# Colonization of the Canary Islands by commensal rodents

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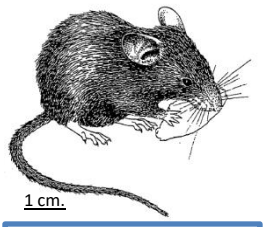
## Introduction

- Oceanic island's fauna is a mixture of ancient lineages and recently spread ones
- Nowadays, two commensal rodent species (Figures 1 & 2) thrive in the Canarian archipelago
- The high altitude reached by almost every island in the Canarian Archipelago allows the coexistence of very different ecological conditions (Figure 3)

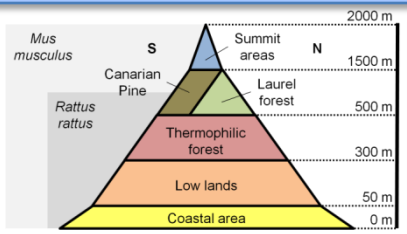
## Aims

1. Determinate the origin and dispersal routes of the commensal rodent populations which will further colonize the Canarian Archipelago
2. Determinate the arrival dates and dispersal routes of both rodent species within the islands




▲ **Figure 1. *Mus musculus*.** The subspecies *domesticus* reached the Canary Islands.


▲ **Figure 2. *Rattus rattus*.** No subspecies are found within this species.




▲ **Figure 3. Vegetation zones in the Canary Islands.** Altitudinal ranges are shown in bright grey for *Mus musculus* and dark grey for *Rattus rattus*.

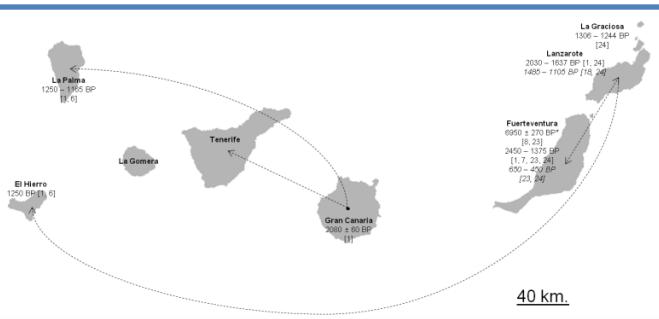
## Materials and Methods

- A total number of sixty-three scientific papers, 4 books and 3 dissertations were reviewed
- A conference given at Barcelona was assisted

## Results

- *Mus musculus* subsp. *domesticus* colonized the Canarian archipelago in a two-step event from Northern Africa and the Iberian Peninsula between 8.400 – 7.000 years BP and 2.500 – 1.250 years BP [1] (Figures 4 & 5)
- *Rattus rattus* colonized the Canary Islands from the Iberian Peninsula between 1.485 – 400 years BP [2]


► **Figure 4. Map of Europe, Northern Africa and Western Asia.** The solid black arrows show the colonization routes of *Mus musculus* onto the Canary Islands; the black dashed-line arrows show the colonization routes of *Rattus* rattus onto the Canary Islands; the red dotted lines trace the separation between *Mus musculus* subespecies; *M.* musculus arrival intervals are given in non-italics letters; and *R. rattus* arrival intervals are given in italics letters. Arrows show an approximate path. N, Northern; S, Southern; E, Eastern; W, Western; Is., Islands; p., Peninsula; M. m., *Mus musculus*.




◄ **Figure 5. Map of the Canary Islands.** The black dashed-line arrows show the colonization routes of *Rattus rattus* onto the Canary Islands; *M. musculus* arrival intervals are given in non-italics letters; and *R. rattus* arrival intervals are given in italics letters. Arrows show an approximate path.

## Conclusions

- Commensal rodent colonization of both Europe and the Canary Islands show a clear westward direction [3]
- Both species colonized the islands as stowaway transport

## Discussion

- More radiocarbon calibration and datation of fossil samples is fundamental to fully know the pattern of dispersion within the islands and more precise arrival dates
- Further research on the interactions leading to insular divergence will require the inclusion of more insular populations

## Bibliography

[1] Babiker & Tautz, 2015; [2] Nogales et al., 2006; [3] Cucchi et al., 2005