

Short scientific note

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Neobisium (*Neobisium*) *courtiali*, a new pseudoscorpion species from France (Arachnida: Pseudoscorpiones, Neobisiidae)

Giulio GARDINI

Via Monte Corno 12/1, 16166 Genova, Italy – giulioamedeogardini@gmail.com; <https://orcid.org/0000-0001-6366-2827>

Abstract

Neobisium (*Neobisium*) *courtiali* n. sp. is described from France (Department of Puy-de-Dôme) and compared with *Neobisium* (*Neobisium*) *pauperculum* Beier, 1959 from Spain (Cantabria and Asturias), with which it shares its small size and from which it differs above all in having partially granular pedipalpal femur and hand and slenderer pedipalps.

Key words: Taxonomy, new species, orophilic species, Auvergne-Rhône-Alpes, Puy-de-Dôme.

<http://zoobank.org/urn:lsid:zoobank.org:pub:3F3E2E65-8F2F-4CD4-A4C1-27B7A45A6F67>

Introduction

The genus *Neobisium* Chamberlin, 1930 includes 257 living epigean and hypogean species in the Turano-Euro-Mediterranean area, with two species known from Yemen (Socotra Island) and one species imported to India and Kenya (WPC 2023; Gardini 2023). At present, two subgenera of *Neobisium* are recognized as valid, in addition to the nominal subgenus: *Blothrus* Schiödte, 1847, with 96 subterranean, anophthalmic species, and *Neoccitanobisium* Callaini, 1981, with one epigean species (Gardini 2023).

The subgenus *Neobisium* currently comprises 160 living species, of which 120 are mainly epigean and with functional eyes, while the remaining 40 species are hypogean, with troglomorphic facies and reduced eyes, probably non-functional. The latter were previously attributed to the subgenus *Ommatoblothrus* Beier, 1956, which was recently synonymized with the nominotypical subgenus *Neobisium* Chamberlin, 1930 by Gardini (2023).

The chernetological fauna of France is quite well known and includes 31 species belonging to the subgenus *Neobisium* (WPC 2023): 25 of these are mostly known from epigean habitats while 6 are subterranean species, showing more or less evident troglomorphic characters (Beier 1963; Heurtaut 1986).

Thanks to the courtesy of Dr Cyril Courtial (Orcines, France), I had the opportunity to examine a small epigean specimen of *Neobisium* (*Neobisium*), collected in an alpine

meadow in the Massif Central (Central France, Auvergne-Rhône-Alpes), which I believe belongs to a new species, whose description is the subject of the present article.

Material and methods

The specimen was cleared by immersion in 70% lactic acid and then temporarily mounted, after dissection of palp, chelicera and leg IV, in cavity slides with the same medium. It was rinsed, after study, in distilled water and returned to a vial of 70% ethanol, together with the dissected portions in glass capillary tubes. The specimen was studied using an Olympus BHB compound microscope; drawings were made with the aid of a Nacet drawing tube. Terminology and reference points for measurements largely follow Chamberlin (1931), measurements are given in mm and proportions are given as length/breadth for carapace, chelicera and pedipalp and as length/depth for leg; the measurements of the chela are taken in ventral view. The relative position of trichobothria along chelal axis and the ratio between the diameter of the distal opening of the patella (X) and the length of the inner margin of the patella (Y) are calculated following Gabbutt & Vachon (1965). The use of the terms rallum, antiaxial and paraxial follows Judson (2007).

Acronym: MHNG (Muséum d'histoire naturelle, Geneva).

Taxonomy

Neobisium (Neobisium) courtiali n. sp.

Figs 1–8

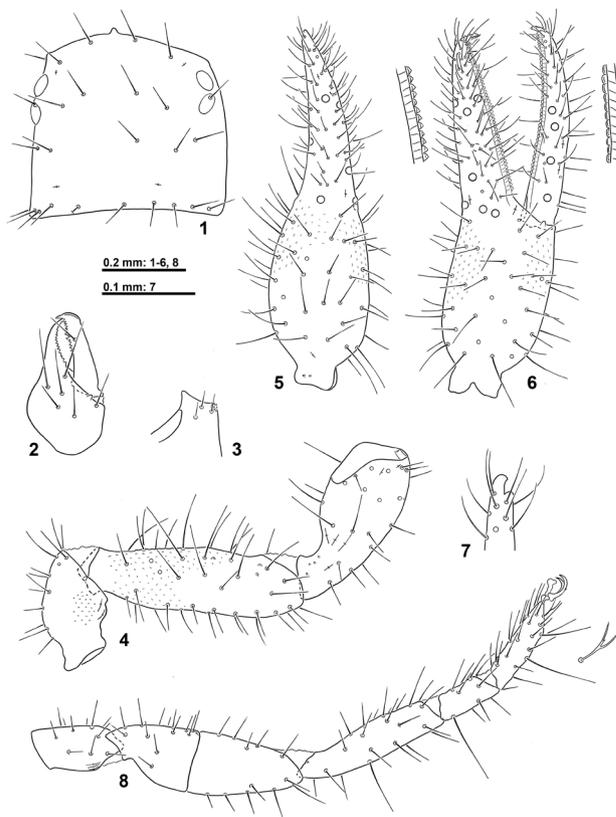
Type material. FRANCE: *Auvergne-Rhône-Alpes*: Holotype ♂, Puy-de-Dôme, commune de Chastreix, Puy de Chabane (45°31'54.77"N 2°47'56.62"E), 1687 m a.s.l., 15–28.X.2021, C. Courtial leg., Barber trap in alpine meadow (MHNG).

Diagnosis (♂). A small, epigeal *Neobisium (Neobisium)* from central France (Puy-de-Dôme) that differs from other species of the subgenus in the following combination of characters: posterior margin of carapace with 10 setae, both eyes with convex lens and tapetum; chaetotaxy of tergites I–IV: 9:11:14:14; cheliceral palm with 6 setae, rallum with 7 blades; pedipalpal femur weakly granular in the proximal half, 0.485 mm length (3.23 ×); patella smooth, short and globose, 0.405 mm length (2.31 ×), ratio X/Y = 0.97; chelal hand moderately granular in the distal half; fixed and movable chelal fingers regularly homodontate, with 45 and 41 contiguous teeth, respectively; movable chelal finger 0.46 mm length, ratio between movable finger and hand of chela with pedicel 1.09; trichobothrium *it* just proximal to *et*, trichobothrium *ist* almost halfway the fixed chelal finger; trichobothrium *st* very close to *t*; trichobothrium *sb* halfway between *b* and *st*.

Etimology. Species named after the collector Dr Cyril Courtial, arachnologist from Orcines, France.

Description of **adult** (♂, ♀ unknown). Chelicerae, pedipalps and palpal coxae red-brown, carapace and tergites brown; pedipalpal femur and hand partially granular, pedipalpal patella smooth, pleural membrane granular. Carapace (Fig. 1) 1.29 times as long as broad, with four eyes with tapetum; both anterior and posterior eyes with slightly convex lens (diameter 0.035 mm), distance from anterior eyes to anterior margin of carapace 0.035 mm, distance from anterior to posterior eyes 0.015 mm; anterior margin of carapace with triangular epistome, apically rounded; chaetotaxy 5:6:5:10(26). Chaetotaxy of tergites I–X: 9:11:14:14:14:14:15:11:10:9. Chaetotaxy of sternites II–X: 7:(2)11+10 along the genital opening(2):(2)10(2):15:17:16:17:13:12, lateral genital sacs tubular, median genital sac pyriform, reaching half sternite V. Chelicera (Fig. 2) 1.74 times as long as broad, palm with 6 setae; fixed finger with 13 subequal teeth, movable finger with 12 teeth, some of which are more prominent just distally *gs*; *gs* ratio 0.66; spinneret slightly prominent and broadly rounded; rallum with 7 blades, the distal one briefly serrate-pinnate and isolated on a prominence, the second one serrate, the successive ones smooth, the proximal one very short. . Coxal setae: pedipalp 8–9, I 8–9, II

8–9, III 6–7, IV 12–12; manducatory process with 4 setae; anterolateral process of coxa I squat, anteromedial process broadly rounded with evident denticles (Fig. 3). Pedipalp (Figs 4–7): trochanter 1.93 times as long as broad, dorsally indistinctly granular; femur 3.23 times as long as broad, weakly granular in the proximal half; patella smooth, 2.31 times as long as broad, ratio between club and pedicel 2.0, ratio X/Y = 0.97, pedicel dorsally with 4 glandular pores; chela with pedicel 3.57 times as long as broad; chelal hand moderately granular distally, 1.78 times as long as broad (with pedicel), with oval profile and its greatest width in the proximal third (dorsal view) (Fig. 5); fixed chelal finger homodontate (Fig. 6), with 45 contiguous teeth, a little pointed apically; nodus ramosus subterminal; movable chelal finger with 41 low, apically flattened contiguous teeth (Fig. 6), except the distal 10, which are longer; all teeth with dental canals; apex of movable chelal finger with deep antiaxial hollow (Fig. 7); sensillum closer to *st* than *sb*; trichobothria as in figs 5–6; relative position of trichobothria along chelal axis: *it* 0.32/*et* 0.31/*est* 0.37/*ist* 0.54/*isb* 0.68/*ib* 0.80/*esb* 0.84/*eb* 0.89/*t* 0.415/*st* 0.50/*sb*



Figs 1–8 – *Neobisium (N.) courtiali* n. sp., ♂ holotype: 1, carapace, dorsal view (slightly inclined to the left); 2, right chelicera, dorsal view; 3, anterior processes of right coxa I; 4, trochanter, femur and patella of right pedipalp, dorsal view; 5, right pedipalpal chela, dorsal view; 6, same, antiaxial view, with magnified detail of teeth; 7, apex of movable chelal finger, ventral view; 8, right leg IV, antiaxial view, with magnified detail of subterminal seta of telotarsus.

0.66/*b* 0.84; trichobothrium *it* just proximal to *et*, trichobothrium *ist* almost halfway the fixed chelal finger; trichobothrium *st* very close to *t*, trichobothrium *sb* halfway between *b* and *st*; ratio between movable finger and hand of chela with pedicel 1.09; ratio between pedipalpal femur and movable finger 1.05; ratio between pedipalpal femur and carapace 1.01. Leg IV (Fig. 8): trochanter 2.00 times as long as deep, femur + patella 3.13 times as long as deep, tibia 4.11 times (TS = 0.46), basitarsus 2.66 times (TS = 0.18), telotarsus 3.83 times as long as deep (TS = 0.41), ratio between basitarsus and telotarsus 0.69, subterminal seta furcate, claws with a very small dorsal tooth.

Measurements (mm). Body length 1.87. Carapace 0.48 × 0.37 anteriorly. Chelicera 0.305 × 0.175; movable finger length 0.205. Pedipalp: trochanter 0.280 × 0.145; femur 0.485 × 0.15; patella 0.405 × 0.175; chela with pedicel 0.840 × 0.235 (depth 0.235); hand with pedicel length 0.420; movable finger length 0.460. Leg IV: trochanter 0.22 × 0.11; femur + patella 0.47 × 0.15; tibia 0.37 × 0.09; basitarsus 0.16 × 0.06; telotarsus 0.23 × 0.06.

Remarks. *Neobisium* (*N.*) *courtiali* n. sp. can be placed among the epigeal species of *Neobisium* from Western Europe (Portugal, Spain, France and Italy) which show the following combination of characters: small body and stubby pedipalps; posterior margin of carapace with about 10 setae; carapace and pedipalpal femur approximately of the same length; notch on the median side of pedipalpal patella reaching to middle of the club length; fixed chelal finger with trichobothrium *ist* halfway between *ib* and *it*, just proximal to the middle of the finger.

These characters are present in *Neobisium* (*N.*) *bernardi franzi* Beier, 1955 from Portugal and Spain, *N.* (*N.*) *geronense* Beier, 1939 from Spain and France, *N.* (*N.*) *pauperculum* Beier, 1959 from Spain and *N.* (*N.*) *ruffoi* Beier, 1958 from Italy (Beier 1963; Mahnert 1985; Zaragoza 2007; Zaragoza et al. 2007). The most evident character that distinguishes *Neobisium* (*N.*) *courtiali* n. sp. from these species is the presence of graininess on the pedipalpal femur and hand, which is smooth in all the above species (Beier 1963). It also differs from *N.* (*N.*) *bernardi franzi*, *N.* (*N.*) *geronense* and *N.* (*N.*) *ruffoi* in having significantly smaller sizes.

Neobisium (*N.*) *courtiali* n. sp. is very similar to *N.* (*N.*) *pauperculum*, described upon a male (“Type”) from Unquera (Cantabria, Spain) and two females (“Paratypen”) from Nueva and La Moria, both near Llanes (Asturias, Spain). *Neobisium* (*N.*) *courtiali* n. sp. shares with *N.* (*N.*) *pauperculum* [whose description and morphometric data were mostly based on the specimen which I believe to be the male holotype and whose left palp was drawn by Beier (1959: 118, fig. 1)] its small size, but differs from the latter in having pedipalpal femur and hand partially granular and more slender pedipalps [the pedipalpal ratios of *N.* *pauperculum* were recalculated based on the enlargement of the fig. 1 from Beier (1959)]: pedipalpal femur 3.23 times as

long as broad in *N.* (*N.*) *courtiali* n. sp., 2.72 × in *N.* (*N.*) *pauperculum*; patella 2.31 times as long as broad in *N.* (*N.*) *courtiali* n. sp., 1.86 × in *N.* (*N.*) *pauperculum*; hand with pedicel 1.78 times as long as broad in *N.* (*N.*) *courtiali* n. sp., 1.45 × in *N.* (*N.*) *pauperculum*; chela with pedicel 3.57 times as long as broad in *N.* (*N.*) *courtiali* n. sp., 2.85 × in *N.* (*N.*) *pauperculum*. Furthermore, the hand of the palps in dorsal view is oval in *N.* (*N.*) *courtiali* n. sp., subglobose in *N.* (*N.*) *pauperculum*; the trichobothrium *isb* is halfway between *ib* and *ist* in *N.* (*N.*) *courtiali* n. sp., while *isb* is almost at the level of *ib* in *N.* (*N.*) *pauperculum*; trichobothria *est-et-it* are closer to each other in *N.* (*N.*) *courtiali* n. sp., further apart in *N.* (*N.*) *pauperculum* (Figs 5–6 and Beier 1959: 118, fig. 1).

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