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Modern assortment of utility plants in baroque cesspit in Thunovska street No. 192 at Lesser Town in Prague

ANNOTATION

Contents of a brick cesspit belonging to the college of Theatine order (Prague-Lesser Town, Thunovska St. No. 192/III) were submitted for archaeobotanical analysis with the aim of recording the assortment of economic plants within the Prague ecclesiastic ambient at the turn of the 17th and 18th centuries and shortly afterwards. The analysis confirmed the supply of vegetal macroremains through faeces together with the waste above all from the dispensary of the monastery. The set of more than 110,000 diaspores representing 210–220 taxa of herbs and woody species ranges among the richest ones from the early modern era within all of Europe. Medicinal species, in western European countries considered characteristic for hospitals and pharmacies of those times, were recorded in unusual quantities. The assortment of vegetables was extraordinarily varied. Two utility species (*Phytolacca americana*, *Benincasa cerifera*) are not hitherto known from archaeological situations outside the Czech Republic. The presence of species imported and newly introduced, some of which were expensive goods bears witnesses to the fact that the members of the order belonged to the social elite and, at the same time, documents globalization of the world in those days. The article is a detailed study of the concrete set of finds.

SUMMARY

The closed brick cesspit in the house No. 192/III in Thunovska St. at the Lesser Town in Prague offered the first more important opportunity for archaeobotanical research of an early modern Prague object belonging to the ecclesiastic community at the time of its usage. Only one cesspit at the Capucin Monastery (on the site of Prague's Republic Square – cf. Kočár et al. 2009) was discovered sooner. The found artefacts (seals, coins, gallipots with ointments, etc.) confirmed that the house No. 192/III served as a College of the Theatine order at the turn of the 17th and 18th centuries and shortly afterwards. Also larger animal and vegetal remains, besides a quantum of minute seeds and fruits that passed through the digestive tract, proved that the baroque cesspit was filled up, besides faecal and house waste also by kitchen and pharmaceutical waste.

The aim of the analyses of the samples from the fill was to reconstruct the assortment of economic plants, consumed and otherwise employed by the members of the monastery. In the presented study the set of finds is compared with the existing finds from aristocratic ambient of the Prague castle and the Hradčany largely in the Renaissance period (Beneš et al. 2012; Čulíková 2007, 2008a) and partially with the assortments from the early modern bourgeois objects in other parts of Prague (cf. Kočár et al. 2007a, b). Exceptional finds are discussed in the European context.

Three samples of approximately 10 l volume were presented to the authoress of this article for carpological analysis by the head of the research, Dr. J. Čiháková. After elutriating them on the sieves with 0.3 mm meshes, 15.3 l of mostly organic material were obtained. From this quantity 6.5 l was fully analyzed by means of a microscope. The remains visible with naked eye as well as diaspores of rare and newly identified species were separated from the rest and included into the total quantity of the macroremains. The sedimentation ambient was permanently wet till the day of the cesspit opening, most of the diaspores was preserved in excellent, non-petrified condition (calcified remains and juvenile diaspores were not included into the sum). Concentration of vegetal macroremains in the sediment on the bottom of the cesspit proved itself as quite extraordinary. Over 110 thousands of seeds and fruits as well as further thousands of fragments were mostly separated from the material analyzed in detail whose volume was only 6.5 litres which meant presence of practically 17,000 macroremains in one litre of sediment. At that, 6.5 litres represented merely 0.073 % of the whole volume of the existing complex of strata in the cesspit. Additional revision of the remaining roughly 8 litres of elutriated botanical material (0.090 % of the volume of the complex of strata) proved to be a significant contribution to the analysis. Very small diaspores of the species rare in the archaeological situations in Europe – such as rosemary, columbine, globe flower, common and Virginia tobacco that were not registered in the originally analyzed 6.5 litres - were documented in the course of the analysis. Cardamom was definitively confirmed.

In total 110,332 intact diaspores + 2,559 fragments of diaspores were identified, belonging to 208–215 taxa of herbs and woody species. Further 4–8 species of woody plants were documented by means of fragments of charred and non-charred wood, needles and buds. For a summary of all recorded macroremains of vegetal and animal origin refer to Tab. 1. The set of finds ranks among the richest and the most varied one in the whole-European scale. At least 120 species are possible utility ones in addition to utility wood. Cultural plants are represented by 74–87 species of home origin as well as of foreign provenience including articles of luxury. As much as 90 % of the sum of diaspores belonged to three species of fruit – wild strawberry (*Fragaria vesca* – ca 60,000), fig-tree (*Ficus carica* – ca 23,000) and cultivated grape-wine (*Vitis vinifera* subsp. *sativa* – ca 10,000). Wild strawberry of small-size fruits is a home species growing wild in our country, fig-tree represents imports, wine grape could be both from home cultivation and from import. All the three species of fruit were evidently dished up as a sweet course in the monastic dining-hall, but, at the same time, they served as medicaments with figs being an important dietetic remedy. The origin and consumption of a large quantity of small “strawberries” remains a question. With the supply of a lot of other small-size fruits especially of raspberries (*Rubus idaeus*), mulberries (*Morus nigra*) and current (*Ribes rubrum* agg., etc.), it is probable that strawberry, like raspberry, was planted in the culture. Unlike the medieval sets, cultivated plants played the paramount role in the monastic diet.

Vegetables, in the sets of finds usually a less significant component, were represented by lower number of diaspores than fruit, nevertheless in remarkably varied assortment, exceptional for the early modern period not only within central but the whole Europe. Collected home crop plants, such as forest fruits and spices, represented a diet supplement, but above all they kept their irreplaceable position in the monasterial medicine. They were massively represented by juniper (*Juniperus communis*) and cumin (*Carum carvi*), supposedly also cultivated. According to the present finds both on Kanovnicka street in Hradčany (Čulíková 2008a), and on Thunovska street, it was just pharmacies that represented particularly valuable source of vegetal remains of home and foreign origin. Apparently mainly thanks to apothecaries, visiting foreign markets, the remains of overseas drugs (such as tobacco, poke weed, cardamom, etc.) used to appear in the Prague ambient. Many medicinal species were common for both the localities. The existence of a pharmacy in the Theatine College manifested itself by a mass representation of the fruits of officinal species indicating invariably a pharmacy or a hospital in western Europe. In addition to the above - mentioned cumin it was opium poppy (*Papaver somniferum*), fennel (*Foeniculum vulgare*) and coriander (*Coriandrum sativum*). Probably also cannabis (*Cannabis sativa*) belonged to medicaments here.

Imports (from Mediterranean countries and from tropical Asia) as well as the species newly introduced into the Czech lands especially from the New World are the most important finds in the set. The classification to the first or to the second group need not be always unambiguous. Rice (*Oryza sativa*), black pepper (*Piper nigrum*), cardamom (*Elettaria cardamomum*), olive tree (*Olea europaea*) and stone pine (*Pinus pinea*) are clear imports in the Czech situation next to the fig tree. Also wax-pumpkin = beninkasa (*Benincasa cerifera*) and, in the case of correct identification, also pomegranate (cf. *Punica granatum*) are, with high probability, imports, however neither their cultivation in greenhouses or orangeries can be excluded. Import of utility parts, cultivation of plants in local gardens, as well as combination of both the possibilities can be considered in the case of egg-plant (*Solanum melongena*), sugary melon (*Cucumis melo*), poke-weed (*Phytolacca americana*) and representatives of the genus tobacco (*Nicotiana* cf. *tabacum*, *N. rustica*). *Schoenoplectus mucronatus*, weed companion of rice fields in the Mediterranean area whose little fruits evidently occurred in the set together with the remains of rice, imported in those days into Bohemia above all from southern Europe (Italy). The presence of pomegranate, remains from stone pine and almond-tree, olive-tree, fig-tree and rice, including its weed companion, can be considered as the proof of commercial contacts between Prague and southern countries. From the point of view of the history of the plants grown in the Czech lands and central Europe the recorded group of species of American origin is significant. Besides poke weed and tobacco there are new species of vegetables – paprika (*Capsicum annuum*) and pumpkin (*Cucurbita pepo*), and from oil plants it is helianthus (*Helianthus annuus*). Thorn-apple (*Datura stramonium*) was introduced as medicinal plant or unintentionally brought from the North America.

As far as fennel (*Foeniculum vulgare*) and coriander (*Coriandrum sativum*) are concerned, both were homegrown as well as imports of dried fruits as culinary spices and medicament is possible. Anise (*Pimpinella anisum*) ranged among expensive imported goods, due to its high price its growing in spice gardens, especially in monasterial ones, was also recommended in our country. Dill (*Anethum graveolens*), more important for kitchen than in healing, was grown in the Czech situation more in the Middle Ages than in the early modern period as can be seen from archeobotanical finds. Similarly, in the case of sweet chestnut-tree (*Castanea sativa*) and almond-tree (*Amygdalus communis*) both import of chestnuts and almonds and their home origin is possible.

In many recorded cultural plants it is a matter of priority archaeobotanical documents, namely in the territory of the Czech Republic or Bohemia, in central Europe, in two or three cases within the whole Europe. From oil plants helianthus (*Helianthus annuus*) was archaeobotanically documented for the first time in the Czech Republic. From fruit trees it was quince (*Cydonia oblonga*) that was confirmed for the first time in archaeological situation in Bohemia. Determination of pomegranate (*Punica granatum*), registered in the CR for the first time, is still with a

question mark. Within vegetables, growing of spinach (*Spinacia oleracea*), radish (*Raphanus sativus*), lettuce (*Lactuca sativa*) and common purslane (*Portulaca oleracea* subsp. *sativa*) was confirmed by diaspores for the first time in the Czech lands. Paprika (*Capsicum annuum*) is documented here for the first time in Bohemia. So far, egg-plant (*Solanum melongena*) was repeatedly confirmed from the early modern period in the Netherlands, its seeds in the set are the first archaeobotanical proof of its growing, possibly in various varieties, within the Czech Republic and central Europe. In the cesspit the diaspores of the above mentioned species could be remains of seeds for sowing. From culinary spices and medicinal plants it was cardamom (*Elettaria cardamomum*) and rosemary (*Rosmarinus officinalis*), a woody species grown in our country from the Middle Ages also as decorative plant, that were documented for the first time in the Czech Republic.

Within decorative and medicinal plants the set yielded the first material proof of growing of hollyhock (*Alcea rosea*) and pot marigold (*Calendula officinalis*); also helianthus used to be grown as a decorative plant at first. Mediterranean stone pine (*Pinus pinea*), recorded for the first time in the CR, can also be added to the decorative woody species or even to oil plants. Diasporas of home species that were found in the Czech Republic for the first time – columbine (*Aquilegia vulgaris*), globe flower (*Trollius altissimus*) and common mallow (*Malva sylvestris*) most probably come from grown plants.

In the case of correct determination also Virginian tobacco (*Nicotiana* cf. *tabacum*) has been recorded for the first time in our country and, at the same time, in central Europe. Also common tobacco (*N. rustica*) – the third published find in Prague and in the Czech Republic – belongs to the rare finds in the CR and in the neighbouring countries. The seeds of *Phytolacca americana* – source of dye and medicinal plant – are the second find in Europe whereas the first find comes from Prague-Hradčany (Čulíková 2007). The seeds of multi-utilizable *Benincasa cerifera* represent the first archaeobotanical find in Europe.

Recorded diaspores of many other grown species especially of spice herbs and officinal plants belong in archaeological situations in the Czech lands and in central Europe among rare ones – e.g. marjoram (*Majorana hortensis*), sweet basil (*Ocimum basilicum*).

From wildy growing species without a direct use (approx. 60 species) it is the record of the species in various degrees of endangerment within the territory of the Czech Republic that is important in the set. According to the latest “red” list (Holub/Procházka 2000) seven species are concerned: *Adonis aestivalis*, *Agrostemma githago*, *Anthriscus caucalis*, *Glaucium corniculatum*, *Ranunculus arvensis*, *Thymelaea passerina*, *Trollius altissimus*. Two taxa - *Spergula arvensis* subsp. *maxima* and *Vaccaria hispanica* – are included into the category of species missing, probably extinct. Also *Agrostemma linicola*, former companion of flax cultures, is probably extinct. In our country also *Schoenoplectus mucronatus* is considered extinct – see above.

A reconstructed assortment of economic plants compete with not only the aristocratic ambient of the Prague castle but also with the richest Hanseatic towns of the modern central, western and northern Europe. Even though fashionable exotic goods identified under the floor of the Vladislav hall at the Prague castle were not found (citrus fruits, pistachio nuts and peanuts, coffee – cf. Beneš et al. 2012), from the rich offer of plants including imported ones of high prices it is evident that the members of the Theatine college belonged to wealthy class of inhabitants, to the social elite, in Prague at the turn of the 17th and 18th centuries. Rice, olives, from spices and medicaments cardamom, pepper (“black” and “white”), anis and sweet basil were affordable only for higher social classes in our country during Renaissance and baroque periods. Besides cardamom the other species have been already recorded from the Prague Hradčany (Čulíková 2008a) or from the Castle (Beneš et al. o. c.). Cardamom belongs to unique finds, not long ago known only from the High Middle Ages and early modern period from Germany (e.g. from Rostock from the 16th century – Wiethold 1999, 417; from Luneburg – 14th–17th centuries – Wiethold 2000, 30 etc.), more recently also from the Polish Hanseatic town of Danzig (Gdańsk) from the 15th and 16th centuries (Badura 2011, 176). The kitchen and dispensary in the college of the Order featured similar high standard as those of noble inhabitants of the castle area, many of the members studying there came from aristocratic circles. Of course, whether the Prague college of Theatine Order possessed its own garden, with vegetables or spices, an orchard and/or a greenhouse, cannot be decided from the macroremains of the accompanying weeds. Taking in account especially the needs of dispensary, the existence of lands seems very probable.

The results of the analysis allow comparison of the offer of agricultural, garden and imported crop plants in the Czech metropolis at the turn of the 17th and 18th centuries with modern days. If the home and imported fresh products or their dried parts were purchased at the Prague markets then the markets of those days competed with the present offer even surpassing it in some commodities. At the present markets we cannot find the fruits of beninkasa neither the offer includes “vegetal kermes” – the fruits of poke weed, imported as food dye from southern Europe nearly to the first half of the 20th century. The set of finds from Thunovska Street is a material document of the degree of globalization of the civilized world on the threshold of the 18th century.

Note

Remains of utility species, imported or grown here, documented from other mediaeval or modern sites within the Czech Republic are still missing from the territory of the historic Prague (e.g. *Foenix dactylifera*, *Myristica fragrans*, *Melissa officinalis*). To date clove (*Eugenia caryophyllata*) has been documented in Prague only by its pollen.

Translated by Helena Vičková