makbun, P. Pawangkhanant & K. Yimyoo leg.

Current status. Valid as *Terraplistes ingrischi* Tan, Dawwrueng & Artchawakom, 2015.

#### Family Rhaphidophoridae

***Mimadiestra sirindhornae* Dawwrueng, Storozhenko & Artchawakom, 2016** (Figure 34G–H)

*The Thailand Natural History Museum Journal* 10(2): 62–66 [published on 31 December 2016].

Holotype. Male (**THNHM-I-00973**), NE Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station (ERS), 350–450 m alt., 14.IX.2014, P. Dawwrueng leg.

One paratype. Female (**THNHM-I-00974**), same data as holotype.

Current status. Valid as *Mimadiestra sirindhornae* Dawwrueng, Storozhenko & Artchawakom, 2016.

#### Family Schizodactylidae

***Schizodactylus salweenensis* Dawwrueng, Panitvong, Mooltham, Meebenjamart & Jaitrong, 2018** (Figure 34I–J)

*Zootaxa* 4472(1): 61–66 [published on 7 September 2018].

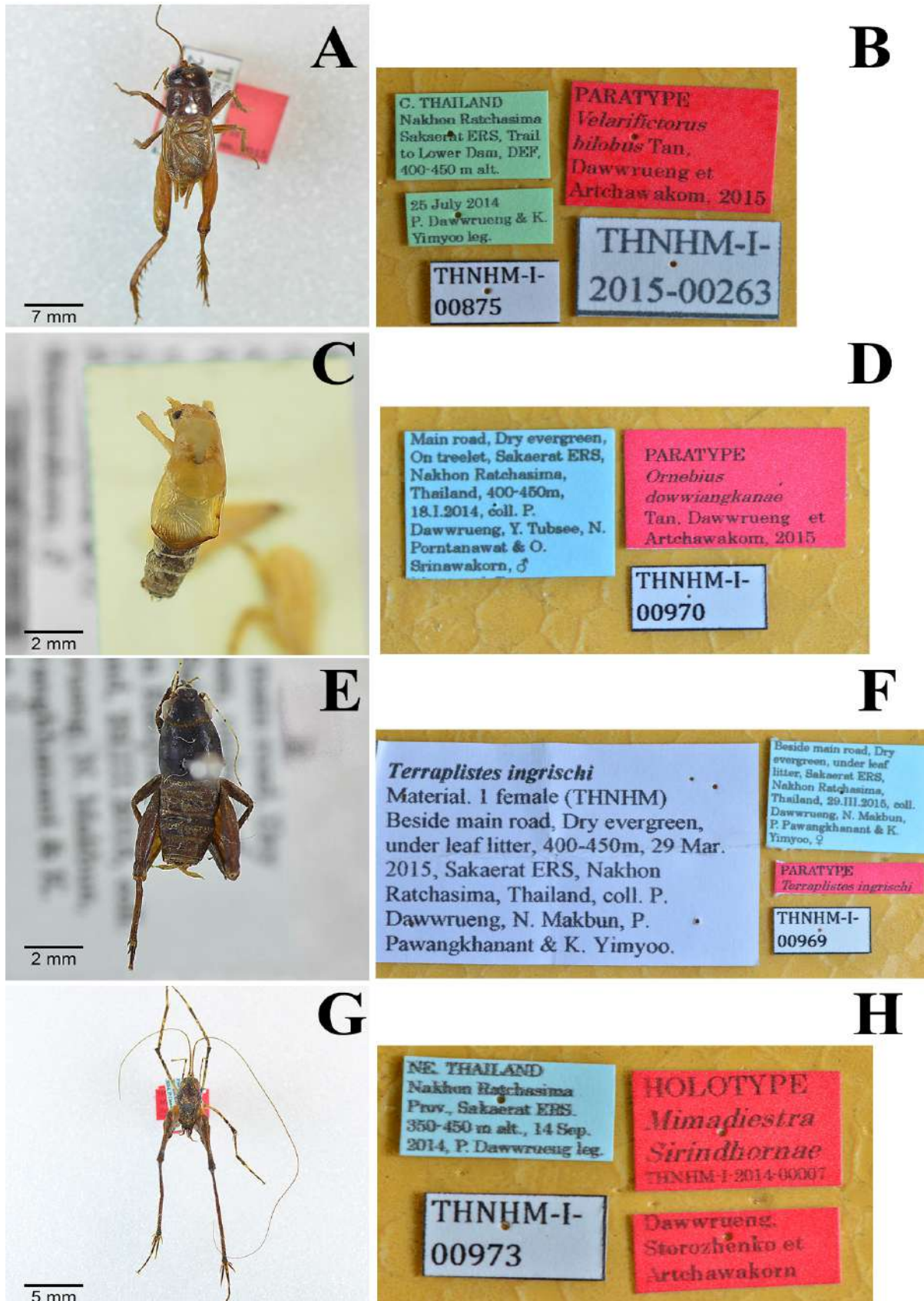
Holotype. Male (**THNHM-I-01223**), N Thailand, Mae Hong Son Prov., Sand dune beside the Salween River, Ban Pala Ue, Sob Moei, 1.XII.2015, coll. P. Dawwrueng, K. Mooltham and P. Meebenjamart leg.

Twenty-five paratypes. Five males (**THNHM-I-01224** to **THNHM-I-01228**) and 6 females (**THNHM-I-01229** to **THNHM-I-01234**), same data as holotype; 2 males (**THNHM-I-01174** and **THNHM-I-01175**) and 12 females (**THNHM-I-01169** to **THNHM-I-01173** and **THNHM-I-01176** to **THNHM-I-01181**), Thailand, Mae Hong Son Prov., Mae Sariang Dist., Huai Umda Beach, Salween River, 15.VI.2017, S. Makchai & C. Chueachat leg.

Current status. Valid as *Schizodactylus salweenensis* Dawwrueng, Panitvong, Mooltham, Meebenjamart & Jaitrong, 2018.

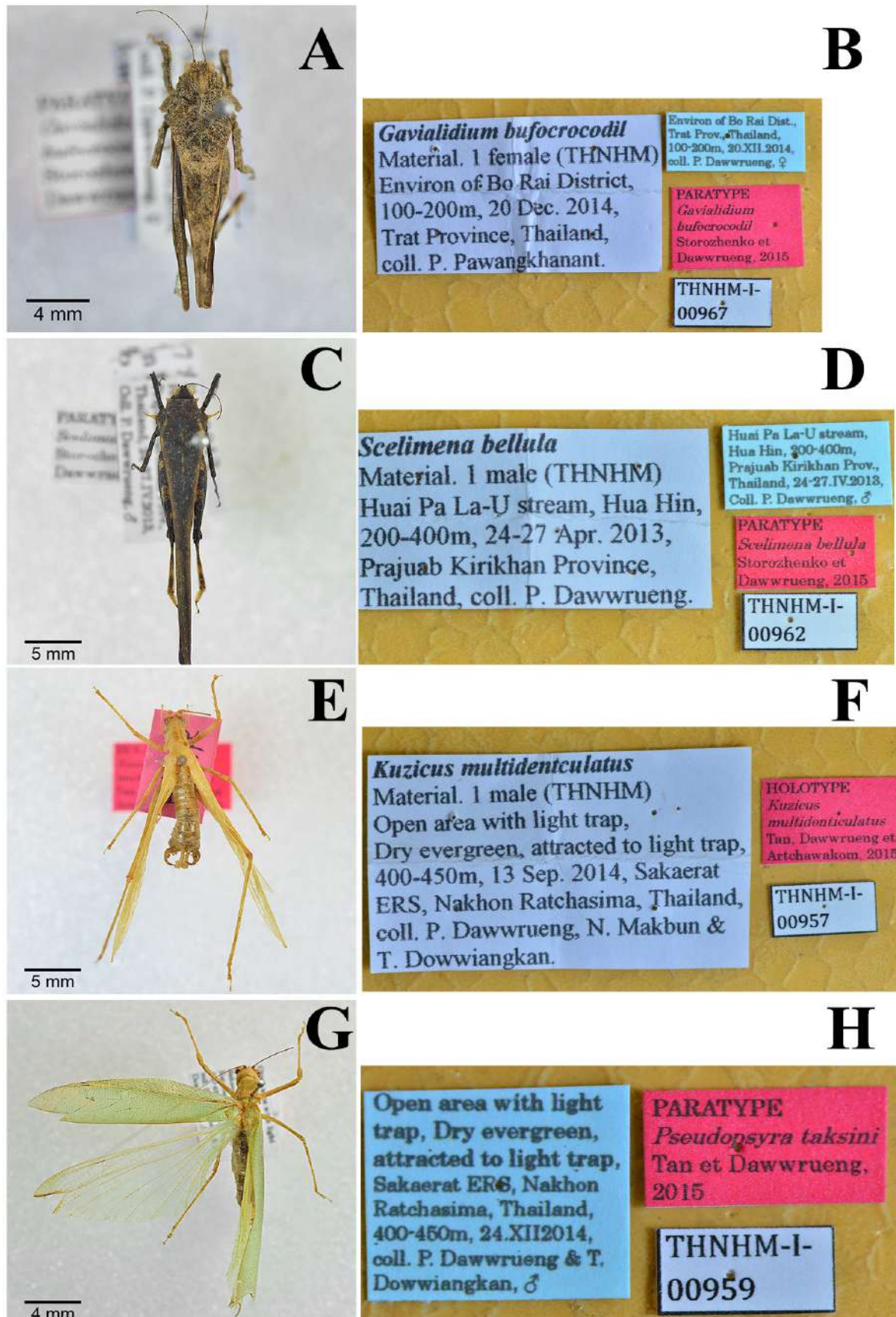
#### Family Tetrigidae

***Gavialidium bufocrocodil* Storozhenko & Dawwrueng, 2015** (Figure 35A–B)

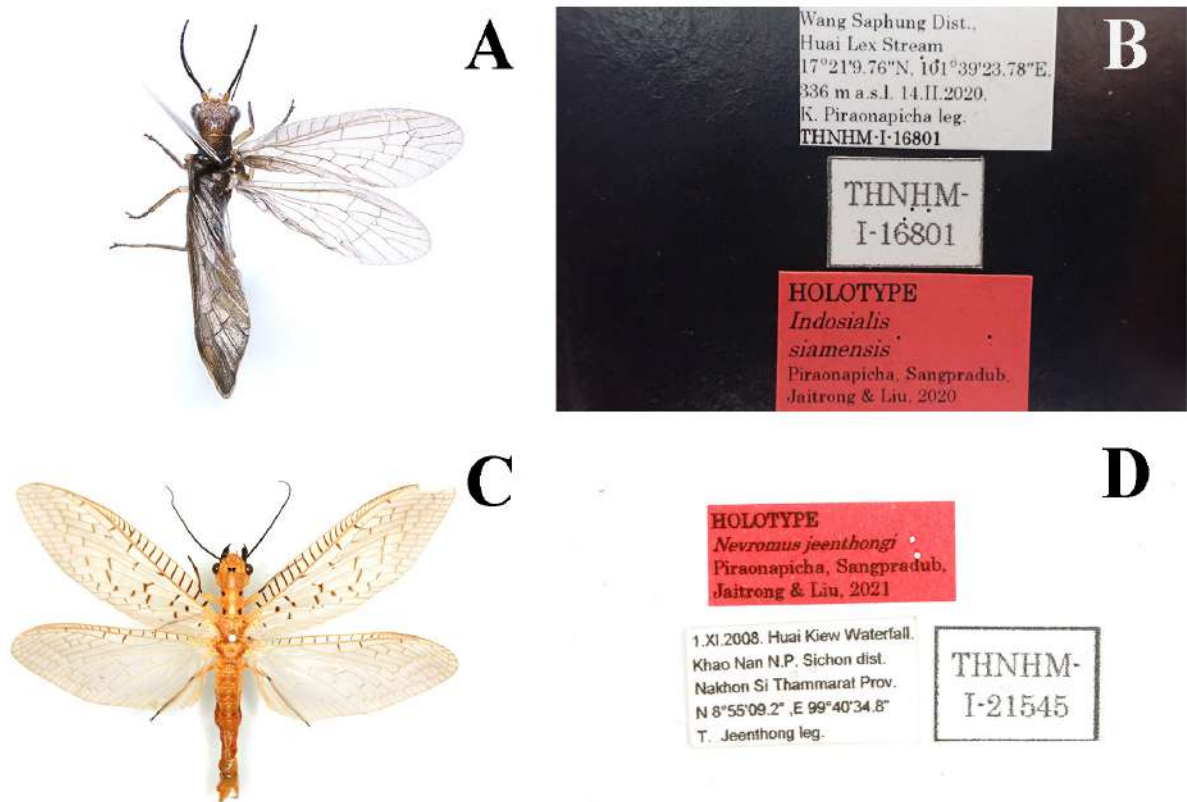


**Figure 34.** Type specimens and labels of type specimens of Orthoptera deposited in THNHMC. A–B, *Velarifictorus* (*Pseudocoiblemmus*) *bilobus* (Gryllidae), paratype (Tan *et al.*, 2015c); C–D, *Ornebius dowwiangkanae* (Mogoplistidae), paratype (Tan *et al.*, 2015a); E–F, *Terraplistes ingrischi* (Mogoplistidae), paratype (Tan *et al.*, 2015a); G–H, *Mimadiestra sirindhornae* (Rhopidophoridae), holotype (Dawwrueng *et al.*, 2016); I–J, *Schizodactylus salweenensis* (Schizodactylidae), holotype (Dawwrueng *et al.*, 2018).





**Figure 35.** Type specimens and labels of type specimens of Orthoptera deposited in THNHMC. A–B, *Gavialidium bufocrocodil* (Tetrigidae), paratype (Storozhenko and Dawwrueng, 2015); C–D, *Scelimena bellula* (Tetrigidae), paratype (Storozhenko and Dawwrueng, 2015); E–F, *Kuzicus multidenticulatus* (Tettigoniidae), holotype (Tan *et al.*, 2015b); G–H, *Pseudopsyra taksini* (Tettigoniidae), paratype (Tan *et al.*, 2015).



**Figure 36.** Type specimens and labels of type specimens of Megaloptera deposited in THNHMC. A–B, *Indosialis siamensis* (Sialidae), holotype (Piraonapicha *et al.*, 2020); C–D, *Nevromus jeenthongi* (Corydalidae), holotype (Piraonapicha *et al.*, 2021).

*Zootaxa* 4052(2): 540–543 [published on 7 December 2015].

One paratype. Female (THNHM-I-00967), Thailand, Trat Prov., Bo Rai Dist., 100–200 m, 20.XII.2014, P. Dawwrueng leg.

Current status. Valid as *Gavialidium bufocrocodil* Storozhenko & Dawwrueng, 2015.

***Scelimena bellula* Storozhenko & Dawwrueng, 2015** (Figure 35C–D)

*Zootaxa* 4052(2): 543–546 [published 7 December 2015].

Five paratypes. Two males (THNHM-I-00962 and THNHM-I-00963) and 3 females (THNHM-I-00964 to THNHM-I-00966), Huai Pa La-U Hua Hin, 200–400 m, 24–27.IV.2013, Prachuap Kiri Khan [Prachuap Khiri Khan] Prov., Thailand, P. Dawwrueng leg.

Current status. Valid as *Scelimena bellula* Storozhenko & Dawwrueng, 2015.

#### Family Tettigoniidae

***Kuzicus multidenticulatus* Tan, Dawwrueng & Artchawakom, 2015b** (Figure 35E–F)

*Zootaxa* 3999(2): 286–289 [published on 10 August

2015].

Holotype. Male (THNHM-I-00957), Thailand, Nakhon Ratchasima Prov., Sakaerat ERS, open area with light trap, dry evergreen forest, attracted to light trap, 400–450 m, 13.IX.2014, P. Dawwrueng, N. Makbun & T. Dowwiangkan leg.

One paratype. Female (THNHM-I-00958), same data as holotype.

Current status. Valid as *Kuzicus multidenticulatus* Tan, Dawwrueng & Artchawakom, 2015.

***Pseudopsyra taksini* Tan, Dawwrueng & Artchawakom, 2017** (Figure 35G–H)

*Zootaxa* 4231(4): 596–599 [published on 24 February 2017].

One paratype. Male (THNHM-I-00959), Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station (ERS), open area with light trap, dry evergreen, attracted to light trap, 400–450 m, 24.XII.2014, P. Dawwrueng & T. Dowwiangkan leg.

Current status. Valid as *Pseudopsyra taksini* Tan, Dawwrueng & Artchawakom, 2015.

#### OTHER ARTHOPODS



## ISOPOD

## CLASS CRUSTACEA

## ORDER ISOPODA

## Family Stenasellidae

*Stenasellus mongnatei* Magniez & Panitvong, 2005  
*Subterranean Biology* 3: 76–79 [published in 2005].

Holotype. Male (THNHM-Iv-18773, previous number was THNHM-Iv-00001), central Thailand, Sarabu Prov., Kangkoi Dist., Tham Nam aquifer of Phrabuddhabat-noi mountain, ca. 120 NNE of Bangkok, 17.X.2004, N. Panitvong leg.

Eight paratypes. Six females (THNHM-Iv-18775 to THNHM-Iv-18779), same data as holotype; 2 females (THNHM-Iv-18780 and THNHM-Iv-18781), same locality as holotype, 12.X.2003, N. Panitvong leg.

Allotype. Female (THNHM-Iv-18774, previous number was THNHM-Iv-00001), same data as holotype.

Current status. Valid as *Stenasellus mongnatei* Magniez & Panitvong, 2005.

## MILLIPEDES

## CLASS DIPLOPODA

## ORDER SPHAEROTHERIIDA

## Family Zephroniidae

*Zephronia lannaensis* Likhitrakarn & Golovatch, in Likhitrakarn *et al.*, 2021 (Figure 37A–B)

*Tropical Natural History* 21(1): 13–19 [published on 18 March 2021].

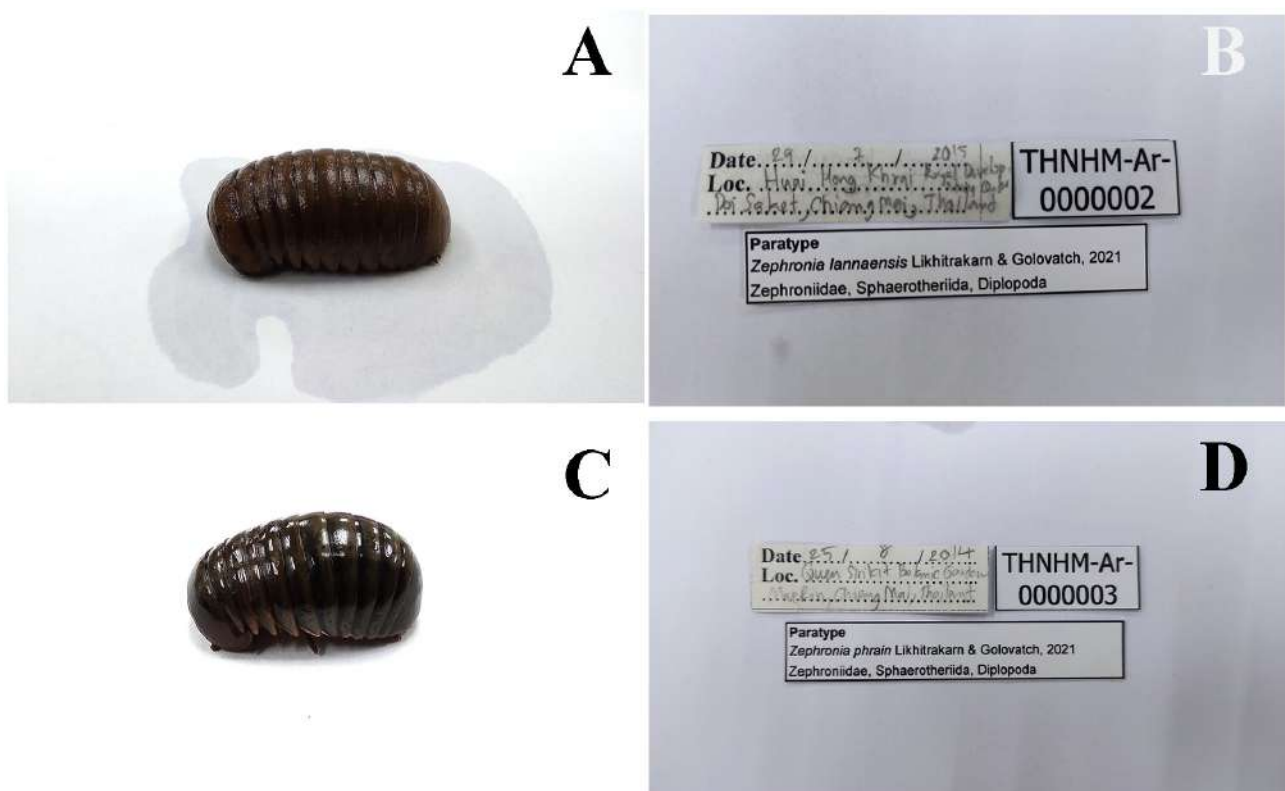
Two paratypes. One male (THNHM-Ar-00001) and 1 female (THNHM-Ar-00002), N Thailand, Chiang Mai Prov., Doi Saket Dist., Huai Hong Khrai Royal Development Study Centre, 445 m a.s.l., 18°52'47"N, 99°13'22"E, 29.VII.2015, N. Likhitrakarn leg.

Current status. Valid as *Zephronia lannaensis* Likhitrakarn & Golovatch, 2021.

*Zephronia phrain* Likhitrakarn & Golovatch in Likhitrakarn *et al.*, 2021 (Figure 37C–D)

*Tropical Natural History* 21(1): 19–23 [published on 18 March 2021].

Two paratypes. Two males (THNHM-Ar-00003 to THNHM-Ar-00004), N Thailand, Chiang Mai Prov., Mae Rim Dist., Queen Sirikit Botanic Garden, 650 m a.s.l., 18°53'52"N, 98°51'40"E, 25.VIII.2018, P. Nunthamontree leg.



**Figure 37.** Type specimens and labels of type specimens of Sphaerotheriida deposited in THNHMC. A–B, *Zephronia lannaensis* (Sphaerotheriida, Zephroniidae), paratype (Likhitrakarn *et al.*, 2021); C–D, *Zephronia phrain* (Sphaerotheriida, Zephroniidae), paratype (Likhitrakarn *et al.*, 2021).

**Table 1.** Number of the insect type specimens deposited in the Natural History Museum of the National Science Museum, Thailand

<b>Orders/ Families</b>	<b>Species/ Subspecies</b>	<b>Holotypes</b>	<b>Paratypes</b>	<b>Total</b>
<b>Order Coleoptera</b>	<b>3</b>	<b>1</b>	<b>10</b>	<b>11</b>
Family Curculionidae	1		2	2
Family Gyrinidae	1		1	1
Family Lucanidae	1	1	7	8
<b>Order Diptera</b>	<b>15</b>	<b>1</b>	<b>23</b>	<b>24</b>
Family Psychodidae	1	1	1	2
Family Tabanidae	14		22	22
<b>Order Hemiptera</b>	<b>20</b>	<b>0</b>	<b>40</b>	<b>40</b>
Family Aphelocheiridae	5		10	10
Family Gerridae	2		5	5
Family Hebridae	3		3	3
Family Helotrephidae	3		7	7
Family Micronectidae	2		3	3
Family Naucoridae	1		2	2
Family Veliidae	4		10	10
<b>Order Hymenoptera</b>	<b>137/ 1</b>	<b>49</b>	<b>952</b>	<b>1,001</b>
Family Formicidae	137/ 1	49	952	1,001
<b>Order Lepidoptera</b>	<b>8/ 2</b>	<b>0</b>	<b>31</b>	<b>31</b>
Family Hesperidae	1		2	2
Family Lycaenidae	1		4	4
Family Nymphalidae	2/ 2		16	16
Family Papilionidae	2		6	6
Family Tortricidae	3		5	5
<b>Order Mantodea</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>6</b>
Family Deroplatyidae	1	1	1	2
Family Haaniidae	1	1		1
Family Mantidae	1		3	3
<b>Order Megaloptera</b>	<b>2</b>	<b>2</b>	<b>31</b>	<b>33</b>
Family Corydalidae	1	1	26	27
Family Sialidae	1	1	5	6
<b>Order Orthoptera</b>	<b>12/ 3</b>	<b>10</b>	<b>50</b>	<b>60</b>
Family Acrididae	1	1	6	7
Family Stenopelmatidae	3/ 3	6	3	9
Family Gryllidae	1		3	3
Family Mogoplistidae	2		4	4
Family Rhaphidophoridae	1	1	1	2
Family Schizodactylidae	1	1	25	26
Family Tetrigidae	2		6	6
Family Tettigoniidae	2	1	2	3



**Table 1.** Number of the insect type specimens deposited in the Natural History Museum of the National Science Museum, Thailand (continued)

Orders/ Families	Species/ Subspecies	Holotypes	Paratypes	Total
<b>Order Isopoda</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>9</b>
Family Stenasellidae	1	1	8	9
<b>Order Sphaerotheriida</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>
Family Zephroniidae	2		4	4
<b>Total</b>	<b>203/ 6</b>	<b>66</b>	<b>1,153</b>	<b>1,219</b>

Current status. Valid as *Zephronia phrain* Likhitrakarn & Golovatch in Likhitrakarn, 2021.

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# Silica Gel Drying of Sea Cucumber DNA Samples is a Viable Alternative to Sequencing

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## ABSTRACT

The material for DNA extraction of sea cucumber which involve refrigeration may not always be convenient because of certain conditions that cannot be achieved. So, we tried out drying the sea cucumber body wall. A comparison is made with traditional ethanol preservation and a modern molecular method in 3 different sampling methods: storage in 96 % Ethanol under refrigeration; storage in RNAlater (Quiagen) under refrigeration and drying in excess silica gel at ambient temperature. The result clearly shows that there is at least some DNA in every samples. Even though it is not an optimal method, silica gel drying can be used for sea cucumber DNA sampling.

**Keywords:** Silica gel drying, sea cucumber, DNA, sequencing.

## INTRODUCTION

Protocol for collection of the material for DNA extraction often involve refrigeration, which may be difficult to achieve under field conditions, particularly in tropical climate as such conditions soon will degrade the DNA. Plant scientists often successfully dry their samples, including the ones intended for DNA extraction. Even zoologists can dry organisms such as small calcareous foraminiferans and later successfully extract DNA from them (T. Cedhagen, pers. comm.). Here we tried out drying also for animal tissues, specifically sea cucumber body wall. A comparison is made with traditional ethanol preservation and a modern molecular method.

## METHODS AND MATERIALS

Sea cucumbers of the order Apodida were collected subtidally in the Andaman Sea and the Gulf of Thailand, cleaned in sea water and kept in a zip-lock plastic bag with some sea water. All specimens were then transferred to isotonic (7 %) magnesium chloride for 2–5 hours (depending on the size of the specimen) as part of the standard procedure for Sea cucumber collection.

The body wall was cut with a scalpel into pieces of ca.

10x10 mm size. Each sample was divided into three subsamples that were subsequently exposed to three different methods:

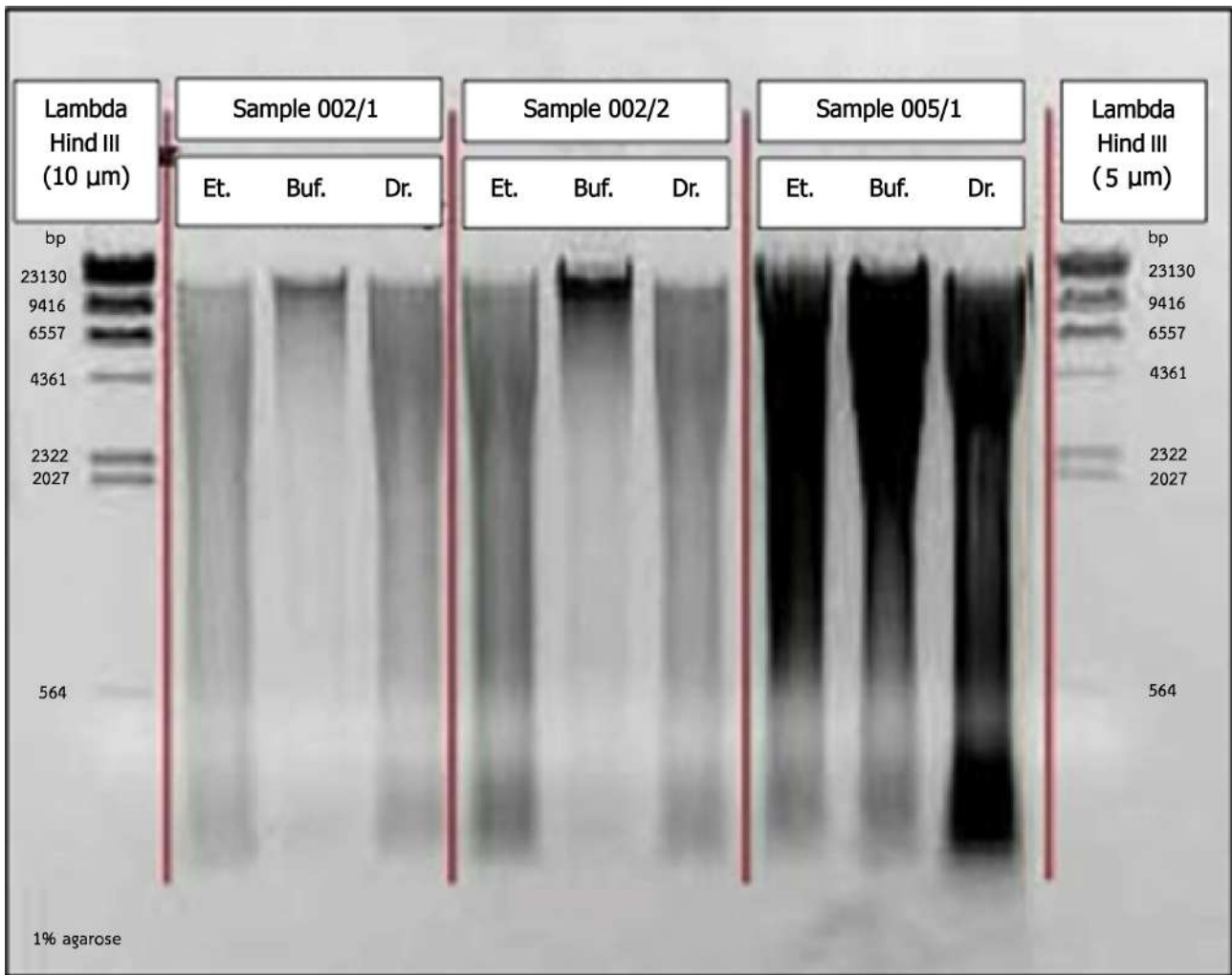
1. storage in 96 % Ethanol under refrigeration
2. storage in RNAlater (Quiagen) under refrigeration
3. drying in excess silica gel at ambient temperature

DNA was extracted using the DNeasy Tissue Kit (Quiagen). The purified DNA was visualized with 1% agarose gel electrophoresis (Fig. 1).

## RESULTS AND DISCUSSION

The gel electrophoresis picture clearly shows that there is at least some DNA in every sample. The DNA from tissues preserved in RNAlater gave a slightly larger amount of DNA if compared with the other methods. Tissue preserved in 96 % Ethanol and Silica gel yielded a similar amount. A greater degree of degradation is observed in the silica gel dried subsample of sample 005/1, but not in the other samples even if the samples of the same genus, *Synaptula*, and were collected from the same area.

Even though it is not an optimal method, silica gel drying can be used for sea cucumber DNA sampling.



**Figure 1.** Purified DNA from fieldwork specimens visualized with agarose gel electrophoresis. Et: 96 % Ethanol, Buf: RNAlater, Dr: Driying in silica gel.

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