Evolutionary potential of reintroduced and source population of the Large Blue butterfly *Maculinea arion*

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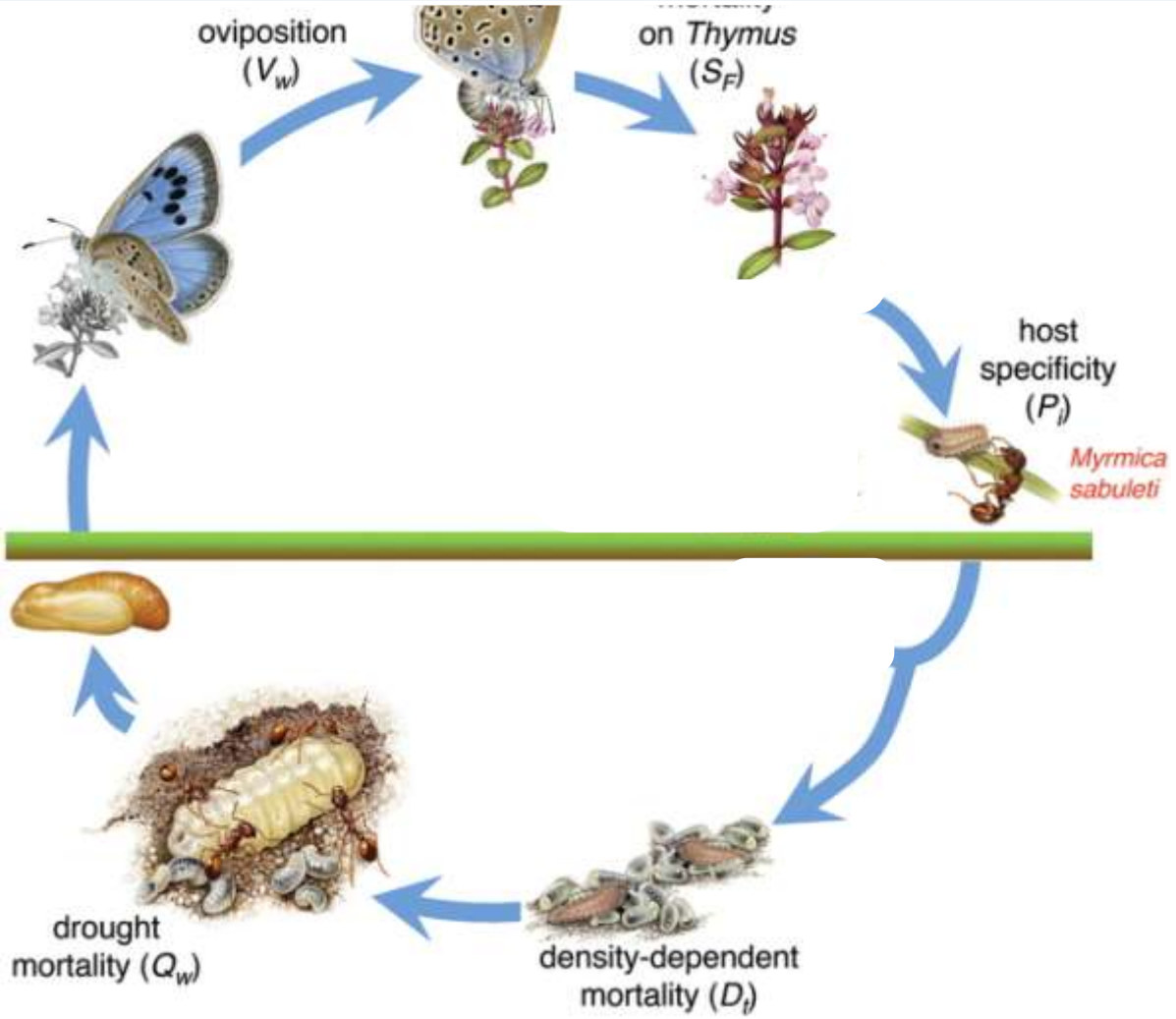
Future of Butterflies III

A. Illum

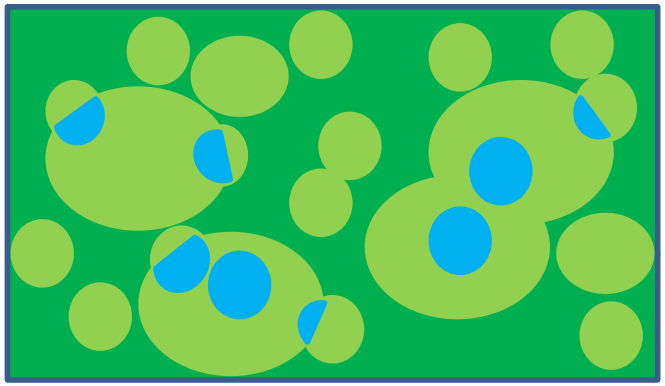
Introduction



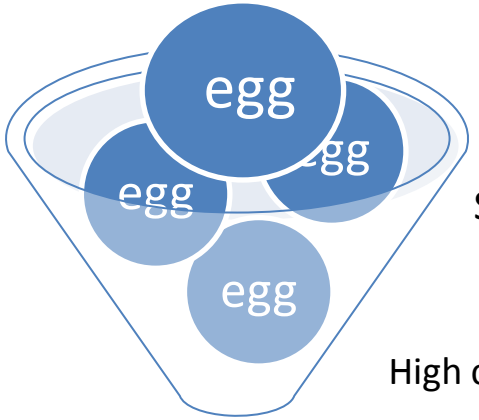
Modified from R.Lewington in Thomas *et al.* (2009) Nature

Consequences of lifestyle

- Patchy habitat



- Virulence

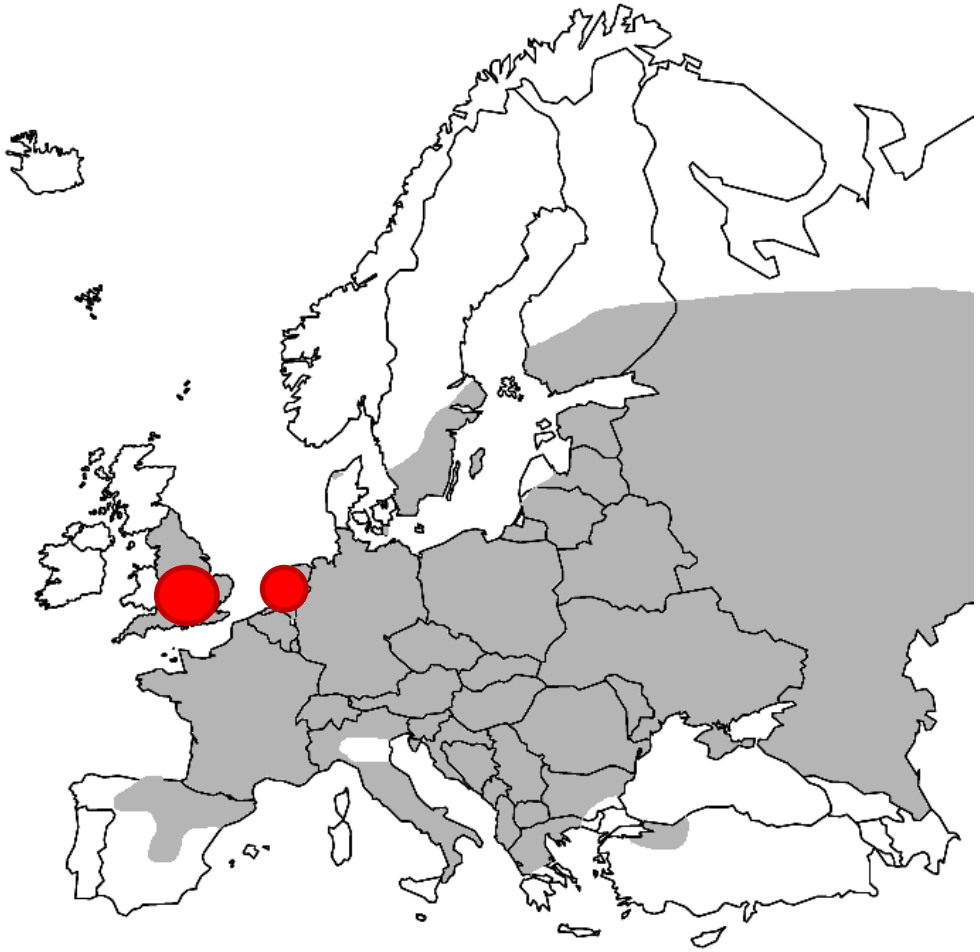


Small Ne

High caterpillar mortality

- Population bottlenecks

Populations decline and threats



After Collins butterfly guide, Tolman & Lewington 2008

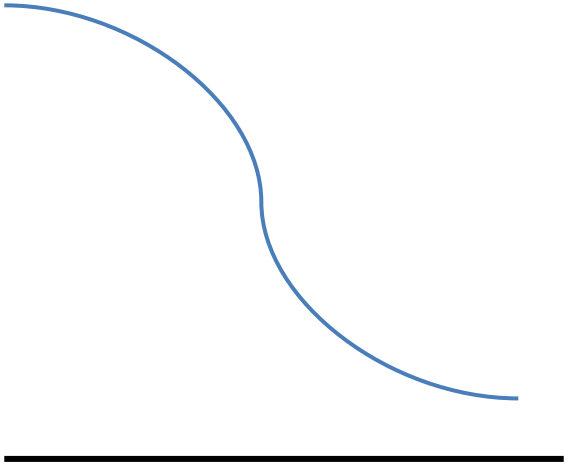
www.flickr.com/photos/awmc1/favorites/page32/?view=lg
www.landbrugsinfo.dk/Maskiner-markteknik/Traktorer/Sider/lpart160.aspx

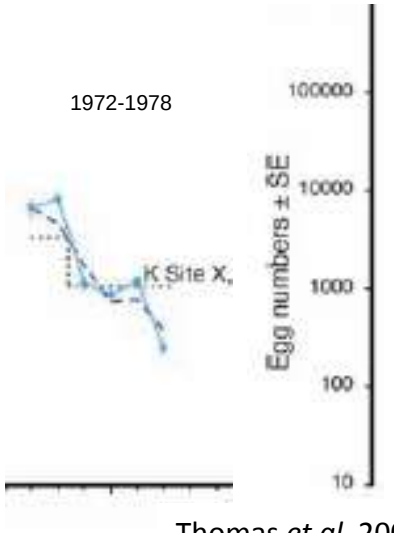
Evolutionary potential of reintroduced and source populations

History of the Large Blue in the U.K.

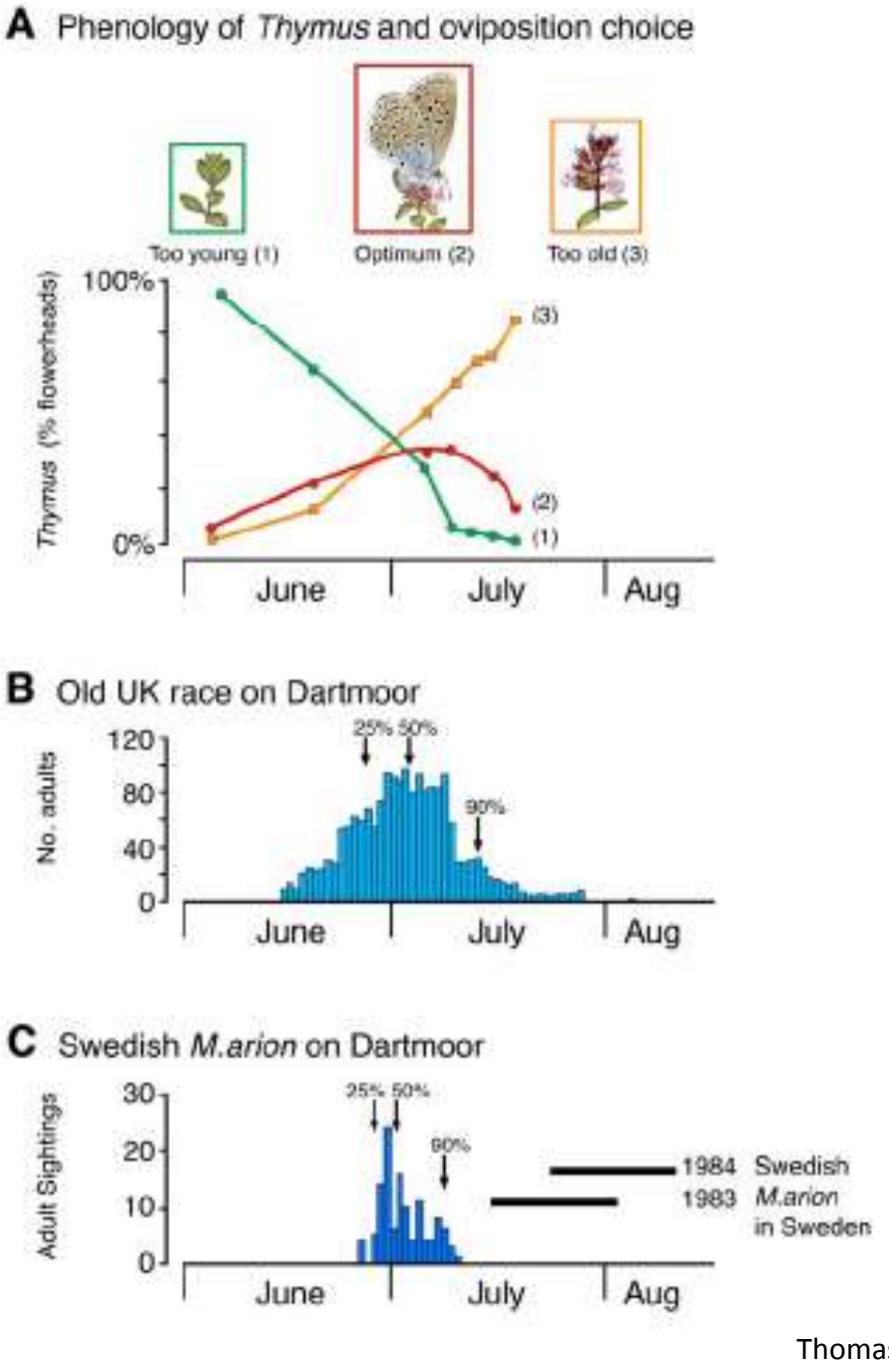
1900 | 1970s | 1979 | 1983 | 1992 | 2011

Decline | Ecological studies | Extinction | Reintroductions | Population growth





Thomas *et al*. 2009, Nature

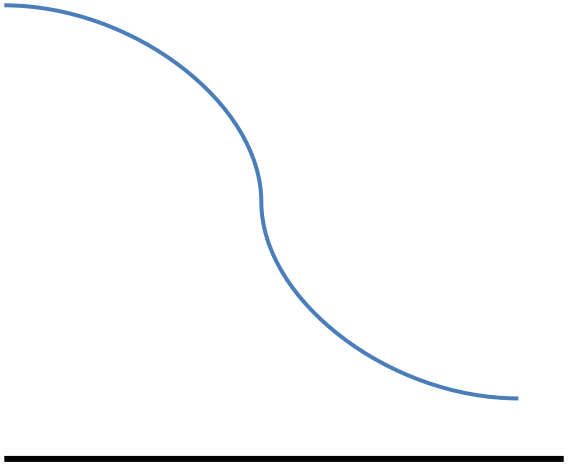


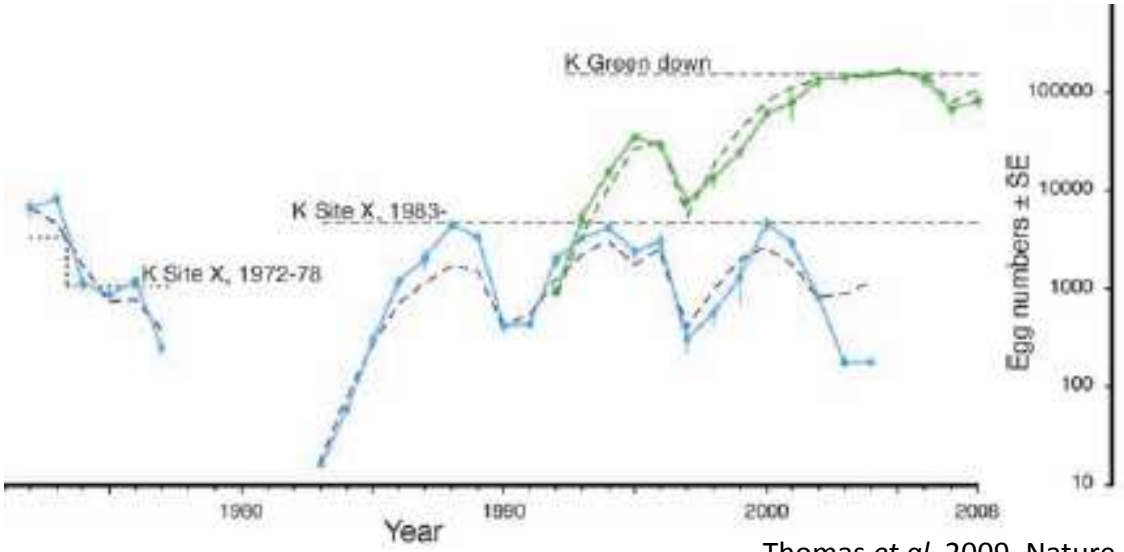
Thomas *et al*. 2009, Nature

Reintroduction history

The Large Blue butterfly in the U.K.

1900	1970s	1979	1983	1992	2011
Decline	Ecological studies	Extinction	Reintroductions	Population growth	





Thomas *et al*. 2009, Nature

Objectives

1) Characterize the population genetic structure of the Öland population (good source population?)

2) Analyse the levels of genetic diversity and the population genetic structure of reintroduced populations in the U.K.

Photos by A. Illum

Hypotheses

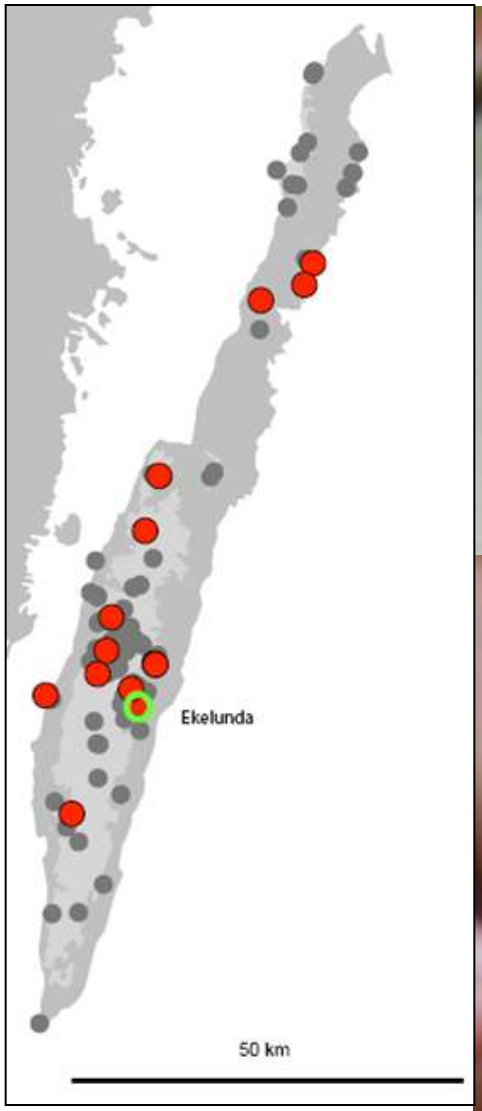
The reintroduced population...

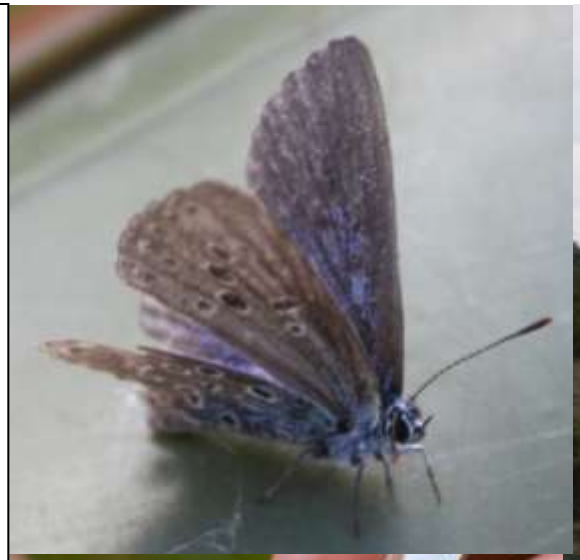
1. has lower genetic diversity than the source population

2. are genetically differentiated from the source population

3. has lower genetic differentiation among subpopulations

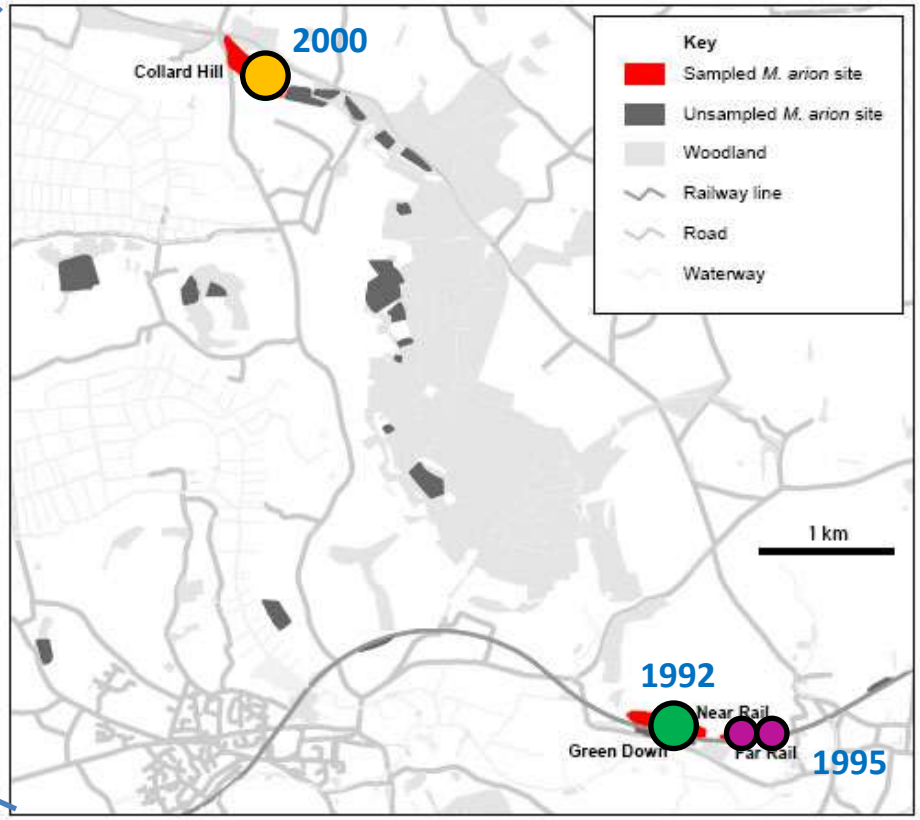
Öland – source population





U.K. - reintroduced populations

Polden Hills, Somerset



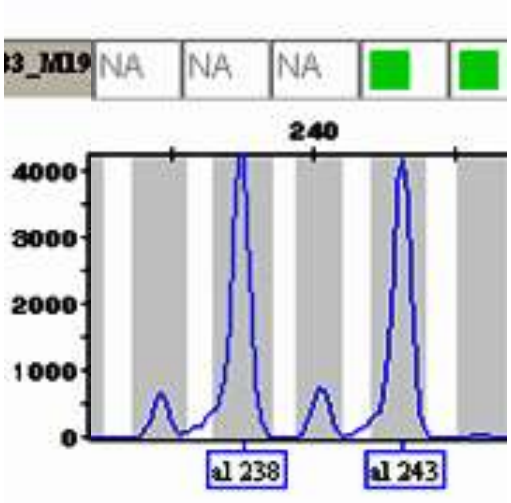
Field work done by David Simcox

Methods – lab

DNA extraction and amplification of 14 microsatellite loci

Scoring of allele sizes

ABI 3130x machine



Allele sizes

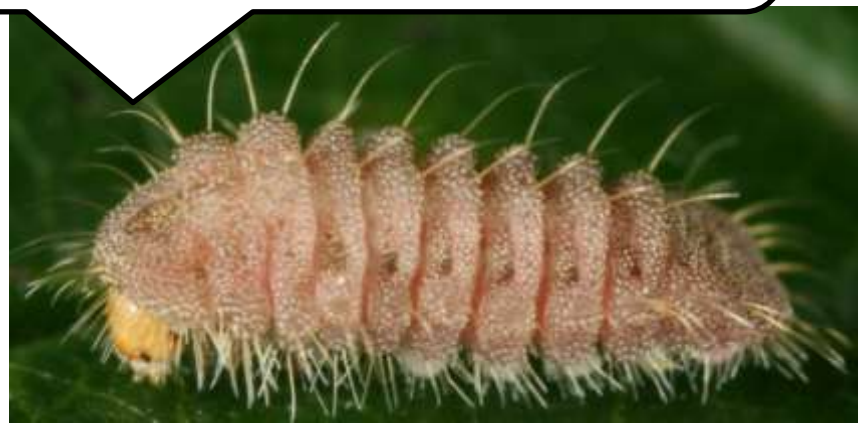
www.narilis.be/ressources/pdf/ABI3130xl-2.pdf
http://www.cf.gu.se/english/Genomics/Services+provided/Fragment_analysis/Microsatellite_genotyping/

unpublished results and conclusions removed from this presentation

Acknowledgements

- David R Nash and Line V Ugelvig
- Anders A Illum
- David J Simcox and Jeremy A Thomas

Thanks for your attention!



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