

Two new genera of the tribe Thioniini Melichar (Hemiptera: Auchenorrhyncha, Issidae, Issinae) from Central America

Два новых рода трибы Thioniini Melichar (Hemiptera: Auchenorrhyncha, Issidae, Issinae) из Центральной Америки

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Ключевые слова: Issinae, Леопольд Мелихар, Неотропика, обозначение лектотипа, новая комбинация, новый род, систематика.

Abstract. The type specimens of two Melichar's issid species described from Nicaragua and Jamaica are studied and illustrated. A new genus, *Crousta* **gen.n.**, is erected to accommodate *Thionia carinata* Melichar, 1906 and a new genus, *Epomides* **gen.n.**, is erected to accommodate *Thionia impressa* Melichar, 1906 accordingly. The lectotype is designated for *Th. carinata* Mel. to stabilize the nomenclature in the studied group according to the International Code of Zoological Nomenclature.

Резюме. Изучены и проиллюстрированы типовые экземпляры двух Мелихаровских видов иссид, описанных из Никарагуа и с Ямайки. Установлен новый род, *Crousta* **gen.n.**, для *Thionia carinata* Melichar, 1906 и новый род, *Epomides* **gen.n.**, для *Thionia impressa* Melichar, 1906 соответственно. Обозначен лектотип для *Th. carinata* в целях стабилизации номенклатуры в изучаемой группе в соответствии с Международным Кодексом Зоологической номенклатуры.

Introduction

The genus *Thionia* Stål, 1859 is the largest New World genus of the family Issidae with more than 70 species described so far belonging to the tribe Thioniini Melichar of the subfamily Issinae Spinola [Metcalf, 1938; Gnezdilov, 2012; Gnezdilov et al., 2020, 2022; Llano-Arias et al., 2023; Bourgoin, 2023]. Recently revision of the genus *Thionia* is started, with the neotype designation for *Issus longipennis* Spinola, 1839, the type species of the genus [Gnezdilov, Dmitriev, 2018]. Nine new genera are erected to accommodate 11 species previously treated in *Thionia* auctorum and four species are transferred from *Thionia* to the genus *Cheiloceps* Uhler, 1895 [Gnezdilov, 2018a, b, 2020]. In continuation of this revision two new genera are erected below based on examination of the type specimens of *Thionia carinata* and *Th. impressa* described by Leopold Melichar [1906] from Nicaragua and Jamaica accordingly (Figs 1–4, 9–12).

Already E. Van Duzee [1907] noted that during his nearly month collecting in Jamaica «no representatives of the subfamily Issinae was taken». In fact *Th. impressa* Melichar, 1906 is the only formally known issid species from the island as other records by Walker [1858], Fennah [1955], and Gnezdilov and O'Brien [2008] belong to the tribe Colpopterini of the family Nogodinidae [Gnezdilov, 2012]. The same is true also for *Th. carinata* Melichar, 1906, a single representative of Issidae recorded from Nicaragua.

Materials and methods

The classification adopted here follows Gnezdilov et al. [2020, 2022]. Morphological terminology follows Anufriev and Emeljanov [1988] and Gnezdilov et al. [2014].

Photographs were taken using a Leica MZ9.5 stereomicroscope and a Leica DFC 490 camera. Images were produced using Helicon Focus v. 6.7.1 and Adobe Photoshop software. The specimens were figured using the same stereomicroscope with a camera lucida.

Label information is quoted, with '/' indicating new line and '/' indicating next label.

Nomenclatural acts introduced in the present work are registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:3E28C928-8E5A-4BA2-883D-62D1FE71A9C8

Systematics

Issidae Spinola, 1839

Issinae Spinola, 1839

Thioniini Melichar, 1906

Thioniina Melichar, 1906

Crousta Gnezdilov, **gen.n.**

Urn:lsid:zoobank.org:act:7B75F77C-2DF5-4B50-ADB5-3BE07F2430F1.

Type species: *Thionia carinata* Melichar, 1906, by original designation.



Figs 1–4. *Crousta carinata* (Melichar, 1906), comb.n., male lectotype. 1 — external appearance, lateral view; 2 — external appearance, dorsal view; 3 — external appearance, front view; 4 — labels.

Рис. 1–4. Лектотип *Crousta carinata* (Melichar, 1906), comb.n., самец. 1 — внешний вид сбоку; 2 — внешний вид сверху; 3 — внешний вид спереди; 4 — этикетки.

Diagnosis. Metope wide, with weakly concave upper margin and with relief median and sublateral carinae (Figs 3, 5). Median and sublateral carinae of metope joint above metopoclypeal suture. Coryphe nearly square, without median carina; anterior margin obtusely angulately convex (Figs 2, 6). Coryphe and metope joint at nearly right angle (in lateral view) (Fig. 1). Eyes not large, each eye diameter is half of coryphe width (Fig. 6). Paradiscal fields of pronotum wide behind the eyes. Forewings with long equally wide throughout its length hypocoastal plate (Fig. 7). Hind wings well developed as long as forewings.

Description. Metope wide, elongate, 1.4 times as long at midline as wide below the eyes (Fig. 5). Metope enlarged below the eyes and narrowing to clypeus, with strong median carina running from its weakly concave upper margin and became indistinct above metopoclypeal suture. Sublateral carinae of metope weak below its upper margin and became strong above metopoclypeal suture. Median and sublateral carinae arising from one point at upper margin of metope (Fig. 3). Sublateral carinae fused with median carina above metopoclypeal suture which is nearly horizontal. Coryphe and

metope joint at nearly right angle in lateral view (Fig. 1). Coryphe nearly square, with keel-shaped lateral margins and with median groove; anterior margin obtusely angulately convex; posterior margin obtusely angulately concave (Fig. 6). Pedicel globular. Postclypeus not flattened dorso-ventrally. Post- and anteclypeus with distinct thick median carina. Rostrum reaching hind coxae; 2nd and 3rd segments are equal in length; 3rd segment narrowing apically. Eyes not large, each eye diameter is half of coryphe width. Ocelli absent. Pronotum slightly shorter than coryphe at midline; anterior margin acutely angulately convex; posterior margin straight. Paradiscal fields of pronotum wide behind the eyes. Paranotal lobes of pronotum wide, with lower margin weakly folded. Mesonotum longer than pronotum. Forewings wide, narrowing to widely rounded apices, with strong knee protuberances and long equally wide throughout its length hypocoastal plate (Figs 1, 7). Forewing appendages rudimentary, longitudinal veins relief, very few transverse veins. Clavus long, $\frac{3}{4}$ of whole wing length. Basal cell short and wide. Forewing vein sequence: R 3, firstly furcating right after basal cell and second branch (R₂) furcating apically; M 2, furcating in basal third of wing; CuA I.

Hind wings well developed, as long as forewings. Legs not flattened. Hind tibia with two lateral spines in its distal half and 11 spines apically. First and second metatarsomeres short and wide. First metatarsomere with two latero-apical and 4 + 1 intermediate spines arranged in arc. Second metatarsomere with only two latero-apical spines. Arolium of pretarsus with weakly concave hind margin not protruding above apices of claws (in dorsal view).

Etymology. Generic name is derived from Greek Κρούστα (crust) referring to nut peel-shaped external view of the type species with relief carinae of head and forewings. Feminine in gender.

Comparison. New genus is close to *Thionia* by the carination of metope, with distinct median and sublateral carinae joint above clypeus and tri-branched radius of forewings, however, well differs by elongate metope, with prominent median and sublateral carina visible in lateral view, nearly square coryphe, and shorter forewings.

Crousta carinata (Melichar, 1906), **comb.n.**

Figs 1–8.

Thionia carinata Melichar, 1906: 281; Schmidt, 1911: 191.

Type material. Nicaragua: Lectotype (here designated), ♂, «Chinandega / Nicaragua / Coll. Baker» [print] // «1419» [hand-written in ink] // «Typus» [red, print] // «*Thionia* /

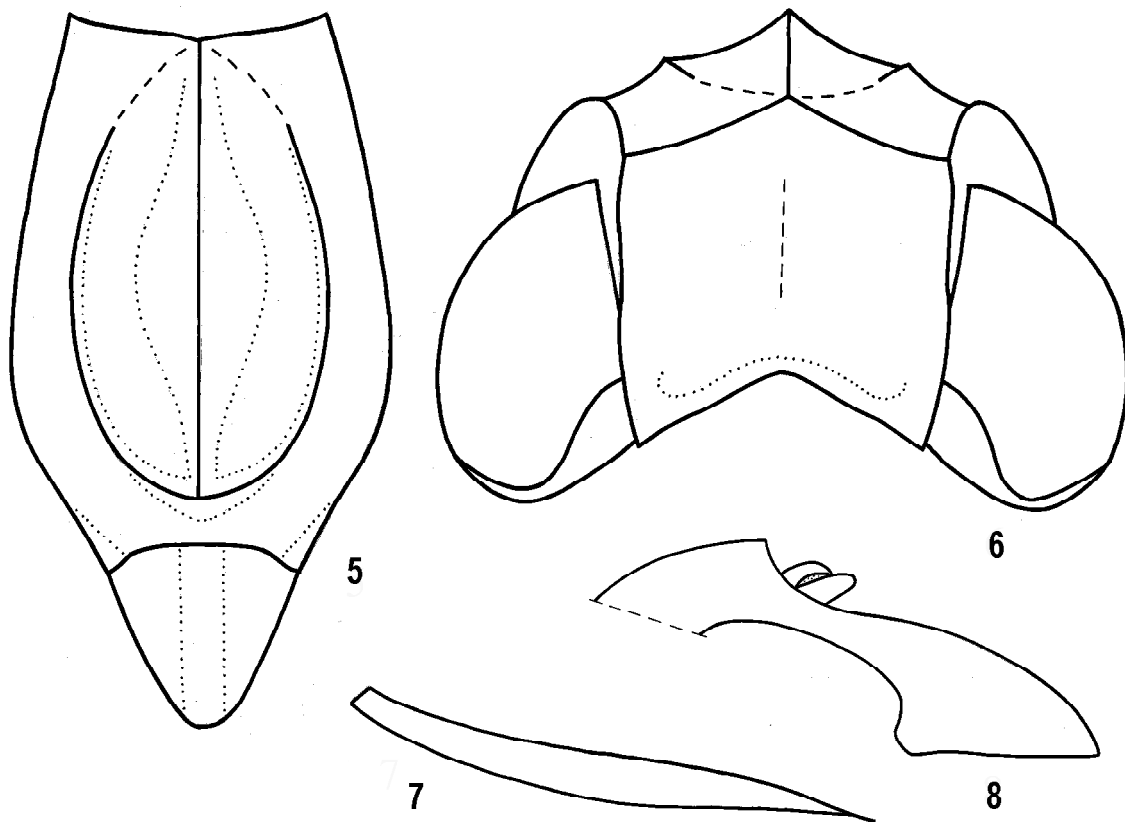
carinata / M» [hand-written in ink] // «Transcriptio [print] / *Thionia* ♂ / *carinata* / sp.n. [hand-written in ink] / L. Melichar det [print] 1906 [hand-written in ink] // «Invent č. [print] / 3815 [hand-written in ink] / Ent.[print] / Mor. muzeum Brno [print] // «Collectio / Dr. L. Melichar / Moravské museum Brno» [print] // «Syn- / typus» [red, print].

Emended description. **Coloration.** Generally brown yellowish. Coryphe light brown yellowish, with pair of elongate brown spots besides of median groove and pair of bean-shaped dark brown spots at posterior margin. Anterior and lateral margins of coryphe black. Rostrum with black apex. Pronotum with dark brown traces of larval sensory pits. Mesonotum with round dark brown spot at each upper angle. Forewings with brown to dark brown dots and dark brown to black longitudinal veins. Hind wings matt. Fore and middle femora dark brown. Apices of leg spines black. Claws and dorso-lateral plates of arolium of pretarsus dark brown to black.

Male genitalia. Anal tube long, with large protruding triangular-shaped upper angles (in lateral view) (Fig. 8). Anal column short.

Total length. 6.0 mm. Melichar [1906] indicated 7.0 mm for this species, but apparently he measured the female.

Distribution. The species is known from Nicaragua after the original description by Melichar [1906] and was later recorded from Honduras by Schmidt [1911]. The record of



Figs 5–8. *Crousta carinata* (Melichar, 1906), comb.n., male lectotype. 5 — metope and postclypeus in front view; 6 — head in dorsal view; 7 — hypocostal plate of right forewing; 8 — anal tube, lateral view. Out of scale.

Рис. 5–8. Лектотип *Crousta carinata* (Melichar, 1906), comb.n., самец. 5 — метопа и постклипеус спереди; 6 — голова сверху; 7 — гипокостаальная лопасть правого крыла; 8 — анальная трубка сбоку.



Figs 9–12. *Epomides impressus* (Melichar, 1906), comb. n., holotype, habitus. 9 — lateral view; 10 — dorsal view; 11 — front view; 12 — labels. Out of scale.

Рис. 9–12. Голотип *Epomides impressus* (Melichar, 1906), comb.n. 9 — внешний вид сбоку; 10 — внешний вид сверху; 11 — внешний вид спереди; 12 — этикетки.

this species by Metcalf [1938] from Barro Colorado Island in Panama is erroneous as the specimen figured by him [Metcalf, 1938, Pl. 13] clearly differs from the lectotype of *Th. carinata* by metope, with only median carina distinct running from its upper margin to metopoclypeal suture. Thus Metcalf's Panamanian record belongs to another (unknown) species.

Note. Melichar [1906] described the species based on male and female collected in Chinandega, Nicaragua from Baker's collection in Washington. Here I designate the lectotype for a male to stabilize the nomenclature in the group according to the ICZN [1999].

Epomides Gnezdilov, gen.n.

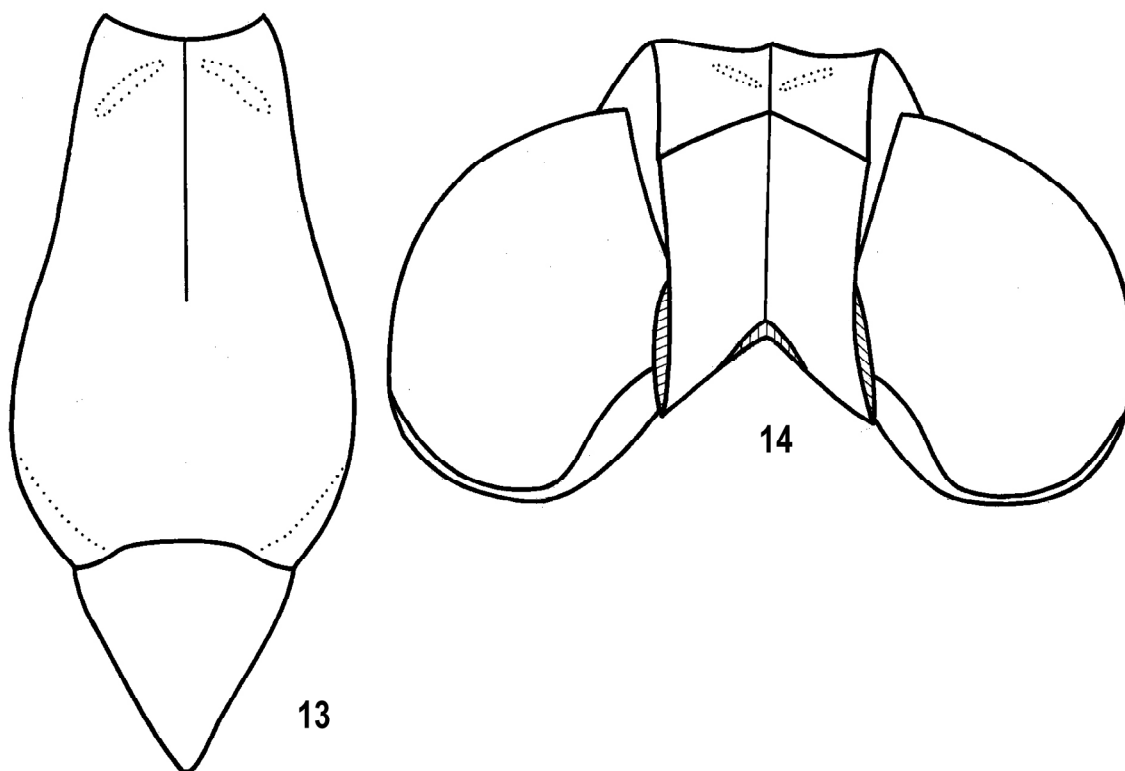
Type species: *Thionia impressa* Melichar, 1906, by original designation.

Urn:lsid:zoobank.org:act:35F9F922-F3A2-4521-AA96-65A6B3897641.

Diagnosis. Metope long and narrow, with median carina running from its upper margin to its middle and short weak sublateral carinae visible only in its upper part (Figs 11, 13). Coryphe narrow and elongate, with fine median carina; anterior margin obtusely angulate (Figs 10, 14). Coryphe and metope joint at obtuse angle in lateral view (Fig. 9). Eyes large, each eye larger than coryphe width (Fig. 14). Paradiscal fields of

pronotum narrow behind the eyes. Each paranotal lobe of pronotum with large caldera-shaped circle, dark brown to black inside, with white margin (Fig. 11). Forewings without hypocostal plate. Hind wings well developed as long as forewings.

Description. Metope long and narrow, with concave upper margin and with median carina running from its upper margin to its middle and weak and short sublateral carinae visible only in its upper part (Fig. 13). Metopoclypeal suture nearly horizontal. Postclypeus flattened dorso-ventrally, without carinae. Pedicel globular. Ocelli present. Metope and coryphe joint at obtuse angle (in lateral view) (Fig. 9). Coryphe narrow, elongate, with fine median carina; anterior margin obtusely angulate; posterior margin acutely angularly concave; lateral margins keel-shaped (Fig. 14). Eyes large, each eye larger than coryphe width. Rostrum far protruding behind hind coxae at half of its apical segment length; 3rd segment slightly longer than 2nd one, narrowing apically. Pronotum depressed, shorter than coryphe at midline; anterior margin strongly convex; posterior margin weakly concave medially. Paradiscal fields of pronotum narrow behind the eyes. Each paranotal lobe of pronotum with large caldera-shaped circle epaulette (Fig. 11). Mesonotum twice as long as pronotum medially, with lateral carinae.



Figs 13–14. *Epomides impressus* (Melichar, 1906), comb. n., holotype. 13 — metope and postclypeus in front view; 14 — head in dorsal view. Out of scale.

Figs 13–14. Голотип *Epomides impressus* (Melichar, 1906), comb.n. 13 — метопа и постклипеус спереди; 14 — голова сверху.

Legs not flattened. Forewings elongate, narrowing apically, without hypocostal plate (Fig. 9). Forewings with reduced appendages and almost missing transverse veins except apically. Basal cell elongate oval. Forewing vein sequence: R 2, furcating near to basal cell; M 2, furcating at basal third of wing; CuA 1; veins relief. Hind wings well developed as long as forewings. Hind tibia with two lateral spines in its distal half and seven apical spines. First and second metatarsomeres are nearly equal in length; 1st wider. First metatarsomere with two latero-apical and 7 + 2 intermediate spines arranged in arc. Second metatarsomere with only two latero-apical spines.

Etymology. Generic name is derived from Greek Επωμίδες (epaulettes) referring to relief circles on paranotal lobes of pronotum resembling epaulettes. Masculine in gender.

Comparison. New genus well differs from *Thionia* by narrow metope, with only median carina, long and narrow coryphe, peculiar large relief caldera-shaped circles on paranotal lobes of pronotum, and bifurcate radius of forewings.

Epomides impressus (Melichar, 1906), **comb.n.**

Figs 9–14.

Thionia impressa Melichar, 1906: 284.

Type material. Jamaica: Holotype, ♂, «Newcastle / Jamaica» [print] // «*Thionia*» [hand-written in ink] // «*impressa* M [hand-written in ink] / det. Melichar [print]» // «Wien / Dr. Melichar» [print] // «Transcriptio [print] / *Thionia* ♂ / *impressa* / sp.n. [hand-written in ink] / L. Melichar det [print] 1906 [hand-written in ink]» // «Invent. c. [print] / 3816 [hand-written in ink] / Ent[print] / Mor. muzeum Brno [print]» //

«Collectio / Dr. L. Melichar / Moravské museum Brno» [print] // «Holo-/typus» [red, print].

Emended description. **Coloration.** Generally brown yellowish. Paranotal lobes dark brown to black behind the eyes, with epaulettes dark brown to black inside, with white margins. Forewings dark brown except light anterior margin of corium, with black median, cubitus anterior, and postcubitus except basally. Hind wings transparent, with brown veins. Abdominal sternites V–VIII brown. Abdominal tergites dark brown.

Male genitalia. Anal tube flat, egg-shaped, narrowing apically. Style with distinct lateral tooth.

Total length. 5.0 mm.

Distribution. Endemic to Jamaica.

Note. *Cheiloceps argo* (Fennah, 1949) described from Virgin Islands (Jost Van Dyke I.) has similar «eyes» on paranotal lobes of pronotum, but they are smaller and situated on its upper margins while the epaulettes of *Epomides impressus* (Melichar, 1906) occupying whole paranotal lobes (Fig. 11). *Ch. argo* well differs from the last species also by wider metope rather transverse coryphe, and forewings with dark brown spots [Fennah, 1949: Pl. 4, Figs 20–22].

Apparently the epaulettes of *E. impressus* and *Ch. argo* imitate the eyes of jumping spiders and protect the planthoppers from these predators.

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