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A strikingly coloured new species of *Hemisphaerius* Schaum, 1850 from Thailand (Hemiptera: Fulgoromorpha: Issidae)

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Front cover: Two specimens of *Hemisphaerius binduseni* sp. nov., Thailand, Rayong, Pluak Daeng, 12°58'48.7"N 101°12'27.0"E, 3.V.2014. © A. Suphap.

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Abstract

A new species of *Hemisphaerius* Schaum, 1850, *H. binduseni* sp. nov. is described from Thailand. Illustrations of the holotype and male genitalia, photographs of live specimens and a distribution map are provided. It is compared with *H. interclusus* Noualhier, 1896, which is additionally recorded from Thailand for the first time and illustrated from live specimens; new records from Cambodia and Vietnam and a distribution map are also provided for this species. The genus *Hemisphaerius* counts now four species in Thailand.

Keywords: Fulgoroidea, Hemisphaeriinae, Hemisphaeriini, Indochina, planthopper.

Introduction

The planthopper genus *Hemisphaerius* Schaum, 1850 (Issidae, Hemisphaeriinae, Hemisphaeriini) is widely distributed in Southeast Asia and extends to the adjacent parts of the Palaearctic Region to the North and to New-Guinea to the South. It is very speciose, containing 89 species, and is in need of a comprehensive revision (CONSTANT & BARTLETT, 2019). Only two species were recorded from Thailand: *H. cassidoides* Walker, 1862 and *H. rufovarius* Walker, 1858 (WALKER, 1862; METCALF, 1958; LIANG, 2001; FLOW – BOURGOIN, 2020). Recently, specimens of a strikingly turquoise and orange-red coloured *Hemisphaerius* collected from central and western Thailand appeared to be an undescribed species close to *H. interclusus* Noualhier, 1896 which is currently recorded from Cambodia and Vietnam (NOUALHIER, 1896; MELICHAR, 1906; GNEZDILOV, 2013; CONSTANT & BARTLETT, 2019). Only two other species of *Hemisphaerius*, *H. coccinelloides* (Burmeister, 1834), described from the Philippines (BURMEISTER, 1834), and *H. formosus* Melichar, 1913, from Taiwan (MELICHAR, 1913) show turquoise-blue and orange-red colours, but the pattern on the tegmina is very different, composed of straight longitudinal bands with the red ones broader than the blue ones (BUTLER, 1875; CHAN & YANG, 1994). The scrutiny of collection specimens and photographs of insects on various websites provided several additional records of *H. interclusus* from Cambodia, Thailand and Vietnam. Accordingly, this paper aims to provide a description of this new species as *H. binduseni* sp. nov. and to compare it with *H. interclusus*, to add the latter species to the fauna of Thailand and to provide additional data of host plants, habitat and distribution.

Material & methods

The specimens were captured by hand using small transparent vials with which they were slowly covered or by sweeping the lower vegetation and bushes in the forest. The genitalia were extracted after boiling the abdomen in a 10% solution of potassium hydroxide (KOH) at about 100°C. Some drops of saturated alcoholic Chlorazol black solution were added for contrasting (CARAYON, 1969). The pygofer was separated from the abdomen and the aedeagus dissected

with a needle blade for examination. The whole was then placed in glycerine for preservation in a tube attached to the pin of the corresponding specimen.

The classification follows WANG *et al*. (2016) and GNEZDILOV (2017); the description of the male genitalia, BOURGOIN (1988). The metatibiotarsal formula provides the number of spines on (side of metatibia) apex of metatibia/apex of first metatarsomere/apex of second metatarsomere. The nomenclature used for the coloured lines on the disc of tegmina follows Fig. 1 E.

The measurements were taken as in CONSTANT (2004) and the following acronyms are used:

BB = maximum breadth of the body.
BF = maximum breadth of the frons.
BV = maximum breadth of the vertex.
LF = length of the frons in median line.
LT = total length (apex of head to apex of tegmina).
LV = length of the vertex in median line.

The photographs of the collection specimens were taken with a with a Canon EOS 7D camera with Canon EF 100mm f/2.8 Macro USM lens, and stacked using the Adobe Photoshop CC 2019 or alternatively with a Leica EZ4W stereomicroscope with integrated camera, stacked with CombineZ software and optimized with Adobe Photoshop CS3. The photographs of the male genitalia were taken using the last method. The distribution maps were produced with SimpleMappr (SHORTHOUSE, 2010).

Acronyms used for the collections:

KUKPS	=	Department of Entomology, Faculty of Agriculture, Kasetsart University Kamphaeng Saen Campus, Nakhon Pathom, Thailand.
RBINS	=	Royal Belgian Institute of Natural Sciences, Brussels, Belgium.
RUPP	=	Royal University of Phnom Penh, Faculty of Biology, Cambodian Entomology Initiative, Phnom Penh, Cambodia.
THNHM	=	Thailand Natural History Museum, National Science Museum, Pathum Thani, Thailand.

Taxonomy

Order Hemiptera Linnaeus, 1758
Suborder Auchenorrhyncha Duméril, 1806
Infra-order Fulgoromorpha Evans, 1946
Superfamily Fulgoroidea Latreille, 1807
Family Issidae Spinola, 1839
Subfamily Hemisphaeriinae Melichar, 1906
Tribe Hemisphaeriini Melichar, 1906

Genus *Hemisphaerius* Schaum, 1850

Hemisphaerius Schaum, 1850: 71. Type species: *Hemisphaerius coccinelloides* (Burmeister, 1834).

The definition of the genus given by GNEZDILOV (2017) is followed here, with as main diagnostic characters: frons flat, smooth, widened above clypeus, with lateral margins slightly projecting on sides; frons and clypeus without carinae; vertex wider than long; pro- and

mesonotum without carinae; costal margin of tegmina not strongly projecting anteriorly under eye; posterior wings rudimentary; metatibiae with 2 lateral spines. Male terminalia: phallobase asymmetric; aedeagus without ventral hooks; posterior margin of pygofer rounded in lateral view; gonostyli with short and wide capitulum; anal tube wide in dorsal view.

DISTRIBUTION. China, Japan, Taiwan Vietnam, Cambodia, Myanmar, Thailand, India, Sri Lanka, Malaysia, Singapore, Philippines, Indonesia, New Guinea, Solomon Islands (FLOW – BOURGOIN, 2020).

CHECKLIST OF THE SPECIES OF *HEMISPHAERIUS* FROM THAILAND

H. binduseni **sp. nov.**

H. cassidoides Walker, 1862
DISTRIBUTION: Thailand*.

H. interclusus Noualhier, 1896
DISTRIBUTION: Cambodia*, Thailand (**new record**), Vietnam.

H. rufovarius Walker, 1858
DISTRIBUTION: Borneo, China, Myanmar*, Thailand, Vietnam.

= *H. scymnoides* Walker, 1862, synonymised by LIANG (2001)
DISTRIBUTION: Thailand*.

= *H. testaceus* Distant, 1906, synonymised by LIANG (2001)
DISTRIBUTION: Myanmar*.

= *H. virescens* Distant, 1906, synonymised by LIANG (2001)
DISTRIBUTION: Myanmar*.

* = type locality

Hemisphaerius binduseni sp. nov.

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(Figs 1–5)

ETYMOLOGY. The species epithet is a patronym dedicated to Mr Charnchai Bindusen (Thailand) in acknowledgement for his guidance and his support to the work of the second author.

DIAGNOSIS. The species can be very easily recognized by its unique colour pattern (Figs 1–2): turquoise background with orange-red markings and the strongly curved shape of the orange-red lines on tegmina, with the lower one strongly sinuate and the upper and mid ones merging together posteriorly.

DIFFERENTIAL DIAGNOSIS. The species can be separated from the closest species, *H. interclusus* Noualhier, 1896 by (1) the shape of orange-red lines (Fig. 6) with the mid one nearly straight (strongly curved in *H. binduseni* sp. nov. – Fig. 2), and all three lines ending separately posteriorly (Fig. 6) (upper and mid lines connected posteriorly in *H. binduseni* sp. nov. – Fig. 2) and (2) the shape of the anal tube with posterior margin emarginate in dorsal view (GNEZDILOV, 2017, fig. 6) (rounded in *H. binduseni* sp. nov. – Fig. 3 D).

TYPE MATERIAL. THAILAND: Holotype ♂ (Figs 1–2): Thailand, Nakhon Pathom, Kamphaeng Saen, 14°02'22.0"N 99°57'40.8"E, 23.VIII.2003, day collecting, leg. Julalak [no last name given] (THNHM).

Paratypes: (4♂♂, 7♀♀): 1♂ Thailand, Nakhon Pathom, Kamphaeng Saen, 14°02'22.0"N 99°57'40.8"E, 3.VIII.2013, day collecting, leg. T. Onsompetch (RBINS); 1♂ Thailand, Nakhon Pathom, Kamphaeng Saen, 14°02'22.0"N 99°57'40.8"E, 17.VI.2013, day collecting, leg. W. Yongprapat (THNHM); 1♂ Thailand, Nakhon Pathom, Kamphaeng Saen, 14°02'22.0"N

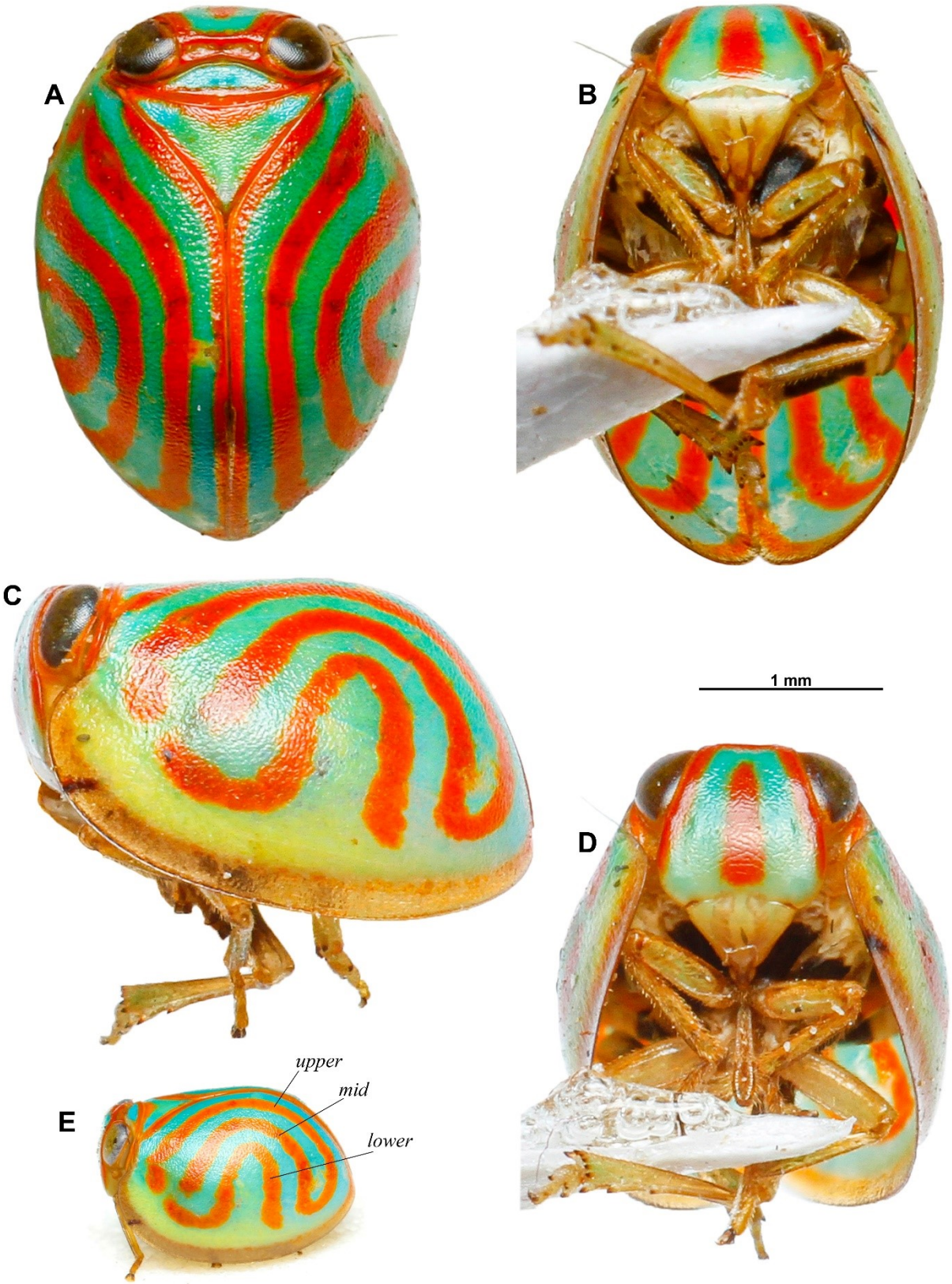

Fig. 1. *Hemisphaerius binduseni* sp. nov., holotype. A, dorsal view. B, ventral view. C, lateral view. D, perpendicular view of frons. E, nomenclature of the orange-red discal lines of tegmina.

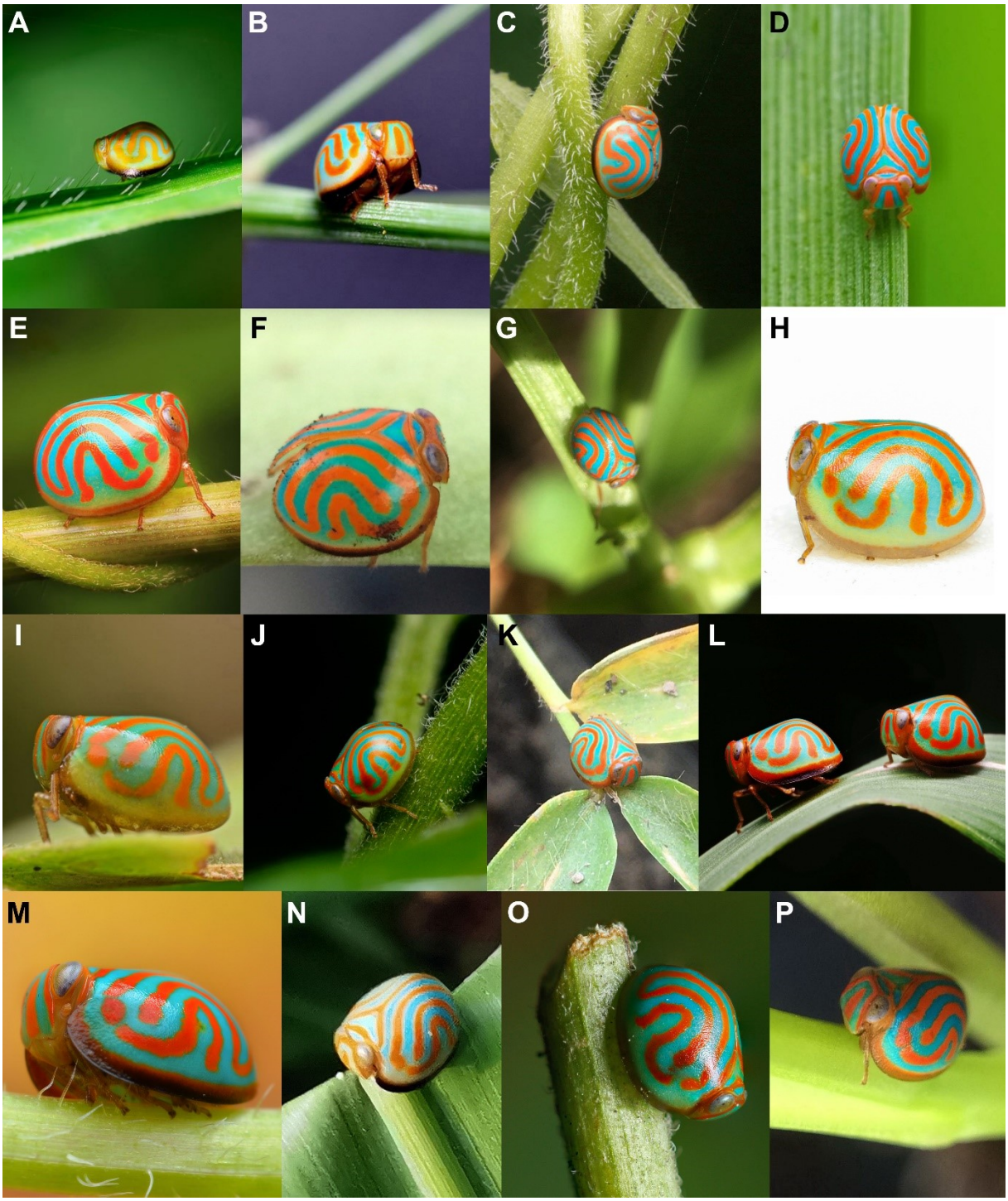

Fig. 2. *Hemisphaerius binduseni* sp. nov., in nature. THAILAND. A, Chonburi, Bang Phra Reservoir, 19.VII.2012. © P. Sritanarat. B, same data, 22.VII.2012. © A. Buranapong. C, Chonburi, Amphoe Mueang (= capital district), IV.2019. © S. Klaebangtong. D, Songkhla, Hat Yai District, 22.IX.2017. © T. Suchipong. E, Phuket, Amphoe Mueang (= capital district), 11.I.2015. © S. Schwendener. F, Prachuap Khiri Khan, Amphoe Mueang (= capital district), 25.XII.2019. © S. Surinta. G, same data, 27.I.2018. © S. Surinta. H, Ratchaburi, Suan Phueng, Khao Krachom, 30.VII.2019. © K. Jiaranaisakul. I, Ratchaburi, Suan Phueng, 23.I.2015. © T. Thitatammo. J, Ratchaburi, Suan Phueng, Khao Krachom, 25.VIII.2019. © K. Jiaranaisakul. K, Phang Nga, Thanoon, 1.I.2020. © P. Borankit. L, Rayong, Pluak Daeng, 3.V.2014. © A. Suphap. M, Surat Thani, Suan Luang Rama 9, 19.VIII.2016. © S. Jongprasert. N, Chonburi, Bang Phra Reservoir, 26.X.2019. © S. Thanombuddha. O, Ratchaburi, Khao Krachom, 10.VI.2020. © K. Jiaranaisakul. P, Prachuap Khiri Khan, 11.IX.2018. © M. Surinata.

99°57'40.8"E, 8.I.2004, day collecting, leg. Ratchanee [no last name given] (KUKPS); 1♂ Thailand, Nakhon Pathom, Kamphaeng Saen, 14°02'22.0"N 99°57'40.8"E, 12.VIII.2008, day collecting, leg. Kornthong [no last name given] (KUKPS); 1♀: Thailand, Ratchaburi, Suan Phueng, 13°33'40.6"N 99°12'24.4"E, 3.VIII.2019, day collecting, leg. K. Jiaranaisakul (THNHM); 1♀: Thailand, Ratchaburi, Suan Phueng, 13°33'40.6"N 99°12'24.4"E, 30.VII.2019, day collecting, leg. K. Jiaranaisakul (KUKPS); 1♀: Thailand, Ratchaburi, Suan Phueng, 13°33'40.6"N 99°12'24.4"E, 24.VIII.2019, day collecting, leg. K. Jiaranaisakul (RBINS); 4♀♀: Thailand, Pranburi District, Prachuap Khiri Khan prov., XII.2013, leg. & gift Darika Hongpadharakiree, I.G.: 32.616 (RBINS).

ADDITIONAL MATERIAL. THAILAND: 5 nymphs: Pranburi District, Prachuap Khiri Khan prov., XII.2013, leg. & gift Darika Hongpadharakiree, I.G.: 32.616 (RBINS).

MATERIAL EXAMINED FROM PHOTOGRAPHS. THAILAND: 1 ex. (Fig. 2 A): Chonburi, Bang Phra Reservoir, 13°13'43"N 100°58'20"E, 19.VII.2012, P. Sritanarat; 1 ex. (Fig. 2 B): same data, 22.VII.2012, A. Buranapong; 1 ex. (Fig. 2 C): Chonburi, Amphoe Mueang (= capital district), 13°21′43″N 100°58′45″E, IV.2019, S. Klaebangtong; 1 ex. (Fig. 2 D): Hat Yai, Amphoe Mueang (= capital district), 7°0′7″N 100°27′26″E, 22.IX.2017, T. Suchipong; 1 ex. (Fig. 2 E): Phuket, Amphoe Mueang (= capital district), 7°53′24″N 98°23′6″E, 11.I.2015, S. Schwendener; 1 ex. (Fig. 2 F): Prachuap Khiri Khan, Amphoe Mueang (= capital district), 11°48′30″N 99°47′48″E, 25.XII.2019, S. Surinta; 1 ex. (Fig. 2 G): same data, 27.I.2018, S. Surinta; 1 ex. (Fig. 2 H): Ratchaburi, Suan Phueng, Khao Krachom, 13°33'43.6"N 099°12'24.1"E, 30.VII.2019, K. Jiaranaisakul; 1 ex. (Fig. 2 I): Ratchaburi, Suan Phueng, 23.I.2015, T. Thitatammo; 1 ex. (Fig. 2 J): Ratchaburi, Suan Phueng, Khao Krachom, 25.VIII.2019, K. Jiaranaisakul; 1 ex. (Fig. 2 K): Phang Nga, Thanoon, 8°12'15.5"N 98°17'53.2"E 1.I.2020, P. Borankit; 2 ex. (Fig. 2 L): Rayong, Pluak Daeng, 12°58'48.7"N 101°12'27.0"E, 3.V.2014, A. Suphap.

DESCRIPTION. *Measurement and ratios*: LT: ♂ (n = 5): 3.6 mm (3.55–3.7), ♀ (n = 3): 4.05 mm (4.0–4.15); LT/BB = 1.4; LV/BV = 4.9; LF/BF = 0.89.

Head: (Fig. 1 A–D) vertex orange, nearly 5 times broader than long. Frons subhexagonal, flat and smooth without carina; turquoise with orange-red median line not reaching upper margin nor frontoclypeal suture; orange-red line along dorsal and lateral margins, stopping at ventrolateral angles of frons, not reaching frontoclypeal suture; frontoclypeal suture slightly arcuate. Clypeus and labium ochraceous. Genae and antennae ochraceous; antennae with scape short and cylindrical and pedicel bulbous. Ocelli absent.

Thorax: (Fig. 1 A–D) pronotum turquoise anteriorly; orange-red line along posterior margin extending to orange paranotal lobes; anterior margin carinate. Mesonotum turquoise on disc, with anterior and lateral margins bordered with orange-red; smooth, without median carina. Sternum ochraceous.

Tegmina: (Fig. 1 A, C, E) turquoise with orange-red stripes; one orange-red line along A2-postclaval margin extending anteriorly to anterolateral angle of mesonotum and posteriorly to caudal angle; disc with upper and mid orange-red lines parallel, departing below level of eye and following A2-postclaval margin and fused caudally before reaching margin, lower orange-red line departing from under base of first line and strongly sinuate to follow curve of mid line and stopping at level of connection of upper and mid lines; orange-red lines regularly separated by turquoise zone as wide as line; base of upper orange-red line sometimes separated and forming an elongate spot, sometimes merged with base of lower line resulting in a pattern formed by a single continuous line; costal margin entirely bordered by red to brown-black line, the latter followed by a turquoise area as wide as orange-red lines and usually paler than other

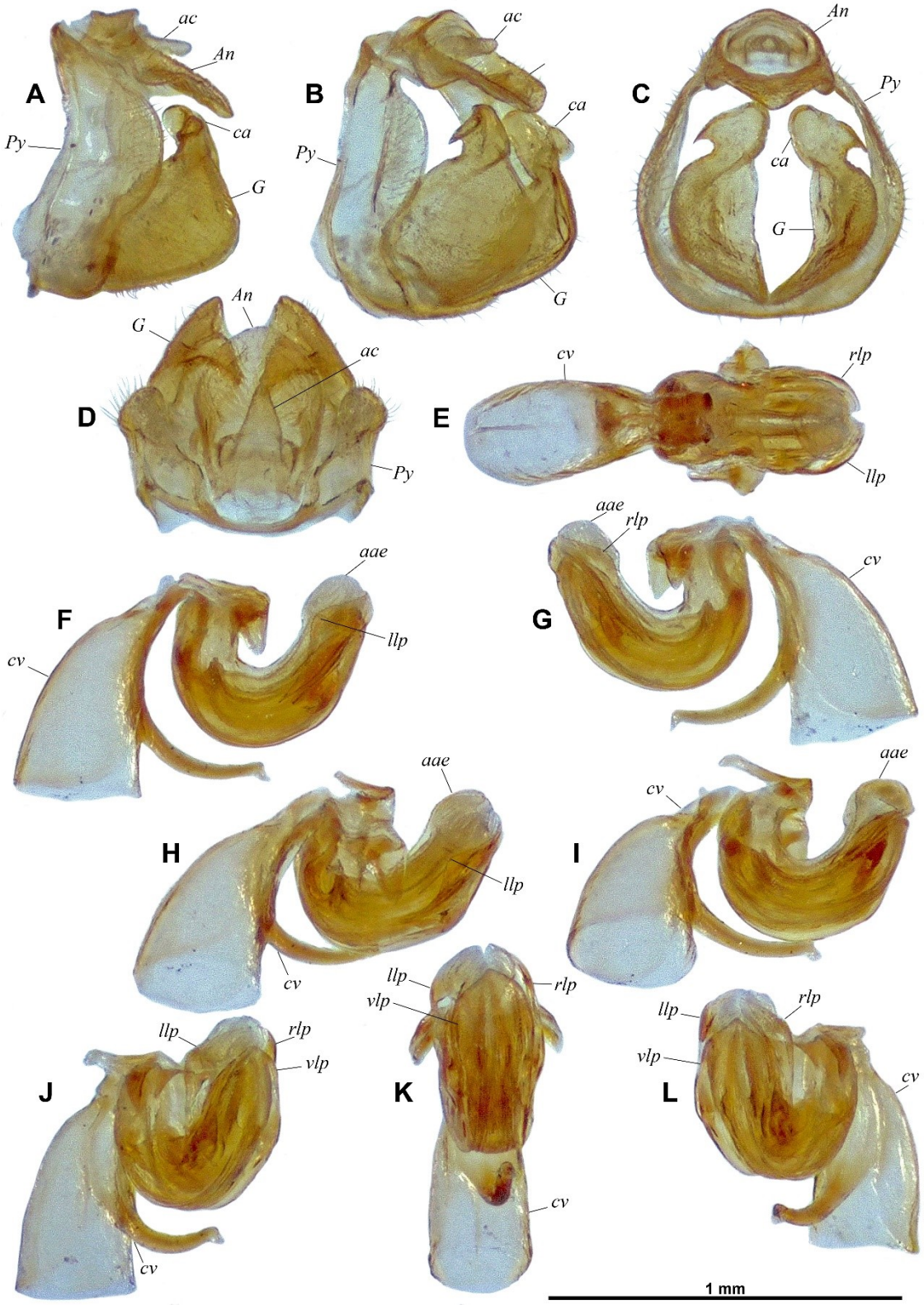

Fig. 3. *Hemisphaerius binduseni* sp. nov., holotype, male terminalia. A, pygofer, anal tube and gonostyli, left lateral view. B, pygofer, anal tube and gonostyli, left posterolateral view. C, pygofer, anal tube and gonostyli, caudal view. D, pygofer, anal tube and gonostyli, dorsal view. E, aedeagus, dorsal view. F, aedeagus, left lateral view. G, aedeagus, right lateral view. H, aedeagus, left laterodorsal view. I, aedeagus, left lateroventral view. J, aedeagus, left lateroposterior view. K, aedeagus, posterior view. L, aedeagus, right lateroposterior view.

aae: apex of aedeagus – *ac*: anal column – *An*: anal tube– *ca*: capitulum of gonostylus – *cv*: connective – *G*: gonostylus – *llp*: left lateral lobe of periandrium– *Py*: pygofer – *rlp*: right lateral lobe of periandrium – *vlp*: ventral lobe of periandrium.

turquoise zones of tegmina. Tegmina strongly convex, smooth, without trace of venation and with anterior angle projecting anteriorly.

Posterior wings: extremely reduced, ochraceous with apex black; tapering from base to apex, elongate triangular; venation not visible.

Legs: (Fig. 1 B–D) pro- and mesocoxae black; trochanters, femora, tibiae and tarsi ochraceous; spines of metatibiae black apically. All legs slender and elongate. Metatibiae broadening on distal half, with two lateral and 6 apical spines. Metatibiotarsal formula: (2) 6–7 / 4 / 0.

Fig. 4. *Hemisphaerius binduseni* sp. nov., distribution map.

Abdomen: terga ochraceous; sterna ochraceous with rather large transverse blackish marking on each side, separated by median ochraceous area; anal tube and genital segments ochraceous.

Terminalia ♂: (Fig. 3) pygofer (*Py*) higher than long (in lateral view), anterior margin concave, posterior margin sinuate, broadly rounded in middle, smoothly narrowing on dorsal 1/4;

posterior margin deeply roundly emarginate in dorsal view (Fig. 3 A–D). Gonostyli (*G*) subtriangular in lateral view and convex; ventral margin very smoothly rounded in lateral view; posterior margin slightly incurved in lateral view; dorsal margin rounded in lateral view; caudal angle rounded; capitulum of gonostyli (*ca*) well developed dorsally with apex rounded in lateral and caudal views, with strong dorsolateral laminate tooth directed anterolaterally (Fig. 3 A–C). Connective (*cv*) strongly developed, corpus connective long and regularly curved in lateral view, tectiductus strongly developed, conical with wide anterior foramen (Fig. 3 E–L) and with crista developed in a single carina, not foliated. Periandrium U-shaped, strongly upcurved basally, bilaterally asymmetrical; left lateral lobe of periandrium (*llp*) laminate and rounded laterally, right lateral lobe (*rlp*) less developed; ventral lobe of periandrium (*vlp*) abruptly tapering apically (Fig. 3 E–L). Aedeagus membranous apically (*aae*) (Fig. 3 E–L). Anal tube (*An*) elongate, about 1.25 times longer in median line than broad in dorsal view, broader at mid-length, with rounded lobe projecting ventrally at middle of lateral margin and apex rounded; anal column (*ac*) well developed, at basal 1/4 (Fig. 3 A–D).

DISTRIBUTION. Thailand: provinces of Ratchaburi, Nakhon Pathom, Chonburi, Rayong, Phuket, Phang Nga, Songkhla, Surat Thani and Prachuap Khiri Khan (Fig. 4).

BIOLOGY. All specimens were found on plants belonging to the family Poaceae. Host plant species include at least *Digitaria* cf. *setigera* and *Urochloa* sp. both in the tribe Paniceae (subfamily Panicoideae). The species inhabits grassy areas in disturbed to strongly anthropized habitats, including along roads in villages (Fig. 5).

Fig. 5. *Hemisphaerius binduseni* sp. nov., habitat in Khao Krajome, Ratchaburi, 7.II.2020. © K. Jiaranaisakul.

Hemisphaerius interclusus Noualhier, 1896
(Figs 6–7)

Hemisphaerius interclusus NOUALHIER, 1896: 256 [described].
NOUALHIER & MARTIN, 1904: 181 [described], pl. 10 fig.4 [habitus illustrated].
MELICHAR, 1906: 73 [keyed], 93 [described, recorded from Vietnam, Saigon], 317 [listed].
METCALF, 1958: 146 [catalogued].
GNEZDILOV, 2013: 1026 [lectotype designation; additional data from Vietnam].
GNEZDILOV *et al.*, 2014: 82 [listed from Vietnam].
GNEZDILOV, 2017: 1339, figs 1–7 [male genitalia described and illustrated].
CONSTANT & BARTLETT, 2019: 22 [listed from Cambodia].

DIAGNOSIS. The species can be very easily recognized by its unique colour pattern (Fig. 6): turquoise background with orange-red markings and three orange-red lines on disc of tegmina, with the mid one straight, the three lines separated by evenly wide turquoise bands and ending separately posteriorly.

DIFFERENTIAL DIAGNOSIS. The species can be separated from the closest species, *H. binduseni* sp. nov. by (1) the shape of orange-red lines with the mid one strongly curved in *H. binduseni* sp. nov. (Fig. 2) (nearly straight in *H. interclusus* – Fig. 6) and upper and mid lines connected posteriorly in *H. binduseni* sp. nov. (Fig. 2) (all three lines ending separately posteriorly in *H. interclusus* – Fig. 6) and the shape of the anal tube with posterior margin rounded in dorsal view in *H. binduseni* sp. nov. (Fig. 3 D) (emarginate in *H. interclusus* – GNEZDILOV, 2017, fig. 6).

MATERIAL EXAMINED. CAMBODIA: 57 ex.: Takeo, National Road 2, 10°37’44.7”N 104°51’33.5”E, 27m, 10.X.2014, Chhum, Ly, Sour, Heang & 10 Bio. stu., CA0 005, sweeping in grassland forest on mountain (RUPP); 16 ex.: Takeo, National Road 2, 10°38’40.8”N 104°50’59.2”E, 47m, 10.X.2014, Chhum, Ly, Sour, Heang & 10 Bio. stu., CA0 006, sweeping in grassland forest on the mountain (RUPP); 42 ex.: Kampot,National Road 3 & 33, 10°38’21.8”N 104°31’54.1”E, 5m, 7.I.2015, Hap, Phauk, Kheam, Chhum, Ly, Sour, Heang & 10 Bio. stu., CA0010, sweeping in a field near Totong Mount (RUPP). VIETNAM: 3♀♀: Cat Tien National Park, 11°26’N 107°26’E, 6–16.VII.2012, leg. J. Constant & J. Bresseel, I.G.: 32.161 (RBINS).

MATERIAL EXAMINED FROM PHOTOGRAPHS. THAILAND: 1 ex. (Fig. 6 A): Chiang Mai, Hang Dong, 18°43’52.6”N 98°55’08.4”, 8.IX.2015, P. Katsura; 1 ex. (Fig. 6 B): Chiang Mai, 18°44’33.2”N 98°57’05.6”E, X.2018, P. Chuatrakul; 1 ex. (Fig. 6 C): Chiang Mai, 18°47’10.5”N 98°57’35.2”E, 27.X.2019, A. Mintrawech; 1 ex. (Fig. 6 D): Chiang Mai, San Kamphaeng, 18°46’31.5”N 99°03’18.8”E, X.2019, S. Pidanpun; 1 ex. (Fig. 6 E): Chiang Mai, Wang Bua Ban Waterfall, 18°48’44.3”N 98°56’29.9”E, 23.I.2019, S. Pidanpun; 1 ex. (Fig. 6 F): Nontaburi, Phra Nang Klao Bridge, 13°52’09.9”N 100°28’18.8”E, VIII.2012, Y. Sriaj; 1 ex. (Fig. 6 G): Nontaburi, Bang Rak Noi, 13°52’35.8”N 100°27’25.2”E, 9.III.2016, P. Supremsri; 1 ex. (Fig. 6 H): Pathum Thani, Paholyothin Soi 62, 13°56’31.4”N 100°38’25.0”E, 26.III.2018, P. Thepchaloem; 1 ex. (Fig. 6 I): Phitsanulok, Ban Teng Nam, 16°51’28.7”N 100°16’30.1”E, 1.II.2020, S. Yookong; 1 ex. (Fig. 6 J): Uttaradit, Tha Pla, 17°52’18.8”N 100°17’54.4”E,6.XI.2014, P. Supremsri; 1 ex. (Fig. 6 K): Chiang Mai, V.2016, R. Thacker; 1 ex. (Fig. 6 M): Nongkhai, Wiang Khuk Subdistrict, 17°47'55.2"N 102°39'34.5"E, 6.V.2020, P. Sukgasee. VIETNAM: 1 ex. (Fig. 6 M): Dong Nai Province, Cat Tien National Park, 21.XII.2015, O. Dangles; 1 ex. (Fig. 6 N–O): Ho Chi Minh City, 10°48’N 106°39’E, 19.XI.2017 © T. Tao.

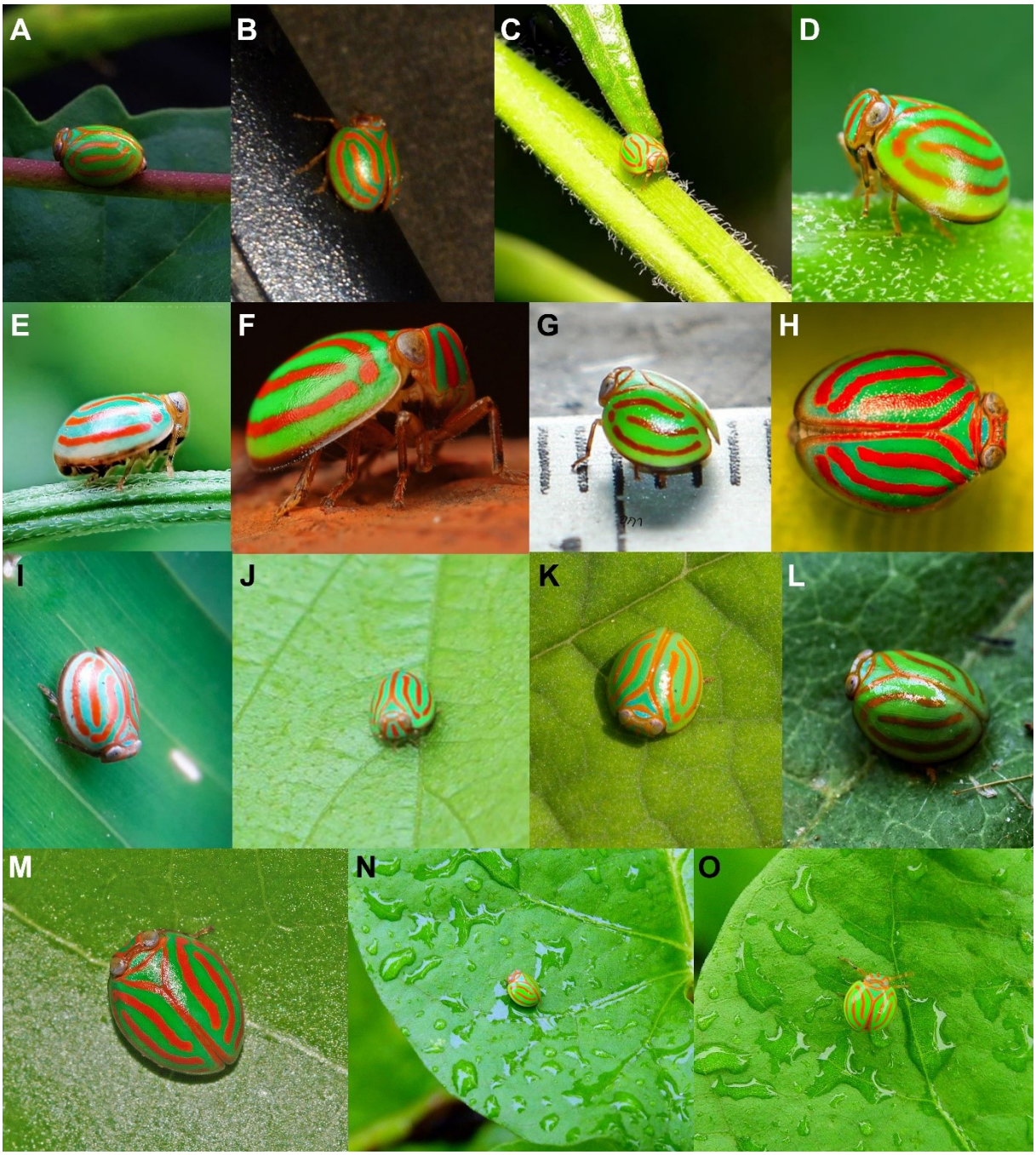

Fig. 6. *Hemisphaerius interclusus* Noualhier, 1896, in nature. A–L, THAILAND. A, Chiang Mai, Hang Dong, 8.IX.2015. © P. Katsura. B, Chiang Mai, X.2018. © P. Chuatrakul. C, Chiang Mai, 27.X.2019. © A. Mintrawech. D, Chiang Mai, San Kamphaeng, X.2019. © S. Pidanpun. E, Chiang Mai, Wang Bua Ban Waterfall, 23.I.2019. © S. Pidanpun. F, Nontaburi, Phra Nang Klao Bridge, VIII.2012. © Y. Sriaj. G, Nontaburi, Bang Rak Noi, 9.III.2016. © P. Supremsri. H, Pathum Thani, Paholyothin Soi 62, 26.III.2018. © P. Thepchaloem. I, Phitsanulok, Ban Teng Nam, 1.II.2020. © S. Yookong. J, Uttaradit, Tha Pla, 6.XI.2014. © P. Supremsri. K, Chiang Mai, V.2016. © R. Thacker. L, Nongkhai, Wiang Khuk Subdistrict, 6.V.2020. © P. Sukgasee. M–O, VIETNAM. M, Dong Nai Province, Cat Tien National Park, 21.XII.2015. © O. Dangles. N–O, Ho Chi Minh City, 19.XI.2017. © T. Tao.

NOTE. The species is here recorded from Thailand for the first time.

DISTRIBUTION. Cambodia, Thailand, Southern Vietnam (Fig. 7).

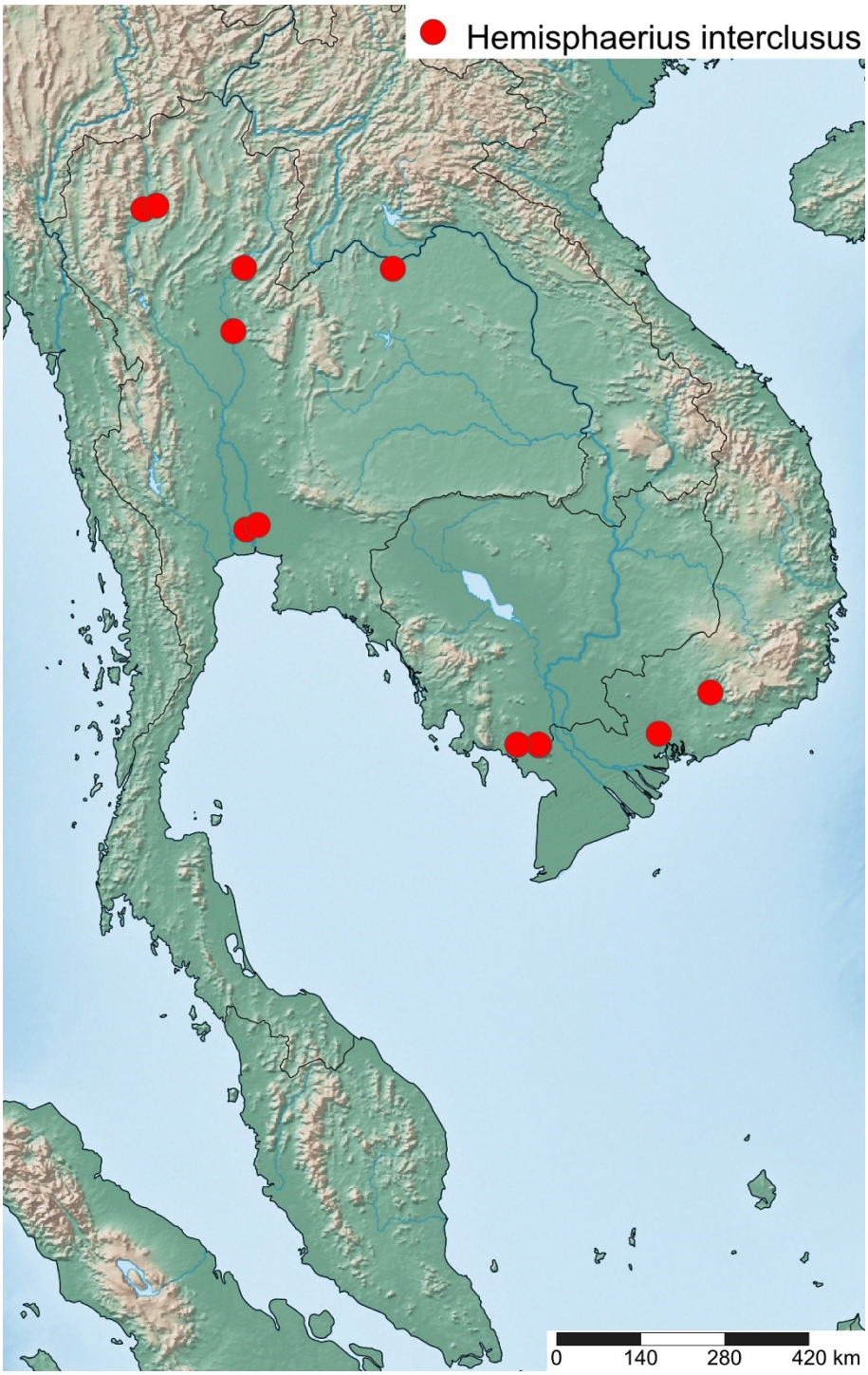

Fig. 7. *Hemisphaerius interclusus* Noualhier, 1896, distribution map.

Discussion

The Issidae fauna of Thailand now counts 7 species, a number consistent with the counts of Cambodia (3 species) and Laos (5), but way under other countries in the same area like China (127), Vietnam (41), Taiwan (80) or even Myanmar (17 with the most recently described species dating 1906) (FLOW – BOURGOIN, 2020). These figures however must be regarded as artifacts and reflect the effort of taxonomic work on issids in each country rather than its diversity. Taiwan, Vietnam and especially China benefitted from the work of several scientists in the recent years, both for sampling specimens and for the taxonomic study of this material.

Dozens of undescribed or unrecorded species exist in Thailand (CONSTANT & JIARANAISAKUL, unpublished data) and the country is expected to contain a very diverse issid fauna in relation with the variety of habitats observed over the country.

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