



**Notes on *Chersodromia* from Portugal, Spain and France with
the description of a new brachypterous species
(Diptera, Hybotidae, Tachydromiinae)**

GROOTAERT, P.¹, SHAMSHEV, I.^{1,2} & R. ANDRADE³

¹ Department of Entomology, Royal Belgian Institute of Natural Sciences, Rue Vautier 29, B-1000, Brussels, Belgium. E-mail: Patrick.Grootaert@naturalsciences.be

² All-Russian Institute of Plant Protection, shosse Podbel'skogo 3, 188620, St. Petersburg – Pushkin, Russia. Temporarily at RBINS, Brussels; E-mail: shamshev@mail.ru

³ Rua Dr. Abel Varzim 16, 2D, 4750-253 Barcelos, Portugal. E-mail: ruiamandrade@yahoo.com

Abstract

Chersodromia squamata sp. nov. is described from Portugal and Spain. A key is given to the four known species of the *Ch. curtipennis* subgroup in the *Ch. incana* group. In addition *Ch. incana* Walker is re-illustrated and the species is recorded for the first time from France and Portugal. *Chersodromia alata* (Walker) (= *Ch. difficilis* Lundbeck) is also recorded for the first time from France and Spain.

Keywords: Diptera, Hybotidae, new species.

Introduction

The recent collection of some *Chersodromia* on the coast of Portugal and the Atlantic coast of Spain by our colleague RUI ANDRADE revealed the presence of a new brachypterous species belonging to the *Ch. curtipennis* subgroup. It is described here and a key is given to the four species actually described in this subgroup.

Two more species were found in the samples: *Ch. incana* Walker and *Ch. alata* (Walker), which needed some comments. *Chersodromia alata*, better known under its junior synonym *Ch. difficilis* Lundbeck, is a new record for Spain. Examination of the collections of J. VILLENEUVE at Royal Belgian Institute of Natural Sciences (RBINS) showed that it is also present and new for France. *Chersodromia incana* is reported here for the first time from Portugal and France. Male genitalia of this species are illustrated giving more detail on the prominent and characteristic left cercus.

Material and methods

The latitudes have been determined from a Google Earth map and thus are not the precise

sites of collection. Type material is preserved in the collections of the Royal Belgian Institute of Natural Sciences in Brussels.

Taxonomic account

***Chersodromia squamata* sp. nov.**

Figs 1–9

Material examined: Holotype male: PORTUGAL, Gulpilhares (Vila Nova de Gaia; 41°04'44''N, 8°39'25''W) 14 Eptember 2009 (leg. Rui ANDRADE).

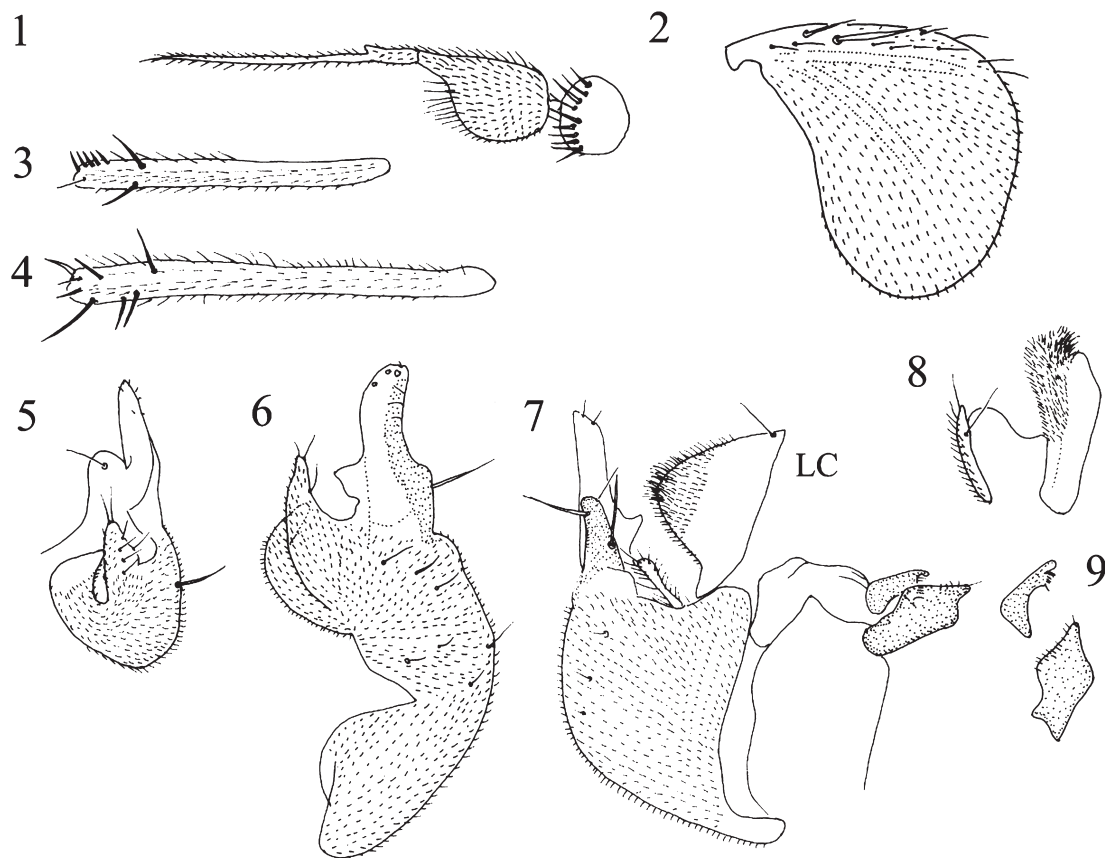
Paratypes: 1 male, 3 females, SPAIN, Playa Mayor, Sanxenxo (42°24'04''N, 8°48'17''W), 26 September 2009 (leg. Rui ANDRADE).

PORTUGAL, 3 males, 5 females, Apúlia (41°28'58''N, 8°46'39''W), 21 March 2009 (leg. Rui ANDRADE).

Male:

Body length: 1.26-1.54 mm; wing: 0.28-0.35 mm.

Head. Black in ground-colour. Frons wide, in front as wide as postpedicel, widening towards ocellar tubercle. Face above narrower than front of frons, widening below. Jowls below eyes a little wider than postpedicel. Ocellar and vertical



Figs 1-9. *Chersodromia squamata* sp. nov. paratype male. 1. Antenna; 2. Wing; 3. Mid tibia; 4. Hind tibia; 5-6. Right epandrial lamella; 7. Ebandrium with cerci; 8. Cerci; 9. Left surstylus (both sclerites). LC: left cercus.

bristles pale (almost white), sometimes infuscated at tip, all as long as postpedicel. A pair of anterior ocellars crossing; a pair of long median ocellars diverging; a pair of posterior ocellars diverging. A single pair of verticals, crossing. Postocular pubescence in one row, pale and short. Proboscis yellowish. Palpus large, elongate, pale (almost white) with white pubescence and a short white apical bristle. Antenna (Fig. 1) brownish black. Postpedicel a little longer than wide, almost round with dorsoapical style; basal part of style thickened; style at most twice as long as pedicel and postpedicel combined.

Thorax brownish black in ground-colour, covered with pale (almost white) bristles and hairs. Postpronotal lobe with 1 long and 1 short bristles. Mesonotum with a long erect posthumeral, a long postalar; 1 anterior pair of acrostichals, otherwise acrostichals and dorsocentrals undifferentiated i.e. mesonotum evenly covered with minute hairs; 1 pair of distinct prescutellar dorsocentrals; a pair of long, crossing apical scutellars.

Wing (Fig. 2) white, squamiform, very short, reaching halfway abdominal tergite 1. A forked vein is indistinctly visible. Halter very small; with pale brown stem and darkened knob.

Legs yellow, but base of fore coxa, mid and hind coxae, fore and mid femora dorsally, and apical tarsomere of all legs brown. There is some variation in the intensity of the darkening of the femora. In some specimens the femora are quite dark. Fore coxa with short pale hairs. Fore femur swollen on basal two thirds; ventrally with a row of short pale bristles about half as long as femur is wide. Fore tibia narrow at base, swollen in apical two thirds; with a pair of pale preapical ventral bristles. Mid femur narrower than fore femur; with a short brown anterior preapical and a ventral row of minute pale bristles. Mid tibia (Fig. 3) with 4 to 5 ventral short black spinules in apical fifth. Hind femur a little wider than mid femur, but still narrower than fore femur, with a short brown anterior preapical bristle. Hind tibia (Fig. 4) with 2 dorsal, 1 anterodorsal and 2 anteroventral bristles as long as tibia is wide (Fig. 3).

Abdomen brownish black in ground-colour and covered with pale almost white, minute hairs. No glandular structures are visible below the tergites. Genitalia as in Figs 5–9. Right epandrial lamella with a bifurcate ventral process (Fig. 5); right surstylus fused with epandrial lamella, long and broad, bearing a strong dorsal bristle (Fig. 5–7). Right cercus small, left cercus large with a wide acute, ventral process (Fig. 7). Left epandrial lamella short; left surstylus separated from epandrial lamella, consisting of two sclerites, with scattered unmodified setation.

Female:

Body length: 1.4–1.68 mm; wing: 0.38–0.42 mm.

In most respects identical to male. Mid tibia without ventral bristles in apical quarter.

Etymology: The name "*squamata*" refers to the squamiform or scale-like wings.

Comments

Chersodromia squamata sp. nov. belongs to the *Ch. curtipennis* subgroup within the *Ch. incana* group which includes now four described species. A fifth species has been recognised by RAFFONE (2007) from the coast near Istanbul (Turkey). Since it was a single female he did not describe it. In this species the wing reaches to the tip of tergite 3 and it has 4 pairs of acrostichals and 1 pair of dorsocentrals. *Chersodromia squamata* sp. nov. is the first record of a brachypterous species of the *Ch. curtipennis* group outside the Mediterranean basin *sensu lato*, at least when we include the Black Sea as part of this complex.

Key to the males of the *Chersodromia curtipennis* subgroup

1. Wing reaching tergite 6. Right surstylus large and bent inward (coast of Adriatic Sea
 *neocurtipennis* BESCHOVSKI
- Wing much shorter, reaching slightly beyond tergite 2 or shorter. Right surstylus not bent
 2
2. Wing reaching slightly beyond tergite 2. Right surstylus without inner bristle (coast of Black Sea) *curtipennis* COLLIN
- Wing shorter, not reaching beyond tergite 2. Right surstylus with a distinct inner bristle . 3
3. Wing reaching only to middle of tergite 2. Left cercus viewed laterally with a rounded tip (Coast Tunisia)
 *tunisiana* GROOTAERT & SHAMSHEV

- Wing reaching halfway tergite 1 only. Left cercus viewed laterally with an acute tip (Portugal and Atlantic coast of Spain)
 *squamata* sp. nov.

***Chersodromia alata* (Walker, 1836)**

alata Walker, 1836: 180 (*Tachypeza*, as "? var." of *arenaria* Haliday).

difficilis Lundbeck, 1910: 280 (*Chersodromia*).

difficilis Lundbeck: CHVÁLA, 1975: 282 (*Chersodromia*), re-description, figs 647–649 (genitalia), 783 (wing).

difficilis Lundbeck: CHVÁLA, 1978: 80 (*Chersodromia*), re-description, figs 19–21, Map 3.

Material examined: SPAIN, 1 female, Playa Mayor, Sanxenxo (42°24'04"N, 8°48'17"W), 26 September 2009 (leg. Rui ANDRADE).

FRANCE, 1 male, 1 female (in copula) St. Enogart (46°38'14"N, 2°04'45"W), 14.04.1915; 1 male, 1 female, 23.04.1915; 1 male, 3 females, 24.04.1915; 1 male, Luc-sur-mer (Basse Normandie) (49°16'26"N, 0°14'09"W); 1 male, Piriac (Loire inférieure) (47°22'52"N, 2°32'47"W) (Coll. VILLENEUVE, RBINS).

Comments. *Chersodromia alata* belongs to the *Ch. cursitans* group and is easy to recognize because male and female have the anterior half of the wing brown. This character is unfortunately not indicated on Fig. 19 in CHVÁLA (1978), but a photo is given in his monograph on Scandinavian Tachydromiinae (CHVÁLA, 1975) showing the anterior darkening of the wing. CHVÁLA (1978) considers this species as having a North European distribution. However, here we show that it has a much larger distribution to southern Europe by adding records from three localities on the Atlantic coast from France and one from Spain.

Distribution: Sweden, Denmark, British Isles, Ireland, France, Spain.

When checking the Fauna Europaea (<http://www.faunaeur.org>) the records from France and Spain appeared to be new records for these countries.

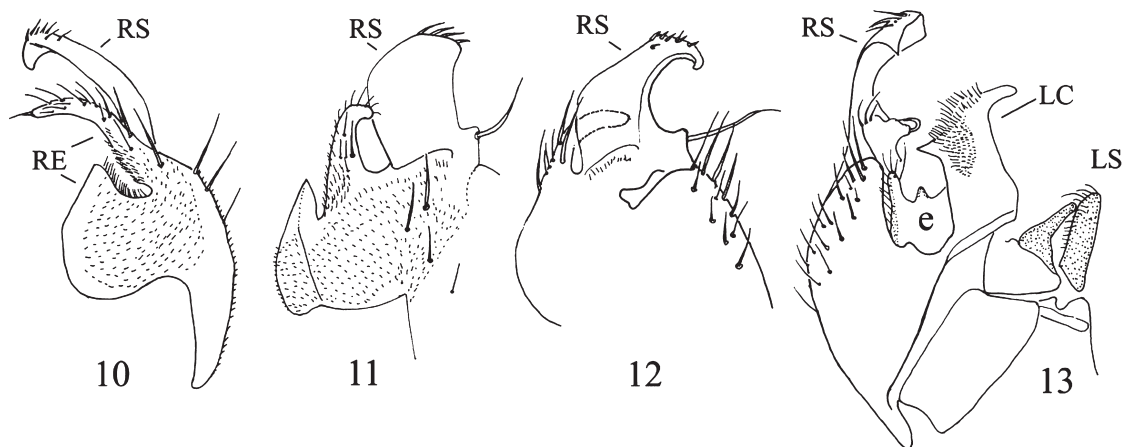
***Chersodromia incana* Walker, 1851**

Figs 10–13

incana Walker, 1851: 138 (*Chersodromia*).

incana Walker: CHVÁLA, 1975: 288, re-description, figs 639 (antenna), 659–661 (genitalia), 787 (wing).

incana Walker: CHVÁLA, 1978: 123, figs 74–76; Map 7.



Figs 10-13. *Chersodromia incana* Walker male genitalia (Areia, Portugal). 10-12. Right epandrial lamella with surstylus in different views; 13. Epandrium with cerci. e: epiproct; LC: left surstylus; RE: right epandrial lamella; RS: right surstylus.

Material examined:

PORTUGAL: 2 males, 1 female, Areia (41°20'37''N, 8°45'13''W), 13.02.2008 (leg. RUI ANDRADE); 5 males, Apúlia (41°28'58''N, 8°46'39''W), 29.08.2009 (leg. RUI ANDRADE).

FRANCE: 2 males, St. Lunaire, 27-31.07.1949 (48°38'20'' N, 2°06'23''W; leg. M. BEQUAERT); 5 males, 1 female, Luc-s-mer (no date ; 49°16'26''N, 0°14'09''W; coll. J. VILLENEUVE); 1 male, 6 females, Ambleteuse, 21-27.08.1989 (50°48'15''N, 1°36'14''E; Leg. G. HAGHEBAERT)

Comments: An illustration of the male genitalia is given here because the prominent left cercus in male has a peculiar shape and bears some typical pubescence on the tip (Fig. 13) and not on the side (CHVÁLA, 1978: 124, figs 74-76).

Actually, in *Ch. incana* the right epandrial lamella is large and it has a pointed apical extension and a large lateral process; the right surstylus is also large, with a lateral tubercle bearing a strong bristle and it is covered with spinules at tip; the left surstylus is small and black. CHVÁLA (1978: 125) indicates that in these species "cerci very small" but that is the case of the right cercus whereas the left cercus is very large and with a dense pubescence on tip.

Distribution: Sweden, Denmark, Germany, The Netherlands, Belgium, British Isles, Ireland, France and Portugal.

When checking the Fauna Europaea (<http://www.faunaeur.org>) the records from France and Portugal appeared to be new records for these countries. It is clear that *Ch. incana* can

be expected on the Spanish Atlantic coast as well.

References

- BESCHOVSKI V.L., 1974. - *Chersodromia neocurtipennis* sp. n. a second species with very short wings of the *Chersodromia* genus (Diptera: Empididae). *Bolletino del Museo Civico di Storia naturale di Venezia* 25: 65-68.
- CANZONERI S. & RATTI E., 1970. - Nota sulla *Chersodromia curtipennis* COLLIN (Diptera: Empididae). *Bolletino del Museo civico di Storia naturale di Venezia* 21-22: 221-222.
- COLLIN J.E., 1950. - A new Palaearctic species of *Chersodromia* with very short wing (Diptera: Empididae). *Proceedings of the Royal Entomological Society London (B)* 19: 78-79.
- CHVÁLA M., 1975. - The Tachydromiinae (Dipt. Empididae) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 3: 1-336.
- CHVÁLA M., 1978. - Revision of Palaearctic species of the genus *Chersodromia* WALK. (Diptera, Empididae). *Acta entomologica Musei nationalis Pragae* 39(1977): 55-138.
- Fauna Europaea (<http://www.faunaeur.org>)
- GROOTAERT P. & SHAMSHEV I., 2008. Notes on the beach-dwelling genus *Chersodromia* (Diptera: Hybotidae) from Tunisia: description of a new brachypterous species with notes on brachyptery in empidooids. *Bulletin de la Société royale belge d'Entomologie* 144: 57-63.
- RAFFONE G. 2007. - On some specimens of Diptera Hybotidae and Empididae from Turkey and Iran. *Quaderno di Studi e Notizie di Storia Naturale della Romagna* 25: 87-91.