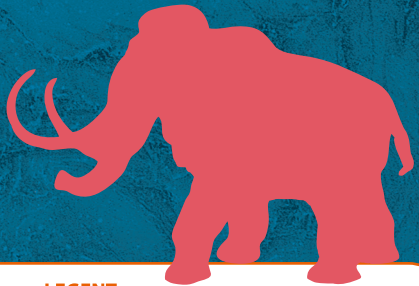




Aegean's settlers



NHMC-UoC 2022

LEGENT



Land



Sea

mya = million years ago



Lagoon

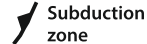


Lake

C>O>H>A: Carnivorous>
Omnivorous>
Herbivorous>
Autotrophus



Volcanoes



Subduction zone

Neocalchas gruberi



SCORPIONS

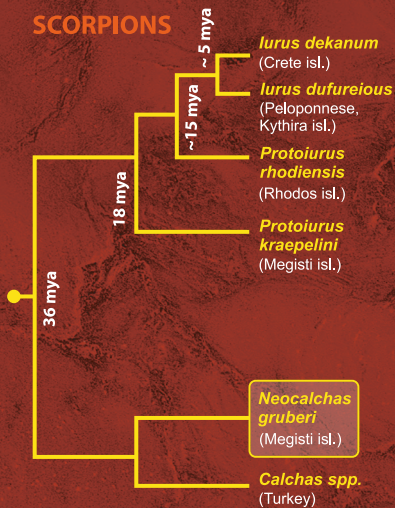
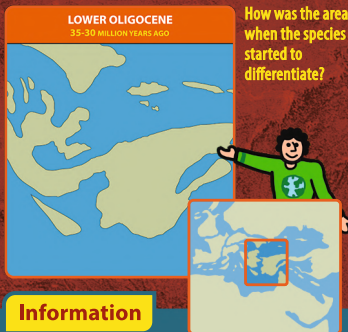


Photo by E. Yagmur



How was the area when the species started to differentiate?

Information

It prefers wet places at low altitudes. It is found under large stones, under the litterfall, at the edges of rubble walls, etc. It gives birth to babies (not laying eggs). It spends most of its life hidden in its shelter and appears on the surface only during the breeding season, which is usually after the first rains. It lives in Megisti isl. (Katelorizo) and in SW Turkey.

Size (length):
Up to 3.5 cm

Food:
Carnivorous

(C>O>H>A)

Closest cousin:
Protoiurus kraepelini

4
points

When did the species firstly appear?
36 mya (check the phylogenetic tree)

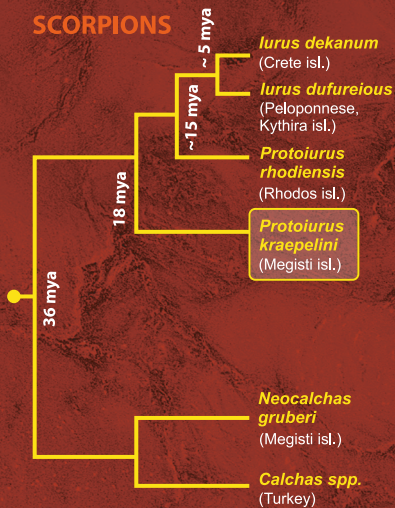
Protoiurus kraepelini

The big black scorpion of Kastelorizo and SW Turkey



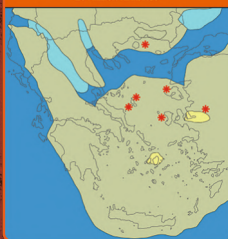
S2

SCORPIONS



©NHMC-UOCL, Nihal Bourdaki

LOWER MIOCENE (Lower Burdigalian) 20 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

It is the biggest scorpion of Greece. It lives in Megisti isl. (Kastelorizo) and in SW Turkey. It prefers wet places. It is found under large stones, at cave entrances, in ruins of human settlements, around stony walled shafts, etc.. It gives birth to babies (not laying eggs). It spends most of its life hidden in its shelter and appears on the surface only during the breeding season, which is usually after the first rains.

Size (length):

Up to 13 cm

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

Protoiurus rhodiensis

3

points

When did the species firstly appear?

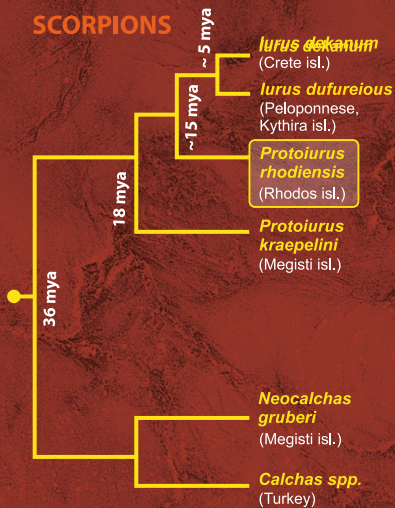
18 mya (check the phylogenetic tree)

Protoiurus rhodiensis

The big black scorpion of Rhodos isl.



SCORPIONS



©NHMC-UCCA, Trikali

MIDDLE MIOCENE (Upper Burdigalian)
16 MILLION YEARS AGO



How was the area
when the species
started to
differentiate?



Information

It is endemic to Rhodos isl., meaning that it lives only there and nowhere else in the world. It prefers wet places. It is found under large stones, at cave entrances, in ruins of human settlements, around stony walled shafts, etc.. It gives birth to 7-13 babies (not laying eggs). It spends most of its life hidden in its shelter and appears on the surface only during the breeding season, which is usually after the first rains.

Size (length):

Up to 13 cm

Food:

Carnivorous

(C>O>H>A)

Closer cousins:

lirus dufoureious and
lirus dekanum

2
points

When did the species firstly appear?

~15 mya (check the phylogenetic tree)

lurus dufourei

The big black scorpion of Peloponnese and Kythira isl.



SCORPIONS

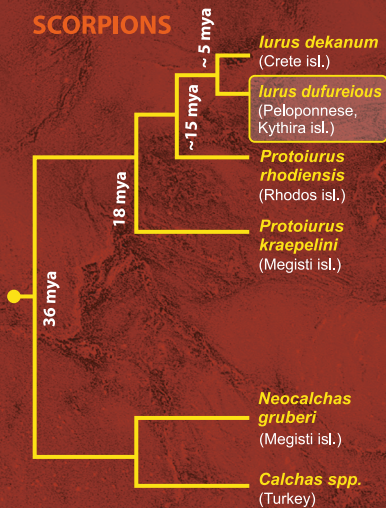


Photo by L. Strachinis

UPPER MIOCENE (Messinian)
6 - 5,5 MILLION YEARS AGO



How was the area when the species started to differentiate?

Information

It is endemic to Peloponnese and Kythira isl., meaning that it lives only there and nowhere else in the world. It prefers wet places. It is found under large stones, at cave entrances, in ruins of human settlements, around stony walled shafts, etc.. It gives birth to 7-13 babies (not laying eggs). It spends most of its life hidden in its shelter and appears on the surface only during the breeding season, which is usually after the first rains.

Size (length):

Up to 11 cm

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

lurus dekanum

1

point

When did the species firstly appear?

~5 mya (check the phylogenetic tree)

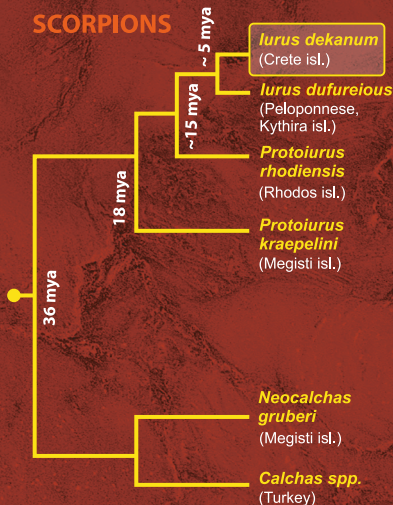
lurus dekanum

The big black scorpion of Crete isl.



S5

SCORPIONS



©NHMC-UOCCA, Trichas

UPPER MIOCENE (Messinian)
6 - 5,5 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (length):

Up to 11 cm

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

lurus dufouereius

1

point

When did the species firstly appear?

~5 mya (check the phylogenetic tree)

It is endemic to Crete isl., meaning that it lives only there and nowhere else in the world. It prefers wet places. It is found under large stones, at cave entrances, in ruins of human settlements, around stony walled shafts, etc.. It gives birth to 7-13 babies (not laying eggs). It spends most of its life hidden in its shelter and appears on the surface only during the breeding season, which is usually after the first rains.

Dendarus sinuatus

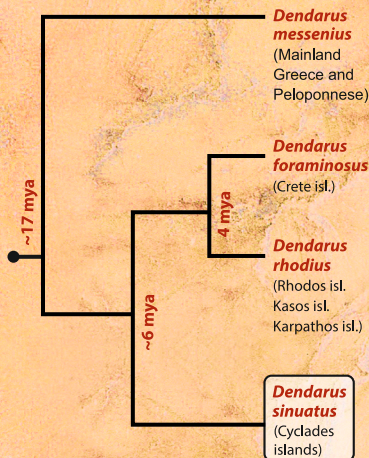
Beetle (there is no common name)



COLEOPTERA (BEETLES)



©NHMC-UCCA, Trichas



UPPER MIOCENE (Messinian) 6 - 5,5 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

It is a wingless beetle. It is found in the soil and below stones. It is active during Spring and Summer. It is resilient to dry conditions, but it will not be found on sandy beaches. It prefers shrublands. It is an omnivorous animal and in particular saprophagous/detritus-feeding, meaning that it eats rotten pieces of plant matter in the soil. It lives in the Cyclades islands.

Size (length):

1,5 cm

Food:

Omnivorous

(C>O>H>A)

Closer cousins:

D. rhodius and
D. foraminosus

2
points

When did the species firstly appear?

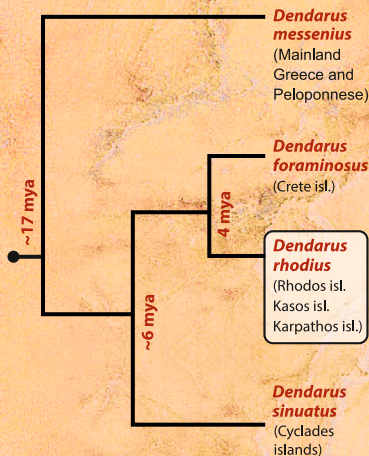
6 mya (check the phylogenetic tree)

Dendarus rhodius

Beetle (there is no common name)



COLEOPTERA (BEETLES)



©NHMC-UCCA, Trichas



How was the area when the species started to differentiate?



Information

It is a wingless beetle. It is found in the soil and below stones. It is active during Spring and Summer. It is resilient to dry conditions, but it will not be found on sandy beaches. It prefers shrublands. It is an omnivorous animal and in particular saprophagous/detritus-feeding, meaning that it eats rotten pieces of plant matter in the soil. It lives in Rhodos, Kasos and Karpathos islands. Recently, it has been located on the coast of Asia Minor.

Size (length):

1 cm

Food:

Omnivorous

(C>O>H>A)

Closest cousin:

Dendarus foraminosus

3
points

When did the species firstly appear?

4 mya (check the phylogenetic tree)

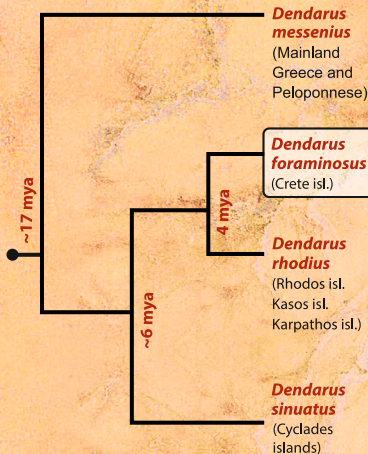
Dendarus foraminosus

Beetle (there is no common name)



C3

COLEOPTERA (BEETLES)



©NHMC-UCCA, Trichas



How was the area when the species started to differentiate?



Information

It is a wingless beetle. It is found in the soil and below stones. It is active during Spring and Summer. It is resilient to dry conditions, but it will not be found on sandy beaches. It prefers shrublands. It is an omnivorous animal and in particular saprophagous/detritus-feeding, meaning that it eats rotten pieces of plant matter in the soil. It lives only in Crete isl.

Size (length):

1 cm

Food:

Omnivorous

(C>O>H>A)

Closest cousin:

D. rhodius

1

point

When did the species firstly appear?

4 mya (check the phylogenetic tree)

Dendarus messenius

Beetle (there is no common name)

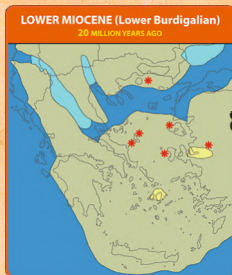
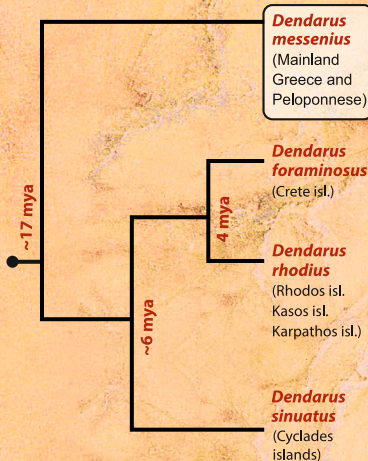


C4

COLEOPTERA (BEETLES)



©NHMC-UCC/A. Trichas



How was the area when the species started to differentiate?



Information

It is a wingless beetle. It is found in the soil and below stones. It is active during Spring and Summer. It is resilient to dry conditions, but it will not be found on sandy beaches. It prefers shrublands. It is an omnivorous animal and in particular saprophagous/detritus-feeding, meaning that it eats rotten pieces of plant matter in the soil. It lives in mainland Greece, Turkey and some islands of the Aegean archipelago.

Size (length):

1 cm

Food:

Omnivorous

(C>O>H>A)

Closest cousin:

D. sinuatus

3
points

When did the species firstly appear?

17 mya (check the phylogenetic tree)

Mammut americanum

Mastodon



E1

MASTODON

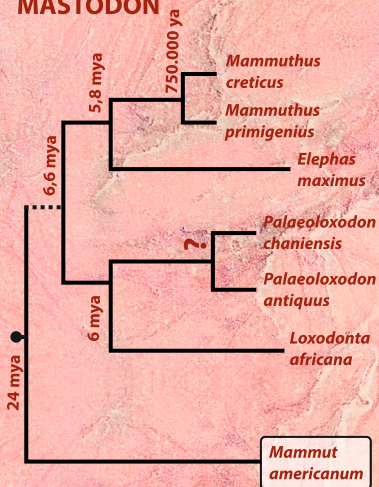


Photo by S. F. Wolfman

LOWER MIOCENE (Lower Burdigalian) 20 MILLION YEARS AGO



How was the area of the today's Aegean when the species started to differentiate?



Size (height):

female: 2.3m, male: 2.8m

Tusk length:

5m

Food:

Herbivorous

(C>O>H>A)

Closer cousins:

L. africana and *E. maximus*

3

points

When did the species firstly appear?

24 mya (check the phylogenetic tree)

Information

It lived from Miocene to Pliocene, in the north and central America. It could reach as heavy as 4.5 tons! Its body was covered by long, brown hair. It disappeared from North America around 10,500 years ago.

Loxodonta africana

The African bush elephant



E2

MASTODON

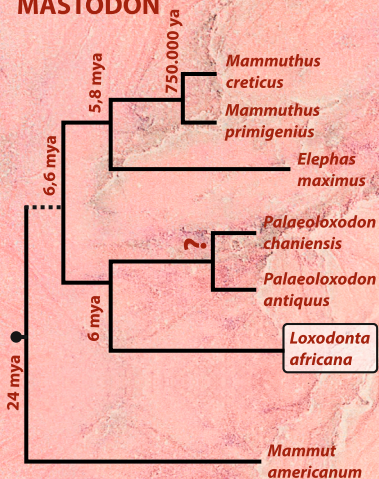


Photo by Muhammad Mahdi Karim



Photo by J. Jones

UPPER MIOCENE (Tortonian)
8 MILLION YEARS AGO



How was the area when the species started to differentiate?



Size (height):

3,96 m

Tusk length:

3,51 m

Food:

Herbivorous

(C>O>H>A)

Closer cousins:

P. antiquus and *P. chaniensis*

2
points

When did the species firstly appear?

>6mya (check the phylogenetic tree)

Information

It is the largest terrestrial animal on Earth today, greater than the Asian elephant, with characteristic large ears. It is found throughout the sub-Saharan Africa, but mainly in forests and savannas in the Congo Basin and the coastal East Africa.

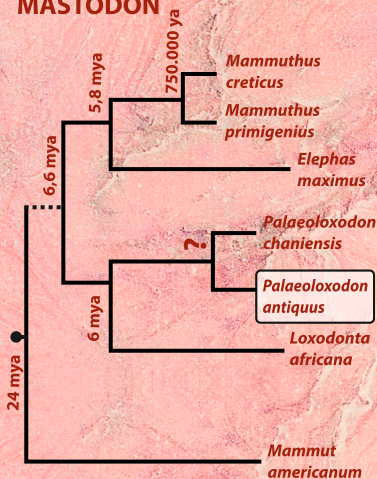
It is considered as a "vulnerable" species.

Palaeoloxodon antiquus



E3

MASTODON



wikimedia.org

UPPER MIOCENE (Messinian)

6 - 5,5 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (height):

1,2-1,5 m (dwarf/dwarfism)

Food:

Herbivorous

(C>O>H>A)

Closest cousin:

Palaeoloxodon chaniensis

1
point

When did the species firstly appear?

~5mya (check the phylogenetic tree)

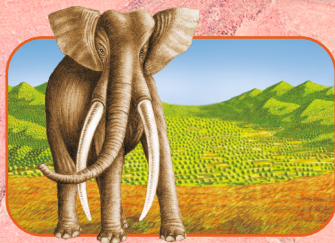
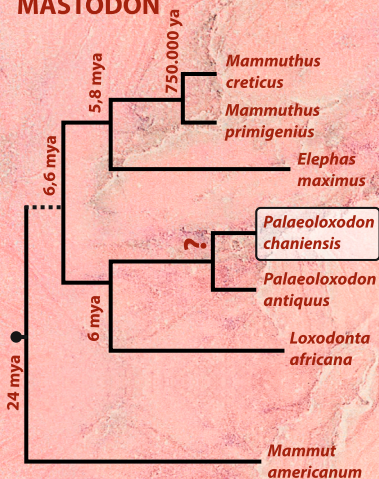
It is an extinct dwarf species. It lived in Europe and the western Asia. It used to form small herds of 5-15 individuals. The skulls of such extinct from the Aegean region proboscidean animals (e.g. elephants, mammoths, dinotherium), have possibly inspired our ancestors to create the myth of Cyclops: they might have thought that the opening for the proboscis was the opening for the Cyclops' eye.

Palaeoloxodon chaniensis



E4

MASTODON



©NHMC-UOCL Charlevoix



How was the area when the species started to differentiate?



Size (height):

1,5-2 m (dwarf/dwarfism)

Food:

Herbivorous

(C>O>H>A)

Closest cousin:

Palaeoloxodon antiquus

1

point

When did the species firstly appear?

Sometime between 5 and 1 mya
(check the phylogenetic tree)

Information

It is an extinct dwarf species, that was discovered at Stylos and Vamos in western Crete isl.. Close related species have been found in other Mediterranean islands as well. The skulls of such extincted from the Aegean region proboscidean animals (e.g. elephants, mammoths, dinotherium), have possibly inspired our ancestors to create the myth of Cyclops: they might have thought that the opening for the proboscis was the opening for the Cyclops' eye.

Elephas maximus

The Asian elephant



E5

MASTODON

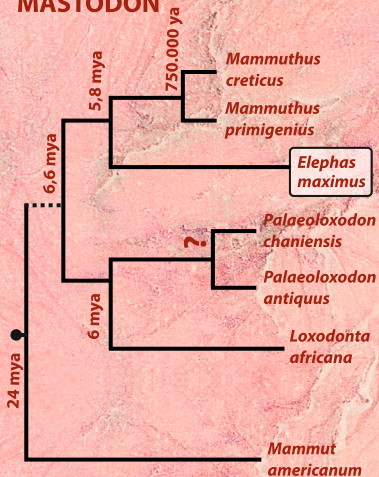


Photo by C. J. Sharp

UPPER MIOCENE (Tortonian)
8 MILLION YEARS AGO



How was the area when the species started to differentiate?



Size (height):

2–3,5 m

Food:

Herbivorous

(C>O>H>A)

Closer cousins:

M. primigenius and *M. creticus*

2
points

When did the species firstly appear?

5 mya (check the phylogenetic tree)

Information

It is the largest terrestrial animal on the Asian continent. It lives in India and SE Asia. It is considered as an "Endangered" species.

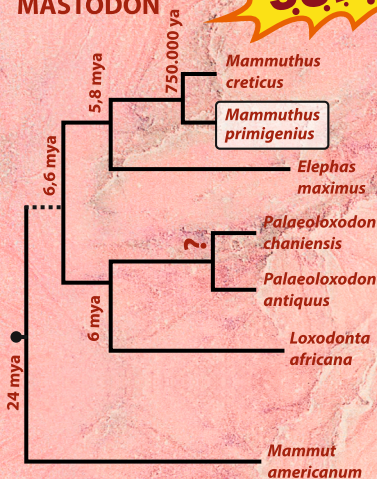
The Asian elephants' community is matriarchal. Males live a solitary life, while females form groups, where their little ones may grow up in safety.

Mammuthus primigenius

Woolly mammoth

E6

MASTODON



SUPREME



Royal British Columbia Museum / Ruth Hartrup



How was the area when the species started to differentiate?



Information

Size (height):

3 m

Tusk length:

4,2 m

Food:

Herbivorous

(C>O>H>A)

Closest cousin:

M. creticus

1

point

When did the species firstly appear?

>750000 years ago (check the phylogenetic tree)

It disappeared during the early Holocene, 10,000-12,000 years ago. It lived in North Asia, in several places of Europe and parts of North America, during the last glacial period. It could live up to 30 years!

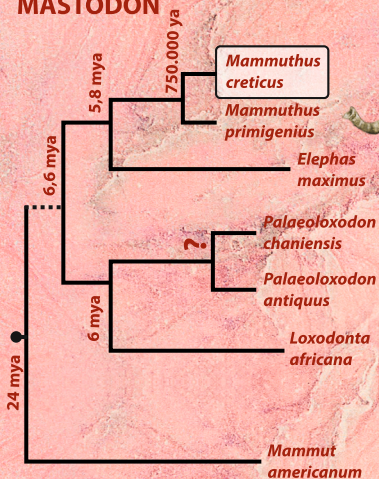
SUPREME

Mammuthus creticus



E7

MASTODON



©NHMC-UOCL, Charbonais



How was the area when the species started to differentiate?



Size (height):
1 m (dwarf/dwarfism)

Food:
Herbivorous

(C>O>H>A)

Closest cousin:
E. primigenius

1
point

When did the species firstly appear?
>750000 years ago (check the phylogenetic tree)

Information

It was the smallest mammoth that lived on Earth. It weighed approximately 310 kg. It disappeared around 12,000 years ago. Skulls of proboscidean animals (e.g. elephants, mammoths, dinotherium), like the one in the photo, have possibly inspired our ancestors to create the myth of Cyclops: they might have thought that the opening for the proboscis was the opening for the Cyclops' eye,



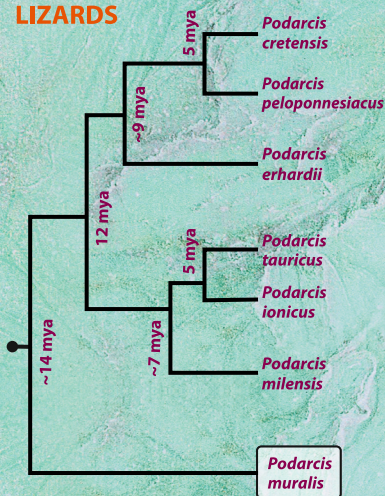
Podarcis muralis

Common Wall Lizard



L1

LIZARDS



©NHMC-UCCA, Trichas

MIDDLE MIOCENE (Upper Burdigalian)
16 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (length):

15 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

P. erhardii

3
points

When did the species firstly appear?

14 mya (check the phylogenetic tree)

It is a diurnal and agile lizard, very skillful in climbing. Its hibernation is very short. It feeds on invertebrates. Females lay 2-10 eggs, often 2 or 3 times a year. It may be found in a variety of habitats up to 2800m altitude. It lives all over mainland Greece, northern and eastern Peloponnese, central Evia isl., Samothraki isl. and Corfu isl., where it has been imported. It is a harmless reptile, like all lizards in Greece.

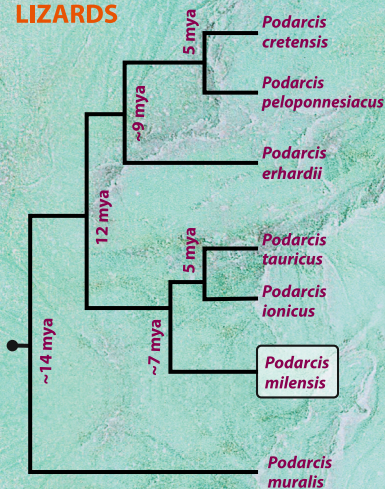
Podarcis milensis

Milos Wall Lizard



L2

LIZARDS



©NHMC-UCCA, Trichas

MIDDLE MIOCENE (Serravallian)
13 - 12 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (length):

15 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closer cousins:

P. tauricus and *P. ionicus*

2
points

When did the species firstly appear?

7 mya (check the phylogenetic tree)

It is a diurnal and agile lizard, mostly active on the ground surface, although it also climbs on stone walls and rocks. It feeds on invertebrates. Females lay 1-3 eggs, several times during the reproductive period. It prefers dry habitats with low and sparse vegetation, stone walls, rubble walls, but also dunes. It is also found in residential areas and up to 685m altitude. It lives in Antimillos isl.. It is a harmless reptile, like all lizards in Greece.

Podarcis ionicus

Ionian Wall Lizard



L3

LIZARDS

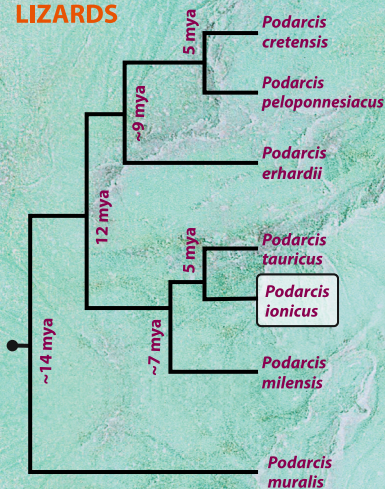


Photo by I. Strachins

UPPER MIOCENE (Messinian)
6 - 5,5 MILLION YEARS AGO



How was the area
when the species
started to
differentiate?



Size (length):

16 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

P. tauricus

2
points

When did the species firstly appear?

5 mya (check the phylogenetic tree)

Information

It is a diurnal and agile lizard, mostly active on the ground surface, that seldom climbs. It feeds on invertebrates. Females lay 2-10 eggs, usually twice a year. It may be found in a variety of habitats, but it prefers open and sunny places. It lives in Epirus and Western Greece (west of the Pindos Mountains), Peloponnese, Corfu isl., Paxos isl., Lefkada isl., Kefalonia isl., Ithaca isl., Zakynthos isl., and Arpia Strofadon isl. It is a harmless reptile, like all lizards in Greece.

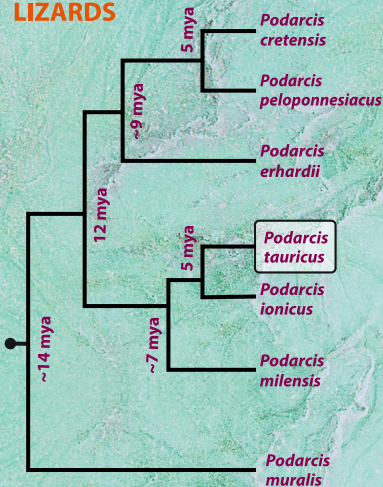
Podarcis tauricus

Balkan Wall Lizard

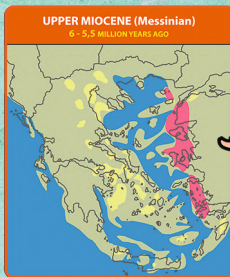


L4

LIZARDS



©NHMC-UOCCA, Trichas



How was the area when the species started to differentiate?

Information

It is a diurnal and agile lizard, mostly active on the ground surface, that seldom climbs. It feeds on invertebrates. Females lay 2-10 eggs, usually twice a year. It prefers open and sunny places and it may be found up to 2350m altitude. It lives in Evia isl., in Thassopoula isl. and in mainland Greece east of the Pindos mountain range (west of Pindos it is replaced by Podarcis ionicus). It is a harmless reptile, like all lizards in Greece.

Size (length):

16 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

P. ionicus

4

points

When did the species firstly appear?

5 mya (check the phylogenetic tree)

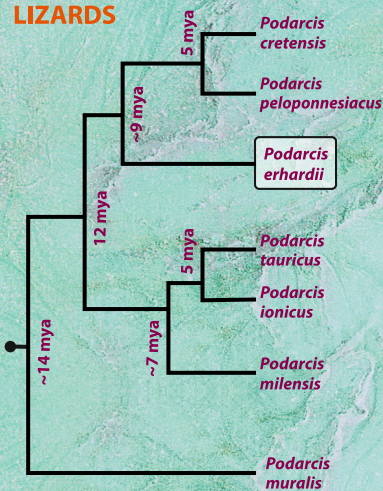
Podarcis erhardii

Erhard's Wall Lizard



L5

LIZARDS



©NHMC-UCCA, Trichas



How was the area when the species started to differentiate?



Size (length):

14 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closer cousins:

P. peloponnesiacus and
P. cretensis

2
points

When did the species firstly appear?

9 mya (check the phylogenetic tree)

Information

It is a diurnal and agile lizard, mostly active on the ground surface, but often climbs as well. It feeds on invertebrates. Females lay 1-5 eggs, in the middle of summer. It may be found in a variety of habitats, up to 1000m altitude, but it seems to prefer lower altitudes. It lives all over Greece. It is a harmless reptile, like all lizards in Greece.

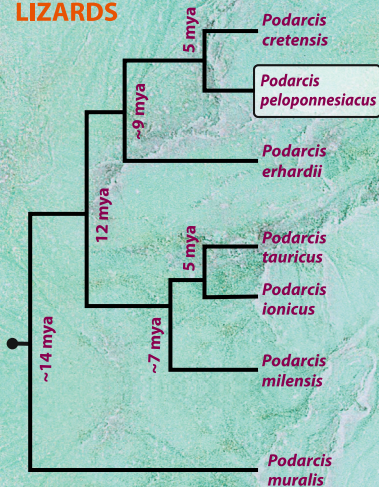
Podarcis peloponnesiacus



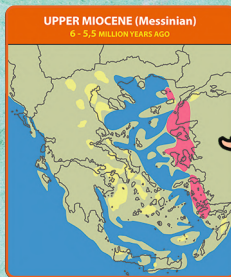
L6

Peloponnesian Wall Lizard

LIZARDS



©NHMC-UCCA, Trichas



How was the area when the species started to differentiate?

Information

It is a diurnal and agile lizard, and a perfect climber. It feeds on invertebrates. Females lay 1-6 eggs. It prefers a variety of habitats, up to 1600m altitude. It is endemic to Peloponnesian, meaning that it lives only there and nowhere else in the world. It is a harmless reptile, like all lizards in Greece.

Size (length):

14 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

P. cretensis

1

point

When did the species firstly appear?

9 mya (check the phylogenetic tree)

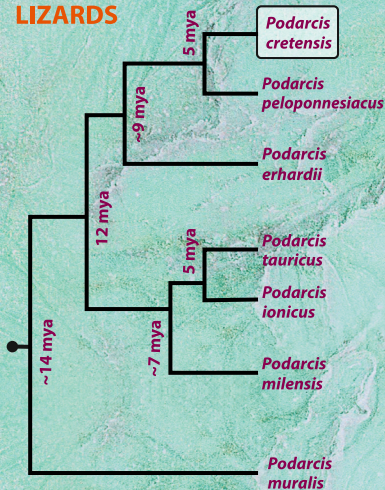
Podarcis cretensis

Cretan Wall Lizard



L7

LIZARDS



©NHMC-UCCA, Trichas



How was the area when the species started to differentiate?

Information

It is a diurnal and agile lizard, mostly active on the ground surface, but often climbs as well. It feeds on invertebrates. Females lay 1-5 eggs, in the middle of summer. It may be found in a variety of habitats, up to 1000m altitude, but it seems to prefer lower altitudes. It is endemic to Crete isl. and surrounding islets, meaning that it lives only there and nowhere else in the world. It is a harmless reptile, like all lizards in Greece.

Size (length):

14 cm with the tail

Food:

Carnivorous

(C>O>H>A)

Closest cousin:

P. peloponnesiacus

1

point

When did the species firstly appear?

5 mya (check the phylogenetic tree)

Garidella spp.

Garidella

P1

PLANTS

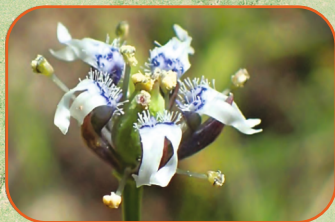
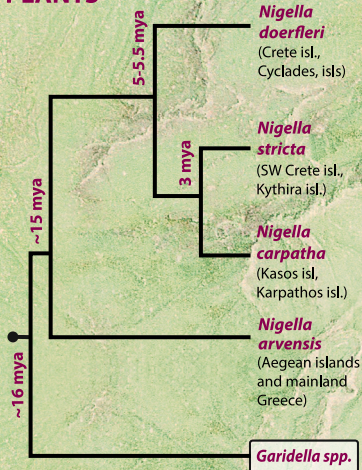


Photo by K. Ziarnek

MIDDLE MIOCENE (Upper Burdigalian)
16 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (height):

30-60 cm

Food:

Autotrophus

(C>O>H>A)

Closest cousin:

Nigella arvensis

4

points

When did the species firstly appear?

16 mya (check the phylogenetic tree)

It is an upright herbaceous annual plant. It lives on stony slopes, in uncultivated fields and on the borders of cultivations. It is found in Central Greece, Peloponnese, Crete isl., Cyclades isls, Eastern and North Aegean isls.

Nigella arvensis

Love in a mist of the field

P2

PLANTS

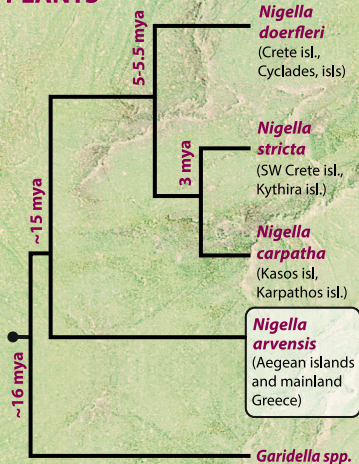


Photo by K. Zárnek

MIDDLE MIOCENE (Upper Burdigalian)
16 MILLION YEARS AGO



How was the area when the species started to differentiate?



Information

Size (height):

30-60 cm

Food:

Autotrophus

(C>O>H>A)

Closest cousin:

Nigella doerfleri

3

points

When did the species firstly appear?

15 mya (check the phylogenetic tree)

It is an upright herbaceous annual plant. It lives on stony slopes, in cultivated or barren areas and in coastal areas. It is found throughout the Aegean and in mainland Greece.

Nigella carpatha

Love in a mist of Carpathos isl.

P3

PLANTS

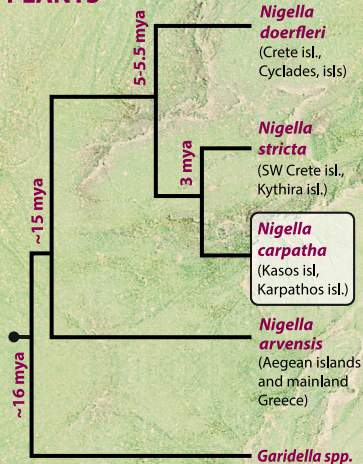


Photo by E. Kalligeropoulos



How was the area when the species started to differentiate?

Information

It is an upright herbaceous annual plant. It lives on stony slopes and in shrublands. It is found on the islands of Karpathos and Kassos.

Size (height):

30-60 cm

Food:

Autotrophus

(C>O>H>A)

Closest cousin:

Nigella stricta

1

point

When did the species firstly appear?

3 mya (check the phylogenetic tree)

Nigella stricta

Upright Love in a mist

P4

PLANTS

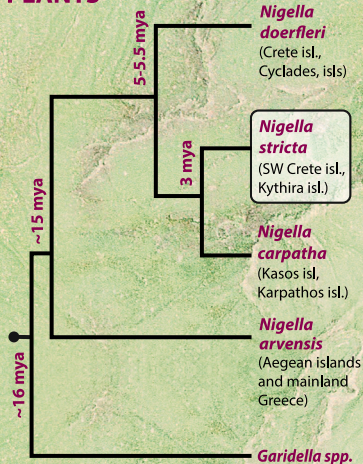


Photo by P. Larking



How was the area when the species started to differentiate?



Information

It is an upright herbaceous annual plant. It lives in sand dunes, at SW Crete isl. and Kythira isl..

Size (height):

30-60 cm

Food:

Autotrophus

(C>O>H>A)

Closest cousin:

Nigella carpatha

1

point

When did the species firstly appear?

3 mya (check the phylogenetic tree)

Nigella doerfleri

Doerfler's Love in a mist

P5

PLANTS

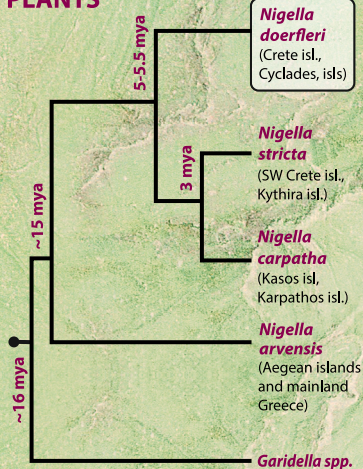


Photo by K. Goula



How was the area when the species started to differentiate?



Size (height):

30-60 cm

Food:

Autotrophus

(C>O>H>A)

Closer cousins:

N. stricta and *N. carpatha*

2
points

When did the species firstly appear?

5,5 mya (check the phylogenetic tree)

Information

It is an upright herbaceous annual plant. It lives on stony slopes, in shrublands up to 600 m altitude, in uncultivated fields and at the borders of cultivations. It is found in Crete isl. and the Cyclades isls.

Trump cards game "Aegean's settlers"

How to play?

Each card has a letter and a number in the upper right corner, corresponding to a group of organisms: S1-S5 for Scorpions, C1-C4 for Coleoptera (beetles), E1-E7 for Elephants and mammoths, L1-L7 for Lizards and P1-P5 for Plants). The game could be played by 2-4 players or groups of players.

TRUMP card:

To start the game, shuffle the cards and deal an equal number to each player!

First starts the person to the left of the one who dealt the cards.

The first player chooses and reads one of the categories! Then, he/she compares it with the other players! The one with the highest value wins the cards and chooses the next term!

The player with all the cards in the end, is the winner!

In case of tie: shuffle the playing cards and the next winner will take them.

Hyper trumps' card "SUPREME" is the wooly mammoth *Mammuthus premeniensis*.

The "SUPREME" card, automatically wins all cards in all categories, unless if someone has a card with the number 1 (S1,C1,E1,L1,P1)

Winner is the one who will manage to collect all the cards.

QUARTET:

To start the game, shuffle the cards and deal an equal number to each player! First starts the person to the left of the one who dealt the cards. The players can see the cards.

The aim of the game is to create as many quartets as possible (set of 4 cards from the same category of organisms).

The player asks another player for the card necessary to make a quartet. If the second player has the card, the first one takes the card and keeps asking for cards from other players until someone says no. The player who answered negatively continues, asking for a card from another player of his/her choice, etc.

Each time a player makes a quartet, he/she places it on the table.

The game ends when there are no more cards left.

Winner is the player with the most quartets.