The role of pines (and its naturality) in certain areas of the Mediterranean has been a theme of intense debate among geobotanists. In this context, the authorship of Pinus pinea has been traditionally considered the most controversial of all the species of the genus. Their edible nut is responsible of a long history of trade and presumably of introduction throughout Europe and N Africa, but great inconsistencies and inconveniences are detected when analyzing the opinion of "real" plant biogeographers (Table 1).

**Why Pinus pinea L. is unique?**

1) It is the only Mediterranean pine having a hog, edible, kernel.
2) It has a very depauperate genetic diversity across its range.
3) The female gametophyte stops earlier (spring) than in other pine species (after the summer).
4) Cones and seeds need 3 years to ripen (versus in almost all other pines the takes only two years or less).
5) It is the only having such a characteristic crown shape (that is why this pine is named "Parasol").
6) Leaf morphology and stomatal features differ greatly from the other pine species. Its vascular ducts in cross section of leaves and characteristic features.

**Difficulties in the obtaining of Palaeoecological data at the species level**

Preliminary palaeoecological information is very limited (see primarily because most of the fossil vegetation evidence is obtained by pollen and the macroscopic presence allowed by pollen analysis is insufficient to detect this tree. Microremains are needed to uniquely detect the species in fossil records. This includes kernels and anatomically well preserved wood, but also leaves (see box at the right).

Furthermore, records with microremains are rarely found in Mediterranean environments, especially in those areas that could be highly suitable for this species (i.e., rocky or sandy substrates) which could constitute a bias in the palaeoecological contexts, genetic presence in archaeological sites.

**Palaeoenvironmental data is almost exclusively linked to archaeological sites**

Pre-Quaternary data (including related taxa) is scarce and fragmentary. It is located in the Western and Central Mediterranean so far (South of France, Spain and Italy, Saponia 1846, 1865, Zappata 1903, Wilf, 1944, Menéndez Amor, 1951).

In several coastal areas of Iberia (Portugal, Gibraltar and the Mediterranean coast) there is wide evidence for the existence of this species during the Holocene. At the Roman period it is distributed, at least, throughout the western Mediterranean area, including parts of inland Spain (i.e., the Northern Plateau) and several other northern areas of Central Europe, which should correspond to the introduction of kernels as luxury food from southern territories.

Genetic data shows that this species is (surprisingly) genetically depauperate, despite having a considerable phenotypic plasticity and adaptability (Fig. 6). This is interpreted as the result of a loss of genetic diversity due to a presumably prolonged bottleneck that could be related with the climatic oscillations (or the lack of seed dispersers) during periods of the Quaternary.

However, alternative scenarios could also have occurred: the existence of a long-term, stable and small range (located probably in the W Mediterranean), and the effects of anthropogenic domestication could have provoked a recent genetic decline and a simultaneous (and rapid) range expansion throughout the Mediterranean.