

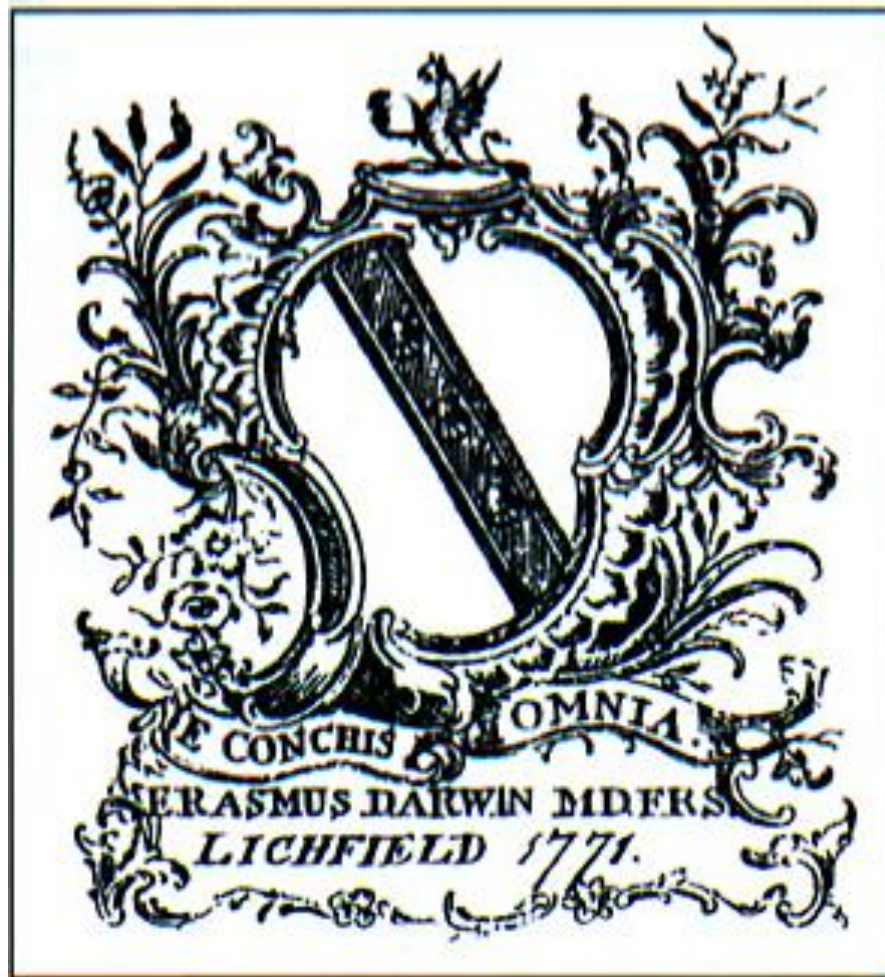
STEVE JONES

Author of the award winning *ALMOST LIKE A WHALE*

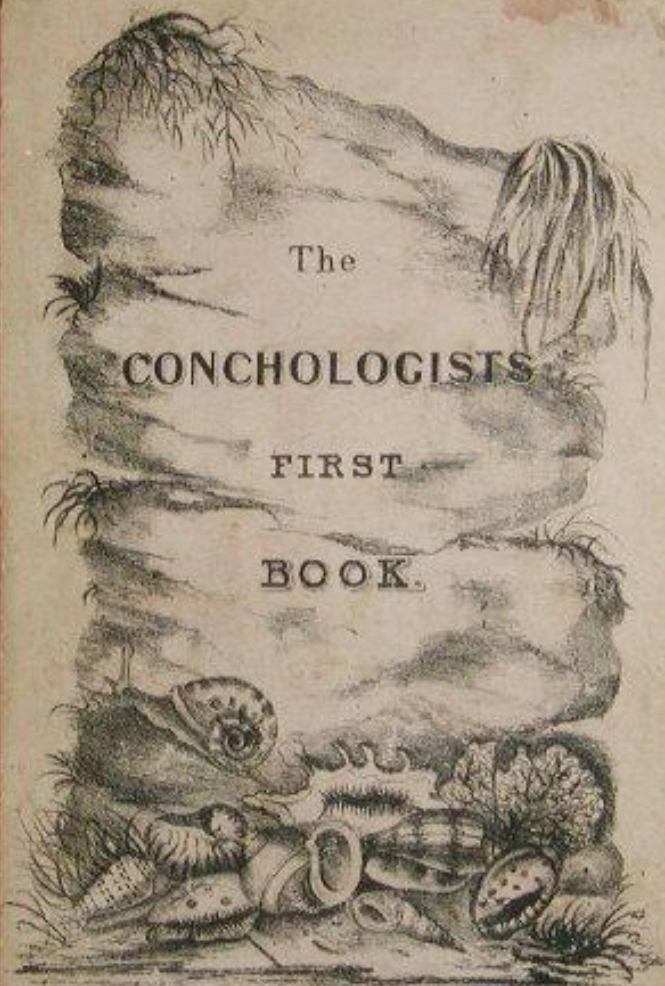


THE SINGLE HELIX
A TURN AROUND THE WORLD OF SCIENCE

Erasmus Darwin's bookplate: "Everything from Shells"



The
CONCHOLOGISTS
FIRST
BOOK.



THE
CONCHOLOGIST'S FIRST BOOK:
OR,
A SYSTEM

OF
TESTACEOUS MALACOLOGY

Arranged expressly for the use of Schools,

IN WHICH

THE ANIMALS, ACCORDING TO CUVIER, ARE GIVEN
WITH THE SHELLS,

BY EDGAR A.
POE.

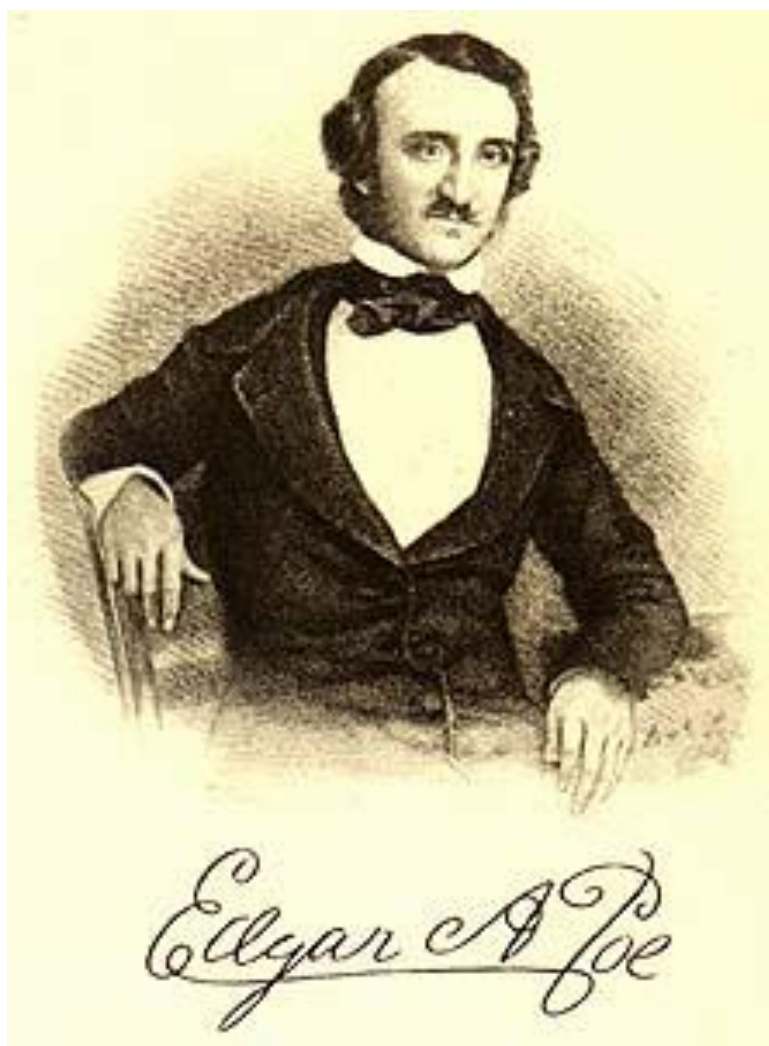
PHILADELPHIA :

PUBLISHED FOR THE AUTHOR, BY

HASWELL, BARRINGTON, AND HASWELL,

AND FOR SALE BY THE PRINCIPAL BOOKSELLERS IN THE
UNITED STATES.

1839.







Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!

A german bandersnatch

- *Zur Auswertung der Diversitat und Struktur des Polymorphismus bei den Banderschnecken *Cepaea hortensis* (Muller 1774) und *C. nemoralis* (Linne 1758) am Beispiel isolierter Populationen*

Autor: Sverlova, N.

Gargoyles on the Sagrada Familia (Gaudi)



Matisse Mollusc



Mediaeval marginalia – sex, age, or death?



More mediaeval molluscs ...



And yet more – but why?



Dali – Woman with snail



Annunciation – Francesco del Cossa; the Virgin Mary and the impregnable snail – “If the dew of the clear air can make the snail pregnant, then God in virtue can make His mother pregnant”



Bernini – The Sleeping Hermaphrodite



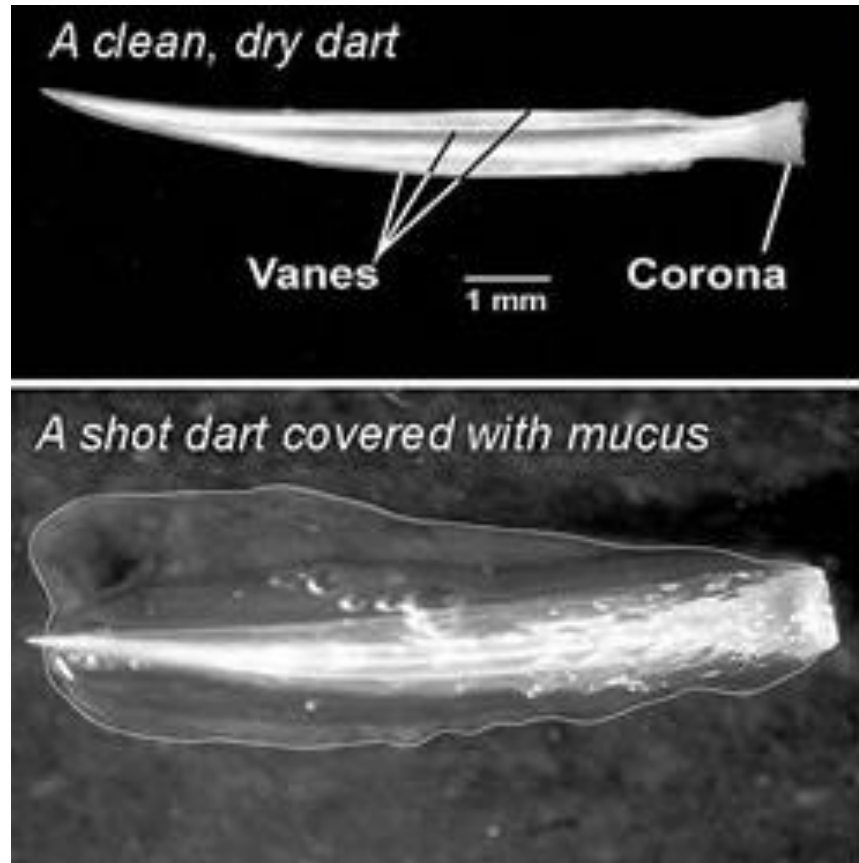
A17th Century Archer



Boucher- Cupid wounding Psyche



Cupid's hormonal dart



Boy-girl meets girl-boy ...

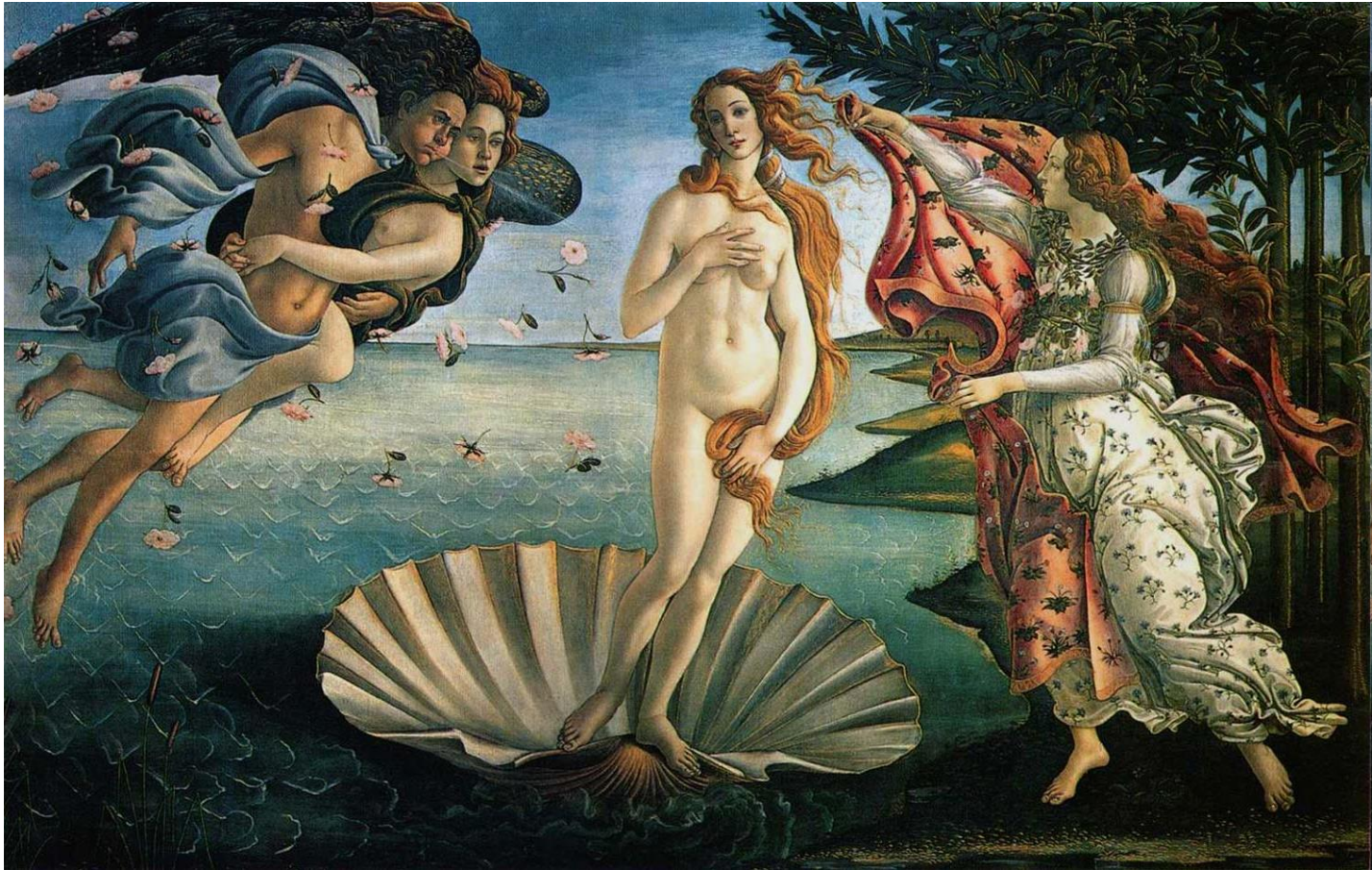


Charles Darwin quoting Agassiz on slug mating: "Quiconque a eu l'occasion d'observer les amours des limaçons, ne saurait mettre en doute la seduction deployee dans les mouvements et les allures qui preparent et accomplissent le double embrassement de ces hermaphrodites".

Goya: Cronos devouring his children (after having castrated his father)



Botticelli: Venus emerging from the ... “foam”



Snail on a gravestone; “Like a snail that melteth away into slime, they shall be taken away ...” Psalm 58



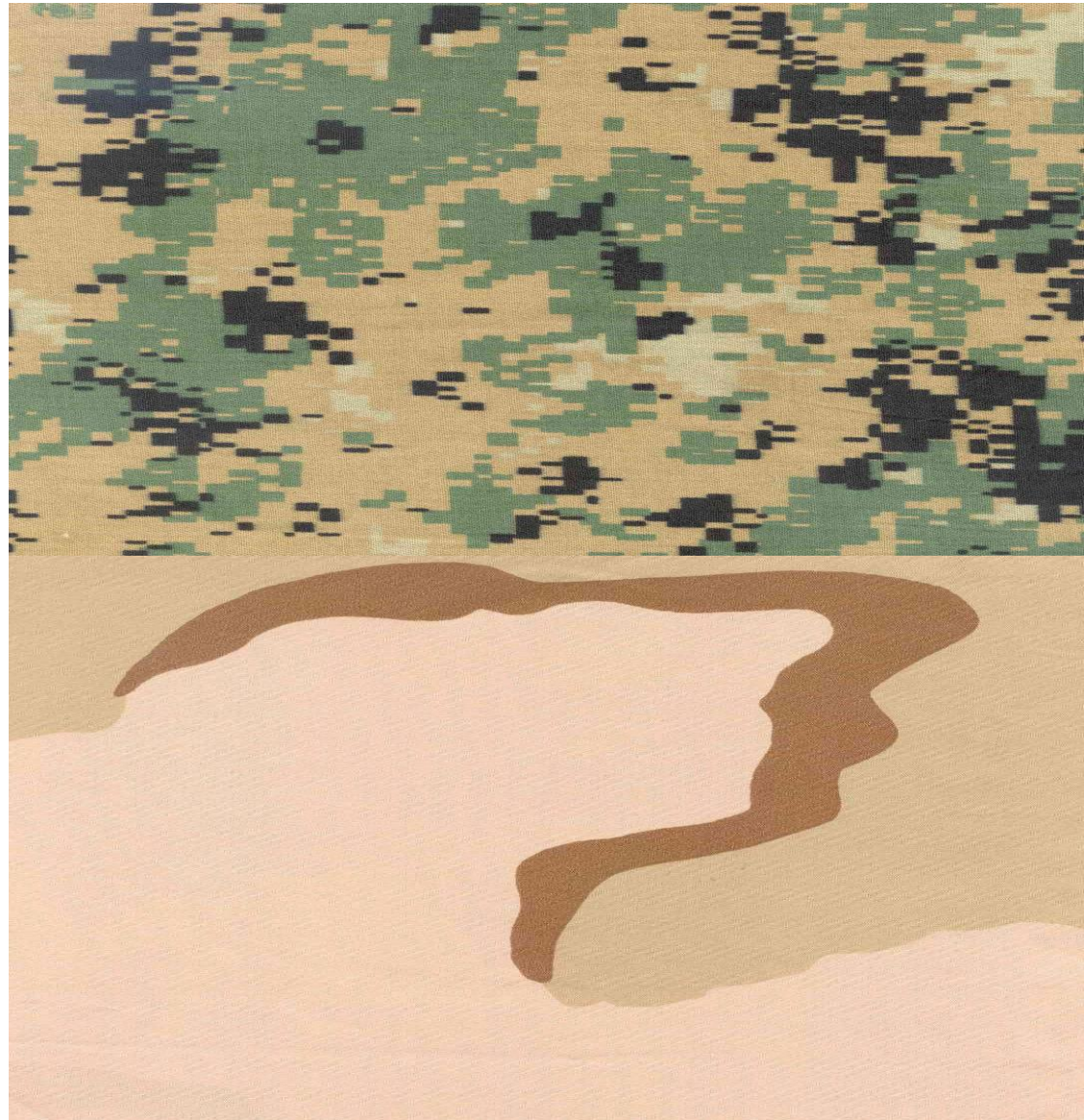
The resurrection of *Theba pisana*



Bird predation: Roman mosaic and the real thing



Military camouflage- forest above, desert below



Dazzle ship in dry dock – Edward Wadsworth 1919



Bridget Riley – high dazzle, high grain

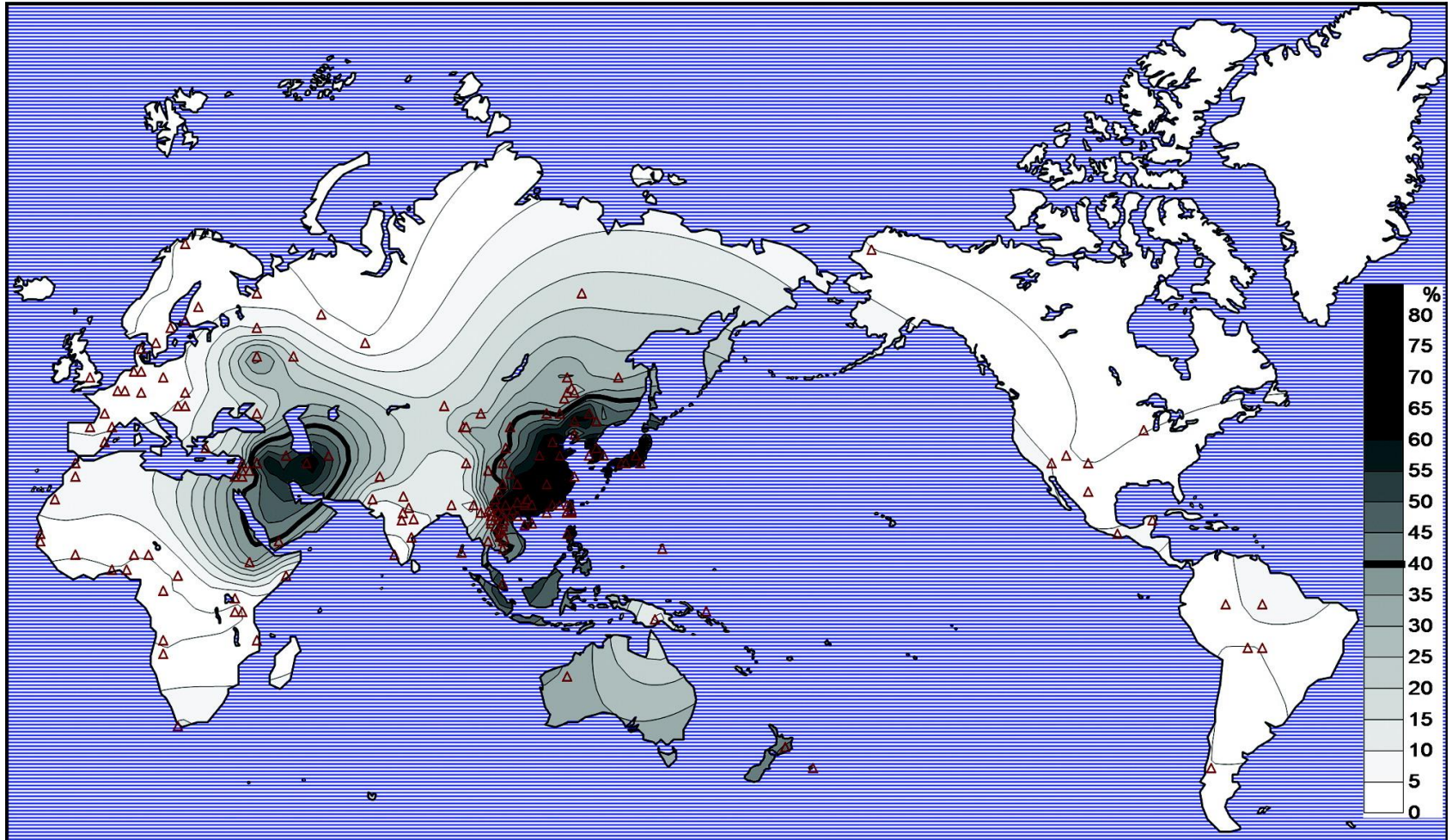


Evolution
MegaLab



GAAATAATTAATGTTTTCTTCCTTCTCCTATTTTGTCTTTACTTCAATTTATTTATTTATTATTAATATTATTATTTTTTG
AGACGGAGTTTCACTCTTGTGTTGCCAACCTGGAGTGCAGTGGCGTGATCTCAGCTCACTGCACACTCCGCTTCTCTGG
TTTCAAGCGATTCTCCTGCCTCAGCCTCCTGAGTAGCTGGGACTACAGTCACACACCACCACGCCCCGGCTAATTTTTG
TATTTTTAGTAGAGTTGGGGTTTCACCATGTTGGCCAGACTGGTCTCGAACTCCTGACCTTGTGATCCGCCAGCCTCT
GCCTCCCAAAGAGCTGGGATTACAGGCGTGAGCCACCAGCGCTCGGCCCTTTGCATCAATTTCTACAGCTTGTTCCTT
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CAGTGTAAATGTGAATATGTCACTTACTAGAGGAAAGAAGGCACTTGAAAAACATCTCTAAACCGTATAAAAAACAATTA
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CAATAAGACCACAGGCTTTAAATTTGGCTTTAAACTGTGAAAGGTGAAACTAGAAATGAATAAAATCCTATAAATTTAA
ATCAAAAAGAAAGAAACAAAATAGAAATTAAGTTAATATACAAGAATATGGTGGCCTGGATCTAGTGAACATATAGT
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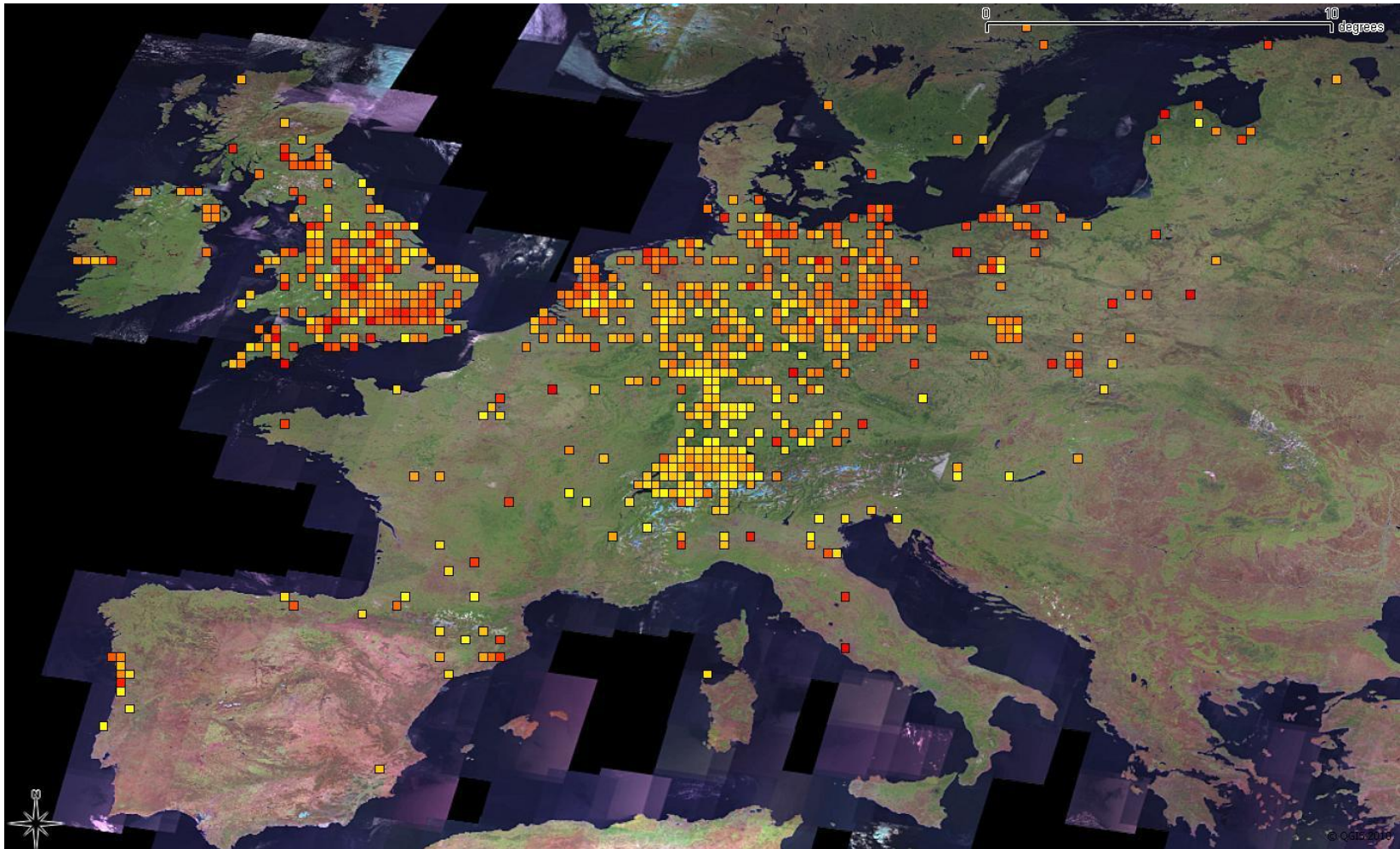
Frequency of ADH 2*2 allele (alcohol sensitivity)



C. nemoralis – light and dark extremes



Evolution megalab – yellow allele frequency 2009



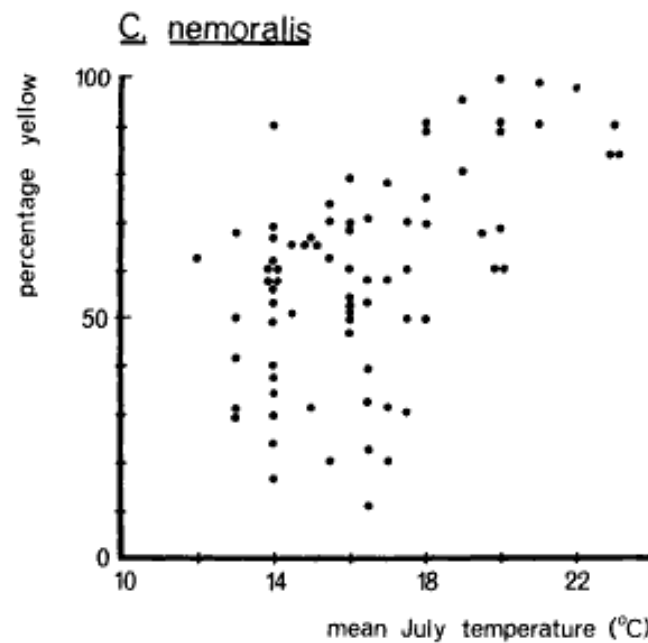
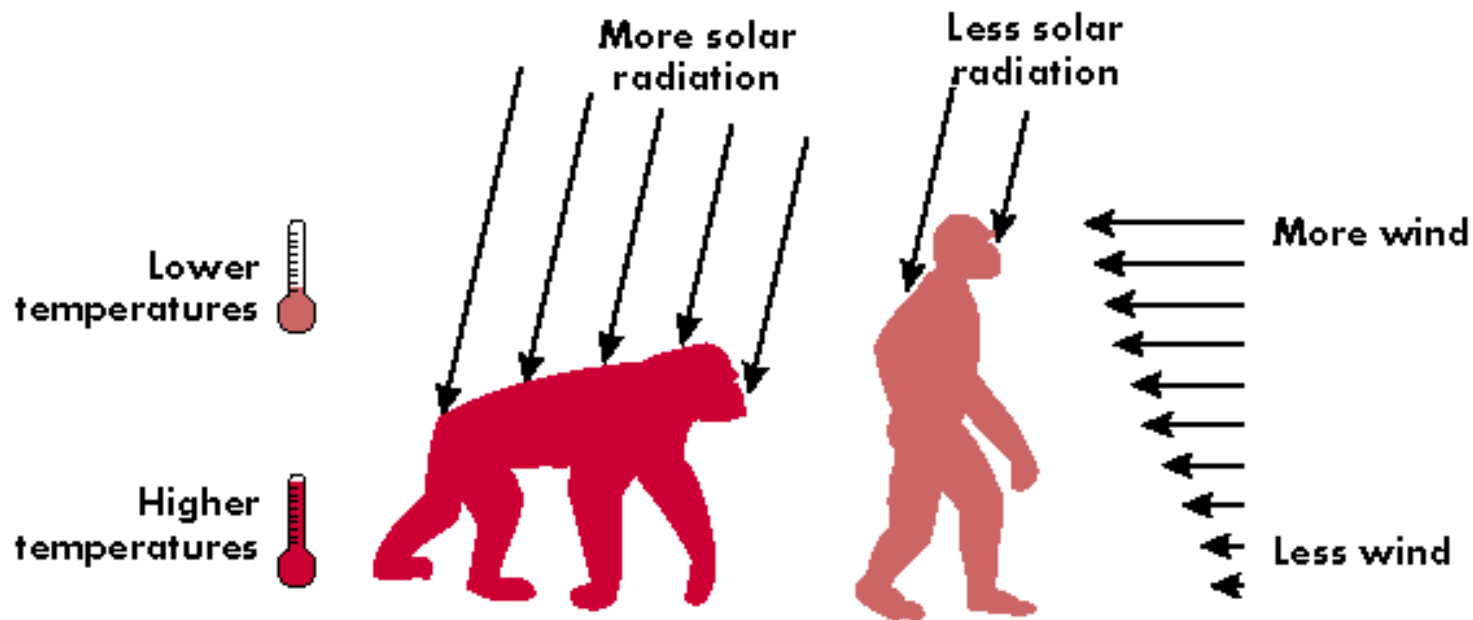


Figure 6 Association between the frequency of yellow shells and mean July temperature in *C. nemoralis* ($p < 0.001$).

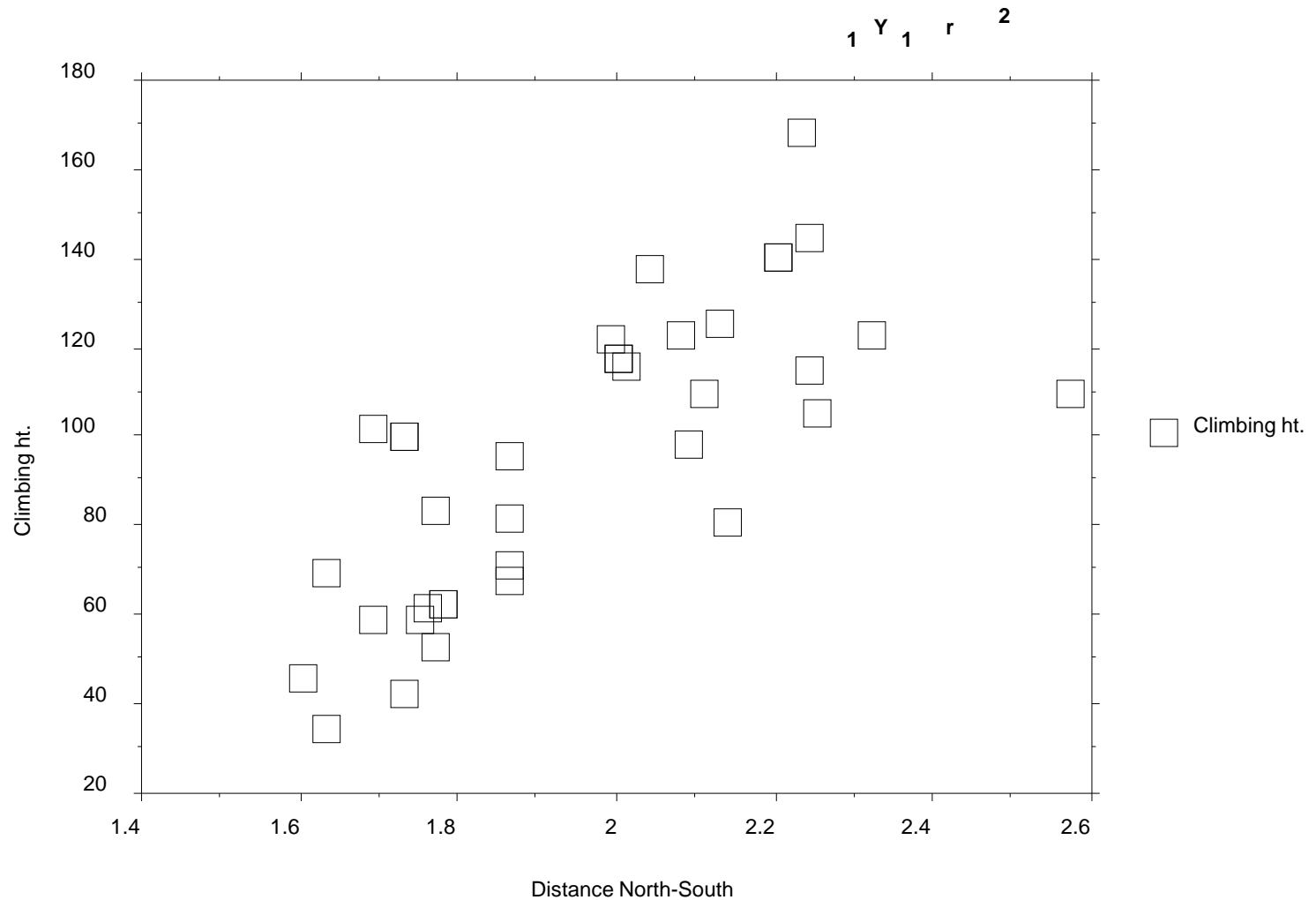
The Sun in the Tate Modern, with behavioral response



Thermoregulation and bipedalism



Cepaea climbing – Scotland to Spain



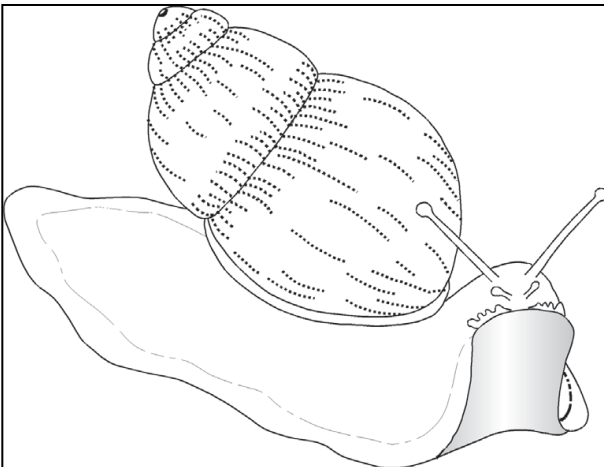
Methods & Naloxone Experiments

Experiment 1: No Naloxone

Used the **hot-plate test**.

Place onto hotplate at $40^{\circ}\text{C} \pm 0.5^{\circ}$

Record latency of foot-lifting response
(thermal nociception) in (s).



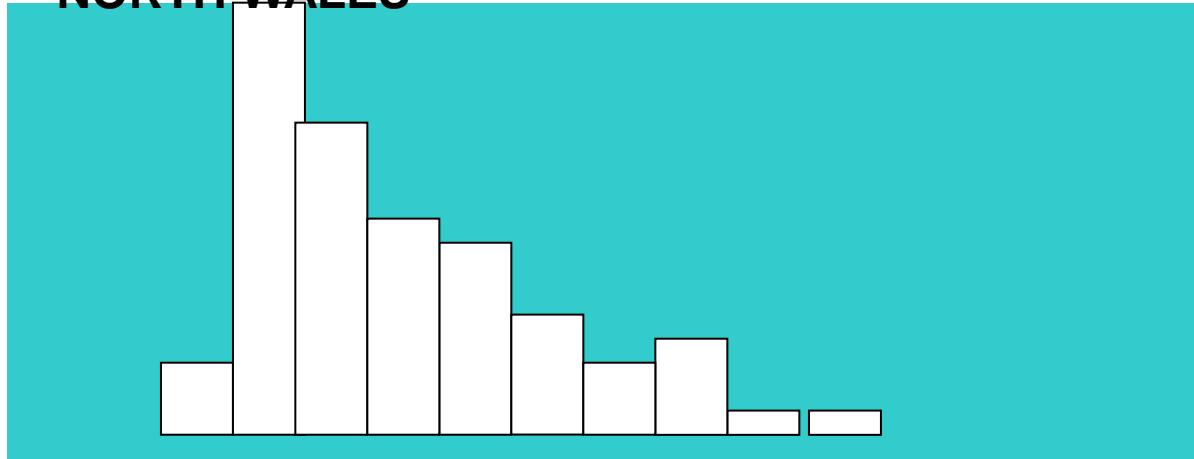
Experiment 2: Naloxone

Inject snails with naloxone.

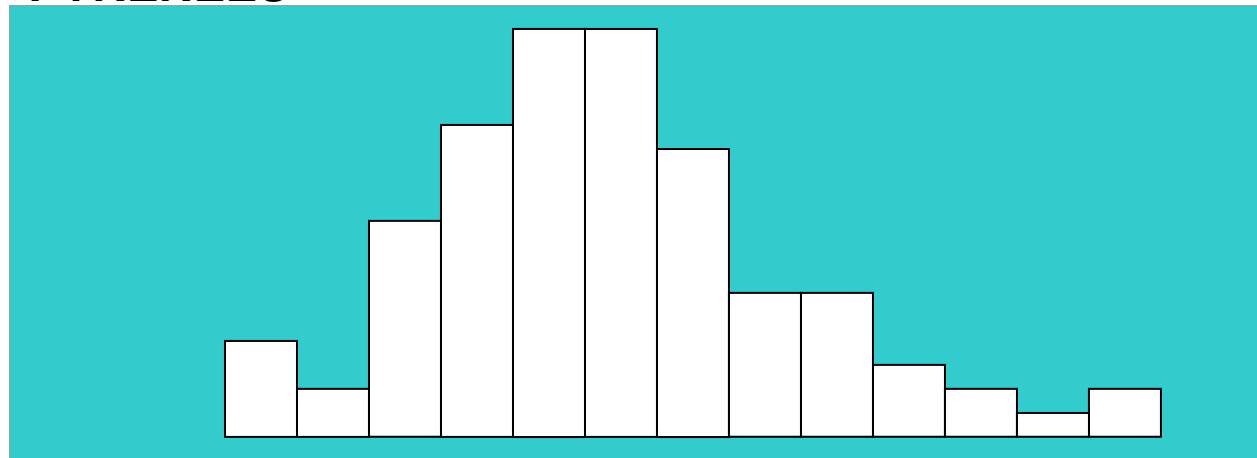
Leave for 15 mins

Hot-plate test

LATENCY OF HEAT RESPONSE IN TWO C NEMORALIS POPULAT
NORTH WALES



PYRENEES



2 2.5 3 3.5 4 4.5 5 5.5 6 6.5 7 7.5 8 8.5 9 seconds

Jan Davidz. de Heem(1606-1684) "Vase of flowers"





Valle de Aran – wide range of habitats



Habitat Types – Val d' Aran



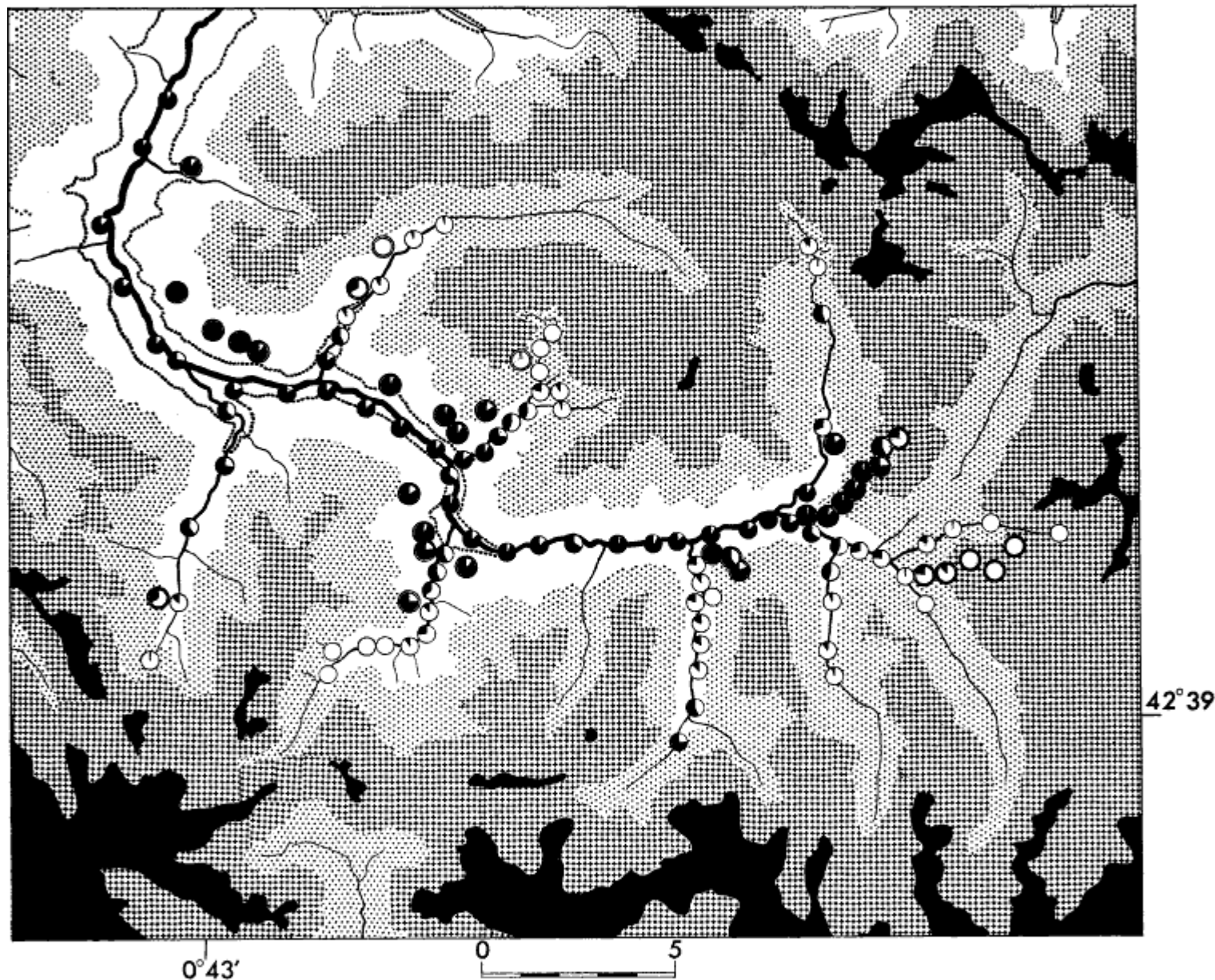


FIGURE 5. Frequencies of banded (black) and unbanded (white) in the Valle de Aran samples. Double circles represent hillside samples, the positions of most of which have been displaced in the diagram for clarity. The 1000 m contour is shown by a dotted line, and stippling indicates land over 1500, 2000 and 2500 m. Kilometre scale.





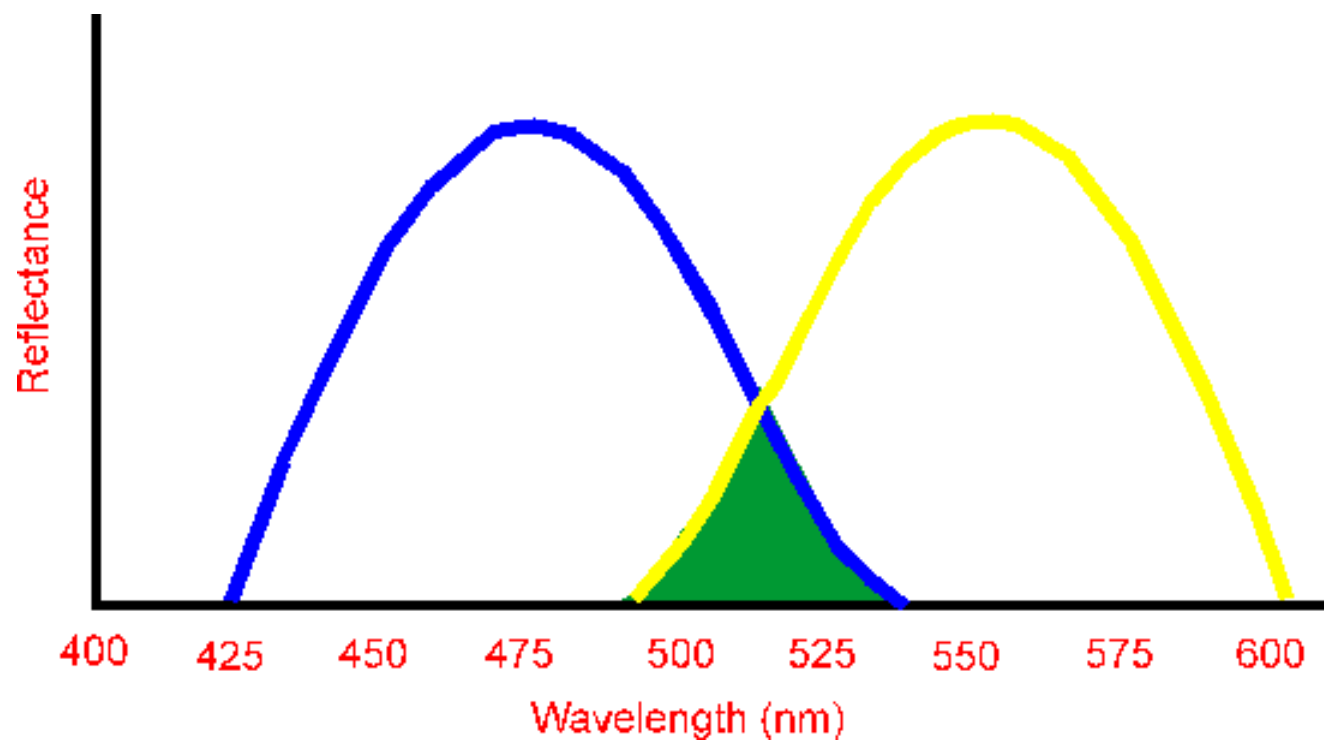






A snail's-eye view



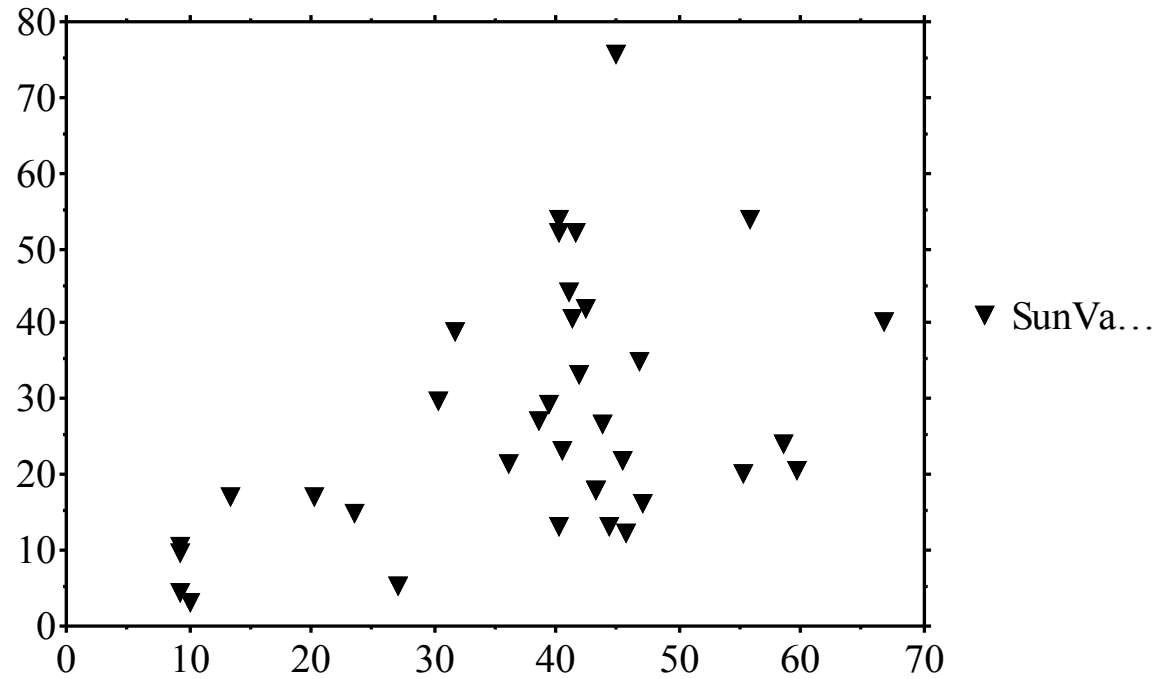




Polymorphism vs thermal complexity

-

- Coefficient of Variation –
- shell polymorphism

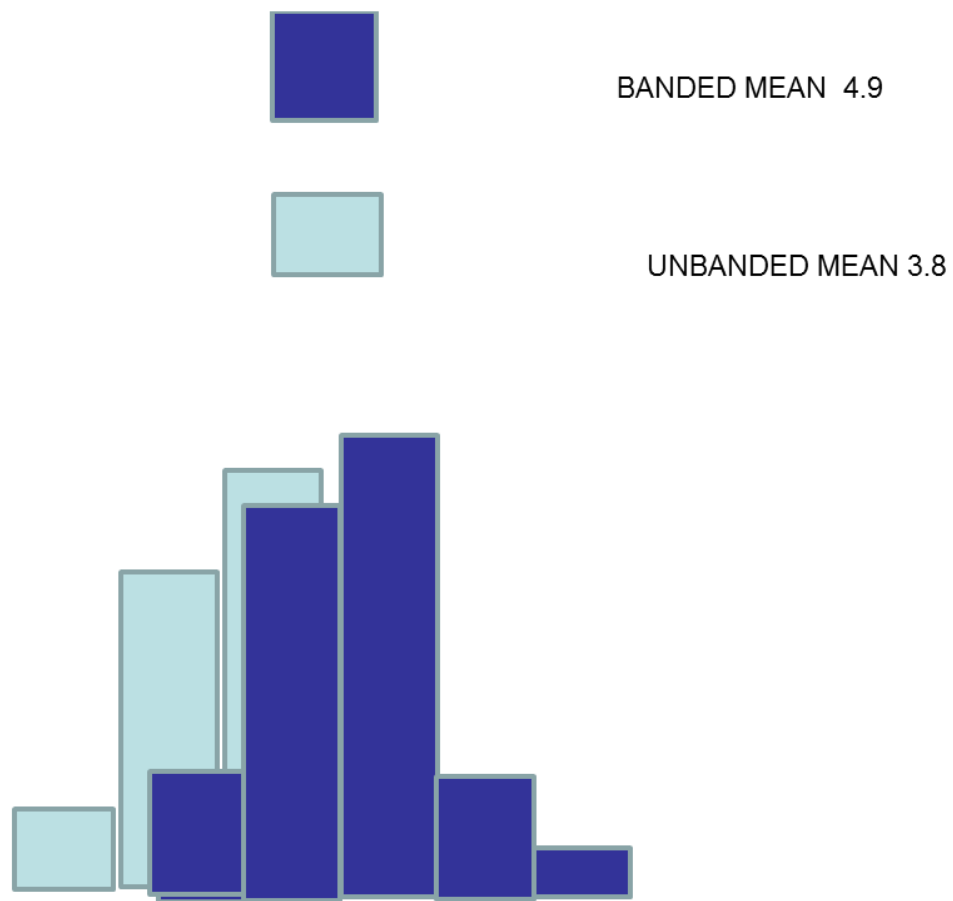


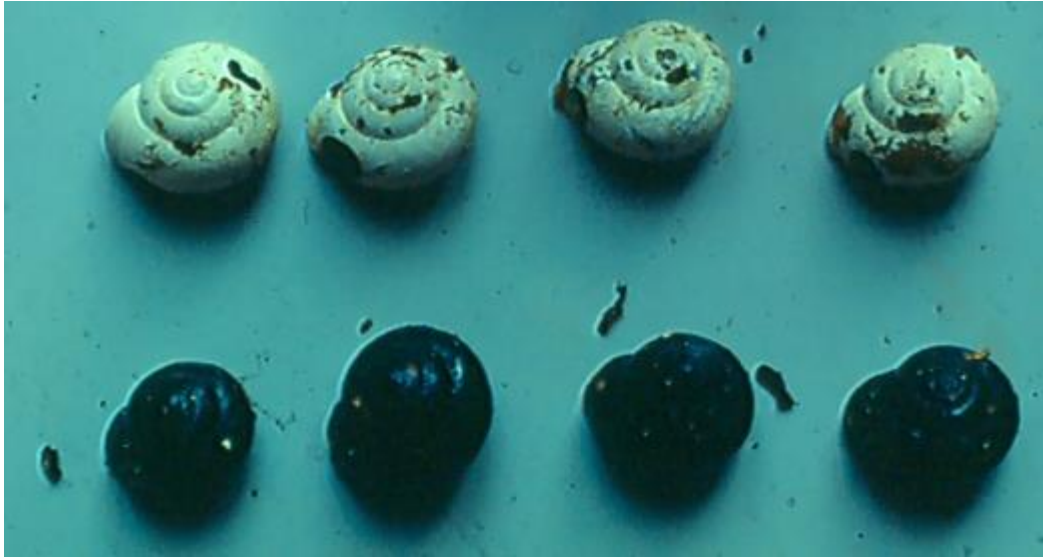
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No. of
Snails

20

10

0

White

Black

1

2

3

4

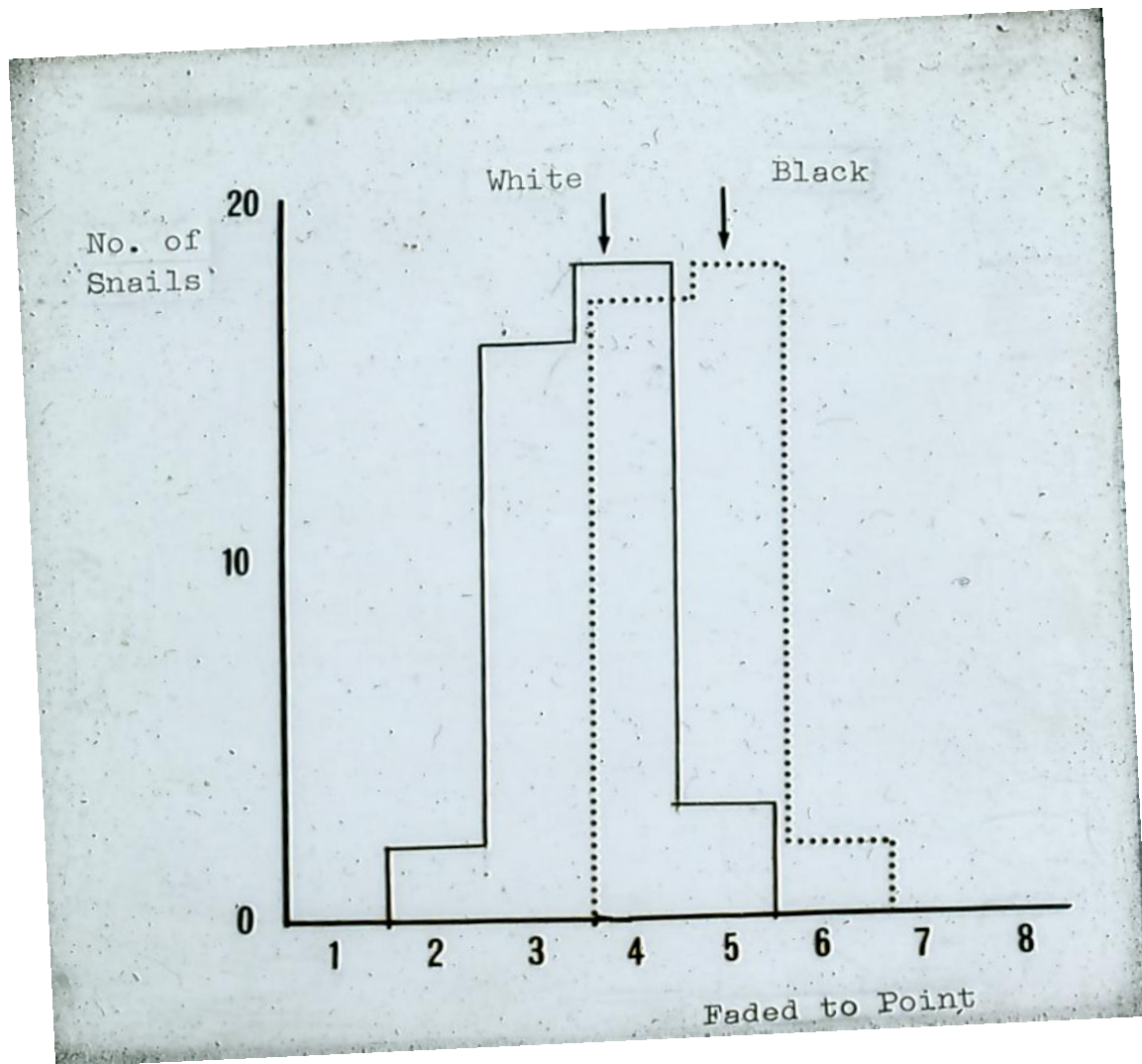
5

6

7

8

Faded to Point



ON
THE ORIGIN OF SPECIES
BY MEANS OF NATURAL SELECTION,
OR THE
PRESERVATION OF FAVOURED RACES IN THE STRUGGLE
FOR LIFE.

By CHARLES DARWIN, M.A.,
FELLOW OF THE ROYAL, GEOLOGICAL, LINNEAN, ETC., SOCIETIES;
AUTHOR OF 'JOURNAL OF RESEARCHES DURING H. M. S. BEAGLE'S VOYAGE
ROUND THE WORLD.'

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1859.

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STEVE JONES



ALMOST
LIKE A WHALE

'AS ENTHRALLING IN
ITS OWN WAY AS
WAS DARWIN'S ORIGINAL'

Kenan Malik, Independent on Sunday

'EXHILARATING'

Melvyn Bragg, Observer



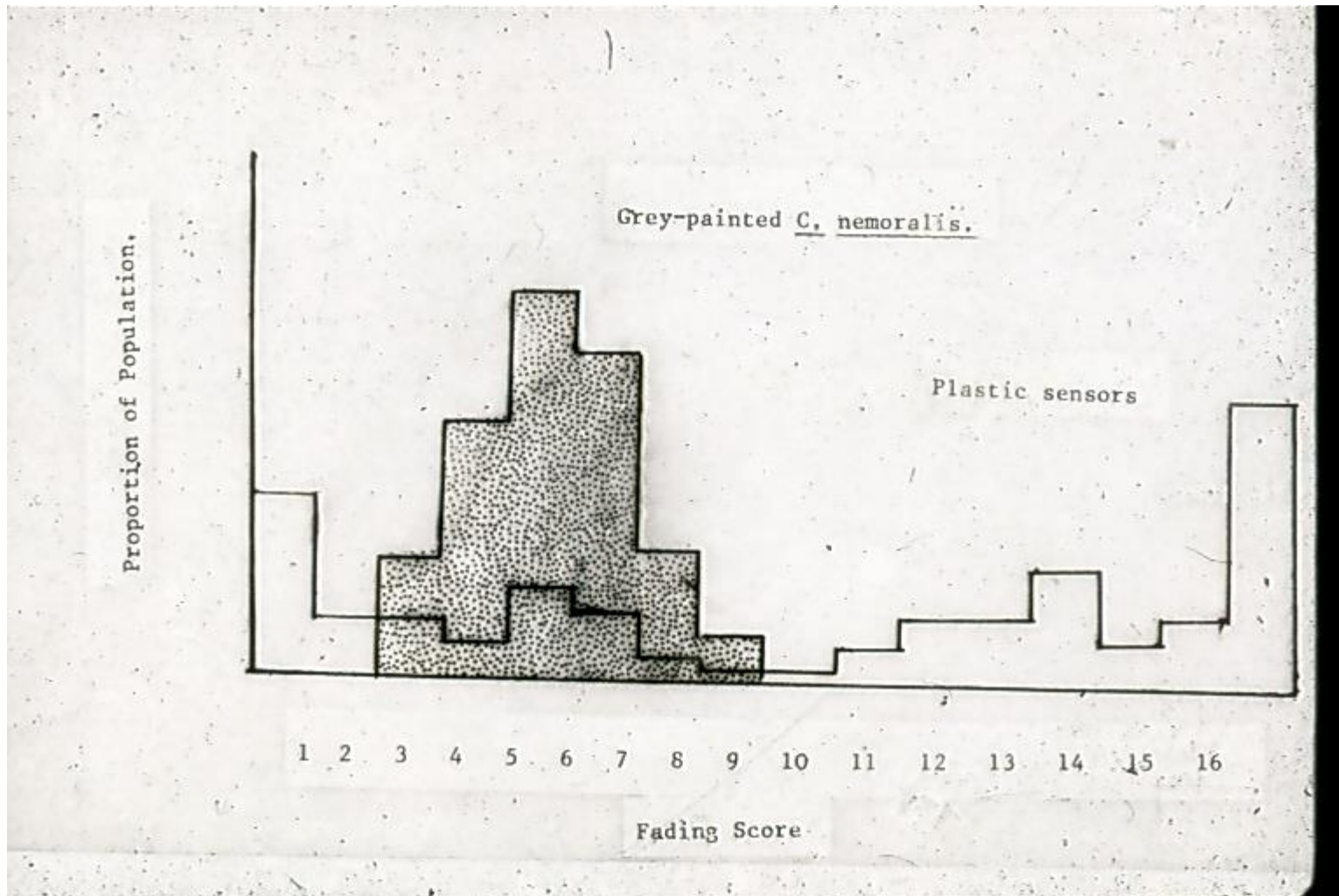
The Origin of Species

UPDATED

Molluscan good taste – Jones versus Darwin



Potential and realised niche



Christ in Chora; rolling out the heavens[?]



$$r^2_{Y_1} = .12$$

$$r^2_{Y_1} = .12$$

Scattergram for columns: X

