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ARCHAEOBOTANICAL REMAINS FROM THE SLOVAK BRONZE AGE BURIAL SITES

The role played by plants for human generations is generally known. Cultivated or freely grown plants formed the raw material basis for human diet, served as material for building, they were used by various handicrafts and they accompanied man even to the grave. We know quite enough about the results of the interaction between man and plants in human history. The archaeologists, however, have paid little attention to the finds of plant remains in burial sites and to the explanation of their presence there in connection with the burial rite. The lack of information in this field has been caused by the relative scarcity of finds, due to the unfavourable conditions of the soil, where only burnt or mainly carbonized plant remains are to be protected and even of these many have been destroyed in the course of the excavations. There is also little interest in dealing with plant remains as auxiliary material for interpreting archaeologic finds in archaeological publications.

The Slovak archaeological literature dealing with Bronze Age burials, either inhumation or cremation ones, very seldom contains data on plant finds and also studies or profound analyses of these finds are very rare.

Recently we have analysed in the archaeobotanical laboratory of the Archaeological Institute of the Slovak Academy of Sciences carbonized plant materials discovered in four cremation burial sites from the latest-third of the Bronze Age. Up to these days we have not find any plant remains in inhumation burial sites of the Slovakian Bronze Age. The main topic of this paper is to describe, analyse and interpret the above-mentioned archaeobotanical material.

1. *Diviaky nad Nitricou,* "Vikárka", Prievidza District. Research: by L. Veliačik; Lusatian culture of the Late Bronze Age; cremation burial site; charred remains of timber were found right in the urns or at the immediate vicinity of their fragments alongside with other inventory. On analysing 130 charred fragments we found the following timbers: oak — Quercus spec. (69 charcoals in 7 urns), ash-tree — Fraxinus spec. (28 charcoals in 3 urns), beech — Fagus spec. (15 charcoals in 3 urns), pine — Pinus spec. (14 charcoals in 1 urn), sporadically we found also fragments of willow-tree — Salix spec. (2 charcoals in 1 urn), hawthorn — Crataegus spec. (1 charcoals in 1 urn). In 16 urns we found only one species, in 1 urn there were two species of timber.

There were no remains of metal implements in the urns to which the timber could have belonged, forming one complex.

2. *Kopčany,* "Kutka", Michalovce District. Research: by S. Demeterová; cremation grave from the Late Bronze Age, belonging to the Suciul de Sus culture. The archaeological research in 1970 to 1971 discovered here 48 frying-pan shaped pyres with fired clay at the bottom. 25 of them contained remains of timber. Discovered were also 48 cremation graves with urns. Three urns contained also remains of timber.

From the Kopčany site we have analysed 496 charcoals from pyres and 3 from urns. The most frequent timber at this site was again oak — Quercus spec. (430 charcoals from 22 pyres and 37 charcoals from 3 urns). The share of other timbers, compared with oak, was quite insignificant: maple — Acer spec. (25 charcoals in 1 pyre alongside with

oak), Common hornbeam — Carpinus spec. (13 carbons together with oak in one pyre), elm — Ulmus spec. (12 charcoals, separately in 1 pyre), chestnut-tree — Castanea sativa, willow-tree — Salix spec., yew-tree — Taxus baccata were found in several cases together with oak charcoals (Quercus spec.) in three different pyres.

On analysing the same species we found different timber structure types. We presume that the charcoals from this locality contain Quercus petraea LIEBL., Quercus cerris L., Quercus robur L. and probably also a further type that cannot be identified. We found charcoals from healthy, well developed trees, but also from decayed ones.

3. *Medovarce*, "Popálenica", Zvolen District. Research: by J. Bátora, cremation burial site belonging to the Lusatian culture at the break of the Bronze age and Halstatt period. From this locality we obtained 21 charcoals from elm — Ulmus spec., 1 hawthorn charcoal — Crataegus spec. from a single cremation grave. The charcoals were situated outside the urns, but in their very vicinity.

4. *Radzovce*, "Monosa", Lučenec District. Research: by V. Furmánek. An extensive cremation burial site from the Middle and Late Bronze Age, Piliny culture. The charcoals were found right in the urns.

From this locality we have analyse 44 charcoals from the urns, 12 charcoals from the pyres and 18 charcoals from their vicinity. The most frequent species in this locality was oak — Quercus spec., both on the pyres and in the urns (58 pieces). From this site come also 18 charcoals of beech — Fagus spec., and 4 charcoals of ash-tree — Fraxinus spec. Noteworthy is also the lump of bitumen — unfortunately we do not know exactly the place whence it comes.

DISCUSSION

All the carbon finds come from cremation burials, from the period of 1300—700 B.C., comprising the Middle, Late and the latest Bronze Ages. The finds from Diviaky nad Nitricou and Medovarce belong to the Lusatian culture. While the first locality contained a large number of finds, the second locality contained only one. It is therefore impossible to compare the findings as to the symbolic use of certain kinds of timber in the burial rite in the Bronze Age in Slovakia.

After studying the circumstances of the findings we can presume that all the charcoals come from timber used for cremation. They are either inside the urns alongside with skeletal remains, or were found on the pyres where the burial rite and the cremation process took place. The relatively richest material comes from the Kopčany locality, where more than fifty per cent of the pyres contained charcoals. There were relatively few charcoals in the urns — out of the 48 urns only 3 contained charcoals. Of small interest are in this respect also the finds in Radzovce, where the percentage of the finds of charred timber fragments in the graves-urns is less than one piece per grave. We can agree with the view of V. Furmánek (1968b, s. 9), based on the situation in the cremation burials of the Piliny culture that the bone fragments were collected very carefully from the pyres and that charcoals got to the urns only accidentally. We should therefore obtain more thorough information from the pyres than the burials — but only very few pyre sites have been preserved.

Very interesting is the lump of the charred tar-like substance (Radzovce, probe B-II-3), which might play some role in the burial rite. Its informative value, however, due to the circumstances of the finding's inaccurate location is quite problematic.

So far no Slovak archaeologist tried to reconstruct the cremation burial used in the Bronze Age. J. Paulík in his paper (1966, p. 388—390) deals also with this problem. The paper by. H. Bouzková, J. Bouzek (1963), quoted by J. Paulík gives us a more clear picture in this recpect.

Various archaeological works mention the discovery of pyres on Bronze Age urnfields (J. Paulík, 1963; P. Čaplovič 1961) or charred timber fragments that have not been evaluated (V. Furmánek 1968a; V. Furmánek 1968b).

The various kinds of timber found on our sites can be dealt with also phytogenetically.

In the cremation rite the plants plaid certain role in keeping with the imagination of the people. The pyres were erected from timber. There are very few finds documenting directly this phase of the burial rite in Slovakia. The 25 pyres in Kopčany from the Late Bronze Age give us a somewhat more complete idea. There is one pyre in Kopčany from the Late Bronze Age and one Piliny culture pyre in Radzovce. Other 30 pyres — very poor in charcoal finds — come from the Neolithic Age and two from the Roman era. In the pyres prevailed oak and beech, also on sites rich in other kinds of timber. In the phytogeographical conditions suitable for these trees (oak prefers low-laying areas with warm and relatively dry climate; beech preferes higher areas with cooler and wet climate) oak and beech have the highest heating value (K. Kavina 1932, p. 109), i.e. they were very suitable for cremation. The finds in the urns also inform us about the timber used in the pyres, we must, however, realize that these materials are very fragmentary, they are not on the original cremation sites, they have been transferred to the urn by people, led by various subjective motivs. The number of charcoals on the pyres, compared with the number of charcoals in the urns is sometimes 50 times higher, showing that there is really a possibility of subjective selection by man. Besides the body of the deceased, funeral offerings, some of them of wood, were also cremated on the pyre and thus some of the charcoal fragments may originate from burned wooden implements.

The various kinds of timber used for cremation in the Bronze Age can be evaluated also from phytogeographical viewpoint.

Though we dont know anything about the phytogeographical map of Slovakia in the Bronze Age, analogically to the present-day map we can say inductively the following things about the phytogeographical situation of the period: Localities Kopčany, Medovarce and Radzovce belong to the phytogeographical region of the Pannonian flora and we presume that the region had a relatively steady development after the last Quartenary Ice Age (J. Májovský, L. Šomšák, D. Magic, 1972, p. 433).

The differences among these localities belong to the lower classification phytogeographical grades. The village Kopčany is situated in one of the subregions of the Pannonian flora proper, strongly influenced by the character of the northern Tisza valley. At present this region is characterized by oaks and mixed oak-hornbeam forests, forming very characteristic eco-societies in the horizon of forests (J. Májovský, L. Šomšák, D. Magic, 1972, p. 444).

The Sub-boreal climate in central Europe which becomes more cold and dry compared with the Atlantic region (E. Krippel 1971, p. 327) resulted in a maximum expansion of beech forests in the north of the territory, while the south is dominated by oak-forests and mixed oak-hornbeam forests. The inhabitants of the Kopčany area lived in the Late Bronze Age in an environment characterized by oak and mixed oak-hornbeam forests and this fact is fully reflected also by the finds from the pyres. The other timbers discovered at the Kopčany locality Salix and Fraxinus are also local, forming part of the flora in more humid places. Strange in this environment are Castanea sativa and Taxus baccata. Perhaps they formed part of the funeral offerings burned in the pyre and need not be of local origin.

The localities Radzovce and Medovarce belong to the Matra Mountain sub-region, to the southern part of the Ipel-Rimava rivers, rift valley, today characterized by oaks and mixed oak-hornbeam forests. Beeches appear in the north of the territory in higher altitudes (J. Májovský, L. Šomšák, D. Magic, 1972, p. 435). All the charcoals found in Radzovce can be regarded as typical timbers of this territory. Due to the small number of finds it is difficult to say whether the various timbers expressed the social status of the cremated person. The find in Medovarce is isolated and it is therefore difficult to evaluate. The prevailing elm may come from the marsh forests along the rivers. The locality in Diviaky nad Nitricou is today characterized from the phytogeographical viewpoint as part of the region of the pre-Carpathian flora. It is situated in the Upper-Nitra Basin, in the very vicinity of the Strážovské Hills. The variability of the flora in this region is connected with the special position of the basin open from the south, as well as by the immediate vicinity of higher altitudes of Strážovské Hills.

The flora is today dominated by oaks in the south. In the surroundings of the Kňažin Stôl and Rokoš peaks, placed near the above mention locality there were originally hairy oaks (Quercus pubescens) and pines (Pinus silvestris) forests (J. Májovský, L. Šomšák, D. Magic, 1972, p. 450). The assemblage of timbers found at this locality shows that a wide range of timbers was used in Bronze Age cremation burials. This wide assortment also shows that the timber used by the Bronze Age people came from sources situated in various places. The people of the Lusatian culture in Diviaky nad Nitricou used a wide assortment of timber growing in the valleys, but also on the slopes of the Strážovské Hills. Similarly as in the above Bronze Age localities we cannot say whether the various kinds of timber used in cremation burials indicated the social status of the deceased individuals.

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