



Hoverflies (Diptera, Syrphidae) of Morocco: a taxonomic and ecological study

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RIF mountains (Northern Morocco)

Outline

- Introduction
- Goals
- History
- Study Area
- Materials & Methods
- Preliminary Results
- Discussion
- Outlook





Oued Farda (Rif)



Deep and narrow throats
Akchour (Rif)

A photograph capturing a caravan of camels and their handlers in the vast, undulating sand dunes of the Sahara Desert. The scene is dominated by large, smooth sand dunes in shades of light beige and tan. A line of six camels is shown walking from left to right across the frame. Five of the camels have small, colorful saddle pads or blankets. Each camel is accompanied by a person: one person walks alongside the first camel, while four others are seated on the camels' backs. The sky above is a clear, pale blue.

Merzouga (Sahara)

why study hoverflies?



✓ Bioindicator of old forests



✓ Prédators



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Larvas eat of pucerons: they eat until 200 pucerons / week.



**Biologique
control**



**Useful to
gardenesr and
agricultur**



✓ Pollinators

Adults feed pollen and nectar attend many flowers



History

First study, BECKER & STEIN (1913)

- GIL COLLADO (1929)
- SEGUY (1930 – 1953)
- KANERVO (1939)
- CLAUSSEN (1989)
- CLAUSSEN & HAUSER (1990)
- KASSEBEER (1995, 1998)
- KUZNETZOV (1997)
- HAUSER & KASSEBEER (1998)
- KASSEBEER (1999 - 2000)
- PÂRVU,CORNELIU,RÂZVANPOPESCU&RÂZVAN ZAHARIA (2006)

Goals

Establishment of an inventory of
Syrphidae

Complete study: Taxonomy, Geography,
Distribution and Ecology

Identification of the hot spots





Study Area

Rif

Rif_area

0 115 230 460 690 920 Km



Oued Chrafate (Rif)



Abies marocana



17/06/2014

*Macaca
sylvanus*



27/04/2010 05:51 PM



Cedrus atlantica

In many aspects Morocco is more similar to Europe.



Rif

17/06/2014

Materials & Methods

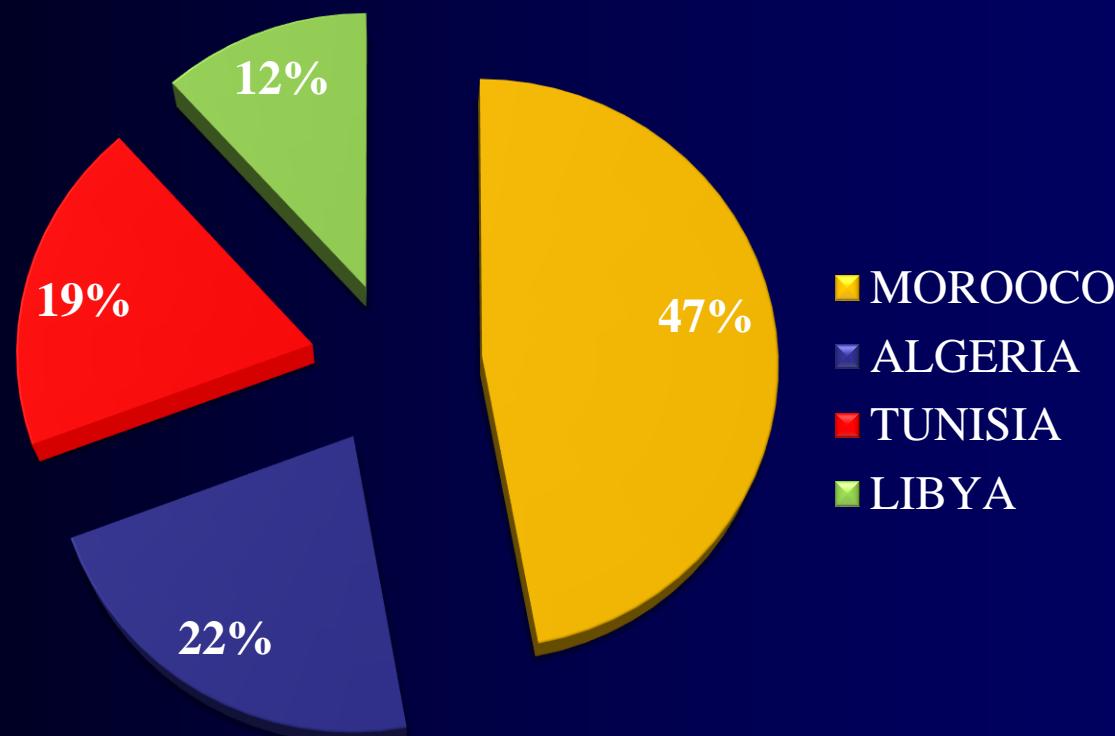


- The most comprehensive studies were conducted in the High Atlas, and Middle Atlas, the Rif was, until recently, hardly investigated.
- Syrphidae occupy a wide variety of habitats in the Rif

Number of species identified in the Maghreb:

- 143 species (Morocco)
- 70 species (Algeria)
- 60 species (Tunisia)
- 37 species (Libya)

Rate of species in the Maghreb





MOROCCO

143 species

SPAIN

355 species

*81
Common
species*

Preliminary Results



Preliminary list

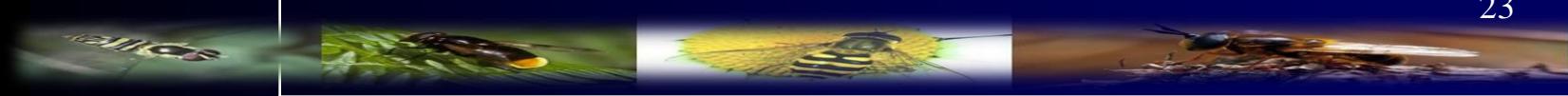
ERISTALINAE

- Ceriana** Rafinesque, 1815
 vespiformis (Latreille, 1804)
Cheilosia Meigen, 1822
 laticornis (Zetterstedt, 1843)
Eristalinus Rondani, 1845
Eristalis Latreille, 1804
 tenax (Linnaeus, 1758)
 arbustorum (L., 1758)
Eumerus Meigen, 1822
Merodon Meigen, 1803
Myathropa Rondani, 1845
 florea (Linnaeus, 1758)
Neoacia Williston, 1886
 claussenii (Hauser & Kassebeer, 1998)
Orthonevra Macquart, 1829
Syritta Lepeletier & Serville, 1828
Xylota Meigen, 1822
 segnis (Linnaeus, 1758)

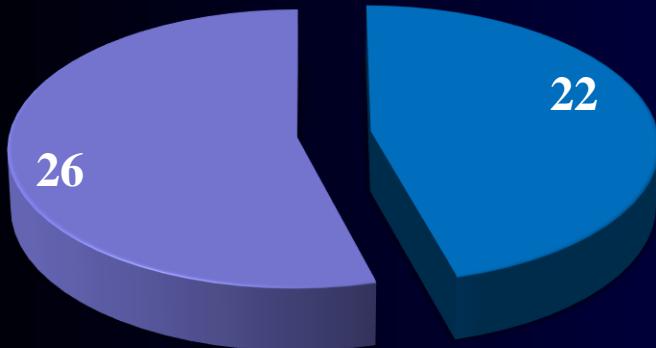
SYRPHINAE

- Chrysotoxum** Meigen 1803
 intermedium (Meigen, 1822)
Diasyrphus Enderlein 1937
 albostriatus (Fallén, 1817)

- Epistrophe** Walker 1852
 eligans (Harris, 1780)
Episyphus Matsumura & Adachi 1917
 balteatus (De geer, 1776)
Eupeodes Osten Sacken 1877
 corollae (Fabricius, 1794)
 latifasciatus (Macquart, 1829)
 luniger (Meigen, 1822)
Melanostoma Schiner, 1860
 mellinum (Linnaeus, 1758)
 scalare (Fabricius, 1794)
Meliscaeva Frey 1946
 auricolis (Meigen, 1822)
Paragus Latreille, 1804
 bicolor (Fabricius, 1794)
Platycheirus Lepeletier & Serville, 1828
 albimanus (Fabricius, 1781)
Scaeva Fabricius, 1805
 albomaculata (Macq., 1842)
Sphaerophoria Lepeletier & Serville, 1828
 scripta (Linnaeus, 1758)
Syrphus Fabricius, 1775
 ribessi (Linnaeus, 1758)
Xantogramma Schiner, 1860
 marginale (Linnaeus, 1758)



Number of genera



- Identified genera
- the rest of the genera not identified yet



Cheilosia paralobi Malski, 1962



1 new specie to science



Eumerus sp nov

4 New species



Orthonevra bervicornis Low, 1843



Platycheirus scutatus (Meigen, 1822)



Merodon unguicornis Strobl, 1909.



Eumerus obliquus (Fabricius, 1805)

Species such as:

- Episyphus balteatus*
- Sphaerophoria scripta*
- Melanostoma mellinum*
- Eristalis tenax*



Episyphus balteatus (De geer 1776)



were widespread and abundant



Melanostoma mellinum (Linnaeus, 1758)



Rare species :

- Ceriana vespiformis*
- Neoascia claussenii*
- Eumerus obliquus sp nov*
- Orthonevra bervicornis sp nov*
- Merodon unguicornis sp nov*
- Platycheirus scutatus sp nov*



Merodon unguicornis Strobl, 1909. sp. nov



Eumerus obliquus (Fabricius, 1805)
Sp. nov



Ceriana vespiformis (Latreille, 1804)

Outlook

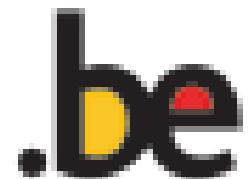
- Finalize identification
- DNA identification
- Publications
- Participation at Scientific events

Oued Maggo (Rif)



Belgian National Focal Point to the
Global Taxonomy Initiative

WITH THE SUPPORT OF
**THE BELGIAN
DEVELOPMENT COOPERATION**



Oued Madisouka (Rif)

18/05/2014

*Thank you for your
attention*