



The ant genus *Myopias* Roger, 1861 (Hymenoptera: Formicidae: Ponerinae) in Thailand, with descriptions of three new species

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Abstract

The genus *Myopias* Roger, 1861 is distributed in the Australian, Oceanian, Oriental and southern Sino-Japanese realms. Currently 40 valid species and three subspecies have been described, but none have ever been recorded for Thailand. Here we review the species of Thailand, recognizing seven in total. Four are new records of previously described species: *Myopias bidens* (Emery, 1900), *M. crawleyi* (Donisthorpe, 1941), *M. maligna punctigera* (Emery, 1900), and *M. mandibularis* (Crawley, 1924). Three new species are described: *Myopias minima* **sp. nov.** from southern Thailand, *M. sakaeratensis* **sp. nov.** from eastern Thailand and *M. sonthichaiiae* **sp. nov.** from northern and western Thailand. The queen caste of *M. mandibularis* is described here for the first time and additional descriptions of other species are provided. All these species were found to nest in rotten wood on the forest floor.

Key words: Ants, *Myopias*, Ponerinae, new species, Thailand, distribution

Introduction

The genus *Myopias* Roger, 1861 was originally described from Sri Lanka by Roger (1861) with *Myopias amblyops* as the type species. The genus is in the subfamily Ponerinae, tribe Ponerini, *Odontomachus* genus group (Schmidt & Shattuck 2014). Currently 40 valid species and three subspecies names are known (Probst *et al.* 2015, AntCat 2017). The genus occurs in the Australian, Oceanian, Oriental and southern Sino-Japanese realms (antmaps.org, Janicki *et al.* 2016). Twenty-one species have been recorded from the Oriental realm, 18 from the Oceanian realm, 5 from the Australian realm, and 3 from the Sino-Japanese realm. In Thailand, the genus *Myopias* has been reported twice on the basis of morphospecies in the southern and central part of the country (Watanasit & Noonanant 2005, Sakchoowong *et al.* 2009), however to this point the presence of particular nominal species or the extent of its diversity within the country remains unknown. Thailand lies mostly in the Indochinese biogeographic subregion, with its southernmost portion in the Sundaic subregion. Due to its geographic position and the occurrence of multiple species in nearby countries, multiple species are to be expected in Thailand.

Myopias occurs in a wide variety of wet to dry habitats, and from lowland to highland. Colonies of *Myopias* are relatively small, with less than a hundred workers, and occur in rotten logs in rainforests (Billen *et al.* 2013; Probst *et al.* 2015). An exception is *M. bidens*, with large colonies containing several hundred workers.

In the course of our examination of *Myopias* specimens from Thailand, we identified seven species, three of them new to science and four of them known species from elsewhere. Based on described *Myopias* species and current knowledge of their distribution, our results now place Thailand as the most diverse country for this genus within the Oriental realm. Here we review these species and provide a key to Thai species based on the worker caste.

Materials and methods

We examined specimens deposited in the Natural History Museum of the National Science Museum, Thailand (THNHM) and the Ant Museum at Kasetsart University, Thailand (AMK). The type series of *Myopias minima* **sp. nov.**, *M. sakaeratensis* **sp. nov.** and *M. sonthichaiiae* **sp. nov.** were pin-mounted and compared with the high resolution images of syntypes, holotype and paratypes of the closely related species which are available on Antweb (2017) and Antwiki (2017).

Most morphological observations were made with a ZEISS Discovery.V12 stereoscope. Multi-focused montage images were produced using NIS element 3.7 from a series of source images taken by a Nikon MNB42100 digital camera attached to a Nikon ECLIPSE E600 microscope. Most measurements were made using a micrometer attached to a ZEISS Discovery.V12 stereoscope. Additional observations, imaging and measurements were performed with a Leica DFC450 digital camera mounted on a Leica M205C dissecting microscope with the use of the Leica Application Suite V4 software, with 24 to 53 images taken per view and numerically processed. All measurements are expressed in millimeters to the nearest 0.01 mm.

The abbreviations used for the measurements and indices are as follows:

TL	Total Length. Roughly measured from anterior margin of head (including mandible) to tip of metasoma in stretched specimens, excluding sting.
HL	Head Length. Length of head proper, excluding mandibles, measured in straight line from anterior clypeal margin to mid-point of a line drawn across posterior margin of head in full-face view.
HW	Head Width. Maximum width of head capsule measured in full-face view, excluding compound eyes.
ED	Eye Diameter. Maximum diameter of eye with head positioned in profile view such that anterior and posterior eye margins are in same plane of focus.
SL	Scape Length. Maximum straight length of antennal scape excluding basal constriction and condylar bulb, in medial view from scape base middle to scape apex.
ML	Mandibular Length. With head in full-face view, length of mandible measured along outer margin, as the chord distance from lateral insertion to mandible apex.
PW	Pronotal Width. Maximum width of pronotum measured in dorsal view.
MSL	Mesosomal Length (Weber's length). Diagonal length of mesosoma in profile, from the point at which pronotum meets cervical shield to posterior margin of metapleuron.
PL	Petiole Length. Measured from anterior margin to posteriormost point of tergite in profile view.
PH	Petiole Height. The height of petiole measured in profile from apex of ventral (subpetiolar) process vertically to a line intersecting dorsalmost point of node.
DPW	Dorsal Petiole Width. The maximum width of the petiole in dorsal view.
CI	Cephalic Index. $HW \times 100 / HL$.
SI	Scape Index. $SL \times 100 / HW$.
OI	Ocular Index. $ED \times 100 / HW$.
MI	Mandibulo-cephalic Index. $ML \times 100 / HL$.
LPI	Lateral Petiole Index. $PH \times 100 / PL$.
DPI	Dorsal petiole index. $DPW \times 100 / PL$.

The abbreviations used for the type and non-type depositories are as follows:

AMK	Ant Museum at Kasetsart University, Thailand
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland.
OXUM	Hope Entomological Collections, University Museum, Oxford, U.K.
SBSHKU	Insect Biodiversity and Biogeography Laboratory, School of Biological Sciences, The University of Hong Kong, Hong Kong SAR.
THNHM	Natural History Museum of the National Science Museum, Thailand

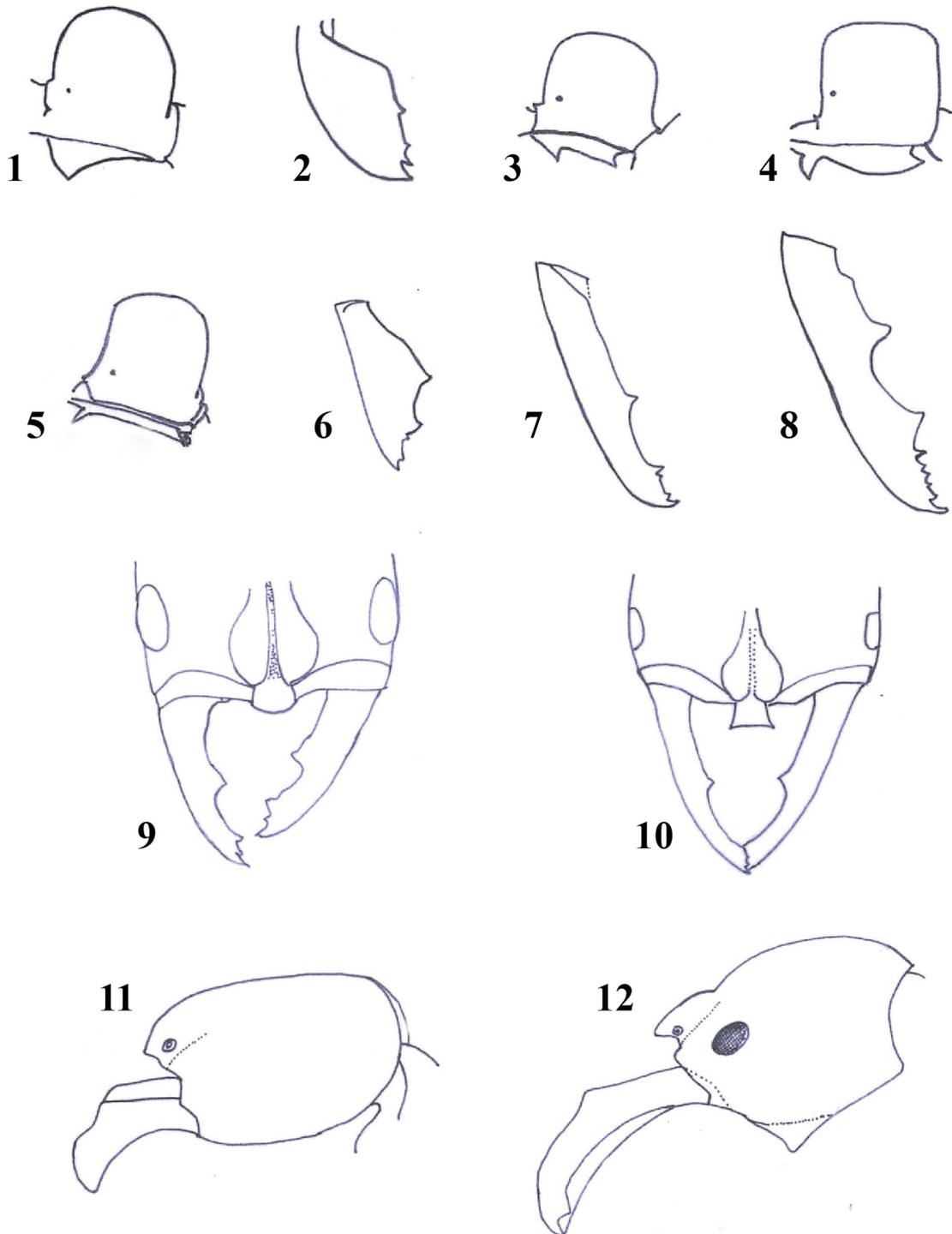
Taxonomy

Myopias Roger, 1861

Myopias Roger, 1861: 39. Type-species: *Myopias amblyops*, by monotypy.

Bradyponera Mayr, 1886: 362. Type-species: *Ponera nitida* (junior primary homonym in *Ponera*, replaced by *Trapeziopelta mayri*), by monotypy.

Trapeziopelta Mayr, 1862: 715. Type-species: *Ponera maligna*, by monotypy.



FIGURES 1–12. Morphological characters us in the key. 1, 3–5, petiole in profile; 2, 6–8, shape and dentition of right mandible; 9–10, head in full-face view; 11–12, head in profile. 1, 2, *Myopias minima*; 3, 7, 10, 12, *Myopias crawleyi*; 4, *Myopias sakaeratensis*; 5, *Myopias conicara*; 6, 9, 11, *Myopias mandibularis*; 8, *Myopias maligna punctigera*.

The general terminology of the worker ants follows Hölldobler & Wilson (1990), and Bolton (1994). For the important characters of the worker in the genus *Myopias* used in this paper, see Willey & Brown (1983) and Schmidt & Shattuck (2014).

Checklist of the Thai species

Myopias bidens (Emery, 1900)
Myopias crawleyi (Donisthorpe, 1941)
Myopias maligna punctigera (Emery, 1900)
Myopias mandibularis (Crawley, 1924)
Myopias minima **sp. nov.**
Myopias sakaeratensis **sp. nov.**
Myopias sonthichaiiae **sp. nov.**

Key to Thai species based on worker caste

1. Subpetiolar process subtriangular, located anteroventrally, its apex truncate and pointed downward (fig. 1); seen from dorsolateral view, masticatory margin of mandibles with 4 teeth (fig. 2); eyes reduced, with 0–6 ommatidia along the longest axis. 2
 - Subpetiolar process not triangular, usually complex, anteroventral corner with a ventrally pointed tooth, posteroventral corner with a posteriorly pointed tooth (figs. 3–5); seen from dorsolateral view, masticatory margin of mandibles with more than 4 teeth (fig. 6–8); eyes relatively larger, with more than 10 ommatidia along the longest axis. 3
2. Eyes present, with 5–6 ommatidia along the longest axis; larger species (TL 5.10–5.50 mm; HW 0.79–0.96 mm); median clypeal lobe about as long as broad, squared, its anterior margin distinctly concave *M. bidens*
 - Eyes absent; smaller species (TL 4.10–4.31 mm, HW 0.69–0.72); median clypeal lobe very short, clearly shorter than broad, broadest posteriorly, its anterior margin straight. *M. minima* **sp. nov.**
3. Seen from dorsolateral view, masticatory margin of mandibles with 7–8 teeth (fig. 8); in full-face view, posterolateral corner of head bluntly angulated *M. maligna punctigera*
 - Seen from dorsolateral view, masticatory margin of mandibles with 5 teeth (figs. 6–7); in full-face view, posterolateral corners of head roundly convex. 4
4. Median clypeal lobe relatively short, its anterior margin weakly convex (fig. 9); mandibles relatively short (MI < 70); in profile view, anteroventral corner of head without bluntly angled process (fig. 11) *M. mandibularis*
 - Median clypeal lobe relatively long, its anterior margin weakly concave (fig. 10); mandible relatively long (MI > 73); in profile view, anteroventral corner of head with bluntly angled process (fig. 12). 5
5. Larger species (HW 1.49–1.58 mm; MSL 1.96–2.31 mm); body dark to black. *M. sonthichaiiae* **sp. nov.**
 - Smaller species (HW ≤ 1.29 mm; MSL ≤ 1.78 mm); body reddish brown 6
6. Mesosoma largely smooth and shiny; propodeal declivity smooth and shiny; posterior ¾ of subpetiolar process triangular, its ventral outline almost straight (fig. 3); frontal lobes high, not passing over anterior clypeal margin (fig. 18) *M. crawleyi*
 - Mesosoma sculptured; propodeal declivity reticulate; posterior ¾ of subpetiolar process subrectangular, its ventral outline convex (fig. 4); frontal lobes low, passing over anterior clypeal margin (fig. 36) *M. sakaeratensis* **sp. nov.**

Treatment of species

Myopias bidens (Emery, 1900)

(Figs. 13–15)

Trapeziopelta bidens Emery, 1900: 313 (diagnosis in key). Holotype worker, INDONESIA, Sumatra, Si-Rambé (MSNG, AntWeb image examined).

Myopias bidens: Bolton, 1995: 269 (combination in *Myopias*); Xu *et al.* 2014: 166 (diagnosis in key); Probst *et al.* 2015: 204 (diagnosis in key).

Non-types. THAILAND: Six workers, Tak Prov., Um Phang Dist., Mae Khlong Yai Village, Um Phang W.S., Old Field, 950–1000 m a.s.l., 11.IX.2004, W. Jaitrong leg., Colony no. WJT04-W-002 (THNHM); 19 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., Ka-Ngae Sod Forest Ranger Station, 20.II.2015, W. Jaitrong leg., Colony no. TH15-WJT-405 (THNHM); 13 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan



FIGURES 13–15. *Myopias bidens* (non-type worker, TH16-WJT-0001). 13, Body in profile view; 14, body in dorsal view; 15, head in full-face view.

East W.S., Huai Nam Kheao Forest Ranger Station, 23.VI.2015, W. Jaitrong leg., Colony no. TH15-WJT-923 (AMK, NMNH, THNHM); 10 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., Thung Nanoi Forest Ranger Station, 22.III.2016, W. Jaitrong leg., Colony no. TH16-WJT-0184 (THNHM); 36 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., Thung Nanoi Forest Ranger Station, Swamp forest, 23.III.2016, W. Jaitrong leg., Colony no. TH16-WJT-0184 (AMK, NMNH, THNHM); 11 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., Thung Nanoi Forest Ranger Station, Swamp forest, 23.III.2016, W. Jaitrong leg., Colony no. TH16-WJT-0202 (AMK, THNHM); 27 workers, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., Head Quarter, 15.32472222°N, 98.91527778°E, 820 m a.s.l., 22.II.2016, W. Jaitrong leg.,

TH16-WJT-0001 (THNHM); 1 worker, Chanthaburi Prov., Khlung Dist., near Trok Nong Waterfall, 12.54250000°N, 102.23694444°E, 155 m a.s.l., 24.XI.2003, W. Jaitrong leg. (THNHM); 1 worker, Chanthaburi Prov., Soi Dao Dist., 13.10277778°N, 102.19388889°E, 300 m a.s.l., 19.I.2008, W. Jaitrong leg. (THNHM); 1 worker, Narathiwat Prov., Su Ngai Ko Lok Dist., Ban Tao Dang, 6.07277778°N, 101.96500000°E, 12 m a.s.l., 12.X.2000, A. Suwannasri leg. (THNHM).

Measurements. Non-type workers (n = 15): TL 5.10–5.50, HL 0.96–1.06, HW 0.79–0.96, SL 0.69–0.86, ED 0.10–0.13, ML 0.66–0.76, PW 0.56–0.63, MSL 1.39–1.52, PL 0.36–0.46, PH 0.46–0.53, DPW 0.40–0.43. CI 83–91, SI 88–90, OI 12–15, MI 69–72, LPI 114–127, DPI 100–109.

Diagnosis of worker: Body 5.10–5.50 mm in total length (small size). Masticatory margin of mandibles with four teeth (fig. 5); median clypeal lobe about as long as broad, squared, its anterior margin distinctly concave; eyes relatively small with 5–6 ommatidia along the longest axis; antennal scape relatively short, not reaching posterior margin of head; petiole in profile subrectangular, almost as long as high; subpetiolar process subtriangular, located anteroventrally, its apex truncate and pointed downward. Entire body (head, mandible, antennal scape, mesosoma, legs, and metasoma) smooth and shiny except for lower portion of lateral face of propodeum finely striate. Body entirely reddish brown to yellowish brown, head darker than elsewhere.

Habitat. *Myopias bidens* is distributed from lowland to highland in various types of forests (swamp forest, evergreen forest, dry evergreen forest and hill evergreen forest) and within both primary and secondary forests. All colonies of *M. bidens* were large, with up to a thousand workers, and nesting in rotten wood in an advanced stage of decomposition.

Distribution. Thailand (Tak, Chanthaburi and Narathiwat Provinces, **new record**, fig. 52) and Indonesia (Sumatra) (Probst *et al.* 2015).

Comparative notes. *Myopias bidens* is similar in general appearance to *M. breviloba*, *M. castaneicola*, *M. mayri*, and *M. trumani* in having the following characteristics in the worker: masticatory margin of mandibles with conspicuously produced basal angle followed by a distinct concavity; masticatory margin blade between basal angle and prebasal tooth subequal in length to distance between prebasal tooth and apical tooth; median clypeal lobe with concave anterior margin, anterolateral corners conspicuously dentate; head smooth and shiny. However, this species is most similar to *M. breviloba* in having large compound eyes, with maximum diameter being longer than malar space length (eyes reduced, with maximum diameter being shorter than malar space length in *M. castaneicola*, *M. mayri* and *M. trumani*). It is separated from *M. breviloba* by the condition of the median clypeal lobe that has the median lobe length subequal to its width, while the medial lobe is clearly shorter than wide in *M. breviloba*; body colour is reddish brown to dark brown in *M. bidens*, while body colour is paler in *M. breviloba*.

***Myopias crawleyi* (Donisthorpe, 1941)**

(Figs. 16–18)

Trapeziopelta nitida Crawley, 1924: 384, fig. 2. Holotype worker, INDONESIA, Sumatra, Fort de Kock, October 1922, 920M, E. Jacobson leg. (OXUM, syntype image examined).

Trapeziopelta crawleyi Donisthorpe, 1941: 237. INDONESIA: Sumatra. Replacement name for *Trapeziopelta nitida* Crawley, 1924: 384. [Junior secondary homonym of *Ponera nitida* F. Smith, 1861: 45.]

Myopias crawleyi: Bolton 1995: 269.

Non-type material examined. THAILAND: five workers, Tak Prov., Um Phang Dist., Thung Yai W.S., Head Quarter, 15.32472222°N, 98.91527778°E, 820 m a.s.l., 22.IX.2016, W. Jaitrong leg., Colony no. TH16-WJT-1035 (THNHM); 1 worker, Kanchanaburi Prov., Thong Pha Phum Dist., Rotten Wood, 3.III.2005, S. Wattana leg., Colony no. PF-1-19 (THNHM); 1 worker, same locality, 15.X.2004, C. Bourmas leg. (AMK). 1 worker, Nakhon Si Thammarat Prov., Tha Sala Dist., Mt. San Yen, 21.IV.2007, W. Jaitrong leg., Colony no. WJT07-TH-760 (THNHM).

Measurements. Non-type workers (n = 7): TL 5.70–5.85, HL 1.06–1.16, HW 0.96–0.99, SL 0.86–0.92, ED 0.13–0.17, ML 0.89–0.92, PW 0.76–0.79, MSL 1.65–1.68, PL 0.56–0.59, PH 0.69–0.73, DPW 0.56–0.59, CI 86–91, SI 90–93, OI 13–17, MI 79–85, LPI 117–129, DPI 94–103.

Diagnosis of worker: Body 5.70–5.85 mm in total length (medium size). Masticatory margin of mandibles with five teeth and/or denticles (fig. 7); basal margin with an ill-defined protuberance; median clypeal lobe slightly

broader than long, subtriangular, widened forward, its anterior margin weakly concave; eyes relatively large with 10-11 ommatidia along the longest axis; antennal scape relatively long, almost reaching posterior margin of head; in profile, anteroventral corner of head with bluntly angled process; petiole subrectangular, slightly shorter than high; subpetiolar process well developed, with concave ventral outline, with a downward pointed triangular denticle at anteroventral corner, and with a small posteriorly pointed denticle at posteroventral corner. Dorsum of head with fine dense punctures, with area between punctures smooth and shiny; dorsum of mesosoma and petiole with sparse punctures; mesopleuron, lateral face and declivity of propodeum smooth and shiny; metasoma segment III dense foveae; metasoma segment IV with sparse small punctures, areas between punctures smooth and shiny. Body entirely reddish brown to dark brown.



FIGURES 16–18. *Myopias crawleyi* (nontype worker, WJT07-TH-760). 16, Body in profile view; 17, body in dorsal view; 18, head in full-face view.

Habitat. In Thailand, specimens of this species were collected from rotten wood in dry evergreen forest, elevation about 500–800 m.

Distribution. Thailand (Tak, Kanchanaburi and Nakhon Si Thammarat Provinces, **new record**, fig. 52) and Indonesia (Sumatra, Donisthorpe 1941; Bolton 1995).

Comparative notes. *Myopias crawleyi* is similar to *Myopias sakaeratensis* in having reddish brown to dark brown body colour; anteroventral corner of head with bluntly angled process; anterior margin of median clypeal lobe weakly concave and other general appearance. However, *M. crawleyi* is easily separated from *M. sakaeratensis* by the following characteristics: mesopleuron and lateral face of propodeum smooth and shiny (sculptured in *M. sakaeratensis*); propodeal declivity smooth and shiny (reticulate in *M. sakaeratensis*); posterior $\frac{3}{4}$ of subpetiolar process triangular, its ventral outline almost straight (posterior $\frac{3}{4}$ of subpetiolar process rectangular, its ventral outline weakly convex in *M. sakaeratensis*); slightly smaller size (HW 0.96–0.99 mm in *M. crawleyi*; HW 1.19–1.29 mm in *M. sakaeratensis*).

***Myopias maligna punctigera* (Emery, 1900)**

(Figs. 19–21)

Trapeziopelta maligna var. *punctigera* Emery, 1900: 663. Syntype worker, INDONESIA: Mentawai I., Sipora, Sereinu (MSNG, AntWeb image examined).

Myopias maligna punctigera: Bolton 1995: 270.

Non-type material examined. THAILAND: seven workers, Narathiwat Prov., Wang Dist., Rotten Wood, 26.IX.2001, W. Jaitrong leg., Colony no. TH01-WJT-160 (AMK, THNHM); 2 workers, same locality and date, C. Bourmas leg., Colony no. CB260901-1 (AMK, THNHM).

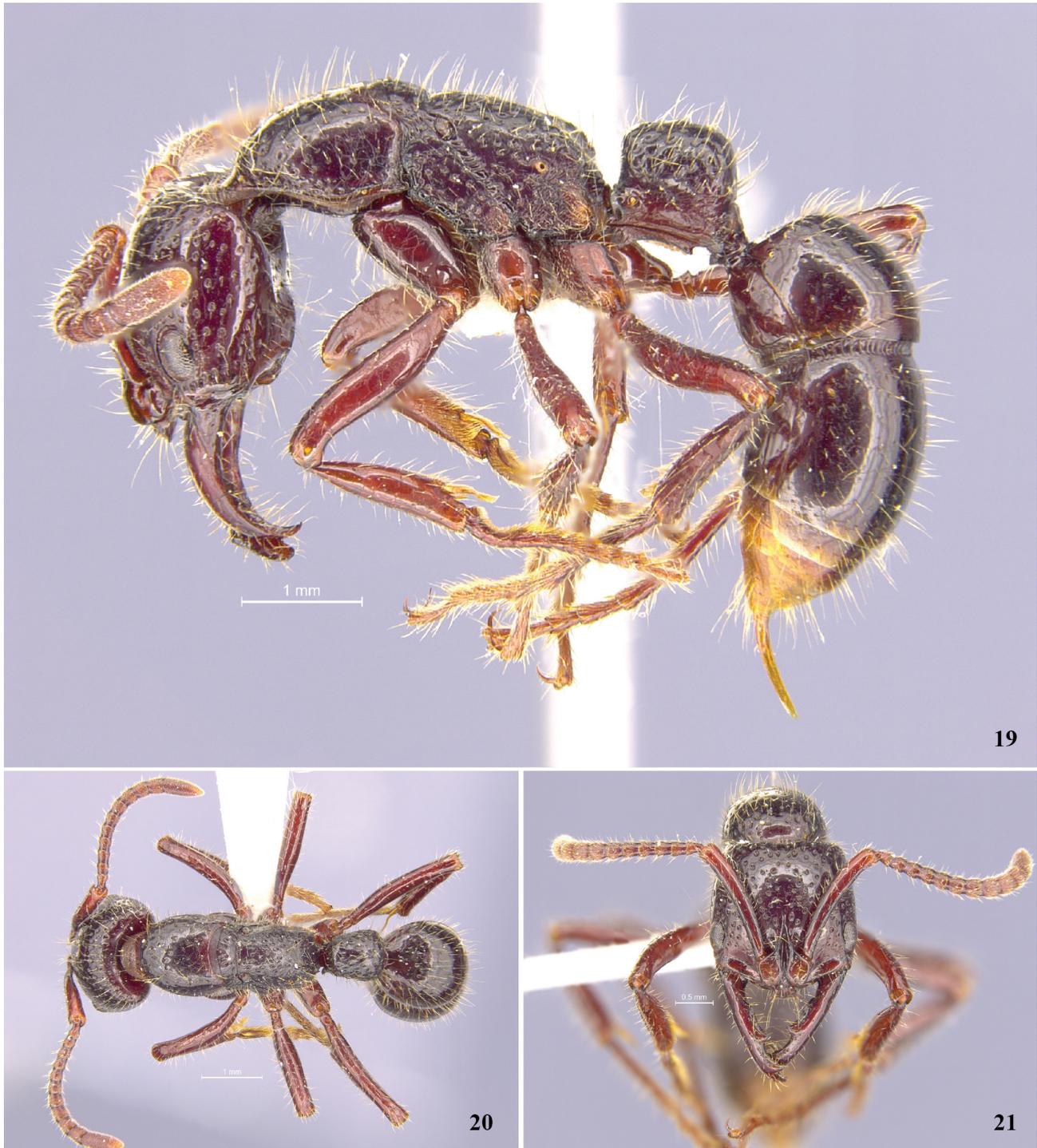
Measurements. Non-type workers (n = 10): TL 11.40–11.50, HL 2.05–2.15, HW 1.85–1.90, SL 1.55–1.65, ED 0.45–0.50, ML 1.55–1.60, PW 1.35–1.40, MSL 3.10–3.20, PL 0.95–1.05, PH 1.00–1.05, DPW 0.80–0.88, CI 88–90, SI 84–89, OI 24–26, MI 74–76, LPI 105, DPI 84–89.

Diagnosis of worker: Body 11.40–11.50 mm in total length (large size). With head in full-face view subrectangular, posterolateral corner bluntly angulated; masticatory margin of mandibles with 7–8 teeth (fig. 8); median clypeal process slightly shorter than broad, subrectangular, widened forward, its anterior margin straight; lateral margin and anterior margin of median clypeal lobe meet forming sharp angle; eyes relatively large and convex, with 12–15 ommatidia along the longest axis; antennal scape robust and enlarged toward apical portion, reaching posterior margin of head; in profile, anteroventral corner of head without bluntly angled process; petiole rectangular or cylindrical, almost as long as high; subpetiolar process well developed, with concave ventral outline, with a downward pointed triangular denticle at anteroventral corner, and with a pair of small posteriorly pointed denticles at posteroventral corners. Dorsum of head, mesosoma and dorsum of petiole with dense foveae, with area between foveae smooth and shiny; ventral surface of head with sparse foveae; scape smooth and shiny; mandible largely smooth and shiny, with a few small punctures; metasoma and legs smooth and shiny with a few small punctures. Body entirely reddish brown to dark brown.

Habitat. This species was collected from rotten wood on the forest floor in lowland primary evergreen forest in southernmost Thailand.

Distribution. Thailand (Narathiwat Province, **new record**, fig. 52) and Indonesia (Mentawai Islands) (Emery 1900; Bolton 1995) (fig. 52).

Comparative notes. This species is easily distinguished from the other species as follows: large body size; posterolateral corner of head bluntly angulated; masticatory margin of mandible with 7–8 teeth; anterior margin of median clypeal lobe straight. While this subspecies might represent a valid species, we did not directly examine the type specimens of *M. maligna* and the description by Smith (1861) is unfortunately rather uninformative. The exact taxonomic position of *M. maligna* and *M. maligna punctigera* thus deserve further work, outside the scope of this study.



FIGURES 19–21. *Myopias maligna punctigera* (non-type worker, TH01- WJT-160). 19, Body in profile view; 20, body in dorsal view; 21, head in full-face view.

***Myopias mandibularis* (Crawley, 1924)**
(Figs. 22–27)

Trapeziopelta mandibularis Crawley, 1924: 386, fig. 3. Holotype worker, INDONESIA, Sumatra, Gunung Dempu, VIII.1916, E. Jacobson leg. (OXUM, syntype image examined).
Myopias mandibularis: Bolton, 1995: 269.



FIGURES 22–24. *Myopias mandibularis* (non-type worker, WJT07-TH-766). 22, Body in profile view; 23, body in dorsal view; 24, head in full-face view.

Non-type material examined. THAILAND: three workers, Nakhon Si Thammarat Prov., Tha Sala Dist., Mt. San Yen, 19.IV.2007, W. Jaitrong leg., Colony no. WJT1904007-1 (THNHM); 4 workers and 1 ergatoid queen, same locality, 22.IV.2007, W. Jaitrong leg., Colony no. WJT07-TH-766 (THNHM); 3 workers, same locality, 16.IV.2007, W. Jaitrong leg., Colony no. WJT07-TH-633 (THNHM); 2 workers and 1 ergatoid queen, same locality, 18.IV.2007, W. Jaitrong leg., WJT07-TH-683 (THNHM); 44 workers and 5 ergatoid queens, Surat Thani Prov., Wipawadee Dist., 29.XI.2001, W. Jaitrong leg., WJT01-TH-015 (AMK, BGC, THNHM); 1 worker, same locality, 29.XII.2001, W. Jaitrong leg. (THNHM); 1 worker, Ranong Prov., Khlong Naka, 1.I.2000, S. Hasin leg. (AMK); 1 worker, same locality and collector, 30.XII.2000 (AMK); 1 worker, same locality and collector, 31.XII.2000 (THNHM).

Measurements. Non-type workers (n = 15): TL 6.24–6.30, HL 1.19–1.25, HW 1.09–1.16, SL 0.79–0.86, ED 0.26–0.30, ML 0.79–0.83, PW 0.83–0.86, MSL 1.72–1.78, PL 0.63–0.66, PH 0.73–0.79, DPW 0.66–0.69, CI 92–94, SI 71–74, OI 24–26, MI 63–68, LPI 110–121, DPI 100–105.



FIGURES 25–27. *Myopias mandibularis* (non-type ergatoid queen, WJT07-TH-766). 22, Body in profile view; 23, body in dorsal view; 24, head in full-face view.

Diagnosis of worker (figs. 22–24): Body 6.24–6.30 mm in total length (medium size); mandibles broad, narrow at base; masticatory margin of mandibles with five teeth, including large basal tooth, followed by medium-sized prebasal tooth, two minute teeth (denticles), and medium-sized apical tooth; basal margin with a ill-defined protuberance (fig. 6); median clypeal lobe distinctly shorter than broad, its anterior margin with ill-defined tridentate (not clear in some specimens); eyes relatively large; antennal scape not reaching posterior margin of

head; in profile, anteroventral corner of head without bluntly angled process; petiole in profile, subrectangular, shorter than high; subpetiolar process well developed, subrectangular, with clearly concave ventral outline, with a downward pointed triangular denticle at anteroventral corner, and with a pair of small posteriorly pointed denticles at posteroventral corners. Dorsum of head with scattered foveae, larger and more elongate along posterior margin of head; ventral surface of head with sparse punctures; scape and mandible smooth and shiny with a few punctures; dorsa of mesosoma, petiole and metasoma segment III with scattered foveae but larger foveae than on head, some elongate; metasoma segment IV largely smooth and shiny with a few punctures; legs smooth and shiny. Body dark to reddish brown; funiculus, mandible, legs and tip of metasoma paler.

Ergatoid queen description (wingless queen, figs. 25–27)

Measurements. Non-type ergatoid queen (n = 7): TL 7.23–7.52, HL 1.22–1.32, HW 1.12–1.22, ED 0.30–0.33, SL 0.83–0.92, ML 0.73–0.83, PW 0.99–1.06, MSL 1.95–2.15, PL 0.66–0.69, PH 0.79–0.86, DPW 0.76–0.83, CI 92–93, SI 74–76, OI 26–27, MI 59–63, LPI 120–124, DPI 115–119.

Similar to the worker in structure, sculpture, coloration and pilosity, with the following conditions that should be noted: body slightly larger (TL 7.23–7.52 mm in ergatoid queen; 6.24–6.30 mm in worker); head in full-face view clearly longer than broad, rectangular, with weakly convex sides and concave posterior margin; eyes slightly larger than in worker, about twice as long as distance between anterior margin of eyes and mandibular bases; configuration of mandibular dentition and shape of antennal scape similar as in worker; median clypeal lobe distinctly shorter than broad, its anterior margin almost straight or weakly convex; median ocellus larger than lateral ocelli; mesosoma stout, in profile view pronotum weakly convex dorsal outline; promesonotal suture and metanotal groove distinct and deep; metapleura clearly demarcated from mesonotum by short and shallow furrows and demarcated from metapleura by deep grooves; in dorsal view pronotum about two times as long as mesonotum; mesonotum almost as long as broad, trapezoidal, about 2/3 length of propodeum in dorsal view; dorsum of propodeum weakly convex, rounded into declivity of propodeum; the latter almost flat; petiole in profile subrectangular, slightly shorter than high, its anterior face flat vertical, dorsal outline convex, posterior face flat vertical; in dorsal view, petiolar node trapezoidal and clearly shorter than broad (DPI 115–119); metasoma (segments III to IX) relatively larger than in the worker.

Habitat. This species was found from lowland to highland (500–800 m alt.) in evergreen forest in southern Thailand. All specimens were collected from rotten wood.

Distribution. Thailand (Ranong, Surat Thani, Nakhon Si Thammarat provinces, (**new record**, fig. 52), Indonesia (Sumatra, Crawley 1924)

Remarks. *Myopias mandibularis* is most similar to *M. modiglianii* (Emery, 1900) in general appearance and having median clypeal lobe tridentate. *Myopias mandibularis* is distinguished from *M. modiglianii* as follows: apicomedial process of median clypeal lobe not clearly produced anteriorly (clearly produced anteriorly in *M. modiglianii*); basal blade of mandibular masticatory margin of mandibles conspicuously produced medially (weakly produced medially in *M. modiglianii*).

***Myopias minima* sp. nov.**

(Figs. 28–33)

Etymology. The species epithet “*minima*” is a Latin word meaning minimum. This refers to this species being the smallest within the described species of the genus.

Type. Holotype worker (THNHM-I-00242, THNHM), S Thailand, Pattalung Prov., Sribanpot 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. Paratypes: two workers (THNHM-I-00243 and THNHM-I-00244, THNHM) and 1 queen (THNHM-I-00245, THNHM), same colony as holotype.

Diagnosis of worker: This is currently the smallest *Myopias* species. Masticatory margin with four teeth, including large basal tooth, large prebasal tooth, minute preapical tooth (denticle), and medium-sized apical tooth; basal margin with a well-defined protuberance; median clypeal lobe very short, clearly shorter than broad, broadest posteriorly, its anterior margin straight; eyes absent; frontal lobes high, not passing over anterior clypeal margin; with head in full-face, antennal scapes not reaching posterior margin of head; petiole in profile subrectangular, slightly longer than high; subpetiolar process well developed, subtriangular, apex of subpetiolar process truncate

and directed downward, anterior margin convex, while posterior margin almost straight and distinctively longer. Entire body (head, mandible, antennal scape, mesosoma, legs, petiole and remaining metasoma segments) smooth and shiny. Body entirely reddish or yellowish brown, normally head darker than elsewhere.

Worker description (figs. 31–33)

Measurements. Holotype: TL 4.30, HL 0.83, HW 0.70, SL 0.56, ML 0.46, PW 0.50, MSL 1.16, PL 0.33, PH 0.45, DPW 0.31; CI 84, SI 80, MI 56, LPI 135, DPI 95.



FIGURES 28–30. *Myopias minima* sp. nov. (Paratype worker, THNHM-I-00243); 28, Body in profile view; 29, body in dorsal view; 30, head in full-face view.



FIGURES 31–33. *Myopias minima* sp. nov. (paratype queen, THNHM-I-00245); 31, Body in profile view; 32, body in dorsal view; 33, head in full-face view.

Paratype workers (n = 2): TL 4.10–4.31, HL 0.82–0.83, HW 0.69–0.72, SL 0.52–0.55, ML 0.46–0.53, PW 0.51–0.53, MSL 1.16–1.21, PL 0.31–0.36, PH 0.45–0.47, DPW 0.33–0.35; CI 84–88, SI 75–76, MI 56–63, LPI 131–145, DPI 97–106.

Head: In full-face view head clearly longer than broad (CI= 83–84), subrectangular with sides convex and posterior margin weakly concave; posterolateral corners of head bluntly angulate. Mandibles robustly linear and subfalcate, relatively short, down-curved in profile; masticatory margin with four teeth, including large basal tooth, large prebasal tooth, minute preapical tooth (denticle), and medium-sized apical tooth; basal margin with a well-defined protuberance; distance from prebasal tooth to preapical tooth about half of distance from basal tooth to

prebasal tooth (fig. 2). Median clypeal lobe very short, clearly shorter than broad, broadest posteriorly, its anterior margin straight. Eyes absent. Antennal scapes robust and enlarged toward their apical portion to reach nearly the width of a frontal lobe, extending posteriorly not reaching posterior margin of head; antennal segment II longer than broad and longer than each of segments III–VIII; segments III–VIII each shorter than broad; four apical segments forming a club. Frontal lobes long and broad, slightly translucent, low slightly extend over anterior margin of clypeus. Median longitudinal frontal sulcus deep, extending slightly beyond 1/3 of head length.

Mesosoma: Stout, in profile with weakly convex dorsal outline, mesonotum anteriorly raised slightly higher than pronotum and propodeum; promesonotal suture and metanotal groove distinct; mesopleuron clearly demarcated from metapleuron by a deep groove; metapleuron not demarcated from lateral face of propodeum; pronotum slightly broader than mesonotum and propodeum in dorsal view; mesonotum about 2/3 length of pronotum in dorsal view.

Metasoma: Propodeum with almost straight dorsal outline, sloping gradually to propodeal junction; propodeal junction obtusely angulated; declivity of propodeum more or less flat. Petiole in profile subrectangular and sessile, longer than high, its anterior face vertical, dorsal and posterior faces weakly convex; in dorsal view petiolar node subrectangular, slightly wider than long (DPI 100–105), broader posteriorly; subpetiolar process well developed, subtriangular, apex of subpetiolar process truncate and directed downward, anterior margin convex, while posterior margin almost straight and distinctively longer. Metasomal segments III to IX elongate, in dorsal view, metasomal segment III slightly narrower than IV. Sting long, sharp and upcurved.

Entire body (head, mandible, antennal scape, mesosoma, legs, and metasoma) smooth and shiny. Pilosity comparatively sparse; dorsa of head, mesosoma, and metasoma with sparse standing hairs mixed with sparse shorter hairs; tip of metasoma with dense standing hairs; tibiae with dense decumbent hairs. Body entirely reddish brown to yellowish brown, head darker than elsewhere.

Dealate queen description (figs. 31–33)

Measurements. Paratype (dealate queen): TL 4.87, HL 0.91, HW 0.85, ED 0.30, SL 0.60, ML 0.59, PW 0.69, MSL 1.54, PL 0.44, PH 0.62, DPW 0.46, CI 94, SI 70, OI 35, MI 65, LPI 140, DPI 106.

Similar to the worker in structure, sculpture and pilosity, with the following conditions that should be noted: body clearly larger; head in full-face view slightly longer than broad, rectangular, with parallel sides and concave posterior margin; eyes large, almost as long as the apical segment of antenna; distance between eye and mandibular base much shorter than eyes length; median ocellus as large as lateral ocelli; mesoscutum trapezoidal with slightly protruding borders, anterior edge convex in dorsal view; in profile, its anterior portion slightly bulged and flattened caudad; parapsidal lines indistinct; scutellum oblong, clearly broader than long; metanotum very short; metanotal-propodeal sulcus deeply impressed; propodeal outline almost straight; propodeal junction nearly right-angled; petiole clearly shorter than high; metasoma (segments III to IX) relatively larger than in the worker.

Head, pronotum, mesopleuron, metapleuron, propodeum, petiole, metasoma segments III and IV reddish brown; mesoscutum, scutellum, tip of metasoma and legs yellowish brown; antenna and mandible lighter than head but darker than legs.

Habitat. The type series of *M. minima* was found nesting inside a small dead branch in an advanced stage of decomposition on the forest floor of a lowland rainforest.

Distribution. This species is known only from the type locality (S Thailand, Pattalung Province, fig. 52).

Comparative notes. *Myopias minima* can be distinguished from the closely related species, *M. bidens* (Emery, 1900); *M. breviloba* (Wheeler, 1919); *M. castaneicola* (Donisthorpe, 1938); *M. chapmani* Willey & Brown, 1983; *M. daia* Xu *et al.*, 2014; *M. darioi* Probst *et al.*, 2015; *M. luoba* Xu & Liu, 2011; *M. mayri* (Donisthorpe, 1932) and *M. trumani* (Donisthorpe, 1949) by the following characteristics: eyes clearly absent in the worker (compound eyes reduced with ca. 5 facets, or larger in closely related species); median clypeal lobe very short, distinctively shorter than broad, broadest posteriorly (similar to that of *M. breviloba*), its anterior margin straight (anterior margin concave in *M. breviloba*); smallest species among the closely related species (worker's HW 0.69–0.72 mm in *M. minima*; over 0.79 in other species). *Myopias minima* is also closely related to *M. nops* Willey *et al.*, 1983 from Taiwan in having a small body size and lacking eyes in the worker caste. However, *M. minima* is easily separated from *M. nops* by the following characteristics: most of body smooth and shiny (reticulo-punctate in *M. nops*); anterior margin of median clypeal lobe straight (concave in *M. nops*); antennal scape extending posteriorly not reaching posterior margin of head (reaching posterior margin of head in *M. nops*).

***Myopias sakaeratensis* sp. nov.**

(Figs. 34–36)

Etymology. The specific name is after the type locality, Sakaerat Environmental Research Station, Nakhon Ratchasima Province, northeastern Thailand.

Type. Holotype worker (THNHM-I-00291, THNHM), NE Thailand, Nakhon Ratchasima Prov., Wang Nam Kheao 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. Two paratype workers (THNHM-I-00292 to THNHM-I-00293), same data as holotype (THNHM); 1 paratype worker (THNHM-I-00294), NE Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station, 12.V.2002, C. Bourmas leg. (THNHM).

Non-type material examined. THAILAND: one worker, NE Thailand, Chaiyaphum Prov., Phu Kheao, 14.VIII.1998, R. Dickinson leg. (AMK).

Diagnosis of worker. Body 6.55–6.65 mm in total length (medium size). Masticatory margin of mandibles with five teeth, including large basal tooth, large prebasal tooth, minute preapical tooth (denticle), and medium-sized apical tooth; basal margin with an ill-defined protuberance; median clypeal lobe slightly broader than long, subtriangular, widened forward, its anterior margin weakly concave, lateral margin and anterior margin meet so as to form sharp angle; eyes relatively large with 15 ommatidia along the longest axis; frontal lobes high, not passing over anterior clypeal margin; with head in full-face, antennal scapes almost reaching posterior margin of head; in profile, anteroventral corner of head with bluntly angled process; subrectangular, slightly shorter than high; subpetiolar process well developed, subrectangular. Dorsum of head with fine dense punctures; dorsa of mesosoma and petiole with dense macropunctures; mesopleuron and lateral surface of propodeum sculptured (irregularly longitudinally striate); declivity of propodeum reticulate with smooth and shiny interspaces; third and fourth metasomal tergites with dense foveae. Body entirely reddish brown to dark brown.

Worker description

Measurements. Holotype: TL 6.94, HL 1.31, HW 1.31, ED 0.19, SL 0.98, ML 1.13, PW 0.92, MSL 1.93, PL 0.62, PH 0.91, DPW 0.72, CI 100, SI 75, OI 15, MI 86, LPI 147, DPI 115.

Paratype workers (n = 3): TL 6.55–6.65, HL 1.22–1.29, HW 1.19–1.29, SL 0.92–1.01, ED 0.17–0.20, ML 0.92–0.99, PW 0.83–0.92, MSL 1.72–1.78, PL 0.59–0.63, PH 0.79–0.83, DPW 0.66–0.69, CI 95–97, SI 78–82, OI 14–16, MI 74–78, LPI 132–139, DPI 105–117.

Head: In full-face view head rectangular, almost as long as broad, with sides convex and posterior margin feebly concave; posterolateral corners of head roundly convex. Mandibles long and slender, inner margin of mandible with 5 teeth (fig. 7). Median clypeal lobe trapezoidal, shorter than broad; broadest anteriorly, with lateral margins clearly diverging from one another in particular on their anterior half; anterior margin of clypeal lobe weakly concave; lateral margin and anterior margin meet so as to form sharp angle. Eyes relatively large, composed of ca. 15 ommatidia along longest axis, located close to the base of mandibles; distance between mandibular base to anterior margin of eye shorter than half length of eyes. Antennal scapes relatively long, clavate, reaching posterior margin of head; flagella incrassate towards apex, apical segment as long as segments IX, X and XI combined. Frontal lobes low, passing over anterior clypeal margin. Median longitudinal frontal sulcus deep, slightly extending beyond level of posterior margin of eyes. Ventral face of head with bluntly angled process in the middle and close to the anterior margin.

Mesosoma: Stout, in profile view pronotum weakly convex dorsal outline; promesonotal suture and metanotal groove distinct, narrow; upper portion of metapleura shallowly impressed; in dorsal view pronotum clearly broader than mesonotum and propodeum; mesonotum short, rectangular, about 1/3 length of pronotum in dorsal view.

Metasoma: Dorsum of propodeum weakly convex, rounded into declivity of propodeum; the latter shallowly concave. Petiole in profile subrectangular, distinctly shorter than high, its anterior face vertical with weakly convex, dorsal outline convex, posterior face flat vertical; in dorsal view, petiolar node trapezoidal and slightly shorter than broad (DPI 105–117), anterior margin convex, but posterior margin flat; subpetiolar process well developed, subrectangular. Metasoma segments III–IX elongate; in dorsal view, metasoma segment III about half-length of metasoma segment IV. Sting long, sharp and upcurved.

Dorsum of head with dense punctures, with area between punctures smooth and shiny; ventral surface of head smooth and shiny; scape with dense punctures but shiny; mandible largely smooth and shiny with a few small

punctures; dorsa of mesosoma and petiole with dense macropunctures, areas between punctures smooth and shiny; lateral surface of propodeum irregularly longitudinally striate; declivity of propodeum reticulate; third and fourth metasomal tergites with dense foveae.

Head and body with dense erect and suberect hairs mixed with dense decumbent pubescence. Antennal scape with sparse suberect hairs and dense decumbent pubescence. Entire body reddish brown or dark brown; hairs and pubescence reddish brown.

Habitat. The type series was collected from a rotten log on the forest floor in a lowland dry evergreen forest. One specimen from Phu Kheao wildlife sanctuary was collected using a pitfall trap in a dry dipterocarp forest.



FIGURES 34–36. *Myopias sakaeratensis* sp. nov. (holotype worker, THNHM-I-00291); 34, Body in profile view; 35, body in dorsal view; 36, head in full-face view.

Distribution. Thailand (Nakhon Ratchasima and Chiyaphum Provinces, fig. 52).

Comparative notes. *M. sakaeratensis* is most similar to *M. conicara* Xu, 1998 in general appearance and with low frontal lobes (figs. 36 and 46). This species can be distinguished from *M. conicara* by the following characteristics: smaller size (TL 6.55–6.94 in *M. sakaeratensis*; TL 7.20–8.30 in *M. conicara*); head with sparse punctures, partly smooth and shiny (dense punctures all over head in *M. conicara*, see figs. 36 and 46 for comparison); petiole more rectangular, shorter than high and subpetiolar process well developed (petiole more squared and subpetiolar process low, its ventral outline weakly concave in *M. conicara*); in dorsal view petiole slightly shorter than broad (clearly longer than broad in *M. conicara*); clypeal lobe not as large as in *M. conicara* (see fig. 36 and fig. 46 for comparison); antennal scapes reaching posterior margin of head (slightly extending beyond posterior margin of head in *M. conicara*). *Myopias sakaeratensis* is similar to *M. crawleyi* but can be easily separated from the latter by the following characteristics: frontal lobes low, passing over anterior clypeal margin (high and not passing over anterior clypeal margin in *M. crawleyi*); mesopleuron and lateral face of propodeum sculptured (smooth and shiny in *M. crawleyi*); propodeal declivity reticulate with smooth and shiny interspaces (entirely smooth and shiny in *M. crawleyi*); posterior $\frac{3}{4}$ of subpetiolar process rectangular, its ventral outline weakly convex (posterior $\frac{3}{4}$ of subpetiolar process triangular, its ventral outline almost straight in *M. crawleyi*); slightly larger size (HW 1.19–1.29 mm in *M. sakaeratensis*; HW 0.96–0.99 mm in *M. crawleyi*).

***Myopias sonthichiae* sp. nov.**

(Figs. 37–43)

Etymology. The specific name is dedicated to Assoc. Prof. Sauwapa Sonthichai of Chiang Mai University, who has been a leading myrmecologist in Thailand.

Type. Holotype worker (THNHM-I-00946, THNHM), 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. Paratypes: one worker (THNHM-I00947) and 1 queen (THNHM-I-00948) are deposited in THNHM, same colony as holotype; one worker, same data as holotype, is deposited in SBSHKU.

Non-type material examined. One worker, N Thailand, Chiang Mai Prov., Muang Dist., Hill Evergreen Forest (HEF), 18.VII.2016, W. Jaitrong leg. (THNHM); 1 worker, Chiang Mai Prov., Muang Dist., Hill Evergreen Forest, 8.VI.2001, S. Hasin leg. (AMK); 1 worker, same locality, Secondary Forest, 15.V.2008, S. Sonthichai leg., Colony no. SS150808-1 (THNHM); 1 worker, same locality and collector, VII, 2008 (THNHM); 1 dealate queen, Tak Prov., Um Phang Dist., Thung Yai Naresuan East W.S., 21.I.2014, W. Jaitrong leg. (THNHM); 1 worker, same locality, Dry Evergreen Forest, V.1999, W. Jaitrong leg. (AMK); 1 worker, same locality, 18.X.2000, S. Hasin leg. (THNHM). See also discussion below.

Diagnosis of worker. Body 6.50–7.00 mm in total length (large size, but presenting important variation). Masticatory margin of mandibles with five teeth, including large basal tooth, large prebasal tooth, minute preapical tooth (denticle), and medium-sized apical tooth; basal margin with an ill-defined protuberance; median clypeal lobes slightly broader than long, subtriangular, widened forward, its anterior margin weakly concave, lateral margin and anterior margin meet so as to form blunt angle; eyes relatively large with 13–15 ommatidia along the longest axis; frontal lobes high, not passing over anterior clypeal margin; with head in full-face, antennal scapes slightly extending beyond posterior margin of head; in profile, anteroventral corner of head with bluntly angled process; petiole subrectangular, shorter than high; subpetiolar process well developed, with strongly concave ventral outline, with a posteroventrally pointed triangular denticle at anteroventral corner, and with a pair of small posteriorly pointed denticles at posteroventral corners. Mandibles sparsely punctate, interspaces smooth and shiny. Head with moderate-sized macropunctures, distance between punctures about equal to diameter of punctures, interspaces smooth and shiny; dorsum of head in central portion with sparse punctures. Dorsa of mesosoma, petiole and first gastral segment with sparse, large, elliptic macropunctures; lateral faces of metapleuron and propodeum finely longitudinally rugulose, opaque; declivity of propodeum superficially transversely rugulose; declivity of petiolar node superficially shagreenate, less shining. Metasomal segments IV–IX largely smooth and shiny, but anterior half of segment IV sparsely punctate. Head and body with dense erect and suberect hairs mixed with dense decumbent pubescence. Antennal scapes with sparse suberect hairs and dense decumbent pubescence. Body colour black; mandible, antenna, legs, and apex of metasoma reddish brown; hairs and pubescence light yellow.



FIGURES 37–39. *Myopias sonthichaiiae* sp. nov. (paratype worker, TH02 SH-052); 37, Body in profile view; 38, body in dorsal view; 39, head in full-face view.

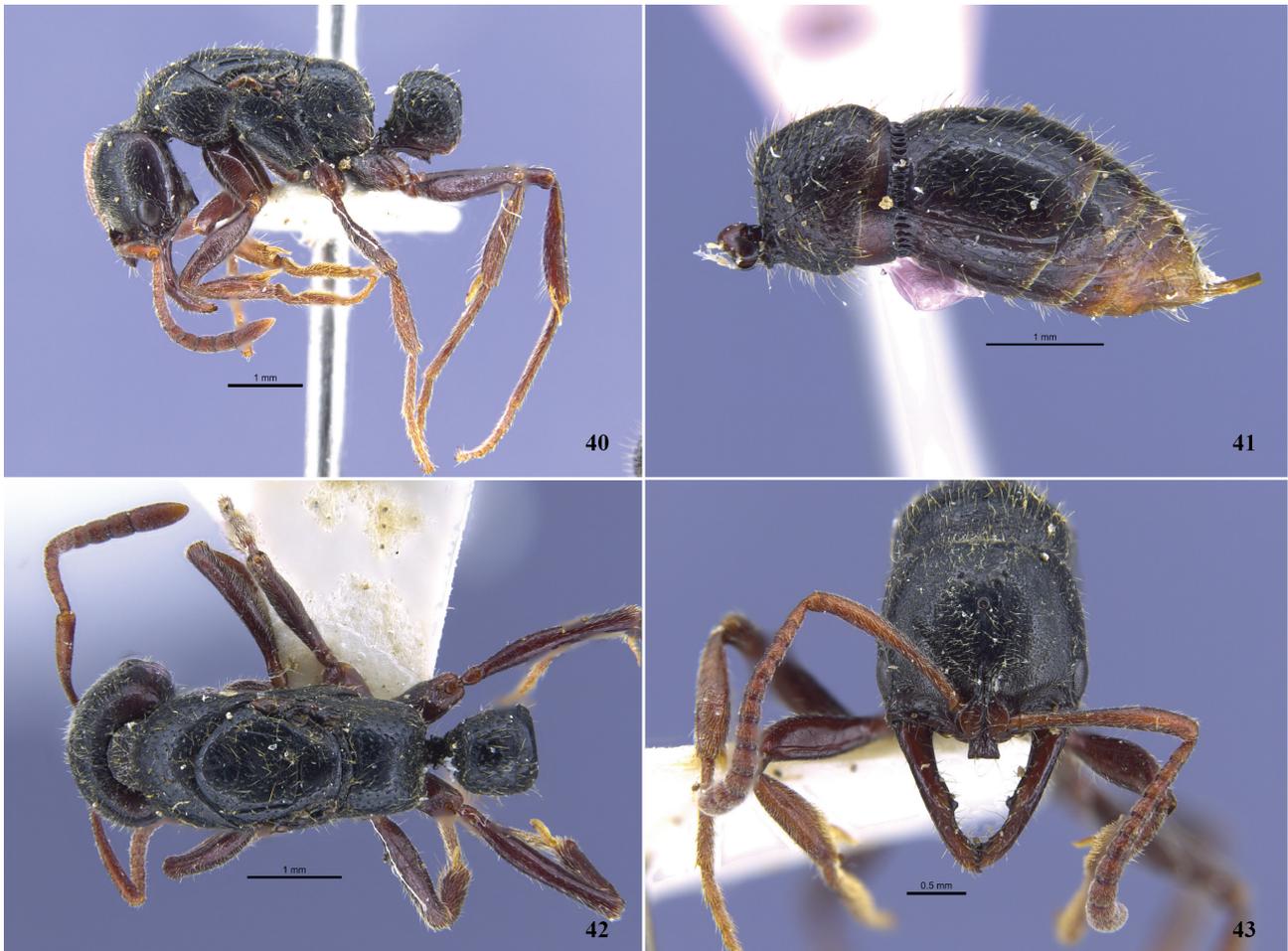
Worker description (figs 37–39)

Measurements. Holotype: TL 9.57, HL 1.62, HW 1.58, ED 0.26, SL 1.42, ML 1.49, PW 1.25, MSL 2.31, PL 0.89, PH 1.06, DPW 0.83; CI 98, OI 17, SI 90, MI 92, LPI 119, DPI 93.

Paratype worker (n=2): TL 9.05–9.30, HL 1.61–1.62, HW 1.49–1.57, ED 0.23, SL 1.25–1.39, ML 1.32–1.48 mm, PW 1.16–1.18, MSL 1.96–2.55, PL 0.83–0.86, PH 0.99–1.05, DPW 0.73–0.75, CI 93–97, OI 15, SI 84–89, MI 82–91, LPI 119122, DPI 87–88.

Head: In full-face view head slightly longer than broad, subrectangular with side convex and posterior margin feebly concave; posterolateral corners of head roundly convex. Mandibles long and slender, inner margin of

mandibles with 5 teeth, apical tooth acute while basal tooth triangular. Median clypeal lobe trapezoidal, widened anteriorly, with lateral margins clearly diverging from one another in particular on their anterior half; anterior margin of clypeal lobe weakly concave; lateral margin and anterior margin meet so as to form blunt angle. Eyes relatively large, composed of 13–15 ommatidia along longest axis, located close to base of mandibles. Antennal scapes relatively long extending slightly beyond posterior margin of head; flagella incrassate towards apex, with apical segment slightly longer than segments X and XI combined. Frontal lobes high, not passing over anterior clypeal margin. Median longitudinal frontal sulcus deep, reaching level of posterior margin of eyes. Ventral face of head with bluntly angled process in the middle and close to the anterior margin.



FIGURES 40–43. *Myopias sonthichaiiae* sp. nov. (paratype queen, THNHM-I-00291); 40, Body in profile view; 41, metasoma in profile view; 42, body in dorsal view; 43, head in full-face view.

Mesosoma: Stout, in profile with weakly convex dorsal outline; promesonotal suture and metanotal groove distinct and depressed; in dorsal view pronotum slightly narrower than head and slightly broader than propodeum; mesonotum short, crescent, about $\frac{1}{4}$ length of pronotum in dorsal view.

Metasoma: Dorsum of propodeum slightly convex, rounded into declivity of propodeum; the latter shallowly concave. Petiole in profile subrectangular, shorter than high, its anterior face vertical with weakly concave, dorsal outline roundly convex, posterior face flat vertical with narrow depression in each side close to lateral margin; in dorsal view petiolar node longer than broad (DPI 88–93), anterior margin convex, but posterior margin almost straight; subpetiolar process well developed, with strongly concave ventral outline, with a posteroventrally pointed triangular denticle at anteroventral corner, and with a pair of small posteriorly pointed denticles at posteroventral corners. Metasomal segments III to IX elongate. In dorsal view, metasomal segment III narrower and shorter than gastral segment IV. Sting long, sharp and upcurved.

Mandibles sparsely punctate, interspaces smooth and shiny. Head with moderate-sized macropunctures,

distance between punctures about equal to diameter of punctures, interspaces smooth and shiny; dorsum of head in central portion with sparse punctures. Dorsa of mesosoma, petiole and first gastral segment with sparse, large, elliptic macropunctures; lateral faces of metapleuron and propodeum finely longitudinally rugulose, opaque; declivity of propodeum superficially transversely rugulose; declivity of petiolar node superficially shagreenate, less shining. Metasomal segments IV–IX largely smooth and shiny, but anterior half of segment IV sparsely punctate. Head and body with dense erect and suberect hairs mixed with dense decumbent pubescence. Antennal scapes with sparse suberect hairs and dense decumbent pubescence. Body colour black; mandible, antenna, legs, and apex of metasoma reddish brown; hairs and pubescence light yellow.

Dealate queen description (figs. 40–43)

Measurements. Paratype queen: TL 11.12, HL 1.84, HW 1.76, ED 0.37, SL 1.54, ML 1.50, PW 1.49, MSL 3.15, PL 1.02, PH 1.23, DPW 0.93, CI 96, OI 21, SI 87, MI 81, LPI 121, DPI 92.

Similar to the worker in structure, sculpture and pilosity, with the following conditions that should be noted: body slightly larger; head in full-face view almost as long as broad, rectangular with side weakly convex and posterior margin almost straight; head with three ocelli; eyes large, located close to mandibular base; distance between eye and mandibular base much shorter than eye length; median ocellus as large as lateral ocelli; mesoscutum trapezoidal with slightly protruding borders, anterior edge convex in dorsal view; in profile, its anterior portion slightly bulged and flattened caudad; parapsidal lines indistinct; scutellum oblong, clearly broader than long; metanotum very short; metanotal-propodeal sulcus deeply impressed; anepisternum clearly demarcated from katapisternum by a distinct groove; dorsum of propodeum slightly convex and shorter than declivity; propodeal junction rounded; petiole shorter than high; gaster relatively larger than in the worker.

Habitat. The type series of *M. sonthichaiae* was collected in highland forest plantation, hill evergreen and dry evergreen forests (1,000–1,300 m a.s.l.) in northern and western Thailand. The colonies were found in rotten wood at an advanced stage of decomposition.



FIGURES 44–47. *Myopias conicara* (holotype worker); 44, Body in profile view; 45, body in dorsal view; 46, head in full-face view; 47, data labels. Photos by Professor Zheng-Hui Xu.



FIGURES 48–51. *Myopias hania* (holotype worker); 48, Body in profile view; 49, body in dorsal view; 50, head in full-face view; 51, data labels. Photos by Professor Zheng-Hui Xu.

Distribution. Thailand (Chiang Mai and Tak Provinces, fig. 52).

Comparative notes. *Myopias sonthichaiiae* is most similar to *M. conicara* (figs. 44–47) and *M. hania* Xu & Liu, 2012 (figs. 48–51) in general appearance. However, *M. sonthichaiiae* can be distinguished from *M. conicara* by the following characteristics: frontal lobes high, not passing over anterior clypeal margin (low, passing over anterior clypeal margin in *M. conicara*); lateral margins and apical margin of median clypeal lobe meet so as to form blunt angle (sharp angle in *M. conicara*); petiole subglobular (subrectangular in *M. conicara*); in profile view subpetiolar process strongly concave ventral outline (weakly concave in *M. conicara*); in dorsal view, petiolar node clearly longer than wide (as wide as long in *M. conicara*). *Myopias sonthichaiiae* differs from *M. hania* by the following characteristics: antennal scapes relatively long, extending beyond posterolateral corners of head (short, not reaching posterolateral corners of head in *M. hania*); frontal lobes high, not passing over anterior clypeal margin (low, passing over anterior clypeal margin in *M. hania*); posterolateral margin of petiolar node with an oblique furrow (lacking in *M. hania*); in profile view petiolar node subglobular (rectangular in *M. hania*); in profile view subpetiolar process strongly concave ventral outline (ventral margin distinctly convex behind anteroventral tooth in *M. hania*).

A Thai specimen at BMNH bears a paratype label of an unpublished manuscript name by W. L. Brown. Images are available on Antweb (<https://www.antweb.org/specimenImages.do?code=casent0902521>). The images were compared with *M. sakaeratensis* and *M. sonthichaiiae* and with holotype images of *M. conicara* and *M. hania*. The images agree well with specimens of *M. sonthichaiiae*. Moreover, the location and elevation of this specimen (Doi Inthanon [misspelled Doi Indhanont], Chiang Mai Prov.) match the holotype of *M. sonthichaiiae*. They were collected about 150km from each other, at similar elevation (1750 and 1780m). Thus, this unpublished species is identified as *M. sonthichaiiae*.

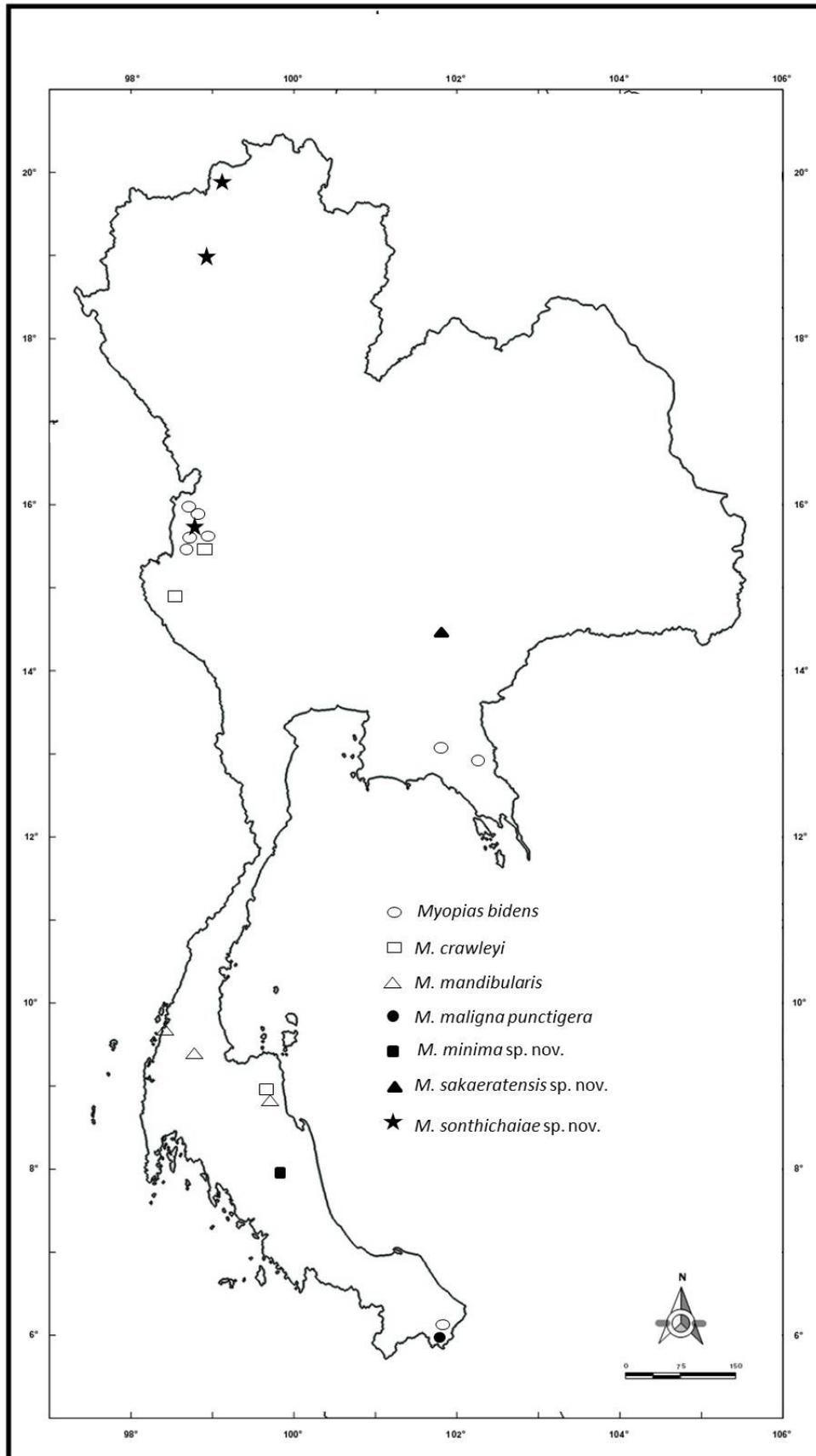


FIGURE 52. Distribution of the ant genus *Myopias* in Thailand.

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