

New data on flies from saltmarshes from the Reserva natural de s'Albufereta and the Natural Park of s'Albufera (Mallorca, Balearic Islands, Spain) with the description of a new species of *Drapetis* Meigen (Diptera: Hybotidae, Tachydromiinae)

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SOCIETAT D'HISTÒRIA
NATURAL DE LES BALEARS

Grootaert, P. & Brice, D. 2024. New data on flies from saltmarshes from the Reserva natural de s'Albufereta and the Natural Park of s'Albufera, (Mallorca, Balearic Islands, Spain) with the description of a new species of *Drapetis* Meigen (Diptera: Hybotidae, Tachydromiinae). *Boll. Soc. Hist. Nat. Balears*, 67: 135-143. ISSN 0212-260X. e-ISSN 2444-8192. Palma.

Chersodromia oraria Collin, 1966, a second species of *Chersodromia* is reported from the Natural Park of s'Albufera and the male genitalia are illustrated providing detailed information on its structure. The record is probably the first for Mallorca. *Drapetis albuferetaensis* sp. nov. is described from a salt marshland at the Reserva natural de s'Albufereta on Mallorca.

Keywords: *Diptera, Hybotidae, Drapetis, new species, salt marshes, Mallorca, Spain.*

NOVES DADES DE LES MOSQUES DE LES ZONES SALOBROSES DE LA RESERVA NATURAL DE S'ALBUFERETA I DEL PARC NATURAL DE S'ALBUFERA (MALLORCA, ILLES BALEARS, ESPANYA) AMB LA DESCRIPCIÓ D'UNA NOVA ESPÈCIE DE *Drapetis* MEIGEN (DÍPTERA: HYBOTIDAE, TACHYDROMIINAE). S'il·lustren la genitèlia masculina de *Chersodromia oraria* Collin, 1966, una segona espècie de *Chersodromia* citada del Parc Natural de s'Albufera i es proporciona informació detallada sobre la seva estructura. La troballa probablement sigui la primera del Mallorca. Es descriu *Drapetis albuferetaensis* sp. nov. d'una zona humida de la Reserva natural de s'Albufereta a Mallorca.

Paraules clau: *Díptera, Hybotidae, Drapetis, espècies noves, salines, Mallorca, Espanya.*

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Recepció del manuscrit: 14-10-2024; revisió acceptada: 4-11-2024; publicació online: 04-11-2024.

Introduction

Salt marshes and beaches have a unique halophilic hybotid fly fauna as reflected in the many species of *Chersodromia* that occur in these habitats (Chvála, 1978). Recently a new species, *Chersodromia albuferetaensis* Grootaert & Brice (2023) was found here in the Reserva natural de s'Albufereta (Grootaert & Brice (2023). Now, we report on a second species of *Chersodromia* that was found nearby on a sandy beach in front of the Reserva natural de s'Albufera. Further we report on a new species of *Drapetis* Walker, that was found in a Malaise trap at the inland side of the saltmarsh of the Reserva natural de s'Albufereta. *Drapetis* is a genus of small, mainly leaf and bark dwelling predacious flies (Michelsen & Grootaert, 2019) and hence it is not sure if this species is halophilic or came accidentally in from the land area.

Materials and methods

Insects were collected with a hand net on the sandy beach area near to s'Albufera and from a Malaise trap placed at the outer side of the Reserva natural de s'Albufereta near Alcúdia (Mallorca, Spain). The material was collected in 70% alcohol and preserved as indicated in the species description.

List of abbreviations:

a: anus; de: dorsoapical extension; hy: hypandrium; lc: left cercus; lel: left epandrial lamella; ls1: left surstylus 1; ls2: left surstylus 2; rc: right cercus; rel: right epandrial lamella; rs: right surstylus.

Observations

Chersodromia oraria Collin, 1966

Figs 1 – 2.

Chersodromia oraria Collin, 1966: 33.

Chersodromia oraria Chvála, 1970: 399 (discussion).

Chersodromia oraria Chvála, 1978: 100, re-description, figs 42 – 44 (Azores).

Diagnosis

A small, dark grey species (1.3 – 1.9 mm) with all bristles on head and thorax brownish (Fig. 1 A). Antennae small, blackish-brown, segment 3 circular with dorsoapical stylus. Palpi and halteres yellow. Legs yellowish but often darkened on femora. Apical tarsomeres brownish. Wings milk-white, broad, veins pale yellowish. Male genitalia with a simple pointed apical surstylus on the right epandrial lamella (Fig 1 B, 2 A, B). Right lateral side of the right epandrial lamella is large and broad, lacking strong bristles (Fig. 2 A) while the dorsal part bears long bristles (Fig. 2 B). Left surstylus (ls2) large, pale (Fig. 2 A, B, C). Right cercus small widely separated from the long left cercus that has a truncate tip with a pointed projection to the right side (Fig. 2 B). The apex of the left epandrial lamella bears a few short bristles and an area with minute bristles (Fig. 2 B).

Material examined: Spain, Mallorca, 1 male, Reserva natural de s'Albufera, N 39° 46' 55.0'' E 3°08'08.8'', 4 May 2023, swept strandline on beach, leg. David Brice (RBINS).

Distribution

According to Chvála (1978) this species has a wide distribution from the Azores to the western part of the Mediterranean Sea (North Africa, Italy,

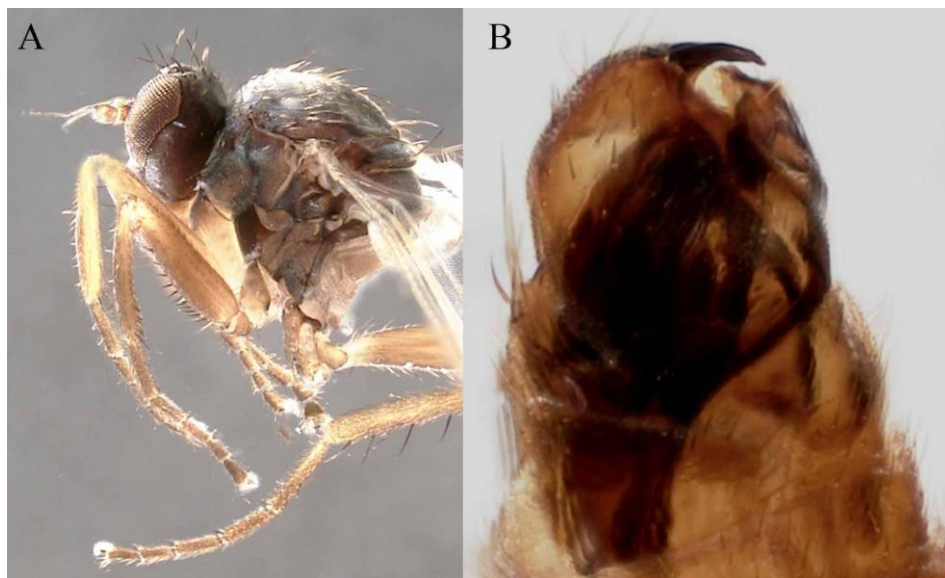


Fig. 1. *Chersodromia oraria* Collin, 1966: A. Head and thorax; B. Right epandrial lamella, lateral view. Image by David Brice.

Fig. 1. *Chersodromia oraria* Collin, 1966: A. Cap i tòrax; B. Làmina epandrial dreta, vista lateral. Imatge de David Brice.

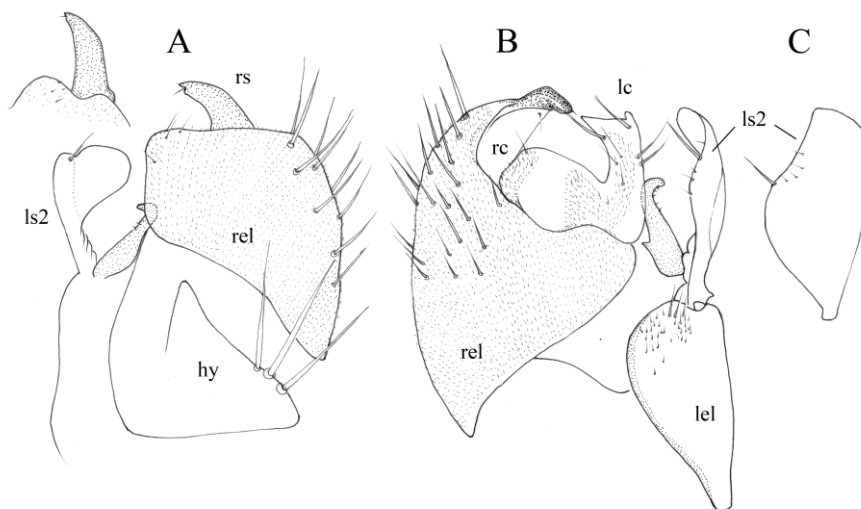


Fig. 2. *Chersodromia oraria* Collin, 1966: A. Ventral view of the epandrium with right epandrial lamella and detail of right surstylus, left surstylus ls2 and base of hypandrium; B. Dorsal view of the epandrium; C. Left surstylus ls2, lateral. Scale 0.1 mm.

Fig. 2. *Chersodromia oraria* Collin, 1966: A. Vista ventral de l'epandrium amb lamel·la epandrial dreta i detall del surestil dret, sobrestil ls2 esquerra i base de l'hipandrium; B. Vista dorsal de l'epandrium; C. Surestil esquerra ls2, lateral. Escala 0,1 mm.

Spain). So far, we know, this is the first record of *C. oraria* from Mallorca.

***Drapetis albuferetaensis* sp. nov.**

Figs. 3-6.

Type material. Holotype male: Spain, Mallorca, Reserva natural de s'Albufereta, N 39° 52' 20.9'' E 3°05'05.1'', 3-7 May 2023, collected in a Malaise trap on a bed of Sea Purslane (*Sesuvium portulacastrum*) with Tamarisk and Stone Pines behind the trap and a scrubby dry, sandy/stony clearing (in alcohol; leg. M. Welch & D. Brice). The holotype is deposited at the Royal Belgian Institute of Natural Sciences, Brussels, RBINS.

Derivatio nominis

The name refers to the type locality, s'Albufereta on Mallorca where the new

species was found.

Diagnosis

A small species (1.3 mm) of the *exilis*-group with upper cross-vein (r-m) distinctly beyond middle of second basal cell (bm). Antenna entirely black; postpedicel somewhat trapezoid, about as long as wide; pedicel with ventral setulae nearly as long as pedicel is long. Legs yellowish, but mid leg and all tarsi brown. Mid femur lacking a pattern of transverse fine furrows or ribs anteriorly. Hind femur not thickened nor bent. Male mid tibia lacking an apical tooth, but postero-ventrally with several black spinules (Fig. 6 A, B). Right epandrial lamella with a dorsal apical spherical extension (Fig. 4 A-C, de) bearing a comb-like set of long setae. Right and left cercus digitiform, not running parallel but forming a V.



Fig. 3. *Drapetis albuferetaensis* sp. nov. Holotype male: Head and thorax lateral. Abdomen removed. Scale bar 1 mm. Image by David Brice.

Fig. 3. *Drapetis albuferetaensis* sp. nov. Holotip del mascle: cap i tòrax, visió lateral. Abdomen absent. Barra d'escala 1 mm. Imatge de David Brice.

Description

Male: Body length: 1.3 mm; wing: 1.3 mm.

Head. Black in ground-colour. Frons narrowing downwards; face linear, narrower than frons, widening immediately above clypeus. Vertical and ocellar bristles black. Inner vertical bristles twice as long as the short anterior

and posterior ocellar bristles. Antenna brownish black, but scape and pedicel darker than postpedicel. Pedicel with ventral setulae nearly as long as the pedicel is long. Postpedicel trapezoid, about as long as wide. Stylus long about 4 times as long as the 3 antennal segments combined. Palpus brown with pale bristling.

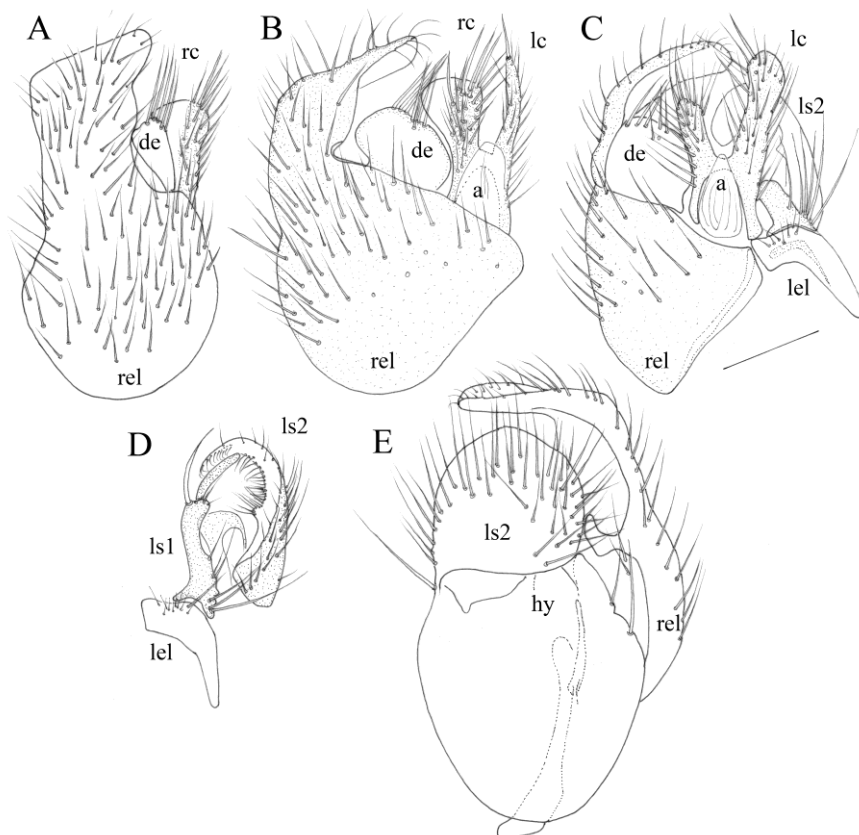


Fig. 4. *Drapetis albuferetaensis* sp. nov. Holotype male genitalia: A. Lateral view of right epandrial lamella with on the left side, the dorsal extension and lateral side of right cercus; B. Latero-dorsal view of epandrium; C. Dorsal view of epandrium; D. Dorso-lateral view of inside of the left surstyli ls1 and ls2; E. Ventral view on the epandrium with left surstylus, ls2 and right epandrial lamella. Scale 0.1 mm.
Fig. 4. *Drapetis albuferetaensis* sp. nov. Genitals masculins de l'holotipus: A. Vista lateral de la lamel·la epandrial dreta amb al costat esquerre, l'extensió dorsal i lateral del cerc dret; B. Vista laterodorsal de l'epandrium; C. Vista dorsal d'epandrium; D. Vista dorso-lateral de l'interior del surestil esquerre ls1 i ls2; E. Vista ventral de l'epandri amb surestil esquerre, ls2 i lamel·la epandrial dreta. Escala 0,1 mm.

Thorax shiny black. All bristling yellowish brown, except the long black pair of prescutellar dorsocentrals and the scutellars. Mesonotum entirely covered with fine hairs. Anteriorly with a single pair of upright acrostichals; a pair of long prescutellar dorsocentrals; 3 short notopleurals; a pair of long crossing scutellars with a tiny bristle at each side. Mesopleura entirely covered with sparse short microtrichia.

Legs (Fig. 3). Yellowish, but mid and hind coxae, mid femur, mid tibia and all tarsomeres brown.

Fore leg. Femur with 3 brown preapical posteroventrals; ventral bristling lacking. Tibia anteriorly with apical 2/3 covered with short brown bristles; posteriorly with yellowish bristles.

Mid leg (Fig. 6). Femur lacking an anterior pattern of transverse fine furrows or ribs (Fig. 6 A). Ventrally, in basal third

with long brown bristles forming a cushion-like area on a black background and with a row of 4 strong anteroventral setae in apical third. Apex of tibia lacking apical teeth, but posteroventrally with various black spinules (Fig. 6 B, inset).

Hind leg. Femur not thickened nor bent, anteroventrally with a row of 4 pale brown preapical setae a little more than half as long as femur is deep.

Abdomen pale brownish. Genitalia (Figs. 4, 5). Cerci not running parallel, but forming a V-shape (Fig. 4 C). Both cerci are digitiform in dorsal view (4 C). Right cercus with apical half set with strong setae (Fig. 4A, B), the ventral side of the apex is broadened and projecting inward and this projection lacks bristles (Fig. 4 A, B). The apex of the left cercus bears only a single strong seta among other long but fine setae (Fig. 4 B, C). Right epandrial lamella with a dorsal apical spherical

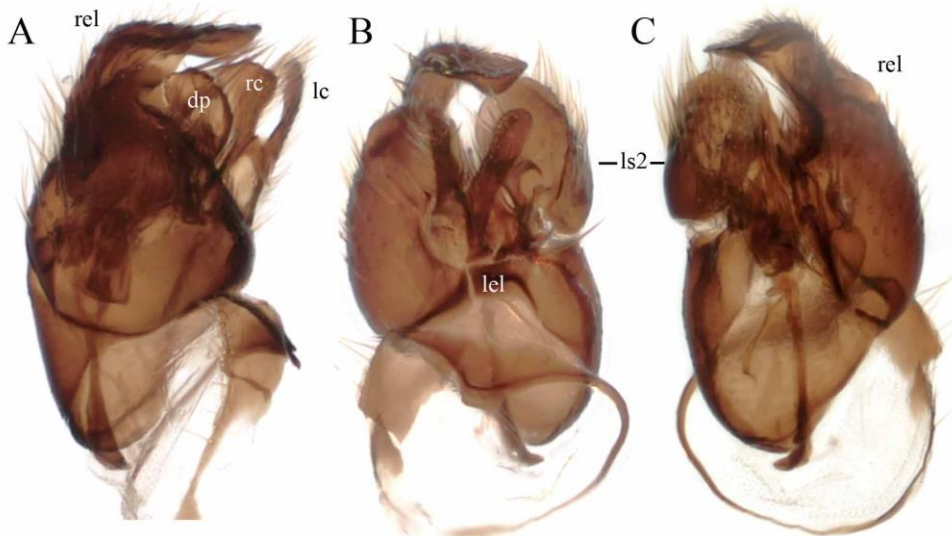


Fig. 5. *Drapetis albuferetaensis* sp. nov. Holotype male genitalia: A. Lateral view of right side epandrium; B. Dorsal view epandrium; C. Ventral view epandrium. Image David Brice.

Fig. 5. *Drapetis albuferetaensis* sp. nov. *Genitals masculins de l'holotipus*: A. *Vista lateral de l'epandri del costat dret*; B. *Vista dorsal epandrium*; C. *Vista ventral epandrium*. *Imatge David Brice.*

extension (Fig. 4 B, C de) bearing a comb-like set of long yellowish bristles. Right surstylus fused with right epandrial lamella forming a cap over the cerci (Fig. 4 B, E). Left epandrial lamella fused with hypandrium, bearing 9 setae on apical border (Fig. 4 D). Left surstylus 1 (Fig. 4 D, ls1) black, finger-like with a strong apical seta. Left surstylus 2 large and rounded, bearing long setae at the outside (Fig. 4 E) while at the inside bears a rim of

densely set bristles (Fig. 4 D). A hook-like projection is visible in ventral view at the inside near the middle of the right epandrial lamella (Fig. 4 E).

Female: unknown.

Distribution and habitat. Spain, Balears, Isla de Mallorca, Reserva natural de s'Albufereta, about 1 km Northwest of the city of Alcúdia, collected near a saltmarsh.

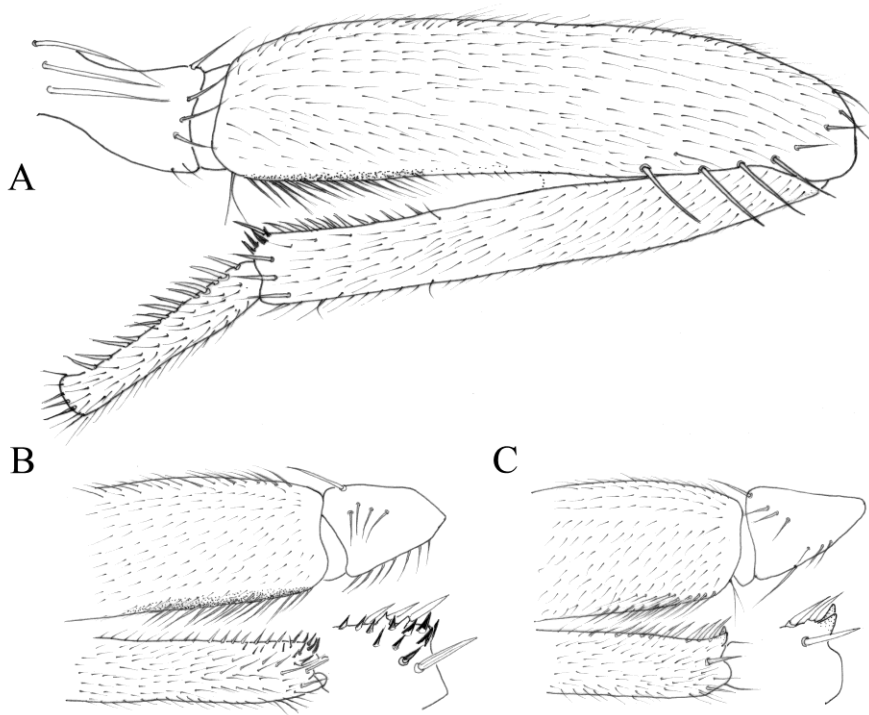


Fig. 6. A. *Drapetis albuferetaensis* sp. nov. Holotype male: mid femur and tibia anteriorly; B. *D. albuferetaensis* sp. nov.: base of mid femur and tip of mid tibia posteriorly with detail of the apex with spinules; C. *Drapetis monsmargila* Grootaert et al. Paratype: base of mid femur and tip of mid tibia posteriorly with detail of the apex with two teeth. Scale 0.1 mm.

Fig. 6. A. *Drapetis albuferetaensis* sp. nov. Holotip del mascle: fèmur mitjà i tibia anterior; B. *D. albuferetaensis* sp. nov.: base del fèmur mitjà i punta de la tibia mitjana posterior amb detall de l'àpex amb espínules; C. *Drapetis monsmargila* Grootaert et al. Paratip: base del fèmur mitjà i punta de la tibia mitjana posterior amb detall de l'àpex amb dues dents. Escala 0,1 mm.

Discussion

Drapetis albuferetaensis sp. nov. seems to be very closely related to *Drapetis monsmargila* Grootaert *et al.* 2020. However, there are several differences in the structure of the male genitalia. Both cerci are connected forming a V in the new species while the cerci run parallel in the type series of *D. monsmargila*. In dorsal view, the cerci are digitiform in the new species, while both cerci are club shaped in *D. monsmargila* from the type locality in Maastricht (The Netherlands). Both cerci are connected with a narrow bridge below the projecting anus (Fig. 4 C) in the new species. This was not distinct in the type series of *D. monsmargila* since being obscured by the bulging anus in front. In lateral view (Fig. 4 A, B), the apex of the right cercus in the new species is projecting inward and lacks bristles. The apex of the right cercus is not projecting inward in the type series of *D. monsmargila*.

The dorsal extension of the right epandrial lamella is large in both species (Fig. 4 B, C). The bristling along the apical border of the left epandrial lamella seems to be shorter in the new species (Fig. 4 C, D) while the bristles seem longer in the type series of *D. monsmargila*. The left surstylus ls1 seems slenderer in the new species bearing a strong subapical seta (Fig. 4 D) while the left surstylus ls1 is a little shorter in the type series of *D. monsmargila* bearing less strong bristles.

The mid femur is ventrally in the apical third, densely set with long bristles forming a cushion like area (Fig. 6 A). The femur is darkened at the insertion of these bristles in the new species, but yellowish in *D. monsmargila*. The tip of the mid tibia in the new species bears several small black spines posteroventrally (Fig. 6 B,

inset) while in *D. monsmargila* the mid tibia bears two apical rounded, brown teeth (Fig. 6 C, inset) and no black spinules.

There are several differences in the colouration of the legs, but in the type series of *D. monsmargila* there is so much variation from yellow to very dark legs that these differences are not taken in account to distinguish both species.

Drapetis monsmargila was also found in Moravia (Roháček *et al.*, 2021) and Bulgaria (Grootaert *et al.*, 2024) sharing most characters with the type series from Maastricht, the Netherlands.

General conclusion

The present survey at the Reserva natural de s'Albufereta was very short and perhaps already too late in the season. Several more hybotid fly species are expected to occur in this remarkable habitat and hence worth more investigation that will hopefully, take place over the coming years.

Acknowledgments

Macu Ferriz of "TAIB" (The Albufera Initiative for Biodiversity) and Maties Rebassa, director of Natural Parc of s'Albufera de Mallorca, are thanked for arranging permission for Dave Brice and Mark Welch to record and collect Diptera from Albufera NP and Albufereta nature reserve. Nick Riddiford (TAIB and Fair Isle, Scotland) provided very helpful information for expediting the granting of permits.

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