

Notes on insect migration in southern France in the autumn of 1966

by

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Summary: The author followed up observations of insect migration that he and D. F. OWEN (BURTON & OWEN, 1954, 1955) made in October 1953 along the south-west coast of France with a return visit in October 1966. The observations made then confirmed those made in 1953. Again, like many migratory bird species, migratory butterflies, moths, dragonflies and hoverflies, mainly *Eristalis tenax* (LINNAEUS, 1758) were seen migrating southwards, both along the coastal sand dunes and inland over the lakes and open fields within the forests.

Other observations of southward insect migration were also made from 15-17 October 1966 in the Camargue (Provence) and are described here.

Zusammenfassung: Im Oktober 1953 machte der Autor mit D. F. OWEN (BURTON & OWEN 1954, 1955) Beobachtungen von Insektenwanderungen entlang der Südwest-Küste Frankreichs. Im Oktober 1966 kehrte er an dieselben Plätze zurück und die dann gemachten Beobachtungen bestätigten die im Jahre 1953 gemachten. Wieder beobachtete er sowohl die Wanderung vieler Vogelarten als auch die wandernder Schmetterlinge (Tag- und Nachtfalter), Libellen und Schwebfliegen, besonders *Eristalis tenax* (LINNAEUS, 1758), die südwärts zogen, sowohl entlang der Sanddünen an der Küste als auch landeinwärts über Seen und offene Felder innerhalb der Wälder.

Weitere Observationen von südwärts wandernden Insekten wurden auch vom 15.-17. Oktober 1966 in der Camargue (Provence) gemacht, die hier beschrieben werden.

Resumé: L'auteur a suivi des observations sur la migration d'insectes que lui et D. F. OWEN (BURTON & OWEN, 1954, 1955) on faites en octobre 1953 le long de la côte sud-ouest de la France, avec un deuxième séjour en octobre 1966. Ces observations ultérieures correspondaient à celles faites en 1953. De nouveau, il a été constaté que - ce qui est valable pour beaucoup d'espèces d'oiseaux migrants - les Lépidoptères, les libellules et les Syrphides, principalement *Eristalis tenax* (LINNAEUS, 1758), volaient vers le sud, tant le long des dunes côtières qu'au-dessus des étangs et des terrains ouverts à l'intérieur des forêts.

D'autres observations sur la migration d'insectes dirigée vers le sud furent effectuées du 15 au 17 octobre 1966 en Camargue (Provence), et sont également décrites ici.

Introduction: In the autumn of 1953 D. F. OWEN and I (BURTON & OWEN, 1954, 1955) made detailed observations on the southward migration of insects along the coast of south-west France between Arcachon (Gironde) and Mimizan Plage (Les Landes). In the autumn of 1966 I had the opportunity to visit this same area, plus a few days in the Camargue in Provence, accompanied by PETER LEWIS, a BBC sound recording engineer, to make sound recordings of birds and other wildlife for the BBC's Library of Wildlife Sound based in Broadcasting House, Bristol, England. Although this work was my main preoccupation, I was able to make some further observations on those insects that were or appeared to be migrating. Details of these are given below.

Species recorded migrating (heavy southward migrations of birds was also taking place at the same time on all these dates):

Odonata

Hawker dragonfly *Aeshna* sp.: Les Landes: Mimizan Plage: one flew south along the dunes on 29 September and many between 10³⁰ and 13⁰⁰hrs. on 6 October during a heavy southward migration of birds. I was unable to catch any for specific identification as the great majority flew quite high, between three and 20 metres, many of them in tandem. I estimated that they were passing me at the rate of at least 108 per hour, although 180 per hour may have been nearer the actual rate. Étang d'Aureilhan: one flew south on 5 October; between Morcenx and Solférino: three flew south-west between 11¹⁵ and 13⁰⁰ hrs., on 9 October.

Darter dragonfly *Sympetrum* spp.: Les Landes: between Moncenx and Solférino: four flew south between 11³⁰ and 12⁴⁵hrs. on 7 October. Provence: wherever we went in the Camargue from 15 to 17 October I saw many thousands of *Sympetrum* spp., especially the Ruddy Darter *S. sanguineum* (MÜLLER, 1764), but I could not detect any directional movement in them. Many were just hovering over the grass.

Orthoptera

Migratory Locust *Locusta migratoria* (LINNAEUS, 1758): Les Landes: near Bias: one solitary phase female on a roadside verge on heathland on 30 September; Lande de Captieux: another solitary phase female on heathland (fig. 3) on 2 October.

Lepidoptera

Rush Veneer *Nomophila noctuella* ([DENIS & SCHIFFERMÜLLER], 1775): Les Landes: Mimizan Plage: abundant along the forest-edge of the coastal dunes (fig. 4: dunes bordered by pine forest) on the morning of 29 September; every clump of vegetation contained from two to 12 or more imagines. It looked as if a very big immigration had taken place overnight following a very heavy thunderstorm the previous afternoon that arrived from the Bay of Biscay on strong south-westerly winds. On 3 October only a few imagines were to be seen here following gale force winds from the south.

Large White *Pieris brassicae* (LINNAEUS, 1758): Les Landes: Mimizan Plage: a few seen flying south along the dunes on 30 September and on 6 and 10 October; and between Moncenx and Solférino on 7 and 9 October.

Provence: Camargue: small numbers flew south against a strong south-easterly wind on 16 October between Port-St. Louis and Les

Stes. Maries de la Mer.

Small White *Pieris rapae* (LINNAEUS, 1758): Les Landes and Provence: as *P. brassicae* (L.), but in large numbers.

Clouded Yellow *Colias croceus* (GEOFFROY, 1785): Les Landes: Mimizan Plage: very small numbers flying south along the dunes between 10³⁰ and 13⁰⁰ hrs. on 30 September, between 10⁴⁵ and 13⁰⁰ hrs. on 6 October, and between 09³⁰ and 12⁰⁰ hrs., on 10 October. Between Moncenx and Solférino: six flew south between 11³⁰ and 12⁴⁵ hrs. on 7 October; very small numbers flying south on 9 October. Provence: Camargue; Many migrating south in one and twos against a strong south-easterly wind almost all day on 16 October between Port-St. Louis and Les Stes. Maries de la Mer.

Long-tailed Blue *Lampides boeticus* (LINNAEUS, 1767): Les Landes: Mimizan Plage: during the period 29 September to 11 October imagines of this migratory species appeared to be resident amongst the Gorse *Ulex* sp., and other scrub between the coastal dunes and the pine forest-edge, as I saw no obvious sign of them migrating, although their numbers fluctuated from small numbers, for example, on 29 September and 3 October, to many present on 5 October. OWEN and I (1954, 1955) had observed a few migrating south at Pilat Plage, Gironde, in October 1953.

Red Admiral *Vanessa atalanta* (LINNAEUS, 1758): Les Landes: Mimizan Plage: two flew south along the dunes between 10³⁰ and 13⁰⁰ hrs on 6 October, and one on 10 October; between Moncenx and Solférino: six flew south on 7 October. Provence, Camargue: many migrating south in one and twos against a strong south-easterly wind almost all day on 16 October between Port-St. Louis and Les Stes. Maries de la Mer.

Painted Lady „*V. (Cynthia) cardui* (LINNAEUS, 1758)“: Les Landes: between Moncenx and Solférino: two flew south between 11³⁰ and 12⁴⁵ hrs. on 7 October.

Provence: Camargue: small numbers migrating south against a strong south-easterly wind almost all day on 16 October between Port-St. Louis and Les Stes. Maries de la Mer.

Humming-bird Hawkmoth *Macroglossum stellatarum* (LINNAEUS, 1758): Les Landes: apart from one that flew in through a window of our hotel on the dunes at Mimizan Plage at mid-day on 1 October, I did not observe this species migrating in 1966.

Silver Y *Autographa gamma* (LINNAEUS, 1758): Les Landes: Mimizan Plage: very small numbers flying south along the dunes between 10⁴⁵ and 13⁰⁰ hrs. on 30 September.

Diptera

Hover-flies (Syrphidae.): Les Landes: Mimizan Plage: between 10³⁰ and 13⁰⁰ hrs. on 6 October a strong southward migration of Syrphids took place along the dunes against a light south-west wind. Many were *Eristalis* spp., some of which I identified as *Eristalis tenax* (LINNAEUS, 1758). I estimated that they were passing me at a rate of 720 per hour; thus 1.800 passed during two and a half hours observation. I made sound recordings of them as they buzzed past, which may be heard on BBC Sound Archives LP disc MP25340, together with migrating Meadow Pipits *Anthus pratensis* and other birds, a copy of which has been supplied to the British Library's Wildlife Section in London.

The flight directions of migrating Syrphids independent of the wind direction have not often been recorded. However, LACK (1951), SNOW & ROSS (1952) and WILLIAMS (1958) reported huge migrations against contrary winds of these insects, including *E. tenax* (L.), through alpine passes in the Pyrénées on the French-Spanish frontier and in the Swiss Alps.

At 15¹⁵ hrs. on 14 October 1989, near Heidelberg, south-west Germany, I encountered a strong westwards movement of an *Eristalis* sp., probably *E. tenax* (L.), at a height of between one and two metres against a light westerly wind. I estimated that they were passing me on a 10-metre front at a rate of c.70 per minute, which would have given an hourly rate of c.4200 (BURTON, 1990).

Weather conditions: The weather throughout the period of observation in Les Landes from 28 September to 11 October 1966 fluctuated between windy days with either showers or heavy rain and some days of very warm and sunny conditions. The wind varied from light to strong and even gale force south-westerly or westerly from 28 - 30 September and 1 October to south-south-east on 2 October, very strong southerly to south-westerly on 3 and 4 October, then switched to a light north-easterly on 5 October and back to a light south-westerly on 6 and 7 October. On 8 October it returned to a light north-easterly, then backed to a light north-westerly on 9, 10 and 11 October.

When we left Mimizan Plage on the afternoon of 11 October and drove to the Camargue, the weather deteriorated and it rained very heavily in Toulouse that evening and during the night. During the rest of the journey from 12 to 13 October via Carcassonne, Narbonne and Sète it was fine, sunny and hot with a light southerly wind. It was fine, sunny and very warm in the Camargue on 14 October but with a very strong southerly wind. The next day the wind had become a moderating south-easterly following heavy rain and thunderstorms during the morning. The 16 and 17 October were gloriously sunny and warm but with a strong south-east wind.

Comparison with migration in the autumn of 1953: Between 1 and 13 October 1953, D. F. OWEN and I observed southward insect migration between the Bassin d'Arcachon (Gironde) and Mimizan Plage (Les Landes), and also over the large lakes (étangs) in Les Landes of Biscarrosse et Parentis (fig. 2), Cazaux et de Sanguinet, Petit Étang de Biscarrosse (fig.1) and Aureilhan (BURTON & OWEN, 1954, 1955). Inland we found that migrating insects undeflected from their standard directions by trees and bushes, etc., were most easily observed over these lakes, where we saw fairly strong to strong migrations to the south and south-west of Clouded Yellow *Colias croceus* (GEOFF.), Red Admiral *Vanessa atalanta* (L.), Painted Lady *V. cardui* (L.) and Large and Small White *Pieris brassicae* (L.) and *P. rapae* (L.) butterflies (mainly the latter), plus Humming-bird Hawkmoths *Macroglossum stellatarum* (L.), darter dragonflies *Sympetrum* spp., and Syrphid hover-flies *E. tenax* (L.) on 1, 2, 4 and 9 October, all flying very low over the water. A few Queen of Spain Fritillary *Issoria lathonia* (LINNAEUS, 1758) and Pale Clouded Yellow *Colias hyale* (L.) butterflies and Silver Y moths *Autographa gamma* (L.) were also seen flying southwards.

At the high coastal dunes between Pilat Plage and Cap Ferret, across the Bassin d'Arcachon (Gironde), we observed fairly strong to strong southward migrations of Large and Small White, Clouded Yellow, Red Admiral, Painted Lady, Queen of Spain Fritillary and Long-tailed Blue butterflies, plus Humming-bird Hawkmoth and Silver Y moth, darter dragonflies *Sympetrum* spp., and the

Syrphid flies *E. tenax* (L.), *Volucella zonaria* (PODA, 1761) (Hornet-mimic Hover-fly) and *Scaeva pyrastris* (LINNAEUS, 1758).

The most conspicuous migrations southwards occurred when the wind was southerly, force one to two, as was also the case in 1966. Thus, although the weather conditions were less favourable, the insect migration I observed in south-west France in the autumn of 1966 followed much the same pattern as OWEN and I observed in the autumn of 1953. It was always possible as then to see insects migrating as soon as it became warm enough, almost always not before 10⁰⁰ hrs. It ceased as soon as the weather became cool in the late afternoon.

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Fig. 1-4: Explanation in the text/Bilderklärung im Text.



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