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***NEOCOLLYRIS (ISOCOLLYRIS) ORNATA* SP. N., A NEW SPECIES OF THE TIGER BEETLES (COLEOPTERA: CICINDELIDAE) FROM VIETNAM**

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Summary. *Neocollyris (Isocollyris) ornata* sp. n. is described from southern Vietnam. The differences from both related *N. (I.) apiceflava* Dheurle, 2017 and *N. (I.) sharovae* Matalin, 2021 are discussed. A modified key to Vietnamese species of the subgenus *Isocollyris* Naviaux, 1994 of the genus *Neocollyris* W. Horn, 1901 is given as well.

Key words: Collyridini, taxonomy, new species, Kon Tum, Quang Nam, Gia Lai provinces, South Vietnam, Asia.

А. В. Маталин. *Neocollyris (Isocollyris) ornata* sp. n. – новый вид жуков-скакунов (Coleoptera: Cicindelidae) из Вьетнама // Дальневосточный энтомолог. 2022. N 460. С. 1-10.

Резюме. Из Южного Вьетнама описан *Neocollyris (Isocollyris) ornata* sp. n. Обсуждаются отличия нового вида от наиболее близких к нему *N. (I.) apiceflava*

Dheurle, 2017 и *N. (I.) sharovae* Matalin, 2021. Также приводится дополненная определительная таблица вьетнамских видов подрода *Isocollyris* Naviaux, 1994 рода *Neocollyris* W. Horn, 1901.

INTRODUCTION

The subgenus *Isocollyris* Naviaux, 1994 is distributed in eastern and northeastern India (Meghalaya, Calcutta), Myanmar, Laos, Vietnam, China (including Taiwan), and Japan (Ryukyu Islands only), and presently it includes 41 species (Naviaux, 1994, 1995, 2004, 2008, 2010; Matalin & Naviaux, 2008; Naviaux & Schüle, 2008; Dheurle, 2016, 2017; Wiesner, 2020; Matalin, 2021). All of them are characterized by bright metallic bronze, purple, violet or green colouration with different tinges. The elytral pattern of most species consist of a yellow humeral spot, sometimes with a long thin portion along the lateral margin, and of a short transverse portion of the medial band, while in *Neocollyris (Isocollyris) apiceflava* Dheurle, 2017 and *N. (I.) sharovae* Matalin, 2021, a transverse, yellow, apical strip is developed.

One more, new species of *Isocollyris* with yellow elytral apices is described here from southern Vietnam, and its distinctions from the related species are discussed as well.

MATERIAL AND METHODS

The specimens used in this study are housed both in the museum and private collections: Zoological Institute of the Russian Academy of Sciences, St.-Petersburg, Russia (ZIN), Moscow State Pedagogical University, Moscow, Russia (MSPU), A.N. Severtsov Institute of Ecology & Evolution of the Russian Academy of Sciences, Moscow, Russia (SIEE), Charles Dheurle, Langres, France (cCD), and Jürgen Wiesner, Wolfsburg, Germany (cJW).

Measurements were taken as follows: TL – total body length without labrum (from the anterior margin of the clypeus to the apex of the elytra); HL – length of head (from the anterior margin of the frons to the anterior margin of the neck); HW – width of head (without eyes); LL – length of labrum with apical teeth (from the anterior margin of the clypeus to the apex of longer teeth); LW – width of labrum (in the widest place); PL – length of pronotum (along the midline); PW – width of pronotum (in the widest place excluding the basal lobe); EL – length of elytra (from the base of the scutellum to the apex); EW – width of the elytra (in the widest place); EHW – width of the elytral shoulders (in the widest place); AL – length of the aedeagus (from the base to the apex).

Photographs of the habitus and individual structural details were taken using a Canon EOS 40D camera with a MP-E 65 mm macro lens. The images of the maxillary and labial palps were taken with a Canon EOS 6D camera attached to a Carl Zeiss AXIO Scope.A1 microscope. All pictures were processed using Zerene Stacker software.

DESCRIPTION OF NEW SPECIES

Neocollyris (Isocollyris) ornata Matalin, sp. n.

<https://zoobank.org/NomenclaturalActs/2173D67F-9465-4121-B08A-43E4166BAF1D>

Figs 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23, 25, 26, 28, 29, 31–33, 35

TYPE MATERIAL. Holotype – ♂, **Vietnam**: Kon Tum Prov., Kon Plong Distr., 14°43'N / 108°19'E, Dak Khe River, h = 1030 m, 8–23.IV 2015, D. Fedorenko leg. (ZIN). Paratypes: **Vietnam**: same labelled as holotype, 4♂, 5♀; Quang Nam Prov., Nam Gian Distr., Song Thanh Natn. Park, 15°32'48"N / 107°23'32"E, h = 1050 m, 23.IV–11.V 2019, 8♂, 3♀, D. Fedorenko leg.; Vietnam, Gia Lai Prov., ~40 km NEE of Pleiku, 14°12'11"N / 108°18'54"E, Kon Ka Kinh Natn. Park, h = 890 m, 9–22.V 2016, 2♂, 2♀, D. Fedorenko leg.

TYPE DEPOSITION. The holotype and five paratypes (2♂, 3♀) are deposited in the collection of ZIN; eight paratypes (5♂, 3♀) – in the collection of MSPU; 11 paratypes (7♂, 4♀) – in the collection of SIEE.

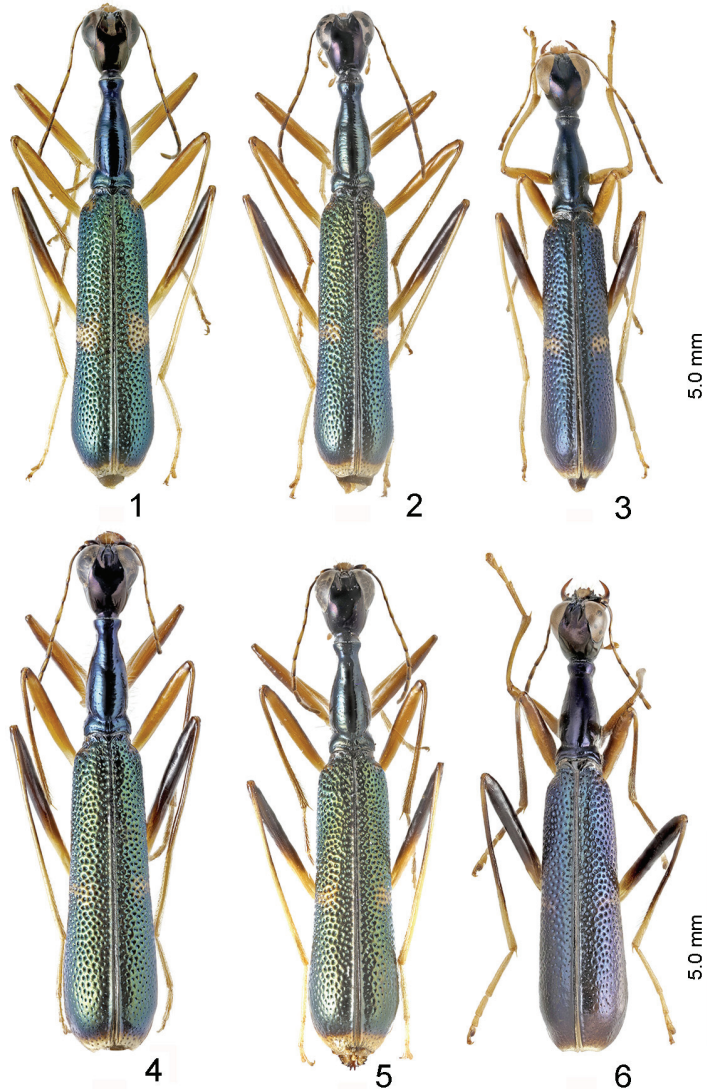
COMPARATIVE MATERIAL. Paratypes of *Neocollyris (Isocollyris) apiceflava* Dheurle, 2017, 1♂, 1♀ – Vietnam, Hue Province, Bach Ma National Park, 16°12'N 107°51'E, alt. 400–1200 m, 16–20.IV 2012, E. Jendek leg. (♂ – cCD, ♀ – cJW). Holotype of *Neocollyris (Isocollyris) sharovae* Matalin, 2021, ♀ – S Vietnam, Lam Dong Province, 5 km S of Dung K'No, at light, 19–21.IV 2010, leg. A. Prokofiev (ZIN).

DIAGNOSIS. *Neocollyris (Isocollyris) ornata* sp. n. seems to be especially similar to both *N. (I.) apiceflava* Dheurle, 2017 and *N. (I.) sharovae* Matalin, 2021.

From the former species, *N. (I.) ornata* sp. n. is clearly distinguished by the mostly larger size (TL – 9.1–11.7 mm), vs. smaller (TL – 9.0–10.3 mm) in *N. (I.) apiceflava*; the shape of the labrum with three prominent, frontal, central teeth (Figs 7–8), vs. not prominent in *N. (I.) apiceflava* (Fig. 9); the longer (EL/PL – 2.56–2.86) and narrower (PL/PW – 2.63–3.13) pronotum (Figs 1, 2, 4, 5, 16, 17, 19, 20), vs. shorter (EL/PL – 2.88–3.10) and wider (PL/PW – 2.33–2.56) in *N. (I.) apiceflava* (Figs 3, 6, 18, 21); the bright green or bluish green elytra (Figs 1, 2, 4, 5, 25, 26, 28, 29), vs. dark blue, cobalt-blue or blue-green in *N. (I.) apiceflava* (Figs 3, 6, 27, 30); the mostly longer aedeagus (AL – 2.0–2.15; EL/AL – 2.8–3.12) with a wider inner basal side and a longer apex (Figs 31–33), vs. a mostly shorter aedeagus (AL – 1.95–1.96; EL/AL – 2.97–3.03) with a narrower inner basal side and a shorter apex in *N. (I.) apiceflava* (Fig. 34).

From the latter species compared, the females of *N. (I.) ornata* sp. n. are easily recognized by the longer (LW/LL – 1.67–2.0) and bicoloured labrum (Figs 7, 8), vs. shorter (LW/LL – 2.08) and entirely yellow in *N. (I.) sharovae* (Matalin, 2021: fig. 2); the longer and narrower (PL/PW – 2.63–2.88) blue or blue-violet pronotum (Figs 1, 2, 4, 5, 16, 17, 19, 20), vs. shorter and wider (PL/PW – 2.50), and bright green in *N. (I.) sharovae* (Matalin, 2021: figs 1, 5–6); the narrower shoulders (EW/EHW – 1.41–1.50), vs. wider (EW/EHW – 1.37) in *N. (I.) sharovae*; the bilobed

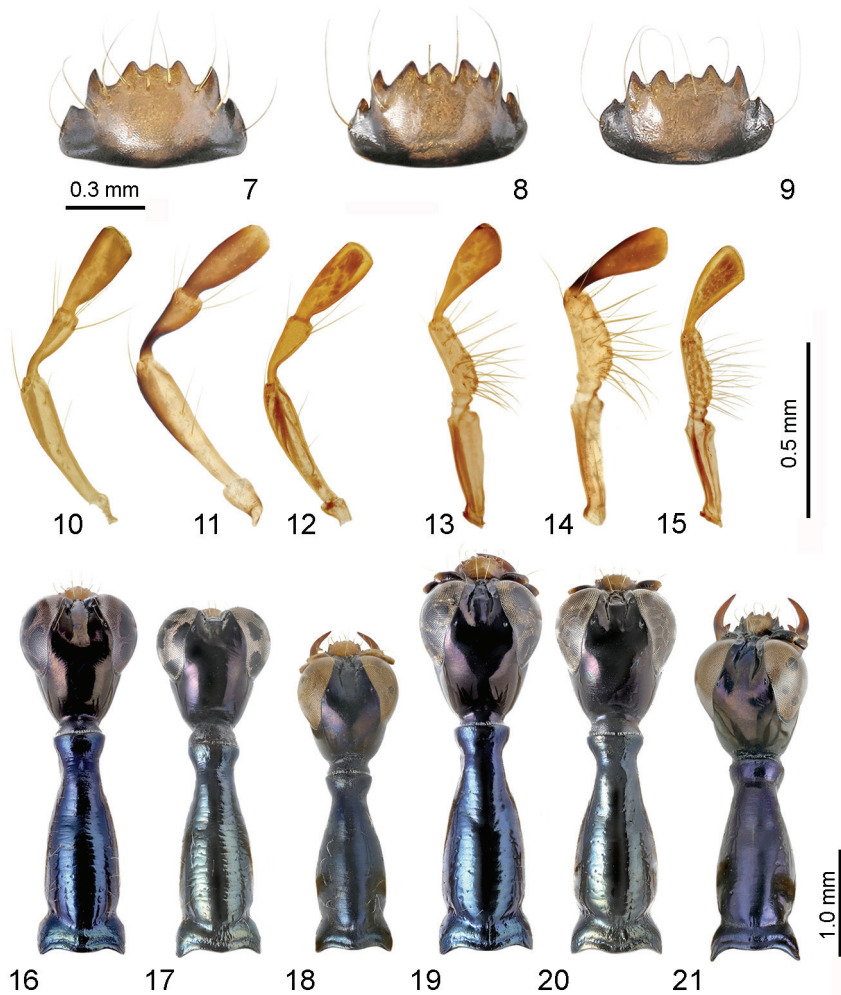
humero-basal spot and the mostly narrower and duller yellow elytral maculae (Figs 1, 2, 4, 5, 22, 23, 25, 26, 28, 29), vs. three-lobed humero-basal spot and clearly wider and brighter yellow elytral maculae in *N. (I.) sharovae* (Matalin, 2021; figs 1, 6, 7); the stout and more widely spaced apical spines of sternum VIII (Fig. 35), vs. slender and more narrowly spaced in *N. (I.) sharovae* (Fig. 36).



Figs 1–6. *Neocollyris (Isocollyris)* spp., habitus, dorsal view: 1–2, 4–5 – *N. (I.) ornata* sp. n. (1, 4 – specimens from Dak Khe River valley; 2, 5 – specimens from Kon Ka Kinh National Park); 3, 6 – *N. (I.) apiceflava*; 1–3 – males; 4–6 – females; 1 – holotype; 2–6 – paratypes.

DESCRIPTION. TL – 9.1–11.7 mm: 9.1–11.1 mm (mean – 10.2 mm, n = 15) in males (10.6 mm in holotype), 9.6–11.7 mm (mean – 10.7, n = 9) in females (Figs 1, 2, 4, 5).

Head elongate, drop-shaped, HL/HW – 1.04–1.15 mm (mean – 1.09 mm, n = 15) in males, 1.07–1.19 mm (mean – 1.12, n = 9) in females, with thin isodiametric



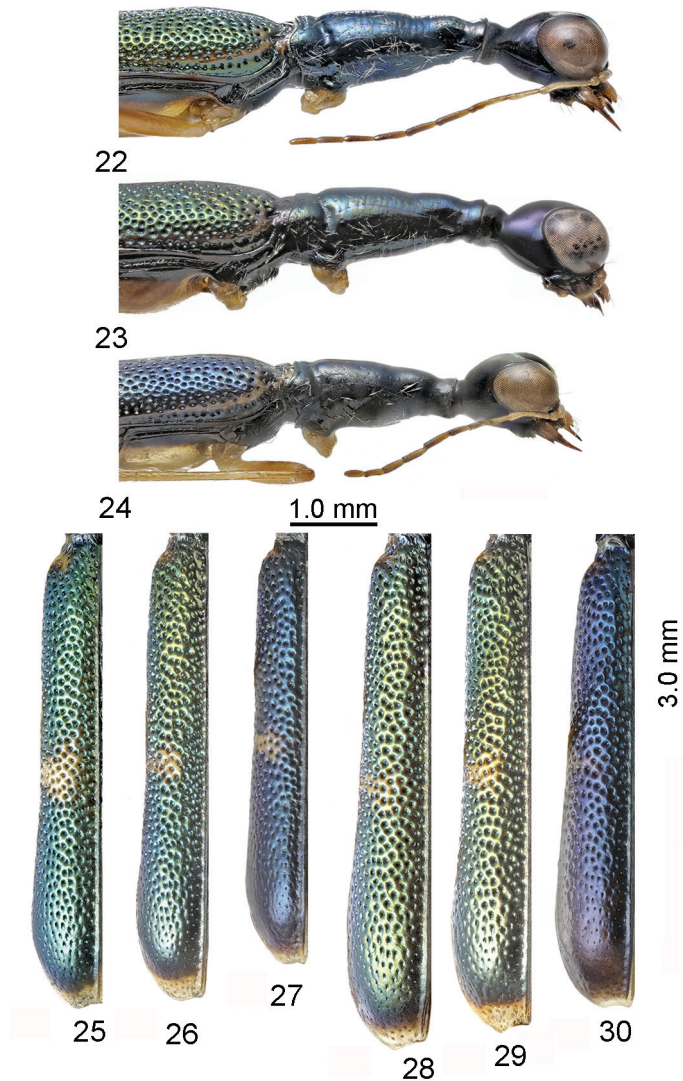
Figs 7–21. *Neocollyris (Isocollyris)* spp.: 7–9 – labrum; 10–12 – left maxillary palp; 13–15 – left labial palp; 16–21 – head and pronotum, dorsal view; 7, 8, 10, 11, 13, 14, 16, 17, 19, 20 – *N. (I.) ornata* sp. n. (7, 10, 11, 13, 14, 16, 19 – specimens from Dak Khe River valley; 8, 17, 20 – specimens from Kon Ka Kinh National Park); 9, 12, 15, 18, 21 – *N. (I.) apiceflava*; 7–10, 12, 13, 15–17, 19, 20 – males; 11, 14, 18, 21 – females; 7, 16 – holotype; 8–15, 17–21 – paratypes.

microsculpture, temples sharply convergent towards base; black-blue with purple lustre; clypeus with two setae; frons narrow, frontal grooves deep, strongly convergent in anterior third, widely divergent in the centre and indistinctly convergent in posterior third, interocular excavation with an oval central impression and bluish or bluish-purple reflection in posterior half; eyes slightly protruding; each supra-orbital plate with two long setae; vertex and occiput smooth (Figs 16, 17, 19, 20). Labrum short and transverse, LW/LL – 1.57–2.0 (mean – 1.78, n = 24); bicoloured with a very large, yellow, central area, brown latero-apical teeth and dark brown latero-basal teeth, as well as a narrow basal margin; normally, with eight, rarely with seven or nine long submarginal setae and seven apical teeth: with three prominent frontal central teeth, middle of which slightly shorter, as well as a pair of larger latero-apical teeth and smaller latero-basal teeth on both sides (Figs 7, 8). Mandibles dark yellow with brown apices and molars. Maxillary (Figs 10, 11) and labial (Figs 13, 14) palps entirely pale except for indistinctly brownish apical joints with a straight and truncate apex in the first one and with a slightly rounded apex in the second one. Antennae relatively long, slightly projected towards base of pronotum; antennomere 3 the longest; scape and pedicel in males pale on dorsal face and light brown on ventral face, in females brown except for pale apices, antennomeres 3–5 in both sexes yellow except for a narrow brown dorsal ridge and a brown base in some females, antennomeres 6–11 dark brown on ventral face and yellow-brown on dorsal face; scape with a single apical seta, antennomeres 3–4 glabrous except for one or two short setae on ventral ridge and a group of short apical setae, antennomeres 5–11 densely pubescent with very short yellow setae, in females antennomeres 5–6 less strongly pubescent than in males (Figs 1, 2, 4, 5, 22).

Pronotum with a short collar (Figs 1, 2, 4, 5, 16, 17, 19, 20) and a small, but distinct anterior hump (Figs 22, 23), moderately long, EL/PL – 2.56–2.86 (mean – 2.69, n = 24), distinctly expanded in basal third (Figs 16, 17, 19, 20), in males narrower than in females, PL/PW – 2.67–3.0 (mean – 2.8, n = 15) in males, 2.63–2.88 (mean – 2.7, n = 9) in females; disc metallic blue with light violet tinge, glabrous with indistinct, sparse, shallow, transverse wrinkles in the centre and with sparse, soft, white hairs in basal third; anterior sulcus relatively wider and more shallow, while posterior one more narrow and deeper; basal lobe with light greenish lustre. Pro- and mesothorax metallic blue or bluish violet; prosternum, pro-episternum, mesothorax and mesosternum sparsely pubescent with long, soft, white hairs (Figs 22, 23). Metathorax yellow except for narrow, metallic bluish green, lateral sides with two irregular rows of short, soft, white hairs in the centre; metepisternum metallic bluish green with a deep, longitudinal, central groove and sparse, short, white hairs.

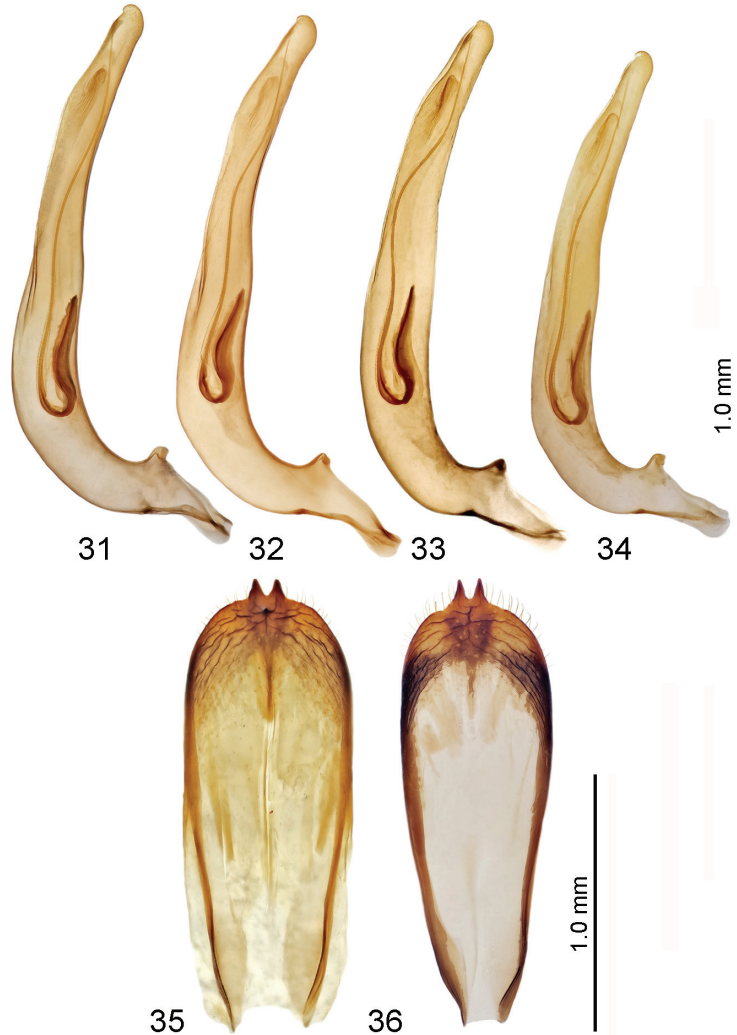
Abdominal sternites dark brown with light metallic blue or bluish-green lustre, entirely covered with isodiametric microsculpture, sternites 5 and 6 each with four or five thin pale setae on each side, sternum 6 additionally with two long central setae at anterior margin; sternite 7 with at least 30 short setae in anterior third and with the same number of more stout setae extending directly from anterior margin. All coxae, as well as fore- and mid-trochanters yellow, hind coxae yellow except for a dark brown, basal, external angle, with short and white hairs in central portion; fore- and mid-femora dark yellow except for brown anterior margins, hind femora bicoloured: dark yellow in proximal half and dark brown in distal half; fore- and

mid-tibiae dark yellow, hind tibia yellow, all of them indistinctly brownish at base; fore- and mid-tarsi yellowish brown, hind tarsi light yellow; two apical tarsomeres of all tarsi darker, all claws dark yellow (Figs 1, 2, 4, 5).



Figs 22–30. *Neocollyris (Isocollyris)* spp.: 22–24 – head, pronotum and basal third of elytra, right lateral view; 25–30 – left elytron, dorsal view; 22, 23, 25, 26, 28, 29 – *N. (I.) ornata* sp. n. (22, 25, 28 – specimens from Dak Khe River valley; 23, 26, 29 – specimens from Kon Ka Kinh National Park); 24, 27, 30 – *N. (I.) apiceflava*; 22–27 – males; 28–30 – females; 22, 25 – holotype; 23, 24, 26–30 – paratypes.

Elytra long, with sloping shoulders EW/EHW – 1.29–1.54 (mean – 1.39, n = 15) in males, 1.41–1.50 (mean – 1.46, n = 9) in females, and expanded towards apex, in females stronger than in males, EL/EW – 3.10–3.59 (mean – 3.42, n = 15) in males, 3.14–3.37 (mean – 3.26, n = 9) in females; metallic green or bluish green with light golden lustre; covered with isodiametric microsculpture, with numerous



Figs 31–36. *Neocollyris (Isocollyris)* spp., genitalia of males and females: 31–34 – aedeagus, left lateral view; 35–36 – genitalia of females, sternum VIII; 31–33, 35 – *N. (I.) ornata* sp. n. (31 – specimen from Dak Khe River valley; 32 – specimens from Song Thanh National Park; 33 – specimens from Kon Ka Kinh National Park); 34 – *N. (I.) apiceflava*; 36 – *N. (I.) sharovae*; 31, 36 – holotypes; 32–35 – paratypes.

relatively regularly distributed, rounded, blue pits, slightly denser along suture and clearly sparser and more shallow at base (Figs 1, 2, 4, 5, 25, 26, 28, 29); scutellum dark blue, small, with a blunt apex; suture slightly protruding; epipleura brown with bluish or bluish green metallic tinge. Elytral maculation consisting of three yellow patches: a bilobed humerobasal spot with a long, thin, sublateral portion extended to the middle of metepisternum (Figs 22, 23), and a small or very small central portion (Figs 25, 26, 28, 29), a medium-sized elongate or subquadrate middle spot with a narrow, relatively long, lateral portion separated from edge by one row of pits, and a relatively wide (in most specimens) apical spot extending from lateral edge to the suture (Figs 25, 26, 28, 29).

Aedeagus relatively long, AL – 2.0–2.15 mm (mean – 2.09 mm, n = 11); EL/AL – 2.8–3.12 (mean – 3.0, n = 11); with a wide, gradually curved, inner, basal side and a relatively long, slightly tapering, indistinctly curved apex with a small, rounded, apical knob; internal sack with a very long and thin flagellum, as well as a large and wide spoon-shaped sclerite (Figs 31, 33).

Sternum VIII (insinuator) oblong-oval, sparsely pubescent with short pale setae in anterior quarter including lateral sides (10–12 setae on each), with two sharp spines with apices slightly curved towards ventral side, and a short oblong ridge under notch between spines (Fig. 35).

DISTRIBUTION. Vietnam: provinces Kon Tum, Quang Nam, and Gia Lai.

ETYMOLOGY. The name of the new species is derived from the Latin “*ornata*, -us” – decorated, because of its bright colouration.

DISCUSSION

To accommodate the new species, the first couplets in the key to the species of the subgenus *Isocollyris* from Vietnam (Wiesner *et al.*, 2017; Matalin, 2021) must be modified as follows:

- 1. Elytral apex with a yellow band A
- Elytral apex without yellow band 2
- A. Labrum bicoloured with a pale central area; pronotum dark blue or blue-green; elytral spots narrower, dull yellow, humeral spot bilobed B
- Labrum pale; pronotum bright green; elytral spots clearly wider, bright yellow, humeral spot three-lobed. TL – 9.4 mm (only female). Vietnam: Lam Dong Province *N. (I.) sharovae* Matalin, 2021
- B. Labrum with clearly prominent, three, central teeth; pronotum more narrow and longer, not less than 2.6 times longer than wide; elytra green or bluish green with wider yellow maculae; aedeagus longer. TL – 9.1–11.7 mm. Vietnam: Quang Nam, Kon Tum, Gia Lai Provinces *N. (I.) ornata* sp. n.
- Labrum with three not so prominent central teeth; pronotum wider and shorter, no more than 2.56 times longer than wide; elytra dark blue, cobalt-blue or blue-green with narrower yellow maculae; aedeagus shorter. TL – 9.0–10.3 mm. Vietnam: Thua Thien Hue Province *N. (I.) apiceflava* Dheurle, 2017

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