



New and little known crane-fly species of the genera *Helius*, *Elephantomyia* and *Toxorhina* (Diptera, Limoniidae) from Dominican and Mexican amber

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ABSTRACT

The descriptions of two new species of limoniid dipterans: *Helius (Helius) neali* n. sp., *Helius (Helius) oosterbroeki* n. sp., from Dominican amber and one new species *Toxorhina (Ceratocheilus) mexicana* n. sp. from Mexican amber are given and documented by photographs and drawings. New information about a new specimen of the known species *Elephantomyia grata* Podenas and Poinar, 2012 is also provided.

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INTRODUCTION

The Dominican and Mexican ambers are well known among the fossil resins of Central America. In the Dominican Republic, amber occurs in commercially exploitable quantities in two zones, in the "northern area", north of Santiago de los Caballeros and the "eastern area" northeast of Santo Domingo (Iturralde-Vinent and MacPhee, 1996). The age of the Dominican amber is debatable (Lambert et al., 1985; Grimaldi, 1995; Kimura et al., 2006; Penney, 2010). Amber from the northern area is estimated to be as old as early Eocene or as

young as early Miocene, while the age of deposits of amber from eastern area ranges even from Cretaceous to extant times. Generally, all the main amberiferous deposits in the Dominican Republic were probably formed during the early Miocene through middle Miocene, about 15 to 20 Ma, according to available biostratigraphic and paleogeographic data (Iturralde-Vinent and MacPhee, 1996; Penney, 2010).

The Mexican amber, besides Baltic and Dominican amber, is one of the most important global resource (Solórzano-Kraemer, 2007). The

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TABLE 1. A list of fossil species of Limoniidae known from Dominican and Mexican amber.

Genus	Species	Locality
Chioneinae		
<i>Erioptera</i>	<i>Erioptera (Mesocyphona) beata</i> Podenas and Poinar, 2012	Mexico
	<i>Erioptera (Mesocyphona) diversa</i> Podenas and Poinar, 2012	Mexico
	<i>Erioptera (Mesocyphona) sherry</i> Podenas and Poinar, 2012	Mexico
<i>Gnophomyia</i>	<i>Gnophomyia ieva</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Gnophomyia martini</i> Podenas and Poinar, 1999	Dominican Republic
<i>Molophilus</i>	<i>Molophilus (Molophilus) theischingeri</i> Krzemiński, 1992	Dominican Republic
<i>Styringomyia</i>	<i>Styringomyia dominicana</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Styringomyia optiova</i> Podenas and Poinar, 2001	Dominican Republic
Limnophilinae		
<i>Epiphragma</i>	<i>Epiphragma aurora</i> Podenas and Poinar 2001	Dominican Republic
<i>Polyneura</i>	<i>Polyneura specula</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Polyneura virgo</i> Podenas and Poinar, 1999	Dominican Republic
Limoniinae		
<i>Dicranomyia</i>	<i>Dicranomyia (Caenolimonia) alexbrowni</i> Podenas and Poinar, 2012	Mexico
	<i>Dicranomyia (Dicranomyia) chiapa</i> Podenas and Poinar, 2012	Mexico
	<i>Dicranomyia (Dicranomyia) fera</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Dicranomyia (Dicranomyia) lema</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Dicranomyia (Dicranomyia) mexa</i> Podenas and Poinar, 2012	Mexico
	<i>Dicranomyia (Dicranomyia) vela</i> Podenas and Poinar, 2012	Mexico
<i>Elephantomyia</i>	<i>Elephantomyia grata</i> Podenas and Poinar, 2001	Mexico
<i>Geranomyia</i>	<i>Geranomyia euchara</i> Podenas and Poinar, 2001	Dominican Republic
<i>Helius</i>	<i>Helius collemus</i> Podenas and Poinar, 2012	Mexico
<i>Rhipidia</i>	<i>Rhipidia mira</i> Podenas and Poinar 1999	Dominican Republic
<i>Trentepohlia</i>	<i>Trentepohlia (Parangoma) agri</i> Podenas and Poinar, 1999	Dominican Republic
	<i>Trentepohlia (Parangoma) immemorata</i> Podenas and Poinar, 2001	Mexico
	<i>Trentepohlia (Parangoma) mexicana</i> Podenas and Poinar, 2001	Mexico

age of Mexican amber is estimated to be middle Miocene (20 Ma). Both the Dominican and the Mexican amber can be correlated not only in respect to similarity of age but also on account of the same amber-producing tree, the representative of extant genus *Hymenaea* (Poinar, 1992; Poinar and Brown, 2002) and geological conditions (Solórzano-Kraemer, 2007).

Although knowledge about the representatives of Limoniidae Speiser, 1909 (Diptera) from this American resins is rather poor, 24 species of Limoniidae are known from Dominican and Mexican amber with three of them belonging to Limnophilinae Bigot, 1854 like *Epiphragma aurora* Podenas and Poinar, 2001; *Polymera specula* Podenas and Poinar, 1999 or *Polymera virgo* Podenas and Poinar, 1999; eight to subfamily Chi-

oneinae Rondani, 1841 especially to the genus *Gnophomyia* Osten-Sacken, 1860 or *Erioptera* Meigen, 1803; and 13 species belong to subfamily Limoniinae Speiser, 1909, mainly to the genus *Dicranomyia* Stephens, 1829 or *Trentepohlia* Bigot, 1854 (Table 1). The information about Limoniidae from Miocene Dominican and Miocene Mexican ambers can be found in papers of Krzemiński (1992), Evenhuis (1994), Podenas and Poinar (1999, 2001, 2012).

This paper presents the description of three new species from the Dominican and Mexican ambers and information about new materials of known species of the genus *Elephantomyia* Osten Sacken, 1860 from this kind of resins. It also documents the first representative of *Toxorhina* Loew, 1851 in Mexican amber.

MATERIAL AND METHODS

The present study was based on material from the collection of the Smithsonian Institution Entomology Department (NMNH), located in Washington; Brodzinsky/Lopez-Penha Collection (3 specimens) and Natural History Museum (NHM), London, UK (1 specimen). The specimens were studied using a Nikon SMZ 1500 stereomicroscope. The photographs for analysis were taken with a Nikon DS-Fi1 camera attached to a microscope. The drawings were made on the basis of the specimen and photographs. The measurements of the specimen were taken with NIS-Elements D 3.0 software, Nikon Corporation, Tokyo. The nomenclature of wing venation is given after Krzemiński et al. (2010), while the terminology of the male genitalia follows that of Podenas (2003). The drawings were made by Iwona Kania.

SYSTEMATIC PALEONTOLOGY

Order Diptera Linnaeus, 1758

Family Limoniidae Speiser, 1909

Subfamily Limoniinae Speiser, 1909

Genus ELEPHANTOMYIA Osten Sacken, 1860

Type species. *Elephantomyia canadensis* (Westwood, 1835).

The genus is represented by more than 130 extant species, which occur mainly in tropical and subtropical regions like: Neotropic, Afrotropic (Oosterbroek, 2015). Over 20 species are represented in oriental region, over 10 species in Palearctic, Australian and Oceanian, while only three species were reported from Nearctic region.

Until recently, only six fossil species have been described, mainly from Eocene Baltic amber (Loew, 1851; Alexander, 1931; Kania, 2015) and one species from Oligocene Dominican amber (Podenas and Poinar, 2001).

Elephantomyia (Elephantomyia) grata Podenas and Poinar, 2001
Figures 1 and 2

Type material. No. 5546 (sex unknown) Smithsonian Institution Entomology Department; Brodzinsky/Lopez-Penha Collection.

Comparisons. The species was described based on a single specimen. The second specimen, which was found by us, is partially preserved, without the end of abdomen. But the size of the body, wing venation and morphology of antennae correspond to the description of holotype. The small differences are visible: cross-vein m-cu is situated nearer the middle of d-cell basal part than in holo-

type; the first and the second flagellomeres in examined specimen are joined into fused segment.

Additional description. The body (Figure 2.1) is about 3.00 mm long with rostrum very elongated, longer than half the body length, 3.01 mm long and antennae 0.88 mm (Figures 1.1, 1.4, 2.2). Wing (Figures 1.3, 2.1) is 3.50 mm long, 0.94 mm wide.

Genus HELIUS Lepeletiere and Serville, 1828

Type species. *Helius longirostris* (Meigen, 1818).

The genus is represented by more than 240 extant species, occurring mainly in the Oriental region (Oosterbroek, 2015). Almost 50 species are represented in Neotropic and Australian and Oceanian, over 20 species in Palearctic and Afrotropic, but only four species are reported from the Nearctic region.

Until recently, 20 fossil species had been described, mainly from Eocene Baltic amber (Loew, 1850, 1851; Meunier, 1906; Alexander, 1931; Krzemiński 1985, 1993; Podenas, 2002; Kania, 2014), but also from Early Cretaceous of Botswana (Rayner and Waters, 1990), Burma (Ribeiro, 2003), Lebanon (Kania et al., 2013; Krzemiński et al., 2014) and Eocene/Oligocene (Krzemiński, 1991), Oligocene of Germany (Statz, 1934, 1944), Oligocene Dominican amber (Podenas and Poinar, 2001), Miocene of Russia (Krzemiński, 2002), Miocene of Mexico (Podenas and Poinar, 2012).

Helius (Helius) neali n. sp.
Figures 3 and 4

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Type material. Holotype: No. 10938 (male); Dominican amber (Lower Miocene); Smithsonian Institution Entomology Department; Brodzinsky/Lopez-Penha Collection.

Etymology. The name is dedicated to Prof. Neal Evenhuis, the eminent specialist on Diptera, author of the Catalogue of the Fossil Flies of the World (Insecta: Diptera).

Diagnosis. Rostrum comparatively elongated, but only a little longer than length of head, approximately 1/5 the length of antenna; vein R_{2+3+4} elongated, slightly curved, twice as long as vein R_s ; cross-vein m-cu in the middle of d-cell basal part; outer gonostylus narrow; inner gonostylus twice as long as outer gonostylus.

Comparisons. *Helius (Helius) neali* n. sp. differs from *Helius collemus* Podenas and Poinar, 2012 and *Helius (Helius) oosterbroeki* n. sp. described below, especially by the wing venation and the relation between the length of rostrum, palpus, antenna and head. In *H. (H.) oosterbroeki* n. sp.

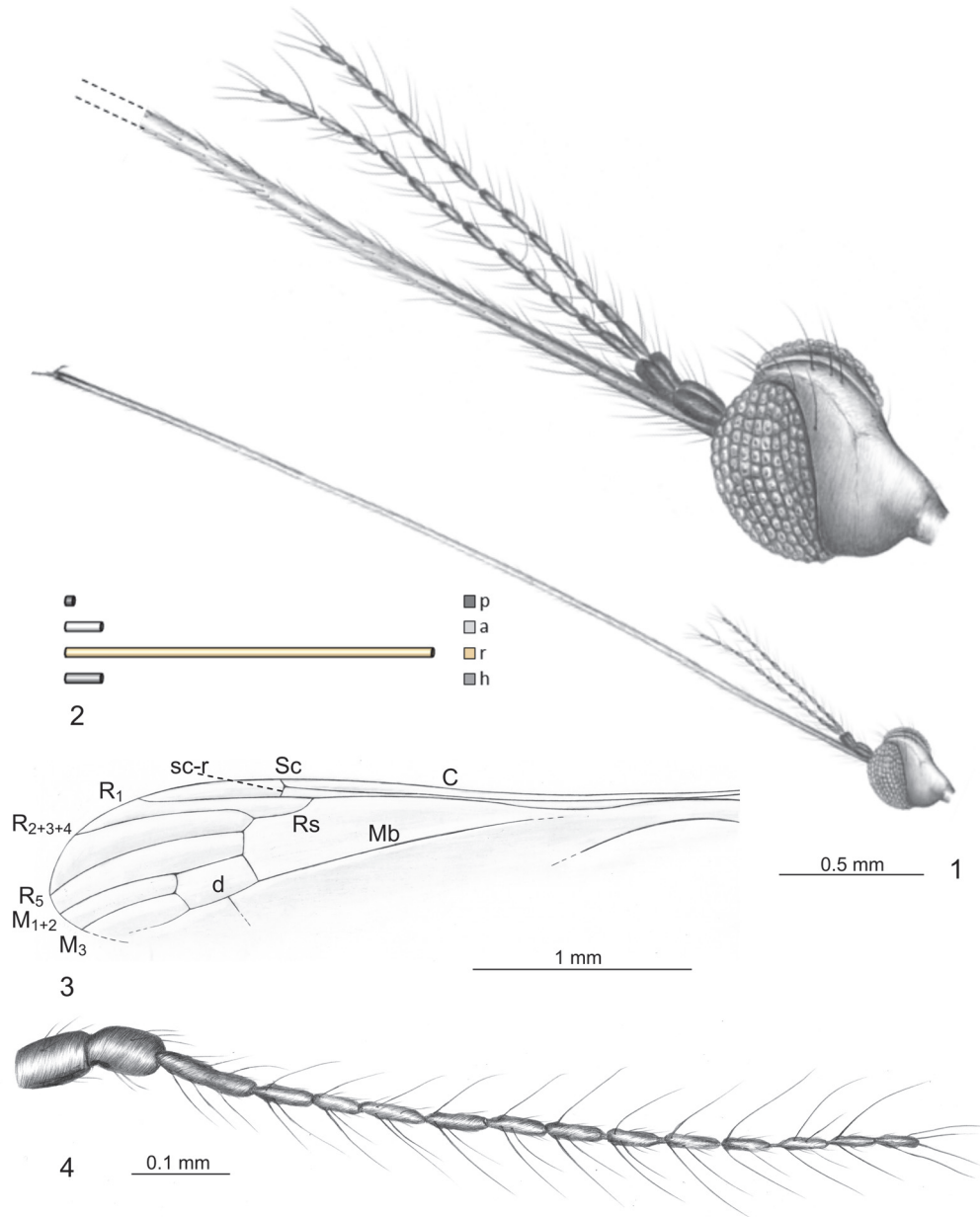


FIGURE 1. *Elephantomyia (Elephantomyia) grata* Podenas and Poinar, 2001, No. 5546 (sex unknown). 1, a drawing of the head (reconstructed) in latero-dorsal view; 2, a schematic representation of the relation between the length of palpi (p), antenna (a), rostrum (r) and head (h); 3, a drawing of the left wing venation; and 4, a drawing of the right antenna in latero-dorsal view.

rostrum is comparatively elongated, but a little shorter than head, 1/3 the length of antenna and is shorter than palpus while in *H. (H.) neali* n. sp. rostrum is slightly longer than head, 1/5 the length of antenna. In *H. collemus* rostrum is as long as remainder of head and almost twice as long as palpus, antenna are longer than rostrum. Moreover, in *H. (H.) neali* n. sp. vein R_{2+3+4} is elongated, slightly curved and twice as long as vein Rs while in *H. (H.) oosterbroeki* n. sp. is short, Rs is very short and

R_{2+3+4} is only about 1/4 longer than Rs. Cross-vein m-cu in *H. (H.) neali* n. sp. is situated in the middle of d-cell, in *H. (H.) oosterbroeki* n. sp. at the bifurcation of Mb, in *H. collemus* this vein is positioned shortly before the fork of Mb. This new species differs also from *H. collemus* and *H. (H.) oosterbroeki* n. sp. by the morphology of male genitalia. In *H. (H.) neali* n. sp. inner gonostylus is twice as long as outer gonostylus, in *H. (H.) oosterbroeki* n. sp.

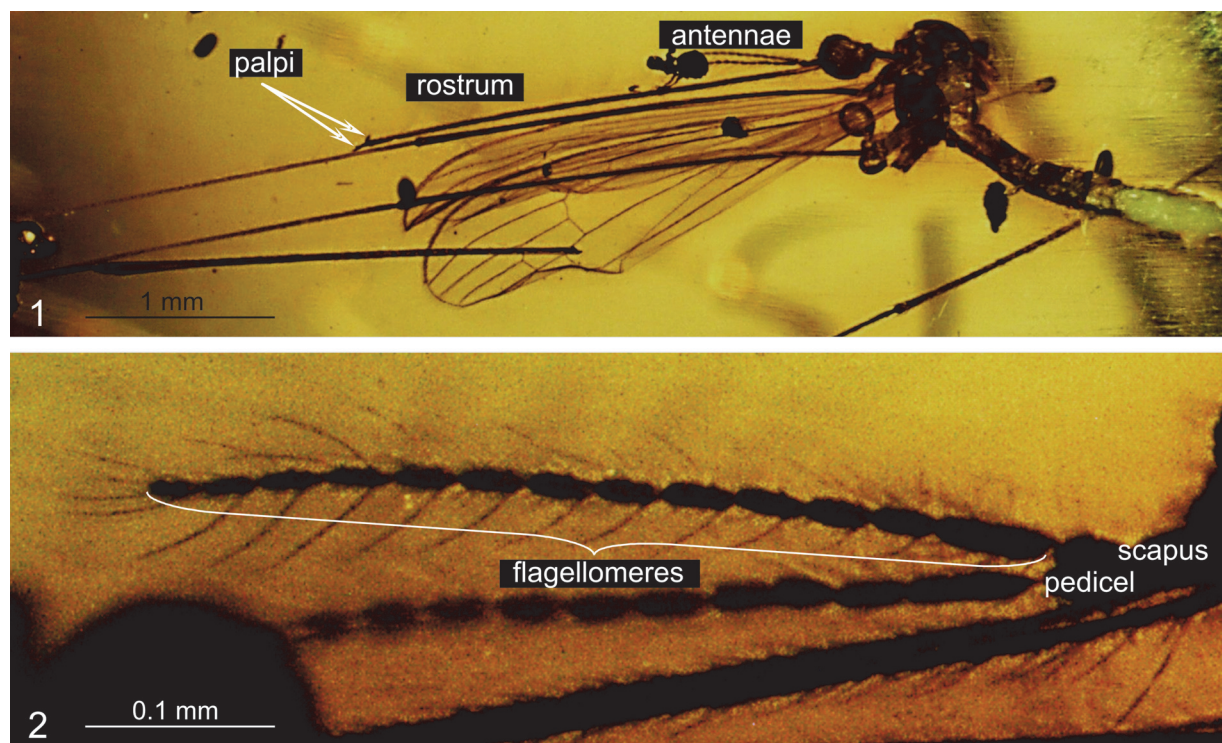


FIGURE 2. *Elephantomyia (Elephantomyia) grata* Podenas and Poinar, 2001, No. 5546 (sex unknown). 1, a photograph of the body in lateral view; and 2, a photograph of the right antenna in latero-dorsal view.

inner gonostylus is 1/4 shorter than outer gonostylus.

Description. The body is pale brown, 4.38 mm long. Head (Figures 3.1, 4.2): width of head 0.49 mm, rostrum elongated, but only a little longer than length of head, 0.14 mm long, distinctly widened at distal part (Figure 3.1, 3.2); antenna 0.80 mm long, 16-segmented; scapus elongated, cylindrical; pedicel barrel-like; first segment of flagellum oval, 1/3 longer than its width; the other flagellomeres oval, tapered toward the end of antennae, each flagellomere with two elongated setae, a little longer than the length of segments bearing them; palpi not preserved, the probably appearance is given on Figure 4.2. Thorax (Figure 4.1): the wing approximately 4.0 mm long, 1.2 mm wide, with distinctly visible pterostigma; Sc ending opposite 3/4 the length of Rs; sc-r one its length before the end of Sc, R₁ ending opposite 1/2 the length of R₂₊₃₊₄; r-r (R₂) atrophied; R₂₊₃₊₄ twice as long as vein Rs; r-m very short; d-cell huge, wide at the basal part; the sector of vein M₁₊₂ from d-cell to the edge of wing twice as long as d-cell; m-cu in the middle of d-cell basal part. Abdomen: male genitalia: hypopygium and gonocoxites narrow, more than twice as long as width in widest area; inner gonos-

tylus twice as long as outer gonostylus, strongly curved at the end (Figure 3.4). Female: unknown.

Helius (Helius) oosterbroeki n. sp.
Figures 5 and 6

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Type material. Holotype: No. 10189 (male); Dominican amber (Lower Miocene); Smithsonian Institution Entomology Department; Brodzinsky/Lopez-Penha Collection.

Etymology. The name is dedicated to Prof. Piotr Oosterbroek, the eminent specialist on Diptera, author of the Catalogue of the Craneflies of the World.

Diagnosis. Rostrum comparatively elongated, but a little shorter than the length of head, 1/3 the length of antenna, shorter than palpus; Rs very short; R₂₊₃₊₄ short, about 1/4 longer than Rs; d-cell rhomboid, 1/9 the length of wing; cross-vein m-cu at the bifurcation of Mb; outer gonostylus 1/4 longer than inner gonostylus.

Comparisons. *Helius (H.) oosterbroeki* n. sp. differs from *H. collemus* and *H. (H.) neali* n. sp. by the wing venation, but especially by the relation between the length of rostrum, palpus, antenna and head. In *H. (H.) neali* n. sp. rostrum is slightly longer than head, 1/5 the length of antenna while in

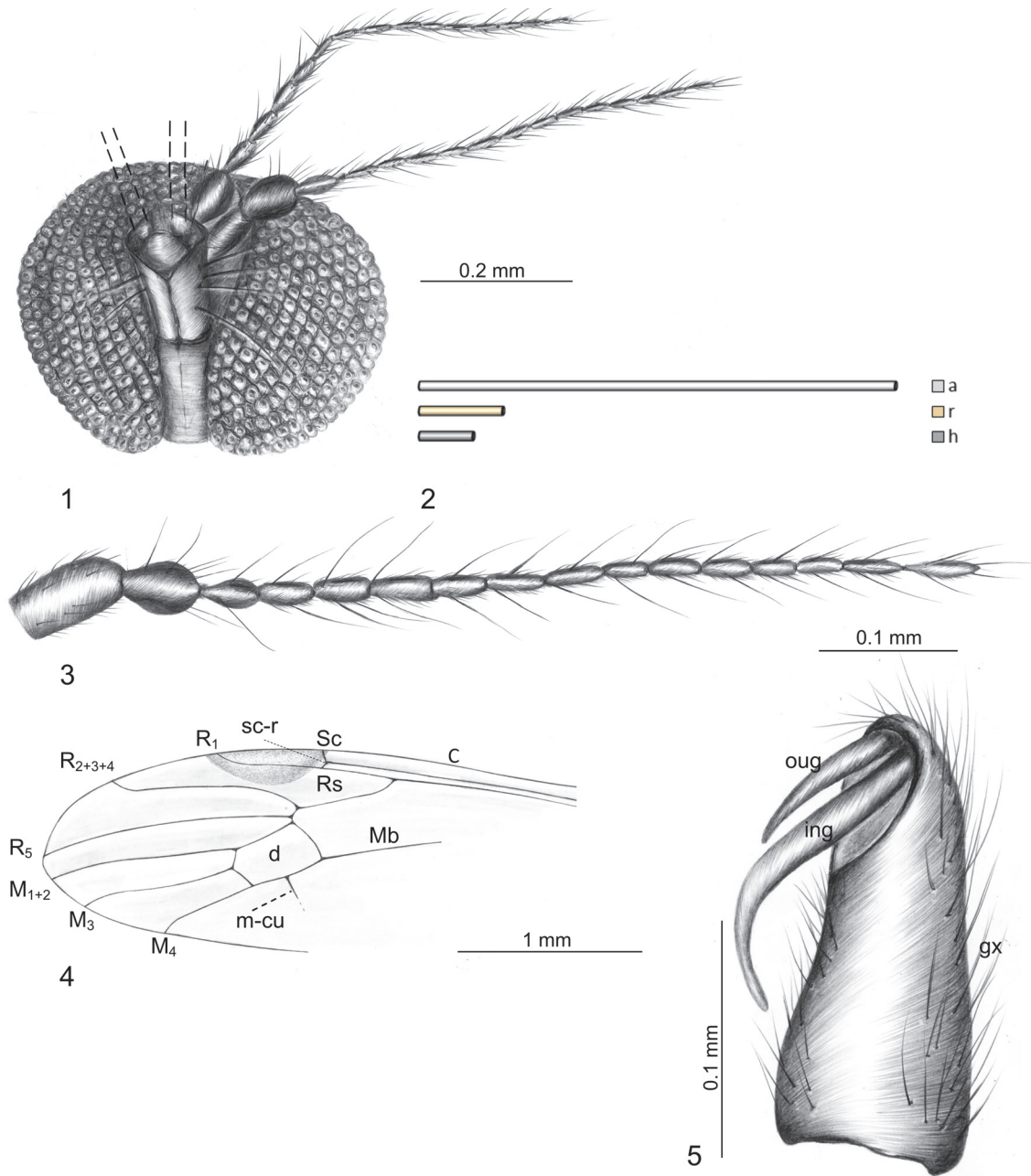


FIGURE 3. *Helius (Helius) neali* n. sp., No. 10938 (male). 1, a drawing of the head (reconstructed) in fronto-dorsal view; 2, a schematic representation of the relation between the length of antenna (a), rostrum (r) and head (h); 3, a drawing of the left antenna in ventral view; 4, a drawing of the left wing venation; and 5, a drawing of the right gonocoxite and gonostyles in ventral view. Abbreviation: gx, gonocoxite; ing, inner gonostylus; oug, outer gonostylus.

H. (H.) oosterbroeki n. sp. rostrum is comparatively elongated, but a little shorter than head, 1/3 the length of antenna and is shorter than palpus. In *H. collemus* Podenas and Poinar, 2012 rostrum is as long as remainder of head and almost twice as long as palpus, antenna are longer than rostrum. Moreover, in *H. (H.) oosterbroeki* n. sp. is short, Rs

is very short and R_{2+3+4} about only 1/4 longer than Rs, in *H. (H.) neali* n. sp. vein R_{2+3+4} is elongated, slightly curved and twice as long as vein Rs. Cross-vein m-cu in *H. (H.) oosterbroeki* n. sp. is at the bifurcation of Mb, *H. (H.) neali* n. sp. is situated in the middle of d-cell, in, in *H. collemus* this vein is positioned shortly before the fork of Mb. This new

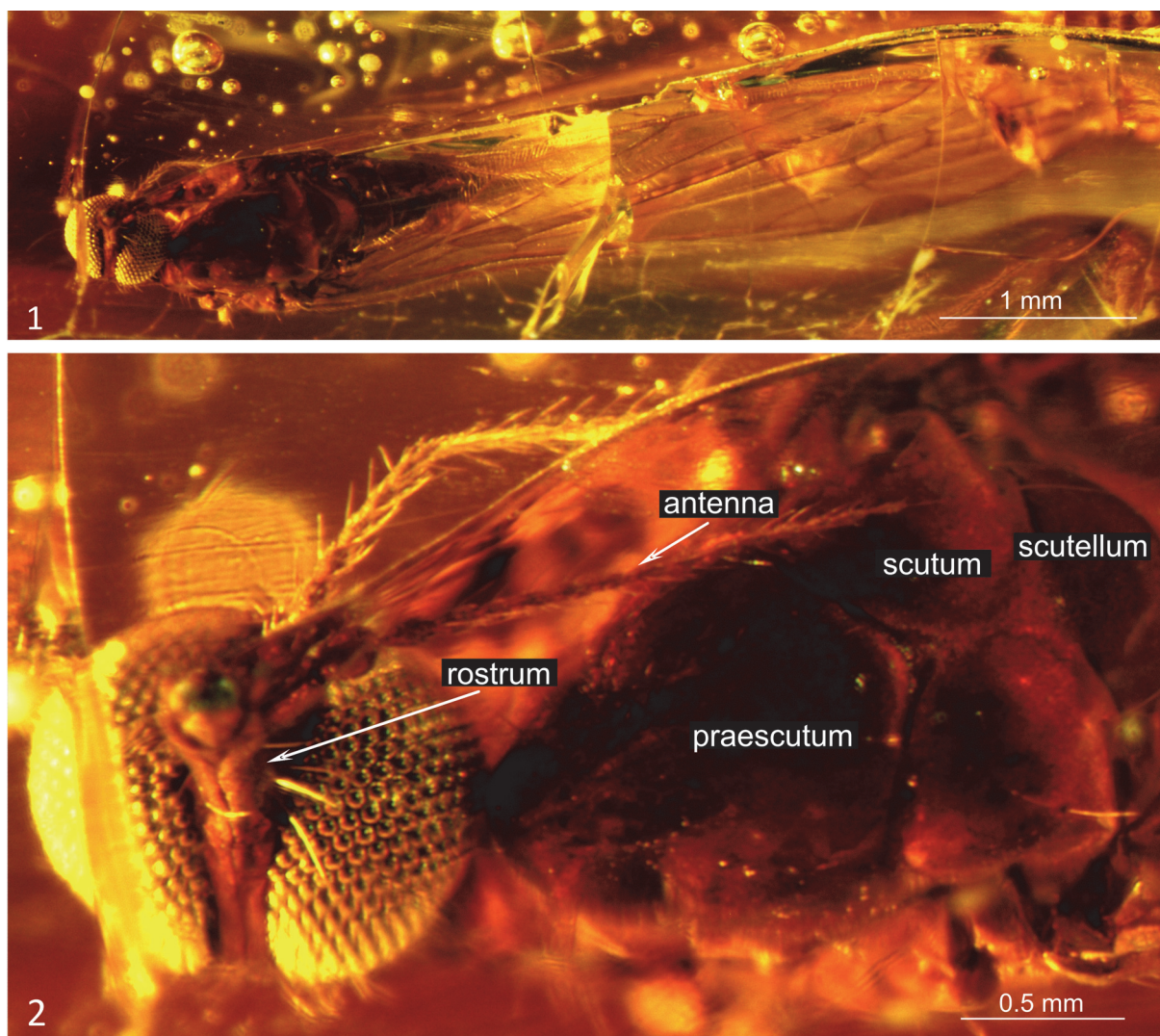


FIGURE 4. *Helius (Helius) neali* n. sp., No. 10938 (male). 1, a photograph of the body in fronto-dorsal view; and 2, a photograph of the head in fronto-dorsal view and the part of thorax in dorsal view.

species differ also from *H. collemus* and *H. (H.) neali* n. sp. by the morphology of male genitalia. In *H. (H.) oosterbroeki* n. sp. inner gonostylus is 1/4 shorter than outer gonostylus while in *H. (H.) neali* n. sp. inner gonostylus is twice as long as outer gonostylus.

Description. The body is brown, 3.25 mm long (Figure 6.1). Head (Figures 5.1, 6.2): Rostrum comparatively elongated, a little shorter than the length of head 0.29 mm (Figure 5.4), slightly widened at the end, width of head 0.55 mm; antenna 0.78 mm long (Figure 5.2) 16-segmented; scape elongated, cylindrical; pedicel barrel-like; first flagellomere widened in the middle, twice as long as its width; the other flagellomeres oval, tapered toward the end of antennae; palpus 0.56 mm long (Figure

5.3), almost twice as long as rostrum, the last segment of palpus is elongated, almost equal in length to the penultimate one and other taken together. Thorax: wing (Figures 5.6, 6.1) 3.85 mm long, approximately 1.30 mm wide; vein Sc ending opposite the bifurcation of Rb on Rs and R₁; Rs very short; sc-r two its length before the end of Sc; R₁ ending opposite 1/2 the length of R₂₊₃₊₄; R₂ (r-r) atrophied; R₂₊₃₊₄ short, only 1/4 longer than Rs; d-cell huge, narrowed at the basal part; the sector of M₁₊₂ from d-cell basal part to the edge of wing not more than twice as long as d-cell; m-cu at bifurcation of Mb; A₁ elongated, slightly waved; A₂ slightly arched. Abdomen (Figure 6.1): hypopygium 0.51 mm long, gonocoxite elongated, three times longer

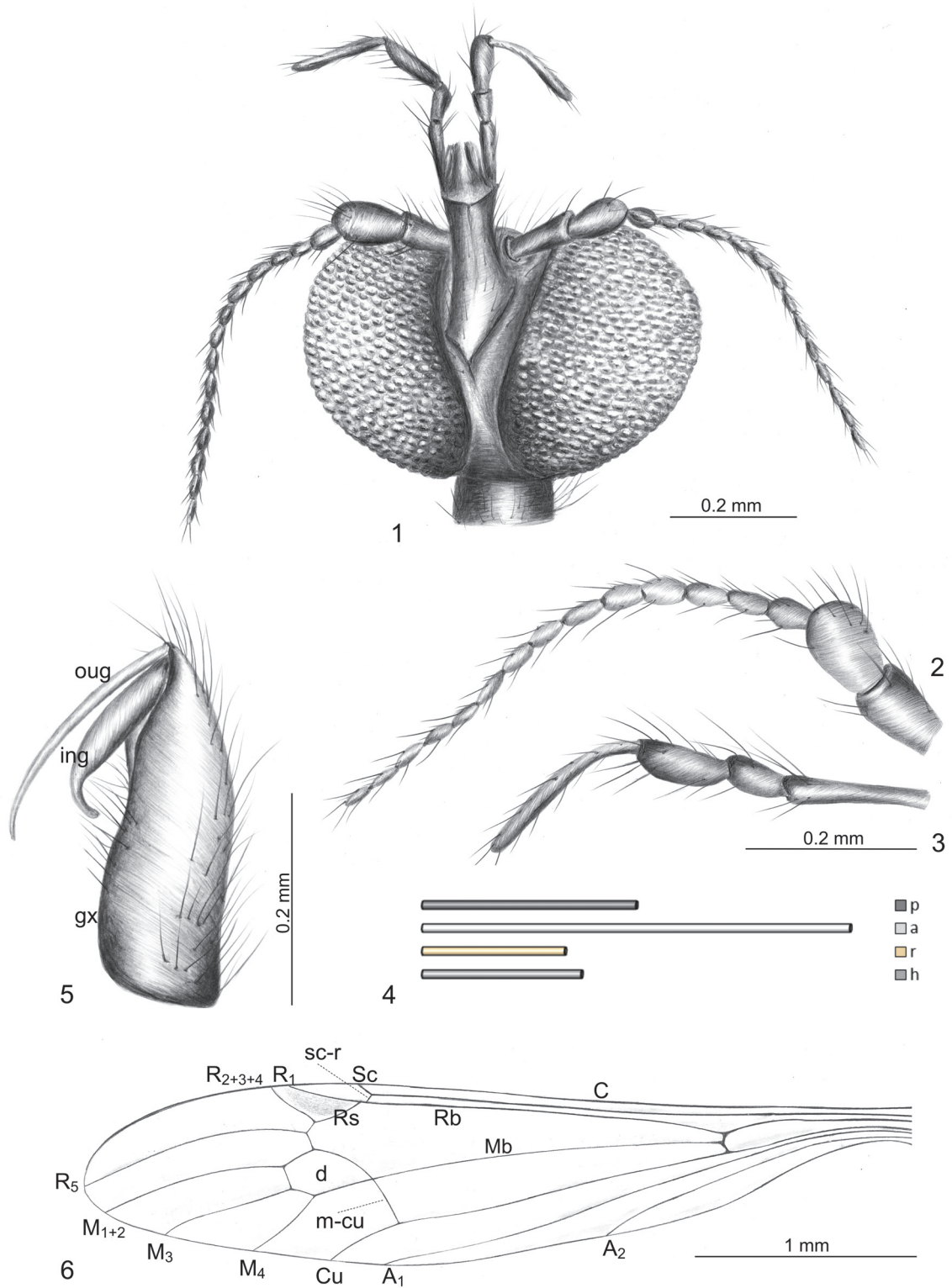


FIGURE 5. *Helius (Helius) oosterbroeki* n. sp., No. 10189 (male). 1, a drawing of the head (reconstructed) in fronto-ventral view; 2, a drawing of the right antenna in fronto-dorsal view; 3, a drawing of the right palpus in fronto-ventral view; 4, a schematic representation of the relation between the length of palpi (p), antenna (a), rostrum (r) and head (h); 5, a drawing of right gonocoxite and gonostyles in ventral view; and 6, a drawing of the right wing. Abbreviation: gx, gonocoxite; ing, inner gonostylus; oug, outer gonostylus.

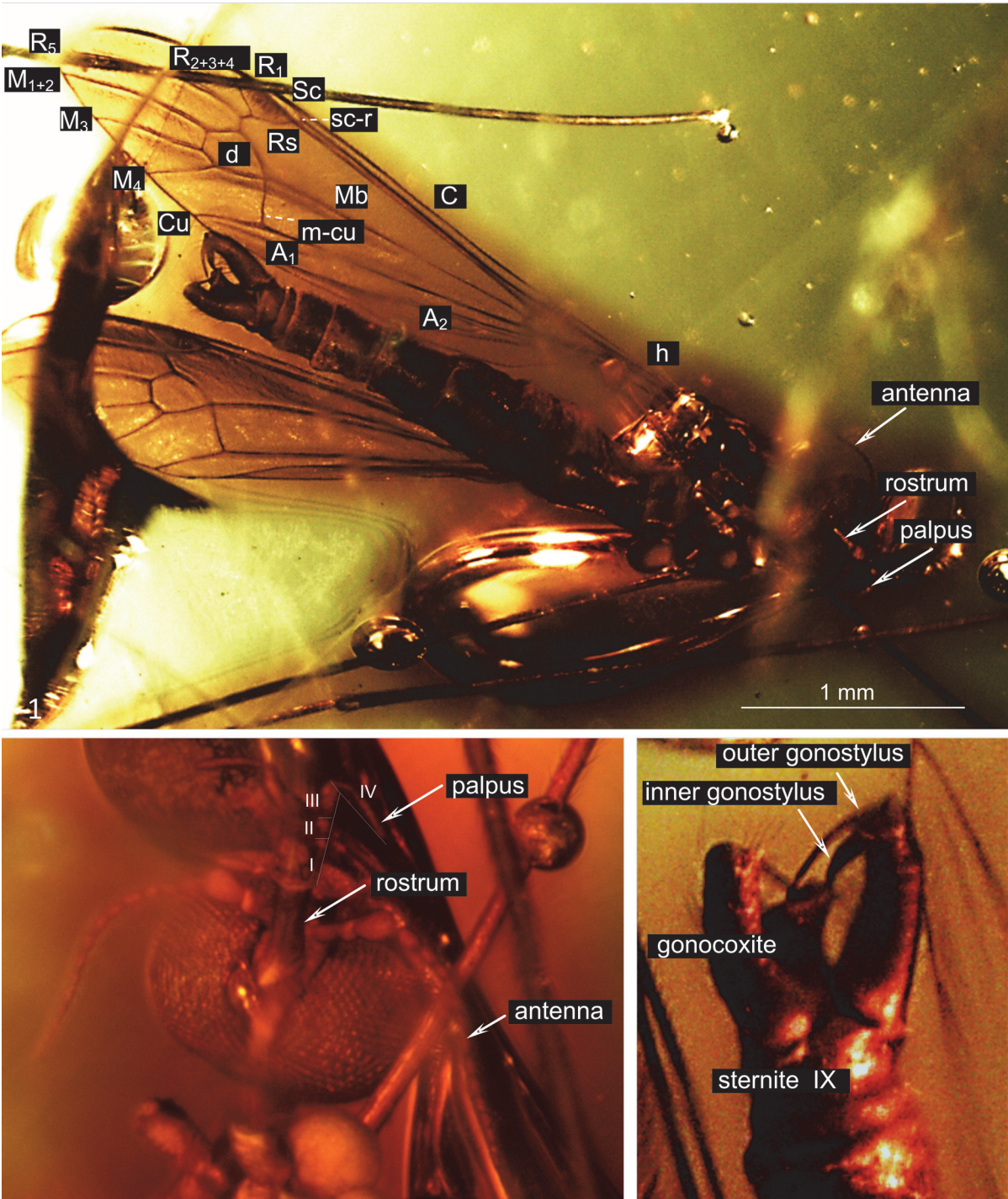


FIGURE 6. *Helioides (Helioides) oosterbroeki* n. sp., No. 10189 (male). 1, a photograph of the body in ventral view; 2, a photograph of the head in fronto-ventral view; and 3, a photograph of hypopygium in ventral view.

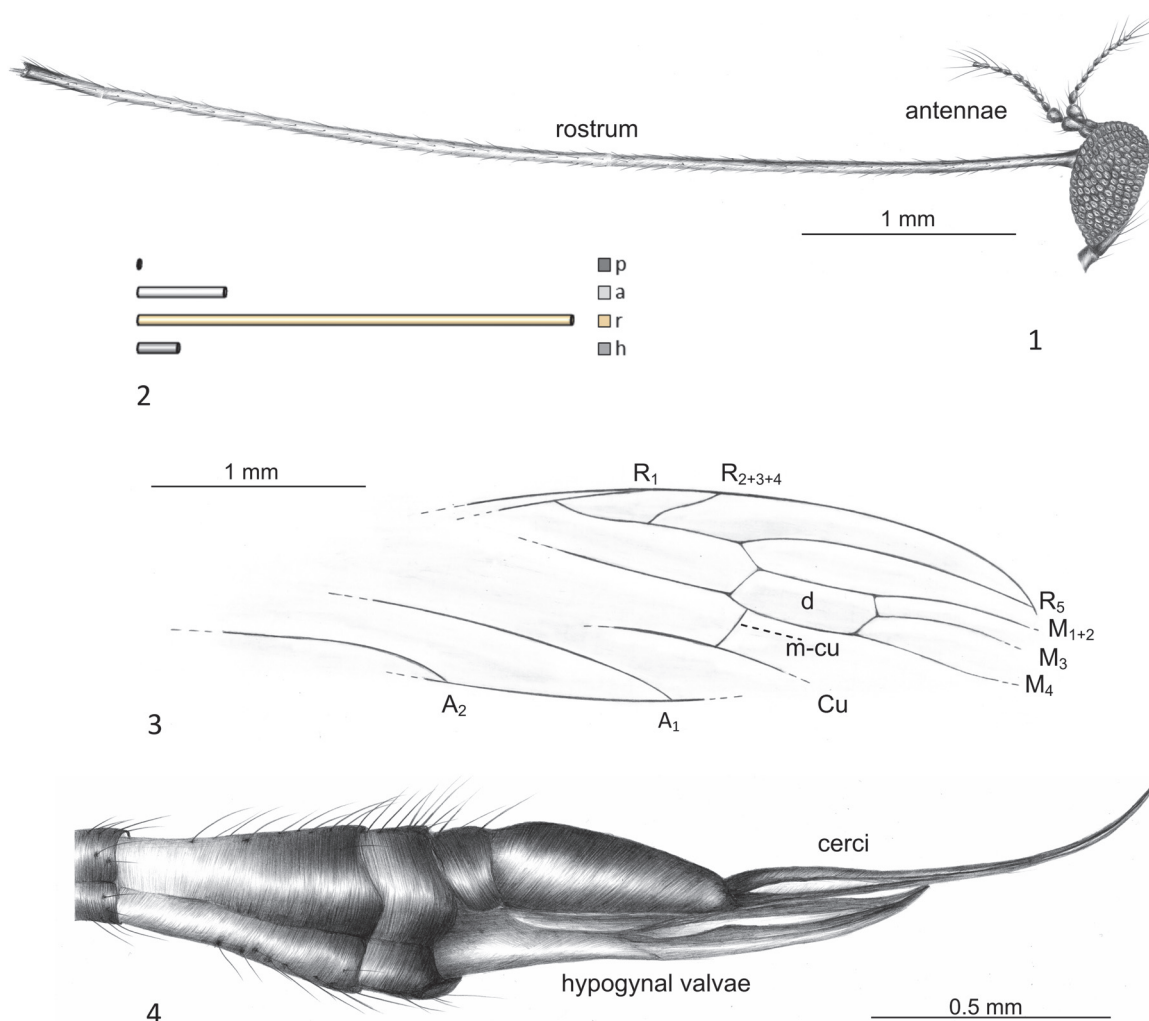


FIGURE 7. *Toxorhina (Ceratocheilus) mexicana* n. sp., No. PI II 1870 (female). 1, a drawing of the head (reconstructed) in lateral view; 2, a schematic representation of the relation between the length of palpi (p), antenna (a), rostrum (r) and head (h); 3, a drawing of the left wing venation; and 4, a drawing of the ovipositor in latero-ventral view.

than its width; inner gonostylus 1/4 shorter than outer gonostylus, strongly curved at the end directed to its basal part, widened at the base; outer gonostylus elongated, narrow, straight, slightly curved at the end; aedeagus elongated, wide (Figures 5.5, 6.3).

Genus TOXORHINA Loew, 1851

Type species. *Toxorhina fragilis* Loew, 1851, by subsequent designation by Osten Sacken (1869, p. 113).

Subgenus CERATOCHEILUS Wesché, 1910

Type species. *Ceratocheilus winnsampsoni* Wesché, 1910.

The genus is represented by almost 150 extant species, occurring mainly in Australian and Oceanian region. Over 30 species were reported from the Neotropic and Afrotropic. In Palearctic Region the genus *Toxorhina* is not represented (Oosterbroek, 2015).

Until recently, only three fossil species had been described from Eocene Baltic amber (Meunier, 1917), Miocene of Russia (Krzemiński and Freiwald, 1991) and Holocene of Madagascar (Meunier, 1906).

Toxorhina (Ceratocheilus) mexicana n. sp.
Figures 7 and 8

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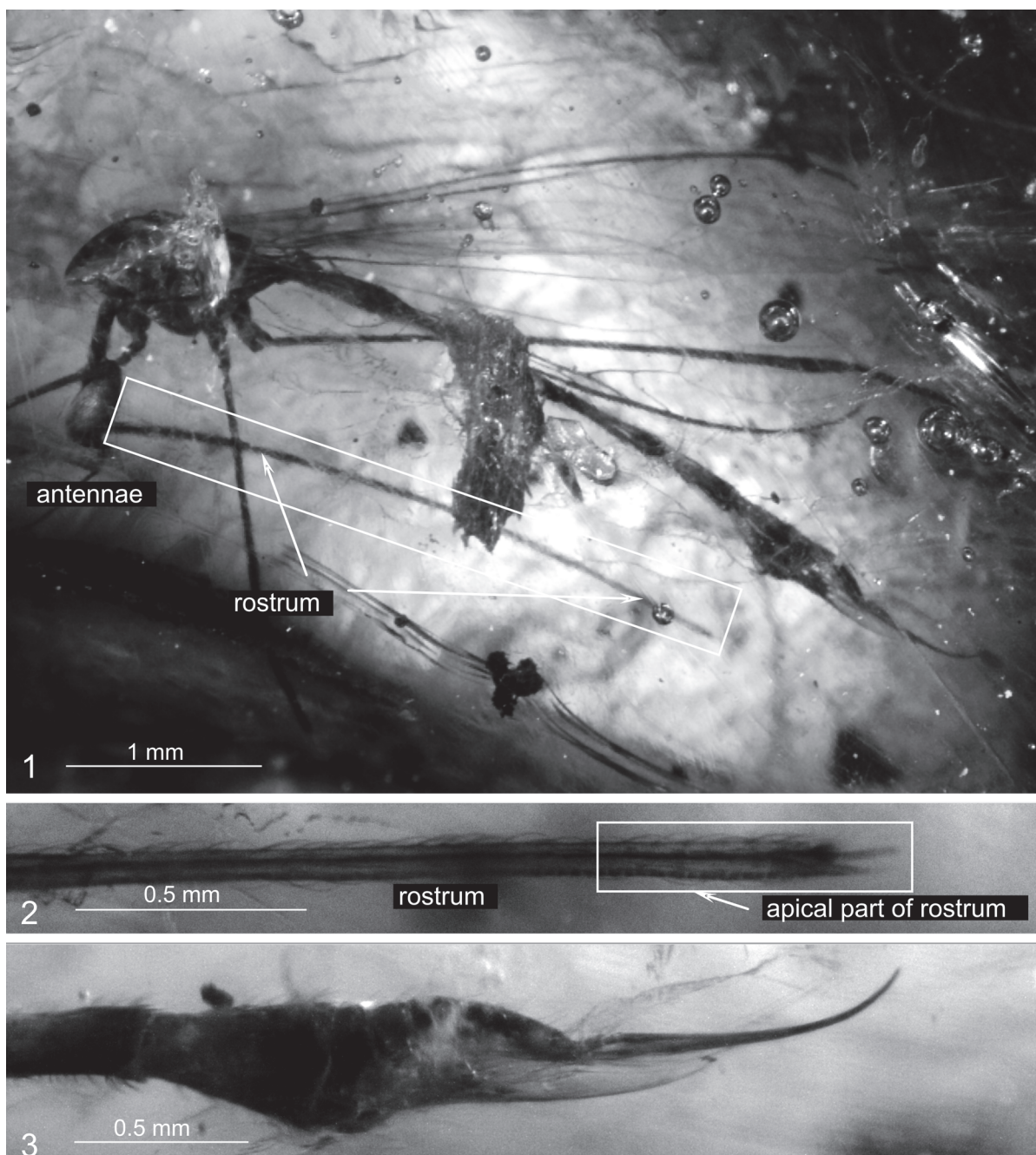


FIGURE 8. *Toxorhina (Ceratocheilus) mexicana* n. sp., No. PI II 1870 (female). 1, a photograph of the body in lateral view; 2, a photograph of the apical part of rostrum in lateral view; and 3, a photograph of the ovipositor in latero-ventral view.

Type material. Holotype: No. PI II 1870 (female); Mexican amber (Lower Miocene), Chiapas, Mexico; Natural History Museum, London, UK.

Etymology. The name of species is derived from Mexico, where the amber comes from.

Diagnosis. The *Toxorhina (Ceratocheilus) mexicana* n. sp. differs from all fossil and extant species from South and Central America by very short vein

R_{2+3+4} , equal in length of vein R_s ; cross-vein $m-cu$ is positioned distinctly behind the bifurcation of Mb , it differ also by very elongated, narrow ovipositor.

Remarks. From South and Central America only two localities with fossil remains are known—Santana Formation and localities from where the Dominican amber comes from. To that day, only a few Limoniidae have been discovered from these

localities. Hence, each new finding is very important and considerably enriches our knowledge about evolution of this family in the Neotropical Region. The new species, *Toxorhina (Ceratocheilus) mexicana* n. sp. is the first representative of *Toxorhina* Loew, 1851 from Mexican amber. Until now, only 11 species have been described from South and Central America, one of them from Mexico. In 2001, Podenas and Poinar noticed a partially preserved specimen of *Toxorhina (Ceratocheilus)* from the Dominican amber, with no preserved genitalia and unknown sex. During a few last years, any new Recent species of the genus have been described from the Dominican Republic.

Description. The specimen is well preserved, but without part of a wing, the second wing is partially crinkled, 4.66 mm long. The body 7.10 mm long, dark brown, the basal part of tergites and sternites pale brown, the distal part of tergites and sternites almost black, ovipositor elongated. Head (Figures 7.1, 8.1): small, 0.37 mm long with very elongated rostrum 4.67 mm long (Figure 7.2), rostrum slightly longer than wing length (Figure 8.1), apical part of rostrum dainty with palpus relatively slender, probably 2-segmented (Figure 8.2); antenna 0.81 mm long, 12-segmented (not well preserved); pedicel elongated, cylindrical; scape huge, conical; flagellomeres short, barrel like, tapered to the end of antenna, with very long and conspicuous setae (verticils) toward the apical part of antennae. Thorax (Figure 8.1): brown, legs very elongated, partially preserved in mentioned specimen, wing (Figures 7.3, 8.1) 4.66 mm long, 1.02 mm wide, vein Sc relatively short, vein Rs and basal section of R_5 almost equal in length, nearly straight, R_{2+3+4} almost equal in length of Rs, d-cell elongated, twice as long as wide, M_3 approximately 1/3 longer than d-cell, m-cu behind the bifurcation of Mb, A_1 almost straight, A_2 slightly waved. Abdomen (Figures 7.4, 8.3): female genitalia: ovipositor very elongated, narrow and slender (Figures 7.4, 8.3), 1.58 mm long with hypogynal valves wide, cerci narrow, longer than hypogynal valves.

DISCUSSION

New species of *Toxorhina* belongs to subgenus *Ceratocheilus* and is characterized by, typical for subgenus, a very elongated rostrum, much longer than half the body length and reduced palpi. The representatives of genus *Helius*, which are characterized by more or less elongated rostrum, and atrophy of cross-vein r-r (R_2), or by the characteristic morphology of hypopygium and elongated last segment of palpi of species of this genus are

easily recognizable among fossil Limoniidae and occur also in Dominican amber.

Among inclusions, we found the representatives of one known species, *H. collemus*, which is characterized by a small body compared to other species of the genus with general body coloration in light brown, rostrum 2.5x as long as remainder of head; with antenna slightly longer than rostrum, twice as long as palpus, wing shorter than body, without pigmented areas except stigma, long and narrow gonocoxite, both pairs of gonostyles long and narrow and with inner gonostylus with a slightly curved distal part. It is characterized also by short veins Rs and R_3 , the tip of R_3 nearly reaches the tip of R_1 , long vein r-m and vein Sc extending no farther than the base of Rs. Cross-vein m-cu in this species is positioned shortly before the fork of Mb (Podenas and Poinar, 2012). The new species *H. (H.) neali* n. sp. differ from *H. collemus* especially by wing venation and morphology of mouthpart. It is characterized by a comparatively short rostrum, only a little longer than head length. Antennae of this species are much longer than rostrum. Vein Rs is elongated in this species, vein Sc elongated ending opposite 3/4 vein Rs, cross-vein r-m is comparatively short, vein R_1 ending opposite half the length of R_3 , cross-vein m-cu is positioned in half of d-cell basal part. The *H. (H.) oosterbroeki* n. sp. is characterized by short vein Rs and vein R_3 , the tip of R_3 nearly reaches the tip of R_1 , Sc ending just before the base of Rs, like in *H. collemus*, and the position of cross-vein m-cu is similar (at the bifurcation of Mb) but male genitalia are different. Hypopygium is massive, gonocoxite wide, outer gonostylus is tiny and straight, elongated, inner gonostylus wide. This new species differs also from *H. collemus* by morphology of mouthpart. Rostrum in new species is elongated, as long as head but shorter than in *H. collemus* where rostrum is 2.5x as long as remainder of head. Antennae and palpi are much longer than rostrum in this new species.

CONCLUSION

Descriptions of a new taxa are important for understanding the evolutionary history of Limoniidae. Such data allow the verification and testing the further phylogenetic hypotheses, as well as evolutionary scenarios of this family of crane-flies. New palaeoentomological data are very important for further comparative morphological analyses. A better knowledge of fossil Limoniidae made possible to provide palaeohabitats reconstructions and

ecological interpretations of the past environments, in which these insects existed.

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