

Archaeobotany and the history of local Flora: the case of archaeobotanical records (12th century A.D.) from the Bishop's Palace of Modena (Emilia Romagna - Italy)

Giovanna Bosi(1), Rossella Rinaldi(1), Donato Labate(2), Claudio Santini(3), Marta Bandini Mazzanti(1)

1 - University of Modena and Reggio Emilia (ITALY) - giovanna.bosi@unimore.it

2 - Soprintendenza dei Beni Archeologici Emilia Romagna (ITALY) - donato.labate@beniculturali.it

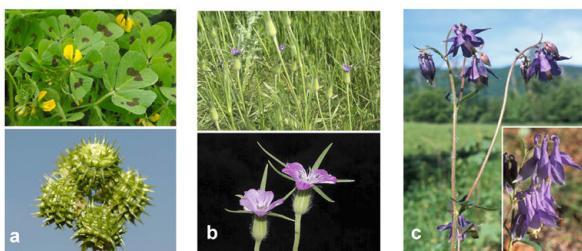
3 - Gruppo di lavoro sulla Flora della Provincia di Modena (ITALY) - claudiosantini_004@fastwebnet.it



1 - Bishop's Palace of Modena; 2 - archaeological excavations (layers 17)

Archaeobotanical analyses show that the canal was partly naturally, partly anthropically filled up, but it was rarely used as garbage and latrine waste. Probably the canal, rich of wet ground plants, was close to a **kitchen garden** and a **little orchard**, with fruits, vegetables, aromatics/medicinal plants and weeds, other than ornamental plants, such as for example *Aquilegia vulgaris/atrata* and *Prunella vulgaris*, probably with also a religious meaning, according to the archaeological context.

The revision of the Flora of the Province of Modena (in press) allows us to compare past and present.



Flora of the Province of Modena - carpological remains from the Bishop's Palace (12th cent. AD) and plants of the same taxa currently living in the territory - 5 and a - *Medicago cf. arabica* (legume 4,8 mm); 6 and b - *Agrostemma githago* (seed 3,8 mm); 7 and c - *Aquilegia vulgaris/atrata* (seed 1,2 mm) and *A. vulgaris*; 8 and d - *Scutellaria galericulata* (mericarp 1,5 mm); 9 and e - *Sinapis alba* (seed 1,2 mm); 10 and f - *Cladium mariscus* (achene 2,1 mm); 11 and g - *Thymelaea passerina* (achene 2,5 mm); 12 and h - *Veronica cf. hederifolia* (seed 1,2 mm)

Several plants today missing in the plain, take cover in the hills of the Emilia Romagna region: for example, in the medieval settlement of S. Agata Bolognese (BO - 17 m.s.l. - 10th-11th century A.D.) we find many carpological records of *Drasera intermedia*, a protected species today absent in the plain and still present in the hills. So, archaeobotany is able to supervise the vegetal biodiversity in time, giving evidence of disappeared plants.

In 2009 archaeological excavations in the Bishop's Palace of Modena brought to light a **canal** (layers 17 - 12th century AD) filled with plant material. Seeds and fruits, above all waterlogged except a few charred ones, show a good state of preservation. The concentration of remains is **52,174 sf/60 l** and the floristic list include **146 taxa**.



Biblioteca Estense - alfa.G.9.26 = Lat. 853 - Officium BMV - c.75v (14th cent. AD)

Among **weeds**, more than 1/5 of taxa found in the archaeobotanical record are today rare or disappeared; e.g. *Agrostemma githago*, *Amaranthus graecizans/lividus*, *Ammi majus*, *Anthemis cotula*, *Chenopodium ficifolium*, *Medicago arabica*, *Neslia paniculata*, *Thymelaea passerina* and *Veronica hederifolia*.

About **wet ground plants**, more than 1/3 of taxa are in the same situation: we may mention *Cicuta virosa*, perhaps also a medicinal plant in this context, *Cladium mariscus*, *Eleocharis multicaulis*, *Epilobium tetragonum*, *Hydrocotyle vulgaris*, *Oenanthe fistulosa*, *Pedicularis cf. palustris*, *Polygonum amphibium*, *P. minus*, *Ranunculus flammula*, *Rhynchospora alba*, *Salix viminalis* and *Scutellaria galericulata*.



13 - *Equisetum* sp. (node fragment - 13,1 mm);
14 - *Cicuta virosa* (mericarps - 1,5 mm - mean)

15 - *Bolboschoenus maritimus* (achene 2,6 mm);

16 - *Falllopia convolvulus* (achene 3,1 mm); 17 -

Polygonum aviculare group (achene 2,5 mm); 18 -

Potentilla cf. reptans (achene 1,0 mm); 19 - *Ficus carica* (achene 1,3 mm); 20 - *Fragaria vesca* (achene 1,1 mm); 21 - *Hyoscyamus niger* (seed 1,4 mm);

22 - *Solanum nigrum* (seed 2,1 mm); 23 - *Physical alkekengi* (seed 1,8 mm); 24 - *Daucus carota* (mericarp 2,2 mm); 25 - *Anethum graveolens* (mericarp 1,5 mm); 26 - *Portulaca oleracea* (seed 1,1 mm); 27 - *Brassica rapa* subsp. *rapa* (seed 1,3 mm); 28 - *B. rapa* subsp. *sylvestris* (seed 1,1 mm); 29 - *Lycopus europaeus* (mericarp 1,4 mm); 30 - *Rhynchospora alba* (achene 1,7 mm); 31 - *Mentha aquatica* (mericarp 0,8 mm); 32 - *M. arvensis* (mericarp 1,0 mm); 33 - *Rubus cf. caesius* (endocarp 3,0 mm); 34 - *R. fruticosus* s.l. (endocarp 2,8 mm); 35 - *R. idaeus* (endocarp 1,9 mm); 36 - *Humulus lupulus* (achene 2,2 mm); 37 - *Ranunculus arvensis* (achene 4,5 mm); 38 - *R. flammula* (achene 1,9 mm); 39 - *Oenanthe cf. lachenalii* (mericarp 2,8 mm); 40 - *O. cf. fistulosa* (mericarp 3,1 mm); 41 - *Silene vulgaris* (seed 1,4 mm); 42 - *Stellaria media* (seed 1,2 mm); 43 - *Neslia paniculata* (silicle 2,4 mm); 44 - *Euphorbia cf. exigua* (seed 1,2 mm); 45 - *Beta vulgaris* (achene 4,4 mm); 46 - *Heliotropium europaeum* (mericarp 2,1 mm); 47 - *Sparganium erectum* (achene 4,5 mm); 48 - *Carex cf. divisa* (achene 2,0 mm); 49 - *C. caryophyllea* (achene 1,6 mm); 50 - *Linum* sp. (seed 2,7 mm); 51 - *Ajuga cf. chamaepitys* (mericarp 2,8 mm); 52 - *Valerianella cf. locusta* (nutlet 1,5 mm); 53 - *Urtica dioica* (achene 1,1 mm); 54 - *Hypericum perforatum* (seed 1,0 mm); 55 - *Cichorium intybus* (achene 2,3 mm); 56 - *Hyssopus officinalis* (mericarp 2,1 mm); 57 - *Convolvulus arvensis* (seed 3,3 mm); 58 - *Anthemis cotula* (achene 1,3 mm); 59 - *Picris hieracioides* (achene 3,5 mm); 60 - *Cyperus cf. longus* (achene 1,3 mm); 61 - *Cirsium arvense* (achene 2,9 mm); 62 - *C. cf. oleraceum* (achene 3,4 mm)

