



Naturalis Repository

Taxonomic and nomenclatural notes on some Andes species (Hemiptera, Fulgoromorpha, Cixiidae) with two synonymies and one homonymy

MATTHÉ CORNELIS DE HAAS, MAXIME LE CESNE & THIERRY BOURGOIN

DOI

<https://doi.org/10.11646/zootaxa.5403.4.8>

Downloaded from

[Naturalis Repository](#)

Article 25fa Dutch Copyright Act (DCA) - End User Rights

This publication is distributed under the terms of Article 25fa of the Dutch Copyright Act (Auteurswet) with consent from the author. Dutch law entitles the maker of a short scientific work funded either wholly or partially by Dutch public funds to make that work publicly available following a reasonable period after the work was first published, provided that reference is made to the source of the first publication of the work.

This publication is distributed under the Naturalis Biodiversity Center 'Taverne implementation' programme. In this programme, research output of Naturalis researchers and collection managers that complies with the legal requirements of Article 25fa of the Dutch Copyright Act is distributed online and free of barriers in the Naturalis institutional repository. Research output is distributed six months after its first online publication in the original published version and with proper attribution to the source of the original publication.

You are permitted to download and use the publication for personal purposes. All rights remain with the author(s) and copyrights owner(s) of this work. Any use of the publication other than authorized under this license or copyright law is prohibited.

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the department of Collection Information know, stating your reasons. In case of a legitimate complaint, Collection Information will make the material inaccessible. Please contact us through email: collectie.informatie@naturalis.nl. We will contact you as soon as possible.



Taxonomic and nomenclatural notes on some *Andes* species (Hemiptera, Fulgoromorpha, Cixiidae) with two synonymies and one homonymy

MATTHÉ CORNELIS DE HAAS¹, MAXIME LE CESNE² & THIERRY BOURGOIN^{2,*}

¹ *Naturalis Biodiversity Center (RMNH), Darwinweg 2, 2333 CR Leiden, The Netherlands*

✉ marco.dehaas@naturalis.nl; <https://orcid.org/0000-0002-8604-0307>

² *Institut Systématique, Evolution, Biodiversité (ISYEB), MNHN-CNRS-Sorbonne Université-EPHE-Université des Antilles, Muséum National d'Histoire Naturelle, CP 50, 45 rue Buffon, 75005 Paris, France*

✉ le.cesne.maxime@gmail.com; <https://orcid.org/0000-0001-5933-7247>

✉ thierry.bourgoin@mnhn.fr; <https://orcid.org/0000-0001-9277-2478>

*Corresponding author: ✉ thierry.bourgoin@mnhn.fr

Abstract

Two African Cixiidae species names, *Andes goniodes* and *Andes synavei* proposed by Emeljanov in 2001 to correct two homonymies published by Synave in 1953, are synonymized respectively with *Andes muiri* and *Andes spinifer*, which were already proposed as replacement names by Synave in 1970. Additionally, the name *Andes synafenni* is proposed as new for the Vietnamese species *Andes truncatus* Fennah, 1978 preoccupied by the African species *Andes truncatus* Synave, 1953.

Key words: Taxonomy, Cixiidae, *Andes*, Synonymy, Homonymy

Introduction

In the planthopper family Cixiidae Spinola, 1839, the tribe Andini Emeljanov, 2002, groups only three genera: *Andicixius* Emeljanov & Hayashi, 2007 (10 species), *Parandes* Muir 1925, restricted to the type species until the recent description of two Chinese species (Wang *et al.* 2023) and the large genus *Andes* Stål, 1866 (122 species) (Bourgoin, 2023).

First advances in our understanding of *Andes* are due to Muir in 1925, describing 32 new species, synonymizing the genus *Leirioessa* Kirkaldy, 1907 with *Andes*, and transferring to the genus 14 species from other genera (Muir, 1925a). Since the 1950s, numerous new species have been described thanks to the work of various authors, and particularly Henri Synave who described several species in 1953, 1959, 1960, 1963 and 1967. For two of them, he used in his 1953 paper, names which were preoccupied by species described by Muir in his work of 1925. Synave corrected his mistake in 1970 in his list of type material from the collection of the Royal institute for natural sciences of Brussels (RBINS), although not mentioning explicitly that the name was replaced. Unfortunately, Emeljanov in 2001 missed Synave's publication of 1970 and proposed two new names for the species described by Synave (1953) to correct the preoccupation of the names by Muir (1925a). Emeljanov's names are therefore synonymized here with the replacement names proposed by Synave in 1970.

In 1978, Fennah also proposed a preoccupied name as he described *Andes truncatus* Fennah, 1978 from Vietnam, a name which was already used by Synave (1953) for *Andes truncatus* Synave, 1953, a species from the Democratic Republic of Congo. For Fennah's species we therefore propose a new name to correct the homonymy, together with some taxonomic remarks for the genus.

Abbreviations

BPBM—Bernice Pauahi Bishop Museum, Honolulu, Hawaii
MZPW—Museum and Institute of Zoology PAS, Warsaw, Poland
MRCA—Musée royal de l’Afrique central, Tervuren, Belgium

Taxonomy

Order Hemiptera Linnaeus, 1758

Suborder Fulgoromorpha Evans, 1946

Superfamily Delphacoidea Leach, 1815

Family Cixiidae Spinola, 1939

Subfamily Cixiinae Spinola, 1839

Tribe Andini Emeljanov, 2002 (cixiinian lineage *sec.* Luo *et al.*, 2021)

Genus *Andes* Stål, 1866

Type species. *Andes undulatus* Stål, 1870; by subsequent designation.

***Andes spinifer* Synave, 1970: 6 (fig. 1)**

Andes spinosus Synave, 1953 nom. preoc. nec *Andes spinosus* Muir, 1925

Andes synavei Emeljanov, 2001 **syn. nov.**

Type depository:

Andes spinosus Muir, 1925: BPBM

Andes spinosus Synave, 1953: MRCA

Distribution. Democratic Republic of Congo



FIGURE 1. *Andes spinifer* Synave, 1970, holotype. **A.** Right lateral view. **B.** specimen and labels on pin.

Andes muiri Synave, 1970: 33 (fig. 2)

Andes angulatus Synave, 1953 nom. preoc. nec *Andes angulatus* Muir, 1925

Andes goniodes Emeljanov, 2001 **syn. nov.**

Type depository:

Andes angulatus Muir, 1925: BPBM

Andes angulatus Synave, 1953: MRCA

Distribution. Democratic Republic of Congo

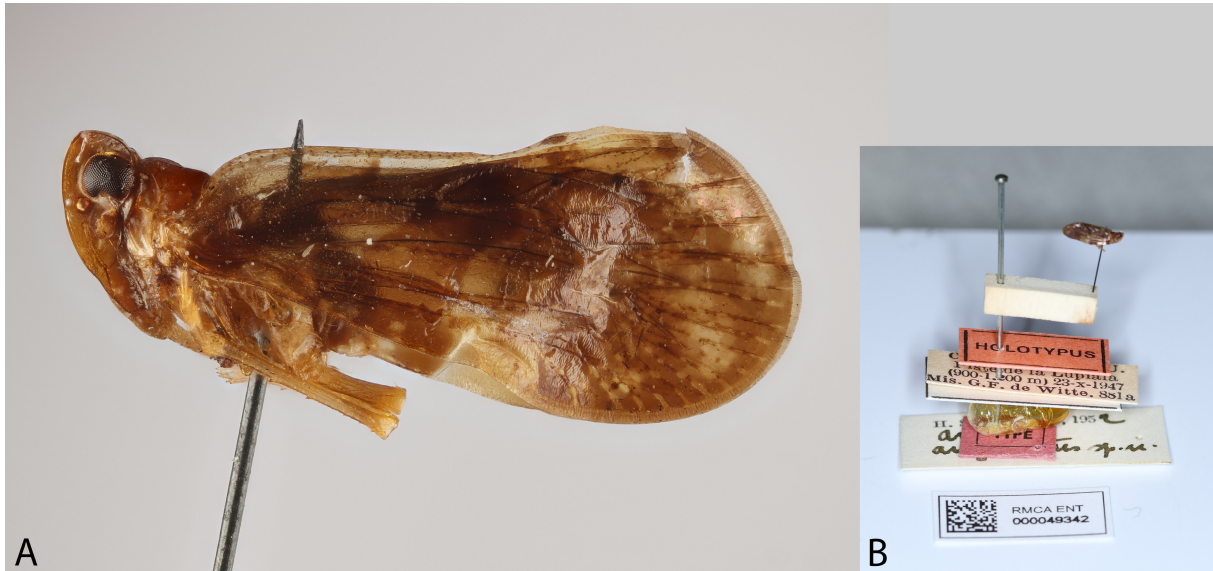


FIGURE 2. *Andes muiri* Synave, 1970, holotype. A. Left lateral view. B. Specimen and labels on pin.

Andes synafenni Le Cesne, De Haas & Bourgoïn, 2024 nom. nov.

pro *Andes truncatus* Fennah, 1978 (fig. 3), nec *Andes truncatus* Synave, 1953 (fig. 4)



FIGURE 3. *Andes synafenni* Le Cesne, De Haas & Bourgoïn 2024, holotype. A. Left lateral view. B. Right lateral view. C. dorsal view. D. labels and genital vial placed under the pin, photos by A. Stroński (MIZ).

Etymology. Contraction of the names of Synave and Fennah to honour the two hemipteran entomologists involved in this homonymy.



FIGURE 4. *Andes truncatus* Synave, 1953, holotype. **A.** Right lateral view. **B.** Specimen and labels on pin.

Type depository:

Andes truncatus Fennah, 1978: MZPW

Distribution. Vietnam, China (Guizhou, Zhejiang)

Discussion

Compared to the other two genera of Andini (*Andixius*: 10 species and *Parandes*: 8 species) only known from the Indo-Malayan and Oriental zoogeographic regions (as defined by Holt, 2013), *Andes* is by far the largest genus with 122 species to date and distributed throughout the Afrotropical, Oriental and Australasian regions with respectively 46, 65 and 11 species (Bourgoin, 2023). However, no species are found in more than one geographical area and the male genitalia patterns of African and Asian species exhibit noticeable differences, that would require comprehensive taxonomic re-evaluations of a group that undoubtedly presents paraphyletic characteristics (Löcker *et al.*, 2007).

Following the observations of Muir (1925a: 201), species within the genus *Andes* are characterized by their trifold branching pattern of ScP, R, and MP, without common stem. This particular trait was extended by Emeljanov & Hayashi (2007) to all Andini species, “except *Andixius* and some species of *Parandes* (sic)”, the latter genus still being restricted to the type species at the time. Although these authors also mentioned the occurrence of the common stem ScP+R in “some *Parandes* species (sic)”, curiously, they omitted the reference to the long ScP+R+MP common stem in their new genus *Andixius* (therefore with the basal cell bearing only two main veinal stems distally). This feature is clearly identified in *Andixius nupta* Emeljanov & Hayashi, 2007, and *Andixius venustus* (Tsaur & Hsu, 1991). It is however absent in the Chinese *Andixius* species diagnosed with “M near basal cell” (Zhi & Yang, 2018; Wang *et al.*, 2020, 2023).

The genera *Parandes* and *Andes* differ by their procoxae, straight in the former and regularly produced distally in the latter (Muir, 1925b), a generic character, recently confirmed by the discovery of two new species from China (Wang *et al.*, 2023). Accordingly, in all the *Parandes* species the distally trifold basal cell point of main longitudinal veins is observed without a common ScP+R stem, versus Emeljanov & Hayashi (2007). Löcker *et al.* (2007) mentioned however the possible occurrence in the genus *Andes* of a minute common ScP+R+MP stem due to variability of this character, sometimes even differently expressed in each tegmen of the same specimen and confirmed *Leirioessa* as a junior synonym of *Andes* as proposed by Muir (1925a).

Beyond of the scope of this paper, a careful revision of the Andini taxa is necessary. African and East Asian taxa are most likely non congeneric (Löcker *et al.*, 2007) and several groups should be separated within. For instance, the other Chinese *Andixius* species would probably need to be separated from the two *Andixius* species in Emeljanov & Hayashi, 2007 and placed in a new genus.

Acknowledgements

We thank Dr. Adam Stroiński (Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw) for having provided the photographs of the holotype of *Andes truncatus* Fennah, 1978 and Dr. Stéphane Hanot (Musée royal de l’Afrique central, Tervuren) for the access to the collection. BINCO (Biodiversity Inventory for Conservation) provided the camera setup which was used to take photos in the collection.

Bibliography

- Bourgoin, T. (2023) FLOW (Fulgoromorpha Lists on The Web): a world knowledge base dedicated to Fulgoromorpha. Version 8. Updated 10 December. <http://flow.hemiptera-databases.org/flow/> (accessed 5 January 2023)
- Emeljanov, A.F. (2001) Two new species of the genus *Monorachis* Uhler from Mexico and some new replacement names in Cixiidae (Homoptera: Cixiidae). *Zoosystematica Rossica*, 10, 67–70.
- Emeljanov, A.F. (2002) Contribution to classification and phylogeny of the family Cixiidae (Hemiptera, Fulgoromorpha). *Denisia*, 4, 103–112.
- Emeljanov, A.F. & Hayashi, M. (2007) New Cixiidae (Hemiptera, Auchenorrhyncha) from the Ryukyus, Japan. *Japanese Journal of Systematic Entomology*, 13 (1), 127–140.
- Evans, J.W. (1946) A natural classification of leaf-hoppers (Jassoidea, Homoptera) Part 1. External morphology and systematic position. *Transactions of the Royal Entomological Society of London*, 96 (3), 47–60.
<https://doi.org/10.1111/j.1365-2311.1946.tb00442.x>
- Fennah R.G. (1978) Fulgoroidea (Homoptera) from Vietnam. *Annales Zoologici*, 34 (9), 207–279.
- Holt, B.G., Lessard, J.P., Borregaard, M.K., Fritz, S.A., Araujo, M.B., Dimitrov, D., Fabre, P.H., Graham, C.H., Graves, G.R., Jonsson, K.A., Noguees-Bravo, D., Wang, Z.H., Whittaker, R.J., Fjeldsa, J. & Rahbek, C. (2013) An update of Wallace’s zoogeographic regions of the world. *Science*, 339 (6115), 74–78.
<https://doi.org/10.1126/science.1228282>
- Kirkaldy, G.W. (1907) Leafhoppers supplement. (Hemiptera). *Bulletin Hawaiian Sugar Planters’ Association Experiment Station Division of Entomology Honolulu*, 3, 1–186.
- Leach, W.E. (1815) Entomology. *The Edinburgh Encyclopedia*, 9, 57–172.
<https://doi.org/10.5962/bhl.title.30911>
- Linnaeus, C. (1758) *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata.* Laurentii Salvii, Holmiae, [4] + 824 pp.
<https://doi.org/10.5962/bhl.title.542>
- Löcker, B., Fletcher, M.J., Holzinger, W.E. & Gurr, G.M. (2007) Revision of the Australian Andini (Hemiptera: Fulgoromorpha: Cixiidae) with a description of five new species. *Zootaxa*, 1475 (1), 43–59.
<https://doi.org/10.11646/zootaxa.1475.1.4>
- Luo, Y., Bourgoin, T., Szewo, J. & Feng, J.N. (2021) Acrotiarini trib. nov., in the Cixiidae (Insecta, Hemiptera, Fulgoromorpha) from mid-Cretaceous amber of northern Myanmar, with new insights in the classification of the family. *Cretaceous Research*, 128 (104959), 1–17.
<https://doi.org/10.1016/j.cretres.2021.104959>
- Muir, F.A.G. (1925a) The genus *Andes* Stål (Cixiidae: Homoptera). *Philippine Journal of Science*, 27, 201–226.
- Muir, F.A.G. (1925b) *Parandes*, a new Cixiid genus (Homoptera, Fulgoroidea). *The Philippine Journal of Science*, 26, 511–513.
- Spinola, M. (1839) Essai sur les Fulgorelles, sous-tribu de la tribu des Cicadaïres, ordre des Rhyngotes. *Annales de la Société Entomologique de France, Paris*, 8, 133–337.
- Stål, C. (1866) Hemiptera Homoptera Latr. *Hemiptera Africana*, 4, 1–276.
- Synave, H. (1953) Cixiidae (Hemiptera, Homoptera). *Exploration du Parc National Upemba. Mission G. F. de Witte (1946–49)*, 23, 1–49.
- Synave, H. (1959) Cixiidae nouveaux du Congo Belge (Homoptera). *Revue de Zoologie et de Botanique Africaines, Ostend*, 59, 1–18.
- Synave, H. (1960) Cixiidae (Homoptera—Fulgoroidea). *Exploration du Parc National Garamba. Mission H. de Saeger (1949–1952)*, 18, 7–44.
- Synave, H. (1963) Fulgoroidea (Hemiptera Homoptera). *Exploration du Parc National Albert*, 2, 16, 3–35.

- Synave, H. (1967) Contribution à la faune du Congo (Brazzaville). Mission A. Villiers et A. Descarpentries. 47. Homoptères Cercopidae et Fulgoroidea. *Bulletin de l'Institut Fondamental d'Afrique Noire*, 29, 347–369.
- Tsaur, S.-C., Hsu, T.-C. & Van Stalle, J. (1991) Cixiidae of Taiwan Part 5. Cixiini except *Cixius*. *Journal of the National Taiwan Museum*, 44 (1), 1–78.
- Wang, X.-Y., Zhi, Y. & Chen, X.-S. (2020) Key to species of the genus *Andixius* Emeljanov & Hayashi (Hemiptera: Fulgoromorpha: Cixiidae) with descriptions of two new species. *Zootaxa*, 4802 (3), 440–448.
<https://doi.org/10.11646/zootaxa.4802.3.2>
- Wang, X.-Y., Zhi, Y., Yang, L., Long, J.-K., Chang, Z.-M. & Chen, X.-S. (2023) First record of the genus *Parandes* Muir, 1925 from China with descriptions of two new species (Hemiptera, Fulgoromorpha, Cixiidae). *European Journal of Taxonomy*, 888 (1), 111–123.
<https://doi.org/10.5852/ejt.2023.888.2233>
- Zhi, Y. & Yang, L. (2018) Two new species of the genus *Andixius* Emeljanov & Hayashi from China (Hemiptera, Fulgoromorpha, Cixiidae). *ZooKeys*, 739, 55–64.
<https://doi.org/10.3897/zookeys.739.13043>