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RESEARCH PAPER

Taxonomic revision of the genus *Glenopopillia* (Coleoptera: Scarabaeidae: Rutelinae)

Yuan Yuan LU[1,3,4], Carsten ZORN[2], David KRÁL[3], Ming BAI[1] & Xing Ke YANG[1,5]

[1] Key Laboratory of Zoological Systematics and Evolution, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, China
[2] Rostocker Strasse 1a, Gnoien 17179, Germany
[3] Charles University, Faculty of Science, Department of Zoology, Viničná 7, CZ-12843, Praha 2, Czech Republic
[4] University of Chinese Academy of Sciences, Beijing 100039, China
[5] Corresponding author: yangxk@ioz.ac.cn

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Abstract. The small Southeast Asian ruteline genus *Glenopopillia* Lin, 1980 is revised. We describe four new species: *Glenopopillia albopilosa* Zorn & Lu sp. nov. from Vietnam, *Glenopopillia forceps* Zorn & Lu sp. nov. from India, *Glenopopillia mengi* Lu & Zorn sp. nov. from China and Laos, and *Glenopopillia skalei* Zorn & Lu sp. nov. from Vietnam; and one new subspecies: *Glenopopillia rufipennis nigropicta* Zorn & Lu subsp. nov. from Laos; propose two new combinations: *Glenopopillia fossulata* (Benderitter, 1929) comb. nov. (from *Strigoderma fossulata* Benderitter, 1929) and *Glenopopillia klossi* (Ohaus, 1926) comb. nov. (from *Spilota klossi* Ohaus, 1926), bringing the total number of species group taxa in this genus to ten. We characterize the genus, provide a key to the species, describe and diagnose each species group taxon, and compile a distribution map. A lectotype for *Spilota klossi* Ohaus, 1926 is designated.

Keywords. Coleoptera, Scarabaeoidea, Scarabaeidae, Rutelinae, Anomalini, Popilliina, *Glenopopillia*, taxonomy, new species, key, distribution, Oriental Region

Zoobank: http://zoobank.org/urn:lsid:zoobank.org:pub:6D0940E8-A47D-45F9-B84C-E3A2A80B7D8A

Introduction

The genus *Glenopopillia* Lin, 1980 is a small group of Rutelinae, including, to date, only three species. It was originally established on the basis of two species: *Glenopopillia maculata* Lin, 1980 (type species), described from Guangxi, China, and *G. rufipennis* Lin, 1980, described from Yunnan, China. Only one species, *G. nagaii* (Sabatinelli, 1997), was added subsequently (Zorn 2005) by transferring it from the genus *Callistethus* Blanchard, 1851. The only additional treatment of this genus was the listing in the Catalogue of Palaearctic Coleoptera (Zorn 2006, Zorn & Bezděk 2016), which also contained rough distributional data, and the catalogue works of Krajčík (2007, 2012).

The appealing species of this genus are very distinctive, rather large Popilliina with a metallic green to red body combined with conspicuous maculate or orange brown elytra. The genus is distinguished by the usually rigid spiniform setae (white and soft only in *Glenopopillia albopilosa* sp. nov.) along the lateral margin of elytra, which are usually also present at the apico-sutural angle. This unique and perhaps autapomorphic character is not found in any other genus in the subtribe Popilliina. This subtribe is poorly defined morphologically, however, and its monophyly remains uncertain (Uliana & Sabatinelli 2017). In other current subtribes of the Anomalini, like Anisopliina and Anomalina, setae along the elytral margin are frequently apparent and in some cases spiniform (e.g. genus *Chaetopteroplia* S. I. Medvedev, 1949).

Glenopopillia species were apparently rarely collected in the past and are present only in few collections. According to label data and personal communication with collectors, they are not attracted to light. Our study is based mainly on material collected during recent field work in Southeast Asia and China. Ninety percent of the material available to us was collected in the last two decades.

During the course of our studies, four new species and one new subspecies were discovered. The find of syntypes of *Strigoderma fossulata* Benderitter, 1929 (placed in the

genus *Trichanomala* Arrow, 1917 by Paulian 1959) in the BMNH and IRSB showed that this species also belongs in fact to the genus *Glenopopillia*.

Moreover, the generic definition of *Glenopopillia* is broadened to include *Glenopopillia albopilosa* sp. nov. and *Glenopopillia klossi* (Ohaus, 1926) comb. nov., described originally in the genus *Spilota*. The latter species is the only Malayan member of the genus and differs significantly from all other known species, which occur in an area comprising Meghalaya in India, Laos, Vietnam, as well as Yunnan and Guangxi in China (Fig. 10).

Material and methods

Morphological terminology largely follows Zorn (2007). The enumeration of elytral striae used in this study was introduced by Ohaus (1902) and subsequently employed by Arrow (1917), Ohaus (1934), Machatschke (1957) and Zorn (2007). These authors differentiate between six 'primary costae' and five 'interstices' between them, whereby the sutural interval corresponds to the first primary costa and the lateral bead to the sixth primary costa. However, instead of the term 'primary costa' we use 'costal interval' to take into account the fact that these intervals are actually more or less flat in *Glenopopillia* (Fig. 1), and not raised as the term 'costa' would suggest.

The body length was measured from the apex of the clypeus to the apex of the elytra. The length of pronotum was measured in the middle in dorsal view, its width at the place of greatest width. The ratio of interocular width to head width was measured in dorsal view at greatest width of head and nearest interocular distance.

Fig. 1. *Glenopopillia rufipennis rufipennis* Lin, 1980, left elytron. 1–6 – numbered costal intervals, I–V – numbered interstices.

We use the unified species concept as outlined by De Queiroz (2007).

For observation of morphological structures, some specimens were softened by soaking in glass cleaner for about 24 hours. Observations and dissections were carried out under an Olympus SZ61 stereomicroscope and a Zeiss Stemi 2000. The digital images were created with a Canon 5D digital camera in conjunction with a Canon MP-E 65mm f/2.8 1-5X Macro Lens, then stacked by Helicon Focus 5.3.10. All images were edited and adjusted in Adobe Photoshop CS6 Extended. The distribution map was made by QGIS 2.14 software (QGIS Development Team 2016). Coordinates and altitude are assigned for each locality mentioned in the text (material examined in each species) (see Table 1). These data were used in the construction of distribution maps (see Fig. 10).

Specimens of species described new to science are provided with one red printed label 'Name of taxon sp. nov., HOLOTYPE [or] PARATYPE, Lu & Zorn [or] Zorn & Lu, 2017' or 'LECTOTYPE, Name of taxon, Lu & Zorn, 2017'. Exact label data are cited for the type material, individual labels are indicated by a double vertical bar (||), individual lines of every label by a single vertical bar (|). The following abbreviations are used: [p] – preceding data within quotation marks are printed, [hw] – the same but handwritten, HT – holotype, LT – lectotype. Some traditional Chinese characters of the original labels are replaced by simplified ones. Our remarks and additional comments are found in brackets.

The material examined is housed in the following collections (curators in parenthesis):

ASPC	André Skale collection, Hof (Saale), Germany;
BMNH	Natural History Museum, London, United Kingdom (Maxwell W. L. Barclay, Michael Geiser);
CCPC	Chang-Chin Chen collection, Tianjin, China;
CZPC	Carsten Zorn collection, Gnoien, Germany;
DKCP	David Král collection (deposited in NMPC);
GIABR	Guangdong Institute of Applied Biological Resources, Guangzhou, Guangdong, China (name used from 1972–2015: GEI, Guangdong Entomological Institute) (Jianxiong Li, Ping Yang);
IRSB	Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgium (Pol Limbourg);
IZAS	Institute of Zoology, Chinese Academy of Sciences, Beijing, China (Ming Bai);
MNHG	Muséum national d'histoire naturelle, Genève, Switzerland (Giulio Cuccodoro, Guido Sabatinelli);
MSPC	Matthias Seidel collection, Praha, Czech Republic;
MZUF	Università di Firenze, Museo Zoologico 'La Specola', Italy (Luca Bartolozzi);
NMEC	Naturkundemuseum Erfurt, Germany (Matthias Hartmann);
NMPC	National Museum, Praha, Czech Republic (Jiří Hájek);
PKLC	Paul Lago collection, Oxford, Mississippi, USA;
PPCB	Petr Pacholátko collection, Brno, Czech Republic;
VNMN	Vietnam National Museum of Nature, Hanoi, Vietnam (Vu Van Lien);
ZFMK	Zoologisches Forschungsmuseum Alexander König, Bonn, Germany (Dirk Ahrens);
ZMHB	Zoologisches Museum Berlin (Museum für Naturkunde, Zoologische Sammlung), Berlin, Germany (Johannes Frisch, Bernd Jäger, Joachim Willers);
ZMPC	Mingzhi Zhao collection, Guangzhou, China.

Taxonomy

Glenopopillia Lin, 1980

Glenopopillia Lin, 1980: 75, 77, Figs 1–3.
Glenopopillia: Zorn (2006): 272 (catalogue); Krajčík (2007): 72 (catalogue); Krajčík (2012): 113 (catalogue); Zorn & Bezděk (2016): 350 (catalogue).

Type species. *Glenopopillia maculata* Lin, 1980, by original designation.

Generic characters. Scarabaeidae, Rutelinae, Anomalini, Popilliina. Body elongate ovoid, dorsum weakly convex. Length 10.0–14.0 mm. Body with strong greenish or reddish metallic luster, except for elytra which are contrastingly orange brown or maculate black-yellow and legs which are partly orange. Clypeus weakly reflexed. Pronotum with two large, deep oblique impressions near each lateral margin (except for *Glenopopillia albopilosa* sp. nov. and *G. klossi*), with anterior angles acute and strongly produced and posterior angles obtuse; sides strongly converging in anterior third; basal margin of pronotum straight before scutellum, basal marginal line interrupted medially; surface finely and sparsely punctate. Elytron with prominent humeral umbone and apical protuberance; posterior margin evenly rounded; apicosutural angle dentiform; surface with regular punctate striae; all intervals slightly convex; apical curvature lined by a more or less extensive opaque area; elytral lateral margin with row of usually dark, rigid setae (all setae white and soft only in *G. albopilosa* sp. nov.), which are present also at apico-sutural angle, except for *G. klossi*. Base of mesepimeron not exposed beyond elytral base in dorsal view. Meso-metaventral process short (previously known as mesosternal process), compressed between mesocoxae, anteriorly vertical, straight; apex subcircular, bulbiform in ventral view. Posterior margin of propygidium exposed by elytra, with fringe of white setae, except for *G. klossi*. Pygidium strongly convex in males. Protibia bidentate. Metatibia strongly fusiform. Proximal abdominal ventrites laterally carinate, all abdominal ventrites with transverse band of whitish setae. Sexual dimorphism present as follows: protibia wide with approximated teeth (terminal tooth short and pointed) and spur short in males vs. protibia more slender with teeth more distant (terminal tooth long and spatulate) and spur long in females; protarsus somewhat thicker and protarsomeres 1–4 shorter in males, while protarsus very slender and protarsomeres 1–4 longer in females; inner protarsal claw and outer mesotarsal claw very long, cleft, with upper branch spiniform in males, shorter and less unequal in females; metatarsal claws very unequal in males, more equal in females.

Diagnosis. The character of the long, rigid or soft setae along the lateral margin of the elytra (soft only in *G. albopilosa* sp. nov.), with similar setae usually present at the apico-sutural angle, is unique within the subtribe Popilliina.

Glenopopillia albopilosa Zorn & Lu, sp. nov.

(Figs 2A–I)

Type locality. Central Vietnam, Thừa Thiên-Huế Prov., Bạch Mã National Park.

Type material (15 spec.). Holotype: ♂ (VNMN), 'C VIETNAM: Thua Thien Hue | Prov., Bach Ma National Park | (16.193°N 107.853°E) 1250m [p] || 28.V – 1. VI. 2017 L. Bartolozzi | E. Orbach, V. Sbordoni, | S. Bambi & A. Bandinelli leg. | (numero Mag. 3089) [p]'. Paratypes: 1 ♂ (ZMPC), 'Dambri. Bảo Lâm. | Lâm Đồng, Vietnam. | March, 2017, | local collector leg. [p]'; 3 ♂♂ 2 ♀♀ (CZPC), 'Dambri. Bảo Lâm. | Lâm Đồng, Vietnam. | March, 2018, | local collector leg. [p]'; 4 ♂♂ 4 ♀♀ (CZPC), 'Dambri. Bảo Lâm. | Lâm Đồng, Vietnam. | April, 2018, | local collector leg. [p]'.

Description of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong dark green metallic luster; antennomeres 1–6, maxillary palpi, labial palpi and lateral teeth of protibia dark orange, antennal club black; elytra black with two arcs of rather small yellow spots: 6 anterior spots encircling scutellum and 8 additional spots of which the most anterior is situated beneath humeral umbone and the most posterior lies in interstice 1 and costal interval 2 at ca. 2/3 of elytral length.

Head. Clypeus subtrapezoidal, disc very densely, transversely rugopunctate, anterior corners rounded; anterior margin weakly reflexed; frons rugopunctate and with very shallow impression at middle, confluently punctate at sides; vertex finely and sparsely punctate at middle, coarsely punctate laterally; ratio of interocular width/width of head approximately 0.64; antennal club longer than antennomeres 1–6 combined.

Pronotum approximately 1.56 times wider than long, with oblique impression posteriorly of middle on each side and median longitudinal furrow, with steep decline along lateral margin; sharply defined area posteriorly of anterior angle with deep, coarse, confluent punctures, area of lateral impression with coarse, separate punctures, remaining surface smooth with scarce micropunctures; with sparse, erect setae at lateral margin; anterior angles acute and strongly produced; posterior angles rectangular; sides of pronotum slightly converging anteriad in posterior half, strongly converging in anterior half; basal marginal line present only near posterior angle; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and very sparsely punctate.

Elytra regularly striate; costal intervals and interstices similarly slightly convex; strial punctures distinct, coarse, subsutural interstice with a secondary stria irregularly doubled anteriorly and disappearing in posterior quarter; vague secondary striae also present in anterior part of interstice 2 (anterior 1/5) and 3 (anterior half); elytral surface with sparse micropunctation; humeral umbone and apical protuberance prominent; opaque area at apical curvature narrow; lateral margin with flat paramarginal area between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of middle of elytron; epipleuron with soft, white setae continuing along lateral margin to apical curvature; another 2–3 large white setae near and at apicosutural angle; posterior margins evenly, separately rounded.

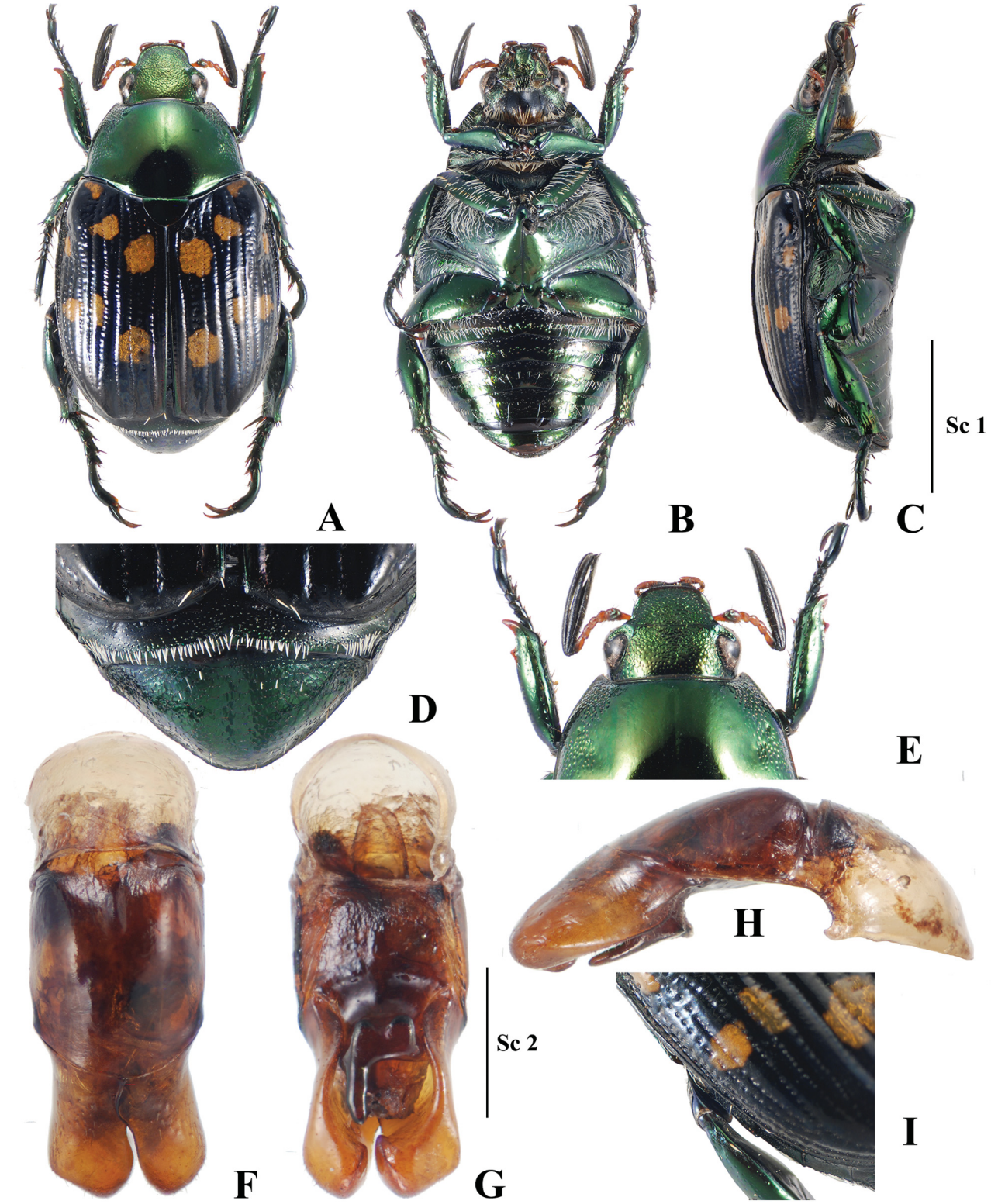

Fig. 2. *Glenopopillia albopilosa* sp. nov., holotype. A–C – habitus: A – dorsal view, B – ventral view, C – right lateral view; D – propygidium and pygidium; E – head and pronotum; F–H – aedeagus: F – dorsal view, G – ventral view, H – right lateral view; I – lateral margin of elytra. Sc. 1: scale for A–C = 5 mm; Sc. 2: scale for F–H = 1 mm.

Propygidium with dense fringe of white, rather short setae along posterior margin.

Pygidium strongly convex; apex broadly rounded; punctation densely punctate-imbricate, transversely confluent; with scattered white setae near base; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

Abdominal ventrites with transverse band of rather sparse white setae (usually interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Mesofemur and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, rather slender, approximately 3.9 times longer than wide; proximal tooth short, situated close to the rather long, weakly curved apical tooth; inner spur short, positioned at level of space between proximal and apical teeth. Metatibia fusiform. Protarsomere 5 (without claws) slightly longer than protarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, strongly curved and deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately as long as combined length of mesotarsomeres 1–4, curved, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and distinctly longer than inner.

Aedeagus as in Figs 2F–H.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsus shorter, two apical branches more equal than in males; antennal club slightly longer than antennomeres 2–6 combined.

Measurements. Total body length 10.4–11.9 mm (HT 11.9 mm), total body width 6.0–7.2 mm (HT 7.2 mm).

Morphological variation. All six paratypes have the sides of the pronotum suffused with orange and dark orange femurs and tibiae with the knee joints and apices of tibiae dark metallic green. The size of the yellow elytral spots is variable. Some spots become divided in specimens with generally smaller spots. Number of elytral setae near apico-sutural angle varies between two and five. Shape of aedeagus remains consistent.

Differential diagnosis. *Glenopopillia albopilosa* sp. nov. is clearly separated from all other species in this genus by several characters: the setae on the elytral margin and epipleuron are soft and white, not rigid and dark as in all other species. The pronotum has only one oblique lateral impression (none in *G. klossi*, two in all other species). The coarsely punctate areas of the pronotum are sharply defined (more gradually changing in the other species). The legs are generally more slender than in all other species; the apical tooth of the protibia is laterally protruding beyond the proximal tooth (not surpassing the proximal tooth in all other species). The antennal club is very long in males, longer than the combined length of the remaining antennomeres (longer than antennomeres 2–6 combined in the other species). The elytra are predominantly black in *G. albopilosa* sp. nov. whereas larger parts are light colored in the other species.

Etymology. The specific epithet (adjective in the nominative singular case) references the color of the setae on the lateral elytral margin, which is white and not blackish-brown as in all the other species of this genus.

Collecting circumstances. The holotype was collected with a beating sheet at the forest edge (L. Bartolozzi, pers. comm.).

Distribution. Central Vietnam, Thừa Thiên-Huế and Lâm Đồng Provinces.

Glenopopillia forceps Zorn & Lu, sp. nov.

(Figs 3A,G; 4A,G,M; 5A,G,M)

Type locality. India, Meghalaya, 3 km E of Tura, 25°30'N 90°14'E, 500–1150 m a. s. l.

Type material (21 spec.). Holotype: ♂ (NMPC), 'NE INDIA; MEGHALAYA; 1999 | 3km E of Tura; 500–1150m; | 25°30'N 90°14'E; 1. –8.v. | Zd. Koštál lgt [p]'. Paratypes: 3 ♂♂ 12 ♀♀ (CZPC), same data as holotype; 1 ♂ 2 ♀♀ (IZAS), same data as holotype; 1 ♀ (CZPC), 'NE INDIA; MEGHALAYA; 1999 | 3km E of Tura; 500–1150m; | 25°30'N 90°14'E; 15. –22.iv. | Zd. Koštál lgt [p]'; 1 ♀ (PPCB), 'NE INDIA, Meghalaya state | West Garo Hills reg., TURA | 5–7.V. 1996, alt. 700±100m, | GPS N25°30.7' E90°13.9 (WGS 84) | E. Jendek & O. Šauša leg. || Coll. P.Pacholátko | Brno | Merhautova 68 | Czech republic [p]'.

Description of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra including all margins, epipleura and suture blackish-brown with weak metallic sheen; a large oblique reniform yellow spot between humerus and costal interval 1 posteriorly not reaching middle of elytron, one small elongate yellow spot in anterior part of costal interval 5, two small yellow spots slightly posteriorly of middle: one elongate in costal interval 3, another transverse extending from costal interval 4 to 5, and a subquadrate yellow spot in the apical 4/5 extending from costal interval 1 to 2.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, laterally punctate like clypeus, separately punctate at middle; vertex very sparsely punctate; ratio of interocular width/width of head approximately 0.67; antennal club slightly longer than antennomeres 2–6 combined.

Pronotum approximately 1.5 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and deep median longitudinal furrow, with steep decline along lateral margin; punctation of pronotum distinct between lateral impressions, extremely shallow and sparse only in very middle, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral interstice 2 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and sparsely punctate.

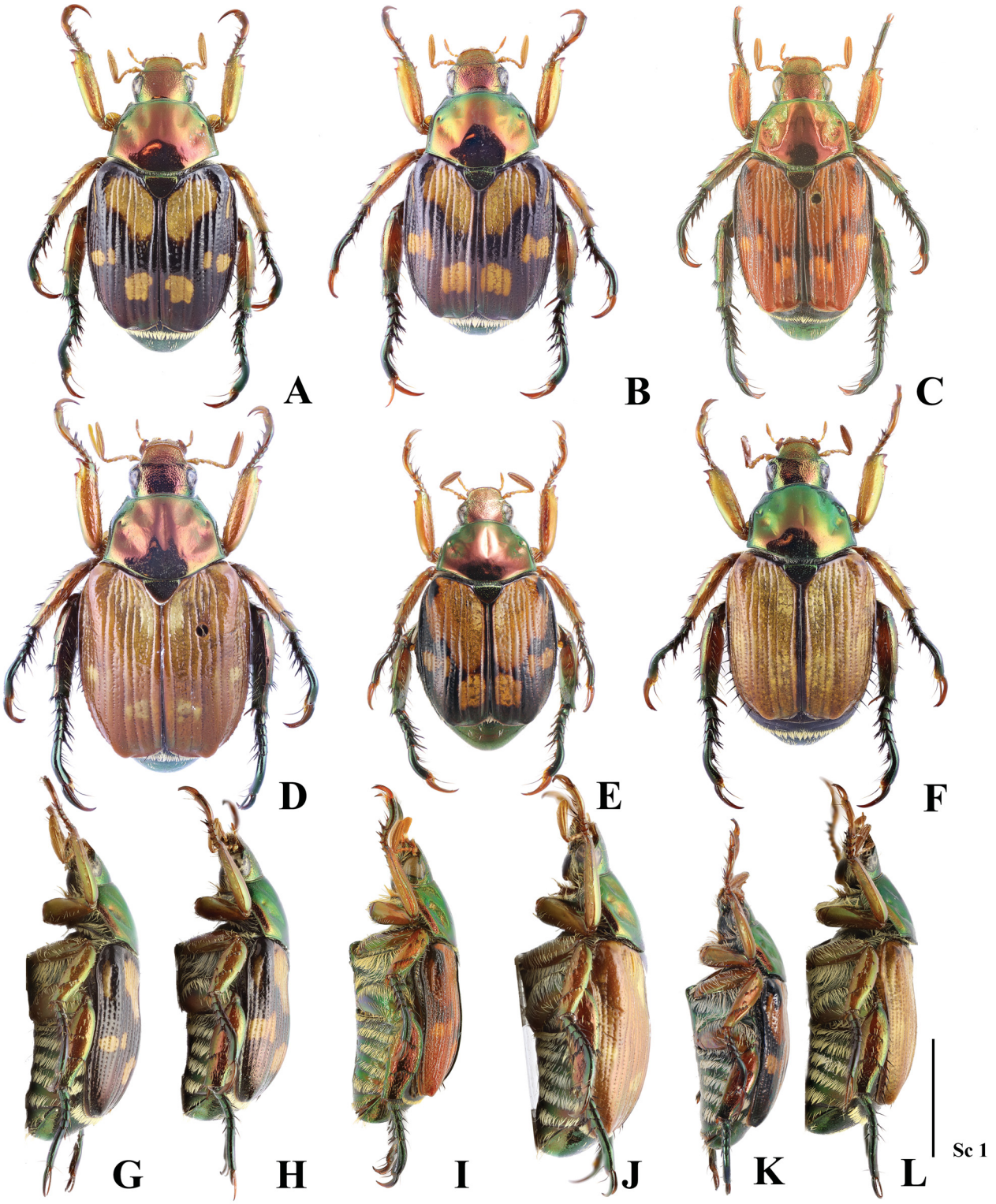

Fig. 3. Habitus of *Glenopopillia*. A–F – dorsal view, G–L – lateral view. A, G – *G. forceps* sp. nov. (HT); B, H – *G. maculata* Lin, 1980 (Vietnam, Bắc Giang Prov.), C, I – *G. mengi* sp. nov. (HT); D, J – *G. rufipennis rufipennis* Lin, 1980 (Laos, Houaphanh Prov.); E, K – *G. r. nigropicta* subsp. nov. (HT); F, L – *G. skalei* sp. nov. (HT). Scale = 5 mm.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures distinct, subsutural interstice with secondary stria being irregularly doubled anteriorly and disappearing close to posterior elytral margin; vague secondary striae also present in very anterior part of interstice 2 (slightly longer than scutellum) and anterior 1/3 of interstice 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance prominent; opaque area at apical curvature narrow; lateral margin with wide flat paramarginal extension between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning

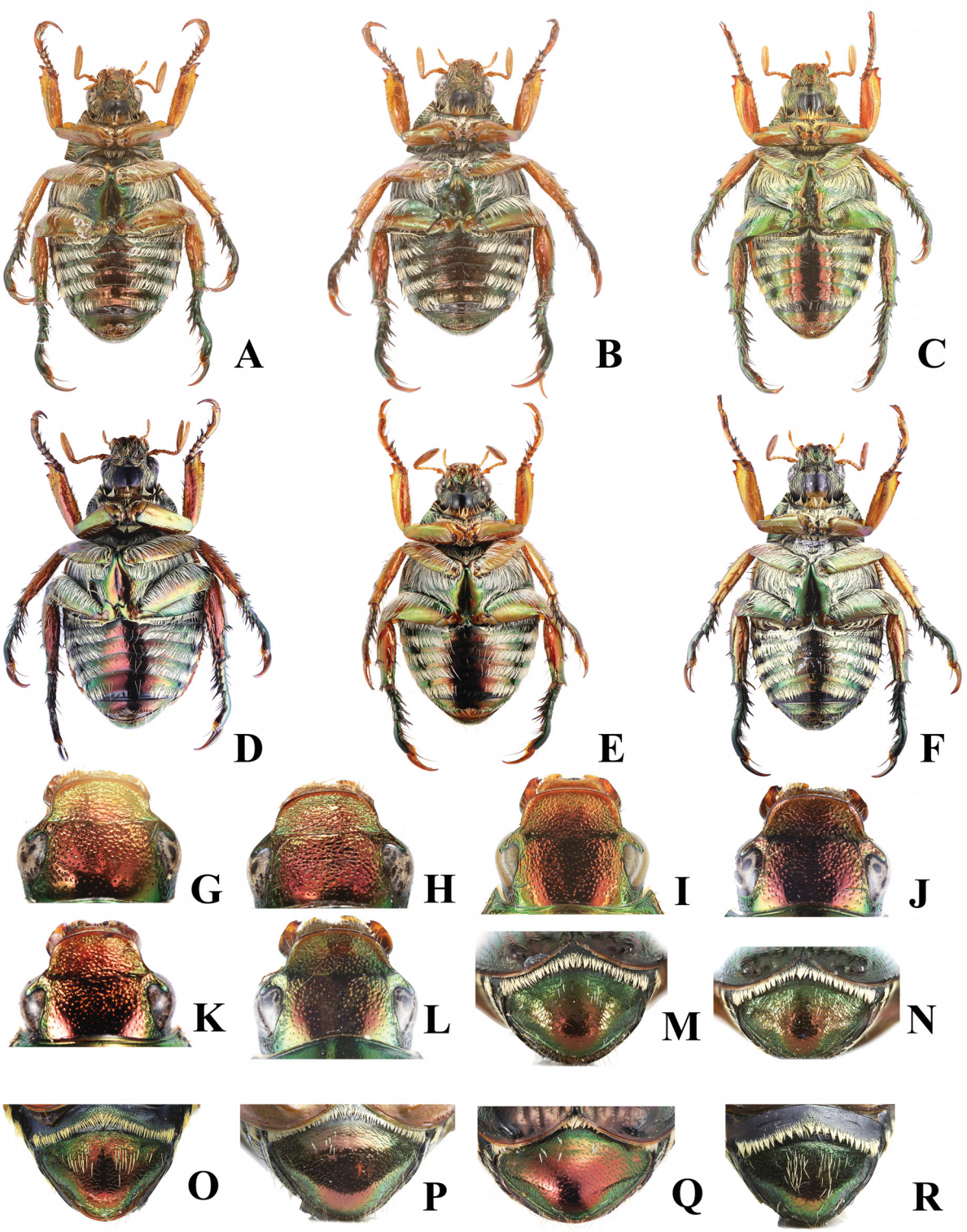

Fig. 4. Details of *Glenopopillia*. A–F – habitus, ventral view; G–L – head; M–R – propygidium and pygidium. A, G, M – *G. forceps* sp. nov. (HT); B, H, N – *G. maculata* Lin, 1980 (Vietnam, Bắc Giang Prov.); C, I, O – *G. mengi* sp. nov. (HT); D, J, P – *G. rufipennis rufipennis* Lin, 1980 (Laos, Houaphanh Prov.); E, K, Q – *G. r. nigropicta* subsp. nov. (HT); F, L, R – *G. skalei* sp. nov. (HT). Not to scale.

posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); one additional large spiniform seta present near apico-sutural angle; posterior margin evenly rounded.

Propygidium with dense fringe of white setae along posterior margin, covering approximately 1/2 of propygidial length.

Pygidium very convex; apex broadly rounded; punctation rather sparse, transverse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two small spots of white setae near base; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

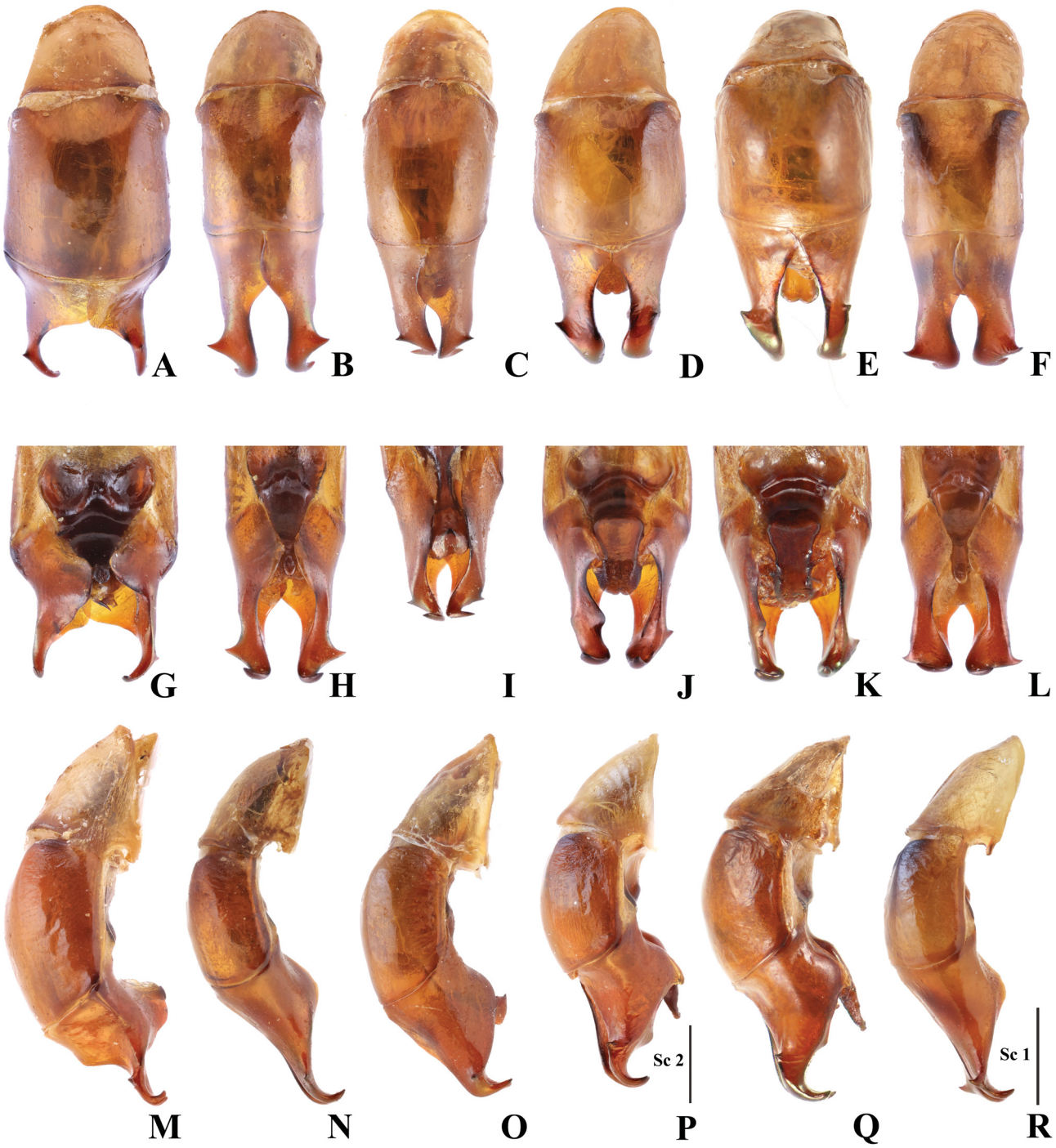

Fig 5. Aedeagus of *Glenopopillia*. A–F – dorsal view, G–L – ventral view, M–R – right lateral view. A, G, M – *G. forceps* sp. nov. (HT); B, H, N – *G. maculata* Lin, 1980 (Vietnam, Bắc Giang Prov.); C, I, O – *G. mengi* sp. nov. (HT); D, J, P – *G. rufipennis rufipennis* Lin, 1980 (Laos, Houaphanh Prov.). E, K, Q – *G. r. nigropicta* subsp. nov. (HT); F, L, R – *G. skalei* sp. nov. (HT). Sc 1: Scale for A–R, except D, J, P = 1 mm; Sc 2: Scale for D, J, P = 1 mm.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

Abdominal ventrites with dense transverse band of long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Mesofemur and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, rather long, approximately 3.9 times longer than wide; proximal tooth short, situated close to the rather short, weakly curved apical tooth; inner spur short, positioned at level of space between proximal and apical tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately

as long as combined length of mesotarsomeres 1–4, curved, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 5A,G,M.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsus shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.3–11.8 mm (HT 11.6 mm), total body width 5.6–6.6 mm (HT 6.4 mm).

Morphological variation. Elytral yellow spots vary slightly in shape and size. Number of elytral spiniform setae near apico-sutural angle varies between two and five. Shape of parameres very constant.

Differential diagnosis. *Glenopopillia forceps* sp. nov. is most similar to *G. maculata* Lin, 1980 and *G. nagaii* (Sabatinelli, 1997). It differs from these species in the following characters: protibia more slender in males; yellow lateral spot of elytron divided; secondary stria on interstice 2 present only anteriorly; abdominal ventrites with distinct irregular white setae on each side of the anterior half of ventrites 2–4. Moreover, in *G. forceps* sp. nov. the aedeagus is rather short with asymmetric parameres (Figs 5A,G,M).

Etymology. The specific epithet refers to the forceps-like shape of the parameres of the new species (noun in nominative case, standing in apposition).

Distribution. India (Meghalaya, Garo Hills).

Glenopopillia fossulata (Benderitter, 1929), comb. nov.

(Figs 6A–I)

Strigoderma fossulata Benderitter, 1929: 103, Fig. 2 (original description).
Trichanomala fossulata: Paulian (1959): 104, Figs 242, 243 (new combination); Machatschke (1972): 197 (catalogue); Krajčík (2007): 123 (catalogue); Krajčík (2012): 255 (catalogue).

Type locality. 'Tonkin, Chapa [= Vietnam, Lào Cai Province, Sapa]'.

Type material studied (2 spec.). Syntypes: 1 ♂ (BMNH), 'Co- | type [yellow] [p] || 1930.275 [hw] | TONKIN [p] | Chapa | 20.VI. [hw] 191 [p] 8 [hw] | JEANVOINE [p] || Strigoderma ♂ | fossulata cotype Bend [hw] | E. Benderitter, det. [p]'; 1 ♂ (IRSB), "TONKIN [p] | Chapa | 11.VII. [hw] 191 [p] 7 [hw] | JEANVOINE [p] || Strigoderma ♂ | fossulata cotype Bend [hw] | E. Benderitter, det. [p] || R. I. Sc. N. B. 16.117 | L. Burgeon, coll. Et det. [p]".

Redescription of syntype (♂ from BMNH). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia which are dark brown with green metallic luster; clypeus and antenna light brown; elytra predominantly light brown with weak metallic sheen; sutural margin narrowly blackened; some vague, pale yellow spots as follows: one posteriorly of scutellum; two near middle of outer margin: inner spot in costal interval 3, outer one slightly larger than inner and spanning costal interval 4 to 5; one subquadrate spot approximately between 2/3 and 3/4 of elytral length, from costal interval 1 to 2.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, laterally punctate like clypeus, separately punctate at middle; vertex very sparsely and finely punctate; ratio of interocular width/width of head approximately 0.67; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.5 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and deep median longitudinal furrow; with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral costal interval 3 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures large, distinct, subsutural interstice with secondary stria being irregularly doubled anteriorly and almost reaching the posterior elytral margin; distinct but discontinuous secondary striae also present on interstice 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance prominent; opaque area at apical curvature broad, including interstice 4 laterally; lateral margin with wide flat paramarginal extension between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); three additional large spiniform setae present near apico-sutural angle; posterior margin evenly, separately rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/3 of propygidial length.

Pygidium very convex; apex broadly rounded; punctation transverse, rather sparse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two small spots of white setae near base and another two vague spots in a small depression at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

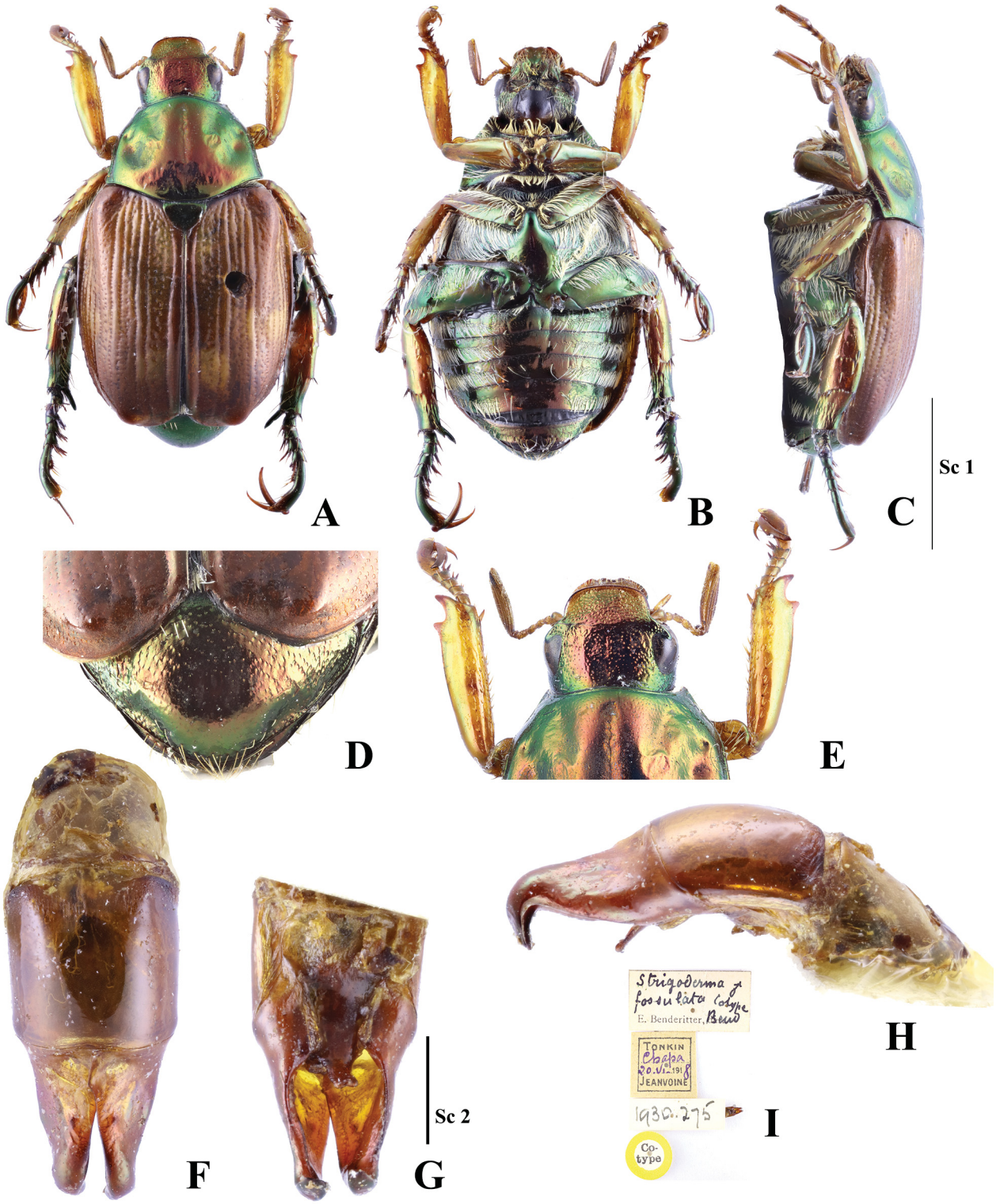

Fig. 6. Syntype of *Glenopopillia fossulata* (Benderitter, 1929). A–C – habitus: A – dorsal view, B – ventral view, C – left lateral view; D – propygidium and pygidium; E – head and pronotum; F–H – aedeagus: F – dorsal view, G – ventral view, H – right lateral view; I – label. Sc 1: Scale for A–C = 5 mm; Sc 2: Scale for F–H = 1 mm.

Abdominal ventrites with a transverse band of dense, long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of the anterior half of ventrites 2; ventrites 1–3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, rather long, broadened, approximately 4.3 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur short, at level of proximal tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately

as long as combined length of mesotarsomeres 1–4, curved, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 6F–H.

Female. Unknown.

Measurements. Total body length 12.5–12.9 mm, total body width 7.0–7.2 mm.

Differential diagnosis. *Glenopopillia fossulata* is very similar to *G. r. rufipennis* Lin, 1980 and *G. skalei* sp. nov. in having the same light brown color type of the elytra. *Glenopopillia skalei* sp. nov. is clearly separated by the partly blackened costal interval 1, and the wider protibia in males. The two syntypes have only one transverse band of setae on each abdominal ventrite while the anterior part is more or less glabrous. In *G. r. rufipennis*, there are white setae present in the anterior half of abdominal ventrites 2–4. Punctures in abdominal ventrites are fewer and smaller; setae at the metafemur are distinctly shorter and less dense; spiniform setae in metatibia are not strong as *G. r. rufipennis*. The shape of the parameres is very specific. In contrast to *G. r. rufipennis* and *G. skalei* sp. nov., the parameres of *G. fossulata* are symmetrical with the apex strongly curved but simple, without subapical denticle (Figs 6F–H).

Distribution. Vietnam (Lào Cai Province) (Benderitter 1929).

Glenopopillia klossi (Ohaus, 1926), comb. nov.

(Figs 7A–I)

Spilota klossi Ohaus, 1926: 238, Fig. 12 (original description).

Callistethus klossi: Machatschke (1957): 96 (catalogue), Machatschke (1972): 171 (catalogue); Sabatinelli (1997): 249, Figs 1–2; Krajčík (2007): 60 (catalogue).

Anomala klossi: Krajčík (2012): 23 (catalogue).

Type locality. 'Selangor, Bukit Kutu, 3000–3460 F' [Malaysia, Selangor State, Bukit Kutu mt., ca. 3°32.6'N, 101°43.2'E]'.

Type material studied (1 spec.). Lectotype: ♂ (present designation, ZMHB), 'Bukit Kutu | Selangor | April 1915 [p] | 3000–3460 [hw] || Zool. Mus. | Berlin [p] || Spilota | klossi | Type Ohs. [red] [hw]'.

Additional material studied (8 spec.). **MALAYSIA: Perak:** 1 ♀ (CZPC), W. Perak, 30 km SE of Ipoh, Cameron Highlands, Ringlet, 900 m, 25.iv.–5.v.2001, P. Čechovský lgt.; 1 ♂ 2 ♀♀ (MSPC), Malaysia, Cameron Highlands. **MYANMAR: Tanintharyi Region:** 2 ♂♂ (CZPC), Tenasserim, 20.iv.1995; 2 ♂♂ 1 ♀ (CZPC), Tenasserim, 23.iv.1996, local collectors.

Redescription of lectotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green metallic luster; all legs except tarsi dark orange; all tarsi, proximal half of femur, and apical part of meso- and metatibia dark brown with green metallic luster; antenna light brown; elytra including all margins, epipleura and suture blackish-brown with weak metallic sheen; a large oblique reniform yellow spot between humerus and costal interval 1 posteriorly not reaching middle of elytron; three interconnected yellow spots forming an oblique transverse band just posteriorly to middle of elytron; inner spot larger and subquadrate, spanning costal interval 1 to 2, middle spot rather small, spanning interstice 2 and costal interval 3, outer spot extending from interstice 3 to costal interval 5.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed medially, densely punctate, medial impression sparsely punctate; vertex very sparsely punctate; ratio of interocular width/width of head approximately 0.61; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.4 times wider than long, with small impression on each side; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum very weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral costal interval 3 on each side; all other marginal lines complete.

Scutellum nearly semicircular, longer than wide, finely and sparsely punctate.

Elytra regularly striate; two inner costal intervals (1 and 2) slightly convex, all other costal intervals and interstices almost flat; strial punctures distinct; subsutural interstice with a secondary stria being irregularly doubled anteriorly and disappearing in posterior third; vague secondary striae also present in anterior half of interstices 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance prominent; opaque area at apical curvature very narrow, laterally ending at apical protuberance; lateral margin with moderately wide flat paramarginal extension between humerus and middle of elytron; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with several short white setae near humerus and rigid but rather short spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad), apico-sutural angle without setae; posterior margin evenly rounded.

Propygidium glabrous. Pygidium strongly convex; apex broadly rounded; punctation dense, transverse; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subcircular; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in middle); ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with several irregular bands of long white setae. Protibia bidentate, broadened, approximately 4.0 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur short, at level of space between proximal and apical tooth. Metatibia strongly fusiform; protarsus slightly thickened; protarsomere 5 (without claws) longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw as long as

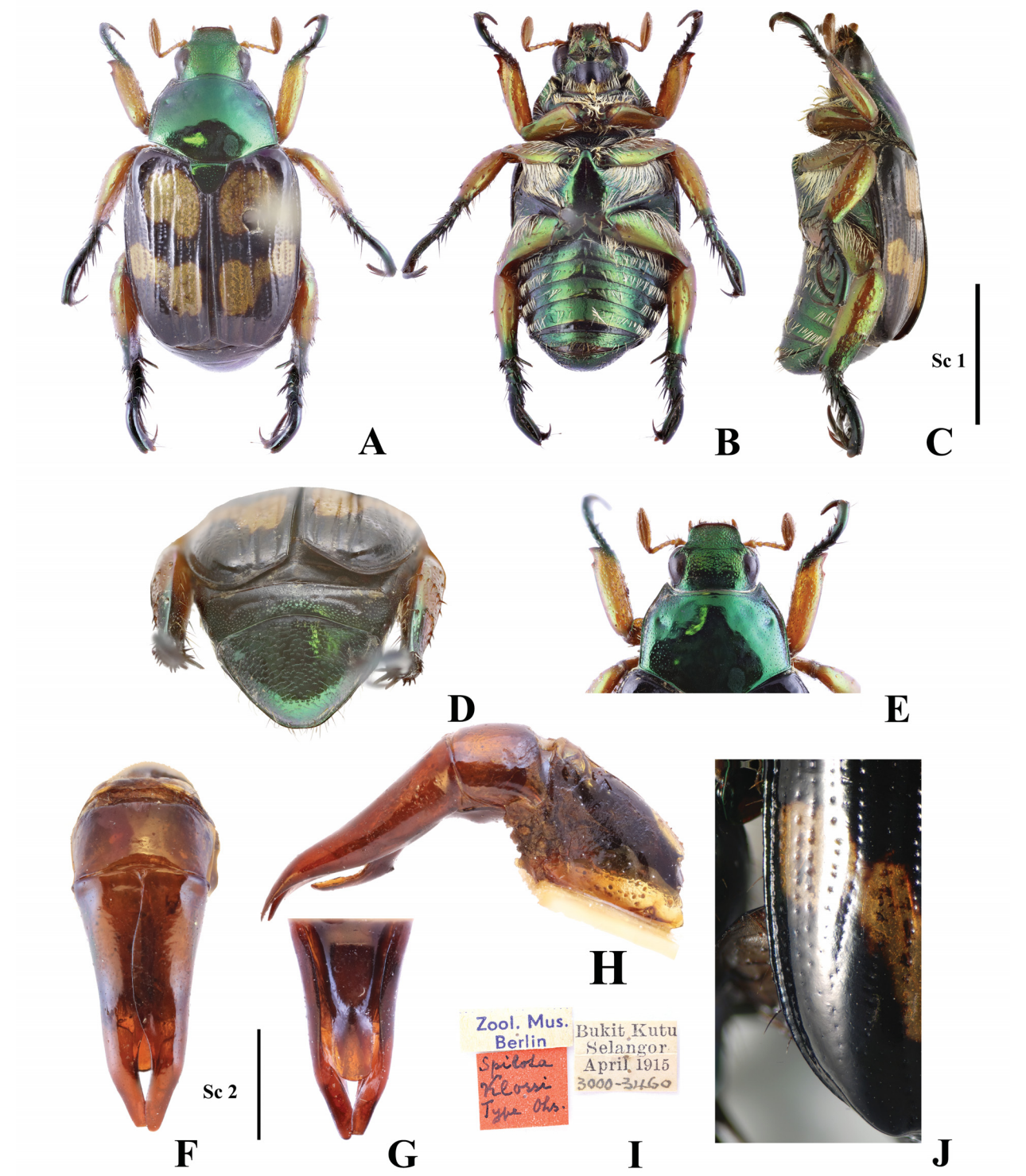

Fig 7. *Glenopopillia klossi* (Ohaus, 1926). A–I – lectotype; J – specimen from Myanmar, Tenasserim. A–C – habitus: A – dorsal view, B – ventral view, C – left lateral view; D – propygidium and pygidium; E – head and pronotum: F–H – aedeagus, F – dorsal view, G – ventral view, H – right lateral view; I – label; J – lateral margin of elytra. Sc 1: Scale for A–C = 5 mm; Sc 2: Scale for F–H = 1 mm.

mesotarsomere 5, incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 7F–H.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, positioned between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.8–12.5 mm (LT 11.3 mm), total body width 5.2–7.4 mm (LT 6.2 mm).

Morphological variability. Elytral spots vary slightly in shape and size, the preapical transversal band some-

times divided into two spots. Color of legs variable, in some specimens all legs dark brown with green metallic luster. Secondary stria on subsutural interstice sometimes only present in anterior half of elytra, sometimes almost reaching the posterior margin. Shape of parameres very constant.

Differential diagnosis. This species is peculiar and differs from all other species of this genus by the following characters: pronotum more or less even, with only one small impression on each side; apico-sutural angle of elytron without spiniform setae, setae along lateral margin less strong and shorter compared to all other species except *G. albopilosa* sp. nov. with short soft setae; propygidium without long white setae at posterior margin; pygidium smooth, without white long setae; modified claws of pro- and mesotarsi of males more robust, the upper branch extremely small. Moreover, the general shape of the aedeagus differs significantly from the shape found in all other species: The parameres are very elongated, without a subapical tooth as found most other species, and the ventral plate has a long extension reaching the apical curvature of the parameres (Figs 7F–H).

Distribution. Malaysia (Perak, Selangor) (Ohaus 1926). First country record from Myanmar (Tanintharyi Region).

Remarks. Because Ohaus (1926) did not state how many syntypes were included in the original description of this species, and it is not entirely certain that the type series was monospecific; therefore, a lectotype was designated by us.

Glenopopillia maculata Lin, 1980

(Figs 3B,H; 4B,H,N; 5B,H,N; 8A–J)

Glenopopillia maculata Lin, 1980: 75, 77, Figs 1–2 (original description).
Glenopopillia maculata: Zorn (2006): 272 (catalogue); Krajčík (2007): 72 (catalogue); Krajčík (2012): 113 (catalogue); Zorn & Bezděk (2016): 350 (catalogue).

Type locality. 'Guangxi, Pingxiang, Daqingshan'.

Type material studied (1 spec.). Holotype: ♂ (GIABR): '广西 大青山 [= Guangxi, Mt. Daqing Shan] | 1974.5.26~31 | 林平 罗裕良 李耀泉 [= leg. Lin Ping, Luo Yuliang & Li Yaoquan] || HOLOTYPE [red] [p] || Glenopopillia | maculata sp. nov. [hw] | 鉴定者 [p] 林平 1978 [hw] [= det. Lin Ping 1978] || 477 [p]' (Fig. 8I).

Additional material studied (4 spec.). **CHINA: Guangxi Zhuang A. R.:** 1 ♂ (CCPC), Jiuwanshan Mts, Huanjiang County, Hechi City, Guangxi, China, 1100 m, 1.vi.2015, Y.-Q. Lu lgt.; 1 ♂ (CCPC), Jiuwanshan Mts, Huanjiang County, Hechi City, Guangxi, China, 1100 m, 29.v.2015, Y.-Q. Lu lgt. **VIETNAM: Bắc Giang Province:** 1 ♂ (CZPC) (Figs 3B,H; 4B,H,N; 5B,H,N), Tay Yen Tu Nat. Res., Thanh So'n, 21°12.812N′ 106°45.846E′, 86 m, 18.v–21.v.2015, A. Skale lgt.; 1 ♀ (CZPC), Tay Yen Tu Nat. Res., Van Danh (bei Dong Ri), 21°09.96N′, 106°49.56′E, 415 m, 20.v.2015, A. Weigel lgt.

Redescription of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra including all margins, epipleura and suture blackish-brown with weak metallic sheen; with following maculae: a large oblique reniform yellow spot between humerus and first costal interval extending posteriorly but not reaching middle of elytron, one small elongate yellow spot in anterior part of costal interval 5, two small approximated yellow spots slightly posteriorly of middle: one elongate in costal interval 3, second transverse, spanning costal interval 4 to 5, and a subquadrate yellow spot in apical 4/5 spanning costal interval 1 to 2.

Head. Clypeus subsemicircular, disc very densely, partly transversely confluently punctate, anterior corners widely rounded; anterior margin weakly reflexed; frons shallowly impressed, laterally punctate like clypeus, punctures separate at middle; vertex sparsely punctate; ratio of interocular width/width of head approximately 0.65; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.5 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and a shallow median longitudinal furrow, with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted in middle between level of elytral costal interval 2 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, moderately fine and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures distinct; subsutural interstice with secondary stria being irregularly doubled anteriorly and almost reaching posterior elytral margin; distinct but discontinuous secondary striae distinct on interstices 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance prominent; opaque area at apical curvature narrow; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); two or three additional large spiniform setae present near apico-sutural angle.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/2 of propygidial length in middle and 1/3 of length at sides. Pygidium strongly convex; apex broadly rounded; punctation transverse on disc, transforming into concentrically arranged dense striolation at sides and base; with two large spots of white setae near base; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subcircular; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in

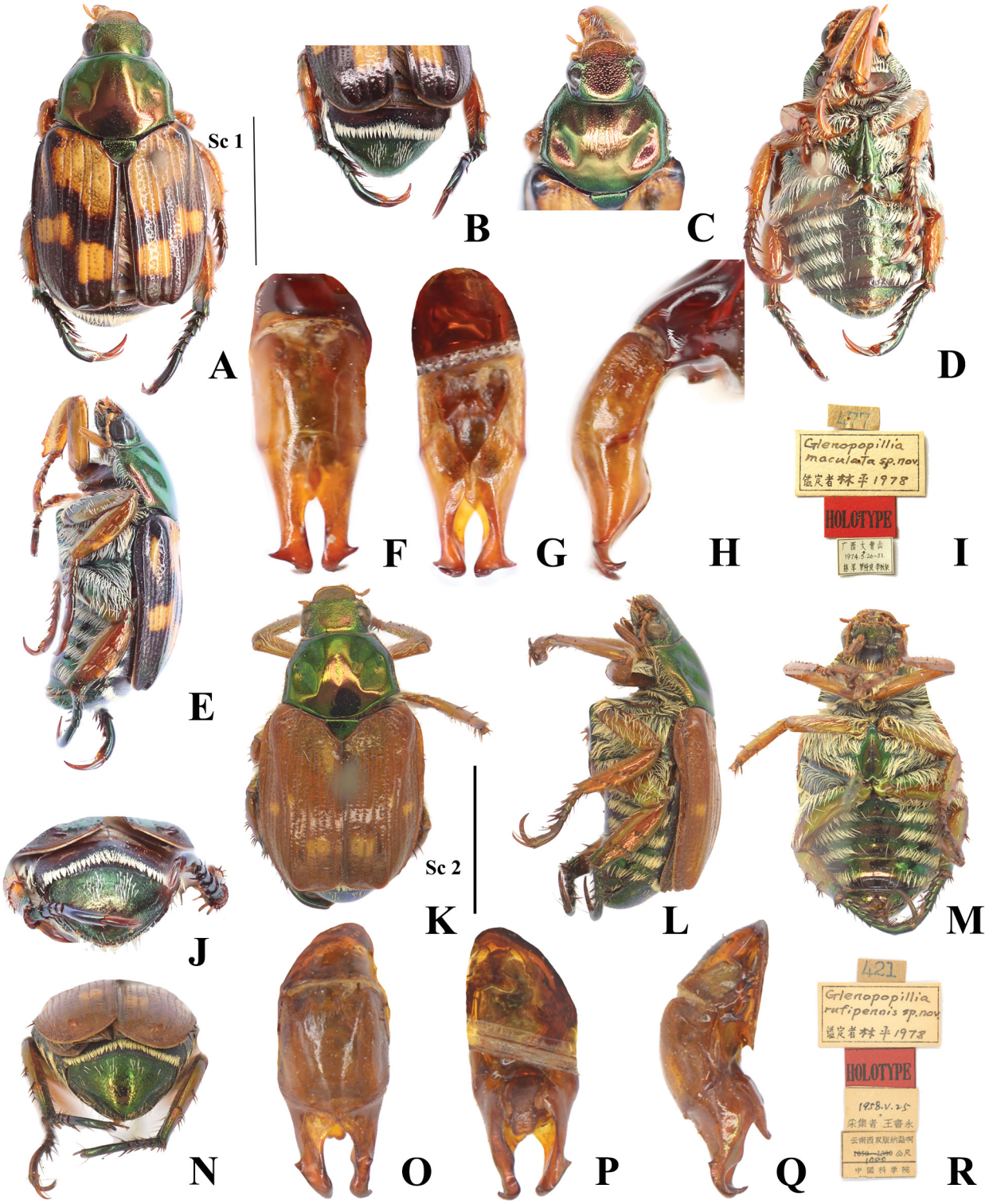

Fig 8. Details of *Glenopopillia*, holotypes. A–J – *G. maculata* Lin, 1980, K–R – *G. rufipennis rufipennis* Lin, 1980. A, D, E, K–M – habitus: A, K – dorsal view, D, M – ventral view, E, L – left lateral view; B, N – propygidium and pygidium; C – head and pronotum; F–H, O–Q – aedeagus: F, O – dorsal view, G, P – ventral view, H, Q – right lateral view; I, R – label. Sc 1: Scale for A = 5 mm; Sc 2: Scale for K = 5 mm.

middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, approximately 3.6 times longer than wide; proximal tooth short, situated close to the rather short, weakly curved apical tooth; inner spur short, articulated at level of proximal tooth. Metatibia strongly fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, slightly widened and deeply incised apically, upper branch spiniform, lower branch broad,

obliquely truncated; outer mesotarsal claw approximately as long as combined length of mesotarsomeres 1–4, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 5B,H,N and 8F–H.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.2–11.4 mm (HT 10.2 mm), total body width 5.7–6.3 mm (HT 5.7 mm).

Morphological variation. Elytral yellow spots vary slightly in shape and size. Number of elytral spiniform setae near apico-sutural angle varies between one and three. Shape of parameres very constant.

Differential diagnosis. *Glenopopillia maculata* is most similar to *G. nagaii* and *G. forceps* sp. nov. with which it shares the same elytral color pattern. It differs from *G. forceps* sp. nov. in having a distinctly broader protibia in males, the secondary stria on interstice 2 reaching the posterior quarter of elytra, and in having the yellow lateral spot of the elytron not divided. *Glenopopillia maculata* differs from *G. nagaii* in the punctation of the pronotum which is more distinct between the lateral impressions. The parameres of *G. maculata* are more or less symmetric (asymmetric in *G. forceps* sp. nov.), and the terminal and subapical lateral tooth of the parameres are more stout compared to *G. nagaii* (Figs 8F–H).

Distribution. China (Guangxi Zhuang Autonomous Region) (Lin 1980). First country record from Vietnam (Bắc Giang Province).

Glenopopillia mengi Lu & Zorn, sp. nov.

(Figs 3C,I; 4C,I,O; 5C,I,O)

Type locality. China, Yunnan, Jinghong, Naban River Watershed National Nature Reserve, Anmaxinzhai (forest), 22°11.75′N 100°38.72′E.

Type material (13 spec.). Holotype: ♂ (IZAS), 'Anmaxinzhai V D | 16.05.2009 | leg. LZ. Meng | 纳板河保护区赠送 [= donated by Naban River Watershed National Nature Reserve] || 云南景洪纳板河保护区 [= Yunnan, Jinghong, Naban River Watershed National Nature Reserve] | 安麻新寨(森林) [= Anmaxinzhai (forest)] | 2009.V.16 772m | 中科院动物所 [= IZAS] || 22.19577°N | 100.64532°E 飞阻 [= flight interception traps] | 采集人：孟令曾 [= leg. Meng Lingzeng] | 中科院动物所 [= IZAS] || IOZ (E) 1966471 [p]'. Paratypes: 2 ♂♂ (IZAS), same data as holotype, IOZ (E) 1966472, IOZ (E) 19664731; 1 ♂ (CZPC), same location data as holotype, 2009.V.26, IOZ(E) 1966474; 1 ♀ (IZAS), 'Naban II/I D | 16.05.2009 | leg. LZ. Meng | 纳板河保护区赠送 [= donated by Naban River Watershed National Nature Reserve] || 云南景洪纳板河保护区 [=Yunnan, Jinghong, Naban River Watershed National Nature Reserve] | 纳版茶厂(橡胶林) [=Tea Factory of Naban (rubber forest)] | 2009.V.16 732m | 中科院动物所 [=IZAS] || 22.15843°N | 100.66487°E 飞阻 [=flight interception traps] | 采集人：孟令曾 [=leg. Meng Lingzeng] | 中科院动物所 [=IZAS] || IOZ (E) 1966475 [p]'; 1 ♀ (NMEC), 'CHINA: S-YUNNAN | (Xishuangbanna), | 23 km NW Jinghong, | vic[inity]. Na Ban (NNNR) [= Naban River Watershed National Nature Reserve] | N22°10.04, E100°39.52 | 28.VI.2008, 730 m, forest | leg. A. Weigel MF1 [=Malaise-Falle (Malaise trap)]'; 2 ♂♂ 5 ♀♀ (PPCB), 'LAOS, 21°09'N 101°19'E, | Louangnamtha pr. | Namtha→MuangSing. | 5–31.v.1997, 900– | Vit Kubáň leg. –1200m, || Coll. P. Pacholátko | Brno | Merhautova 68 | Czech republic [p]'.

Description of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; fore legs and major part of mesotibia dark orange with metallic sheen; mesofemur, apex of mesotibia, mesotarsus and posterior legs dark brown with green metallic luster; clypeus and antenna light brown; elytra predominantly medium brown with weak metallic sheen; lateral margin, epipleura, major part of sutural interval and humeral spot black; one vague yellow spot posteriorly of scutellum; small elongate black spots at costal intervals 1, 2 and 3 connected by dark brown curved zig-zag band reaching margin posteriorly of humeral umbone; three yellow spots just posteriorly to brown cingulum as follows: inner spanning costal interval 1 to 2, middle spot on costal interval 3 and outer spanning costal interval 4 to 5.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, laterally punctate like clypeus, separately punctate at middle; vertex sparsely punctate; ratio of interocular width/width of head approximately 0.66; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.5 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and deep median longitudinal furrow; with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures gradually larger laterad; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral costal interval 2 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures distinct, subsutural interstice with secondary stria being irregularly doubled anteriorly and disapearing in posterior third; vague, widely discontinuous, and similarly disappearing secondary striae also present on interstice 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance very prominent; opaque area at apical curvature narrow; lateral margin with wide flat paramarginal extension between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); three additional large spiniform setae near apico-sutural angle; posterior margin evenly rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/3 of propygi-

dial length in middle and 1/4 of length at sides. Pygidium strongly convex; apex broadly rounded; punctation rather sparse, transverse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two spots of white setae near base and another two vague spots in a small depression at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular and rounded; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, approximately 3.1 times longer than wide; proximal tooth short, situated close to the rather short, strongly curved apical tooth; inner spur short, articulated at level of proximal tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately as long as combined length of mesotarsomeres 1–4, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 5C,I,O.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.0–12.0 mm (HT 10.8 mm), total body width 5.6–7.2 mm (HT 5.8 mm).

Morphological variation. Elytral black-brown transversal band and yellow spots vary slightly in shape and size, sometimes with another vague yellow spot between scutellum and humerus. Number of elytral spiniform setae near apico-sutural angle varies between one and three. Shape of parameres very constant.

Differential diagnosis. *Glenopopillia mengi* sp. nov. is distinguished from similar species by the combination of the following characters: unique color pattern of elytra – medium brown with a black/dark brown curved zig-zag band in the middle and additional vague yellow spots; punctures of subsutural interstice almost disappearing in the posterior third of elytra; epipleuron with numerous white short setae near humerus; protibia rather short and wide; white setae along posterior margin of propygidium rather sparse and short. The aedeagus is distinctive and cannot be confused with any other species of *Glenopopillia*. The parameres are similar to those of *G. maculata*, but are stouter, with the subapical lateral tooth very short. The apex of the ventral plate is equipped with a backward-pointed hook (Figs 5C,I,O).

Etymology. Patronymic (noun in the genitive case), named in honour of Lingzeng Meng, the collector of most of the type material, who conducted an excellent field study in the Naban River Watershed National Nature Reserve.

Collecting circumstances. These specimens were collected in the Naban River Watershed National Nature Reserve with cross window traps in the tree canopy.

Distribution. China (Yunnan Province), Laos (Louang Namtha Province).

Glenopopillia nagaii (Sabatinelli, 1997)

(Figs 9A–I)

Callistethus nagaii Sabatinelli, 1997: 249, Figs 3–4, 25 (original description).

Glenopopillia nagaii: Zorn (2005): 320 (new combination), Zorn (2006): 272 (catalogue); Krajčík (2007): 72 (catalogue); Krajčík (2012): 113 (catalogue); Zorn & Bezděk (2016): 351 (catalogue).

Type locality. 'North Vietnam, Mt Tamdao'.

Type material studied (2 spec.). Paratypes: 1 ♂ (MHNG) (Figs 9A–I), 'North VIETNAM | Mt Tamdao, VI. 1993 | S. Nagai leg. [p] || Paratypus [p] ♂ [hw] | Callistethus nagai n. sp. | des. Sabatinelli 1997 [red] [p]' (Fig. 9I); 1 ♀, (MHNG), 'North VIETNAM | Mt Tamdao, VI. 1993 | S. Nagai leg. [p] || Paratypus [p] ♀ [hw] | Callistethus nagai n. sp. | des. Sabatinelli 1997 [red] [p]'.

Additional material studied (49 spec.). **VIETNAM: Vĩnh Phúc Province:** 2 ♂♂ 1 ♀ (NMPC), Tam Dao, 3.–11.vi.1985, 900–1400 m, J. Jelínek lgt.; 1 ♂ (DKCP), Tam Dao, 5.vi.1986, D. Král coll.; 4 ♂♂ 3 ♀♀ (MSPC, PPCB), Tamdao, 2.–11.vi.1985, Vít. Kubáň lgt.; 1 ♂ 3 ♀♀ (CZPC), Tam Dao, ca. 1000 m, 17.–30.vi.1999, A. Kallies lgt.; 1 ♂ (CZPC), Tam Dao, 8.–22.v.1990, Miloš Dudycha lgt.; 1 ♀ (CZPC), Tam Dao NP, 4.vi.2012, 21°27.577′N 105° 38.489′E, 1000 m, M. Pejcha lgt.; 1 ♀ (CZPC), Tam Dao, 930 m, vi.–viii.1997, native collector lgt.; 1 ♂ (PKLC), Tam Dao National Park, N 21.4603° E 105.64201°, 1027 m, 1.–4.vi. 2013, Nathan M. Schiff lgt; 9 ♂♂ 5 ♀♀ (MSPC), Tam Dao, 20.–28.vi.1990, Strnad Jan lgt.; 4 ♂♂ 6 ♀♀ (MSPC), Tam Dao, 20.–27.vi.1990, A. Olexa lgt.; 2 ♂♂ (MSPC), Tam Dao, 27.v.–2.vi.1986, 900 m, A. Olexa lgt.; 1 ♂ (MSPC), Tam Dao, 16.–23.v.1991, 900 m, Strnad Jan lgt. 2 ♂♂ (MSPC), Tam Dao, 6.–25.v.1990. **Lào Cai Province:** 1 ♂ (CZPC), Mt. Fan-si-pan, W-Seite [western slope], Cha-pa (=Sapa), 2000 m, 22.15°N 103.45°, E primär. Nebelwald [east, primary cloudy forest], 5.vii.1994, Brechlin & Schintlmeister lgt.

Doubtfully labeled material. CHINA: Yunnan: 1 ♂ (CZPC), Baoshan city env., 2000 m a.s.l., 10.vii.1998. A. Gorodinski lgt. (see Remarks below).

Redescription of paratype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra including all margins, epipleura and suture blackish-brown with weak metallic sheen; a large oblique reniform yellow spot between humerus and costal interval 1 not reaching middle of elytron posteriorly, one small elongate yellow spot on anterior part of costal interval 5, two approximated small

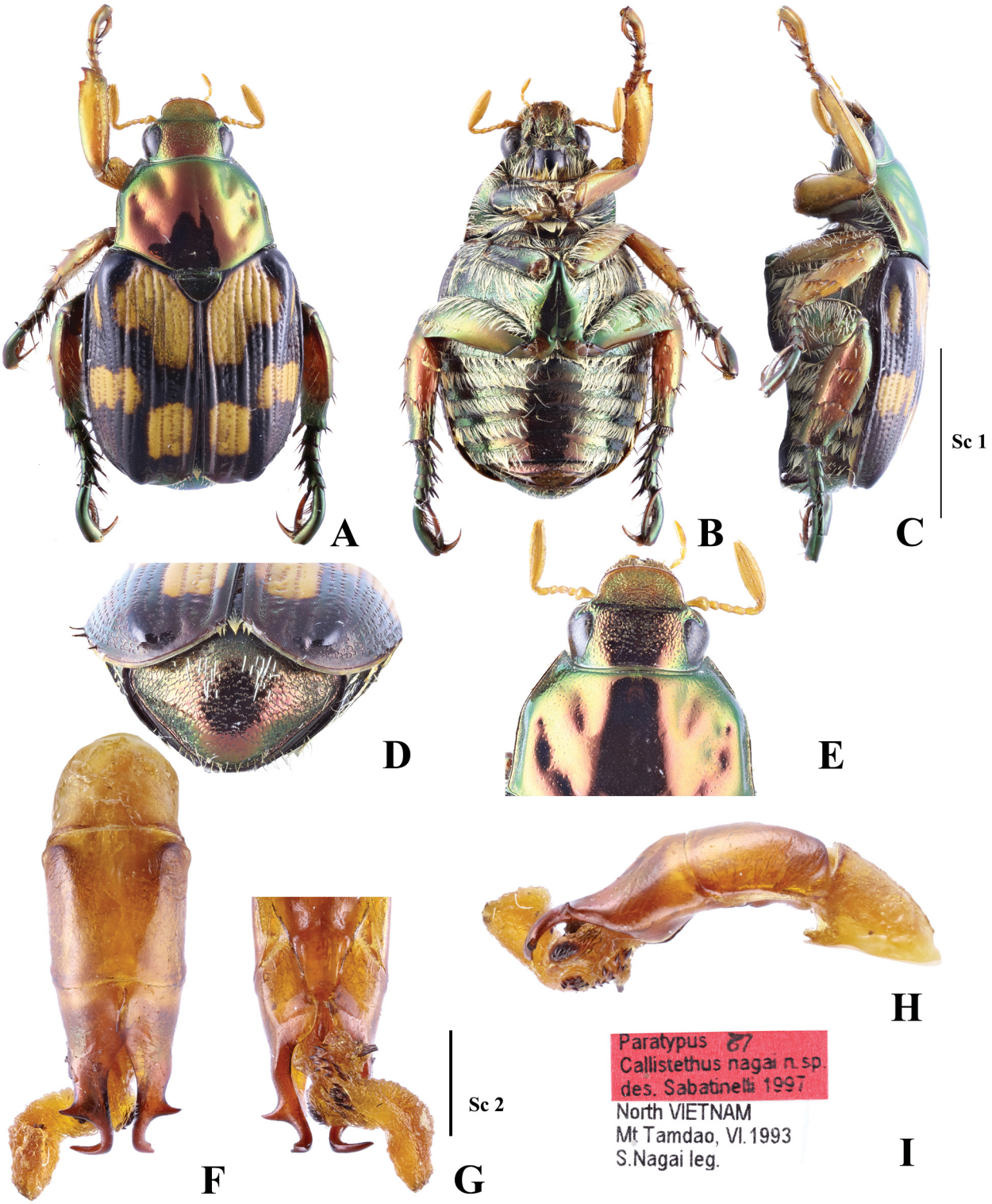

Fig 9. *Glenopopillia nagaii* (Sabatinelli, 1997), paratype. A–C – habitus: A – dorsal view, B – ventral view, C – left lateral view; D – propygidium and pygidium; E – head and pronotum; F–H – aedeagus: F – dorsal view, G – ventral view, H – right lateral view; I – label. Sc 1: Scale for A–C = 5 mm; Sc 2: Scale for F–H = 1 mm.

yellow spots slightly posteriorly of middle: one elongate in costal interval 3, the second transverse, spanning costal interval 4 to 5, and a subquadrate yellow spot in the apical 4/5 spanning costal interval 1 to 2.

Head. Clypeus subsemicircular, disc very densely, partly transversely confluently punctate; anterior corners widely rounded; anterior margin weakly reflexed; frons very shallowly impressed, laterally punctate like clypeus, separately punctate at middle; vertex sparsely and finely punctate; ratio of interocular width/width of head approximately 0.65; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.4 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and shallow median longitudinal furrow; with steep decline along lateral margin;

disc extremely finely, shallowly and sparsely punctate, punctures becoming gradually larger laterally; with sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum distinctly converging anteriad in the posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral interstice 2 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, moderately finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures distinct; subsutural interstice with secondary stria being irregularly doubled anteriorly and almost reaching posterior elytral margin; distinct but discontinuous secondary striae also present on interstice 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance very prominent; opaque area at apical curvature narrow; lateral margin with flat paramarginal extension in anterior half of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with several short white setae near humerus and stout, strongly spiniform black setae beginning at humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); 2 or 3 large spiniform setae present near apico-sutural angle; posterior margin evenly rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/2 of propygidial length in middle and 1/3 of length at sides. Pygidium strongly convex; apex broadly rounded; punctation transverse and rather sparse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two spots of white setae near base and some white setae scattered at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, rounded; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, approximately 3.4 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur short, at level of proximal tooth. Metatibia strongly fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, slightly widened and deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw very long, approximately as long as combined length of mesotarsomeres 1–4, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 9F–H.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.6–11.5 mm, total body width 6.0–6.6 mm.

Morphological variation. Elytral yellow spots vary very slightly in shape and size. Number of elytral spiniform setae near apico-sutural angle varies between two and four. Shape of parameres very constant.

Differential diagnosis. The elytra of *Glenopopillia nagaii* have the same basic color pattern as those of *G. forceps* sp. nov., *G. klossi* and *G. maculata*. While it is easily distinguishable from *G. klossi* by the presence of rigid setae at the apico-sutural angle and by several further characters (see 'Differential diagnosis' of *G. klossi*), it is extremely similar to *G. forceps* and *G. maculata*. It differs from *G. maculata* in the following characters: punctation of pronotum extremely fine and shallow between the lateral impressions (distinct, extremely shallow and sparse only in very middle in *G. maculata*); end of each paramere with two laterally directed denticles, which are distinctly longer than those of *G. maculata* (Figs 9F–H). *Glenopopillia nagaii* is distinguished from *G. forceps* by the following characters: scutellum more or less coarsely punctate; protibia in males slightly stouter; yellow lateral spot of elytra not divided; secondary stria on interstice 2 reaching the posterior quarter of elytra; aedeagus symmetrical (asymmetrical in *G. forceps*).

Distribution. Vietnam (Vĩnh Phúc and Lào Cai Provinces), so far known only from the Tam Đảo National Park and Mt. Phan Xi Păng (Sabatinelli 1997).

Remarks. This species was reported from Yunnan, China (Zorn 2006, Zorn & Bezděk 2016). We consider this record erroneous because the specimens on which it was based was presumably mislabeled.

Glenopopillia rufipennis rufipennis Lin, 1980

(Figs 3D,J; 4D,J,P; 5D,J,P; 8K–R)

Glenopopillia rufipennis Lin, 1980: 76, 78, Fig. 3 (original description).
Glenopopillia rufipennis: Zorn (2006): 272 (catalogue), Krajčík (2007): 72 (catalogue); Krajčík (2012): 113 (catalogue); Zorn & Bezděk (2016): 351 (catalogue).

Type locality. 'Yunnan, Xishuangbanna, Meng'a, 1000 m a. s. l.'.

Type material studied (1 spec.). Holotype: ♂ (IZAS) '云南西双版纳勐啊 [= Yunnan, Xishuangbanna, Meng'a] [p] | 1000 [hw] 公尺 (m) | 中国科学院 [= Chinese Academy of Sciences] [p] || 1958. V. 25 [hw] 采集者 王书永 [= leg. Wang Shuyong] || HOLOTYPE [red] [p] || Glenopopillia

| rufipennis sp. nov. [hw] | 鉴定者 [p] 林平 1978 [= det. Lin Ping] [hw] || 421 [p]' (Fig. 8R).

Additional material studied (51 spec.). **CHINA: Yunnan Province:** 1 ♀ (IZAS), Xishuangbanna, Meng'a, 1050–1080 m, 17.v.1958, Wang Shuyong lgt., IOZ (E) 1966477; 1 ♀ (IZAS), Xishuangbanna, Meng'a, 1050 m, 17.v.1958, Pu Fuji lgt., IOZ (E) 1966476; 1 ♀ (IZAS), Xishuangbanna, Meng'a, 1000 m, 25.v.1958, Wang Shuyong lgt., IOZ (E) 1966478; 1 ♀ (IZAS), Xishuangbanna, Meng'a, 1000 m, 16.v.1958, Pu Fuji lgt., IOZ (E) 1966479. **LAOS: Houaphanh Province:** 2 ♂♂ (NMPC), Ban Saluei→Phou Pane Mt., 20°12–13.5N′ 103°59.5–104°01E′, 1340–1870 m, 15.iv.–15.v.2008, Lao collectors lgt.; 22 ♂♂ 18 ♀♀ (CZPC, ZFKB), Ban Saleui, Phou Pan (Mt.) -20°12′N, 104°01′E, 11.iv.–15.v. 2012, 1300–1900 m, leg. C. Holzschuh ZFMK Ankauf 2012/13 (Figs 3D,J; 4D,J,P; 5D,J,P); 1 ♂ (RBINS), Mt. Phu Phan, 2060 m, vi.2015, S. Collard lgt.; 1 ♂ 3 ♀♀ (IZAS), Xam Neua, Mt. Pan, v.2012.

Redescription of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra predominantly light brown with weak metallic sheen; sutural margin narrowly blackened; some vague, pale yellow spots as follows: one posteriorly of scutellum; two near middle of outer margin: inner spot in costal interval 3, outer one slightly larger than inner and spanning costal interval 4 to 5; one subquadrate spot approximately between 2/3 and 3/4 of elytral length, from costal interval 1 to 2.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, punctate like clypeus, but punctures less confluent medially; vertex very sparsely and finely punctate; ratio of interocular width/width of head approximately 0.64; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.4 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and a deep median longitudinal furrow; with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral costal interval 3 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures large, distinct; subsutural interstice with secondary stria being irregularly doubled anteriorly and almost reaching posterior elytral margin; distinct but discontinuous secondary striae also present on interstice 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance very prominent; opaque area at apical curvature broad, including interstice 4 laterally; lateral margin with wide flat paramarginal extension between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral mid-length; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); 1 or 2 large spiniform setae present near apico-sutural angle; posterior margin evenly, separately rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/3 of propygidial length. Pygidium strongly convex; apex broadly rounded; punctation transverse and rather sparse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two small spots of white setae near base and another two vague spots in a small depression at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, rather long, broadened, approximately 3.9 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur short, at level of proximal tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw very long, slightly widened and deeply incised apically, upper branch spiniform; outer mesotarsal claw very long, curved, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 5D,J,P and 8O–Q.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.7–13.3 mm (HT 10.7 mm), total body width 5.8–7.3 mm (HT 5.8 mm).

Morphological variation. Vague yellow spots on elytra vary slightly in shape and size, sometimes with an additional vague yellow spot between scutellum and humerus, occasionally the inner of the two middle spots missing, sometimes all yellow spots very indistinct. Number of elytral spiniform setae near apico-sutural angle varies

between one and three. Shape of parameres very constant.
Differential diagnosis. Only two other species share the entirely light brown elytra as seen in *G. rufipennis rufipennis*: *G. fossulata* and *G. skalei* sp. nov. Of these, *G skalei* sp. nov. is easily distinguished by the partly blackened costal interval 1, the longer propygidial white setae and the wider protibia in males. *Glenopopillia rufipennis rufipennis* is virtually identical externally to *G. fossulata,* except that the setae at the abdominal ventrites form two transverse bands in *G. rufipennis rufipennis*; whereas the anterior areas are nearly glabrous in the syntypes of *G. fossulata*. Moreover, the setation of the metafemur is more distinct. There are, however, distinct differences in the shape of the parameres, which are strongly asymmetric and subapically dentate in *G. rufipennis*, but strongly curved and not dentate in *G. fossulata* (Figs 5D,J,P; 8O–Q). Both, *G. rufipennis rufipennis* and *G. fossulata*, are larger than all other species, the spiniform setae on the elytral margin are especially stout, and the series begins right posteriorly of the humeral umbone. For the separation from *G. rufipennis nigropicta* subsp. nov., see 'Diagnosis' under that subspecies.
Distribution. China (Yunnan) (Lin 1980). First country record from Laos (Houaphanh).

Glenopopillia rufipennis nigropicta Zorn & Lu, subsp. nov.

(Figs 3E,K; 4E,K,Q; 5E,K,Q)

Type locality. Laos, Attapeau Province, Dong Ampham National Biodiversity Conservation Area, Nong Fa (crater lake) enviroment, 15°05.9′N 107°25.6′E, 1160 m a.s.l.
Type material (2 spec.). Holotype: ♂ (IRSB), 'Coll. I.R.Sc.N.B. | LAOS, Attapeau Prov. | Annam Highlands Mts. Dong | Amphan NBCA, ca 1160m NONG | FA (crater lake) env. | 15°05.9'N, 107°25.6'E | 30-IV-6-V-2010 | Lgt. St Jakl / I.G.31.970 [p]'. Paratype: 1 ♀ (IRSB), 'Coll. I.R.Sc.N.B. | LAOS, Attapeau Prov. | Annam Highlands Mts. Dong | Amphan NBCA, ca 1160m NONG | FA (crater lake) env. | 15°05.9'N, 107°25.6'E | 30-IV-6-V-2010 | Lgt. St Jakl / I.G.31.970 [p]'.

Description of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra light brown with weak metallic sheen in anterior half to two thirds; a humeral spot, anterior margin, inner half of sutural interval, lateral margin and posterior third of elytra black; black color enclosing a transverse yellow/light brown spot near lateral margin as well as a subapical subquadrate yellow/light brown spot spanning costal interval 1 to 2; another yellow elongate spot in subsutural interstice posteriorly of scutellum.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, punctate like clypeus, with punctures less confluent at middle; vertex very sparsely and finely punctate; ratio of interocular width/width of head approximately 0.65; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.4 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and deep median longitudinal furrow; with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum weakly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between third costal interval on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; subsutural interstice with secondary stria being irregularly doubled anteriorly and almost reaching posterior elytral margin; distinct but discontinuous secondary striae also present on interstices 2 and 3; elytral surface with sparse micropunctation; humeral umbone and apical protuberance very prominent; opaque area at apical curvature broad, including interstice 4 laterally; lateral margin with wide flat paramarginal extension between humerus and middle of elytra; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with numerous soft short white setae near humerus and stout spiniform black setae beginning posteriorly of humerus and extending along lateral margin to apical curvature (becoming gradually larger apicad); one or two large spiniform setae present near apico-sutural angle; posterior margin evenly, separately rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/3 of propygidial length. Pygidium strongly convex; apex broadly rounded; punctation transverse and rather sparse on disc (except across vague midline near apex), transforming into concentrically arranged dense striolation at sides and base; with scattered white setae near base and in an indistinct depression at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

Abdominal ventrites with a transverse band of dense, long, white setae on posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1–2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, approximately 3.75 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur short, at

level of proximal tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately as long as combined length of mesotarsomeres 1–4, curved, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than inner.

Aedeagus as in Figs 5E,K,Q.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.3–10.8 mm (HT 10.3 mm), total body width 6.0–6.2 mm (HT 6.0 mm).

Morphological variation. The extent of the black and yellow elytral markings does not differ significantly between the two known specimens.

Differential diagnosis. *Glenopopillia rufipennis nigropicta* subsp. nov. differs from the nominotypical subspecies in the following characters: large areas of elytra black laterally and posteriorly (light brown in *G. r. rufipennis*), body size smaller than majority of specimens of the nominotypical form, setae at lateral margin of elytra less stout and less numerous, starting near the middle of elytra (starting near humerus in *G. r. rufipennis*), opaque area on apical curvature of elytra weakly expressed, indistinct at apico-sutural angle and laterally extending only to interstice 5 (broad in *G. r. rufipennis*, including interstice 4 laterally, including apico-sutural angle).

Etymology. The specific epithet (adjective in the nominative singular) translates as 'black-colored' and alludes to the black coloration of the elytra.

Distribution. Laos (Attapeu).

Remarks. We decided to give this taxon subspecies status because there are substantial external morphological differences between the two available specimens from southern Laos and all examined specimens of the nominotypical subspecies (n = 52) from China and northern Laos, but there are virtually no differences in the shape and structure of the male genitalia (Figs 5E,K,Q). We found that all other species in this genus have a very low degree of variation in the external morphological characters, especially in color pattern (except for *G. albopilosa* sp. nov.). Therefore, we consider the observed external morphological differences between these two subspecies to be stable and realiable, even if only two specimens of the subspecies *G. f. nigropicta* subsp. nov. were available to us. Thus, these are allopatric, phenetically distinct populations that show no differences in the morphology of the male genitalia. These findings comply best with a relationship at subspecies level (De Queiroz 2007). To what extent there is reproductive isolation between the two populations, which are separated by approximately 500 km distance, remains uncertain. Further material is needed to verify the taxonomical status.

Glenopopillia skalei Zorn & Lu, sp. nov.

(Figs 3F,L; 4F,L,R; 5F,L,R)

Type locality. N Vietnam, Cao Bang Province, Vin Den, Nui Pla Oac Nature Reserve, 22°33′53″N, 105°52′53″E, 900–1300 m a. s. l.

Type material (6 spec.). Holotype: ♂ (NMEC), 'N-VIETNAM Cao Bang Prov., vic. | Vin Den, Nui Pia Oac Nature Res. | 10.–15.V.2014, 22°33'53''N, | 105°52'53''E 900–1300m, A. Skale [p]'. Paratypes: 1 ♂ 2 ♀♀ (ASPC, CZPC), same data as holotype; 1 ♂ 1 ♀ (CZPC, NMEC), 'N-VIETNAM Cao Bang Pr. | vic. Vin Den, Nui Pia Oac | Nature Res., 6. –10.V.2013 | 22°33'53''N, 105°52'53''E | 900–1300m leg. A. Weigel || collection | NATURKUNDE – | MUSEUM ERFURT [yellow] [p]'.

Description of holotype (♂). Body shape. Elongate ovoid, weakly convex.

Color. Ground color blackish-brown with strong green to red metallic luster; legs dark orange except for meso- and metatarsus, meso- and metafemur, and apical part of metatibia being dark brown with green metallic luster; clypeus and antenna light brown; elytra light brown with weak metallic sheen; anterior margin before humeral umbone and mid-lateral margin dark brown; suture and inner 1/3 to 1/2 of costal interval 1 blackish-brown; some vague, pale yellow spots present as follows: one posteriorly of scutellum; two near middle of lateral margin; one between 2/3 and 3/4 of elytral length spanning costal interval 1 to 2.

Head. Clypeus subrectangular, disc very densely, transversely, confluently punctate; anterior corners rounded; anterior margin weakly reflexed; frons very shallowly impressed, punctate like clypeus; vertex very sparsely and finely punctate; ratio of interocular width/width of head approximately 0.67; antennal club longer than antennomeres 2–6 combined.

Pronotum approximately 1.5 times wider than long, with two deep, oblique impressions on each side (posterior impression larger than anterior) and shallow median longitudinal furrow; with steep decline along lateral margin; disc extremely finely and sparsely punctate, punctures becoming gradually larger laterally; sparse erect setae present near anterior angles and along lateral margin; anterior angles acute and strongly produced; posterior angles obtuse; sides of pronotum distinctly converging anteriad in posterior two thirds, then strongly curved, strongly converging, and slightly sinuate in anterior third; basal marginal line interrupted before scutellum between level of elytral interstice 2 on each side; all other marginal lines complete.

Scutellum nearly semicircular, broader than long, moderately finely and sparsely punctate.

Elytra regularly striate; three inner costal intervals (1, 2 and 3) slightly more convex than interstices; strial punctures large, distinct; subsutural interstice with a secondary stria that is irregularly doubled anteriorly and almost reaches posterior elytral margin; distinct but discontinuous secondary stria also present on interstice 2, secondary stria on interstice 3 only present in anterior half; elytral surface with sparse micropunctation; humeral umbone and apical protuberance very prominent; opaque area at apical curva-

Table 1. List of know localities of *Glenopopillia* with their geographic coordinates and altitude data.

Species	Country	Locality	N	E	Altitude
G. albopilosa	Vietnam	Thừa Thiên-Huế Prov., Bach Ma National Park	16.22°	107.85°	1200 m
G. albopilosa	Vietnam	Lâm Đồng Prov., Dambri, Bảo Lâm	11.64°	107.74°	800 m
G. forceps	India	Meghalaya State, Tura	25.5°	90.23°	1000 m
G. fossulata	Vietnam	Lào Cai Prov., Sapa	22.34°	103.84°	1500 m
G. klossi	Malaysia	Selangor State, Bukit Kutu	3.58°	101.73°	300 m
G. klossi	Malaysia	Perak State, Ringlet	4.41°	101.38°	900 m
G. klossi	Myanmar	Tanintharyi Region, Tenaserim	12.09°	99.01°	20 m
G. maculata	China	Guangxi, Daqing Shan	22.30°	106.73°	300 m
G. maculata	China	Guangxi, Hechi City, Huanjiang County, Jiuwanshan Mts.	25.41°	108.30°	1100 m
G. maculata	Vietnam	Bắc Giang Prov., Tay Yen Tu Nat. Res., Thanh So'n	21.21°	106.76°	200 m
G. mengi	China	Yunan Prov., Jinghong, Naban River Watershed National Nature Res.	22.20°	100.65°	800 m
G. mengi	Laos	Louang Namtha Prov., Namtha→MuangSing	21.15°	101.32°	1000 m
G. nagaii	Vietnam	Vĩnh Phúc Prov., Mt Tamdao	21.46°	105.64°	1000 m
G. nagaii	Vietnam	Lào Cai Prov., Mt. Fan-si-pan, W-Seite	22.15°	103.45°	2000 m
G. rufipennis rufipennis	China	Yunnan Prov., Xishuangbanna, Meng'a.	22.19°	101.33°	1000 m
G. rufipennis rufipennis	Laos	Houaphanh Prov., Ban Saluei→Phou Pane Mt.	20.32°	104.10°	1500 m
G. rufipennis nigropicta	Laos	Attapeu Prov., Dong Ampham National Biodiversity Conservation Area, Nong Fa	14.94°	107.11°	1200 m
G. skalei	Vietnam	Cao Bằng Prov., Vin Den, Nui Pla Oac Nature Res.	22.56°	105.88°	1100 m

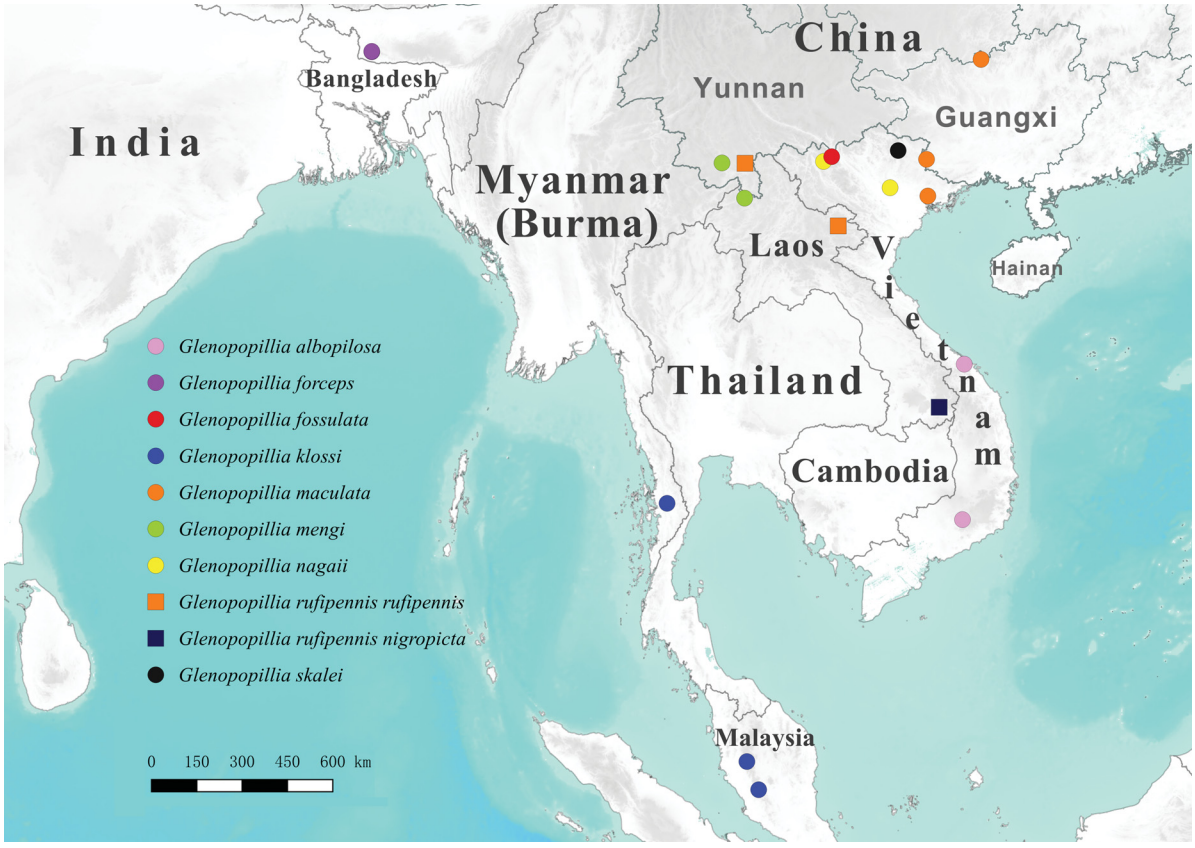

Fig. 10. Sketch map of the South-east Asia with marked distribution of *Glenopopillia* species.

ture narrow; lateral margin with flat paramarginal extension in anterior half of elytron; epipleuron broad near humerus, ending slightly posteriorly of elytral midlength; epipleuron with several short white setae near humerus and stout strongly spiniform black setae beginning at humerus and extending in a row along lateral margin to apical curvature (becoming gradually larger apicad); three large spiniform setae present near apico-sutural angle; posterior margin evenly, separately rounded.

Propygidium with dense fringe of white setae along posterior margin covering approximately 1/3 of propygidial length in middle and 1/4 of length at sides.

Pygidium strongly convex; apex broadly rounded; punctation transverse and rather sparse on disc (except across vague midline), transforming into concentrically arranged dense striolation at sides and base; with two big spots of white setae near base and some white setae scattered at lateral margin; apex with several long, erect brownish setae.

Ventral thoracic surface densely covered with soft, long, white setae.

Meso-metaventral process short, compressed between mesocoxae, projecting slightly downward in lateral view, anteriorly vertical and straight; apex subrectangular, somewhat rounded; bulbiform in ventral view.

Abdominal ventrites with transverse band of dense, long, white setae in posterior half (broadly interrupted in middle) and irregular white setae on each side of anterior half of ventrites 2–4; ventrites 1, 2 and anterior half of ventrite 3 carinate laterally.

Legs. Meso- and metafemur with two bands of long white setae, one along anterior margin, the second emerging from a transverse row of punctures parallel to posterior margin. Protibia bidentate, broadened, approximately 3.3 times longer than wide; proximal tooth short, situated close to the rather short, curved apical tooth; inner spur very short, at level of proximal tooth. Metatibia fusiform; protarsus slender; protarsomere 5 (without claws) slightly longer than tarsomeres 1–4 combined; inner protarsal claw approximately 3/4 as long as protarsomere 5, deeply incised apically, upper branch spiniform, lower branch broad, obliquely truncated; outer mesotarsal claw approximately as long as combined length of mesotarsomeres 1–4, deeply incised at apex, upper branch spiniform; metatarsal claws very unequal, outer claw approximately twice as thick and 1/3 longer than the inner one.

Aedeagus as in Figs 5F,L,R.

Female. Protibia slender, apical tooth of protibia long and spatulate; protarsus articulated slightly basally of level of proximal tooth; inner spur long, articulated between 1/2 and 2/3 of tibial length; protarsus very slender, protarsomere 5 (without claws) shorter than tarsomeres 1–4 combined; modified claws of pro- and mesotarsi shorter, two apical branches more equal than in males; antennal club as long as antennomeres 2–6 combined.

Measurements. Total body length 10.6–11.0 mm (HT 11.0 mm), total body width 5.6–6.5 mm (HT 6.3 mm).

Morphological variation. Number of elytral spiniform setae near apico-sutural angle varies between 2 and 4. Secondary stria on interstice 3 may or may not be present in posterior half of elytra. Shape of parameres very constant.

Differential diagnosis. *Glenopopillia skalei* sp. nov. is very similar to *G. rufipennis rufipennis* and *G. fossulata* in having the same light brown elytra. In contrast to those two taxa, the inner 1/3 to 1/2 of costal interval 1 is blackened (only suture blackened in *G. r. rufipennis* and *G. fossulata*), the protibia is wider in *G. skalei* sp. nov., and the fringe of white setae of the propygidium is half as long as the length of the propygidium in the middle (one third as long in *G. rufipennis* and *G. fossulata*). The parameres are symmetrical and similar to those of *G. maculata*, but are broader in dorsal view, with the subapical tooth closer to the apex and bent upwards in lateral view. Moreover, the basal piece of the ventral plate is more strongly developed (Figs 5F,L,R).

Etymology. Patronymic (noun in the genitive case), named in honor of André Skale who collected most of the type material including the holotype.

Distribution. Vietnam (Cao Bằng Province).

Identification key to the *Glenopopillia* species

1 Pronotum smooth, with only one small fossa on each side (Fig. 7A); apico-sutural angle of elytron without white or spiniform setae (Fig. 7A); propygidium glabrous, without white setae (Fig. 7D); pygidium glabrous (Fig. 7D); Malaysia: Perak and Selangor States, Myanmar: Tanintharyi Region. ..... ***G. klossi*** (Ohaus, 1926)

– Pronotum with at least one deep, oblique impression on each side (e.g. Figs 2A, 3A); apico-sutural angle of elytron with one or several white or spiniform setae (e.g. Fig. 2D); propygidium with fringe of white setae at posterior margin (e.g. Fig. 2D); pygidium with white setae near base (e.g. Fig. 2D). 2

2 Setae at lateral margin and apico-sutural angle of elytron white, rather short and soft (Fig. 2I); antennal club longer than combined length of remaining antennomeres (male, female unknown) (Fig. 2E); each side of pronotum with only one distinct oblique impression, which is densely punctate (Fig. 2E); Vietnam: Lâm Đồng and Thừa Thiên-Huế Provinces. ..... ***G. albopilosa* sp. nov.**

– Setae at lateral margin and apico-sutural angle of elytron dark, rigid, spiniform (e.g. Figs 9A, D); antennal club as long as antennomeres 2–6 (e.g. Fig. 9E); each side of pronotum with two distinct oblique impressions (e.g. Fig. 9E). 3

3 Elytra predominantly light brown with vague yellow spots, sometimes with additional small black or brownish spots (e.g. Figs 3C, F). 4

– Elytra predominantly blackish-brown, at least predominantly black laterally and posteriorly, with sharply defined yellow spots (e.g. Fig. 3A). 7

4 Elytra with small blackish spots (Fig. 3C); punctures of subsutural interstice almost disappearing in posterior third (Fig. 3C); epipleuron with numerous short white setae near humerus (Fig. 3I); China: Yunnan Prov., Laos: Louang Namtha Prov. ..... ***G. mengi* sp. nov.**

– Elytra without small blackish spots (e.g. Fig. 3F); punctures of subsutural interstice reaching apex (e.g. Fig. 3F); epipleuron only with few white setae near humerus (e.g. Fig. 3L). 5

5 Sutural margin blackened but costal interval 1 light brown (e.g. Fig. 3D); fringe of white setae of propygidium short, one third as long as propygidium in middle (e.g. Fig. 4P). 6

– Suture and inner 1/3 to 1/2 of costal interval 1 blackened (Fig. 3F); fringe of white setae of propygidium long, half as long as length of propygidium in middle (Fig. 4R); Vietnam: Cao Bằng Prov. ..... ***G. skalei* sp. nov.**

6 Abdominal ventrites with a transverse row of white setae in the posterior half and distinct irregular white setae in the anterior half of ventrite 2–4 (Fig. 4D); species from China: Xishuangbanna, and northern Laos. ....***G. rufipennis rufipennis*** Lin, 1980

– Abdominal ventrites with a transverse row of white setae in the posterior half and irregular white setae only in the anterior half of ventrite 2 (Fig. 6B); species

from northern Vietnam. .... ***G. fossulata*** (Benderitter, 1929)

7 Disc of elytra mostly light brown anteriorly, only posterior third of elytra black with yellow to light brown spots (Fig. 3E); Laos: Attapeu Prov. ....***G. rufipennis nigropicta*** **subsp. nov.**

– Disc of elytra predominantly black, with sharply defined yellow to light brown spots (e.g. Fig. 3A). 8

8 Protibia more slender in males, 3.9 times longer than wide (Fig. 3A); secondary stria on interstice 2 present only anteriorly (Fig. 3A); metatibia weakly fusiform (Fig. 4A); yellow lateral spots of elytra divided (Fig. 3A); species from India. ..... ***G. forceps*** **sp. nov.**

– Protibia slightly stouter in males, 3.4–3.6 times longer than wide (e.g. Fig. 3B); secondary stria on interstice 2 reaching the posterior quarter of elytra (e.g. Fig. 3B); metatibia strongly fusiform (e.g. Fig. 4B); yellow lateral spot of elytra not divided (e.g. Fig. 3B); species from Vietnam and China. 9

9 Punctation of pronotum between impressions distinct, extremely shallow and sparse only in very middle (Fig. 3B); terminal tooth of parameres smaller than preapical lateral tooth (Fig. 5B); China: Guangxi, Vietnam: Bắc Giang Prov. ..... ***G. maculata*** Lin, 1980

– Punctation of pronotum extremely fine and shallow between impressions (Fig. 9E); terminal tooth of parameres larger than preapical lateral tooth (Fig. 9F); Vietnam: Vĩnh Phúc and Lào Cai Prov. .... ***G. nagaii*** (Sabatinelli, 1997)

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