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New archaeobotanical evidence for *Trigonella foenum-graecum* L. from the 4th century Serdica

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ABSTRACT

This study investigates fenugreek and black mustard seed storages, discovered for the first time in an archaeological context in the territory of Bulgaria. A large quantity of charred fenugreek seeds (*Trigonella foenum-graecum*) and black mustard seeds (*Brassica nigra*) was found in room N 12 of building A 2 in a layer related to the final quarter of the 2nd century AD. The archaeobotanical samples were collected during rescue excavations carried out in Sofia in advance of the construction of the subway station No 8 in 2012–2013. The stores of *Trigonella foenum-graecum* and *Brassica nigra* unambiguously indicate that these plants had economic value and, considering their properties, also possible medical application. The archaeobotanical evidence of fenugreek in Europe and particularly in the Balkan Peninsula is quite rare, making its discovery in the territory of Bulgaria very important for studying its cultivation history. The plant findings from "Subway station 8", i.e. the Serdica station also provide important information on the diversity of crop plants used in this period. Their discovery at this site contributes to the archaeobotanical knowledge of the period and provides further insights into the wide cultural and economic interactions within the ancient Graeco-Roman world and within the Mediterranean.

1. Introduction

In the Antiquity, and especially in the Roman times, there happened a substantial change in diet through enlargement of the spectrum of cultivated and imported annual crops, fruits, vegetables and spices. The Mediterranean influence is noticeable all over the Roman Empire not only through the use of diversity fruits, vegetables, etc. Some of the fruits, like *Punica granatum* and *Prunus dulcis* were imported (Alonso et al., 2016). Intensive trade contacts resulted in the appearance of new cultivated plants and growing of a variety of vegetables and spices (Lodwick, 2016) like celery, coriander, mustard, fenugreek etc. utilised in cuisine, but also for medical purposes. Since the Antiquity these plants, especially *Trigonella foenum-graecum*, have been well-known as spices – used either as healing or nutritious plants, or both.

The rescue archaeological excavations carried out in the city of Sofia in 2012–2013 as part of the construction of subway station No 8 revealed architectural remains of the ancient town of Serdica dating to the period from the Antiquity to the Middle Ages. The topic of this paper is the extremely rare finding of seeds of fenugreek encountered in an excavated building recorded at this site; this is the first such archaeobotanical discovery in the territory of Bulgaria.

2. Archaeological setting

In Roman times ancient Serdica was one of the important towns situated in the Balkan Peninsula. It existed for four centuries during the Roman imperial era. In 45 CE, during the reign of Claudius, Serdica was assigned to the newly established province – Thrace. Claudius turned the settlement into a town. The emperor Marcus Ulpius Trajan (98–117) named the town Ulpius and initiated its development.

During the 2nd century AD numerous settlers from Asia Minor came to Serdica. In 170 CE the Costoboci tribes attacked and destroyed the town. At the time of Marcus Aurelius and his son Commodus (between 176 CE and 180) a large defensive wall was built around the town. During the last quarter of the 3rd century AD Serdica became the principle town in the newly established province of Inner Dacia. Around the beginning of the 4th century AD, and during the reign of the emperor Constantine the Great, Serdica became the emperor's residence; this status lasted for a while. It is him who the following words were assigned to: "My Rome is

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Serdica". The excavations showed that the town had been destroyed many times as a result of wars and invasions of the Huns and the Goths (Ivanov, 2006).

The archaeobotanical finds of *Trigonella foenum-graecum* and *Brassica nigra* were discovered in room N 12 of building A 2. The building itself represents large residential area and consists of several rooms. It is located immediately to the north of Decumanus Maximus and to the west of Cardio Maximus – the two main streets of Serdica. The structures shown in Figs. 1 and 2 are generally dated to the 4-6th century. Walls of earlier buildings are, to some extent, preserved beneath them, and in some places they are destroyed (Mario Ivanov, field director – personal communication) (See Fig. 1A and B and Fig. 2).

3. Materials and methods

A total of 30 samples were collected. Besides the remains of fenugreek and black mustard, they contained 1540 remains belonging to 14 plant species. The samples were collected from a range of archaeological entities (see Table 1):

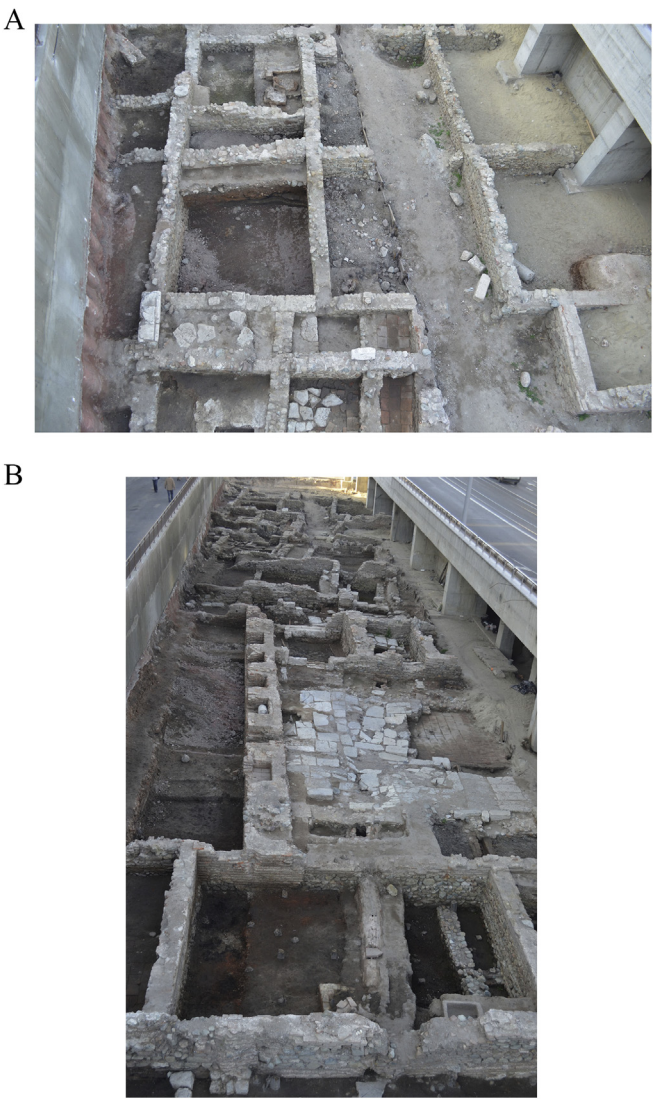

Fig. 1. Archaeological excavation of the ancient town of Serdica: A. Close-up view of the location of the building in which the presented material was discovered. B. Overview of the investigated area.

- Economic structure in quadrant G 9/H 9
- Building A 2, room No 12
- Building A 4, room No 1
- Building A 6, room No 9
- Quadrant No H 5, dwelling No 2
- Burnt structure in quadrants No: F 3, F 8, F 11.
- Decumanus 3
- Decumanus 2

The archaeobotanical samples were taken from different archaeological contexts: residential areas, economic structures, concentrations of burnt equipment, buildings, and pottery concentrations. Some of the remains were recovered through hand flotation, but a larger portion of the material, particularly charred or non-carbonized wood varying in sizes from stakes to beams, was collected by hand. Charcoal is present in almost all of the samples; charcoal samples were taken for dendrochronological dating in order to reconstruct the chronology of the site. The absolute dating of building A 1, N level 536.55 indicated a date later than 182 CE (dates provided by Laboratory for Tree-Ring Research, University of Arizona, 1215 E. Lowell St, Tucson, AZ 85721, USA). The dated level is stratigraphically very close to the levels at which seeds of *Trigonella foenum-graecum* were encountered in building A 2, N -▼540.10–540.00 and ▼540.10–540.08. The seeds were discovered within strongly burnt layer that consisted of burnt 'kirpich' Roman tiles (tegulae) and wood remains deriving from the roof construction. The layer is associated with the invasion of the Costoboci in 170 CE.

Room N 12 is approximately square in plan. Building A 2, including room N 12, was built in the first decades of the 2nd century AD. Over time, the layout of the building was changed several times by the end of the 6th century AD. During this period the town did not have a defensive wall and was significantly damaged. The seed concentrations levels located at▼540.10–540.00 and ▼540.10–540.08 correspond to the level placed in the final quarter of the 2nd century AD. Among the debris, a lot of broken ceramic vessels and kitchen pottery were found. The seeds were likely stored in a vessel which broke releasing the seeds. In the adjacent room, a kitchen oven belonging to the same chronological phase was discovered.

4. Results

4.1. Building A 2, room No 12

The archaeobotanical samples derive from a burnt layer which, based on the date of the coins found in the same layer, can be associated with the attack of the Costoboci in 170 CE. The samples were collected manually from two levels: ▼540.10–540.00 and ▼540.10–540.08. It is supposed that room No 12 in which the seed concentrations were registered could have been connected with the preparation of food, i.e. that it served as a kitchen (Mario Ivanov, field director – personal communication). From this room three samples were taken and presented here (Table 1). Approximately 560 g of fenugreek seeds (*Trigonella foenum-graecum* L.) were recovered; 10 g contains 532 seed and thus the assemblage included approximately 297920 seeds. Further, 20 g of black mustard seeds (*Brassica nigra* L.) were retrieved; 5 g contains 3790 seeds and so approximately 7580 seeds were found.

Apart from fenugreek and black mustard no other annual crops or weeds were identified in these archaeobotanical samples. The presence of walnut shell fragments (*Juglans regia* L.) and stone pine shell (*Pinus pinea* L.) in quadrant G 9▼530.30 and few instances of grape seeds (*Vitis vinifera* L.) in various locations (see Table 1) suggest consumption of fruits/nuts at the site. The majority of the

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