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Atrocalopteryx auco spec. nov. from Vietnam, with taxonomic notes on its congeners (Odonata: Calopterygidae)

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Abstract

Atrocalopteryx auco Hämäläinen, **spec. nov.** (holotype ♂, from Vietnam, Lang Son province, Huu Lien, Tan Lai, alt. 260 m, 9 June 2008, deposited at RMNH, Leiden, The Netherlands) is described and illustrated for both sexes and compared with other species in the genus. The new combination *Atrocalopteryx laosica* (Fraser, 1933), comb. nov. is made. An annotated list of *Atrocalopteryx* species and keys to both sexes are presented. Male of *A. auco* differs from the other two completely opaque-winged species (*A. atrata* and *A. atrocyana*) by having yellowish crossveins on the under surface of the wings and by having the underside of abdominal segments 8–10 strikingly yellowish. The female of *A. auco* can be easily separated from *A. atrata* and *A. atrocyana* by the presence of whitish pseudopteroostigma in both wings. Problems in the definition of the genus *Atrocalopteryx* are discussed.

Key words: Odonata, Calopterygidae, *Atrocalopteryx*, new species, new combination, key, Vietnam

Introduction

The genus *Atrocalopteryx* Dumont, Vanfleteren, De Jonckheere & Weekers, 2005, with *Calopteryx atrata* Selys, 1853 as its type species, was established on the basis of a molecular phylogeny of the family Calopterygidae. Dumont & al. (2005) showed that the genus *Calopteryx* Leach, 1815, as defined at that time, was not a monophyletic group, with *C. atrata* being recovered together with species of the genus *Matrona* Selys, 1853 rather than with the other *Calopteryx* species studied. The same conclusion had been earlier made by Misof & al. (2000).

Calopteryx atrocyana (Fraser, 1935) was transferred to *Atrocalopteryx* by Wilson & Xu (2007) and this combination was confirmed in molecular studies by Dumont & al. (2007). The latter authors also wrote: “The relationships within *Atrocalopteryx* are less straightforward, although clearly, ‘*Calopteryx coomani* [(Fraser, 1935)] is seen to belong in *Atrocalopteryx* or a closely related taxon...”. Later Guan & al. (2012a) concluded that, besides *coomani*, also *Calopteryx melli* Ris, 1912, belongs to the genus *Atrocalopteryx*. The authors also transferred *Calopteryx oberthueri* McLachlan, 1894, to *Atrocalopteryx*, but with some reservations (see p. 569). In the present paper *Calopteryx laosica* Fraser, 1933, is transferred to the genus *Atrocalopteryx*. Some problems in the definition of the genus are discussed.

In November 2013 Sébastien Delonglée (Hanoi, Vietnam) sent me photos of a calopterygid male specimen that he had collected a few days earlier at Huu Lien in Lang Son province in the northern part of Vietnam and asked me to identify the species. I could see that it was an *Atrocalopteryx* species, but it did not match any of the known species in this genus. To my surprise, I soon found four specimens, three males and one female, of the same species in my own collection. I had collected them at Huu Lien in June 2008, at a stream only five kilometres away from Sébastien Delonglée’s site, but had misidentified them and they had lain forgotten in my collection. Also some photographs had been taken before the damselflies were collected (Fig. 1). This new species is described here as *Atrocalopteryx auco*, and its distinguishing characters with the other species of the genus are discussed.

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