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ANTHRACOLOGICAL EXAMINATION OF THE WOODEN HANDLE OF A COPPER PICKAXE FROM SÁRRÉTUDVARI-ÓRHALOM, GRAVE 7

Material and methods

The author received a wood sample from János Dani for tree species identification. The sample originates from the wooden handle of a copper pickaxe excavated from a grave (grave 7) at the Sárrétudvari-Órhalom archaeological site.

The sample seems to have survived several hundreds of years without charring. It looks like wood timber showing little compression or decay, preserved by the corrosion of the metal of the handle-tube.

The sample size was about a half a cm. This allowed us to carry out examination in three anatomic plains on the tree remain. The sample was first examined under stereo-microscope with maximum magnification of 80×. Identification took place under reflected-light microscope with magnification around 400–600× on three anatomical planes (STIEBER 1967). The keys of Schweingruber (Schweingruber 1978; Schweingruber 1990) were used. As to the documentation, photos of the species were taken by the author with Hitachi type natural scanning electron microscope. We have examined three fracture faces of the remain, i.e. the transversal, longitudinal radial and tangential planes. Fractures were made by hand or sometimes we got the appropriate surface by cutting the fragment with razor-blade. No chemical treatment was applied. All microscopic investigations were carried out at the Department of Plant Anatomy, Eötvös Loránd University, Budapest, Hungary.

The botanical nomenclature by Schweingruber (Schweingruber 1990) was used.

Results and discussion

As the sample was badly preserved we can say that probably *Fagus sylvatica* (common beech) was used to prepare the handle of the copper pickaxe. The sample showed the characteristic of a diffuse porous tree (Fig. 1. 1–3). Pores are grouped in the early wood and are solitary in late wood. On longitudinal plains (Fig. 2. 1-2) we can observe rays uniseriate to multiseriate. These features were what we could observe. On the basis of these and that *Fagus* is hardwood with thick stem and branches, we conclude that this species was used. The observable features would allow to conclude also to *Fagus orientalis*, *Platanus* sp., *Hedera* sp., *Chlematis* sp., *Berberis* sp., *Vitis* sp., *Ilex* sp. The first two are introduced to Europe most probably later, as radiocarbon dating proved the sample ~2500–2800 year old BC (on the basis of dates with lab codes: deb-

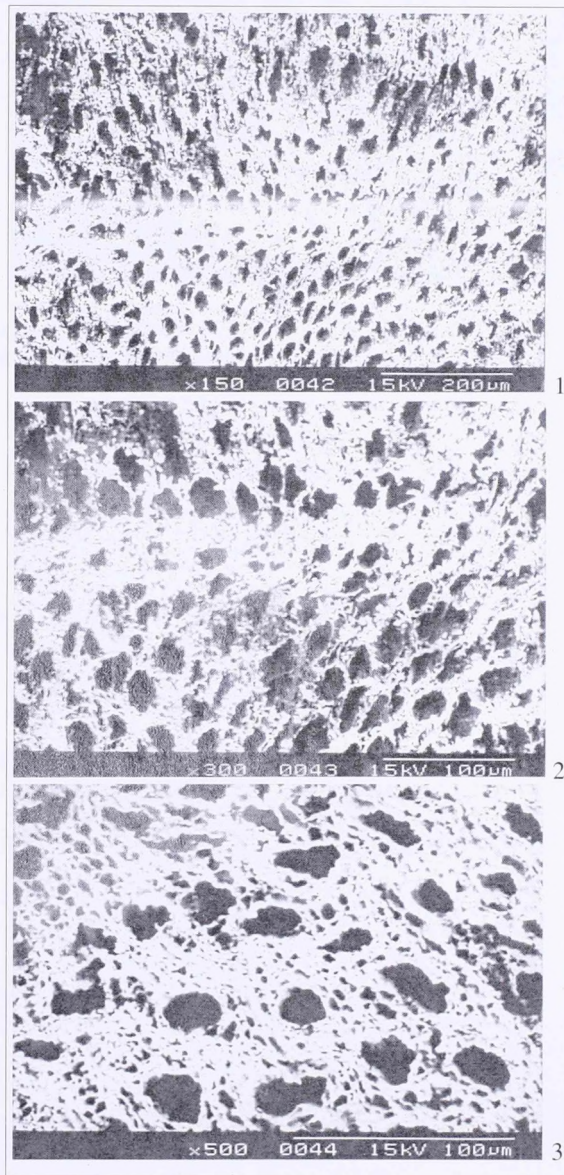


Fig. 1. 1–3: *Fagus sylvatica* (common beech) wood remains, in transversal surface view. (SEM photos 0042, 0043, 0044)

6871, deb-7182), so we excluded them. The latter ones are mostly shrubby in appearance, so we think they also can be excluded. A tool handle must be strong and beech timber is appropriate to use for this kind of purpose.

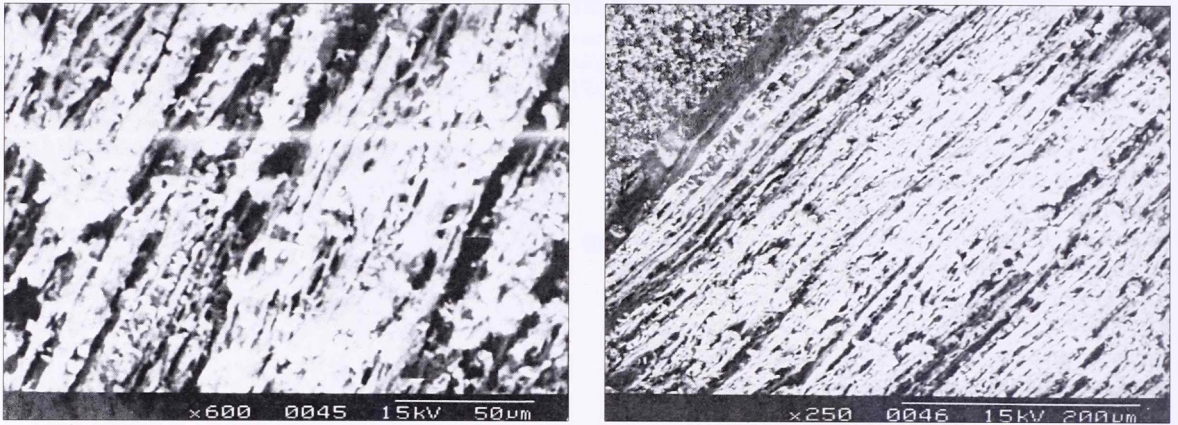


Fig. 2. 1: *Fagus sylvatica* (common beech) wood remains, in longitudinal radial surface view. (SEM photo 0045.);
2: wood remains, in longitudinal tangential surface view. (SEM photo 0046)

Beech can be the native member of the arboreal flora in the determined ages (Beech I or Sub-Boreal phase of vegetation based chronology, JÁRAI-KOM-

LÓDI 1966) in the area. It is a native species to Hungary (Gencsi and Vancsura 1997) however in present lives in the Mountain Ranges above 400 m a.s.l.

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