

## Article

# On the genus *Harnischia* Kieffer, 1921 from France. Description of *H. curvistyla* sp. n. (Diptera, Chironomidae, Chironominae)

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## ABSTRACT

Male adult of *Harnischia curvistyla* sp. n. is described and diagnosed based on material recently collected in the nearby of the River Changeon (Central-West France). Other additional adults collected in Spain by F. Reiss and deposited in the museum of Munich as unnamed taxa could belong to *H. curvistyla* sp. n. (M. Spies pers. com.). A combination of some distinguishing characters found in the male adult (anal tergite band cup-shaped, not interrupted medially; anal point slender with truncate apex, median part without tuft of setae; distal part of gonocoxite with a distinct setulate rounded lobe; gonostylus atypically concave bearing a characteristic basal expansion), will easily separate the new species from other related congeners. With *H. curtilamelata* (Malloch, 1915) and *H. fuscimana* Kieffer, 1921, the new species is the third member of the *Harnischia* group to occur in Europe and France. Consequently, the description here of *H. curvistyla* sp. n. increases the total number in the genus to 9 valid species worldwide. Short comments on the taxonomic position of the new species are given.

Keywords: taxonomy, new species, conservation.

## Sur le genre *Harnischia* Kieffer, 1921 de France. Description d'*Harnischia curvistyla* sp. n. (Diptera, Chironomidae, Chironominae)

## RÉSUMÉ

L'adulte mâle de *Harnischia curvistyla* sp. n. est décrit et diagnostiqué à partir d'un matériel récemment collecté à proximité de la rivière Le Changeon (Centre-Ouest France). D'autres adultes collectés par F. Reiss en Espagne et déposés au muséum de Munich comme taxon non nommé pourraient appartenir à *H. curvistyla* sp. n. (M. Spies com. pers.). Une combinaison de certains caractères discriminants de l'adulte mâle (bande tergale anale en forme de coupe avec sa partie médiane non interrompue ; pointe anale gracile avec un apex tronqué, partie médiane dépourvue de soies ; partie distale du gonocoxite munie d'un lobe arrondi distinct ; gonostyle atypiquement concave muni d'une expansion basale caractéristique) permet de séparer la nouvelle espèce des autres congénères. La nouvelle espèce représente le troisième membre du groupe *Harnischia* connu d'Europe et de France, avec *H. curtilamelata* (Malloch, 1915) et *H. fuscimana* Kieffer, 1921. De même, la présente description d'*H. curvistyla* sp. n. porte à 9 le nombre total d'espèces valides mondialement connues de ce genre. De brèves remarques sur la position taxonomique de la nouvelle espèce sont fournies.

Mots-clés : taxonomie, nouvelle espèce, conservation.

## 1. Introduction

Based on knowledge and published papers on the taxonomy, geographical distribution and ecology of the genus *Harnischia* Kieffer, 1921 (MALLOCH 1915, KIEFFER 1921, EDWARDS 1929, TOWNES 1945, FREEMAN 1954, ALBU & BOTNARIUC 1966, BECK & BECK 1969, SÆTHER 1971, 1977, 1980, WANG et al. 1977, ALBU 1980, FREEMAN & CRANSTON 1980, PRAT 1980, HASHIMOTO et al. 1981, HASHIMOTO 1984, SASA & KIKUCHI 1986, CHAUDHURI & CHATTOPADHYAY 1990, SASA 1990, WANG et al. 1993, WANG & ZHENG 1993, DUTTA et al. 1996, SASA & OGATA 1999, WANG 1999, SÆTHER et al. 2000, CHAUDHURI et al. 2001, KAWAI et al. 2002, MAKARCHENKO et al. 2005, LANGTON & PINDER 2007, MOUBAYED-BREIL & ASHE 2012, 2016, SÆTHER & SPIES 2013, PAASIVIRTA 2014, MURRAY 2015, YAN et al. 2016, MOUBAYED-BREIL 2020), there are currently 8 known valid species recorded worldwide: *H. angularis* Albu & Botnariuc, 1966; *H. cultriata* Wang, 1999; *H. curtilamelata* (Malloch, 1915); *H. fuscimana* Kieffer, 1921; *H. japonica* Hashimoto, 1984; *H. longispuria* Wang, Zheng & Ji, 1993; *H. parallela* Yan & Wang, 2016 and *H. turgidula* Wang, Zheng & Ji, 1993.

At present, *Harnischia curvistyla* sp. n., increases the total number worldwide to 9 species and to 3 from Europe and France (with *H. curtilamelata* and *H. fuscimana*).

This genus is characterized by the variability of its hypopygium, which is bearing specific distinctive gonocoxite and gonostylus with a vestigial superior and inferior volsella. The new species resembles to *H. turgidula* by the shape of the gonostylus, which is concave and lobe like. In this paper, only the male adult of *H. curvistyla* sp. n. is diagnosed and described. Its pupal and larval stages are unknown.

## 2. Material and methods

The described male adult (HT) was captured exclusively by Malaise trap set near the River Changeon, Central-West of France. Sampling methods and other various technics of capture are detailed in MOUBAYED (2025). The examined material was preserved in 80-85% ethanol for the taxonomic examination and description. Information on the methodology of mounting and conservation of the type-material is provided in MOUBAYED (2024). Morphological terminology and measurements follow those of SÆTHER (1980) and LANGTON & PINDER (2007).

## 3. Description

### *Harnischia curvistyla* sp. n.

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#### Material examined

Holotype. France. One male adult captured by Malaise trap set in the nearby of the bordering aquatic habitats of the River Changeon (Central West France); municipality of Continvoir (37082); hamlet of La Brétinière (47.363375°N, 0.203111°E); typology composed mainly of clean lentic habitats; alt. 54 m; 24/05/2021. Leg. C. Cocquempot, 2021.

Holotype (mounted on one slide) is deposited in the collections of the 'Naturéum, Department of Zoology, Palais de Rumine, 6 place de la Riponne, CH-1014 Lausanne (MZL), Switzerland'; GBIFCH01224296.

Remark: additional material, composed of adults could belong to the same new species were collected from Spain by F. Reiss and deposited as unnamed taxa in the museum of Munich, Germany (M. Spies pers. com.).

	fe	ti	ta <sub>1</sub>	ta <sub>2</sub>	ta <sub>3</sub>	ta <sub>4</sub>	ta <sub>5</sub>	LR
PI	755	450	950	510	360	250	85	2,11
PII	790	895	445	285	135	125	85	0,50
PIII	815	825	630	215	275	155	95	0,76

Table I. *Harnischia curvistyla* sp. n., Leg ratio of the male adult ( $n = 1$ , holotype). "LR = Length of tarsomere  $ta_1$  divided by length of tibia ( $ti$ )".

Etymology: the name "*curvistyla*" of the new species belongs to the incurved to bracket-like shaped of the gonostylus.

### Male adult

( $n = 1$ , holotype, Photo 1; = *H.* sp. A in MOU-BAYED 2025)

### Diagnostic characters

*H. turgidula* (known from China) seems to be the nearest *Harnischia* species to *H. curvistyla* sp. n. as figured in YAN et al. (2016), except for the shape of the anal point. Despite some morphological affinities with other related members of the genus, the new described species is easily distinguished by the following differentiating characters: anal tergite band cup-like, not interrupted medially; anal point parallel-sided medially and distally, lacking median setae, apex truncate; distal part of gonocoxite with a characteristic prominent setulate lobe; gonostylus with a basal expansion, inner margin distinctly concave and turned over like a vertical bracket.

### Description

Small to medium sized species. Total length 4.65 mm. Wing length 2.00 mm, TL/WL = 2.30. General colouration brownish in general, with contrasting brown to dark brown thorax. Antenna brownish; mesonotal stripes dark brown; wing pale; legs brownish. Abdomen brown to dark brown; anal segment contrasting brown to dark brown.

Head. Frontal tubercles absent. Antenna 1165  $\mu\text{m}$  long, last flagellomere 655  $\mu\text{m}$  long, well clubbed; antennal; AR 1.30. Wing 1850  $\mu\text{m}$  long, .75  $\mu\text{m}$  wide, Brachiolum with 2 setae, squama with 6-7 setae. Fore leg with a long apical seta.

Length (in  $\mu\text{m}$ ) and proportions of legs ( $n = 1$ , holotype) as in the table I.

Abdomen. Hypopygium including apodemes in dorsal and ventral view as in Photo 1 for the holotype. Tergite IX broadly rectangular, posterior part slightly expanded and bearing about 12 stout setae (6 on each side of anal point). Anal tergite band (ATB) cup-shaped, median part not interrupted as figured in Photo 1A. Anal point 360  $\mu\text{m}$  long, distal part 135  $\mu\text{m}$  long; *fuscimana*-type, basal part capital "V" shaped, median and distal parts parallel-sided as in *H. fuscimana*; median area without tuft of stout setae; apex distinctly truncate, only visible in lateral view. Laterosternite IX with 6 setae (3 on each side). Gonocoxite 330  $\mu\text{m}$  long, 145-150  $\mu\text{m}$  maximum width; distal inner margin with a characteristic rounded setiferous lobe (Photo 1B), well projecting inwardly and bearing 13-15 setae. Gonostylus 225  $\mu\text{m}$  long, 75-80  $\mu\text{m}$  maximum width, vertical bracket-like (Photo 1C), strongly curved inwardly, linearly elongate, not tapering apically, basal part with a typical projecting expansion densely covered with setae. HR 1.47; HV 0.21.

### Ecology and distribution

*H. curvistyla* sp. n. belongs to a very rare species. Only one male adult was collected by Malaise trap placed in the nearby of bordering lentic habitats expending over the River Changeon, which is in need of protection and preservation. Typology of clean and pristine lentic habitats of the River Changeon is provided in Table I (MOU-BAYED 2025). At present, the new species is only known from central-west France where is considered as a biogeographic representative and pertinent biological indicator.

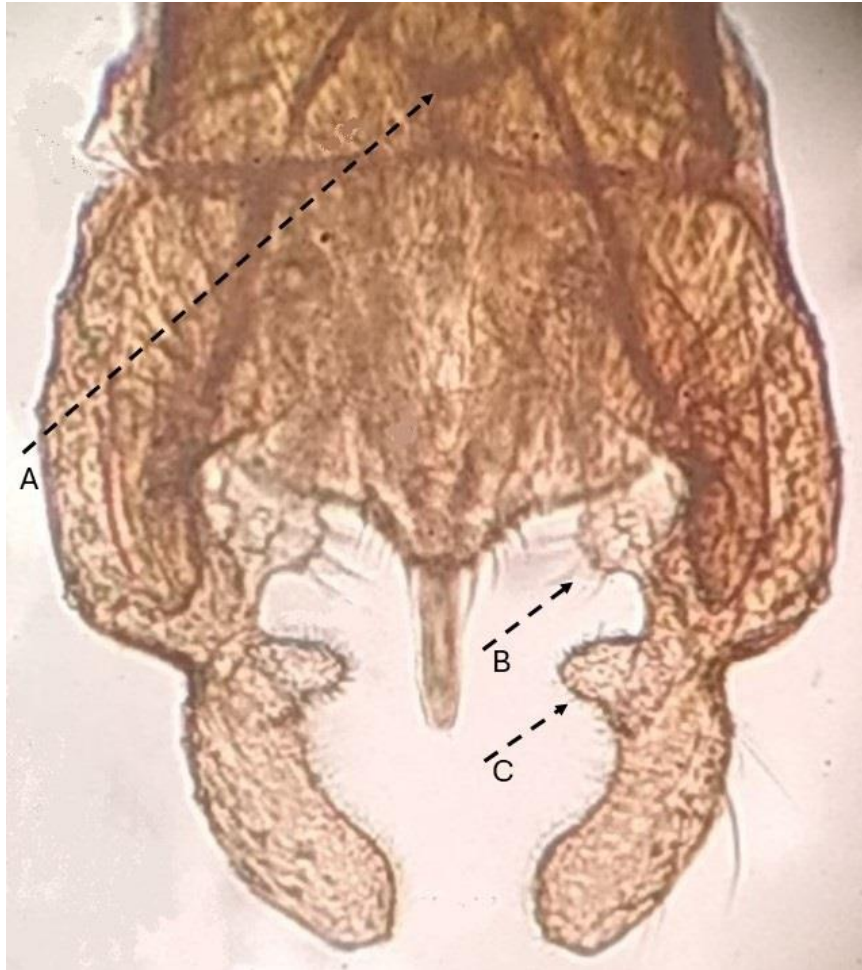


Photo 1. *Harnischia curvistyla* sp. n., male adult, hypopygium of the holotype in dorsal view. A, Anal tergite band; B, inner distal lobe of gonocoxite; C, basal expansion of gonostylus.

Photo 1. *Harnischia curvistyla* sp. n., mâle adulte, hypopyge de l'holotype en vue dorsale. A, bande tergale anale ; B, lobe distal du gonocoxite ; C, expansion basale du gonostyle.

Its occurrence as male adult collected in Spain by F. Reiss (M. Spies pers. com.) needs to be confirmed.

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