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Fossil Limoniidae (Diptera) from the Mesozoic – *Cretolimonia* and the oldest lineage of *Trichoneura*

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Abstract. *Cretolimonia dayana* Kopeć, **sp**. **nov**., *Cretolimonia lukashevichae* Kopeć & Krzemiński, **sp**. **nov**., *Cretolimonia pseudojurassica* Krzemiński, **sp**. **nov**., *Cretolimonia mikolajczyki* Kopeć, Krzemiński & Soszyńska, **sp**. **nov**., and *Trichoneura* (*Cretalinea*) *xavieri* Kania-Kłosok, Krzemiński, Kopeć & Arillo, **subgen**. **et sp**. **nov**., *Elephantomyia* (s. str.) *christelae* Kania-Kłosok & Krzemiński, **sp**. **nov**. and *Elephantomyia* (*Hoffeinsonia*) *prima* Kania-Kłosok & Krzemiński, **subgen**. **et sp**. **nov**. are re-published here to make them available according to the International Code of Zoological Nomenclature Art. 8.5.3.

INTRODUCTION

Kopeć *et al*. (2021), Kania-Kłosok *et al*. (2021) and Kania-Kłosok & Krzemiński (2021) described several new taxa of Limoniidae from Mesozoic deposits, including impression fossils from Transbaikalia and inclusions in Cretaceous amber. However, these works were published in electronic-only format without prior registration in ZooBank and therefore do not meet the requirements of the International Code of Zoological Nomenclature (ICZN), Article 8.5.3.

These works were registered *a posteriori*, but this does not change their nomenclatural status as unavailable works, in which names or nomenclatural acts cannot be established. To make the names proposed in these works available here, a concise, Code-compliant extract is provided.

SYSTEMATIC PALAEONTOLOGY

Order Diptera Linnaeus, 1758
Infraorder Tipulomorpha Rohdendorf, 1961
Family Limoniidae Speiser, 1909

Genus *Cretolimonia* Kalugina, 1986

Cretolimonia Kalugina, 1986: 115.Type species: *Cretolimonia popovi* Kalugina, 1986: figs. 87a, b: Gurvan-Ereny-Nuru (West Mongolia), Early Cretaceous, by original designation. Description based on a wing fragment.

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Cretolimonia dayana Kopeć, **sp**. **nov**.

lsid:zoobank.org:act:8DFEAC9D-1F4F-4BC4-B00A-94D2B851440C

Cretolimonia dayana Kopeć *in* Kopeć *et al*. 2021: 4; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Wing narrow, about 3.3 times longer than its width; venation differs in the proportions of individual veins from all species in this genus. Sc ends opposite fork of Rs, d cell long, narrow, expanded at distal part, no more than 1/9 of wing length; m-cell lies at 2/3 length of the base of the d-cell . Male: gonocoxites short, broad; outer gonostylus short, strongly sclerotized, significantly hooked at end; inner gonostylus delicate, lobed; aedeagus long, narrow, slightly curved; parameres shorter than penis, broad at base.

Etymology. The name refers to the site where this species was discovered.

Material examined. Holotype No. 3063/1208 (female) and additional specimens deposited in PIN, Moscow. Jurassic/Cretaceous boundary; Daya, Transbaikalia, Russia.

Remarks. See Kopeć *et al.* (2021) for a more full description.

Cretolimonia lukashevichae Kopeć & Krzemiński, **sp**. **nov**.

lsid:zoobank.org:act:80E1ADF2-56AC-497D-A9BC-6CF15D8D8A4E

Cretolimonia lukashevichae Kopeć & Krzemiński *in* Kopeć *et al*., 2021: 5; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Wing broad, 2.5 times as long as its width; Sc ends distinctly beyond fork of Rs; petiole more than half as long as M_1 and 1/4 as long as upper margin of d-cell; m-cu lies nearly at 2/3 length of lower part of d-cell.

Etymology. The species name is dedicated to Dr. Elena D. Lukashevich, in recognition of her work on fossil Diptera.

Material examined. Holotype No. 3795/637; PIN, Moscow. Jurassic/Cretaceous boundary; Shevia, Transbaikalia, Russia.

Remarks. See Kopeć *et al.* (2021) for a more full description.

Cretolimonia pseudojurassica Krzemiński, **sp**. **nov**.

lsid:zoobank.org:act:5669211B-3686-4453-AF2D-8DB129A91AF1

Cretolimonia pseudojurassica Krzemiński *in* Kopeć *et al*., 2021: 7; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Wing narrow, nearly 3.3 times as long as its width; vein Sc ends distinctly before fork of Rs; R_4 equal in length to R_{2+3+4}; M_1 slightly shorter than petiole and equal in length to upper margin of d-cell.

Etymology. The species name emphasizes the similarity to *Cretolimonia jurassica* Lukashevich, 2009.

Material examined. Holotype No. 3795/628; PIN, Moscow. Transbaikalia, Russia.

Remarks. See Kopeć *et al.* (2021) for a more full description.

Cretolimonia mikolajczyki Kopeć, Krzemiński & Soszyńska, **sp**. **nov**.

lsid:zoobank.org:act:B324181F-8A9A-4857-8F9B-F9E2C192DAD4

Cretolimonia mikolajczyki Kopeć, Krzemiński & Soszyńska-Maj *in* Kopeć *et al.*, 2021: 7; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Wing broad, about 2.3 times as long as its width; wing venation differs in proportions of individual veins from all species in this genus; vein Sc ends opposite the fork of Rs, d-cell trapezoidal and distinctly expanded at the tip, constituting 1/10 of wing length; petiole constitutes only about 1/3 of M_1; crossvein m-cu just before the fork M_{3+4} on M_3 and M_4; gonocoxites long, narrow, with numerous bristles, outer gonostylus long, narrow, strongly hooked at the tip; inner gonostylus delicate, lobed, elongated at the tip.

Etymology. The species dedicated to the memory of the great, well-known Polish dipterologist Dr. Waldemar Mikołajczyk.

Material examined. Holotype No. MP/4082 (male), ISEA PAS, Kraków. Earliest Cenomanian; Kachin amber, Myanmar.

Remarks. See Kopeć *et al.* (2021) for a more full description.

Genus *Trichoneura* Loew, 1850

Trichoneura Loew, 1850: 36. Type species: *Trichoneura vulgaris* Loew, 1850, Eocene, Baltic amber, by monotypy.

Subgenus *Cretalinea* Kania-Kłosok, Krzemiński, Kopeć & Arillo, **subgen**. **nov**.

lsid:zoobank.org:act:61B1E9B6-9447-4F92-B4A7-CB81A63AEB17

Cretalinea Kania-Kłosok, Krzemiński, Kopeć & Arillo, 2021: 3; unavailable name, violation of ICZN Art. 8.5.3.

Type species: *Trichoneura* (*Cretalinea*) *xavieri* Kania-Kłosok, Krzemiński, Kopeć & Arillo, **sp**. **nov**., by original designation and monotypy.

Diagnosis. The same as that of its only included species.

Etymology. The subgenus name is derived from "*creta*" (Latin) = Cretaceous and "*linea*" (Latin) = line. Gender feminine.

Remarks. See Kania-Kłosok *et al.* (2021) for a more full description.

Trichoneura (***Cretalinea***) ***xavieri*** Kania-Kłosok, Krzemiński, Kopeć & Arillo, **sp**. **nov**.

lsid:zoobank.org:act:CD3D2452-7CD5-4258-8ABD-539733D14085

Trichoneura (*Cretalinea*) *xavieri* Kania-Kłosok, Krzemiński, Kopeć & Arillo, 2021: 6; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Vein R_1 terminates in C, opposite approximately 0.8×length of R_{2+3+4}; R_{3+4} present, slightly shorter than R_2 (r-r); bifurcation of Mb before level of the tip of Sc; sc-r shorter than length of section of Sc between sc-r and tip of Sc; gonocoxite with huge, spoon-shaped lobe, which measures almost 0.5× the length of gonocoxite, lobe with relatively short, strong, sparsely distributed setae; outer gonostylus sclerotized, undivided, narrow, only slightly widened at apex, inner and outer gonostylus of comparable length, each constitutes less than 0.5× the length of gonocoxite; pronotal appendages absent.

Etymology. The specific epithet is dedicated to the eminent geologist and paleontologist Xavier Delclòs from the Universitat de Barcelona, Spain.

Material examined. Holotype No. MCNA 9735 (male), Peñacerrada, Álava, Spain, housed at the Museo de Ciencias Naturales de Álava, Vitoria, Spain.

Horizon and locality. The type specimen was found in amber from coal levels with abundant plant remains deposited in delta plain areas that correspond to the top of filling sequences of interdistributary bays. Amber is also found in filling deposits of abandoned fluvial channels or crevasse splay in the Utrillas Group (Barrón *et al.*, 2015), Lower Cretaceous, upper Albian. The outcrop of Peñacerrada I (Peñalver & Delclòs, 2010) is located in the Basque-Cantabrian Basin, municipality of Moraza (Province of Burgos, Castilla y León Autonomous Community, northern Spain) (after Kania-Kłosok *et al.,* 2021).

Remarks. See Kania-Kłosok & Krzemiński (2021) for a more full description.

Genus *Elephantomyia* Osten Sacken, 1860

Elephantomyia Osten Sacken, 1860: 220. Type species: *Limnobiorhynchus canadensis* Westwood 1835, *sensu* Osten Sacken 1860, by original designation (= *Elephantomyia westwoodi* Osten Sacken 1860; misidentification).

Subgenus *Elephantomyia* Osten Sacken, 1860

Elephantomyia (*Elephantomyia*) *christelae* Kania-Kłosok & Krzemiński **sp**. **nov**.

lsid:zoobank.org:act:75DB5A07-0F07-463E-8A67-540400B2DAE3

Elephantomyia (*Elephantomyia*) *christelae* Kania-Kłosok & Krzemiński, 2021: 3; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Antennae 14-segmented; rostrum shorter than wing, only slightly longer than 1/2 of wing, longer than abdomen; palpus longer than glossal lobes; R_{2+3+4} very elongate, 2.5× as long as Rs; d-cell short and wide, 1.5× as long as wide; m-cu just before half the length of d-cell; M_3 2× longer than d-cell; vein m-m very short, almost completely reduced; vein Rs relatively short, length of vein Rs only about twice the length of the basal deflection of R_5; Rs shorter than R_{2+3+4}.

Etymology. The new species is dedicated to Christel Hoffeins, Hamburg, Germany, the amber collection owner and expert of Baltic amber inclusions, who also donated this holotype to the collection of Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland.

Material examined. Holotype No. MP/4960 (former No. CCHH 874–2), male, coll. Ch. & H. W. Hoffeins.

Horizon and locality. Baltic amber – Middle Eocene.

Remarks. The specimen collection number was changed following the generous donation by Christel and Hans Werner Hoffeins to the collection of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland. See Kania-Kłosok & Krzemiński (2021) for a more full description.

Subgenus *Hoffeinsonia* Kania-Kłosok & Krzemiński, **subgen**. **nov**.

lsid:zoobank.org:act:43B5BC90-B7B4-415A-9DD2-BC9EE91D535E

Hoffeinsonia Kania-Kłosok & Krzemiński, 2021: 5; unavailable name, violation of ICZN Art. 8.5.3.

Type species*: Elephantomyia* (*Hoffeinsonia*) *prima* **sp**. **nov**., by original designation and monotypy.

Diagnosis. Wing at most 2.5× as long as wide without darker pattern along vein Sc and R_1; pterostigma oval; vein Sc elongate, tip of Sc beyond Mb bifurcation level, opposite crossvein m-cu; vein R_1 straight, basal half of vein R_{2+3+4} sharply arched to the upper edge of wing, veins R_{2+3+4} and R_1 running closer together than veins R_{2+3+4} and R_5; d-cell short, wide, trapezoidal; two well developed anal veins; gonostyles small, about 1/3 length of gonocoxite, gonocoxite elongate and rather narrow, longer than twice its width.

Etymology. The new subgenus is dedicated to Christel Hoffeins from Hamburg, Germany, the amber collector, owner and expert of Baltic amber inclusions.

Elephantomyia (***Hoffeinsonia***) ***prima*** Kania-Kłosok & Krzemiński, **sp**. **nov**.

lsid:zoobank.org:act:EAECF26F-B0E9-44EC-87ED-660DF085BBE1

Elephantomyia (*Hoffeinsonia*) *prima* Kania-Kłosok & Krzemiński, 2021: 6; unavailable name, violation of ICZN Art. 8.5.3.

Diagnosis. Antennae 15-segmented; rostrum shorter than wing, shorter than 1/2 of wing, shorter than abdomen; palpus shorter than glossal lobes; R_{2+3+4} 1.5× as long as Rs; d-cell approximately 1.5× as long as wide; m-cu in half the length of d-cell; M_3 1.5× as long as d-cell; vein m-m well developed; length of vein Rs only about 5× as long as the basal deflection of R_5; R_5 approximately as long as R_{2+3+4}.

Etymology. The specific epithet is derived from "*prima*" (Latin) = the first. Gender feminine. The name refers to the species being the first within this genus.

Material examined. Holotype No. MP/4959 (former No. CCHH 874–1), male, coll. Ch. & H. W. Hoffeins. Housed in the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland (ISEA PAS).

Horizon and locality. Baltic amber – Middle Eocene.

Remarks. The specimen collection number was changed following the generous donation by Christel and Hans Werner Hoffeins to the collection of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland. See Kania-Kłosok & Krzemiński (2021) for a more full description.

REFERENCES

Barrón E., **Peyrot D**., **Rodríguez-López**, **J**.**P**., **Meléndez**, **N**., **López del Valle**, **R**., **Najarro**, **M**., **Rosales**, **I**., **Comas-Rengifo**, **M**.**J**. 2015. Palynology of Aptian and upper Albian (Lower Cretaceous) amber-bearing outcrops of the southern margin of the Basque-Cantabrian Basin (northern Spain). *Cretaceous Research* **52**: 292–312.

Kalugina, **N**.**S**. 1986. True flies. Muscida (= Diptera). Infraorders Tipulomorpha and Culicomorpha. Insects in the Early Cretaceous ecosystems of the West Mongolia. *Transactions of the Joint Soviet-Mongolian Paleontological Expedition* **28**: 112–125. [In Russian.]

Kania-Kłosok, **I**. **& Krzemiński**, **W**. 2021. Recent discoveries of new *Elephantomyia* (Diptera, Limoniidae) fossils in Baltic amber. *Scientific Reports* **11**(23647): 13 pp. https://doi.org/10.1038/s41598-021-03022-3

Kania-Kłosok, **I**., **Krzemiński**, **W**., **Kopeć**, **K**. **Arillo**, **A**. 2021. The oldest evolutionary lineage of *Trichoneura* Loew, 1850 (Diptera, Limoniidae) and the first evidence of this genus in Cretaceous Spanish Amber. *Insects* **12**(411): 11 pp. https://doi.org/10.3390/insects12050411

Kopeć, **K**., **Soszyńska-Maj**, **A**., **Kania-Kłosok**, **I**., **Coram**, **R**., **Krzemiński**, **W**. 2021. Morphology of the oldest fossil subfamily of Limoniidae (Diptera, Architipulinae) in the light of exceptionally preserved Mesozoic material. *Scientific Reports* **11**(24137): 11 pp. https://doi.org/10.1038/s41598-021-03350-4

Loew, **H**. 1850. *Ueber den Bernstein und die Bernsteinfauna*, pp. 1–44. *In*: Loew, H., *Programm der Königlichen Realschule zu Meseritz womit zu der am 27. und 28. September 1850 stattfindenden öffentlichen Prüfung alle Gönner und Freunde der Anstalt insbesondere die Eltern und Angehörigen sämmtlicher Schuler ergebenst einladet der Director*. F.W. Lorenz, Meseritz [Międzyrzecz].

Lukashevich, **E**.**D**. 2009 Limoniidae (Diptera) in the Upper Jurassic of Shar Teg, Mongolia. *Zoosymposia* **3**: 131–154.

Osten Sacken, **C**.**R**. 1860. New genera and species of North American Tipulidae with short palpi, with an attempt at a new classification of the tribe. *Proceedings of the Academy of Natural Sciences, Philadelphia* **11**: 197–256.

Peñalver, **E**. **& Delclòs**, **X**. 2010 Spanish amber, pp. 236–270. *In*: Penney, D. (Ed.), *Biodiversity of fossils in amber from the major world depo*sits. Siri Scientific Press, Manchester, UK.