



Eocene Cixiidae (Hemiptera: Fulgoromorpha) of Europe

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Eonothem / Eon		Series / Epoch		Stage / Age	numerical age (Ma)
Era / System / Period					
Phanerozoic	Cenozoic	Paleogene	Miocene	Aquitanian	23.03
				Chatthian	28.1
			Oligocene	Rupelian	33.9
				Priabonian	37.8
				Bartonian	41.2
			Eocene	Lutetian	47.8
				Ypresian	56.0
				Thanetian	59.2
				Selandian	61.6
			Paleocene	Danian	66.0
Maastrichtian	66.0				
M	K	K2			

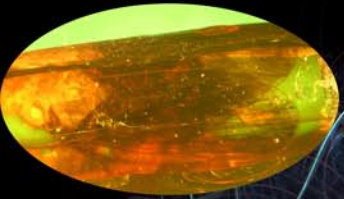


First notion of fossil Cixiidae from the Eocene, was given by Burmeister (1832), the first formal taxa descriptions comes from Germar & Berendt (1856). Few more genera and species were added by subsequent authors (Gebicki & Szwedo 2000, Szwedo 2002, 2004, 2007, Szwedo & Stroiński 2002, Szwedo et al. 2006).

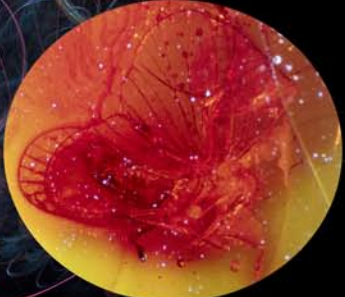
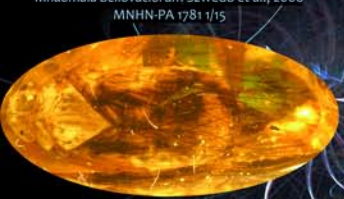
The earliest, terminal Palaeocene (56 Ma) record of the family is *Mnasthaia arverniorum* Szwedo, Bourgoin et Lefebvre, 2006 - from Menat, France, of the tribe Mnemosynini (Cixiinae). Undescribed Cixiidae (Mnemosynini and Pentastirini) were found among imprint of coeval Fur Formation of Jutland, Denmark.



Mnasthaia arverniorum Szwedo et al., 2006
Menat, MNHN-L.P.R. 6385



Mnaomaia bellowaciorum Szwedo et al., 2006
MNHN-PA 1781 1/15



Stalisyne lutetiorum Szwedo et al., 2006
MNHN-PA 2427

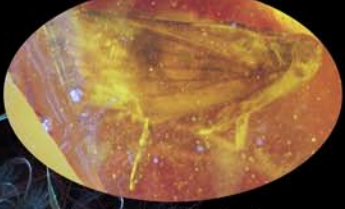
Three species are known from the Lowermost amber of Oise, France (53 Ma), all of them represent the tribe Mnemosynini (Szwedo et al. 2006).

The richest data come from the Baltic amber from Gulf of Gdańsk area. Unfortunately, the type material of Germar & Berendt is lost, and the placement of '*Cixius* *fraternus* Germar et Berendt, 1856', '*Cixius* *gracilis* Germar et Berendt, 1856', '*Cixius* *succineus* Germar et Berendt, 1856' remains doubtful. Some other taxa ascribed by them to this genus are now placed to other families - Achilidae and Tropiduchidae.

More species described after, represent the tribes Cixiini, Pentastirini and Mnemosynini. Single species of subfamily Bothriocerinae, recently limited to the tropical and subtropical zone of the new World was described so far, but more specimens were just identified. Some more specimens of Cixiinae were also found among inclusions of the Baltic amber from the deposits of Rovno, Ukraine and Bitterfeld, Germany. Baltic amber from these localities is aged 47-37 Ma.



Bothriobaltia pietreniukae Szwedo, 2002
PIHU MB.1, 1983



Kulickamia jantaris Gebicki et Szwedo, 2000
MZIE 6455



Autrimpus sambiorum Szwedo, 2004
MNHN P. 8834, Ln 11927

Subfam. Bothriocerinae

Bothriobaltia pietreniukae Szwedo, 2002

Subfam. Cixiinae

Tribe Cixiini

Balticixius insignis (Germar et Berendt, 1856)

Glisachaemus jonassdamzeni Szwedo, 2007

Kulickamia jantaris Gebicki et Szwedo, 2000

Tribe Mnemosynini

Autrimpus sambiorum Szwedo, 2004

Mnaomaia bellowaciorum Szwedo, Bourgoin et Lefebvre, 2006

Mnasthaia arverniorum Szwedo, Bourgoin et Lefebvre, 2006

Stalisyne lutetiorum Szwedo, Bourgoin et Lefebvre, 2006

Stalisyne veromanduorum Szwedo, Bourgoin et Lefebvre, 2006

Tribe Pentastirini

Perkunas sudoviorum (Szwedo et Stroiński, 2005)

Perkunas bruziorum (Szwedo et Stroiński, 2005)

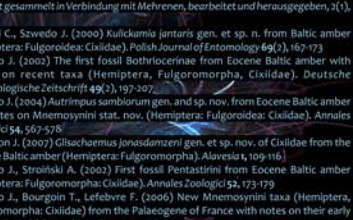
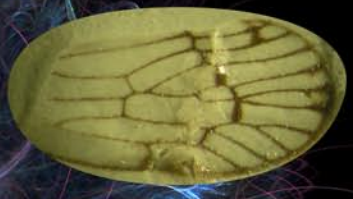
unplaced - doubtful

'Cixius' fraternus Germar et Berendt, 1856

'Cixius' gracilis Germar et Berendt, 1856

'Cixius' sieboldtii Germar et Berendt, 1856

The terminal Eocene deposits of Bembridge marls, Isle of Wight, UK, aged 34 Ma preserved several specimens of Cixiidae. The new taxa found there represent subfamily Bothriocerinae (the last record of them in the Old World), and Cixiinae: Mnemosynini, Pentastirini, Cixiini and first fossil record of Pentalini.



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