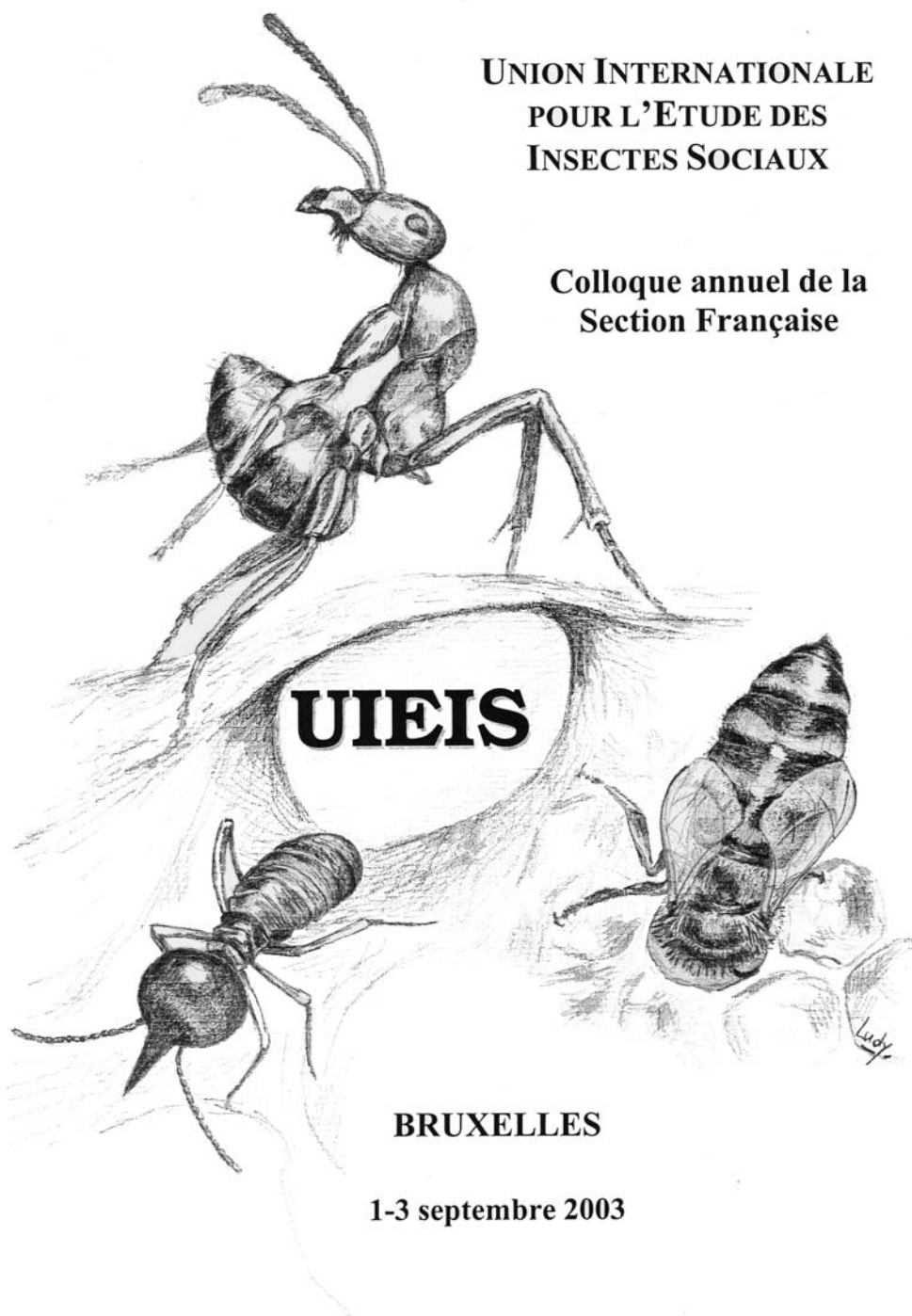


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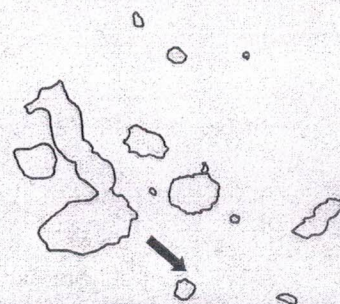
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Tramp ants of Galápagos: recent evolution of populations on Floreana Island

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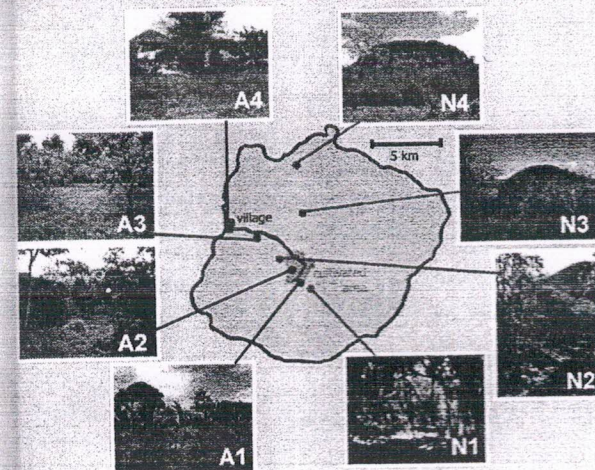


The introduction of invasive species has a large impact on sensible insular ecosystems. In order to preserve such environments it is essential to understand invasion mechanisms.

Our investigation took place on Floreana Island. We compared the actual distribution of ant species with previous data collected in 1996-7 (Pezzati et. al 1998) using the same methodology.

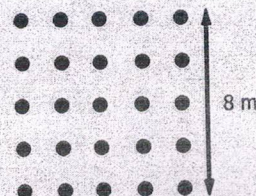
Study sites

8 sites were chosen: 4 sites in the man-impacted zone (A1 - A4)
4 sites in the natural zone (N1 - N4)



Methodology

- At each site we used alternatively **honey** and **tuna** baits to attract ants
- 25 baits** were laid in a 8m x 8m quadrant for **20 hour** periods
- Presence of ants were recorded five times during each experiment



Tuna in oil bait



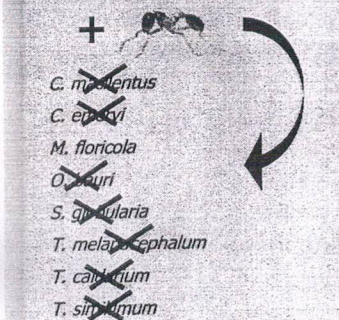
Honey bait with *Camponotus macilentus*

Results

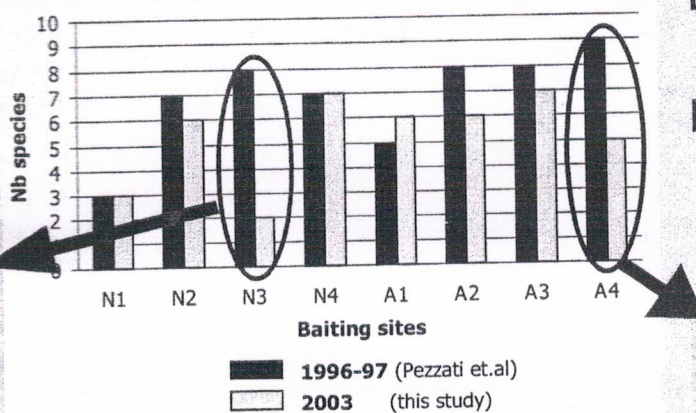
Among the 16 species collected...

- 2 are endemics of Galápagos archipelago
- 10 are tramp species and among them 3 have been recently introduced

Invasion phenomenon of *Solenopsis geminata*



Nb of ant species collected at each baiting site in 1996-7 and in 2003



S. geminata was not recorded in 1996-7 at site N3 while it is very abundant in this study (94% of our observations).

M. destructor was new for the Galápagos archipelago in 1996-7.

It is still found only in the village (site A4) but species composition at baiting site changed from 7 years ago.

List of collected species

- Camponotus macilentus*
- Camponotus planus* (only in 1996-7)
- Cardiocondyla emeryi*
- Cardiocondyla nuda*
- Monomorium destructor*
- Monomorium floricola*
- Odontomachus bauri*
- Paratrechina longicornis*
- Paratrechina sp.*
- Solenopsis geminata*
- Solenopsis globularia*
- Solenopsis sp.* (only in 1996-7)
- Tapinoma melanocephalum*
- Tetramorium bicarinatum*
- Tetramorium caldarium* (only in 1996-7)
- Tetramorium similimum*

Replacement phenomenon by *Monomorium destructor*

<i>C. macilentus</i>	<i>C. macilentus</i>
<i>C. emeryi</i>	<i>C. emeryi</i>
<i>M. destructor</i>	<i>M. destructor</i>
<i>M. floricola</i>	<i>M. floricola</i>
<i>P. longicornis</i>	<i>P. longicornis</i>
<i>S. geminata</i>	<i>S. geminata</i>
<i>S. globularia</i>	<i>S. globularia</i>
<i>T. melanocephalum</i>	<i>T. melanocephalum</i>
<i>T. caldarium</i>	<i>T. caldarium</i>

Comments

- Our results illustrate two typical stages of an invasion:
 - Arrival of a new species at a given place (case of *S. geminata*)
 - Changes of behaviour of a recent introduced species (case of *M. destructor*)
- It is therefore necessary to conduct further investigations in laboratory to elucidate the kind of competition used by these very efficient invasive species.

In both cases competition among ants is very strong.

Bibliography

PEZZATTI, B. et al. 1998 : "Ants (Hymenoptera, Formicidae) of Floreana : lost paradise ? " Noticias de Galápagos 1998 :11-19.