

Discovery of the genus *Molleriella* Sæther & Ekrem, 1999 in continental France [Diptera, Chironomidae]

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The genus *Molleriella* Sæther & Ekrem, 1999 and its type-species *M. calcarella* (Diptera, Chironomidae, Orthocladiinae) are recorded for the first time from continental France. The new record is based on a single male specimen collected from the upper Guiel River Basin in north-western France (Haute-Normandie). The species was previously only known from several localities in the Netherlands.

Découverte du genre *Molleriella* Sæther & Ekrem, 1999 en France continentale [Diptera, Chironomidae]

Mots-clés: *Molleriella calcarella*, nouvelle citation, Diptera, Chironomidae, continental France, conservation.

Le genre *Molleriella* Sæther & Ekrem, 1999 et son espèce-type *M. calcarella* appartiennent à la sous-famille des Orthocladiinae. Ils n'étaient connus jusqu'à présent, en Europe, que de quatre localités situées dans les Pays-Bas. De récentes investigations menées en France continentale nous ont permis d'établir une liste de 792 espèces appartenant à 5 sous-familles de Chironomidae (MOUBAYED-BREIL & ASHE 2016). Dans le présent travail, le genre *Molleriella* et l'espèce *calcarella* sont cités pour la première fois de France continentale et seulement pour la seconde fois en Europe. Un seul adulte mâle de *M. calcarella* a été récolté dans le cours supérieur de la rivière Guiel (affluent de la Charentonne) au niveau du village de Verneusse en Haute-Normandie (NW-France, zone 1a d'après MOUBAYED-BREIL & ASHE 2016). La localité où l'espèce a été prélevée couvre des séquences de radiers et de chutes de petite taille qui sont délimitées par un rithral modérément ombragé et bien préservé dont la qualité biologique et écologique mérite d'être soulignée et considérée du point de vue patrimonial.

Introduction

The genus *Molleriella* Sæther & Ekrem, 1999 is represented worldwide by only two species: *M. calcarella* (from the western Palaearctic) and *M. kaputu* Andersen, 2014 (from the Afrotropi-

cal Region). The first species was described from the Netherlands by SÆTHER & EKREM (1999). The second species was described from Tanzania (Eastern Africa) by ANDERSEN (2014).

Based on recent investigations conducted between 2010 and 2015, a large amount of material, including adults, pharate adults and pupal exuviae, has allowed us to generate a list of 792 species of Chironomidae from continental France (MOUBAYED-BREIL & ASHE 2016). This list includes 740 valid species, 62 new records (including *M. calcarella*) and 52 undescribed/unnamed species. The new record of *M. calcarella* is based on a single male adult from the Guiel River Basin which is located in north-western France, zone 1 (after MOUBAYED-BREIL & ASHE 2016). Both the genus *Mollerella* and the species *M. calcarella* are reported from continental France for the first time which represents a considerable extension in its known geographical range. In Europe *M. calcarella* was previously only known from four localities in the Netherlands (MOLLER PILLOT 2013).

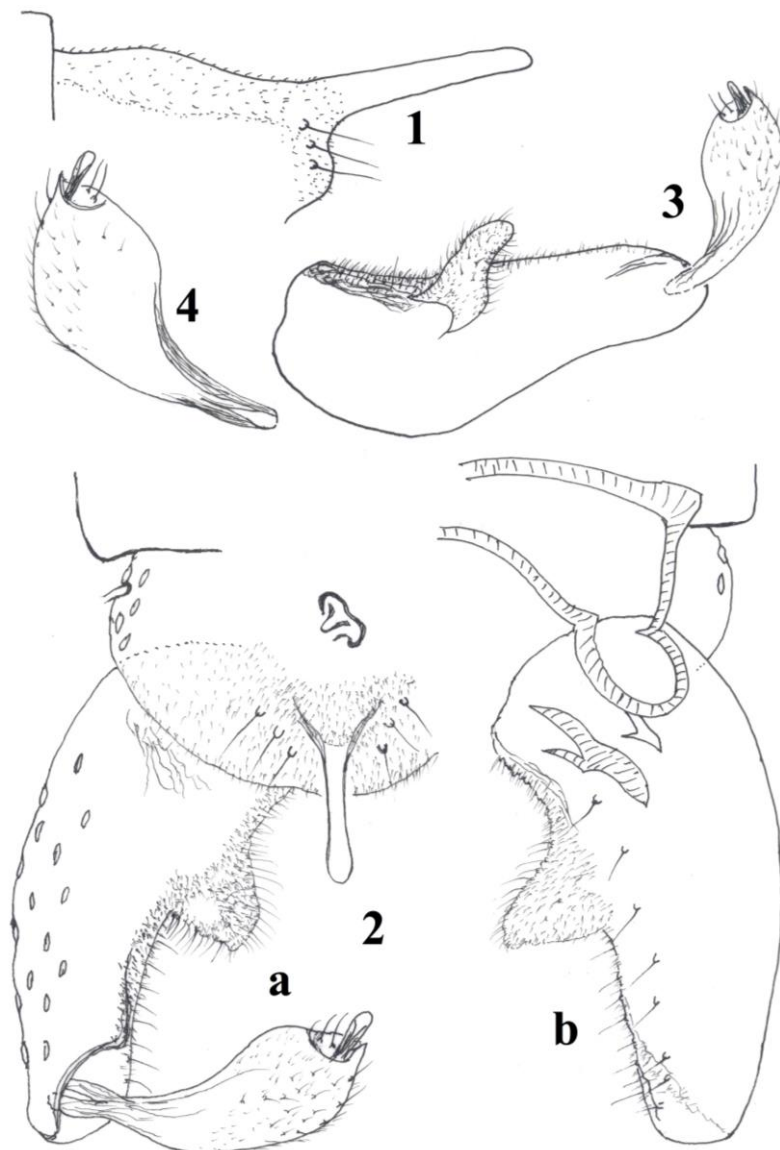
Material examined

France. Haute-Normandie, Guiel stream, at Verneusse village (altitude 180 m), a tributary of the Charentonne River, NW-France, subregion 1 (= zone 1a) as given in MOUBAYED-BREIL & ASHE 2016, 6.08.2004; 1 male adult, leg. J. Moubayed-Breil, collected using a Surber sampler, and mounted on 1 slide which is deposited in the collection of the senior author.

Male Adult

Some features found on the hypopygium (Fig. 1) of *M. calcarella* from north-western France supplement data published in SÆTHER & EKREM (1999):

- tergite IX rounded in the French specimen while it is rectangular in the Dutch specimen illustrated in SÆTHER & EKREM (1999);
- laterosternites: each with a few setae (SÆTHER & EKREM 1999) or each with 6 setae (French specimen);
- anal point 45 µm long with spatulate apex;
- in the French specimen the virga is 20 µm long and has a maximum width of 9 µm, and consists of two parts: a skewed 3-shaped feature and a V-shaped median component resembles that of *M. kaputu*. In *M. kaputu* the 3-shaped feature is horizontal and the V-shaped feature is broader. In the Dutch specimen of *M. calcarella*, SÆTHER & EKREM (1999) state that the virga is present (14 µm long, 12 µm wide) and it appears to be indicated on their figure as a weak V-shaped structure near the base of the inner side of the gonocoxite (in the ventral view of the hypopygium on the right-hand side of Fig. 7) but there is no 3-shaped component shown in their figure;
- phallapodeme somewhat different to that illustrated in the Dutch specimen;
- gonocoxite 130 µm long, base distinctly wrinkled on dorsal side. Inferior volsella: dorsally, with a bare circular area lacking setae; ventrally, densely covered with setae;
- gonostylus 70 µm long, maximum width 36 µm.



Figures 1-4. Male adult of *Mollerietta calcarella*. Anal point, lateral view (1); Hypopygium, dorsal (2a) and ventral (2b) view; gonocoxite and gonostylus, lateral view (3); right gonostylus, dorsal view (4).

Figures 1-4. Adulte mâle de *Mollerietta calcarella*. Pointe anale, vue latérale (1); Hypopygium, vue dorsale (2a) et ventrale (2b); gonocoxite et gonostylus, vue latérale (3); gonostylus droit, vue dorsale (4).

Ecology and distribution

The male and female adults of *M. calcarella* were collected from the type-locality at Bergen op Zoom, the Netherlands, in mini-traps, in woodland on the banks of a small lake about 1 metre

from water (SÆTHER & EKREM 1999). MOLLER PILLOT (2013: 145-146) states that the larvae appear to live semi-terrestrially in wet woodland, a rarely investigated biotope, and in the Netherlands *M. calcarella* has been found at four localities scattered across the country. At two of the Dutch localities the type of woodland is described as birch and alder scrub (SÆTHER & EKREM 1999). The information above indicates that the larvae of *M. calcarella* may live in wet woodland soils with a high water content such as alder carr - such soils are waterlogged in the autumn to spring period but are somewhat drier in the summer months. The adults of *M. kaputu* were collected in Malaise traps located close to or even spanning the Kaputu stream and SÆTHER & EKREM (op. cit) state that the species habitat could be mosses or wet soils along the margin of the stream.

The new record from France is only the second European country from which *M. calcarella* has been reported. The locality where the material was sampled consists of lotic habitats delimited by a moderately shaded rhithral, which deserve greater consideration and preservation. Species encountered in the same locality as *M. calcarella* include: *Bryophaenocladus flexidens* (Brundin, 1947), *B. furcatus* (Kieffer, 1916), *B. nidorum* (Edwards, 1929); *Chaetocladus melaleucus* (Meigen, 1818); *Epoicocladus ephemerae* (Kieffer, 1924); *Eurycnemus crassipes* (Meigen, 1810); *Heleniella ornaticollis* (Edwards, 1929); *Krenosmittia camptophleps* (Edwards, 1929); *Metriocnemus eurynotus* (Holmgren, 1883); *Parakiefferiella normandiana* Moubayed-Breil & Langton, 2008; *Pseudosmittia angusta* (Edwards, 1929), *P. obtusa* Strenzke, 1960, *P. trilobata* (Edwards, 1929); *Smittia betuletorum* Edwards, 1941 and *S. foliosa* (Kieffer, 1921).

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