

# ARCHAEOBOTANICAL ANALYSES IN MEDITERRANEAN URBAN CONTEXTS: NEW DATA FROM LECCE (SE ITALY) BETWEEN IV CENTURY B.C. AND XVII CENTURY A.D.

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Seeds/fruits analysis in Mediterranean contexts is still fairly recent (Bosi *et al.* 2009). The Lecce case study shows that these macro-remains, involved in an integrated approach with anthracology, palinology and historical sources, are important to understand the environmental and anthropic dynamics of a southern European city over time.



Fig. 2: graphic reconstruction of Lupiae

Lecce is a city located in the Apulia region (SE Italy) (Fig. 1) with a complex stratigraphy:

- Iron Age (X-VII century B.C.): hut villages.
- Hellenistic Age (IV century B.C.): birth of the Messapian settlement.
- Roman conquest (II-I century B.C.): this site becomes a *municipium*, known as *Lupiae* (Fig. 2).
- Byzantine Period (VII-IX century A.D.): we have little information; probably its population decreased.
- Norman county (X-XI century A.D.): the Lecce population had increased again.
- Swabian and Angevin-Durazzesco Age (XII-XIV century A.D.): a period of economic growth.
- Aragonese Period (XV century A.D.): Lecce was one of the most important cities in Southern Italy.
- Kingdom of the two Sicilies (XVI-XVII century A.D.): this city went through a period of great economic crisis.



Fig. 1

The analysis of 2500 soil samples (total volume: 12.500 l), sieved with meshes of 0,5 and 3 mm, was performed on different archaeological contexts: housing, handicraft, agricultural, funerary and religious.

In total we found 2106 seeds/fruits and 8031 charcoals. This macro-remains belong to the following time span (Figs. 3, 4) (Colaïanni 2012):

### Seeds/fruits:

- Hellenistic Age (IV-III century B.C.): remains reveal the presence of olive (*Olea europaea*), horse bean (*Vicia faba* var. *minor*) and wheat (*Triticum aestivum/durum*)
- Roman Period (I century B.C.-VI century A.D.): olive stones decrease, while wheat caryopsis, horse bean legumes and fig seeds (*Ficus carica*) increase. There is also the first appearance of grapes (*Vitis vinifera*).
- Medieval Period (VII-XIV century A.D.): scarce concentration of seeds. Pulses and grape increased while there was a decrease in wheat.
- Aragonese Period (XV-XVI century A.D.): after an increase in cereal caryopsis, such as barley (*Hordeum vulgare*), there was a sharp decrease in the numbers of these plants.
- Modern Age (XVII-XIX century): cereal cultivation has almost disappeared. It happened in concomitance with the increase in grapes and olive.

### Charcoals:

- Hellenistic Age (IV-III century B.C.): the use of olive tree (*Olea europaea*) and Mediterranean maquis species, such as evergreen oak (*Quercus* type *ilex*), mastic (*Platanus lentiscus*), myrtle (*Myrtus communis*) and heath (*Erica arborea*).
- Roman Period (I century B.C.-VI century A.D.): olive tree and maquis taxa exploitation increasing. Also grape charcoals (*Vitis vinifera*) are attested.
- Medieval Period (VII-XIV century A.D.): high use of olive tree, evergreen oak and Mediterranean shrub wood. There are also remains of tree-fruit species, such as *Prunoideae*. An increasing use of Grape charcoals.
- Aragonese Period (XV-XVI century A.D.): prevalence of olive tree exploitation.
- Modern Age (XVII-XIX century A.D.): the olive tree is still the most exploited plant.

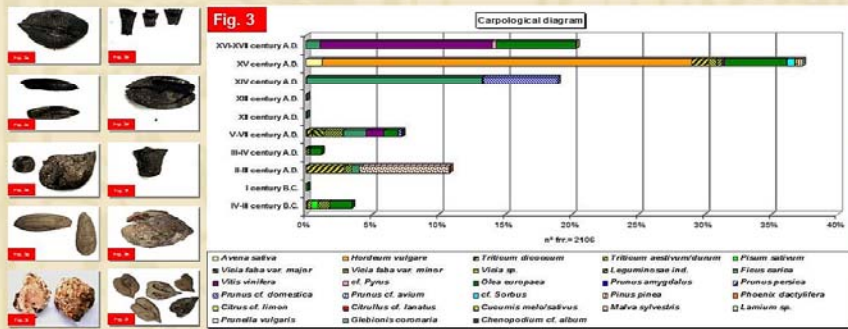
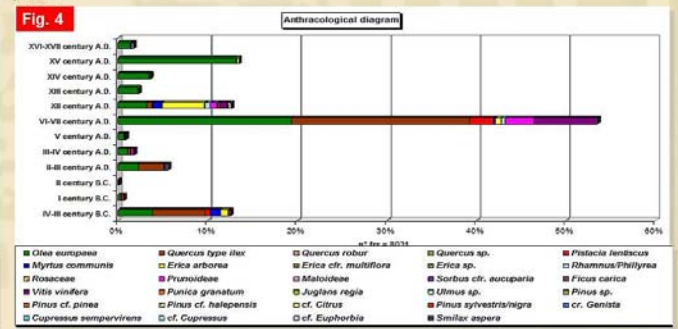
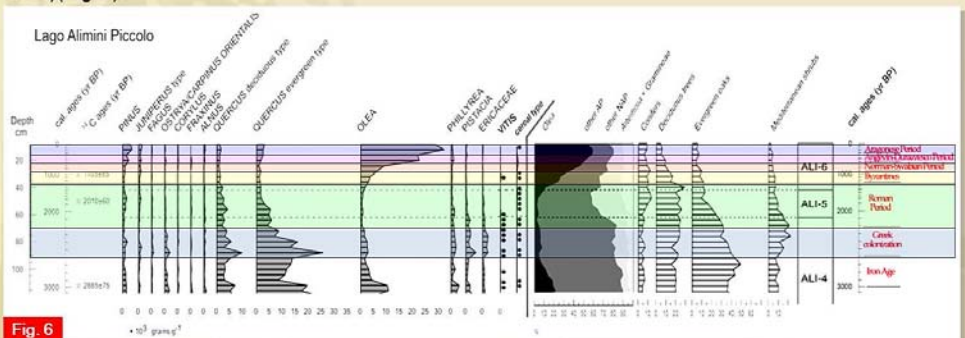


Fig. 3, a: charred caryopsis of naked barley (*Hordeum vulgare*); b: charred rachis fragments of barley (*Hordeum vulgare*); c: charred caryopsis of oat (*Avena sativa*); d: charred olive stone (*Olea europaea*); e: charred legumes of horse bean (*Vicia faba* var. *minor*) and broad bean (*Vicia faba* var. *major*); f: charred seed of crown daisy (*Glebionis coronaria*); g: mineralized seeds of melon/cetriol (*Cucumis melo/sativus*); h: mineralized seed of lemon (*Citrus cf. limon*); i: mineralized peach stone (*Prunus persica*); l: mineralized grape seeds (*Vitis vinifera*).



Pollen analysis of Alimini lakes, a lacustrine area, 30 km away from Lecce (Fig. 5), show the transformation from the natural environment to the anthropic landscape, due to the creation of agricultural areas (Di Rita, Magri 2009)(Fig. 6).



Agricultural activities during the centuries are confirmed also by the historical sources. For instance, ancient Roman authors, such as Catone and Columella, write about the exploitation of a variety of local olives (Lombardo 1992) (Fig. 7). Macro/micro-remains, together with historical documents, also show the steady exploitation of the wooded areas for agricultural purposes during the Medieval Age. This deforestation mainly happened during the Angevin and Aragonese Period. With the Aragonese kingdom, there was a slow change of cultures; cereals were replaced by grape and olive-growing. During the Modern Age, olive-growing became the most widespread crop in the fields around Lecce (Fig. 8), while some plant remains reveal the presence of orchards and gardens in the urban and peri-urban landscape. Therefore, we have seen that the contribution of the seeds and fruits, integrated in a multidisciplinary approach, shows that the anthropic pressure for agriculture purposes was the main cause of the change in the Lecce plant landscape (Fig. 9). The creation of much wider crop fields and the introduction of new food species have led to a dramatic fall in the local vegetation, which was originally an evergreen oak forest and arboreal/shrubby plants of Mediterranean maquis.



Fig. 5



Fig. 8: graphic reconstruction of the oil tubs discovered in Lecce



Fig. 7: graphic reconstruction of a Roman olive-press (*trapetum*) discovered in Lecce



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