ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN
(MINISTERIE VAN WELZIJN, VOLKSGEZONDHEID EN CULTUUR)

Deel 59 no. 5 31 december 1984 ISSN 0024-0672

NOTES ON TYPE-SPECIMENS OF EPHEMEROPTERA (INSECTA), DESCRIBED BY HERMAN ALBARDA, WITH SPECIAL REFERENCE TO *AMETROPUS FRAGILIS* ALB.

by

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Mol, A. W. M.: Notes on type-specimens of Ephemeroptera (Insecta), described by Herman Albarda, with special reference to *Ametropus fragilis* Alb.

Zool. Med. Leiden 59 (5), 31-xii-1984: 55-59, figs. 1-2. — ISSN 0024-0672.

Key words: Ephemeroptera; *Raptobaetopus; Isonychia; Ametropus;* Europe; type designations.

Lectotypes are designated for *Isonychia ferruginea* Alb., 1878 and *Ametropus fragilis* Alb., 1878, whereas the holotype of *Centroptilum tenellum* Alb., 1878 is recognized. Specimens from Poland, that were regarded to belong to the Asian *Ametropus eatoni* Brod., 1930, appear to belong to *A. fragilis.*

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In 1878 Albarda described three new species of Ephemeroptera from The Netherlands, *Centroptilum tenellum, Isonychia ferruginea* and *Ametropus fragilis.* As no type-specimens were designated, lectotypes for *I. ferruginea* and *A. fragilis* are chosen here from the original series. *C. tenellum* has been described after a single specimen, which is the holotype therefore. All types are preserved in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands.

Centroptilum tenellum Albarda

Centroptilum tenellum Albarda, 1878: 128.

Holotype: ♂ imago, pinned, labelled: *Centroptilum tenellum* Albarda ♂, Gelderland Arnhem, ix.8 [= September 8], v.M.d.R. [= van Medenbach de Rooij] (Albarda's handwriting).

The specimen is heavily damaged. It was studied by Müller-Liebenau (1978), who was not certain whether the present specimen was the holotype indeed. Doubt mainly arose by the fact that the specimen was not labelled as a type (Dr. D. C. Geijskes, pers. comm.). As the species has been described after a single male, and the specimen in Albarda's collection is provided with the same data as mentioned in the original publication, there can be no doubt that this specimen is the holotype. The species was transferred from *Centroptilum* to the genus *Raptobaetopus* by Müller-Liebenau (1978).

Isonychia ferruginea Albarda

Isonychia ferruginea Albarda, 1878: 128.

Lectotype, here designated: ♂ imago, pinned, labelled: *Chirotonetes ignota* Walk., Gelderland Arnhem, vii.29 [= July 29], v.M.d.R. [= van Medenbach de Rooij] (Albarda's handwriting).

Six specimens are designated here as paralectotypes: ♂ imago, pinned, labelled: *Chirotonetes ignota* Walk., Holland, v. Walch.; ♀ imago, pinned, labelled; *Chirotonetes ignota* Walk., Gelderland Arnhem, viii.18, v.M.d.R.; ♂ subimago, pinned, labelled: *Chirotonetes ignota* Walk., Gelderland Arnhem, viii. 1, v.M.d.R.; ♂ subimago, pinned, labelled: *Chirotonetes ignota* Walk., Gelderland Oosterbeek [the name Vasserbeck in the original publication is a lapsus], vii.21, v.M.d.R.; ♂ subimago, pinned, labelled: *Chirotonetes ignota* Walk., Z. Holland Rotterdam, Fransen; ♀ subimago, pinned, labelled: *Chirotonetes ignota* Walk., Gelderland Arnhem, vii.19, v.M.d.R. (all labels in Albarda's handwriting).

Isonychia ferruginea is a junior synonym of *Isonychia ignota* (Walker, 1853). The synonymy was proposed by Eaton (1879) and adopted by Albarda. This is shown by the name *Chirotonetes ignota* on the labels of the type series and by the use of this name in a later publication (Albarda, 1889).

Ametropus fragilis Albarda

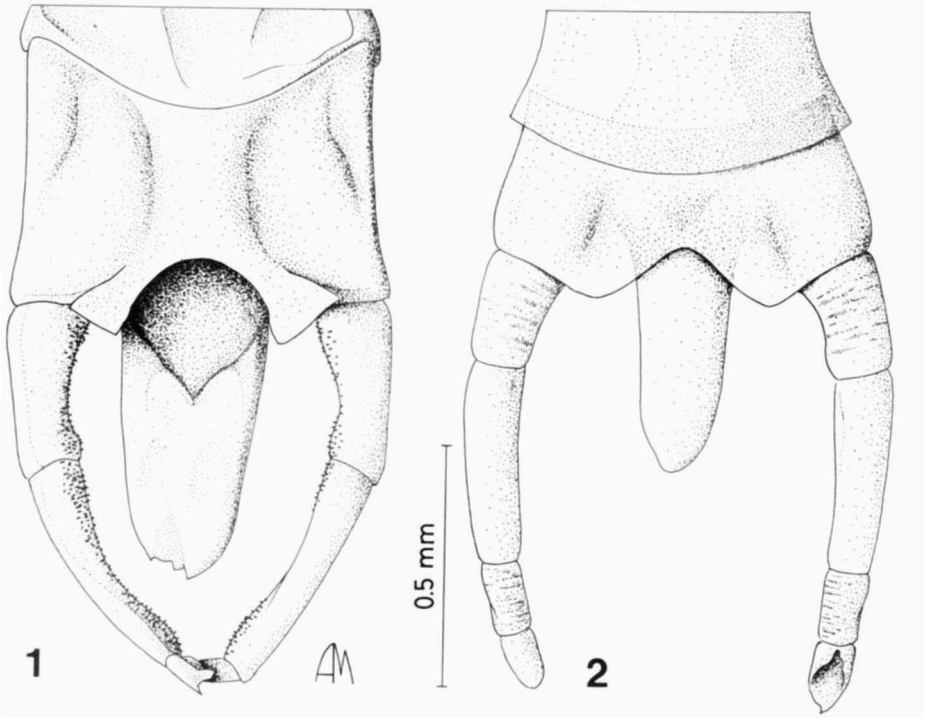
Ametropus fragilis Albarda, 1878: 129.

Lectotype, here designated: ♂ imago pinned, labelled: *Ametropus fragilis* Albarda ♂, Gelderland Arnhem, v.15 [= May 15], v.M.d.R. [= van Medenbach de Rooij] (Albarda's handwriting). The tip of the abdomen is kept in glycerine now. On the same pin a male subimaginal skin is present.

Three specimens are designated here as paralectotypes: ♀ imago, pinned, labelled: *Ametropus fragilis* Albarda ♀, Z. Holland Rotterdam, Frans.; ♀ subimago, pinned, labelled: *Ametropus fragilis* Albarda subim. ♀, Gelderland Arnhem, v.M.d.R.; ♀ subimago, pinned, labelled: Ametropus fragilis Albarda subim. ♀, Gelderland Arnhem, v.Med. d.R. (all labels in Albarda's handwriting). One further specimen of the species is present in Albarda's collection, bearing a label in Albarda's handwriting too. The specimen, a ♀ subimago, caught in Oosterbeek by Backer, is not mentioned in the original publication and therefore not included in the series of paralectotypes.

The lectotype is rather damaged. The fore and hind legs on the left side, both wings on the right side and the fila caudalia are missing. The left wings and parts of the genitalia are damaged (fig.1). The paralectotypes are less damaged, but none is complete.

Eaton (1883-88: pl. XXII fig. 38) gave a figure of the genitalia of *A. fragilis*. As only a single male specimen was known then, the figure must have been drawn after the lectotype. Eaton's figure shows a clear apical incision of the



Figs. 1-2. *Ametropus fragilis* Alb. Fig. 1. Lectotype, genitalia in ventral view, dry. Fig. 2. Subimaginal exuviae ♂ (on same pin as lectotype), genitalia in ventral view, dry (penis folded longitudinally, in reality wider than shown here).

penis. This feature was included into the definition of the genus *Ametropus* by Needham et al., (1935), whereas Brodskij (1930) separated *A. eatoni* from central Siberia as a different species, mainly because of its entire penis, without any incision.

After studying the genitalia of the lectotype of *Ametropus fragilis*, dry (fig. 1) and in glycerol after a treatment with lactic acid, the incision of the penis appeared to be articifial. The incision is asymmetrical, irregularly shaped and probably caused by some cabinet pest. The subimaginal skin, which is found on the same pin as the lectotype, shows a penis without any incision (fig. 2).

Apparently Eaton (1883-88) was not aware of the artificial character of the apical incision of the penis, which he took for the natural condition of *A. fragilis*. However, in an additional note he mentioned to have seen another male afterwards, without locality dates and differing from *A. fragilis* in some details. In this new specimen "the narrow linguiform penis is entire, not incised at the tip" (Eaton, 1883-88: 321).

In Europe, *Ametropus* was rediscovered in Poland by Keffermüller (1959). The specimens were described as *A. eatoni* Brod., mainly because of the entire penis (M. Keffermüller, in lit.).

Through the kindness of Mrs. Keffermüller, it was possible to examine a male *Ametropus* from Poland, together with the subimaginal exuviae. Comparing this specimen with the lectotype of *A. fragilis* revealed that both belong to the same species. There are no differences in size, shape and pigmentation. In the lectotype the sides of the penis are slightly tapering towards the apex, whereas in the Polish specimen the sides of the penis are more parallel. This minor difference, however, may be due to individual or geographical variation, or to a different way of preservation. There is no reason to believe that *A eatoni* does occur in Europe, as more recent notes on this species (Jażdżewska, 1973; Soldán, 1978) refer to the descriptions and figures by Keffermüller (1959).

Whether *A. eatoni* is a junior synonym of *A. fragilis*, as has been stated by Landa (1969), is uncertain. It has not been possible yet to study the types of *A. eatoni*. Apart from the presumed difference in the shape of the penis, Brodskij (1930) did mention other differences that may be of importance. But as Brodskij perhaps took a subimago for an imago (viz. Brodskij's fig. 4 and the present figs. 1 and 2) it is not possible to estimate the real value of these characters purely on literature accounts.

The author wishes to thank Mrs. M. Keffermüller, Poznan, Poland, for the loan of material, and Dr. D. C. Geijkses, Leiden, for his comments on the manuscript.

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