

Taxonomic Studies on the Genus *Holangus* PIC (Coleoptera, Cerambycidae) from China

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Abstract Chinese species of the genus *Holangus* are revised. *Holangus bicolor* sp. nov. from Hainan and Guangxi is described. *Holangus ruficollis* PIC, 1940 is recorded from China for the first time. Taxonomic relationships of the genus are discussed based on both external and genital features. Holotypes of four known species described by Maurice PIC are illustrated and compared and a key to all known species of the genus is provided.

Introduction

Holangus PIC, 1902 is a small genus of the tribe Stenopterini GISTEL, 1848. It was established based on *H. flavonotatus* PIC, 1902 from Tonkin in comparison with a similar taxon of the Neotropic genus *Oxycoleus* LACORDAIRE, 1869 (PIC, 1902). Up to now, four *Holangus* species have been known from China and North Vietnam, viz. *H. flavonotatus* PIC, 1902, *H. ruficornis* PIC, 1922, *H. ruficollis* PIC, 1940 from Tonkin (N. Vietnam), and *H. guerryi* PIC, 1904 from Yunnan (China) (TAVAKILIAN & CHEVILLOTTE, 2018). The beetles of this genus seem to be rare and are sometimes found on tree blossoms and fly to mountain peaks on upward air currents.

In the course of recent field surveys, we obtained a number of specimens belonging to three species of the genus from China. Our close examination revealed that one was a new species and the others are new country and province records for China. In the following paragraphs, we will describe, record, and illustrate them in detail. We will also redefine the genus based mainly on the Chinese species and discuss its systematic position.

Material and Methods

Materials used in the present study were mainly from the Bin Insect Taxonomy Studio, Beijing, China (BITS), the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZAS), the Muséum National d'Histoire Naturelle, Paris, France (MNHN), and the private collections of Wen-Xuan BI, Shanghai, China (CBWX), Chang-Chin CHEN, Tianjin, China (CCCC), Wen-I CHOU, Taitung, Taiwan (CWCT), Guiqiang HUANG, Chongqing, China (CGHC), Tatsuya NISATO, Tokyo, Japan (CTNJ), Tomáš TICHÝ, Technical University of Ostrava, Czech Republic (CTTC), and the late Wen-Hsin LIN. The holotype and the female paratype (allotype) of the new species are preserved in IZAS.

Materials were observed and photographed under a stereoscopic microscope (OLYMPUS SZX16), an optical microscope (OLYMPUS BX53M) with a microscope digital camera (OLYMPUS DP73), and an image analysis software (OLYMPUS CellSens). SEM images were taken by a Keyence

VHK-D500 Ultra Depth Multi-Angle Observation System. The habitus and body parts of specimens were photographed by a Canon digital camera EOS 70D with macro photo lens EF-50mm, MP-E65mm and Life-size Converter EF. The drawings of body structures such as the genitalia were made with Adobe Illustrator CC.

The abbreviations used for the ratios of the measurements when describing new taxon are as follows: BL — body length measured from apical margin of clypeus to elytral apices; HW — maximum width of head across eyes; FL — length of frons; FA — apical width of frons; FB — basal width of frons; OD — interocular space in dorsal view; EW — transverse width of eye-lobe; PL — length of pronotum; PW — maximum width of pronotum across lateral swellings near middle; PA — apical width of pronotum; PB — basal width of pronotum; EL — length of elytra; EW — humeral width of elytra; M — arithmetic mean.

Taxonomy

Genus *Holangus* PIC, 1902

Holangus PIC, 1902: 33; type species: *Holangus flavonotatus* PIC, 1902. — TAVAKILIAN & CHEVILLOTTE, [2018]. (online catalogue)

Merionoeda (*Holangus*): GRESSITT, 1951: 179. — LÖBL & SMETANA, 2010: 204. (catalogue)

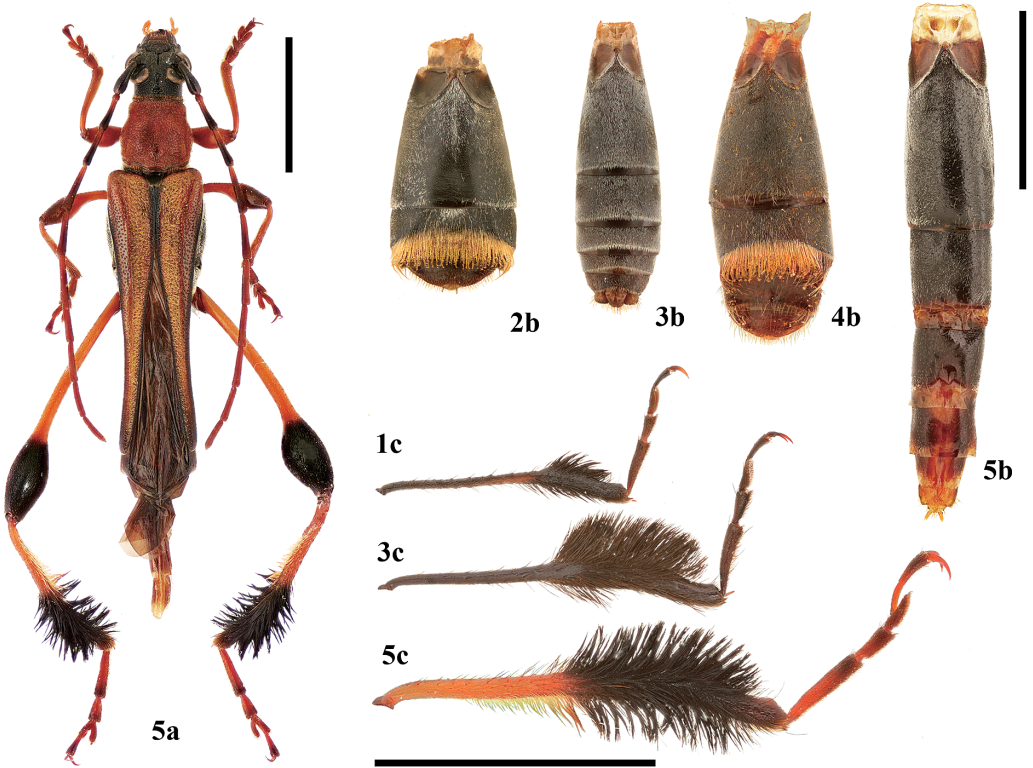
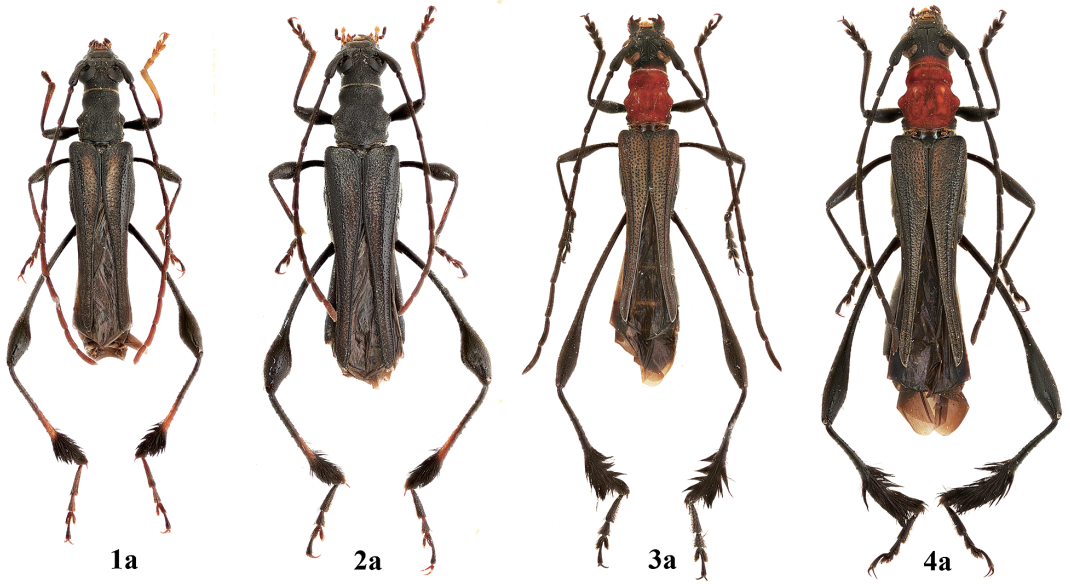
Redescription. Body elongate, flattened, with strongly attenuate elytra, and long hind legs each with a tuft of dense bristles on tibia.

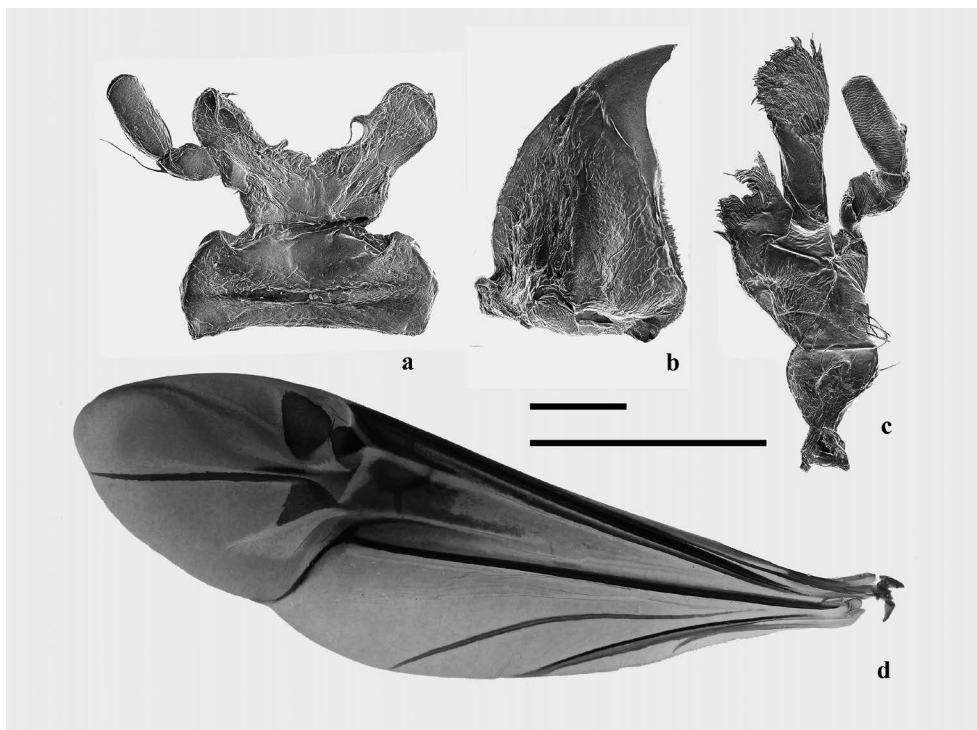
Head globose including prominent eyes, distinctly wider than apical width of pronotum; frons transverse, not bordered on sides, with a distinct median furrow; clypeus transversely trapezoidal, truncate on apical margin, separated from frons by a transverse suture or groove; genae shallow or moderate in depth; eyes large, deeply emarginate, widely separated above; mandibles short, thick, simply arcuate or very weakly dent near middle on each inner margin; maxillae each with galea moderately dilated apicad, lacinia relatively small, terminal palpomere weakly arcuate on sides, widest just behind middle; labrum transversely quadrate, emarginate on apical margin; labium with ligula moderately bifurcated, terminal palpomere subparallel-sided in apical half. Antennae slightly longer than body in ♂ or barely reaching elytral apices in ♀, sparsely provided with suberect hairs along undersides of antennomeres II–V or II–VI; scape clavate; III and IV thickened at each apex; V–X weakly dilated at each ecto-apical corner.

Pronotum distinctly contracted to apex, slightly longer than maximum width across lateral tubercles, not bordered along apical and basal margins; disc uneven, well convex in large median part, transversely concave before and behind the convex part, provided with a median swelling on posterior to middle, and two pairs of approximate swellings on anterior to middle and near basal third on each side, of which the external swellings are weaker than internal ones and sometimes obsolete or absent.

Elytra markedly attenuate apicad, each forming a slender arcuate plate in about apical half, barely attaining anal tergite, largely exposing sides of metathorax, distinctly bordered along external and sutural margins; disc flattened, each with a weak costa from humerus to just before apex. Hind wings elongate, emarginate on posterior margin near base; venation as in Fig. 6d, and basically similar to

Figs. 1–5. *Holangus* spp. from China. — 1, *Holangus guerryi* PIC, 1904, ♂ from Sichuan; 2, ditto, ♀ from Sichuan; 3, *H. bicolor* sp. nov., holotype, ♂ from Hainan; 4, ditto, paratype, ♀ from Guangxi; 5, *H. ruficollis* PIC, 1940, ♀ from Yunnan. — a, Habitus; b, abdomen; c, hind tibia and tarsus. Scale: 4.00 mm for b & c.





Figs. 6. Body parts of *Holangus bicolor* sp. nov. from Guangxi (SEM image except for d). — a, Labium (left palpus is delated), ventral view; b, mandible, dorsal view; c, maxilla, dorsal view; d, hind wing. Scale: 0.25 mm for a–c; 3.00 mm for d.

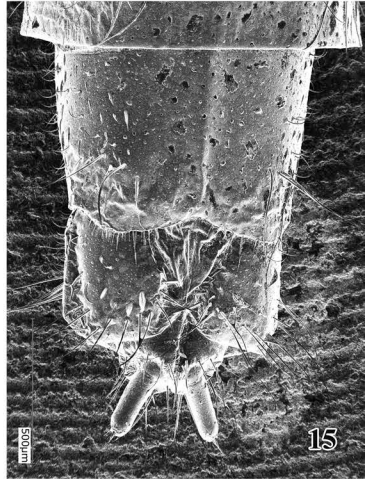
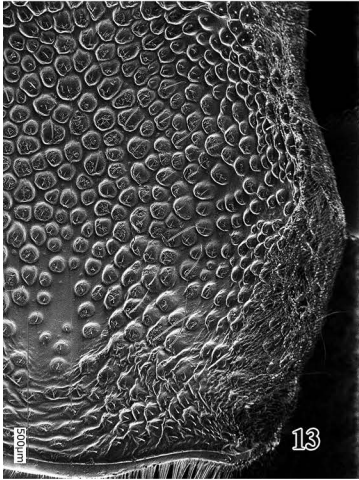
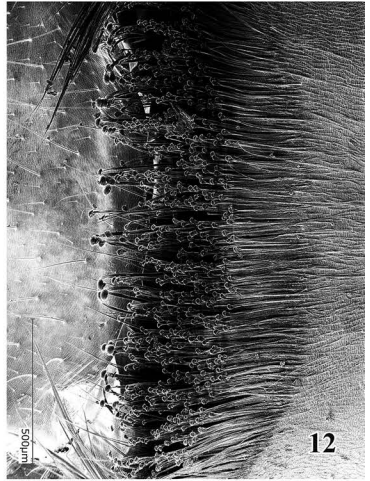
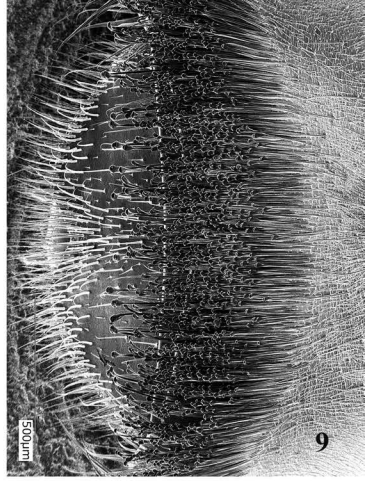
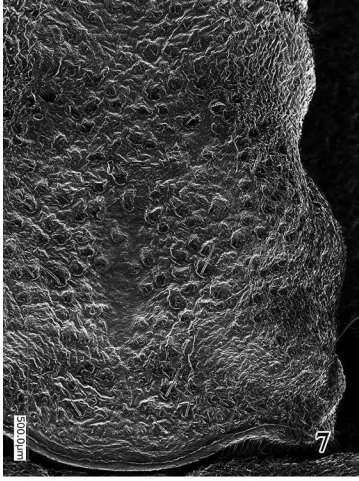
that of the genus *Callimoxys*.

Prosternum with intercoxal process narrow and vertical, moderately dilated at apex, which rests on or reaches internal extensions of pleural processes; procoxal cavities roundly angulated externally, closed behind by pleural processes. Mesosternum with intercoxal process very wide, emarginate on apical margin; mesocoxal cavities widely opened to mesepimera. Male abdomen moderately arcuate on sides, widest in ventrite II and/or III, transverse in III–IV. Female abdomen usually provided with developed rake organ in ventrite II (though lacking in *H. ruficollis*), with III and IV reduced in length, V transversely semicircular (though ventrites III–V abruptly narrowed in width and reduced in length, V small and subquadrate in *H. ruficollis*) (“rake organ” see NIISATO, 2012, 2013).

Legs slender, hind pair extremely long; hind femora swollen ventrad in apical parts; mid and hind femora sparsely clothed with short, erect hairs; hind tibiae each with a tuft of bristles on apical part, haired as on femora on other legs.

Male genitalia. Median lobe broad spindle-shaped, with dorsal and ventral plates completely united; apical lobe, deeply emarginate in subquadrate-shape at middle of apical margin; basal struts slender, longer than apical lobe. Endophallus provided with a pair of lateral sclerites and a median

Figs. 7–15. Body parts of *Holangus* spp. from China (SEM image). — 7, *Holangus guerryi* PIC, 1904 from Sichuan; 8, *H. bicolor* sp. nov. from Guangxi; 9, *H. ruficollis* PIC, 1940 from Yunnan. — 7, 10 & 13, Pronotum, showing the discal future; 8, 11 & 14, venter of thoraces; 9 & 12, abdominal ventrites II–III in ♀; 15, abdominal ventrites IV–V in ♀.



sclerite in proximal area, and an elongate bifurcate sclerite before a combination of the proximal sclerites. Tegmen wide, with subtrapezoidal ring part and unilobed paramere. Eighth tergite semicircularly bilobed. Eighth sternite transversely bilobed.

Female genitalia. Ovipositor markedly reduced, subquadrate or spindle-shaped; paraproct covered on sides of ovipositor in ventral view; stylus medium to relatively long; spermatheca J- or U-shaped, swollen on inner side near base, with gland opened near base.

Range. China: Yunnan, Sichuan, Hainan Provinces, and Guangxi Zhuang Autonomous Region; N. Vietnam.

Notes. The genus *Holangus* is closest to *Callimoxys* KRAATZ, 1863 amongst all nine Old World genera of the Stenopterini GISTEL, 1848 based on basic body features, but distinguished from the latter by widely separated eyes, more slender and elongate elytra, different features of the male genitalia, and especially by the long hind legs with tufts of dense bristles on the tibiae (PIC, 1902; OHBAYASHI *et al.*, 2004; HAMMOND & WILLIAMS, 2011). *Holangus* was described in comparison with the Neotropical genus *Oxycoleus* LACORDAIRE, 1869 in Pic's original description, however the latter is now classified in the monotypic tribe Oxycoleini proposed by MARTINS and GALILEO (2003). These two genera are clearly separable from one another by the aforementioned hind leg feature.

This genus was sometimes treated as a subgenus of *Merionoeda* PASCOE, 1858 by previous authors (e.g. GRESSITT, 1951; LÖBL & SMETANA, 2010). As one example of such misidentification, CHIANG (1963) described *Merionoeda (Holangus) baoshana* CHIANG from Yunnan, China, which does not belong to the genus *Holangus*, and was later transferred to a light position as *Merionoeda (Macromolorchus)* by GRESSITT & RONDON (1970).

Holangus guerryi PIC, 1904

(Figs. 1, 2, 7–9, 16, 18, 20 & 23)

Holangus guerryi Pic, 1904: 10; type locality: "Chine méridionale, Yun-Nam". — DANILEVSKY, 2014: 215.

Merionoeda (Holangus) guerryi: GRESSITT, 1951: 179. — LÖBL & SMETANA, 2010: 204. (catalogue)

Merionoeda guerryi: HUA, 2002: 215. (catalogue)

Redescription. Male. Colour black, generally slightly matte though moderately shiny on elytra and legs; mouthparts light yellow, except for mandibles, basal half of labrum, and basal two segments of palpi which are almost black; antennae black, dark brown in antennomeres VI–XI or VII–XI; elytra black, light yellowish brown in centre from near base to middle, though the brownish part often reduced as a narrow longitudinal stripe or absent depending on individual; legs black, slightly brownish in tarsi, usually yellowish brown in each median part just before the tufts of bristles of hind tibiae. Body clothed with fine short pubescence, partly with semilong pale hairs; head almost glabrous, with a few pale hairs near base of frons; antennae with dense brown pubescence, with a few rows of sparse brown hairs along inner margins of antennomeres II–V or II–VI; pronotum with very short light yellow pubescence mostly on sides and base; scutellum and elytra with dense light yellow pubescence, the pubescence sometimes silvery gray depending on individual; ventral surface with dense light yellow pubescence, intermixed with pale hairs, partly with silvery gray pubescence on median parts of prosternum, metepisternum, hind coxae, side and apical margins of abdominal ventrite I, and on sides of II–V; hind tibiae with a tuft of semilong black bristles on each apical fourth.

Head gently raised on vertex between eyes, rugosely reticulate throughout, transversely rugose with coarse punctures on gula; frons hardly narrowed apicad, about half length of basal width, with a median groove from apical margin to vertex though becomes an obsolete line in posterior half; transverse concavity between frons and clypeus deep, declivous on anterior margin, rugose with a few

coarse punctures; mandibles simply arcuate; eyes weakly prominent, with interocular space about 7/10 width of eye-lobe in dorsal view. Antennae medium in length, exceeding elytral apices at each apex of antennomere IV, relatively stout, weakly serrate at each ecto-apical corner of V–X; scape moderately dilated in apical third, arcuate, finely and densely punctured; III 1.25 times as long as scape and 4/5 the length of IV, distinctly thickened at apex, weakly so at apex of IV; V longest; XI gently arcuate, sharply pointed at apex.

Pronotum slightly longer than maximum width across lateral tubercles, gently emarginate at middle of apical margin; sides slightly arcuate in apical 2/5, arcuate within a short distance from base, with well prominent subtriangular lateral tubercles from before middle to basal fourth; disc provided with a pair of oblong, slightly oblique swellings on anterior to middle of each side, a pair of weak oval swellings on basal fourth of each side, and a weak median swelling on posterior to middle, transversely depressed on apical fourth and on sides of basal fourth; surface rugosely reticulate in irregular directions, intermixed with large coarse punctures. Scutellum semicircular, emarginate at apex.

Elytra 2.97–3.25 times as long as humeral width; sides subparallel in basal fifth, and strongly narrowed in arcuate line to behind middle, then dilated in arcuate line to just before apices, strongly dehiscent in apical 3/4 of suture; disc rather sparsely provided with small punctures which gradually become sparser and shallower in apical 2/5.

Ventral surface densely and finely punctured, though coarsely rugose on apical third of prosternum; prosternal process slightly constricted near middle, dilated as a wide triangle at apex which barely reaches internal extensions of pleural processes; mesosternal process gradually narrowed apicad, deeply triangularly emarginate at apical margin. Abdomen shagreened on surface; ventrite IV raised towards middle of apical margin; ventrite V transversely trapezoidal, moderately emarginate on apical margin; tergite VII elongate semicircular, bluntly produced at middle of apical margin.

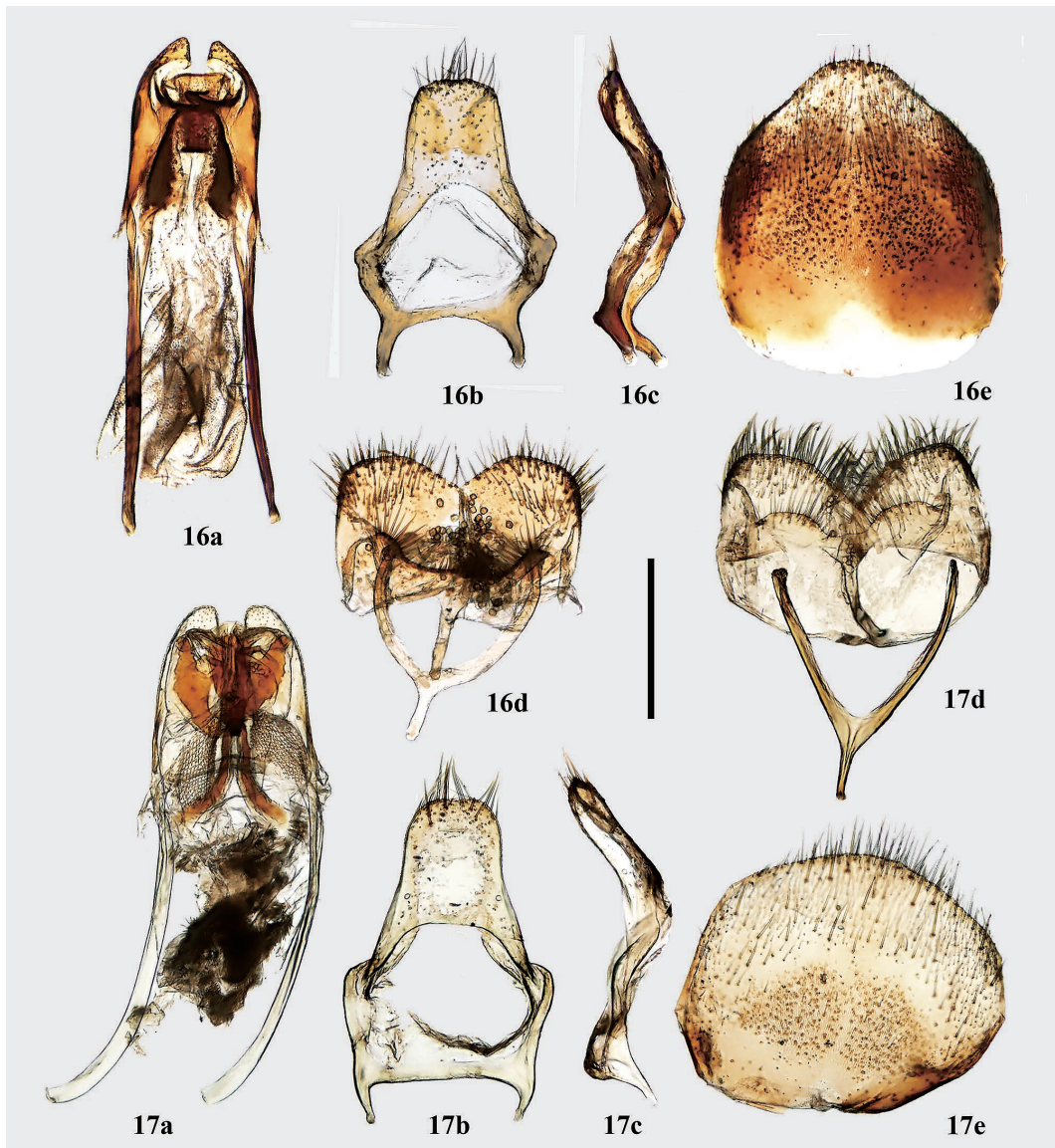
Legs medium in length, with hind femora exceeding elytral apices at near apical third, strongly swollen ventrad in apical 2/5; hind tibiae straight; hind tarsomere I about equal in length to the two others combined.

Male genitalia (Figs. 16 & 18) moderately sclerotised. Median lobe hardly arcuate in lateral view; apical lobe moderate in width, almost parallel-sided in basal 2/3 then arcuately narrowed to apex in dorsal view, with bilobed apical part bluntly angulate at each extremity; basal struts 2/3 length of median lobe. Endophallus provided with a pair of transversally arcuate sclerites in base, which cross each other inside, a median arcuate sclerite in base strongly turned up in apical 2/5 in lateral view and moderately dilated apicad in dorsal view, and a bifurcate sclerite just behind a combination of basal sclerites gradually dilated apicad in each plate which is narrowly produced at apico-external corner. Tegmen with unilobed paramere narrowed in an almost straight line to apex which is widely subtruncate and clothed with medium-sized setae; ring part provided with relatively long, robust stem at each apical corner. Eighth sternite widely emarginate on apical margin, bluntly produced at each apical corner.

Female. Body slightly broader than in male; antennae shorter, barely attaining apical tenth of elytra; abdominal ventrite V transversely semicircular, triangularly emarginate at middle of apical margin.

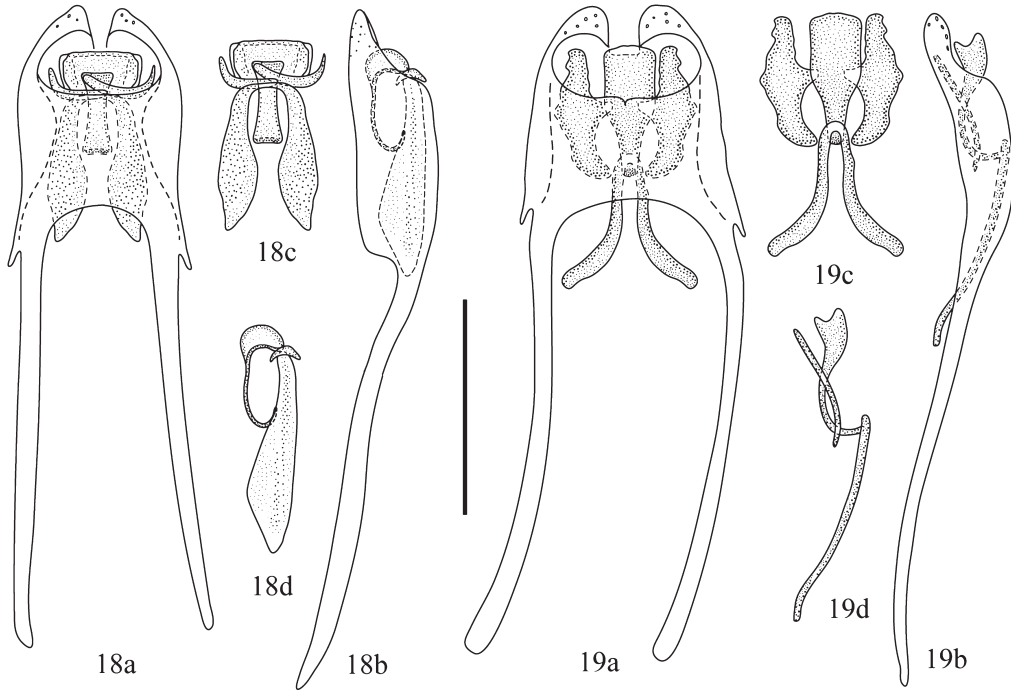
Female genitalia (Fig. 20). Ovipositor a little longer than maximum width near anterior margin of paraproct; paraproct about 4/5 length of ovipositor; coxite lobe gently produced latero-anteriorly in sides, provided with about ten long setae around stylus; stylus medium in length, moderately narrowed apicad, with short setae at apex; spermatheca elongate U-shaped, bent back in apical 2/5, with duct very thick and coiled.

Measurements. Male (n = 4): BL 8.0–10.4 mm; HW/PA 1.40–1.44 (M 1.43); HW/PW 1.08 (M



Figs. 16 & 17. Male genitalia and abdominal segments of *Holangus* spp. from China. — 16, *Holangus guerryi* Pic, 1904 from Sichuan; 17, *H. bicolor* sp. nov. from Guangxi. — a, Median lobe, dorsal view; b, tegmen, dorsal view; c, ditto, lateral view; d, abdominal segments VIII–IX, ventral view; e, abdominal tergite VII. Scale: 0.50 mm.

1.08); FL/FB 0.54–0.56 (M 0.55); FA/FB 0.88 (M 0.88); OD/EW 0.70–0.80 (M 0.76); PL/PW 1.04–1.08 (M 1.06); PL/PA 1.35–1.44 (M 1.40); PA/PB 1.20–1.22 (M 1.21); EL/EW 2.97–3.25 (M 3.13); EL/PL 3.74–4.00 (M 3.89); EW/PW 1.31–1.33 (M 1.32). Female (n = 2): BL 10.4–10.5 mm; HW/PA 1.30 (M 1.30); HW/PW 0.88–0.91 (M 0.90); FL/FB 0.48 (M 0.48); FA/FB 0.91–0.97 (M 0.94); OD/EW 0.90–1.22 (M 1.06); PL/PW 1.03–1.06 (M 1.04); PL/PA 1.48–1.57 (M 1.52); PA/PB



Figs. 18–19. Male genitalia of *Holangus* spp. from China. — 18, *Holangus guerryi* Pic, 1904 from Sichuan; 19, *H. bicolor* sp. nov. from Guangxi. — a, Median lobe, dorsal view; b, ditto, lateral view; c, copulatory piece, dorsal view; d, ditto, lateral view. Scale: 0.50 mm.

1.26–1.30 (M 1.28); EL/EW 3.00–3.02 (M 3.01); EL/PL 3.65–3.67 (M 3.66); EW/PW 1.24–1.29 (M 1.27).

Specimens examined. 2 ♂♂, 2 ♀♀, Mt. Suowushan (索烏山), 2,700 m in alt., Jinchuan County (金川县), Sichuan Province, China, 15.VIII.1997, W.-I. CHOU leg.; 1 ♂, same locality and collector as the preceding but 14.VIII.1997; 1 ♂ (CTTC), "7. 7. 2014; China / Deqin / below Feilai Si / T. Tichý; 2750-2990m / Yunnan". The holotype and a pair of specimens were additionally examined from the clear photo images as follows: 1 ♀ (holotype; MNHN, "HOLOTYPE (red card)" "*Holangus guerryi* Pic" "Yunnan" "MUSEUMS PARIS / YUNNAN / P. GUERRY 1924 (white card with black margin)" "P. GUERRY / Roanne (white card with black margin)"; 1 ♂, 1 ♀ (CGHC), Danba (丹巴) County (2,100 m in alt.), Garze Tibetan Autonomous Prefecture (甘孜藏族自治州), Sichuan Province, China, 12–13.VII.2016.

Distribution. China: Yunnan and Sichuan (new province record).

Diagnosis. This species is slightly similar in general appearance to *Holangus flavonotatus* Pic, 1902 from Tonkin, but easily distinguished from the latter by largely blackish elytra with pale yellowish brown median areas instead of largely yellowish brown as in the latter, and having tuft of black bristles on each apical fourth of hind tibiae instead of on each apical half in the latter.

Bionomics. All five specimens examined from Mt. Suowushan, Sichuan were collecting on the blossoms of *Aralia chinensis* (Araliaceae). The adult beetles always visited the blossoms from around 10:00 am to noon on sunny days.

Holangus bicolor sp. nov.

(Figs. 3, 4, 6, 10–12, 17, 19 & 21)

Description. Male. Colour black, matte; head with neck yellowish red, labrum, labium, maxillae, apical part of palpi light yellowish brown; prothorax yellowish red, except for black basal third of prosternum including margins of coxae, the black area extending to basal sides of pronotum; elytra dark chestnut brown, largely dark yellowish brown on middle of disc. Body densely clothed with fine short pubescence, partly with rather long pale hairs.

Head gently depressed behind frons, raised in median longitudinal part on occiput, coarsely shagreened, scattered with a few shallow punctures, irregularly reticulate on gula; frons transversely quadrate, little more than half length of basal width, with a fine median groove, coarsely punctured; mandibles tucked near apical third; eyes prominent, with interocular space about same width of as eye in dorsal view. Antennae medium in length, exceeding elytral apices at middle of each antennomere IX, slender, weakly serrate at each ecto-apical corner of V–X, and very sparsely provided with black hairs on II–V; scape weakly dilated apicad, closely provided with small shallow punctures; III 3/4 length of scape and a little shorter than IV, distinctly thickened at apex as well as in that of IV; V longest; XI gently arcuate, bluntly pointed at apex.

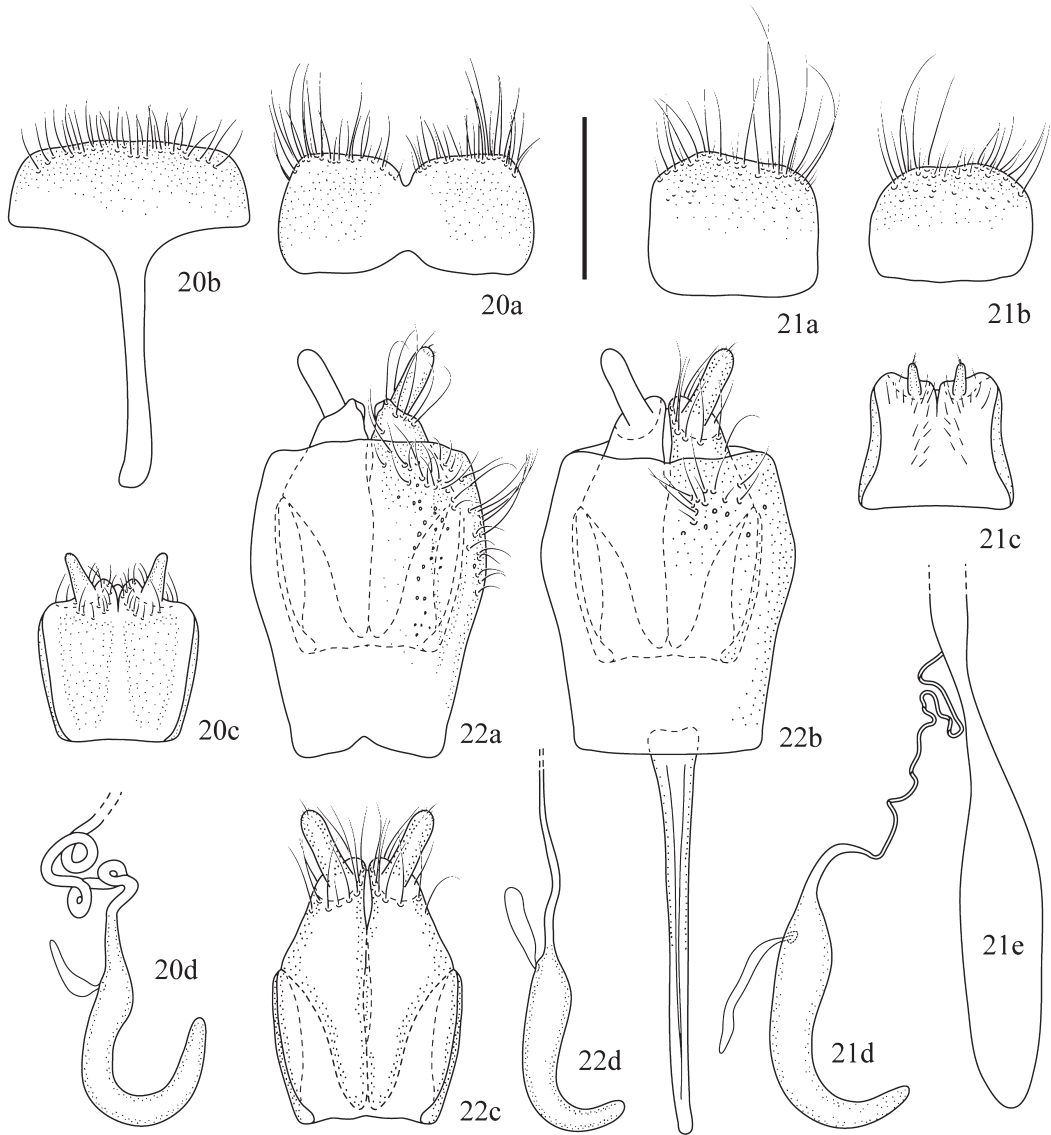
Pronotum slightly longer than maximum width across lateral tubercles, slightly or hardly emarginate at middle of apical margin; sides rather distinctly arcuate in apical fifth, subparallel or weakly arcuate in basal fifth, with large subtriangular lateral tubercles from apical 2/5 to basal fourth; disc provided with a prominent tubercle on anterior to middle of each side, and a weak median swelling on posterior to middle, and a pair of obsolete approximate swellings on each outer margin of the median swelling; surface coarsely shagreened, though smooth on tip of each discal tubercle on anterior to middle, scattered with a few small punctures, each puncture with one very short hair, supplemented with two or three long hairs on sides. Scutellum trapezoidal, thickly bordered on sides, slightly emarginate at apex, surface shagreened.

Elytra 2.89–3.37 times as long as humeral width; sides with humeri weakly projected latero-anteriorly, and strongly narrowed in an almost straight line from humeri to middle, then dilated in arcuate line to just before apices, strongly dehiscent in apical 4/5 of suture; disc densely punctured in eight almost regular lines near basal third, the punctured lines reduced in number towards apex and recognised as only three shallow lines near apical third, densely clothed with fine minute pubescence on whole surface.

Ventral surface almost shagreened, though largely rugose on prosternum; prosternal process strongly narrowed just before apex which forms a large triangle; mesosternal process arcuate on sides, emarginate on wide apical margin. Abdomen slightly broadened apicad, shagreened; ventrite I about half length of abdomen, and V widely arcuately emarginate on apical margin; tergite VII transversely circular, widely arcuate on apical margin.

Legs long, with a tuft of long dense black bristles on each apical half of hind tibiae; hind femora rather gradually swollen in each apical third, exceeding elytral apices at near middle; hind tarsomere I about equal in length to the two others combined.

Male genitalia (Figs. 17 & 19) lightly sclerotised. Median lobe weakly arcuate in lateral view; apical lobe broad, gently narrowed apicad in arcuate line, with bilobed apical part rounded at each extremity; basal struts 3/5 length of median lobe. Endophallus provided with a pair of leaf-shaped sclerites and a horn-shaped median sclerite at base, an elongate bifurcate sclerite behind a combination of basal sclerites, the median sclerite at base adjoining leaf-shaped sclerites on sides and the bifurcate sclerite at base. Tegmen similar to that of *H. guerryi* though apical stem of ring part short and relative-



Figs. 20–22. Female genitalia of *Holangus* spp. from China. — 20, *Holangus guerryi* PIC, 1904 from Sichuan; 21, *H. bicolor* sp. nov. from Guangxi; 22, *H. ruficollis* PIC, 1940, ♀ from Yunnan. — a, Eighth tergite, dorsal view; b, ditto, ventral view; c, ovipositor, ventral view; d, spermatheca; e, bursa copulatrix. Scale: 0.50 mm.

ly thin. Eighth sternite bifurcate in transverse semicircle.

F e m a l e. Body broader than in male; antennae shorter, almost attaining elytral apices; elytra shorter, reaching abdominal tergite V; abdominal anal ventrite transversely semicircular, emarginate at middle of apical margin; hind femora barely reaching abdominal tergite V.

Female genitalia (Fig. 21). Ovipositor a little wider than long; paraproct entirely covered on sides of coxite lobe in ventral view; coxite lobe gradually narrowed in arcuate line to apex, each lobe blunt-

ly angulated latero-anteriorly, provided with short to medium-sized setae near apical part; stylus moderately narrowed apicad, with short setae near apex; spermatheca J-shaped though hardly bent back in apical third, thick in base and gradually narrowed apicad, with duct simply sinuate.

Measurements. Male (n = 10): BL 7.4–10.7 mm; HW/PA 1.38–1.73 (M 1.49); HW/PW 1.00–1.19 (M 1.06); FL/FB 0.43–0.70 (M 0.52); FA/FB 0.85–0.93 (M 0.89); OD/EW 0.73–1.00 (M 0.90); PL/PW 1.03–1.17 (M 1.10); PL/PA 1.43–1.65 (M 1.54); PA/PB 1.141–1.30 (M 1.22); EL/EW 2.89–3.37 (M 3.19); EL/PL 3.06–3.66 (M 3.46); EW/PW 1.14–1.26 (M 1.19). Female (n = 10): BL 9.20–12.20 mm; HW/PA 1.28–1.38 (M 1.33); HW/PW 0.86–0.97 (M 0.92); FL/FB 0.38–0.49 (M 0.43); FA/FB 0.78–0.92 (M 0.88); OD/EW 0.91–1.20 (M 0.99); PL/PW 0.98–1.09 (M 1.04); PL/PA 1.39–1.57 (M 1.51); PA/PB 0.17–1.28 (M 1.22); EL/EW 3.02–3.32 (M 3.15); EL/PL 3.21–3.74 (M 3.62); EW/PW 1.13–1.25 (M 1.19).

Type series. Holotype ♂ (IZAS), “海南省五指山 (Mt. Wuzhishan, Hainan Province) / 2011-IV-15~21 / 790-1200m 林文信 (W.-H. LIN) / 中国科学院动物所” “IOZ(E)1906494” “HOLOTYPE / *Holangus* / *bicolor* / Niisato, Chou et Lin, 2018 (red card with black margin)”. Paratypes (19 ♂♂, 23 ♀♀): 1 ♀ (allotype; IZAS), same data as holotype but collection number is “IZO(E)1906495” “ALLOTYPE / *Holangus* / *bicolor* / Niisato, Chou et Lin, 2018 (orange card with black margin)”; 1 ♀ (CWCT), Mt. Wuzhishan (五指山), 1,150 m in alt., Wuzhishan City (五指山市), Hainan Province, China, 7.IV.2000, W.-I CHOU leg.; 1 ♀ (CBWX), same locality as the preceding, 1,200 m in alt., 16.IV.2011, W.-X. BI leg.; 2 ♀♀ (CCCC), same locality as the preceding, 16.IV.2011, Y.-T. CHUNG; 2 ♀♀ (CWCT), Mt. Jianfengling (尖峰岭), alt. 1,412 m (main peak), 18°43′0.85″N / 108°52′17.74″E, Jianfeng Township (尖峰镇), Ledong Li Autonomous County (乐东黎族自治县), Hainan Province, China, 14.IV.2017, W.-I CHOU leg.; 1 ♀ (BITS), same locality as the preceding, 20.V.2017, B. LIU leg.; 1 ♂, 2 ♀♀ (BITS), same locality as the preceding, 22.V.2017, B. LIU leg.; 1 ♀ (BITS), same locality as the preceding, 29.IV.2018, Y.-F. WU leg.; 2 ♀♀ (BITC), same locality as the preceding, 23.IV.2018, Y.-H. LI leg.; 1 ♀ (BITC), same locality and collector as the preceding, 27.IV.2018; 2 ♀♀ (BITC), same locality and collector as the preceding, 1-2.IV.2018; 17 ♂♂, 8 ♀♀ (CWCT & CTNJ), Banxian Village (板显村), 600 m in alt., Zhongliang Township (忠良乡), Jinxiu County (金秀县), Laibin City (来宾市), Guangxi Zhuang Autonomous Region, China, 18–19.IV.2011, W.-I CHOU leg.; 1 ♂ (BITS), Banxian Village, 721 m in alt., 24°11′2.91″N / 10°16′25.03″E, Zhongliang Township, Jinxiu County, 4.V.2015, J.-T. ZHAO leg.; 1 ♀ (CCCC; C17Z0166-190), Gubaotun (古保屯), 700 m in alt., Dayaoshan (大瑶山), Jinxiu County, 26.IV.2017, J.-T. ZHAO leg.

Distribution. China: Hainan Province and Guangxi Zhuang Autonomous Region.

Etymology. The specific name “*bicolor*” is derived from the almost black body with reddish prothorax of the new species.

Diagnosis. This new species is easily distinguished at a glance from the other members of the genus by the unique colouration of an almost black body with reddish prothorax. Despite having quite a different colouration, this new species may be related to *Holangus flavonotatus* PIC, 1902 from Tonkin based on the matte body surface and the arrangement of tufts of dense bristles on the hind tibiae.

Bionomics. Most of the type series collected by CHOU were found on the blossoms of *Castanopsis* trees in Mt. Wuzhishan and Mt. Jianfengling, Hainan, and Mt. Dayaoshan, Guangxi. They always visited the blossoms from around 10:00 am to noon on sunny days.



Figs. 23–26. Holotypes and their labels of *Holangus* spp. described by Maurice PIC from Tonkin and Yunnan, China preserved in the Muséum National d’Histoire Naturelle, Paris, France. — 23 & 23’, *Holangus flavonotatus* PIC, 1902, ♂; 24 & 24’, *H. guerryi* PIC, 1904, ♀; 25 & 25’, *H. ruficornis* PIC, 1922, ♂; 26 & 26’, *H. ruficollis* PIC, 1940, ♀. Fig. 24 taken by X. GOUVERNEUR.

***Holangus ruficollis* PIC, 1940**

(Figs. 5, 13–15, 22 & 26)

Holangus ruficollis PIC, 1940: 4; type locality: “Tonkin”.

Redescription. Female. Colour dark reddish brown to blackish brown with yellowish brown antennae and legs, partly yellowish red, moderately shiny; head black, mouthparts yellowish brown

except for black mandibles; antennae black to blackish brown in scape, antennomeres III–VIII or III–X yellowish brown with infuscate each apical part, wholly brown in II and XI or II and IX–XI; pronotum reddish yellow; scutellum black; elytra light yellowish brown, each elytron infuscate along both external and sutural margins, narrowly brownish on insides of black external margin from behind humerus to basal half; venter of thoraces dark reddish brown to blackish brown, except for reddish yellow part before procoxal cavities; abdomen blackish brown; legs yellowish brown to reddish brown, blackish brown in mid and hind coxae, each swollen part of hind femora, and each apical half of hind tibiae, brownish on dorsum of tarsi, hind femora and swollen parts of mid femora. Body densely clothed with fine pale pubescence intermixed with short pale hairs; antennae with a few rows of sparse semilong blackish hairs along undersides of antennomeres II–VI; elytra with dense goldenish yellow pubescence; venter of thoraces with dense yellowish gray pubescence intermixed with short pale hairs, partly with goldenish yellow pubescence on mesepimeron and sides of mesosternum, with dense silvery white pubescence on basal side of metepisternum and around hind coxae; abdomen with dense yellowish gray pubescence on ventrites I and II, thinly clothed with semilong pale hairs on sides and near apical margins of III–V; hind tibiae each with a tuft of dense black bristles on apical half, and also with light yellow bristles along each inner side from behind base to just before the black bristles.

Head flattened near vertex then strongly raised posteriad, deeply and densely punctured, the punctures somewhat confluent with each other; frons transverse, slightly narrowed apicad, about half length of basal width, with a deep median groove from anterior margin to vertex, coarsely, somewhat reticulately punctured; fronto-clypeal suture fine and deep, not forming a transverse concavity; mandibles simply arcuate; eyes well prominent, with interocular space $7/10$ width of eye-lobe in dorsal view. Antennae medium in length, exceeding elytral apices at middle of antennomere X, relatively stout, very weakly serrate at each ecto-apical corner of V–IX; scape moderately dilated apicad, finely punctured, intermixed with a few shallow punctures; III $4/5$ length of scape and a little shorter than IV, distinctly thickened at apex as well as in that of IV; V longest; XI gently arcuate, bluntly pointed at apex.

Pronotum almost as long as maximum width across lateral swellings just behind middle, transversely truncate on apical margin; sides almost parallel in apical fourth, largely rounded including lateral swellings between apical fourth and just before base; disc largely convex near middle, rather distinctly uneven, with two pairs of weak swellings on apical and basal third on sides, the anterior pair moderately approximating each other, though the posterior pair rather widely separated, another two pairs of obsolete swellings on outside of discal two pairs on middle and basal fourth, and with a median smooth swelling on basal third, concave on apical sixth and basal fourth except for median parts; surface deeply reticulate, the reticulation becoming weaker on the median swelling on basal third and the posterior pair of external swellings on basal fourth depending on individual. Scutellum semicircular, emarginate at apex.

Elytra 3.13–3.21 times as long as humeral width; sides with humeri moderately projected latero-anteriorly, and strongly narrowed in arcuate line from basal tenth to behind middle, then dilated in arcuate line to just before apices, strongly dehiscent in apical $4/5$ of sutures; disc rather closely provided with small punctures, which gradually become smaller and shallower in apical third.

Venters of thoraces generally coarsely rugose, deeply furrowed with large punctures on apical third of prosternum, densely and coarsely punctured on metasternum and metepisternum; prosternal process dilated as a wide triangle, slightly emarginate at apex; mesosternal process gently narrowed apicad, deeply concave at middle of apical margin. Abdomen long and slender; ventrite I $2/5$ whole length of abdomen, gently narrowed apicad, sparsely provided with small punctures; V transversely

quadrate, slightly wider than long, shallowly emarginate in a wide triangle on apical margin.

Legs long, strongly stout, with hind femora exceeding elytral apices at near apical fourth and distinctly swollen in apical 2/5; hind tibiae weakly arcuate; hind tarsomere I a little longer than the two others combined.

Female genitalia (Fig. 22). Ovipositor elongate ovate, about 1.5 times as long as maximum width near middle; paraproct 3/5 length of ovipositor, with inner sides gradually narrowed to base in ventral view; coxite lobe narrowed in arcuate line to apices, each lobe bluntly produced and provided with nine to ten long setae around stylus; stylus thick and moderately long, almost parallel-sided, with one long seta and a few minute setae at apex; spermatheca elongate J-shaped, arcuately bent in apical third, moderately swollen in basal third, with duct simply sinuate.

Male. Unknown.

Measurements. Female (n = 2): BL 12.3–13.3 mm; HW/PA 1.36–1.41 (M 1.38); HW/PW 0.90–0.95 (M 0.93); FL/FB 0.47–0.49 (M 0.48); FA/FB 0.79–0.86 (M 0.83); OD/EW 0.71 (M 0.71); PL/PW 0.95–1.00 (M 0.98); PL/PA 1.43–1.48 (M 1.46); PB/PA 1.26–1.36 (M 1.31); EL/EW 3.13–3.21 (M 3.17); EL/PL 3.85–4.15 (M 4.00); EW/PW 1.20–1.26 (M 1.23).

Specimens examined. China: 1 ♀ (CCCC), Huayudong (花魚洞), Hekou Yuzu Autonomous County (河口瑶族自治县), Yunnan Province, China, 23.IV.2011, X.-D. YANG leg.; 1 ♀ (holotype of *H. ruficollis*; MNHN), “Tonkin / Mauson / ex de Boomou” “*Holangus / ruficollis / n. sp*” “618 / 618 / Mauson”; 1 ♀ (CTNT), Vietnam: Deo Thung Khe, 700 m in alt., Mai Chau, Hoa Binh Province, Vietnam, 29.IV.1995, A. SHINOHARA leg.

Distribution. China: Yunnan (new record); N. Vietnam.

Diagnosis. *Holangus ruficollis* PIC is easily distinguished from other members of the genus by its large body size of up to 12.0 mm in length measured from the frontal margin of head to elytral apices, and the unique colouration of reddish prothorax and yellowish brown elytra with infusate external margins. The female of this species is very unique since its abdominal ventrites lack the rake organ as is in the other members of the genus.

Bionomics. A female specimen examined from Deo Thung Khe, Vietnam came flying to a light at night. It is a very rare case that the adult beetle of this genus is attracted to a light.

Key to the Species of the Genus *Holangus* Pic, 1902

- 1 (8) Tuft of black bristles on about each apical half of hind tibiae.
- 2 (5) Pronotum yellowish red.
- 3 (4) Body generally shiny, even in pronotum; elytra largely yellowish brown; legs yellowish brown except for infusate apical parts of mid and hind femora; China (Yunnan) and N. Vietnam. *H. ruficollis* PIC
- 4 (3) Body generally matte; pronotum shagreened on surface; elytra largely black with dark yellowish brown median parts; legs wholly black; China (Hainan and Guangxi). *H. bicolor* sp. nov.
- 5 (2) Pronotum black.
- 6 (7) Elytra light yellowish brown with black margins; legs black to blackish brown; N. Vietnam. *H. ruficornis* PIC
- 7 (6) Elytra largely yellowish brown; legs yellowish brown, partly infusate in each swollen part of hind femora; N. Vietnam. *H. flavonotatus* PIC
- 8 (1) Tuft of black bristles on each apical fourth or so of hind tibiae; body black and matte, with median part of elytra light yellowish brown, the yellowish brown part often reduced or absent, antennomeres VI–XI brownish; China (Yunnan and Sichuan). *H. guerryi* PIC

Discussion

The genus *Holangus* may be subdividable into two different groups based on the structures of female abdominal ventrites and ovipositor. Among the three Chinese species examined in our present study, two have developed rake organs in ventrite II and strongly reduced ventrites III and IV, while *H. ruficollis* PIC lacks this feature and has gradually narrowed ventrites III–V. The length of the ovipositor in the two groups is quite different due to the presence or absence of the rake organ. *Holangus ruficollis* has a relatively long ovipositor, while the other two species have markedly reduced ovipositors like most members of the tribe Stenopterini. The features in the female abdomen and genitalia of *H. ruficollis* are quite similar to those of the related genus *Callimoxys*. Apart from the above differentiation, we could not compare the male features between the two groups, since only female specimens of *H. ruficollis* are known to date.

A similar dimorphism in the female is known in members of the genus *Obrium* DEJEAN, 1821, such as *O. nakanei* OHBAYASHI, 1959 (NIISATO, 2012, 2013). Females of *O. nakanei* are the same as in *H. ruficollis*, in that they lack the rake organ in the abdominal ventrite and bear a relatively elongate ovipositor similar to *H. ruficollis*. Such dimorphism appearing within the same genus is plausibly a character displacement caused by differing oviposition behavior (NIISATO, 2012, 2013). *Obrium nakanei* lays eggs on the inside of the thick bark of host plant, *Kalopanax septemlobus* (Araliaceae), using its elongate ovipositor (NIISATO, *op. cit.*), whereas, the other members of the genus lay their eggs on the surface of twigs of their host plants and conceal them with dust using the rake organ (NIISATO, *op. cit.*).

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要 約

新里達也・周 文一・林 美英：中国産 *Holangus* 属 (鞘翅目カミキリムシ科) の分類学的研究。——
Holangus 属は、モモブトコバネカミキリ族 Stenopterini に含まれる4種からなる小属で、中国からはこれまでに *H. guerryi* PIC の1種が知られているだけであった。私たちの近年の調査により、四川省、雲南省、海南省および広西壮族自治区から本属の3種が得られ、それらを詳細に検討した結果、1新種および2新記録種に同定された。このうち新種は、海南省と広西壮族自治区から得られたもので、*H. bicolor* sp. nov. のように命名し記載した。ほかの2新記録種は、中国新記録となる *H. ruficollis* PIC および四川省新記録となる *H. guer-*

ryi PICである。この機会に、主に中国産種をもとに雌雄交尾器を含む本種の形態的特徴を詳細に記載し、モモブトコバナカミキリ族内における類縁関係を考察した。さらに、全既知種5種の検索表を作成するとともに、比較資料として、バリ自然史博物館に所蔵される本属のタイプ標本の画像を掲載した。

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