



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

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Outline

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





Oued Farda (Rif)



Deep and narrow throats
Alchour (Rif)

Merzouga (Sahara)



why study hoverflies?



✓ Bioindicator of old forests



✓ Prédators



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



**Biologique
control**



**Useful to
gardeners and
agriculture**



✓ Pollinators

Adults feed pollen and nectar attend many flowers





History

First study, BECKER & STEIN (1913)

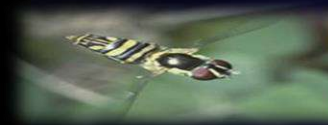
- GIL COLLADO (1929)
- SEGUY (1930 – 1953)
- KANERVO (1939)
- CLAUSSEN (1989)
- CLAUSSEN & HAUSER (1990)
- KASSEBEER (1995, 1998)
- KUZNETZOV (1997)
- HAUSER & KASSEBEER (1998)
- KASSEBEER (1999 - 2000)
- PÂRVU, CORNELIU, RĂZVAN POPESCU & RĂZVAN ZAHARIA (2006)

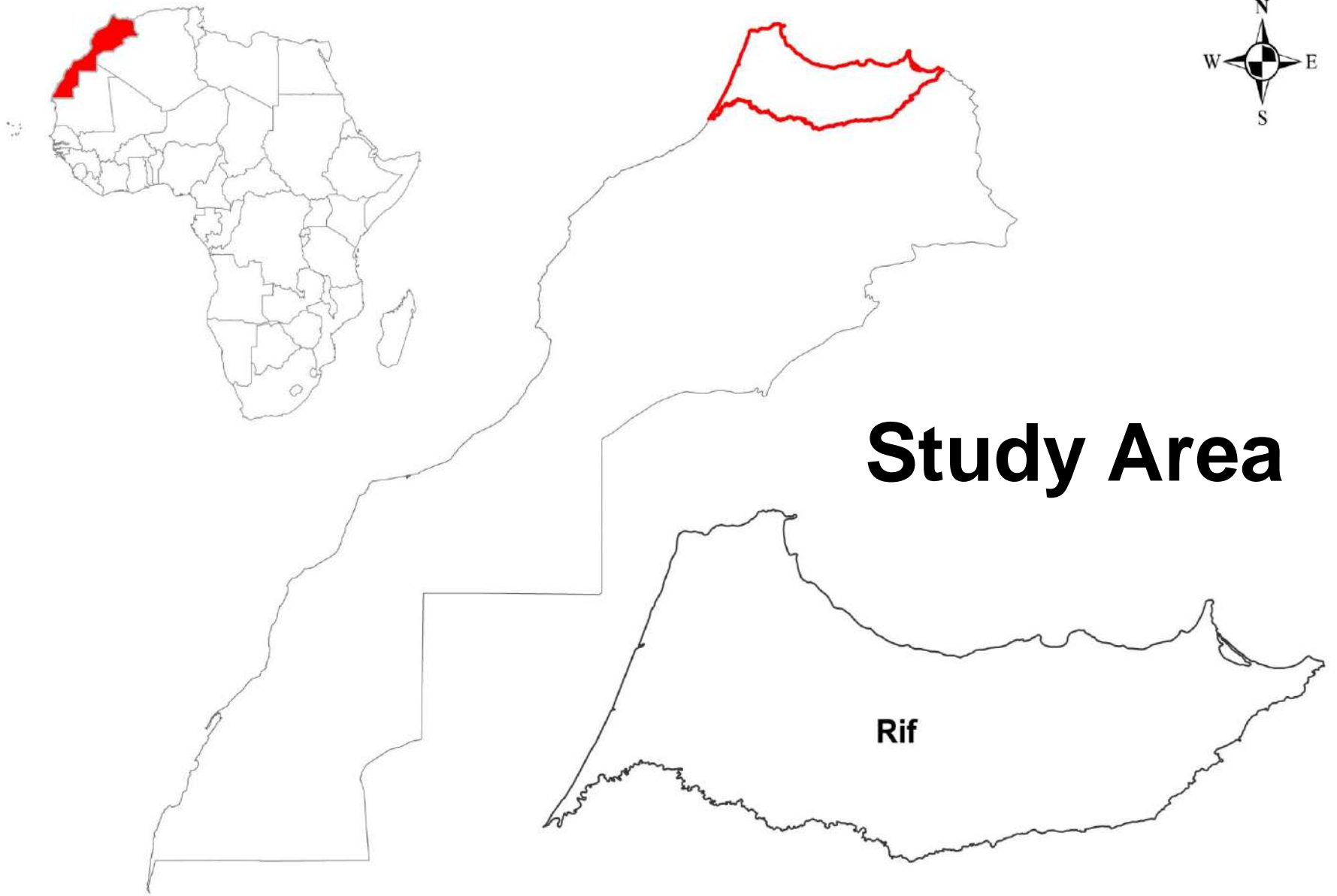
Goals

**Establishment of an inventory of
Syrphidae**

**Complete study: Taxonomy, Geography,
Distribution and Ecology**

Identification of the hot spots

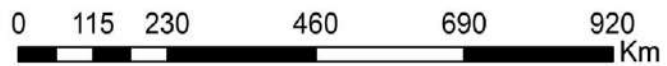




Study Area

Rif

 Rif_area





Oued Chrafate (Rif)

Abies marocana

Rif

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

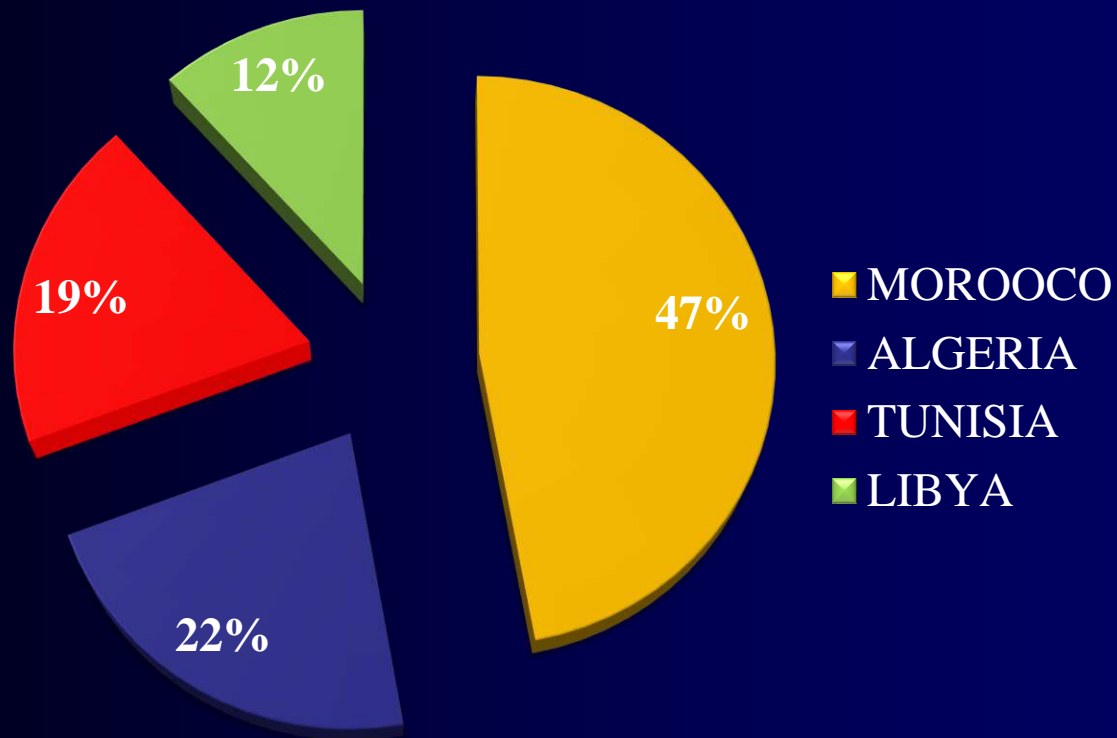


- The most comprehensive studies were conducted in the High Atlas, and Middle Atlas, the Rif was, until recently, hardly investigated.
- Syrphidae occupy a wide variety of habitats in the Rif

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



An aerial photograph of the Strait of Gibraltar, showing the narrow waterway between the Iberian Peninsula and North Africa. The sky is blue with scattered white clouds. The land is green and brown, with some urban areas visible. The text is overlaid on the image.

SPAIN

355 species

MOROCCO

143 species

81

***Common
species***

Preliminary Results



Preliminary list

ERISTALINAE

- Ceriana*** Rafinesque, 1815
vespiformis (Latreille, 1804)
- Cheilisia*** 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
clausseni (Hauser & Kassebeer, 1998)
- Orthonevra*** Macquart, 1829
- Syritta*** Lepeletier & Serville, 1828
- Xylota*** Meigen, 1822
segnis (Linnaeus, 1758)

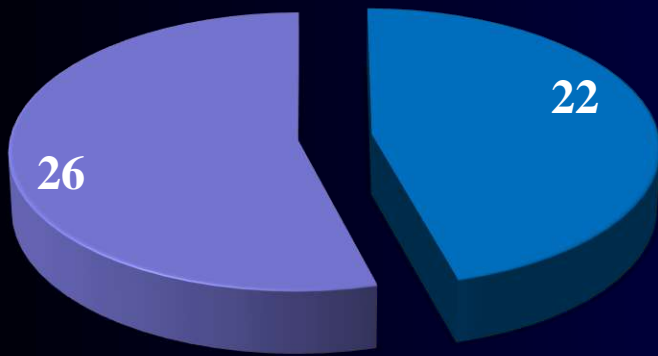
SYRPHINAE

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

- Epistrophe*** Walker 1852
eligans (Harris, 1780)
- Episyrphus*** 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)



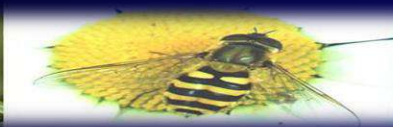
Number of genera



- 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 Strobel, 1909.



Eumerus obliquus (Fabricius, 1805)

Species such as:

- ❑ *Episyrphus balteatus*
- ❑ *Sphaerophoria scripta*
- ❑ *Melanostoma mellinum*
- ❑ *Eristalis tenax*



were widespread and abundant



Episyrphus balteatus (De geer 1776)



Melanostoma mellinum (Linnaeus, 1758)



Rare species :

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



Eumerus obliquus (Fabricius, 1805)
Sp. nov



Ceriana vespiformis (Latreille, 1804)



Merodon unguicornis Strobol, 1909. sp. nov

Outlook

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

Oued Maggo (Ref)



Belgian National Focal Point to the
Global Taxonomy Initiative

WITH THE SUPPORT OF
THE BELGIAN
DEVELOPMENT COOPERATION





*Thank you for your
attention*

Oued Madisouka (Rif)

18/05/2014