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O NALAZU KASNOANTIČKIH TIJESAKA U POREČU 1997. GODINE

ON THE DISCOVERY OF LATE ANTIQUE PRESSES IN POREČ IN 1997

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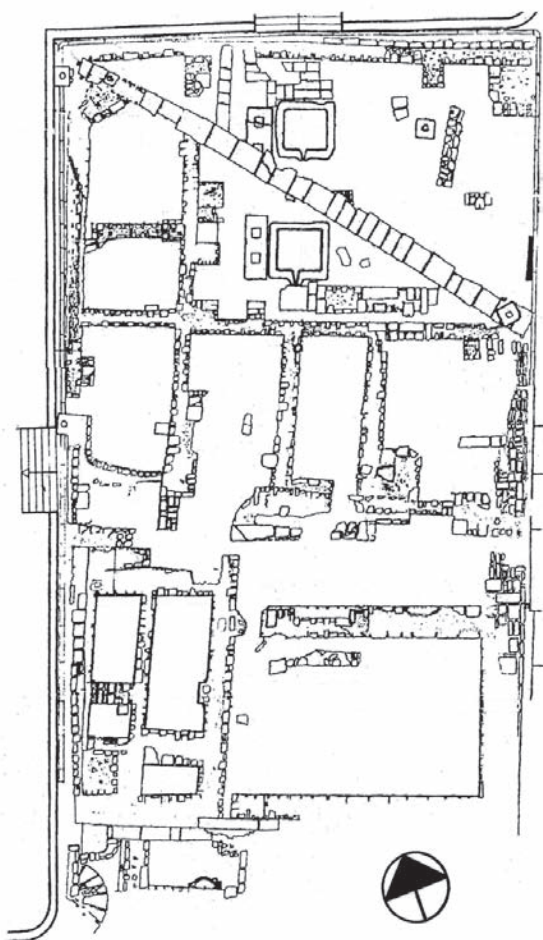
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Za arheoloških istraživanja na trgu Matije Gupca u Poreču 1997. pronađeni su višeslojni ostaci antičke, kasnoantičke i srednjovjekovne arhitekture među kojima se ističu dva lijepa povelika kamena podloška tijesaka s kamenim blokovima protuutega. Tijesci su bili smješteni u jednoj prostoriji koja se poklapa sa sjevernim istraženim dijelom današnjega trga. Tehnološki pripadaju inačici tijesaka s gredom na čijemu je jednome kraju, pored postolja recipijenta za tiještenje, uporište grede, a na drugome, udaljenome oko deset metara, mehanizam za spuštanje grede i pritiskanje mase koja se tiještila. Zidovi prostorije s tijescima ojačani su s unutrašnje strane kontraforima koji su najbolje sačuvani na istočnome zidu. Postojanje kontrafora, kao i rekonstruirana dužina grede, upućuju na zaključak da se radilo o jakim postrojenjima velikoga kapaciteta i o proizvodnji maslinova ulja, bez obzira na to što nisu pronađeni ostaci mlina koji su u ovakvu slučaju uobičajeni. Postojanje tijesaka u gradu dovodi se u vezu s početkom procesa napuštanja sela, poslije 4. stoljeća, kad se neke ruralne gospodarske funkcije pojavljuju u gradovima gdje prije nisu bile uobičajene. Usporedne su situacije u Puli (novi nalaz 1996), Nezakciju (tijesak u rimskim termama) te na Brijunima (tzv. Kastrum s trima ili četirima tijescima u kasnoantičkoj fazi naselja).

Ključne riječi: kasna antika, Istra, gospodarstvo, ulje i vino, tijesci

During archaeological research conducted on Matija Gubec square in Poreč in 1997, many layers of architectural remains dating to Antiquity, Late Antiquity and the Middle Ages were found, among them two nice, rather large stone anchors for olive presses with stone block counterweights. The presses were located in a room that corresponds to the northern researched section of the present-day square. Technologically, they are a variant of the presses with a beam, which has a support on one end, next to the base for the crushing basket, while on the other, about ten meters away, it has a mechanism to lower the beam and apply pressure to the mass being crushed. The walls of the room with presses are reinforced from the inside with counterforts which are best preserved on the eastern wall. The existence of counterforts, as well as the reconstructed length of the beam, lead to the conclusion that this was a strong, high-capacity mechanism and that it was used to produce olive oil, regardless of the fact that no remains of a millstone, otherwise customary in such cases, were found. The existence of presses in the city is brought into connection with the process of rural depopulation after the fourth century, when some rural economic functions appeared in the cities where they previously were not the norm. This is comparable to the situation in Pula (new discoveries in 1996), Nesactium (press in the Ro-

U gradovima koji imaju dugotrajnu urbanu tradiciju života na jednome mjestu arheološka istraživanja često donose iznenađenja, ponekad i neočekivane nalaze. U takvoj su se situaciji našli i arheolozi u Poreču kad su pod vodstvom Marina Baldinija¹ tijekom zaštitnih istraživanja 1997. na trgu Matije Gupca našli na cijeli splet graditeljskih faza od antike do srednjega vijeka. Najznačajniji su nalaz, između ostaloga, bila dva kasnoantička tjeska. To je bila prva faza sustavne rekonstrukcije gradske infrastrukture u jednome dijelu središta jezgre Poreča koja je obuhvatila spomenuti trg uz južni rub gradskoga područja, veći dio odnosnoga karda (obično zvan *Cardo Maximus*) i dijelove dekumana koji se s njime sijeku. Voditelj zaštitnoga istraživanja bio je Marino Baldini koji je i autor prethodnoga izvješća (Baldini 1997: 73–78).



Slika 1. Arhitektonsko-geodetska snimka arheoloških nalaza na trgu Matije Gupca u Poreču 1997. (Baldini 1997: 75; autor M. Pajković, prilagodio R. Matijašić).

Figure 1. Architectural-geodetic map of the archaeological discoveries on Matija Gubec square in Poreč, 1997 (Baldini 1997: 75; by M. Pajković, adapted by R. Matijašić).

man baths) and on the Brijuni islands (the so-called *Castrum* with three or four presses in the settlement's Late Antique phase).

Key words: Late Antiquity, Istria, economy, oil and wine, presses

In cities with a long-standing urban tradition of living in one place, archaeological research often generates surprises, and sometimes even unexpected discoveries. This was the situation encountered by archaeologists in Poreč under the leadership of Marino Baldini¹ during the rescue excavation conducted on Matija Gubec square in 1997, when they uncovered an entire complex of construction phases ranging from Antiquity to the Middle Ages. The most significant discoveries, among others, were two Late Antique presses. This was the first phase of systematic reconstruction of the city's infrastructure in a part of the urban core of Poreč, which encompassed the aforementioned square along the southern periphery of the urban territory, a larger part of the relevant *cardo* (normally called the *Cardo Maximus*) and parts of the *decumanus* that intersected it. The head of the rescue excavation was Marino Baldini, who also authored the preliminary report (Baldini 1997: 73–78).

During the excavation in 1997, the square's entire surface was uncovered, and under it there were multiple layers of walls and other archaeological remains. All of them together document the uninterrupted use of this space from prehistory to the Middle Ages (Fig. 1). The remains of Early Roman pottery were found, fragments which Baldini characterised as "proto-Antique, Arretine and Apulian pottery, a fragment of a *kantharos* or crater of Greek red figural ceramic, *bucchero* pottery, from which a jar was assembled that may date to the end of the seventh or very beginning of the sixth century BC" (Baldini 1997: 76). Although he does not explicitly mention prehistoric *Histri*an Iron Age pottery, he says that a little to the north (at the intersection of *Euphrasius* street and the *Cardo*), Kristina Mihovilić found "prehistoric artefacts" (*ibid.* 74); thus one and the other type of discovery confirm that the centre of the historical urban core of today's Poreč was already inhabited in the first half of the first millennium BC. Earlier discoveries on the Poreč peninsula testify to this, because such fragments were found

¹ Zahvaljujemo se mr. sc. Marinu Baldiniju što nam je omogućio da obradimo taj zanimljivi nalaz iz Poreča, kao i za dokumentaciju koju nam je stavio na raspolaganje jer ona djelomično ilustrira naš rad. Zahvaljujemo se i ing. Miroslavu Pajkoviću koji je autor dijela dokumentacije i idejne rekonstrukcije tjesaka.

¹ I would like to thank Marino Baldini for allowing me to analyse this fascinating discovery from Poreč, and for the documentation he placed at my disposal, for it partially illustrates this paper. Thanks are also due to Miroslav Pajković, who worked out some of the documentation and drafted the reconstruction of the presses.

Za istraživanja 1997. godine otvorena je cijela površina trga ispod koje je postojala višeslojna mreža zidova i drugih arheoloških podataka. Svi oni zajedno dokumentiraju neprekinuto korištenje toga prostora od prapovijesti do srednjega vijeka (sl. 1). Na istraženome području pronađeni su ostaci ranoantičke keramike, ulomci koje Baldini određuje ovako: “protoantičke, aretinske i apulske keramike, jedan ulomak kantara ili kratera grčke crvenofiguralne keramike, buker-keramika, od koje je sastavljen vrč što se može datirati krajem 7. ili samim početkom 6. st. prije Krista” (Baldini 1997: 76). Iako izričito ne spominje prapovijesnu histarsku željeznodobnu keramiku, kaže da je nešto sjevernije (na križanju Eufrazijeve ulice i Karda) Kristina Mihovilić pronašla “protopovijesne nalaze” (*ibid.* 74); stoga i jedna i druga vrsta nalaza potvrđuju da je središte povijesne urbanističke jezgre današnjega Poreča bilo naseljeno već u prvoj polovici 1. tisućljeća pr. Kr. O tome svjedoče i stari nalazi na porečkome poluo-toku jer su takvi ulomci pronađeni na gotovo svim položajima koji su se istraživali tijekom posljednjih desetljeća (Šonje 1966: 295–303).

Osnutak antičkoga grada obavijen je velom tajne. Na temelju starijih podataka iz augustovskoga doba Plinije Stariji spominje *Parentium* kao *oppidum civium Romanorum* (HN 3, 129), što znači da su se rimski građani, možda legijski veterani, na ovome prostoru naseljavali u pretkolonijalnoj fazi, odnosno još u cezarijansko doba (Keppie 1983: 202–203; Šašel 1992: 661–662). Na jednome natpisu iz 2. stoljeća (ILS 6678 = Inscr. It.: 10, 2, 242) grad nosi ime *Colonia Iulia Parentium*, što se smatra ostatkom teorije o cezarijanskom osnutku grada, svakako prije 27. god. pr. Kr. Međutim Degrassi je pretpostavio da je u međuvremenu *Parentium* imao status municipija (1946: 44–49), a da je status kolonije dobio za cara Tiberija ili Kaligule, što je danas uglavnom općeprihvaćeno mišljenje (Degrassi 1950; Keppie 1983: 202).

Držimo da je Poreč dobio gradsku fizionomiju tijekom posljednjih desetljeća 1. st. pr. Kr. Naime nakon što je naselje rimskih građana zaživjelo na mjestu autohtonoga naselja, dobilo je najprije status municipija s dijelom prava lokalne samouprave, a zatim, na početku 1. stoljeća po. Kr., i status kolonije, dakle najviši oblik gradske samouprave. U tome je razdoblju grad dobio i fizička urbana obilježja: ulice i trgove, javne građevine te određeni odnos privatne i javne izgradnje. Ne treba zaboraviti ni ager, poljoprivredno područje i područje gradske jurisdikcije, koje je obuhvaćalo središnji dio zapadne obale Istre od doline rijeke Mirne do Linskoga zaljeva, a u unutrašnjosti područje do Kringe, Tinjana, Berma i Motovuna.

at almost all sites researched over the course of the past several decades (Šonje 1966: 295–303).

The establishment of the town in Classical Antiquity is shrouded in mystery. Based on the oldest data from the Augustan era, Pliny the Elder mentions *Parentium* as an *oppidum civium Romanorum* (HN 3, 129), which means that Roman citizens, perhaps legionary veterans, moved into this area in the pre-colonial phase, that is during the Caesarean age (Keppie 1983: 202–203; Šašel 1992: 661–662). In a second-century inscription (ILS 6678 = Inscr. It.: 10, 2, 242) the city bears the name *Colonia Iulia Parentium*, which is deemed a remainder of the theory on its establishment in the Caesarean era, certainly prior to 27 BC. However, Degrassi assumed that in the meantime *Parentium* had the status of a municipium (1946: 44–49), and that it obtained the status of colony during the reign of Tiberius or Caligula, which is today the generally accepted view (Degrassi 1950; Keppie 1983: 202).

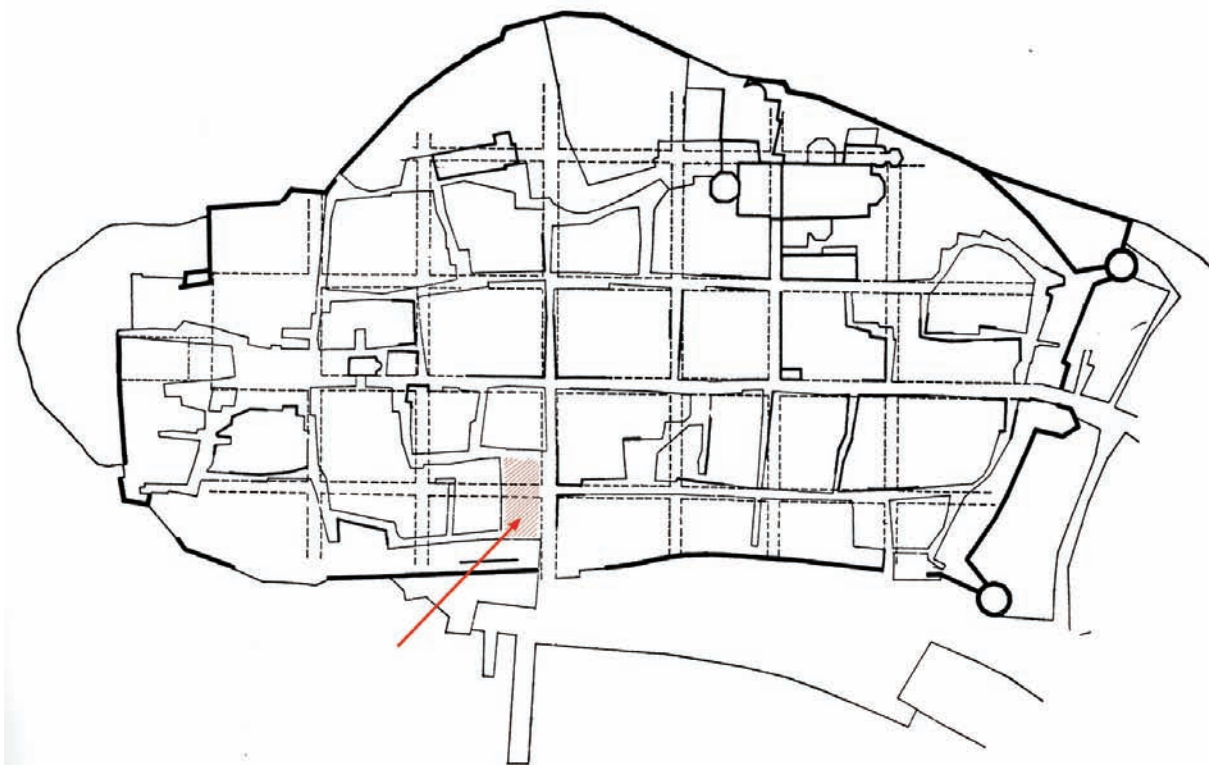
It is this author's view that Poreč obtained its urban physiognomy during the last decades of the first century BC. After the settlement of Roman citizens came to life at the site of an autochthonous settlement, it was first granted the status of municipium with a degree of local self-governance, and then, at the beginning of the first century AD, it was also granted colonial status, meaning the highest form of urban self-government. During this period, the city also assumed urban physical traits: streets and squares, public buildings and a specific relationship between private and public buildings. Neither should one overlook the ager, the agricultural area and territory under the city's jurisdiction, which encompassed the central portion of Istria's western coast from the Mirna River Valley to the Bay of Lim, and reaching inland to Kringa, Tinjan, Beram and Motovun.

There are also numerous papers on the street network of ancient, medieval and present-day Poreč, which makes the city very specific (Kandler 1908: 205–208; Degrassi 1946; 1950; Prelog 1957; Ivančević 1963–64: 5–12; Šonje 1963: 98–100; 1964: 76; 1965: 397–404; Baldini 1997a: 125–136; 1997b: 99–106). Since modern Poreč is a very dynamic city, it will continue to be the topic of works based on new discoveries. Matija Gubec square, which was called *Piazza Grande* in Venetian documents up to the end of the eighteenth century (Baldini 1997b: 70) was sketched by Prelog as a portion of two insulae, but only hypothetically because no specific discoveries have yet been made (Fig. 2). By contrast, in his planimetric reconstruction of *Parentium*'s street grid, Ivančević proposed a square with a form that corresponds to its modern-day equivalent

Postoje brojni radovi o mreži ulica antičkoga, srednjovjekovnoga i današnjega Poreča po čemu je grad vrlo specifičan (Kandler 1908: 205–208; Degrassi 1946; 1950; Prelog 1957; Ivančević 1963–64: 5–12; Šonje 1963: 98–100; 1964: 76; 1965: 397–404; Baldini 1997a: 125–136; 1997b: 99–106). Kako je komunalno poduzetništvo u Poreču vrlo dinamično, o toj će se temi i dalje pisati na temelju novih nalaza. Trg Matije Gupca, koji se u mletačkim ispravama do kraja 18. stoljeća nazivao *Piazza Grande* (Baldini 1997b: 70) Prelog iscertava dijelom dviju insula, ali samo hipotetički jer dosad nije bilo nalaza (sl. 2). Za razliku od njega Ivančević na svojoj planimetrijskoj rekonstrukciji mreže parentinskih ulica predlaže trg kojega je oblik podudaran s današnjim (Ivančević 1963–64: 9). Treba još reći da su čestice oko trga na kojemu je provedeno istraživanje danas parkovi, ali su do Drugoga svjetskog rata na tome mjestu bile kuće pa je i trg bio bolje određen u cjelini urbanoga tkiva. Prema rezultatima istraživanja koje je iznio Baldini duž istočne strane trga očuvano je ulično (?) popločenje (sl. 1) koje, kako on tvrdi, odgovara antičkomu dekumanu (Baldini 1997: 76) iako bi se moglo raditi o križanju dekumana i karda. Antički zidovi klasične faze (ili, uvjetno rečeno, iz razdoblja

(Ivančević 1963–64: 9). It should still be noted that the lots around the square on which research was conducted are today parks, but up to the Second World War there were houses here, so the square itself was much better incorporated into the whole urban fabric. Based on the research results presented by Baldini, pavement stones (Fig. 1) all along the eastern side of the square have been preserved. He claims that this corresponds to the decumanus of Classical Antiquity (Baldini 1997: 76), even though it may have been the intersection of the decumanus and cardo. The Antique walls of the classical phase (or, conditionally, the period between the first and second centuries AD) were preserved in the researched area toward the north-west as well. In the central section they irrefutably confirm that there was a street in this area, and not a square. In the southern half of the dig site, significant remains of Late Antique/medieval buildings were preserved, and this was also the location of the praetorium which is mentioned in more recent written and iconographic sources (*ibid.* 76–77). However, due to the numerous reconstructions, these conclusions are in any case tentative.

With no intention of underestimating the importance of the entire site or individual parts thereof,



Slika 2. Urbana shema Poreča – odnos današnje situacije i rekonstruiranoga antičkog rastera, crveno označen Trg Matije Gupca (Prelog 1957: 50).

Figure 2. Urban layout of Poreč – comparison of current and reconstructed Roman-era layout, in red location of the Matija Gubec Square (Prelog 1957: 50).

this author believes that the remains of the two presses are exceptionally interesting both due to their technical features and the location of this facility in the city itself. Concentrating on the two presses in the northern section of the excavation, we shall first notice that the walls surrounding them

između 1. i 2. st. po. Kr.) sačuvani su u središnjemu dijelu istražene površine i prema sjeverozapadu. U središnjemu dijelu nedvojbeno potvrđuju da je na tome području postojala ulica, a ne trg. Na južnoj polovici iskopa sačuvani su značajni ostaci kasnoantičkih/srednjovjekovnih zgrada, a to je ujedno bio položaj pretorija koji se spominje u novovjekovnim pisanim i ikonografskim vrelima (*ibid.* 76–77). No zbog brojnih pregradnji ovi su zaključci u svakom slučaju privremeni.

Ne želeći umanjivati važnost cjeline lokaliteta ili pojedinih njegovih dijelova, držimo da su ostaci dvaju tijesaka iznimno zanimljivi kako zbog tehničkih značajki tako i zbog smještaja tih postrojenja u samome gradu. Usredotočimo li se na dva tijeska u sjevernome dijelu iskopa, najprije ćemo primijetiti da zidovi koji ih okružuju (i koji s njima čine organsku cjelinu) po strukturi, načinu gradnje, tlorisnome rasporedu i visinskim odnosima datiraju iz kasnoantičkoga razdoblja. Prema Baldiniju oni “nisu raniji od 5. stoljeća” (*ibid.* 76). Pokazat ćemo da se Baldinijeva datacija podudara i s formalnim razlozima postojanja tijesaka na tome mjestu upravo u to vrijeme.

Prostorija u kojoj su smješteni tijesci obuhvaća veći dio sjeverne trećine trga (sl. 3), odnosno iskopa: duga je nešto više od osamnaest metara i široka gotovo devet metara (četvrti, istočni zid nije istražen jer se nalazi ispod današnje ulice). Kako se radi o građevini nemonumentalne naravi, to je za antičke pojmove bila jako velika površina koju nije bilo jednostavno presvoditi. Osim toga gradnja prostora za tiještenje, pogotovo za tiještenje maslina, podrazumijeva vrlo pažljive statičke proračune jer sile koje strojevi i graditeljske strukture moraju podnositi nisu baš bezazlene, pogotovo kad su tijesci veliki kao spomenuti primjerci iz Poreča. Zato su zidovi prostorije s tijescima s unutrašnje strane ojačani kontraforima koji su najbolje sačuvani na zapadnome zidu iza samih tijesaka i u jugozapadnome uglu, ali im se tragovi naziru i na drugim mjestima duž sjevernoga i južnoga zida. Naročito su dobro sačuvani donji dijelovi četvrtastih kontrafora u jugozapadnome uglu prostorije s tijescima: posebno su ojačani uglovi, a između njih na užoj su strani prostorije tri kontrafora. Nastavljaju se i na oba duža bočna zida iako vjerojatno ne u njihovoj punoj dužini. Možda se nalaze na području drugoga kraćeg zida prostorije, ali na tome mjestu nije bilo moguće dovršiti istraživanja. Kontrafori su mogli imati dvostruku ulogu: prvo, činili su dovoljno čvrstu bazu za drvene grede profila dostatnoga da se premosti širina prostorije; drugo i važnije, drvene grede stroja iznad tijesaka bile su istovremeno i sidrište same konstrukcije strojeva.

(and which form an organic whole with them) date to Late Antiquity in terms of structure, construction style, floor-plan and height ratios. According to Baldini, they “are not older than the fifth century” (*ibid.* 76). It will be shown that Baldini’s dating corresponds to the formal reasons for the existence of presses in this place at precisely that time.

The area in which the presses were housed encompasses most of the northern third of the square (Fig. 3) and the excavation: it is slightly over eighteen meters long and almost nine meters wide (the fourth, eastern wall has not been examined because it lies beneath the present-day street). Since this is a non-monumental structure, it was a very large space to the notions of Antiquity which was not easy to over-arch. Additionally, construction of pressing rooms, especially one to crush olives, implies very careful static computations, because the force which the machinery and devices need to withstand are not exactly negligible, especially in the case of presses as large as these from Poreč. This is why the walls of the room with the presses were reinforced on the inside with counterforts, which were best preserved on the western wall behind the presses themselves and in the south-western corner, but traces of them can also be discerned at other places along the northern and southern walls. The lower sections of the rectangular counterforts in the south-western corner of the room with presses are particularly well-preserved: the corners were especially reinforced, and between them there are three counterforts on the narrower side of the room. They continue on both of the longer side walls, although probably not in their full length. Perhaps they are in the area of the other, shorter wall of the room, but excavations could not be continued at this place. The counterforts may have played a dual role: first, they created a sufficiently firm base for wooden rafters of dimensions sufficient to bridge the room; second, and more importantly, the wooden rafters of the ceiling above the presses simultaneously anchored the construction of the machinery itself.

The presses are very well preserved in the stone elements of the anchoring bases. They are equal in size, and their technology and technological parts are identical, so they are, by all indications, contemporary. This is why the description will be simplified to cover just a single press.² Next to the eastern wall of the room, the one with counterforts, there is a base for two vertical pillars which were firmly anchored down into the stone block, and on top in the ceil-

² On technical matters and the classical terminology associated with presses and parts thereof, and on Classical sources, cf. Brun 1986: 59–136; Matijašić 1998: 145–157.



Slika 3. Pogled na istraženo područje s tijescima na kraju istraživanja (snimio: D. Marušić Čiči, 1996).

Figure 3. View of the excavated area with presses at the conclusion of research (photograph: D. Marušić Čiči, 1996).

Tijesci su vrlo dobro sačuvani u kamenim elementima podložaka. Potpuno su jednaki po veličini, tehnologiji i tehnološkim dijelovima pa su, po svemu sudeći, istovremeni. Zato ćemo pojednostaviti opis kao da se radi o jednome tijesku.² Uza zapadni zid prostorije, onaj ojačan kontraforima, nalazi se podložak za dvije okomite grede koje su bile čvrsto usidrene dolje u kamenome bloku, a gore u stropnu konstrukciju. Taj je kameni blok (tehnički je termin *lapis pedicinus*) bio podloga krajnje točke poluge grede spuštanjem koje se tiještilo. Radi se o kamenome bloku dužine oko 230 cm i širine oko 80 do 90 cm, s dvama četvrtastim utorima (36 × 32 cm). U utore su okomito utaknute drvene grede (*arbores*) istoga profila, a između njih je razmak od pedesetak centimetara za horizontalnu gredu koja tiješti plodine.

Tik do toga kamenog bloka nalazi se postolje za tiještenje (*forum*). To je pačetvorinast kameni blok veličine 210 × 210 cm s utorom koji slijedi oblik kamenoga bloka, ali na jednoj strani ima izljev. Taj plitki utor zatvara površinu od oko 130 × 130 cm i to je profil drvom i šibljem ograđenoga gabarita u koji se stavljala samljevena masa maslina za tiještenje ili pak – ako se radilo o vinskome tijesku – grožđe. Unutrašnji rub utora izbrazdan je, kao i u svim drugim pronađenim tijescima, malim okomitim naborima koji su nastali, kako se obično tumači, od kiselina iz soka koji se tiještio jer se sok na tome mjestu najduže zadržavao. Oba postolja za tiještenje imaju izljev unutrašnjega utora prema jugu, ali nisu sačuvane (vjerojatno kamene) posude u koje se izlivalo ulje. Uz južno postolje, odmah ispod izljeva tijeska, u sloju crvenice vidio se polukružni oblik svijetloga šljunka koji je možda predstavljao podlogu za takvu kamenu posudu (Baldini 1997: 76).

² O tehničkim pitanjima i klasičnoj terminologiji vezanoj za tijeske i njihove dijelove te o antičkim izvorima usp. Brun 1986: 59–136; Matijašić 1998: 145–157.

ing structure. This stone block (the technical term is *lapis pedicinus*) was the anchor for the extreme point of the beam lever, which crushed the olives by being lowered. This is stone block with a length of 230 cm and a width of roughly 80 to 90 cm, with two rectangular slots (36 × 32 cm). Wooden piers (*arbores*) of the same profile were vertically inserted into the slots, while between them there was a gap of approximately 50 cm for a horizontal beam used to press the olives.

The crushing surface (*forum*) is right next to the stone block. This is a quadrangular stone block, dimensions 210 × 210 cm, with a channel carved along the block's edge, but with a drain funnel on one side. This shallow channel delimits a surface of approximately 130 × 130 cm and it is the surface of a container made with wood and reeds into which the olive (or grape if it was a wine press) mash was placed for crushing. The internal edge of the channel is grooved, as in all other presses found, with small vertical pleats which were formed, according to the standard explanation, by acids from the juices being pressed because it remained here the longest. Both of the crushing surfaces have drains funnels facing southward, but the (probably stone) vessels into which the oil drained were not preserved. Next to the south crushing surface, immediately below the press drain, a semi-circular form of light gravel was seen in a layer of red earth which may have been the base for such a stone vessel (Baldini 1997: 76).

The press on the other end completes the mechanism for lowering the beam, i.e. for pressing down on the mass being crushed. It is here that the most interesting part of the Poreč city press has been found, with an element not otherwise encountered in other examples from Istria. Namely, a stone block (150 × 100 × 85 cm) was preserved (again on both presses) with triangular slots on the narrower sides and a circular depression in the middle between them. Of these two stone blocks, one was undecorated and it was left at the discovery site like other remains associated with the press on the north-western edge of the excavation. The second, southern one, is a reused grave monument bearing an inscription dated to the first century which was taken to the Museum.³

³ The inscription is very interesting, because it bears the name of the well-known Poreč notable Titus Abudius Verus, the vice admiral of the Ravenna naval fleet, who is known from earlier epigraphic sources to have been a rich investor in Parentium (cf. *Inscr. It.* 10, 2, 2–3). This inscription mentions his wife Junia Varilla, to whom Abudius Verus raised the monument: M[anibus? —]C / IUNIAE P(ubli) f(iliae) VARILL(ae) / PARENTIUMQ(ue) EIUS / ET FRATRIS / ⁽⁵⁾ P(ubli) IUNI SEVERIANI / GALEONIAE L(uci) F(iliae) LARG() / P(ubli) IUNI NOVATI / TEST(amento) VARILL(ae) / UXORIS ROGATUS / ⁽¹⁰⁾ ABUDIUS VERUS FEC(it). I would like to thank Marino Baldini for making the text available to me.

Tijesak na drugome kraju zaključuje mehanizam za spuštanje grede, to jest za pritiskanje plodina koje su se u njemu tiještile. Tu nalazimo najzanimljiviji dio porečkoga gradskog tijeska s elementom koji ne susrećemo na drugim istarskim primjercima. Sačuvan je naime (opet kod obaju tijesaka) kameni blok (150 × 100 × 85 cm) s trokutastim utorima na užim stranama i s jednim udubljenjem kružnoga oblika na sredini između njih. Od ovih dvaju kamenih blokova jedan je bio bez ukrasa i ostavljen je na mjestu nalaza kao i drugi ostaci koji pripadaju tijesku na sjeverozapadnome rubu iskopa. Drugi, onaj južni, predstavlja za tu namjenu ponovno iskorišten nadgrobni spomenik s natpisom iz 1. stoljeća koji je prenesen u Muzej.³

Taj je kameni blok protuuteg vijka po kojemu se okretanjem spuštala matica i tako spuštala cijelu gredu tijeska. To je bio kritični mehanizam koji je stvarao silu pritiska za tiještenje plodova u desetak metara udaljenome košu. Drveni je vijak bio usidren u okruglu udubinu, i to pomoću dviju drvenih dasaka koje su u kameni blok bile usidrene trokutasto oblikovanim klinovima što su ulazili u isto takva bočna udubljenja (sl. 5; Brun 1986: 122, sl. 60 A, br. 50). Kameni blok davao je protutežu sili pritiska, dok je drveni sklop od više komada (koje su morali zajedno držati željezni ili slični okovi) morao osiguravati slobodno okretanje vijka.

Tehnologija tijesaka za masline, koja se u osnovnim crtama ne razlikuje bitno od etnografskih primjera, dobro je poznata iz brojnih arheoloških primjera ne samo u Istri i Dalmaciji nego i na gotovo svim obalama Sredozemlja (Brun 2003: 146–158; 2004). Postoje dvije osnovne vrste tijesaka: jedan s vijkom koji je u središnjoj osi koša (to je mlađi i u antici manje korišten način iako je efikasniji u korištenju sile pritiska), drugi s gredom koji je koristio fizikalne zakone poluge i njezine pogodnosti (Brun 1986: 81).⁴ Brun je razradio tipologiju tijesaka s gredom (sl. 4) na temelju različitih sustava ostvarivanja pritiska: utezima, vitlom i vijkom s protuutegom. Pre-

This stone block served as a counterweight to the screw which, when turned, lowered the nut and thus lowered the entire press beam. This was a critical mechanism which created the pressure to crush the mash in a basket located ten meters away. The wooden screw was anchored in the round depression with the help of two wooden boards which were fastened into the stone block by triangular wedges that were inserted into the corresponding lateral depressions (Fig. 5; Brun 1986: 122, fig. 60 A, no. 50). The stone block provided a counterbalance to the force of pressure, while the wooden mechanism with several components (which had to be held together by iron or similar couplings) had to secure the free movement of the screw.

The technology of the olive press, which in its general features does not differ greatly from ethnographic examples, is well known based on numerous examples not just from Istria and Dalmatia but also from all coasts of the Mediterranean (Brun 2003: 146–158; 2004). There are two basic types of presses: the screw press, where the screw is in the central axis of the basket (this is a more recent and, during Antiquity, less used method although more effective in exploiting the force of pressure), and the lever press, which employed the physical law of leverage and its advantages (Brun 1986: 81).⁴ Brun worked out a typology of lever presses (Fig. 4) based on various systems for creating pressure: weights, lever and screw with counterbalance. Based on the preserved elements, the Poreč press can be classified as Brun's type C4, in which the beam is anchored between wooden supports planted in a stone pedestal and fastened to a ceiling construction; the pressure is created by the weight of the counterbalance fastened to the screw which, when turned, lowers the beam (*ibid.* 112–113). While the lever may have been firmly anchored into the floor (but it may have also had a counterbalance), and often onto the ceiling for the sake of safety, the screw was regularly fastened to the free counterweight because this simplified the construction and achieved the same efficiency. The stone block gave the entire construction greater elasticity, because the turning of the screw initially lifted it several centimetres, and then its weight lowered the beam and thus increased the pressure on the mash being crushed. The counterweight is a standard feature in presses

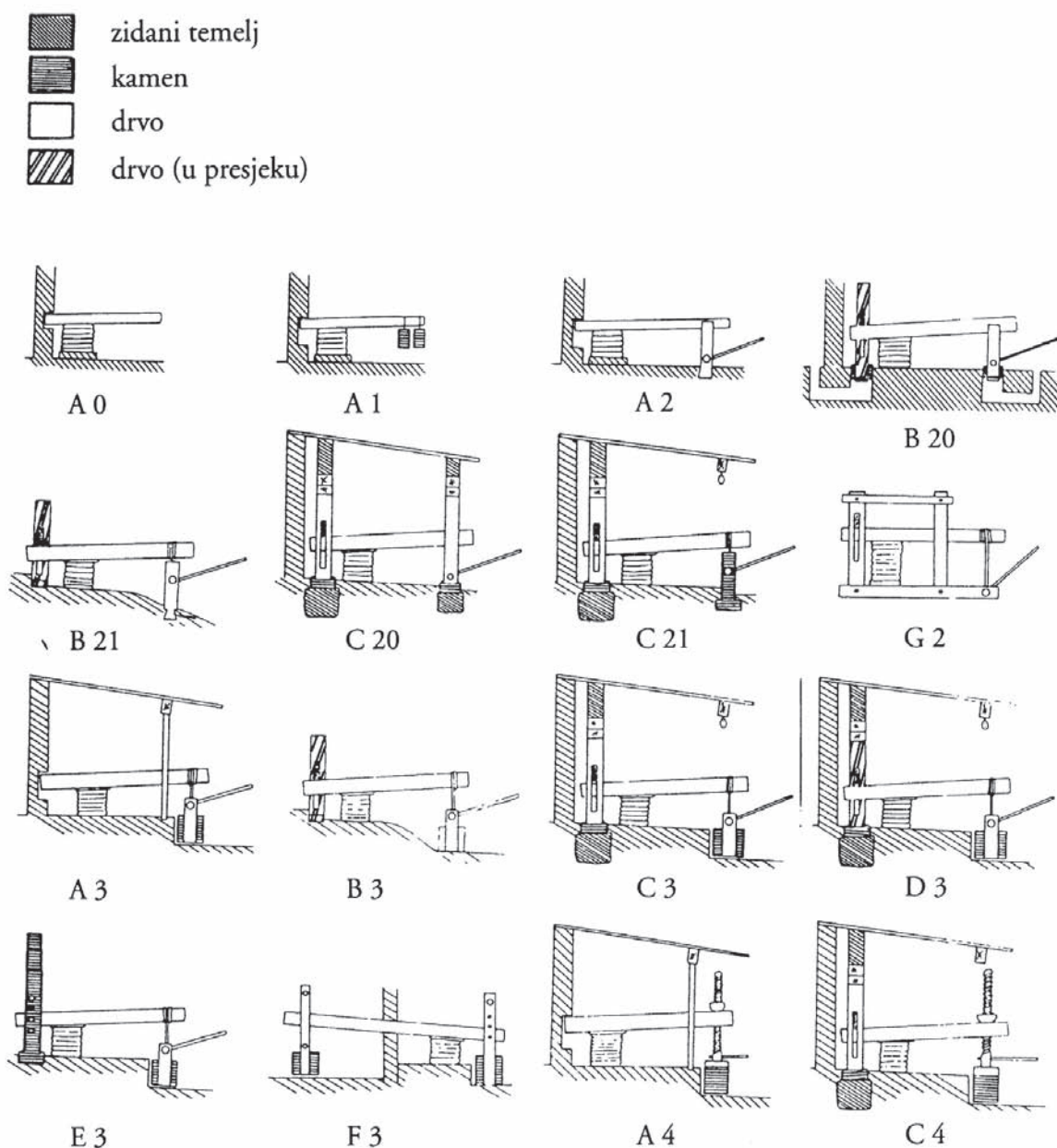
³ Natpis je vrlo zanimljiv jer je na njemu ime poznatoga porečkoga uglednika Tita Abudija Vera, viceadmirala ravske ratne flote, koji je i prije iz epigrafije bio poznat kao bogat investitor u Parenaciju (usp. *Inscr. It.* 10, 2, 2–3). Ovaj natpis spominje suprugu Juniju Varillu kojoj spomenik podiže upravo Abudije Ver: M[anibus? —]C / IUNIAE P(ubli) f(iliae) VARILL(ae) / PARENTIUMQ(ue) EIUS / ET FRATRIS / ⁽⁵⁾ P(ubli) IUNI SEVERIANI / GALEONIAE L(uci) F(iliae) LARG() / P(ubli) IUNI NOVATI / TEST(amento) VARILL(ae) / UXORIS ROGATUS / ⁽¹⁰⁾ ABUDIUS VERUS FEC(it). Zahvaljujem se Marinu Baldiniju što mi je ustupio tekst natpisa.

⁴ Brun (i drugi autori) predlaže razrađenu tipologiju tehnologije tijesaka prema različitim načinima stvaranja sile pritiska: tijesak koji koristi torziju (izvijanje), tijesak s klinovima, tijesak s gredom, tijesak sa središnjim vijkom. Ipak, i on najviše govori o posljednjim dvama načinima tiještenja jer su najčešći i najbolje dokumentirani u arheologiji i etnografiji.

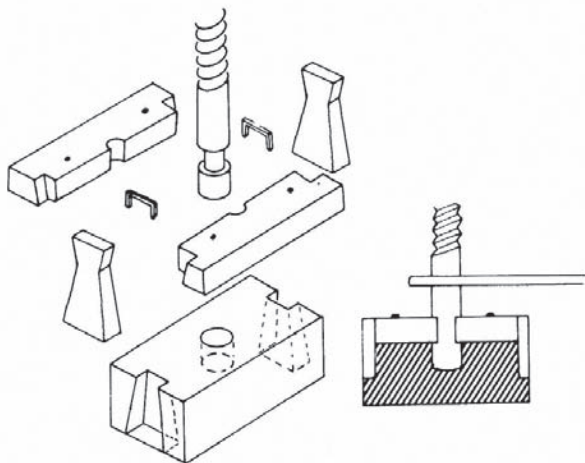
⁴ Brun (and other authors) proposed a more detailed typology of press technology based on different ways of creating pressure force: a press using torsion, a press with pegs, a press with beam, a press with central screw. Nonetheless, he also deals mostly with the last two methods of pressing, because they are the most frequent and best documented in archaeology and ethnography.

ma sačuvanim bi elementima porečki tijeski pripadali Brunovu tipu C4 kod kojega je greda usidrena između drvenih nosača usađenih u kameno postolje i pričvršćenih o stropnu konstrukciju; pritisak stvara težina protuutega pričvršćenoga na vijak okretanjem se kojega spušta kraj grede (*ibid.* 112–113). Dok je vitlo moglo biti čvrsto usidreno u pod (ali je moglo imati i protuuteg), a zbog sigurnosti često i u strop, vijak je redovito bio pričvršćen na slobodni protuuteg jer se time pojednostavljivala konstrukcija i postizala ista učinkovitost. Kameni je blok cijeloj konstrukciji davao veću elastičnost jer se okretanjem vijka najprije podizao za nekoliko centimetara, a potom je njegova težina spuštala gredu i

with screws, i.e. there are no major examples known of screws that are fastened to the floor (and ceiling), because the screw is more effective than the lever, creates greater force and is thus more difficult to effectively anchor. The counterweight had to have the form of a square or cylinder (*ibid.* 121–123); in the Poreč example, it is a square (Fig. 6). From the ethnographic standpoint, more recent examples of presses with counterbalances largely use the cylindrical form. Since the persons working it had to lower the screw by pushing a perpendicular lever in circles, the circular form was probably more appropriate – it was less of a hindrance when stepping around the screw's axis.



Slika 4. Tipologija tijesaka s horizontalnom gredom (Brun 1986: 86; Matijašić 1998: 148).
 Figure 4. Typology of presses with horizontal beam (Brun 1986: 86; Matijašić 1998: 148).



Slika 5. Shema sklapanja mehanizma protuutega i vijka (Brun 1986: 122).

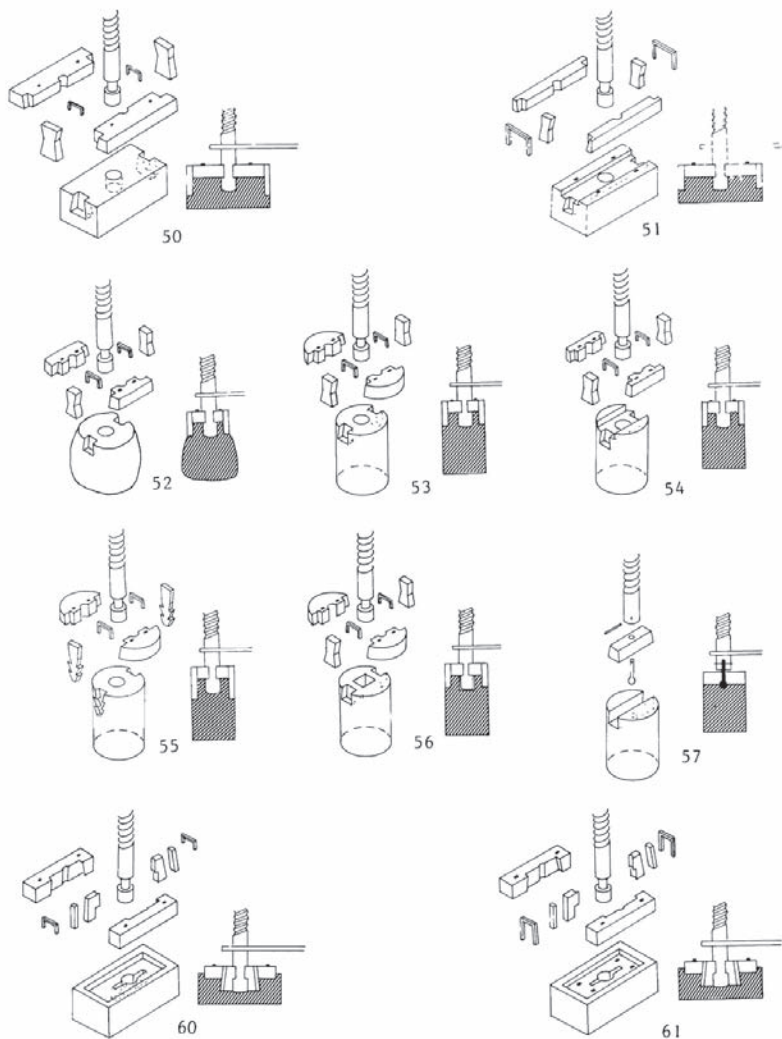
Figure 5. Outline of assembly of counterweight and screw assembly (Brun 1986: 122).

tako povećavala pritisak na masu koja se tiještila. Protuuteg je kod tijesaka s vijkom redovita pojava, odnosno nisu poznati značajniji primjeri vijka koji bi bio učvršćen u pod (i strop) jer je vijak efikasniji od vitla, stvara veću silu pa ga je teže učinkovito usidriti. Protuuteg je mogao imati oblik kvadera ili cilindra (*ibid.* 121–123); u porečkome je primjeru riječ o kvaderu (sl. 6). S etnografskoga stajališta noviji primjerci tijesaka s protuutegom mahom koriste cilindričan oblik. Kako je osoblje moralo spuštati vijak gurajući poprečnu šipku uokrug, kružni je oblik vjerojatno bio prikladniji – manje je smetao pri koračanju oko osi vijka.

Nije uvijek moguće da se samo na temelju ostataka kamenih podložaka tijesaka jednoznačno i nedvosmisleno utvrdi kojemu tehnološkom tipu pripadaju. Tako je i s porečkim primjerom. Grede koje su bočno bile usidrene u trokutastim utorima kamernoga protuutega mogle su biti usidrene u strop ili su pak mogle služiti za učvršćivanje vijka da bi se mogao okretati oko svoje osi. Sustav s protuutegom i vijkom racionalniji je od onoga s vitlom upravo zato što ga ne treba dodatno pričvršćivati za stropnu konstrukciju; stoga je upravo taj tip tijeska

Based on the stone remains of the press anchors, it is still not possible to unequivocally and unambiguously ascertain their technological type. The same holds for the Poreč example. The beams laterally anchored in the triangular slots of the counterweight could have been anchored to the ceiling or they could have served to fasten the screw to turn it on its axis. The system with counterweight and screw is more rational than that with a lever, because it does not require additional fastening to the ceiling structure; therefore, this type of press is in fact the most frequent in ethnographic examples not just in Croatia but also in other European Mediterranean countries.

The press has another, seemingly insignificant, element: in the axis between the basket and counterweight there is a small stone block with rectangular slot in the middle which functions as an additional,



Slika 6. Dio Brunove tipologije protuutega (Brun 1986: 122).

Figure 6. A part of Brun's typology of counterbalances (Brun 1986: 122).

najčešći u etnografskim primjerima ne samo kod nas nego i u svim drugim europskim sredozemnim zemljama.

Tijesku pripada još jedan, naizgled beznačajan, element: u osi između koša i protuutega nalazi se manji kameni blok s četvrtastim utorom u sredini koji funkcionira kao dodatni, pomoćni nosač grede, odnosno vodilica. Kod tijeska s vitlom koje je usidreno u strop i u pod 'vodilicu' za gredu predstavlja upravo okvir vitla, dok kod tijeska s protuutegom i vijkom toga okvira nema. Ovdje valja uzeti u obzir dvije činjenice: prvo, iznimnu dužinu grede koja iznosi oko 10 m (ili 9,65 m radne dužine od jedne krajnje točke uporišta poluge do druge), drugo, činjenicu da se možda radilo o tijesku s protuutegom koji nije bio usidren nego ovješten o gredu i vijak. Zato je ovaj mali kameni blok s četvrtastim utorom zapravo bio postolje koje je vjerojatno dodatno pridržavalo gredu u njezinu najvećem naprezanju, odnosno onemogućavalo bočno pomicanje grede izvan osi mehanizma. S obzirom na to da su dimenzije kamena male (65 × 65 cm), možda se radi o pomoćnome nosaču grede potrebnome u situacijama kad se greda podizala radi pražnjenja tijeska i novoga punjenja i kad se matica možda odvajala od vijka. Taj je nosač bliže kraju grede s mehanizmom za spuštanje (3,55 m) nego središtu površine za tiještenje (4,55 m) ili krajnjoj točki uporišta poluge (6,10 m), pa je drugo navedeno tumačenje vjerojatnije.

Mali kameni podložak sjevernoga tijeska sačuvan je na izvornome mjestu, a drugi je pronađen neposredno uz njega, to jest izmješten je. Držimo da je pomaknut vjerojatno prilikom gradnje odvodnoga kanala koji je u suvremeno doba (u 19. stoljeću?) prolazio dijagonalno preko prostorije s tijescima.

Još jedno pitanje koje se obično postavlja u svezi s antičkim i kasnoantičkim tijescima jest što se u njima stiskalo: masline ili grožđe. Proizvodnja ulja u pravilu se ne može razlikovati od proizvodnje vina samo na temelju arheoloških nalaza tijesaka ili njihovih dijelova, osim kad među njima postoje i organski nalazi (najčešće karbonizirani ostaci plodova, to jest koštica). Tehnologija tiještenja razlikovala se po samo jednoj pojedinosti koju je ponekad moguće arheološki utvrditi: masline su se prije tiještenja mljele u mlinu, a grožđe nije. Ako se u neposrednoj blizini tijeska (u istoj ili u susjednoj prostoriji) pronađu ostaci mlina (*trapetum*) ili mlinskoga kamena (*mola olearia*), može se nepobitno tvrditi da je tijesak služio za proizvodnju maslinova ulja; ako mlina nema, moguće je da se u takvu postrojenju tiještilo grožđe ili da je mlin uništen, odnesen, odnosno da nije pronađen. Kako je u arheološkim istraživanjima u gradovima rijetko moguće potpuno istražiti veće područje, nisu česte situacije u

auxiliary beam support, i.e. a guide. In a press with a lever that is anchored in the ceiling and on the floor, the 'guide' for the beam is actually the lever frame, while in presses with counterweight and screw, there is no such frame. Two facts should be taken into consideration here: first, the exceptional length of the beam, which is approximately 10 m (or 9.65 m operative length from one extreme point of leverage support to the other); second, the fact that it was perhaps a press with counterweight that was not anchored but rather hung from the beam and screw. This is why this small stone block with rectangular slot was actually a pedestal which probably held the beam at its greatest exertion, making it possible to move the beam laterally outside the of mechanism's axis. Since the dimensions of the stone are small (65 × 65 cm), perhaps it was an auxiliary beam support, needed in situations when the beam was raised to empty and then refill the press and when the nut may have been separated from the screw. This support is closer to the end of the beam with the lowering mechanism (3.55 m) than the central pressing surface (4.55 m) or the extreme leverage base point (6.1 m), so the latter explanation is more likely.

The small stone anchor of the northern press was preserved at its original location, while the other was found right next to it, meaning that it was moved. This author believes it was probably moved during construction of a drainage canal which in the modern era (nineteenth century?) passed diagonally through the press room.

Another question that normally arises with reference to presses dated to Antiquity and Late Antiquity is what was pressed in them: olives or grapes. Oil production cannot generally be distinguished from wine production solely on the basis of archaeological discovery of presses or parts thereof, unless they are also accompanied by organic materials (most often carbonised remains of the fruit, meaning the pits). Press technology differed in only a single detail which can sometimes be archeologically ascertained: olives were ground in a mill prior to pressing, while grapes were not. If, in the immediate vicinity of a press (in the same or adjacent room), the remains of a revolving mill (*trapetum*) or oil millstone (*mola olearia*) are found, one can assert without doubt that the press was used to produce olive oil; if there is no mill, it is possible that the mechanism was used to crush grapes or the mill was destroyed, removed or not found. Since it is rarely possible to explore a larger area during archaeological excavations conducted in cities, it is not often that we can be certain if a press without a mill was actually a grape press. There are a series of other solutions that are just as uncertain: crushing

kojima bez mlina možemo biti sigurni da se radi o tijesku za grožđe. Postoji i drugi niz rješenja koji je isto toliko nesiguran: za tiještenje maslina trebali su veliki moćni tijesci s većim potiskom, dok se grožđe moglo tiještiti i u manjim strojevima. Iako mlin nije pronađen, može se zaključiti da su porečki tijesci najvjerojatnije služili tiještenju maslina, ali to se ne može posve sigurno ustvrditi.

Nakon interpretacije nalaza valja iznijeti nekoliko napomena o karakteru nalaza, njegovu značenju i mjestu u širem istarskom kontekstu. Najvažnije je istaknuti da je riječ o jednome od rijetkih nalaza tijesaka u Istri koji pripadaju antičkomu razdoblju u širemu smislu, a pronađeni su u gradovima. Dosad je bio poznat samo primjer iz Nezakcija⁵ gdje je u jednoj prostoriji klasičnih antičkih termi u kasnoj antici (kada terme zasigurno više nisu bile u uporabi) bio ugrađen tijesak (Puschi 1905: 278–279; Matijašić 1998: 214–215). Nastao je svakako poslije 3. stoljeća, vjerojatno krajem 4. ili početkom 5. stoljeća, jer se radi o interpolaciji u termalnu građevinu, što je povezano s promjenom funkcije cijeloga sklopa. Takve izmjene u uporabi prostorija znakovite su za kasno razdoblje, razdoblje krize, kada postupno iščezavaju neke značajke gradskoga života i uljudbe.

Nezakcijski je 'termalni' tijesak bio istražen na početku 20. stoljeća, pa su današnji ostaci *in situ* jedino što nam preostaje za njegovu prosudbu. Pokušaj rekonstrukcije izaziva neke dvojbe jer kamenih podložaka nosača grede ima, duž jedne te iste osi, mnogo više nego bi trebalo za jedan tijesak. Stoga je i Puschi (1905: 278) već pri objavi nalazišta bio pretpostavio da pripadaju dvama tijescima, čak navodi da je jedan mogao služiti za tiještenje maslina, a drugi za tiještenje grožđa, iako je pronađen samo jedan podložak za tiještenje (drugi je, naravno, u međuvremenu mogao nestati). Po svemu sudeći, čini se da je mehanizam za spuštanje grede bio sastavljen od vitla koje je bilo usidreno u dva kamena ortostata, što u tipologiji istarskih klasičnih rimskih tijesaka nije poznato prva dva-tri stoljeća poslije Krista. Važno je međutim da se tijesak na to mjesto unutar grada mogao postaviti tek u kasnoj antici, možda u razdoblju kad su već bile izgrađene kršćanske crkve u neposrednoj blizini. Tada terme više nisu bile potrebne jer je kultura javnoga kupališta bila tijesno vezana uz poganstvo, pa je možda tiještenje ulja i vina bilo povezano s crkvenim potrebama.

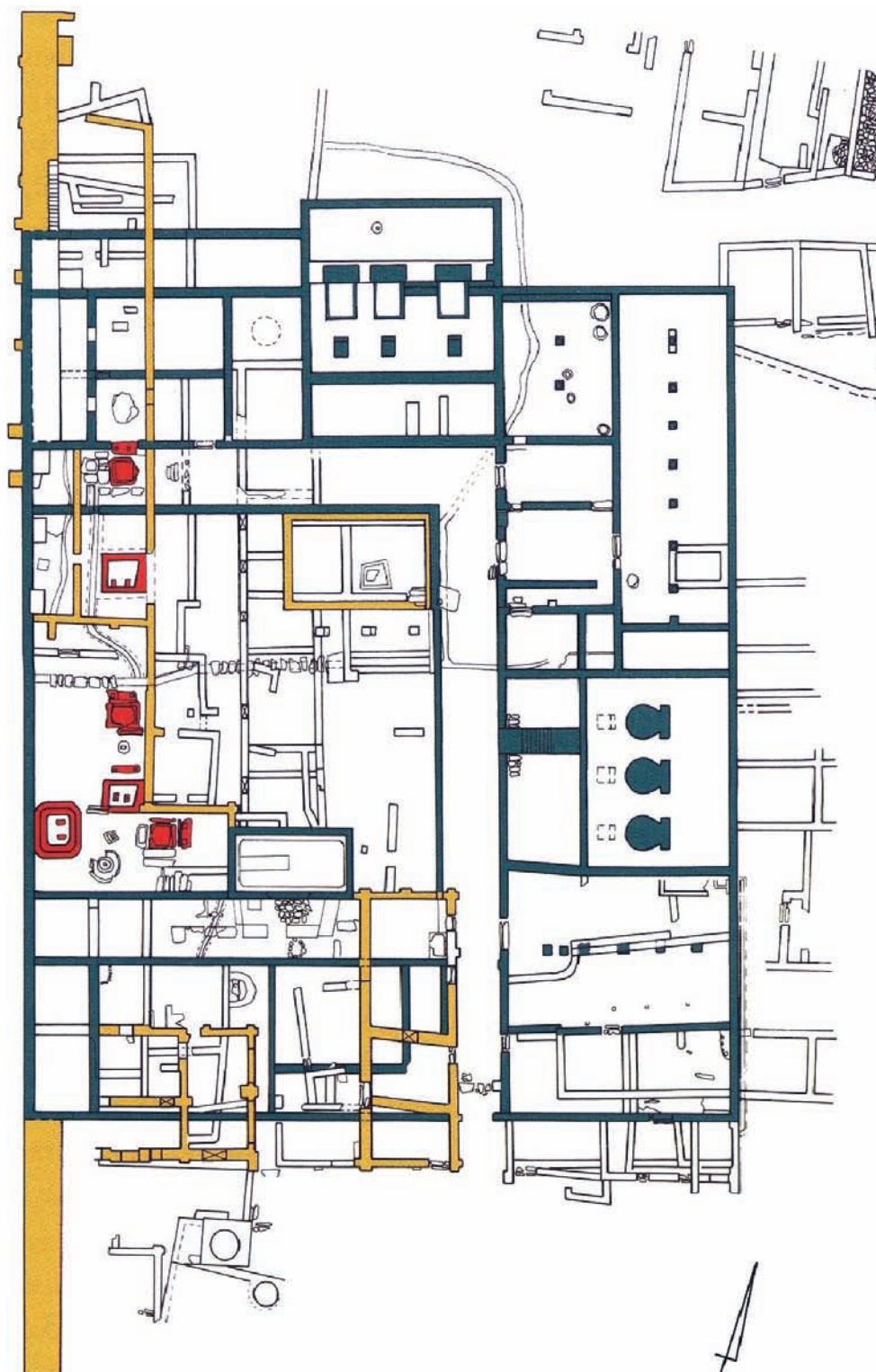
olives required large, powerful presses with higher pressure, while grapes could be crushed in smaller machines. Although no mill was found, one can nonetheless conclude that the Poreč presses were used to crush olives, but this cannot be stated with absolute certainty.

This interpretation of the items is now followed by several comments on their character, their meaning and place in the wider Istrian context. The most important point to make here is that this is one of the few discoveries of presses in Istria that can be dated to Antiquity in the broader sense, and found in cities as well. Previously, the only known example was from Nesactium,⁵ where, in a room that was a public bath in Classical Antiquity, a press was installed during Late Antiquity (when the baths were certainly no longer in use) (Puschi 1905: 278–279; Matijašić 1998: 214–215). It certainly appeared after the third century, probably at the end of the fourth or early fifth centuries, because it involves an interpolation in a thermal building, which is associated with a change in function of the entire complex. Such changes in use are significant to the late period, a period of crisis, when some features of urban life and culture were gradually fading.

The Nesactium 'thermal' press was found and explored at the beginning of the twentieth century, so today's *in situ* remains are all that is left for its assessment. An attempt at reconstruction arouses some doubts, because there are stone base supports for the beam all along that same axis, which is much more than necessary for a single press. Thus, upon publication of the site, even Puschi assumed that they belonged to two presses, and he even specified that one may have served to crush olives, and the other grapes (1905: 278), although only one crushing anchor was found (the other, naturally, may have disappeared in the meantime). By all accounts, it would appear that the mechanism to lower the beam was composed of a lever that was anchored in two stone orthostats, which is unknown in the typology of classical Roman presses of the first two or three centuries AD. It is, however, important to note that a press could only have been installed at that location in a city during Late Antiquity, probably during a period when Christian churches had already been constructed in the immediate vicinity. At that time, public baths were no longer necessary because the culture of public bathing was very closely associated with paganism, so perhaps pressing for oil and wine were associated with church needs.

⁵ Dva novija nalaza tijesaka u gradskome kontekstu (Pula 1996. i Umag 2005.) razmatraju se, zajedno s porečkim primjerom, u Matijašić 2007.

⁵ Two more recent discoveries of presses in the urban context (Pula 1996 and Umag 2005) are examined, together with the Poreč example, in Matijašić 2007.



Slika 7. Kasnoantički tijesci u Castrumu na Brijunima (Matijašić 1998: 174).

Figure 7. Late Antique presses in Castrum on the Brijuni islands (Matijašić 1998: 174).

Što se tiče sličnih kasnoantičkih tijesaka unutar naselja s gradskom fizionomijom, najljepši su primjeri u tzv. 'Bizantskom castrumu' na Brijunima, uz more na zapadnoj obali Velikoga Brijuna (*Val Madona*). To je naselje (Mlakar 1975–76), obično poznato pod navedenim imenom, najprije imalo oblik kla-

As to similar presses of Late Antiquity inside settlements with an urban physiognomy, the nicest examples are in the so-called 'Byzantine castrum' on the Brijuni islands, along the seashore on the western coast of the island of Veliki Brijun (*Val Madona*). This settlement (Mlakar 1975–76), nor-

sične rimske rustične vile ranocarskoga razdoblja s uobičajenim tlorisom na kojemu se prepoznaju prostorije oko triju dvorišnih strana (Matijašić 1998: 173–176), a dvije prostorije imaju po tri tjeska (sl. 7). Najranije, prvobitno naselje na obali mora sagrađeno je na prijelazu iz 1. st. pr. Kr. u 1. st. po. Kr.⁶ i služilo je prvenstveno kao središte poljoprivrednoga imanja kao i drugi slični lokaliteti na Brijunima (Kolci), ali i na kopnu (Barbariga, Šaraja, Radeki, Šijana, Banjole itd. u okolici Pule; Matijašić 1982: 53–64).⁷ Na Brijunima se poslije 3. stoljeća tradicionalna gospodarska građevina (s dvjema prostorijama s po tri tjeska i dvama velikim spremištima za tekuće proizvode poput vina i ulja) počela postupno preuređivati u utvrđeno civilno naselje. Središnje dvorište i okolni prostori ispunjeni su građevinama koje su nastale bez kakva raspoznatljivoga sustavnog plana (Marušić 1973–75). Kako su političke, vojničke i sigurnosne prilike u tome dijelu rimske države postajale sve nesigurnije, naselje je počelo dobivati obrise svojevrsnoga zbjega, sigurnoga utočišta u nemirnim vremenima. U to doba, ali ne prije početka 4. stoljeća, na prostoru bivšega dvorišta, koje je tada bilo prekriveno tlorisno improviziranim građevinama, u pojedinim su prostorijama izgrađena i tri tjeska (Mlakar 1976–77: prilog, zona B, sl. 7). Na tlorisu se naziru i tragovi četvrte preše od koje se na crtežu vidi samo *lapis pedicinus*.

Sva tri kasnoantička tjeska s Brijuna (*Val Madona*) istoga su tipa i vjerojatno su gotovo istovremeni. Nalaze se u zapadnome dijelu ranijega dvorišta u blizini ogradnoga zida naselja uz more. Dva veća tjeska imaju raspon grede od desetak metara, a kod trećega je tjeska raspon grede oko osam metara. Imaju još jednu važnu zajedničku značajku: kod svih triju tjesaka nosač mehanizma za spuštanje grede bio je postavljen u obzidani prostor ispod razine tjeska, čime se nastojala povećati učinkovitost tiještenja, to jest sila pritiska na *forum*. U obzidani prostor postavljale su se dvije okomite kamene grede nosača vitla tako da se greda mogla spuštati gotovo do razine poda, odnosno do razine površine za tiještenje. Ta je značajka poznata i na antičkim/kasnoantičkim tjescima u Dalmaciji, na primjer u Mulinama na Ugljanu (Suić 1960; 1976: 244; 1981: 283; 2003: 367; Glicksman 2005: 210–211), u Sv. Petru kod Bijaća (Jelić 1896–97), u Kupinoviku na Hvaru (Šarić 1978; Zaninović 1982) i drugdje (Matijašić 1993: 255–258). Na primjeru s Brijuna vidi

mally known under that name, first had the form of a classical Roman *villa rustica* of the early Empire period with the customary layout in which there were three wings of rooms around a central yard (Matijašić 1998: 173–176), with two rooms that each had three presses in them (Fig. 7). The earliest, initial settlement on the seashore was constructed at the transition from the first century BC to the first century AD,⁶ and it primarily served as the hub of an agricultural estate, like many similar site on the Brijuni islands (Kolci), and on the mainland as well (Barbariga, Šaraja, Radeki, Šijana, Banjole etc. near Pula; Matijašić 1982: 53–64).⁷ After the third century, the traditional working building (with two rooms containing three presses each and two large storage facilities for liquid products like wine and oil) began to be gradually transformed into a fortified civic settlement. The central yard and the surrounding areas are filled with buildings that emerged without any recognisable systematic plan (Marušić 1973–75). Since political, military and general security circumstances in this part of the Roman state were becoming increasingly precarious, the settlement began to obtain the contours of a refuge, a safe haven in uneasy times. During this period, but not prior to the beginning of the fourth century, three presses were installed in individual rooms in the area of the former yard, which was then covered with improvised buildings (Mlakar 1976–77: attachment, zone B, fig. 7). The traces of a fourth press can be discerned on the layout, of which only the *lapis pedicinus* can be seen in the drawing.

All three Late Antique presses from the Brijuni islands (*Val Madona*) are of the same type and are almost coterminous. They are in the western end of the former yard near the wall that separated the settlement from the sea. The two larger presses have a beam span of approximately ten meters, while the third has a span of roughly eight meters. They have one more important common feature: in all three presses the support for the lowering mechanism was installed in a walled space below the level of the press, which constituted an attempt to increase pressing efficiency, i.e. the force of pressure on the *forum*. Two vertical stone lever supports were placed in this space, so that the beam could be lowered almost to floor level, or to the level of the crushing

⁶ Zasad ne možemo ozbiljno razmatrati raniju dataciju prvotnoga oblika ove vile iako se više puta u usmenim izlaganjima i pisanim tekstovima datirala čak u prvu polovicu 1. st. pr. Kr., ali bez jasne argumentacije.

⁷ U kasnoantičku ruralnu tradiciju valja ubrojiti i kameni podložak greda tjeska (*arbores*) i podložak za tiještenje (*forum*) iskorišten s objiju strana iz Strunjana kraj Pirana (Boltin-Tome 1990: 249–255).

⁶ For now the earlier dating of the initial form of this villa cannot seriously be considered, even though it has been even been dated to the first half of the first century BC several times in oral discussions and written texts, but without clear arguments.

⁷ The stone base for the press pier (*arbores*) and the pressing base (*forum*) used on both sides, which are from Strunjan, near Piran (Boltin-Tome 1990: 249–255), should also be counted in the rural tradition of Late Antiquity.

se pretvorba klasičnoga izvangradskoga naselja tipa *villa rustica* u kasnoantičko utvrđeno naselje u koje su se stanovnici povlačili iz nezaštićenih vila. Poljoprivredne funkcije koje su dotad bile karakteristične za rustične vile s tijescima i skladištima za ulje i vino poslije 4. stoljeća se premještaju u grad.

U to doba moraju se datirati i porečki tijesci. Valja zamisliti političku i gospodarsku situaciju u kojoj su stanovnici postupno napuštali vile oko grada, a njihove su se funkcije preseljavale u grad gdje ih dotad nije bilo. Rustifikacija gradskoga života opća je pojava kasne antike poslije 4. stoljeća (Matijašić 1988: 99–104). To je bio početak procesa koji su antičku uljudbu prenijeli u srednji vijek, ali ne bez snažnih trzavica i lomova. Neka se izvangradska imanja s vremenom razvijaju u sela, a ponegdje su se stanovnici okupljali u nikad posve napuštene prapovijesne gradine od kojih su nastali istarski srednjovjekovni gradići na brežuljcima. To su na području parentinskoga agera na primjer Vrsar, Baderna, Sutlovreč, Kaštelir i Višnjan, Kringa, Tinjan i Motovun (Matijašić 1983–84: 231–243). Gradovi na obali imali su bolje preduvjete za daljnji razvitak jer su preko mora mogli komunicirati sa svijetom izvan Istre, a to je stanovnicima u unutrašnjosti bilo vrlo otežano, čak i nemoguće. Međutim zapadna je Istra, ponajprije njezin obalni pojas, još početkom 4. stoljeća bila poznata po proizvodnji ulja, vina i žitarica, o čemu svjedoči senator Kasiodor, prefekt pretporija na dvoru ostrogotskoga kralja Teodorika u Raveni. On hvali pokrajinu kao plodnu i sjajnu, poznatu čak po ostacima starih palača i luksuznih ljetnikovaca (Matijašić 1988a). Dakle na temelju takvih podataka znamo da se istarska poljoprivreda nije u kasnoj antici naglo slomila, već su krajevi koji su morskim putem mogli održavati veze s drugim obalama Sredozemlja i dalje cvali, iako slabije nego u ranijim stoljećima. Tek su arapski pljačkaški pohodi po Sredozemlju u ranome srednjem vijeku značili konačan kraj antičke uljudbe i gospodarstva, a i mnogo čega drugoga.

Uzme li se u obzir sažeto izložena situacija, porečke tijeske treba i zbog veličine i kvalitete njihove izradbe datirati u 4. ili 5. stoljeće, ali točno se vrijeme njihova nastanka ne može odrediti. Poslije 4. stoljeća vjerojatno više nisu mogli nastajati tako veliki i tehnološki savršeni tijesci koji se izravno naslanjaju na klasičnu tradiciju, iako ni to ne treba sasvim odbaciti. Posebno je znakovita činjenica da se uljara (ako se radi o ulju) sastojala od dvaju velikih tijesaka, što znači da se proizvodila znatna količina ulja kojom se opskrbljivao velik broj ljudi. Ne treba, naravno, smetnuti s uma da je Poreč u 6. stoljeću ili barem tijekom prve polovice 6. stoljeća još bio uvijek vrlo dinamičan grad koji si je mogao priuštiti izgradnju takve sakralne građevine kakva je bila bazilika koju je naručio biskup Eufrazije.

surface. This feature is also known in the Antique/Late Antique presses of Dalmatia, such as those in Moline on the island of Ugljan (Suić 1960; 1976: 244; 1981: 283; 2003: 367; Glicksman 2005: 210–211), in Sveti Petar near Bijaći (Jelić 1896–97), in Kupinovik on the island of Hvar (Šarić 1978; Zaninović 1982) and elsewhere (Matijašić 1993: 255–258). The example from Brijuni exhibits the transformation of a classical extra-urban settlement of *villa rustica* type into a Late Antique fortified settlement into which the residents withdrew from the unprotected villas. Agricultural functions until then characteristic of the rustic villas, with presses and storage rooms for oil and wine, moved to cities after the fourth century.

The Poreč presses must also be dated to this period. It would be best to imagine a political and economic climate in which the residents gradually left the villas around cities, while their functions migrated to the cities where they did not exist previously. The rustification of urban life is a general phenomenon of Late Antiquity after the fourth century (Matijašić 1988: 99–104). This was the beginning of processes whereby the culture of Antiquity was carried over into the Middle Ages, but not without great friction and ruptures. Some extra-urban estates grew into villages over time, while at places the residents gathered into never entirely abandoned prehistoric hillforts, whence the small Istrian medieval towns on hilltops originated. In the territory of the Parentium ager, examples of these are Vrsar, Baderna, Sutlovreč, Kaštelir and Višnjan, Kringa, Tinjan and Motovun (Matijašić 1983–84: 231–243). Cities on the coast had better conditions for further growth because they could communicate with the world outside of Istria by sea, whereas the same was very difficult, if not impossible, for inland residents. However, western Istria – primarily its coastal belt – was still known for its oil, wine and grain production at the beginning of the fourth century, as seen in the testimony of Senator Cassiodorus, praetorian prefect in the court of King Theodoric in Ravenna. He praised the province as fertile and resplendent, known even by the remains of old palaces and luxurious summer villas (Matijašić 1988a). So, based on this data we know that Istrian agriculture did not suddenly collapse in Late Antiquity, but these regions retained their ties with the other shores of the Mediterranean by sea and continued to develop, although not as intensely as in the preceding centuries. Only the Arabian pillaging raids in the Mediterranean in the Early Middle Ages signified a final end to Classical culture and economy, and much else.

Taking into consideration the situation so summarised, the size and quality of their rendering dic-

tates that the Poreč presses should be dated to the fourth or fifth centuries, although the precise date of their construction cannot be ascertained. After the fourth century, such large and technologically sound presses directly based on the Classical tradition could no longer be made, although this possibly should not be entirely excluded. A particularly significant fact is that the oil production facility (if it was a matter of oil) consisted of two large presses, which means that a considerable quantity of oil was produced which supplied a very large number of people. One should also not lose sight of the fact that Poreč in the sixth century, at least during the first half of that century, was still a very dynamic city which could afford construction of sacral buildings such as the basilica commissioned by Bishop Euphasius.

KRATICE / ABBREVIATIONS

ILS	<i>Inscriptiones Latinae Selectae</i> , Berlin.
Inscr. It.	<i>Inscriptiones Italiae</i> , Roma.

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