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Drvoprerađivački kompleksi rane Rusi: Identifikacija i proučavanje na temelju nalaza s područja srednjeg Dnjepra

Ovaj rad bavi se problematikom identifikacije središta obrade drva iz doba rane Rusi otkrivenih tijekom arheoloških istraživanja na području srednjeg Dnjepra. Informacije o ovoj temi dolaze iz dviju ključnih skupina izvora: alata za obradu drva i drvenih artefakata. No, kako bi se dobila cjelovita slika povijesti obrade drva u ranoj Rusi na proučavanom području, ključno je identificirati proizvodne komplekse i centre povezane s ovim zanatom. U radu se daje i definicija pojma proizvodnih i drvoprerađivačkih kompleksa. Oni se opisuju kao skup sačuvanih arheoloških ostataka proizvodnih aktivnosti, uključujući građevine i manje predmete, koji mogu biti ostatci stacionarnih ili privremenih radionica i mjesta primarne obrade sirovina. Te komplekse arheološki je često teško razlikovati.

Ključne riječi: rana Rus', radionica, drvoprerađivački kompleks, obrada drva, tehnike obrade drva.

Early Rus' Woodworking Complexes. Identification and Study (based on material from the middle Dnipro area)

This paper deals with the problem of identification of Early Rus' woodworking centers, discovered archaeologically in the Middle Dnipro area. Two groups of informative sources regarding this issue correct to can be distinguished. They are woodworking tools and wooden artifacts. However, for a relatively complete picture of the history of Early Rus' woodworking in the region under study, it is necessary to identify manufacturing complexes and centers related to this craft. The definition of the concept of manufacturing complexes and woodworking complex as their option are given. They are defined as a set of preserved archaeological remains of production including structures and small objects, which may be remains of stationary and temporary workshops and places of primary processing of raw materials that are not archaeologically distinguishable. Woodworking complexes studied archaeologically in the territory of the Middle Dnipro area are considered.

Keywords: Early Rus', workshop, woodworking complex, wood processing, woodworking techniques.

Obrada drva u ranoj Rusi općenito, a osobito središta i kompleksi obrade drva rijetko su predmet zasebnog proučavanja. Jedan od glavnih razloga slabog interesa za ovu granu obrta jest mali broj sačuvanih arheoloških drvenih artefakata vezanih za nju.

Kada je riječ o rekonstrukciji tehnika obrade drva u različitim područjima proizvodnje tijekom bilo kojeg razdoblja, moguće je razlikovati dvije skupine izvora informacija: alate za obradu drva i drvene artefakte. Treba napomenuti da su na mnogim nalazištima rane Rusi otkriveni glavni alati za obradu drva, kao što su sjekire, strugala s dvjema drškama, bradve različitih vrsta, alati za dubenje, pile, dlijeta, različite vrste svrdla, alati za izradu žlica, rezači i noževi. Pronađene su i poneke specijalizirane pile, odnosno poseban alat za izradu žlijeba na dnu bakrenih posuda. Međutim, oslanjanje samo na metalne alate za obradu drva, koji su zajednički brojnim vremensko-prostornim segmentima, nije uvijek dovoljno za precizno određivanje lokalnih specifičnosti obrade drva u pojedinim regijama. Prisutnost specifičnih alata tek je jedan od izvora koji se treba promatrati isključivo u kontekstu s drugim vrstama artefakata, prvenstveno drvenim predmetima.

Stupanj očuvanosti drva u srednjovjekovnim kulturnim slojevima nalazišta na području srednjeg Dnjeptra ne može se smatrati zadovoljavajućim. Ipak, zahvaljujući istraživanjima provedenim u Kijevu, Černigovu, Voinskoj Hrebliji, Kolodiazhinu i nekim drugim gradinama i naseljima rane Rusi, danas raspoložemo zbirkom drvenih predmeta koja omogućuje proučavanje lokalne obrade drva ranoruskog razdoblja. Unatoč njihovu relativno malom broju, ti drveni artefakti, pronađeni tijekom desetljeća istraživanja, omogućuju nam da u općim crtama pratimo sve oblike organizacije obrade drva, od kućne proizvodnje do visoko specijaliziranih zanata, poput stolarskih, bačvarskih, rezbarskih i tokarskih radova.¹

Kako bi se dobila relativno cjelovita slika povijesti ranoruske obrade drva u ovoj regiji (ali i drugdje), potrebno je identificirati centre povezane s aktivnostima obrtnika koji su se bavili obradom drva. To se pokazalo kao poprilično složen zadatak, no neka takva mjesta ipak su otkrivena na području srednjeg Dnjeptra. Međutim, valja imati na umu da su ta mjesta ostala gotovo neistražena, a dostupni

Early Rus' woodworking in general and woodworking centers and complexes in particular does not often become the object of special study. One of the main reasons for the lack of attention to this branch of craft is a small number of preserved archaeological wooden artifacts related to it.

When talking about the reconstruction of woodworking techniques in various specialties of any period it is possible to distinguish two groups of informative sources regarding this issue. They are woodworking tools and wooden artifacts. It should be noted that the main woodworking tools were discovered in many Early Rus' sites. They are axes, two handled scrapers, adzes of different types, hollowing tools, saws, chisels, drills of different types, tools for spoon making, cutters and knives. Some croze saws (a special tool for making a notch for bottom of cooperage containers) were also found. However, basing only on metal woodworking tools (common to a large space-time segment) does not always help to characterize the local features of woodworking in individual regions. The presence of special tools is only one of the sources that can be considered only in conjunction with other types of artifacts, primarily wooden objects.

The degree of preservation of wood in medieval cultural layers of the sites of the Middle Dnipro area cannot be called satisfactory. Nevertheless, thanks to excavations in Kyiv, Chernihiv, Voinska Hreblia, Kolodiazhyn and some other Early Rus' hillforts and settlements, today we have collection of wooden objects that allow us to study the local woodworking of the Early Rus' period. Despite their relative small number, wooden artifacts obtained over many decades of research allow us to trace in general terms all forms of organization of woodworking from home production to highly specialized crafts such as carpentry, cooperage, carvers' and turners' works.¹

However, for a relatively complete picture of the history of Early Rus' woodworking in the region under study (as elsewhere), it is necessary to identify centers associated with the activities of artisans engaged in woodworking. It is more difficult task; nevertheless some places of wood processing in the region in question were discovered. However, it should be kept in mind that they have remained almost unexplored, and information about them is scattered in various works. That is why general work on this issue is relevant.

¹ Sergeeva 2014a.

¹ Sergeeva 2014a.

podatci o njima su fragmentirani i objavljeni u različitim publikacijama, što ukazuje na potrebu za daljnjim proučavanjem ove teme.

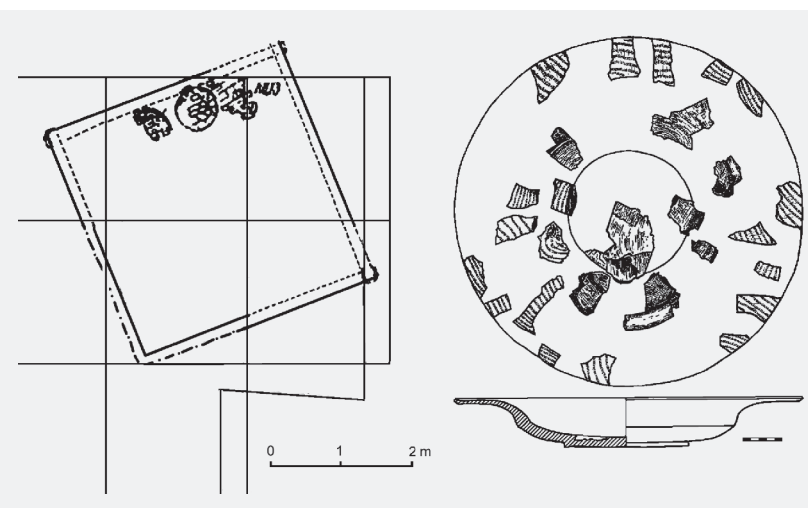
Prije svega treba napomenuti da je izuzetno teško otkriti radionice koje još uvijek sadržavaju sve svoje izvorne karakteristike. To se ne odnosi samo na radionice za obradu drva, već i na druge obrtničke centre, poput onih za rezbarenje kostiju. Radionica je prostorija u kojoj se neposredno odvijao rad obrtnika, kompletno opremljena svim potrebnim materijalom, alatima, napravama i sl. U pravilu je samo dio tih indikatora proizvodnje, kao što su posebna mjesta za rad ili odlaganje otpada (građevine, jame i sl.), neki alati, neobrađeni materijal, poluproizvodi i gotovi proizvodi, arheološki zabilježen u istom kontekstu. Također, ne raspoložemo svim tim obilježjima, već samo nekim dijelovima, stoga je primjerenije otkrivene tragove proizvodnje smatrati *proizvodnim kompleksima* nego radionicama. Proizvodni kompleks može se definirati kao skup sačuvanih arheoloških ostataka proizvodnje. Moguće je da se radi o ostacima stacionarnih i privremenih radionica i mjesta primarne obrade sirovina, koje je arheološki teško razlikovati. U ovom slučaju možemo govoriti o *drvoprerađivačkim kompleksima*. Vrijedi napomenuti da se u doba rane Rusi povremena obrada drva odvijala gotovo svugdje, kako u ruralnim naseljima tako i u gradovima, gdje su vlasnici kućanstava, zahvaljujući strukturi i rasporedu grada s brojnim pripadajućim posjedima, mogli sami obavljati sporedne zanatske poslove. Na temelju toga, središta obrade drva mogla bi se otkriti i proučavati posvuda na nalazištima rane Rusi.

Poznavanje osnovnih tehnika obrade drva bilo je dovoljno za kućnu radinost. Kućna obrada drva (nediferencirana) bila je sastavni dio prirodnog gospodarstva obitelji (ili zajednice), a neke od njezinih varijanti predstavljale su ranu fazu specijalizacije te djelatnosti, koja nije bila vezana za društvenu podjelu rada. Dakle, prisutnost osnovnih alata za obradu drva u nekom kompleksu nije nužno dokaz postojanja radionice, jer su se takvi alati koristili u svakom domaćinstvu. Specifični radovi, poput gradnje ili rezbarenja, bili su povjereni iskusnijim obrtnicima. Formiranje grupe specijaliziranih obrtnika, koji nisu radili samo za vlastite potrebe, već i za širu zajednicu odnosno mušterije, može se smatrati početkom specijalizacije kućnog zanata. Proučavajući ranoruska naselja černigovske regije, O. Shekun pretpostavio je da su stanovnici tih

First of all, it should be noted that workshops with all their features are extremely difficult to detect. This applies not only to woodworking workshops, but also to other ones (for example, bone carving centers). A workshop is a room where the work of a craftsman was directly carried out, with a set of craft materials, devices, tools, etc. As a rule, only some part of production markers such as special places for working or for accumulation of waste (structures, pits etc), some tools, blanks and semi-finished and finished products, are recorded archaeologically together. And we do not have at our disposal entire specified set of characteristics; only some of them are retained. Therefore, it is more appropriate to consider the detected signs of production not as workshops, but as *manufacturing complexes*. A manufacturing complex can be defined as a set of preserved archaeological remains of production. It may be remains of stationary and temporary workshops and places of primary processing of raw materials that are not archaeologically distinguishable. In our case we can talk about *woodworking complexes*. It is worth noting that in Early Rus' times, sporadic wood working was practiced everywhere, including rural settlements and towns. This was facilitated by the estate nature of the city layout, where the owners of households could carry out auxiliary work themselves. So woodworking centers could be discovered and studied everywhere in Early Rus' sites.

Familiarity with basic woodworking techniques was sufficient for home crafts. Home woodworking craft (not differentiated) was a part of the natural economy of the family (or community), and some of its varieties represented the primary specialization of activity, not related to the social division of labor. So the presence of universal woodworking tools in the complex is not a marker of a workshop, as they were used in every household. Some types of work (e.g. construction work, wood carving etc.) were ordered to more experienced persons. The selection of a group of experienced people who worked not only for themselves, but for a certain circle of customers can be considered the beginning of specialization in home crafts. Studying the Early Rus' settlements of the Chernihiv region, O. Shekun assumed the seasonal nature of the industrial activity of their inhabitants.² This is a common practice that existed at least until the early 1900s. According to T. Bogom-

² Shekun 1995, p. 11.



Sl. 1. Kompleks proizvodnje na brdu Kyselivki: 1 – građevina od balvana (preuzeto iz: Bogusevych 1952, sl. 1); 2 – tokarena posuda iz zapune objekta
 Fig. 1 Manufacturing complex in Kyselivka Hill: 1 — log structure, taken from: Bogusevych 1952, Fig. 1; 2 — turned dish from the filling of this structure

naselja proizvodnu aktivnost obavljali sezonski,² što je praksa koja se zadržala barem do ranih 1900-tih. Prema T. Bogomazova, boravak profesionalnih obrtnika ne samo u gradovima već i u selima mogao je pridonijeti s jedne strane dugoročnom očuvanju tradicije „dinastija seoskih obrtnika“, a s druge strane njihovu prilagođavanju općim standardima struke.³

U nekim slučajevima mogu se pronaći ostatci pomoćnih obrta, no i tu postoje određene poteškoće. Naime, alati za obradu drva uglavnom su bili univerzalni alati. Najbolji primjeri domaće radnosti mogu se uočiti na lokalitetima koji su naglo prestali postojati te su se s vremenom pretvorili u zatvorene arheološke cjeline s gotovo cjelovito sačuvanim garniturama predmeta vezanih za funkcioniranje građevina. Takvi primjeri uključuju neke komplekse u Kijevu i Kolodiazhinu.⁴

Na nekim kijevskim posjedima otkrivenim u Podilu (donji dio Kijeva), među drvenim artefaktima pronađeni su mali fragmenti zrelog drva s tragovima blanjanja. Zanimljiv materijal za proučavanje ovog pitanja pružila je i studija o lokaciji Spaska ulica 35 u Kijevu.⁵ Među otpadom od obrade drva, na području imanja iz 11. stoljeća, pronađeni su

azova, the residence of professional artisans not only in towns, but also in villages, on the one hand, could contribute to the long-term preservation of the traditions of “dynasties of rural artisans”, and on the other hand, to their joining common standards of the ecumene.³

Remains of auxiliary crafts can be traced in some cases, although this has its difficulties. The set of woodworking tools here was mostly limited to universal ones. The best signs of domestic crafts could be observed in sites that stopped existing suddenly and turned over time into closed archaeological complexes with an almost complete set of items related to the functioning of buildings. An example can be some complexes of Kyiv and Kolodiazhyh.⁴

In some Kyiv estates discovered in Podil (Lower part of Kyiv), small fragments of ripe wood with traces of planing can be found among wooden artifacts. Interesting material for the study of this problem was provided by a study in Kyiv on the 35 Spaska Str.⁵ Among the woodworking waste on the territory of the estate of the 11th century waste chips and small fragments of wood with traces of processing were found. Traces of knife planing were traced on small fragments of wood, indicating the possibility of manufacturing small-sized household utensils on this estate.

Residential structures containing a set of woodworking tools that includes not only universal ones (such as an axe or adze) can be linked to domestic craft. In this connection log structure dated within 13 century discovered on the Kyselivka Hill in Kyiv excavated by A. Bogusevych⁶ attracts special attention (Fig. 1, 1).

A foundry mold for casting a ring that may indicate the homeowner's specialization as a jeweler was found inside this structure.⁷ However, he may also have been familiar with some of the woodworking techniques. Remains of wooden artifacts were also discovered in this structure.⁸ In particular, the turned dish made of ash-tree⁹ attracts

² Shekun 1995, str. 11.

³ Bogomazova 1999, str. 14–15.

⁴ Karger 1958, str. 469; Sergeeva 2010; Sergeeva 2011a, str. 104–106.

⁵ Sahaidak, Khamaiko, Verhun 2009; Sahaidak, Khamaiko, Komar 2015.

³ Bogomazova 1999, p. 14-15.

⁴ Karger 1958, p. 469; Sergeeva 2010; 2011a, p. 104-106.

⁵ Sahaidak, Khamaiko, Verhun 2009; Sahaidak, Khamaiko, Komar 2015.

⁶ Bohusevych 1952.

⁷ Bohusevych 1952, p. 69.

⁸ Sergeeva 2010.

⁹ Here and hereafter, except in noted cases, the identification of wood species was made by the author of this paper.

iverje i sitni dijelovi drva s tragovima obrade. Tragovi blanjanja nožem vidljivi su na malim fragmentima drva, što upućuje na mogućnost da su se na tom imanju izrađivali mali kućanski predmeti.

Stambeni objekti u kojima su uz osnovne alate, poput sjekire i tesle, pronađeni setovi alata za obradu drva mogu se povezati s kućnom radinosti. Vezano za to, posebnu pozornost privlači građevina od balvana datirana u 13. stoljeće, otkrivena na brdu Kyselivki u Kijevu, koju je istražio A. Bogusevych (sl. 1, 1).⁶ Unutar te građevine pronađen je kalup za lijevanje prstena, što upućuje na to da je vlasnik kuće možda bio zlatar.⁷ Međutim, moguće je da je posjedovao i određeno znanje o obradi drva, s obzirom na to da su u istoj građevini otkriveni ostatci drvenih artefakata.⁸ Posebno se izdvaja tokarena posuda izrađena od jasena⁹ (sl. 1, 2), koja bi mogla biti proizvod profesionalne tokarske radionice smještene izvan ovog imanja. U kontekstu ovog rada, pažnju zaslužuju i drugi drveni artefakti, poput debelih grana ili tankih debla s tragovima obrade (sl. 2, 18–20), koji se s velikom vjerojatnošću mogu tumačiti kao neobrađeni materijal za izradu obruča, koji su mogli biti dio bačvarskih ili izdubljenih posuda. Ostatci izdubljenih posuda (sl. 2, 1–11) kao i bačvarskih kontejnera (sl. 2, 12–17) također su pronađeni u ovom kompleksu.

Je li bačvarstvo bilo sekundarna djelatnost na ovom imanju? Ulomci bačvarskih letvica i dana pronađeni su među nalazima unutar građevine na tom imanju. No, sam neobrađeni materijal za obruče nije dovoljan dokaz da bi se zaključilo kako su se ljudi na tom mjestu bavili bačvarstvom, pogotovo s obzirom na činjenicu da se bačvarstvo rano izdvojilo kao zaseban zanat i da se već u razdoblju Rusi ono pojavljuje u relativno razvijenom obliku.¹⁰ Ostatci bačvarskih letvica i dana najvjerojatnije samo ukazuju na prisutnost bačvarskih posuda u ovom kućanstvu. Dakle, obruči su najvjerojatnije bili dijelovi izdubljenih posuda, koje su bile jednostavne za izradu te su se mogle izraditi u kućnim uvjetima. Ti nedovršeni obruči mogu također ukazivati na popravke bačvarskih proizvoda na licu mjesta.

attention (Fig. 1, 2). It could be the product of a professional turning workshop located outside this estate. However, in the context of this paper another wooden artifacts are worthy of attention. These are thick branches or thin tree trunks with traces of processing (Fig. 2: 18–20). They can be interpreted as blanks for hoops with a very high degree of probability. Such hoops could be part of both cooperage and hollowed-out utensils. Both remains of hollowed-out vessels (Fig. 2, 1–11) and cooperage containers (Fig. 2, 12–17) were discovered in this complex.

Could the cooperage be an auxiliary craft on this estate? On the one hand, among the finds in the structure in question fragments of cooper's staves and bottoms were found. However, the blanks for hoops could not be indisputable marker of the cooper's activity here, especially considering the fact that cooperage is early singled out as a separate craft. In Rus', it appears already in a relatively developed form.¹⁰ The remains of cooperage staves and bottoms most likely only indicate presence of cooper's containers in this household. So most likely, the hoop blanks were details for hollowed-out vessels, which could be made at home and were easy to manufacture. These unfinished hoops also could be markers of on-site repair of cooperage products.

Another example of additional woodworking is represented by the materials from the so-called artist's dwelling. It was discovered on the territory of the estate of the Monastery of St. Michael.¹¹ This complex contained not only art supplies (particularly pots with paint residue), but also a set of woodworking tools, including specific ones. A turning cutter, a drill and a planer were found here, which may indicate that one of the craftsman's specialties was woodworking, including turning. So, this is evidence of the master's varied occupations.

Also in Kyiv, at 8 Volodymyrska Str., the fill of an early thirteenth-century building associated with jewellery production contained a chisel, rasp and graver.¹² These tools could be associated with both jewellery and woodworking. It was also here that a small knife with a pointed end was discovered, suitable for small wood and bone carving (a processed bone was found in the same area).

⁶ Bohusevych 1952.

⁷ Bohusevych 1952, str. 69.

⁸ Sergeeva 2010.

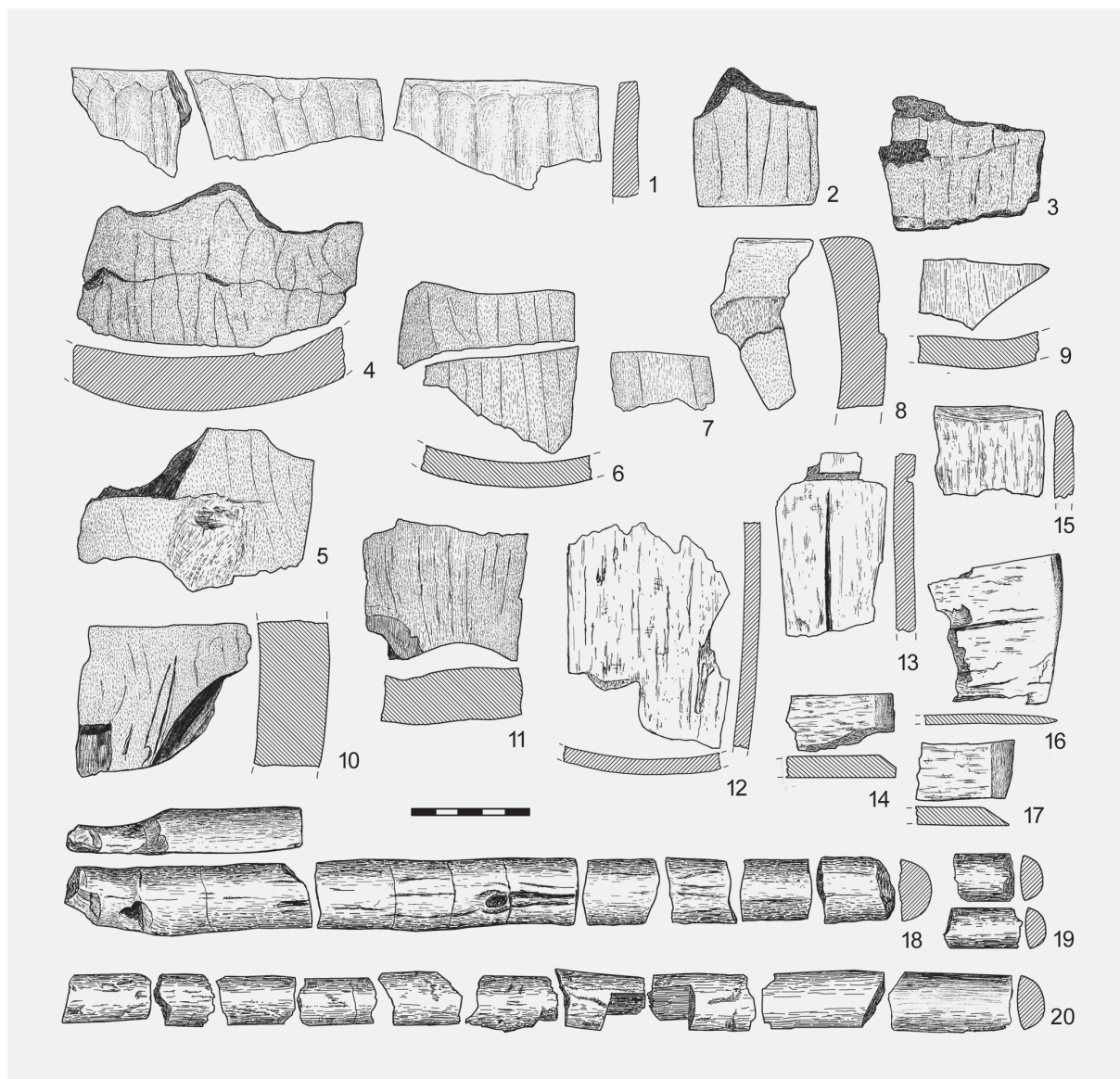
⁹ Ovdje i nadalje, osim u slučajevima kada je napomenuto drukčije, identifikaciju vrsta drva izvršila je autorica ovog rada.

¹⁰ Sergeeva 2014b; Sergeeva 2015b.

¹⁰ Sergeeva 2014b; 2015b.

¹¹ Karger 1958, p. 313–314.

¹² Kozlovskiy, Ievlev 2008, p. 253, fig. 8: 4, 9, 10.



Sl. 2. Drveni predmeti iz brvnare na brdu Kyselivki: 1–11 – ulomci izdubljenog posuđa; 12–17 – ulomci bačvarskih posuđa; 18–20 – nedovršeni obruči

Fig. 2 Wooden objects from log structure in Kyselivka Hill: 1–11 — fragments of hollowed-out utensils; 12–17 — fragments of cooperage containers; 18–20 — unfinished hoops

Drugi primjer dodatne obrade drva predstavlja materijal iz tzv. umjetnikove nastambe, koja je otkrivena na imanju samostana sv. Mihovila.¹¹ Ovdje je, uz umjetnički pribor (osobito posude s ostacima boje), pronađen set alata za obradu drva, uključujući tokarski nož, svrdlo i blanjalicu, što može upućivati na to da je jedna od specijalnosti majstora bila obrada drva, pa tako i tokarenje, a time se potvrđuje višestruka vještina samog majstora.

Na još jednoj lokaciji u Kijevu, u Volodymyrskoj ulici 8, unutar zapune zgrade s početka 13.

Complexes indicating the concentration of woodworking activities in individual households could be traced in Kolodiazhyn¹³, where the contents of the structures were mostly preserved as a result of the sudden demise of the town in the first half of 13th century. Woodworking tools found in Kolodiazhyn were associated with selected structures. Most of the woodworking tools were kept in the defense-and-housing log cells associated with the military environment. So they may indicate a specific group of people who were engaged in this

¹¹ Karger 1958, str. 313–314.

¹³ Sergeeva 2011.

stoljeća, koja je bila povezana s proizvodnjom nakita, pronađeni su dlijeto, rašpa i glodalo.¹² Ovi alati mogli su se koristiti kako u izradi nakita tako i za obradu drva. Na istoj lokaciji otkriven je i mali nož sa šiljastim vrhom, pogodan za sitno rezbarenje u drvu i kosti, uz koji je pronađena i obrađena kost.

Kompleksi koji ukazuju na koncentraciju drvoprerađivačkih aktivnosti u pojedinačnim kućanstvima mogu se pratiti u Kolodiazhinu,¹³ gdje je sadržaj građevina najvećim dijelom sačuvan zbog nagle propasti grada u prvoj polovici 13. stoljeća. Ondje pronađeni alati za obradu drva povezani su s određenim građevinama, a većina tih alata čuvala se u obrambeno-stambenim drvenim ćelijama povezanim s vojskom. Dakle, oni mogu upućivati na to da se određena skupina ljudi bavila ovim zanatom. Istodobno, u tim istim kompleksima često su zajedno pronalazeni i alati koji nisu bili vezani za obradu drva kao i dijelovi oružja. Ti nalazi sugeriraju da su se obradom drva, uključujući proizvodnju predmeta za kućanstvo, najvjerojatnije bavili ljudi uključeni u vojne poslove. Prema R. Yuri, obrada drva u Kolodiazhinu bila je pretežno kućna djelatnost.¹⁴ Što se tiče specijalizacije u pojedinim kućanstvima, pažnju privlače noževi pogodni za rezbarenje drva, koji se ponekad mogu identificirati među kućanskim alatima (sl. 3, 2–4), a kasniji analogni primjerci¹⁵ omogućuju njihovo manje ili više pouzdano tumačenje (sl. 3, 5–6). Međutim, za jednostavnije obrade drva mogli su se koristiti i obični kućni noževi, koji su se sigurno koristili u kućnoj proizvodnji. Stoga, nalazi specijaliziranih noževa za obradu drva mogu ukazivati na pojavu pojedinaca koji su bili stručnjaci u tom zanatu.

Noževi za rezbarenje pronađeni u Kolodiazhinu potječu iz kompleksa u kojem su se nalazili i drugi alati za obradu drva. Prvi primjerak potječe iz građevine u kojoj su pronađene i dvije sjekire različitog oblika i namjene (satara i tesarska sjekira s utorom i spušenom oštricom). U sporednoj građevini tog objekta pronađeno je jednostavno dlijeto i nasadna bradva.¹⁶ Svrđlo u obliku pera, također povezano s obradom drva, pronađeno je u produžetima drugih dviju povezanih građevina.¹⁷ Prisutnost

craft. At the same time, tools that were not related to woodworking and elements of weapons are usually found in these same complexes. Thus, woodworking, including the manufacture of household items, was most likely carried out by people who were involved in military affairs. According to R. Yura, woodworking in Kolodyazhyno was predominantly domestic kind of activity.¹⁴ Regarding to specialisation in individual households, knives suitable for woodcarving, which can sometimes be identified among household tools, also attract attention (Fig. 3, 2–4). They have later analogues,¹⁵ which allows them to be interpreted more or less confidently (Fig. 3: 5–6). However, for simpler woodworking operations, you can use an ordinary household knives, and they were certainly used in home production. Therefore, finds of specialised knives for woodworking may indicate the emergence of individuals who were specialists in woodworking.

Carving knives, found in Kolodiazhyn, come from complexes with other woodworking tools. The first of them comes from a building that also contained two axes that differed in shape and therefore had different purposes (a cleaver and a carpenter's axe with a notch and a lowered blade). In addition, a simple chisel and a socketed adze were found in the outbuilding of this structure.¹⁶ A feather-shaped drill bit, also associated with woodworking, was found in the extensions of two other connected structures.¹⁷ The presence of specialised woodworking tools may indicate that the owners of these structures could be involved in woodworking. Judging by other inventory (agricultural tools, weapons, etc.), it was one of auxiliary crafts for them. It is interesting to note that in one of the cells, among other things, an object made of red deer antler (R. Yura identified it as a mace) and a bone with traces of processing were found.¹⁸ It is possible that the owner tried to practice carving with different materials. However, the absence of any other signs of bone-carving activity suggests that the master's use of this type of raw material was accidental. The craftsman could mainly focus on wood which was a more available and easier to process. The variety of tools, sometimes recorded within the same

¹² Kozlovskiy, Ievlev 2008, str. 253, sl. 8: 4, 9–10.

¹³ Sergeeva 2011.

¹⁴ Yura 1962, str. 100.

¹⁵ Prosvirkina 1955, pl. 1: 2.

¹⁶ Yura 1962, str. 78.

¹⁷ Yura 1962, str. 75.

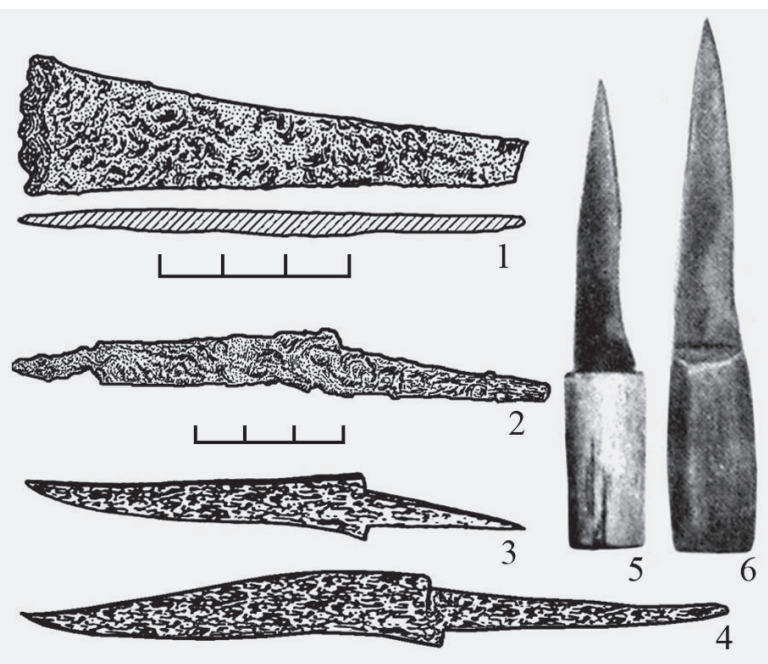
¹⁴ Yura 1962, p. 100.

¹⁵ Prosvirkina 1955, Pl. 1: 2.

¹⁶ Yura 1962, p. 78.

¹⁷ Yura 1962, p. 75.

¹⁸ Yura 1962, p. 75.



Sl. 3. Alati za obradu drva iz Kolodiazhyh i neke moderne analogije: 1 – pila za izradu žlijeba na dnu bakrenih posuda; 2–4 – navodni noževi za rezbarenje; 5, 6 – moderni noževi za rezbarenje drva (preuzeto iz: Prosvirkina 1955, pl. 1: 2)

Fig. 3 Woodworking tools from Kolodiazhyh and some modern analogues: 1 — croze saw; 2-4 — supposed knives for carving; 5, 6 — modern knives for woodcarving, taken from: Prosvirkina 1955, Pl. 1: 2

specijaliziranih alata za obradu drva može ukazivati na to da su vlasnici ovih građevina bili angažirani u obradi drva. Sudeći prema ostalom inventaru (poljoprivredno oruđe, oružje i dr.), to im je bio jedan od sporednih zanata. Zanimljivo je da je u jednoj od ćelija, među ostalim, pronađen predmet od jelenjeg roga (R. Yura identificirao ga je kao topuz) i kost s tragovima obrade.¹⁸ Moguće je da je vlasnik pokušao vježbati rezbarenje koristeći različite materijale. Međutim, budući da nema drugih znakova aktivnosti rezbarenja kosti, vjerojatnije je da je korištenje te vrste sirovine ovdje bilo slučajno te da se majstor prvenstveno fokusirao na drvo, koje je bilo dostupnije i lakše za obradu. Raznovrsnost alata, ponekad zabilježena unutar istog kompleksa, sugerira mogućnost da je jedan majstor bio vješt u različitim specijalnostima obrade drva ili pak da je jedna radionica objedinjavala nekoliko specijalnosti.

Vezano za ovo pitanje, posebna pažnja posvećena je i ostaloj specijaliziranoj opremi, jer njezina prisutnost može ukazivati na pojedince koji su

complex, suggests the possibility of concentrating different woodworking specialities in the hands of one craftsman, and also indicates the combination of several specialities within one workshop.

In relation to this issue, other specialised equipment is also of interest. Its presence may be an indicator of the identification of individuals who concentrated certain branches of woodworking in their hands. This can be evidenced not only by the connection of specialised woodworking tools with individual structures, but also by the quality of the products. In some cases, the same complex contained both specialised and universal woodworking tools.

The spoonmaker's tool found in Kolodiazhyh can be linked to the activity of carvers. According to R. Yura, only two such tools were found in the hillfort so they were not universal ones. In one case, the spoonmaker's tool was found in a cell, where a socket adze and a chisel were also found, in another case, a socket gouge was kept in the building together with the spoonmaker's tool.¹⁹ It may be added that a croze saw was also found in Kolodiazhyh, which testifies to the work of a professional cooper (Fig. 3, 1).

Sometimes the presence of specific woodworking workshops could be marked by their products. E.g. no wood processing centers have been identified in Voinska Hreblia. However, the study of the remains of turned utensils²⁰ made it possible to trace two manners of its processing and to raise the question about functioning of several (at least two) turners' workshops in this hillfort (Fig. 4).

We will also mention another rather controversial Kyiv complex related to the professional woodworking (Fig. 5). This is so-called turner's dwelling dated to 12th century. It was investigated by V. Bohusevych in 1950 at 16 Voloska Street.²¹ Despite the fact that the reconstruction of the house itself as a three-room structure (Fig. 5, 2) raises big questions (their consideration is not the task of the current article, however, we note that there could have been a combination of structures of different times on the plan), we note that the findings in the object allow us to link it to woodworking, in particular to turning. According to Bohusevych, the remains of burnt turned wooden utensils and other products

¹⁹ Yura 1962, p. 124, 125.

²⁰ Sergeeva 2015, p. 34, fig. 38.

²¹ Bohusevych 1954, p. 47-48.

¹⁸ Yura 1962, str. 75.

se specijalizirali za određene grane obrade drva. Dokaz tome nije samo veza između specijaliziranih alata za obradu drva i pojedinih građevina već i kvaliteta proizvoda. U nekim slučajevima, unutar jednog kompleksa zabilježeni su i specijalizirani i opći alati za obradu drva.

Alat za izradu žlica pronađen u Kolodiazhinu može se povezati s aktivnošću rezbara. Prema R. Yuri, samo dva primjerka takvog oruđa pronađena su na gradini, zbog čega se ono ne smatra uobičajenim. Jedan primjerak pronađen je u ćeliji zajedno s nasadnom teslom i dlijetom, a drugi u objektu u kojem je pronađeno i nasadno polukružno dlijeto.¹⁹ Na tom lokalitetu također je pronađena i ranije navedena specijalizirana pila za izradu žlijeba na dnu bakrenih posuda, što svjedoči o radu profesionalnog bačvara (sl. 3, 1).

Ponekad su sami proizvodi ključni u prepoznavanju postojanja specijaliziranih radionica za preradu drva. Na primjer, u Voinskoj Hreblji nisu identificirani centri za obradu drva, no analiza ostataka tokarenog posuđa²⁰ omogućila je uočavanje dvaju različitih načina njegove obrade, što je postavilo pitanje o djelovanju nekoliko (najmanje dviju) tokarskih radionica na toj gradini (sl. 4).

Također, treba spomenuti još jedan kontroverzan kompleks u Kijevu povezan s profesionalnom obradom drva (sl. 5). Riječ je o tzv. tokarskoj nastambi iz 12. stoljeća koja se nalazi u Voloskoj ulici 16, a koju je 1950. godine istražio V. Bohusevych.²¹ Unatoč činjenici da sama rekonstrukcija kuće, kao građevine s trima prostorijama (sl. 5, 2), otvara mnoga pitanja (njihovo razmatranje nije tema ovog rada, no napominjemo da je tlocrtno mogla postojati kombinacija građevina iz različitih razdoblja), nalazi ukazuju na povezanost objekta s obradom drva, osobito tokarstvom. Prema Bohusevychu, ostatci spaljenog tokarenog drvenog posuđa i drugih proizvoda (autor spominje figurativno izrezbarene stupove i 10 drvenih diskova) pronađeni su u prostoriji bez peći, na površini od 3 m². Međutim, u njegovu izvješću dokumentirana su samo tri predmeta (sl. 5, 1), a lokacija tih artefakata kao i lokacija ostatka tokarnice danas su nepoznate. Bohusevych je smatrao da je ova građevina bila spaljena tokarnica,²² dok je K. Hupalo tvrdio da je riječ o skladištu gotovih pro-



Sl. 4. Proizvodi dvojice tokara s gradine Voinska Hreblia: 1, 2 – tokar 1; 3 – tokar 2

Fig. 4 Products made by two turners from Voinska Hreblia Hillfort: 1, 2 — turner 1; 3 — turner 2

(the author mentioned figuratively carved columns and 10 wooden disks) were found in a room without a stove on an area of 3 m². However, only 3 items were presented in his report (Fig. 5: 1). The location of them and the rest of the turnery is unknown now. According to V. Bohusevych, this structure was a burnt turnery.²² K. Hupalo considered this building as a storehouse for finished products.²³ Due to the fact that the material has not been preserved, now it is impossible to make any conclusions about the purpose of this complex. The only thing that is beyond doubt is that it was related to professional woodworking, in particular turning.

Another of the most important problems related to centers of primary woodworking. Identification of places of wood processing also allows us to raise the question of the specifics of local wood working at the stage of primary processing of raw materials. This issue has so far remained little studied due to the lack of materials. The discovery of every woodworking complexes is an important source of information.

¹⁹ Yura 1962, str. 124–125.

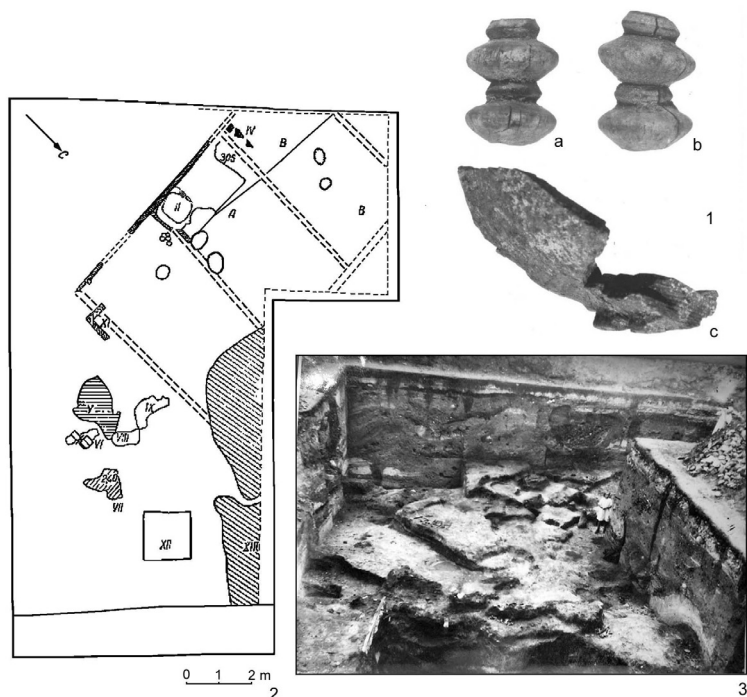
²⁰ Sergeeva 2015, str. 34, sl. 38.

²¹ Bohusevych 1954, str. 47–48.

²² Bohusevych 1954, str. 47.

²² Bohusevych 1954, p. 47.

²³ Hupalo 1981, p. 319.



Sl. 5. Tzv. „tokareva kuća“, Podil, Kijev: 1 – tokareni predmeti (preuzeto iz: Bohusevych 1950, pl. 18); 2 – tlocrt građevine (preuzeto iz: Bohusevych 1954, sl. 4); 3 – fotografija istraživanja (preuzeto iz: Bohusevych 1950, pl. 3)

Fig. 5 Kyiv, Podil, so-called “turner’s house: 1 — turned objects, taken from: Bohusevych 1950, Pl. 18; 2 — plan of the structure, taken from: Bohusevych 1954, fig. 4; 3 — photo from the excavations, taken from: Bohusevych 1950, Pl. 3

izvoda.²³ S obzirom na to da materijal nije sačuvan, teško je donijeti konačne zaključke o namjeni ovog kompleksa, ali je jasno da je bio povezan s profesionalnom obradom drva, posebno tokarstvom.

Jedan od ključnih problema odnosi se na identifikaciju centara primarne obrade drva. Takva identifikacija omogućuje postavljanje pitanja o specifičnostima lokalne obrade drva u fazi primarne obrade sirovina, no zbog nedostatka materijala to područje istraživanja ostalo je slabo razvijeno. Stoga svaki novootkriveni drvoprerađivački kompleks ima značajan potencijal za dublje razumijevanje ovog procesa.

U tom kontekstu, kompleksi u kojima se skladištio proizvodni otpad od ključne su važnosti za rekonstrukciju specifičnosti tehnika obrade drva iz doba rane Rusi, a nekoliko takvih kompleksa danas je poznato.

In this regard, complexes where production wastes have been stored are of great importance for the reconstruction of the peculiarities of Early Rus’ woodworking techniques. Now we have some such complexes.

In Kyiv, the center of initial woodworking is identified at the northwestern outskirts of the Podil. Layers contained numerous wooden chips and bark (mainly pine), so called “layer with chips”, were recorded in the areas investigated on the 23-27 Ratmanska Str. (1985), 43 Mezhihirska Str. (1989), 12 Obolonska Str. (1993). They preceded the settlement of this territory from late 11th to early 12th centuries. According to M. Sahaidak, the specified territory could be used for assembling and primary processing of wood for centralized urban constructive works before its settlement: for defense, hydrotechnical and road structures and for residential development of the city.²⁴

A research in Kyiv Podil in 2016 on the 37 Kyrylivska Str.²⁵ made it possible to study the cultural layers of the 11th century, where wood was partially preserved.

The complex discovered on this site, was located not far from the area of „layers with chips“. An estate of the 11th century was identified, which was not part of Kyiv in that period. It was sufficiently fortified with a powerful fence made of pine logs. Such fences were not typical for urban structures. In the immediate vicinity of this estate outside it, the remains of woodworking and fragments of individual wooden objects were found (Fig. 6).

Among the studied remains of wood²⁶ there were specimens that testify to the primary processing of logs in this area: pine bark and chips of irregular shape and different sizes. Along with them, the remains of wood in the form of bars and small plates were discovered (Fig. 6, 1), which could only be created as waste during the further processing of wood: the production of semi-finished and finished products. Pegs (Fig. 6, 2–5) and remnants of wooden objects (Fig. 6, 3–4) were also found there.

With some exceptions, the material is represented by pine wood (*Pinus silvestris*). Most of the chips represent axing. There are also traces of cutting tools on some wooden objects.

²⁴ Sahaidak 1991, pp. 39-40, 69.

²⁵ Ivakin et al. 2018.

²⁶ Sergeeva 2017.

²³ Hupalo 1981, str. 319.

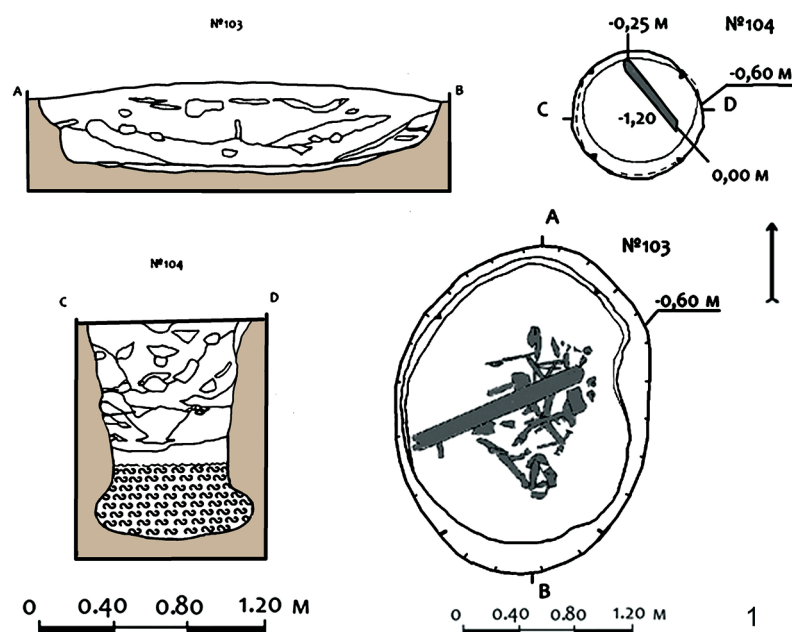


Sl. 6. Drveni predmeti iz Kyrylivske ulice 37, Kijev: 1 – drveno iverje; 2, 5 – klinovi; 3, 4 – proizvodi
Fig. 6 Wooden objects from 37 Kyrylivska Str., Kyiv 1 — wooden chips; 2, 5 — pegs; 3, 4 — products

U Kijevu je središte primarne obrade drva identificirano na sjeverozapadnom rubu Podila. Istraživanja provedena na lokacijama Ratmanska ulica 23 – 27 (1985.), Mezhihirska 43 (1989.) i Obolonska 12 (1993.) otkrila su slojeve s drvenim iverjem i korom (uglavnom borovom), tzv. „slojeve s iverjem“, koji su prethodili naseljavanju tog područja krajem 11. i početkom 12. stoljeća. Prema M. Sahaidaku, to područje moglo je biti korišteno za sklapanje i primarnu preradu drva za potrebe urbanih građevinskih radova, poput izgradnje obrambenih, hidro-

Woodworking complex in Khodosivka-Roslavskaske, a rural settlement near Kyiv, was discovered by Northern Expedition of the Institute of Archaeology NAS of Ukraine.²⁷ Two pits with production waste are the most studied woodworking complex now (Fig 7, 1). It is dated from late 12th to the first half of 13th centuries. The pits contained waste: fragments of branches and wooden chips, which allow us to trace several successive stages of processing the log (Fig. 8).

²⁷ Hotun at al. 2018.



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Sl. 7. Kompleks obrade drva otkriven u naselju Khodosivka-Roslavske: 1 – jame s drvenim artefaktima (preuzeto iz: Hotun *et al.* 2018, sl. 1); 2 – obrađeni trupac (a – detalj)

Fig. 7 Woodworking complex discovered in Khodosivka-Roslavske settlement: 1 – pits with wooden artifacts, taken from: Hotun *et al.* 2018, Fig. 1; 2 – a processed log (a – detail)

tehničkih i cestovnih objekata, kao i za stambeni razvoj grada.²⁴

Istraživanje u Kijevskom Podilu 2016. godine, na adresi Kyrilivska ulica 37,²⁵ omogućilo je proučavanje kulturnih slojeva iz 11. stoljeća, u kojima su pronađeni djelomično očuvani ostatci drva. Kompleks otkriven na ovom lokalitetu nalazio se nedaleko od područja „slojeva s iverjem“. Pronađen je posjed iz 11. stoljeća koji tada nije pripadao Kijevu, a bio je utvrđen snažnom ogradom od borovih balvana, što nije tipično za urbane građevine. U neposrednoj blizini posjeda, ali izvan njegovih granica, pronađeni su tragovi obrade drva i ulomci drvenih predmeta (sl. 6).

Among the materials there is also a timber of square cross-section with a sharpening on one side and a notch in the middle part (Fig. 7, 2). It was made of oak (*Quercus* sp.).

A lot of waste remained from adzing (Fig. 8, 1–7). The shape of the intersection of the chips with the bark (a slightly concave inner surface) indicates that a two-handled scraper with a concave blade could have been used to remove the bark (Fig. 8, 13–14). The shape of chips with plane surface is characteristic for axing (Fig. 8, 8–11). Special attention should be paid to the branch with sawing traces (Fig. 8, 12). A small fragment of wood with sawing traces was also found. This is the first documented use of a saw for Early Rus' woodworking, particularly for working with small parts of wood. So far, such use of the saw has been traced only on bone artifacts.

²⁴ Sahaidak 1991, str. 39–40, 69.

²⁵ Ivakin *et al.* 2018.

Među proučavanim ostacima drva²⁶ pronađeni su primjerci borove kore i iverja nepravilnog oblika i različitih veličina, koji svjedoče o primarnoj obradi trupaca na ovom području. Uz njih su otkriveni ostaci drva u obliku šipki i pločica (sl. 6, 1), koji su mogli nastati samo kao otpad tijekom daljnje prerađivanja drva, poput proizvodnje poluproizvoda i gotovih proizvoda. Na tom lokalitetu također su pronađeni i klinovi (sl. 6, 2–5) te ostaci drvenih predmeta (sl. 6, 3–4).

Uz nekoliko iznimaka, materijal koji se koristio bilo je borovo drvo (*Pinus silvestris*), a većina iverja nastala je tesaњem. Na nekim drvenim predmetima vidljivi su i tragovi alata za rezanje.

Drvoprerađivački kompleks u Khodosivka-Roslavske, ruralnom naselju u blizini Kijeva, otkrila je Sjeverna ekspedicija Instituta za arheologiju NAS-a Ukrajine.²⁷ Ovaj kompleks, datiran u razdoblje od kraja 12. do prve polovice 13. stoljeća, uključivao je dvije jame s proizvodnim otpadom, koje su trenutno najdetaljnije istraženi drvoprerađivački lokaliteti (sl. 7, 1). U jamama su pronađeni ulomci grana i iverje, po čemu možemo pratiti nekoliko uzastopnih faza obrade trupaca (sl. 8). Među materijalom je pronađen i drveni predmet kvadratnog presjeka, zašiljen na jednoj strani, s utorom u središnjem dijelu (sl. 7, 2), izrađen od hrasta (*Quercus* sp.). Rad na tesaњу drva rezultirao je velikom količinom otpada (sl. 8, 1–7). Oblik sjecišta iverja s korom (blago konkavna unutrašnja površina) ukazuje na to da je za skidanje kore moglo biti korišteno strugalo s dvjema drškama i konkavnom oštricom (sl. 8, 13–14). Strugotina s ravnom površinom karakteristična je za korištenje sjekire (sl. 8, 8–11). Posebnu pozornost zaslućuje grana s tragovima piljenja (sl. 8, 12) i manji ulomak drva s tragovima pile. Naime, radi se o prvoj dokumentiranoj uporabi pile za obradu drva u ranoj Rusi, osobito za rad s manjim ulomcima drva, jer je takva uporaba pile ranije bila zabilježena isključivo na koštanim artefaktima.

Također su pronađene brojne grane koje su bile zarezane i polomljene, što je uobičajena tehnika odvajanja dijelova stabla (ili kostiju) od cjeline. Neke grane bile su s jedne strane odlomljene, a s druge odrezane. U tim jamama pronađeni su i odbačeni komadi drva koji se nisu koristili u obradi. Zanimljivi su komadići i ostaci kore koji omogućuju praćenje uzastopnih faza obrade drvenih trupaca,

A lot of incised and broken branch were also found. It is a common technique of separating a part of a tree (and also bone) from the whole. Some branches were broken off on one side, and cut off on the other side.

Rejected wood that was not used in woodworking also was found in these pits.

Chips and remnants of the bark are of interest, which allow us to trace the successive stages of processing wooden logs. That are removing its branches and freeing logs from bark, then treatment for giving required shape to the cross-section of a log (e.g. rectangular) and its subsequent finishing. Traces of work with various tools were identified. The most of chips were of poplar or aspen (*Populus* sp.), oak (*Quercus* sp.), birch (*Betula* sp.) and pine (*Pinus* sp.) were also identified.

An object dating from the end of 11th to threshold of 11–12th centuries was found by the Northern Expedition of the Institute of Archeology, NAS of Ukraine, in the outskirts of Chernihiv.²⁸ Its filling contained a layer of chips and an adze at the bottom. Another adze was found in the dwelling of 12th – the first part of 13th centuries in the same plot. Ethnographic analogies allowed the researchers of the complex to conclude that the pit could be used as a device for processing large logs. This fact and a presence of adzes in the Chernihiv complex in connection with similar works indicate their use in the primary processing of logs at this complex. According to the authors of the publication, a wood of chips was identified as oak.

It should also be mentioned wood processing waste from Shestovytsa in Chernihiv Region.²⁹ A pit containing charred wood chips could be associated with places of wood processing or construction work, although its use as a fuel storage facility cannot be ruled out. Chip shape and a flat surface of chips indicates only axing (Fig. 9).

Complexes associated with woodworking discovered in Kyiv, Khodosivka-Roslavske settlement, Shestovytsa and Chernihiv are most likely related to large-scale works, however, it is difficult to say whether they took place within the framework of a professional or auxiliary craft. Some assumptions about the relatively long-term nature of woodworking works can be made only in relation to the complex discovered in the Chernihiv outskirts

²⁶ Sergeeva 2017.

²⁷ Hotun et al. 2018.

²⁸ Voznesenska, Hotun 2013.

²⁹ Sergeeva 2022.



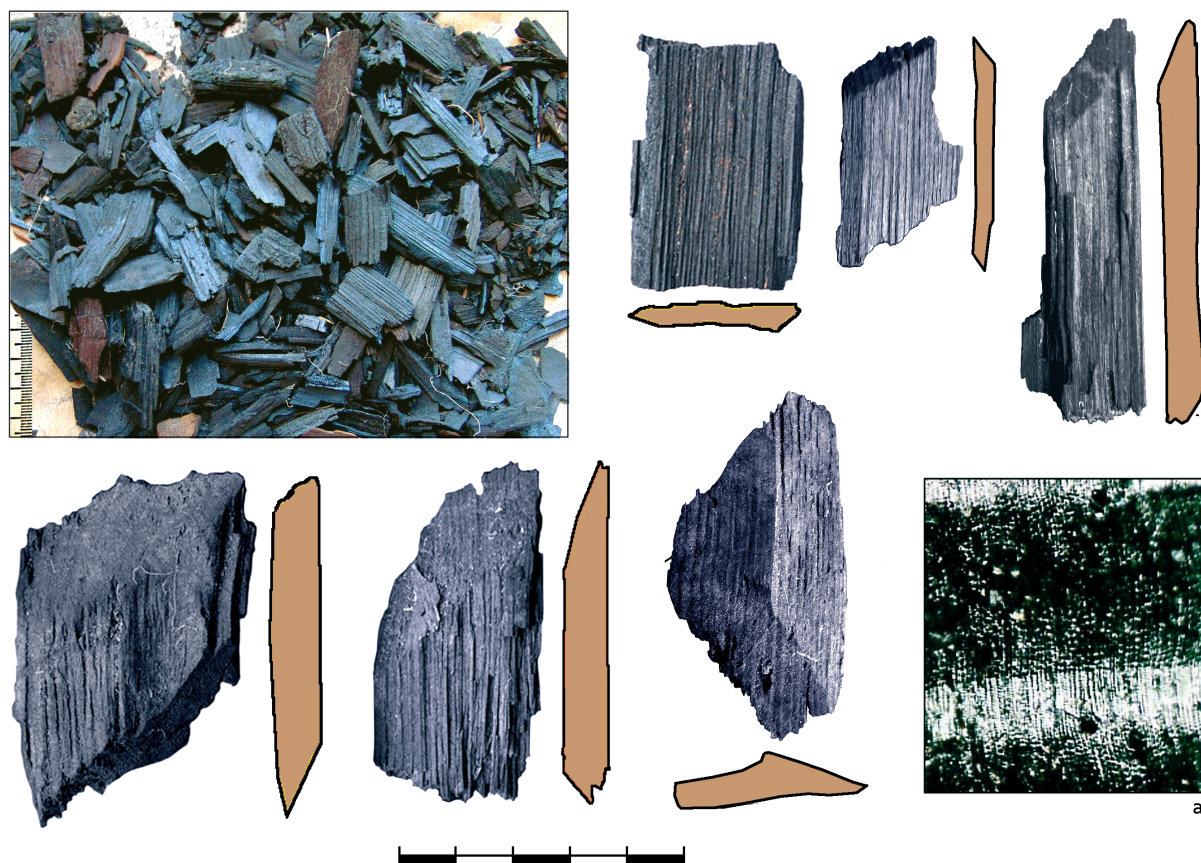
Sl. 8. Drveni otpad iz kompleksa u naselju Khodosivka-Roslavske: 1–7 – otpad nakon uporabe tesle; 8–11 – otpad nakon uporabe sjekire; 12 – grana s tragovima piljenja; 13, 14 – komadići kore

Fig. 8 Wooden waste from the complex in Khodosivka-Roslavske settlement: 1-7 — waste remained from adzing; 8-11 — waste remained from axing; 12 — branch with sawing traces; 13, 14 — bark pieces

kao što su odstranjivanje njegovih grana i oslobađanje trupaca od kore, zatim obrada za postizanje potrebnog oblika presjeka trupca (npr. pravokutnog) te njegova dorada. Utvrđeni su tragovi rada s raznim alatima. Većina iverja bila je od topole ili jasike (*Populus* sp.), a bili su zastupljeni i hrast (*Quercus* sp.), breza (*Betula* sp.) i bor (*Pinus* sp.).

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(a building and a pit, supposedly manufacturing, with woodworking waste). Note that in both structures (the building and the pit) adzes for the primary processing of wood were found. The concentration of specialized remains in one complex and the use of the pit, possibly not only for waste, but also as a working device, may indicate that wood processing was one of the occupations of the owners of the structures.



Sl. 9. Shestovytsa, materijal iz jame (a – građevina od borovog drva, uvećana)
Fig. 9 Shestovytsa, materials from the pit (a — a structure of pine wood, enlarged)

je građevinu datiranu od kraja 11. do početka 12. stoljeća.²⁸ Unutar njezine zapune pronađen je sloj iverja i tesla na dnu. Još jedna tesla pronađena je u nastambi datiranoj od 12. do početka 13. stoljeća na istoj parceli. Etnografske analogije omogućile su istraživačima kompleksa donošenje zaključka da se jama koristila kao naprava za obradu velikih trupaca. Ova činjenica kao i prisutnost tesle u černigovskom kompleksu, uz poveznicu sa sličnim radovima, ukazuju na uporabu ovog alata u primarnoj obradi trupaca na ovom lokalitetu. Prema autorima publikacije, iverje je identificirano kao hrast.

Također valja spomenuti otpad od prerade drva iz Shestovytsy u regiji Černigov.²⁹ Jama koja sadrži pougljenjeni drveni otpad mogla bi biti povezana s mjestima obrade drva ili građevinskim radovima, iako se ne može isključiti i mogućnost njezina korištenja kao skladišta goriva. Oblik i ravna površina strugotine upućuju na obradu uz pomoć sjekire (sl. 9).

Such complexes could help to solve several problems of woodworking history. The main ones are:

- obtaining additional information about woodworking techniques;
- additional data concerning the characteristics of the raw material base for various woodworking specialties.

The study of centers of primary woodworking can also further contribute to the study of the early stages of wood processing. Considering that this issue is almost unexplored, especially relative to the region in question, this type of archaeological objects should be particularly distinguished.

Also in connection with the above it should be especially emphasized the importance of studying all wooden artifacts obtained as a result of archaeological research, including production waste, wood chips, pieces of wood with traces of processing, and charred wood samples. The study of such artifacts has certain prospects, as it provides additional important information about the peculiarities of local woodworking.

²⁸ Voznesenska, Hotun 2013.

²⁹ Sergeeva 2022.

Kompleksi povezani s obradom drva otkriveni u Kijevu, naselju Khodosivka-Roslavske, Shestovytsi i Černigovu najvjerojatnije su povezani s radovima velikih razmjera, međutim, teško je utvrditi jesu li se ti radovi odvijali u okviru profesionalnog ili sporadnog zanata. Neke pretpostavke o relativno dugotrajnoj prirodi obrade drva mogu se izvesti samo za kompleks otkriven u predgrađu Černigova, koji uključuje zgradu i jamu, navodno proizvodnog karaktera, s otpadom od obrade drva. Valja istaknuti da su u toj zgradi i jami pronađene tesle za primarnu obradu drva. Koncentracija specijaliziranih ostataka u jednom kompleksu i korištenje jame, vjerojatno ne samo za otpad nego i kao naprave, mogu upućivati na to da je obrada drva bila jedno od zanimanja vlasnika ovih objekata.

Takvi kompleksi mogli bi pridonijeti rješavanju nekoliko pitanja vezanih za povijest obrade drva uključujući:

- dobivanje dodatnih informacija o tehnikama obrade drva
- prikupljanje podataka o karakteristikama sirovinske baze za različite specijalnosti obrade drva.

Proučavanje centara primarne obrade drva također može značajno pridonijeti razumijevanju ranih faza prerade drva. S obzirom na to da je ova problematika gotovo neistražena, osobito u kontekstu područja o kojem je bilo riječi, ovakve arheološke nalaze treba posebno istaknuti. Osim toga, izuzetno je važno proučiti sve drvene artefakte prikupljene tijekom arheoloških istraživanja, uključujući proizvodni otpad, drvenu sječku, komade drveta s tragovima obrade i uzorke pougljenjenog drva, jer analiza takvih artefakata pruža široke mogućnosti za stjecanje dodatnih važnih informacija o osobito stima lokalne obrade drva.

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