



Note on *Chamaepsila longipennis* (Séguy, 1936): a new rust fly (Diptera: Psilidae) for France, with first illustrations of male genitalia and a key to closely related species

Note sur *Chamaepsila longipennis* (Séguy, 1936) : nouveau Psilidé (Diptera : Psilidae) pour la France, avec les premières illustrations des terminalia du mâle et clé d'identification des espèces proches

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Extended abstract – *Chamaepsila longipennis* (Séguy, 1936) (Diptera: Psilidae) is recorded from France for the first time, in the Py National Nature Reserve, Pyrénées-Orientales, Occitanie. This discovery adds to our knowledge of the French Psilidae fauna, whose larval ecology and host-plant associations remain poorly documented, particularly among montane species. The first male was observed on the 08.IX.2025 at an altitude of 1,121 m during surveys undertaken as part of a myrmecological inventory. Including the first male, a total of 31 specimens were recorded (18 males and 13 females). Most observations were made in relatively young, open deciduous forest habitats. Eight specimens were collected and transferred to the authors' personal collections, while the remaining individuals were released on site. The specimens exhibit the morphological characteristics described by Séguy (1936) and are consistent with subsequent observations made in Spain. The species is readily recognisable by the black line visible in lateral view, extending from the head to the tip of the abdomen. It also possesses two pairs of scutellar setae, a feature shared, among Western European species of the genus, with *C. obscuritarsis* (Loew, 1856). The anterior scutellar setae are half as long as the posterior ones, and the wings are not infuscate along the veins. The male terminalia of *C. longipennis* are illustrated for the first time in ventral and lateral views, based on dissected specimens. They are distinguished by their small size, approximately 0.16 mm in height, and their distinctive structure, including a rudimentary Y-shaped phallapodeme and a highly membranous phallus. An updated identification key to the European *C. obscuritarsis* group is provided in French and in English. These observations are consistent with the species' known late flight period, from September to October. This first record brings the French checklist of Psilidae to 43 species, including 22 species of *Chamaepsila*.

Key words – first record, identification key, male terminalia, Psilini, Py, Pyrenees, rust fly, *Tetrapsila*.

Résumé étendu – *Chamaepsila longipennis* (Séguy, 1936) (Diptera : Psilidae) est signalée pour la première fois en France, dans la Réserve naturelle nationale de Py, située dans les Pyrénées-Orientales, Occitanie. Cette découverte complète les connaissances sur la faune française des Psilidae, dont l'écologie larvaire et les associations avec les plantes hôtes restent peu documentées, notamment chez les espèces montagnardes. Le premier mâle a été observé le 08.IX.2025, à une altitude de 1 121 m, lors de prospections réalisées dans le cadre d'un inventaire myrmécologique. Au total, en incluant le premier mâle, 31 spécimens ont été observés, soit 18 mâles et 13 femelles. Les observations ont principalement été réalisées dans des habitats forestiers feuillus jeunes et ouverts. Huit spécimens ont été conservés dans les collections personnelles des auteurs. Tous ces spécimens présentent les caractères morphologiques décrits par Séguy (1936) et concordent avec les observations ultérieures réalisées en Espagne. L'espèce se reconnaît notamment à la ligne noire visible de profil, qui s'étend de la tête à l'extrémité de l'abdomen. Elle possède également deux paires de soies scutellaires, caractère qu'elle partage, parmi les espèces ouest-européennes du genre, avec *C. obscuritarsis* (Loew, 1856). Les soies scutellaires antérieures sont deux fois moins longues que les postérieures, et les ailes ne sont pas enfumées le long des nervures. Les terminalia de *C. longipennis* sont illustrés pour la première fois, en vues ventrale et latérale, à partir de spécimens disséqués. Ils se distinguent par leur petite taille, de l'ordre de 0,16 mm de hauteur, et par leur structure particulière, comprenant notamment un phallopodème rudimentaire en forme de Y et un phallus très membraneux. Une clé d'identification actualisée du groupe européen de *C. obscuritarsis* est proposée en français et en anglais. Les observations françaises concordent avec la période de vol tardive connue de l'espèce, de septembre à octobre. Cette première mention porte la liste française des Psilidae à 43 espèces, dont 22 appartenant au genre *Chamaepsila*.

Mots-clés – première mention, clé d'identification, terminalia mâles, Psilini, Py, Pyrénées, Psilidés, *Tetrapsila*.

The Psilidae or rust flies are a small family of acalyptrate Diptera. The larvae are most likely all phytophagous. Some host-plant associations are well documented from horticultural and agricultural data [e.g. *Chamaepsila rosae* (Fabricius, 1794) cited by Dufault & Coaker (1987)]. Associations of larvae of other psilid species with their host plants were mentioned mainly by Chandler (1975) and Shatalkin & Merz (2010), but the larval ecology of most species remains unknown or poorly documented. Important aspects of the larval ecology of the species in their natural environment remain poorly understood. This is particularly true for montane species whose host plants are unknown (Withers & Claude 2021, Claude & Tissot 2023).

About 340 species of Psilidae are recognized worldwide (Shatalkin 2021). In Europe, 55 species of rust flies are known (Sumner 2018, Claude & Tissot 2023). In France, Claude & Tissot (2023) list 42 species, including 21 species of *Chamaepsila* Hendel, 1917. This genus, which belongs to the tribe Psilini, can be distinguished from other European rust fly genera by the postpedicel at most four times as long as the pedicel, the height of the peristoma greater than a third of the eye diameter, the anal cell about as long as the second basal cell, the vertex somewhat convex, the vibrissal area rounded in lateral view (males: hypopygium without surstyli), notopleural and supra-alar setae present, anepimeron bare, one postocellar seta present, tarsus of the mid leg ventrally with short yellow setulae (Beuk 2023).

As part of a myrmecological inventory (Lebas 2026) commissioned by the Nature Reserve management association and the “Fédération des Réserves Naturelles Catalanes” in the Py National Nature Reserve (France, Occitanie, Pyrénées-Orientales: <https://reserves-naturelles.org/reserves/py/>), a male of *Chamaepsila longipennis* (Séguy, 1936) was observed on the 8th of September 2025 by Cédric MOLINIER, at a site located at 42.4931°N, 2.3498°E (WGS84) [altitude of 1,121 metres a.s.l.]. Over the following weeks, further surveys were carried out at additional neighbouring sites (Table 1) to confirm the presence of the species. This species was not observed during other surveys

previously carried out on 12, 13 and 14 August in the vicinity of Py by Cédric MOLINIER and Claude LEBAS. In total, 18♂ and 13♀ (Table 1) were observed. The identifications were carried out by Jocelyn CLAUDE. Four specimens (2♂ & 2♀) are preserved in alcohol in Jocelyn CLAUDE's personal collection, and four specimens (2♂ & 2♀), dried and pinned, are preserved in Cédric MOLINIER's personal collection. The other specimens (n=23) were released on site. The majority of observations were made in relatively young, open deciduous forest habitats (Figures 1A & 1B).

All specimens have the same morphological characteristics as those mentioned in the original description by Séguy (1936). Among the other species of the genus, *Chamaepsila longipennis* (Séguy, 1936) [original combination: *Tetrapsila longipennis* Séguy, 1936 described from the Azores] is easily recognisable in lateral view by the black line extending from the head (two large lateral occipital patches) to the thorax and the tip of the abdomen (Figures 1C & 1D). The observations of Carles-Tolrà (1998), based on the examination of specimens from Spain and the Séguy type, are also consistent with our specimens. Another characteristic of this species is the presence of a second pair of scutellar setae (anterior), the setae of which vary in thickness and length. Among Western European *Chamaepsila* species, this feature is found only in *C. obscuritarsis*, a species with which it forms a group distinct from the other species of this genus. These two species are grouped within the subgenus *Tetrapsila* Frey, 1925, according to Hennig (1941) and following Shatalkin (2021). Beuk's (2023) online key enables us to distinguish it from other European *Chamaepsila* species and the key provided by Claude & Tissot (2023) is updated hereafter.

In the original description of *C. longipennis* by Séguy (1936) and in the rest of the faunistic literature (Shatalkin 1986, Wang 1988, Carles-Tolrà 1998, Shatalkin & Merz 2010, Shatalkin 2021, Carles-Tolrà 2002), the male genitalia were neither described nor illustrated. Here we present the first illustration of the male terminalia of *C. longipennis*, showing the epandrium and hypandrium in ventral and lateral views, based on dissected

Table 1 – Survey locations in 2025 and numbers of *Chamaepsila longipennis* (Séguy, 1936) specimens recorded during each survey.

Date	Observer(s)	Location	Habitat	♂	♀	Altitude (m a.s.l.)	Coordinates (WGS84)
08.IX.2025	Cédric MOLINIER, Claude LEBAS	Site 1 Sotelles	Deciduous undergrowth on old terraces	1	-	1 121	42.4931°N 2.3498°E
26.IX.2025	Cédric MOLINIER	Site 2 Py	Open deciduous forest	-	2	1 049	42.4946°N 2.3499°E
08.IX.2025	Cédric MOLINIER, André LABETAA	Site 2 Py	Open deciduous forest	-	1	1 049	42.4946°N 2.3499°E
08.IX.2025	Cédric MOLINIER, André LABETAA	Site 3 Py	Humid deciduous forest	5	3	1 036	42.4948°N 2.3512°E
09.X.2025	Cédric MOLINIER	Site 3 Py	Humid deciduous forest	5	2	1 036	42.4948°N 2.3512°E
09.X.2025	Cédric MOLINIER	Site 2 Py	Open deciduous forest	4	3	1 049	42.4946°N 2.3499°E
18.X.2025	Cédric MOLINIER, Claude LEBAS	Site 4 Palfic	Pastoral summer clearing at the edge of coniferous forest	-	-	1 600 to 1 900	42.4707°N 2.3697°E
21.X.2025	Cédric MOLINIER, André LABETAA	Site 3 Py	Humid deciduous forest	3	2	1 036	42.4948°N 2.3512°E
20.XI.2025	Cédric MOLINIER	Site 3 Py	Humid deciduous forest	-	-	1 036	42.4948°N 2.3512°E
20.XI.2025	Cédric MOLINIER	Site 2 Py	Open deciduous forest	-	-	1 049	42.4946°N 2.3499°E

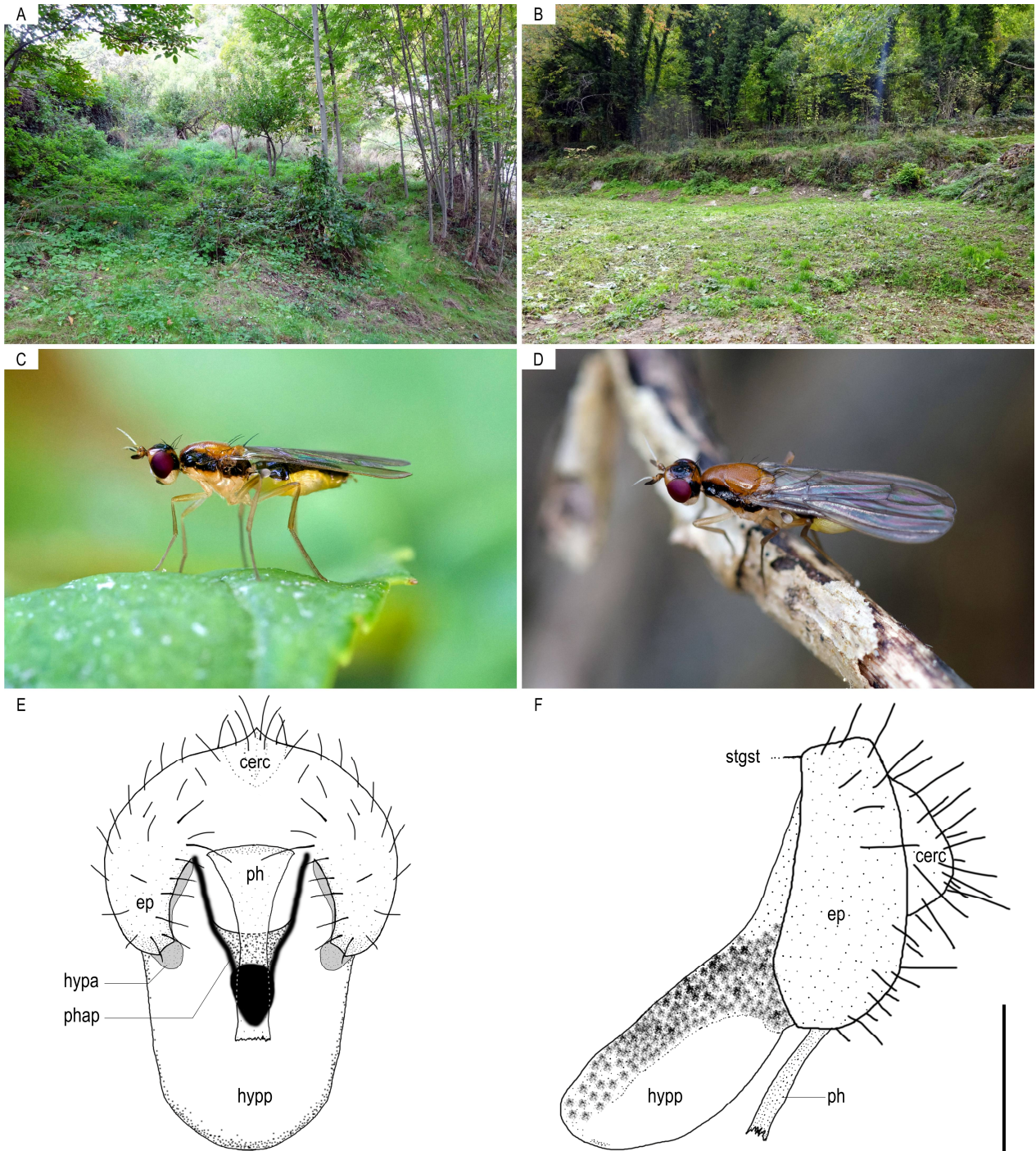


Figure 1 – Survey sites, habitus and genitalia of *Chamaepsila longipennis* (Séguy, 1936)

A. Survey site no. 2 at Py, French Pyrenees; **B.** Survey site no. 3 at Py, French Pyrenees; **C.** Female habitus in lateral view (September 8, 2025); **D.** Female habitus in dorsolateral view (September 8, 2025); **E.** Male terminalia in ventral view; **F.** Male terminalia in lateral view (left). Abbreviations: **ep.** epandrium; **hypp.** hypandrial plate; **phap.** phallapodeme; **cerc.** cercus; **ph.** phallus; **hypo.** hypandrial arms; **stgst.** syntergosternite VII + VIII. Scale bar (E and F) = 0.05 mm. (Photos A–B: Cédric MOLINIER; C–D: André LABETAA; drawings E–F: Jocelyn CLAUDE).

specimens (Figures 1E & 1F). Compared to other *Chamaepsila* species, the male terminalia of *C. longipennis* are very small (0.16 mm in height) and their structure is quite distinctive: postgonites not visible or fused with the upper part of the phallapodeme; cerci very difficult to see; subepandrial sclerites not visible (rudimentary

or membranous). Also, the phallapodeme is rudimentary, shaped like a 'Y' and ending under the phallus in a black, spherical mass. The phallus is very membranous, with contours that are difficult to distinguish. As no specimens of this species were observed before the 8th of September, our observations are consistent with the

previously reported late flight period (September to October) of *Chamaepsila longipennis*. In the present study, the species was recorded at elevations of 1 036–1 121 m a.s.l. (Table 1). Examination of the genitalia confirms that *C. longipennis* differs from other European species of *Chamaepsila*. Following previous records from Portugal, including the Azores (Séguy 1936), Spain (Carles-Tolrà 1998), Andorra (Carles-Tolrà 2002), Greece and Armenia, the present study adds France to the known range of *C. longipennis*. The list of Psilidae from France now contains 43 species, including 22 species of *Chamaepsila*. However, current knowledge of the French Psilid fauna remains incomplete, and further species, particularly within the genus *Chamaepsila*, are likely to be recorded in mountainous areas such as the Alps, the Pyrenees and the Massif Central.

Identification key to the European species of the subgenus *Tetraptsila* Frey, 1925 [English version]

- 1. One pair of scutellar setae (a rudimentary pair, smaller than half of the posterior bristles of the scutellum, may be present):

... other species of *Chamaepsila*
(see Beuk 2023, Claude & Tissot 2023)

- 1' Two pairs of scutellar setae (black):

... Subgenus *Tetraptsila* Frey, 1925, see section 2

- 2 Habitus yellow. Mesonotum yellow, sometimes with two stripes on the scutum. Halteres yellowish. Wings infusate along the veins. Pair of anterior scutellar setae almost as long as the posterior setae. Legs yellow to brownish yellow. For male terminalia see Claude & Tissot (2023: figures 22–23):

... *Chamaepsila (Tetraptsila) obscuritarsis* (Loew, 1856)

- 2' Habitus yellow but with a black line in lateral view (from the occiput of the head to the thorax and the tip of the abdomen). Mesonotum yellow but with black marks on the side (with entirely black postpronotal lobes). Halteres blackish. Wings not infusate along the veins. Pair of anterior scutellar bristles half as long as the posterior ones. Legs whitish yellow. For male terminalia, see Figures 1E & 1F:

... *Chamaepsila (Tetraptsila) longipennis* (Séguy, 1936)

Clef d'identification des espèces européennes du sous-genre *Tetraptsila* Frey, 1925 [French version]

- 1 Une paire de soies scutellaires (une paire rudimentaire, plus petite que la moitié des soies postérieures du scutellum, peut être présente) :

... Autres espèces de *Chamaepsila*
(voir Beuk 2023, Claude & Tissot 2023)

- 1' Deux paires de soies scutellaires (noires) :

... sous-genre *Tetraptsila* Frey, 1925, voir section 2

- 2 Habitus jaune. Mésonotum jaune, avec parfois deux lignes noires sur le scutum. Balanciers jaunâtres. Ailes enfumées le long des nervures. Paire de soies scutellaires antérieures presque

aussi longues que les postérieures. Pour les pièces génitales, se reporter à Claude & Tissot (2023 : figures 22 & 23) :

... *Chamaepsila (Tetraptsila) obscuritarsis* (Loew, 1856)

- 2' Habitus jaune mais avec une ligne noire en vue latérale (de la tête au thorax et jusqu'à l'extrémité de l'abdomen) et le dessus de l'abdomen noir. Mésonotum jaune mais avec des marques noires sur les côtés (avec des lobes postpronotaux entièrement noirs). Balanciers noirâtres. Ailes hyalines. Paire de soies scutellaires antérieures deux fois moins longues que les soies postérieures. Pattes jaune blanchâtre. Pour les pièces génitales, voir les Figures 1E et 1F :

... *Chamaepsila (Tetraptsila) longipennis* (Séguy, 1936)

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