



SURVIVORS OR SNOWFLAKES?

**WILL HONEY BEES SURVIVE THE ERA OF HOMO
SAPIENS?**



230
MYA
Dinosaurs
appeared

140
MYA
First flowers
evolved

130
MYA
First bees
evolved

60
MYA
Honey bees
evolved

20
MYA
First
fossils

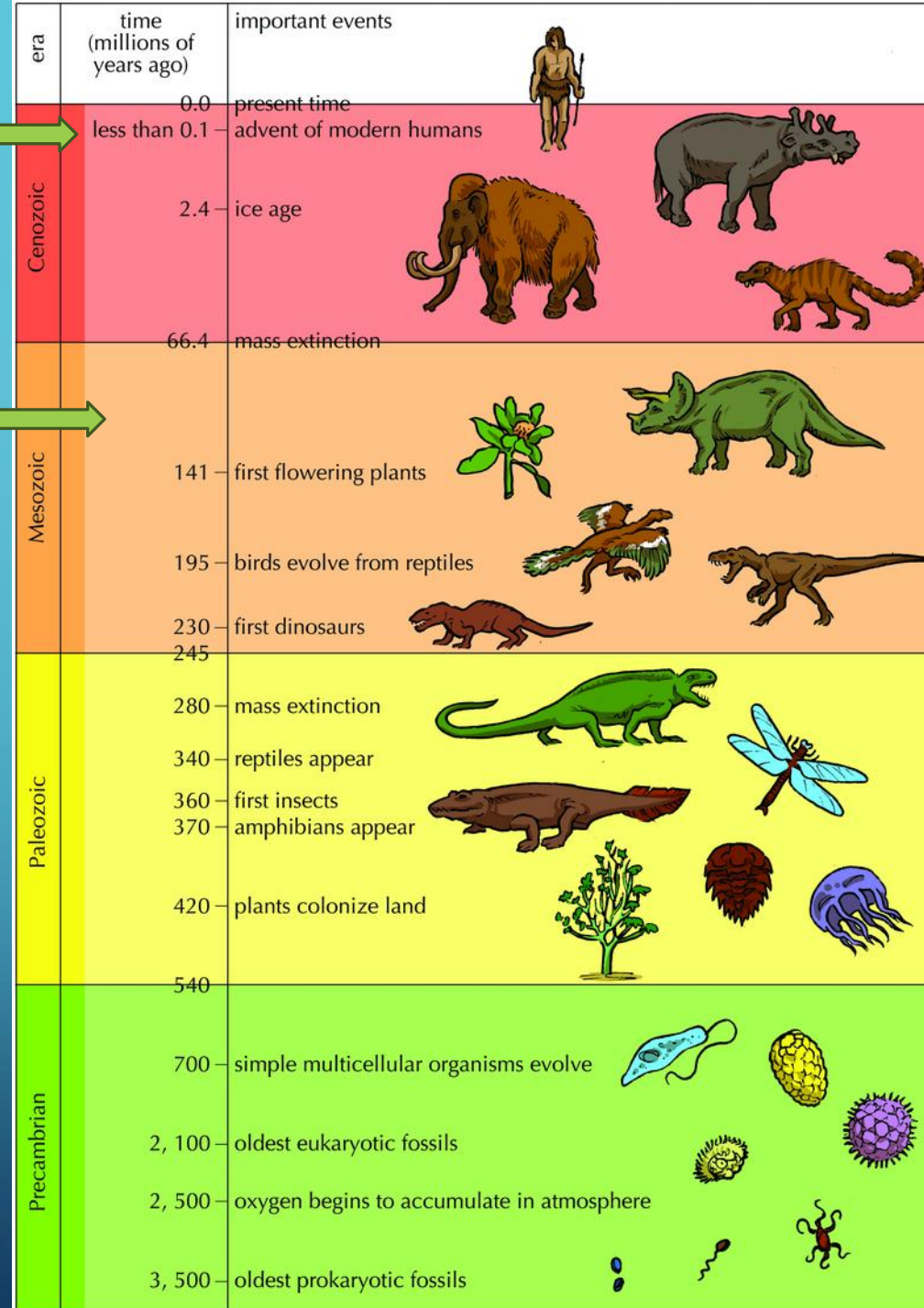
2.8
MYA
Humans
evolved



CIRCA 20 MILLION YEARS AGO

Humans

Bees



ICE AGES

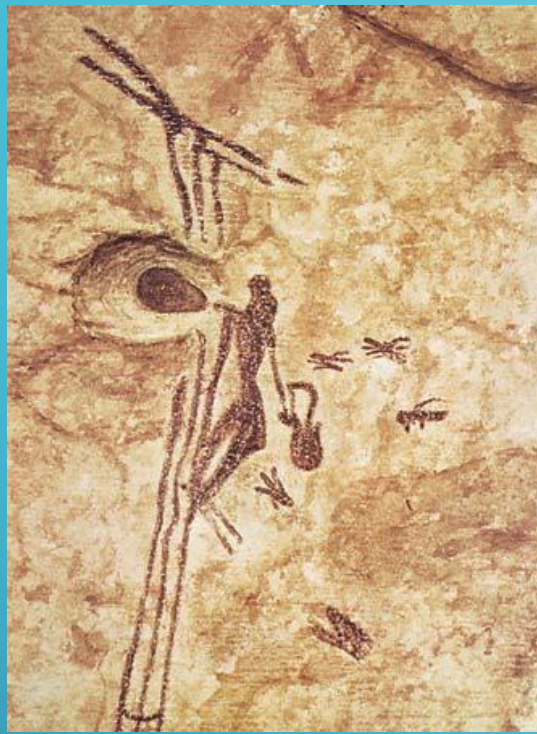
COLLISON WITH METEORITE

**MASS
EXTINCTIONS**

**MAJOR GEOLOGICAL
CHANGES**

**HUGE CHANGES IN NATURAL
RESOURCES**

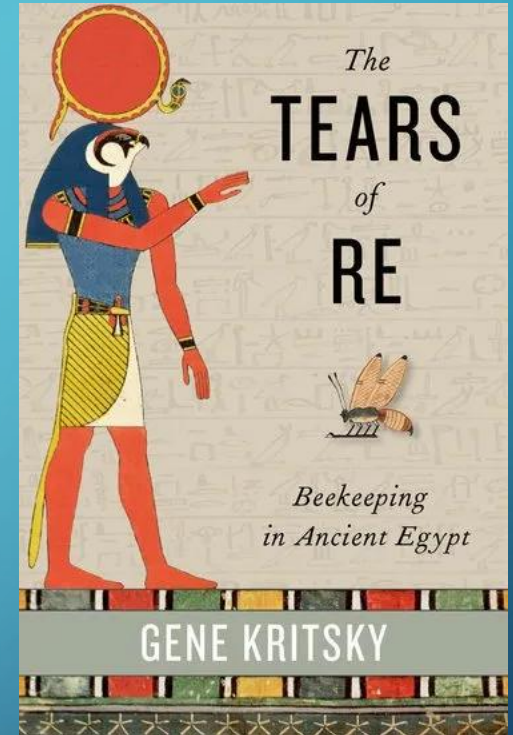
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**Spanish cave
Painting 8,000 BC**



**Ancient
Egyptian
beekeeper**



**Egyptian
Sun God
legend**

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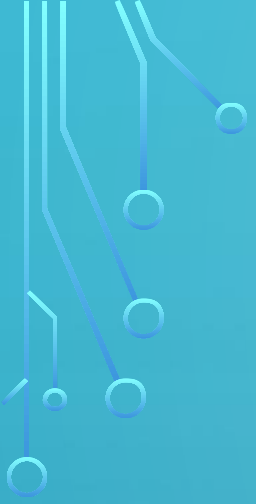


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6

**BRITAIN
APIS MELLIFERA
MELLIFERA**

**THE NATIVE
BRITISH 'DARK'
HONEY BEE**





**SECRETS OF SUCCESS SO
FAR**

GENETIC DIVERSITY

**ADAPTATION TO LOCAL
ENVIRONMENT**

**NATURAL SELECTION OF THE
FITTEST**

**SONS AND DAUGHTERS OF THE BEST OF
THE BEST**

NECTAR, POLLEN AND WATER FOR ALL THEIR NEEDS

**WARM SECURE HOME OF ABOUT 40 LITRES OF THEIR OWN
CHOOSING**

REPRODUCED FROM LARVAE OF THEIR OWN CHOOSING

**NATURAL SELECTION ELIMINATED THOSE TOO WEAK TO
SURVIVE**

**WORKING WITH NATURAL SELECTION NOT
AGAINST IT**



19TH CENTURY

REV L. L. LANGSTROTH

BEE SPACE

**RECTANGULAR
MOVEABLE FRAME
HIVES**



1859

**T. W.
WOODBURY**

**LIGURIAN BEES
TO ENGLAND**

**1862
LIGURIAN
BEES TO
AUSTRALIA**

**APIS
M.LIGUSTICA**

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6**

The Original 'Bee Bro'



SAMPLE FOOTER TEXT

Bro Adam at Buckfast
Abbey



Buckfast bee

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14

**INTRODUCTION OF SUB SPECIES FROM
DIFFERENT CLIMATES AND FORAGE**

**HYBRIDISATION OF LOCAL
STOCK
CHANGES IN COLONY
MANAGEMENT**

**SELECTIVE BREEDING TO SUIT THE NEEDS OF THE
BEEKEEPER**

USE OF BREEDER QUEENS

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15



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**WORKING
AGAINST
NATURAL
SELECTION**

NOT WITH IT

INSULATION

DON'T FORM TIGHT

CLUSTER

NO BROODLESS PERIOD -

VARROA

EAT MORE STORES - NEED FEEDING

DIE OF STARVATION IF NOT FED

LOSE ABILITY TO SURVIVE COLD

TEXT
WINTERS

HONEY CONTAINS

**SUGAR IN THE FORM OF FRUCTOSE AND
GLUCOSE**

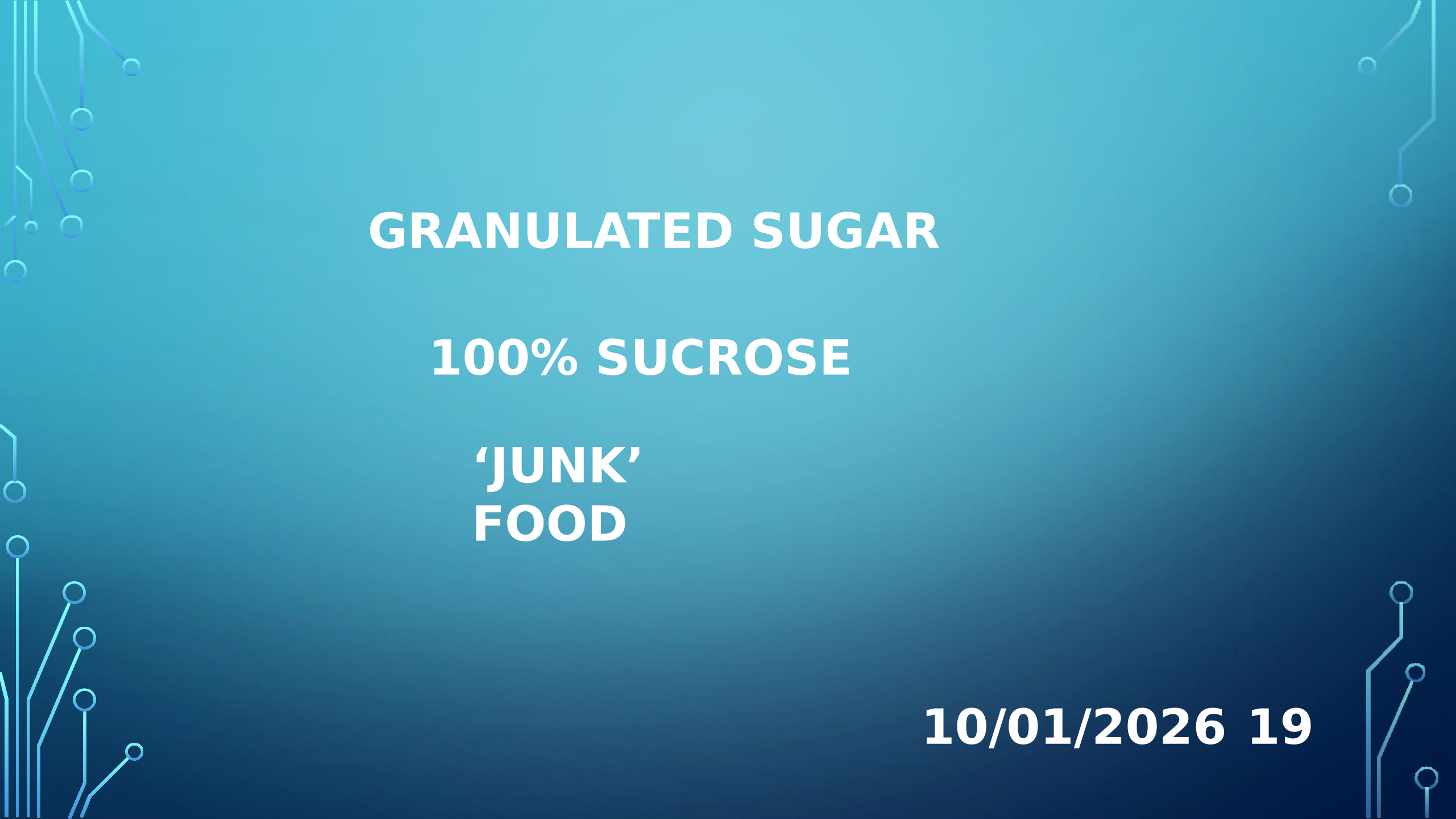
POLLEN

PROTEIN AND LIPIDS

**TRACE ELEMENTS AMINO AND FATTY ACIDS,
VITAMINS ETC..**

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6**

18

The background is a solid blue gradient. In the corners, there are decorative white line art elements resembling circuit boards or neural networks, with lines and small circles connecting them.

GRANULATED SUGAR

100% SUCROSE

**'JUNK'
FOOD**

10/01/2026 19

VARROA JACOBSONI
IN ASIA COEXISTING WITH APIS
CERANA
APIS MELLIFERA MELLIFERA
INTRODUCED INTO JAPAN TO GIVE
BETTER HONEY YIELDS
V. JACOBSONI MORPHPED INTO V.
DESTRUCTOR
A. MELLIFERA MELLIFERA HAD NO
RESISTANCE

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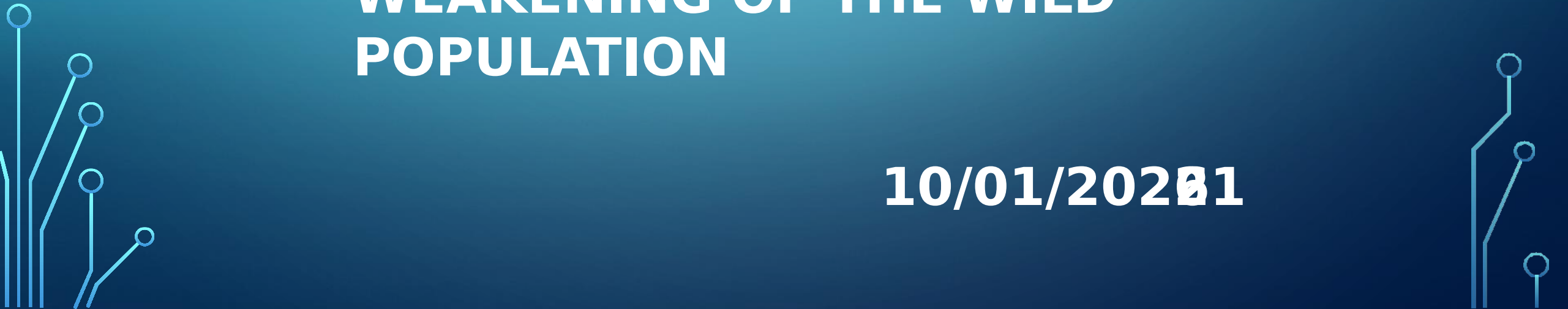


**MANAGED DRONES MATING WITH QUEENS
FROM FREE LIVING COLONIES**

**MANAGED SWARMS SETTTLING IN
THE WILD**

**WEAKENING OF THE WILD
POPULATION**

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PERFECT STORM

**BEES THAT CAN'T OVERWINTER WITHOUT JUNK
+ FOOD**

**BEES THAT NEED INSULATION TO
SURVIVE WINTER +**

**BEES NOT ADAPTED TO LOCAL CLIMATE OR
FORAGE +**

+

**BEES NOT DEVELOPED RESISTANCE TO
VARROA**

=

**UNABLE TO SURVIVE WITHOUT HUMAN
HELP**

10/01/20203

SUMMARY

IMPORTING SUB SPECIES FROM OTHER
CLIMATES WITH DIFFERENT FORAGE

FEEDING JUNK FOOD

INSULATING HIVES IN WINTER

TREATING FOR VARROA

RAISING QUEENS IN INDUSTRIAL
QUANTITIES

SELECTING FOR TRAITS THAT SUIT THE
BEEKEEPER

ELIMINATING NATURAL SELECTION

CLIMATE
PLANTING SINGLE VARIETY CROPS
CHANGE

10/01/2026 24



SAMPLE FOOTER TEXT

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25

“Over 50 million years mutation of the bees’ DNA and natural selection created protective genomes, but their destruction happened in just decades. The life-saving natural assemblies of favourable alleles will never be reassembled, and the protection they conferred has had to be replaced with chemicals and antibiotics.

There seems to be no way back along that route”

Genetic priorities for Conservation of Native Honey Bees

Dorian Pritchard

Northern Bee Books 2024



QUESTION

**WILL FUTURE
POPULATIONS OF
A.MELLIFERA
MELLIFERA BE ABLE
TO SURVIVE
WITHOUT HUMAN
INTERVENTION?**

10/01/2026 27