

NEKOLIKO NEOBJAVLJENIH INTAGLIJA S
GARDUNA (TILURIUM)*

SEVERAL UNPUBLISHED ENGRAVED GEMS
FROM GARDUN (TILURIUM)*

Iva Kaić
Odsjek za arheologiju, Filozofski fakultet, Sveučilište u Zagrebu
Ivana Lučića 3
HR-10000 Zagreb
ikaic@ffzg.hr

UDK 904(497.5 Dalmacija)

Apstrakt: U radu se obrađuje šest dosada neobjavljenih rimskodobnih intaglija koji su nađeni na Gardunu kraj Trilja, na mjestu nekadašnjeg rimskog legijskog logora Tilurija (*Tilurium*). Četiri intaglija dio su privatne zbirke Stipe i Martina Roguljića, stanovnika sela Gardun. Preostala dva intaglija nađena su tijekom sustavnih arheoloških iskopavanja lokaliteta Gardun 2011. godine. Ovdje obrađeni primjerci pripadaju rimskodobnoj gliptičkoj produkciji od 1. do 3. st. po. Kr.

Ključne riječi: intagliji, gliptika, Gardun, *Tilurium*, rimska provincija Dalmacija, rimsko carsko razdoblje

Abstract: Six unpublished engraved gems, found in Gardun near Trilj, at the site of the Roman legionary fortress of *Tilurium*, were analyzed in this paper. Four engraved gems are a part of the private collection owned by Stipe and Martin Roguljić, who are inhabitants of the village of Gardun. In 2011, during the archaeological excavations in Gardun, the two remaining engraved gems were found. Analyzed material belongs to the Roman glyptic production of the Imperial period, from 1st to 3rd century AD.

Key words: engraved gems, glyptics, Gardun, *Tilurium*, Roman province of Dalmatia, Roman Imperial period

* Ovaj rad je sufinancirala Hrvatska zaklada za znanost projektom broj 6505

* This work has been fully supported in part by the Croatian Science Foundation under the project number 6505.

Na lokalitetu Gardunu kraj Trilja u Dalmaciji, smještenom 30-ak kilometara sjeverno od Salone, u antici se nalazio rimski legijski logor Tilurij (*Tilurium*).¹ U njemu je najprije bila stacionirana *legio IX Hispana*, a zatim *legio VII*, koja je tamo vjerojatno došla tijekom ustanka Batonā, a najkasnije 8. g. po. Kr., premda postoje argumenti da je mogla doći i ranije, oko 15. g. pr. Kr.² Legija je napustila logor i samu provinciju Dalmaciju negdje sredinom 1. st. po. Kr., a od tada su u logoru do sredine 3. st. po. Kr. boravile manje postrojbe *cohors II Cyrrhestarum*, *ala Claudia nova*, *ala (Tungrorum) Frontoniana*, *cohors Aquitanorum*, *cohors I Belgarum*, *cohors III Alpinorum* i *cohors VIII Voluntariorum civium Romanorum*.³ Iz razdoblja kasne antike ostalo nam je sačuvano najmanje podataka o životu lokaliteta. U justinijanskome razdoblju Tilurij je vrlo vjerojatno zadržao svoju obrambenu ulogu preuzevši funkciju utvrde ili refugija.⁴

Sam se lokalitet sustavno arheološki istražuje od 1997. godine sve do danas.⁵ Međutim, i prije arheoloških iskopavanja lokalitet Gardun bio je poznat po velikom broju različitih rimskodobnih pokretnih nalaza, među kojima se javljaju i geme.⁶

Dugotrajan boravak rimske vojske na tome lokalitetu ogleđa se stoga i na gemama koje se danas čuvaju u muzejskim kolekcijama u Hrvatskoj. Najveći je broj, njih tristotinjak, pohranjen u Arheološkom muzeju u Splitu.⁷ U

1 O legijskom logoru Tiluriju v. Zaninović 1996, 280-291; Sanader, Tončinić 2010, 33-53.

2 Zaninović 1996, 284; Sanader 2009, 43. O kamenim spomenicima s natpisom VII legije v. Tončinić 2011.

3 Zaninović 1996, 289; Tončinić 2004, 148; Sanader 2008, 89.

4 Zaninović 1996a, 270.

5 Za arheološka iskopavanja Tilurija v. Sanader 1998, 243-255; Sanader 2003; Sanader, Tončinić, Ožanić 2004, 221-243; Sanader et al., *Gardun (Tilurium)*, Hrvatski arheološki godišnjak 1 (2004) – 6 (2010). Uskoro treba izaći iz tiska i najnovija publikacija vezana uz arheološka istraživanja Tilurija u periodu od 2002. do 2006. godine (M. Sanader, D. Tončinić, Z. Buljević, S. Ivčević, T. Šeparović, *Tilurium III. Istraživanja 2002.-2006. godine*).

6 Još je don Frane Bulić naveo Vojnić-Gardun kao lokalitet u Dalmaciji s kojeg potječe mnogo gema (Bulić 1986, 30).

7 Geme s Garduna u Arheološkome muzeju Split publicirao je don Frane Bulić u razdoblju od 1879. do 1926. u časopisu *Bullettino di archeologia e storia Dalmata*, kada su one objavljene u kontinuiranom popisu onako kako su pristizale u muzej, ali bez pripadajućih fotografija ili crteža. Časopis *Bullettino di archeologia e storia Dalmata* počinje izlaziti 1878. godine, a 1920. godine preimenovan je u *Vjesnik za arheologiju i historiju dalmatinsku*. Jedan je tilurijski intaglio s prikazom Kapaneja, trojanskoga junaka, objavila Bruna Nardelli 2010. godine (v. Nardelli 2010). Ista je autorica obradila čitavu kolekciju gardunskih gema iz Arheološkog muzeja u Splitu, čija je monografska publikacija u pripremi za tisak (v. Nardelli 2012, 134, n. 7). Iz te je kolekcije B. Nardelli izdvojila trinaest kasnoantičkih gema s Tilurija, od kojih su osobito značajne četiri kameje datirane u 5. i 6. stoljeće, u razdoblje o kojemu ima jako malo podataka i nalaza sa samoga lokaliteta (v. Nardelli 2012).

At the site of Gardun near Trilj in Dalmatia, situated some 30 kilometres north of Salona, in antiquity a Roman legionary fortress of *Tilurium* was built.¹ The *legio IX Hispana* was the first legion stationed in that fortress. It was followed by *legio VII*, which probably came there during the Great Illyrian Revolt, or by 8 AD at the latest, although there are some arguments of their earlier arrival around 15 BC.² *Legio VII* left the fortress and the Roman province of Dalmatia as well around the mid 1st century AD, while smaller military units stayed there (*cohors II Cyrrhestarum*, *ala Claudia nova*, *ala (Tungrorum) Frontoniana*, *cohors Aquitanorum*, *cohors I Belgarum*, *cohors III Alpinorum* and *cohors VIII Voluntariorum civium Romanorum*).³ There is little data about life at the site from the late antiquity. In the Iustinian period *Tilurium* probably retained its defence role functioning as a *refugium*.⁴

The site of Gardun has been systematically excavated since 1997 till today.⁵ However, a long time before the excavations, the site of Gardun was well-known for a great number of various Roman finds, including engraved gems.⁶

Roman army's long stay at this site is reflected on engraved gems as well. These gems are kept in different museum collections in Croatia. The majority (some 300 pieces) are now in the Archaeological museum of Split.⁷ This is the biggest collection of Gardun gems, mainly

1 For the Roman legionary fortress of *Tilurium* see Zaninović 1996, 280-291; Sanader, Tončinić 2010, 33-53.

2 Zaninović 1996, 284; Sanader 2009, 43. For stone monuments of the *legio VII* see Tončinić 2011.

3 Zaninović 1996, 289; Tončinić 2004, 148; Sanader 2008, 89.

4 Zaninović 1996a, 270.

5 For archaeological excavations of *Tilurium* see Sanader 1998, 243-255; Sanader 2003; Sanader, Tončinić, Ožanić 2004, 221-243; Sanader et al., *Gardun (Tilurium)*, Hrvatski arheološki godišnjak 1 (2004) - 6 (2010). The monograph on archaeological excavations of *Tilurium* during the seasons of 2002 to 2006 is currently in print (M. Sanader, D. Tončinić, Z. Buljević, S. Ivčević, T. Šeparović, *Tilurium III. Istraživanja 2002.-2006. godine*).

6 It was Monsignor Frane Bulić who first stated that Vojnić-Gardun was a site in Dalmatia rich in gems finds (Bulić 1986, 30).

7 Gems from Gardun kept in the Archaeological museum in Split, were first published by Monsignor Frane Bulić in the journal *Bullettino di archeologia e storia Dalmata* (1879-1926), where they were listed in the same order as they were acquired by the museum, but without the photographs or drawings. The journal *Bullettino di archeologia e storia Dalmata* began publication in 1878, while in 1920 it was renamed into *Vjesnik za arheologiju i historiju dalmatinsku*. One intaglio from *Tilurium* depicting Capaneus, a Trojan hero, was published by Bruna Nardelli in 2010 (see Nardelli 2010). The same author analyzed the entire collection of gems from Gardun kept in the Archaeological museum Split, and prepared a monograph based on it, which is currently in press (see Nardelli 2012, 134, n. 7). From that collection B. Nardelli has singled out 13 late antique gems, among which are particularly significant four cameos dated in 5th and 6th century, the period of which very little data, as well as finds from the site, is preserved (see Nardelli 2012).

njemu se, prvenstveno zahvaljujući kontinuiranom interesu tadašnjeg ravnatelja don Frane Bulića za gliptičku građu, čuva najveća do danas poznata zbirka gema s Garduna.⁸

U gliptičkoj zbirci Arheološkog muzeja u Zagrebu s Garduna potječe 5 gema, kojima treba pridodati još 5 gema kojima je kao mjesto nalaza naveden Trilj.⁹ Četiri gardunske gema čuvaju se i u kolekciji Muzeja Cetinske krajine.¹⁰

Osim u Hrvatskoj, gema s Garduna čuvaju se i u nekim inozemnim gliptičkim kolekcijama. Tako iz zbirke dalmatinskih gema koje je sakupio A. Evans, njih sedam potječe s Tilurija.¹¹ Jedan se intaglio s Garduna čuva i u Kunsthistorisches Museum-u u Beču.¹²

Dio arheološkog materijala koji potječe s Garduna nalazi se i u privatnim kolekcijama u Hrvatskoj. Jedan dio tih nalaza (keramika, predmeti od bronce, stakla i kosti) do sada je publiciran, međutim gema nisu objavljene.¹³

U privatnoj zbirci vlasnika Stipe i Martina Roguljića čuvaju se četiri rimskodobna intaglija, koji su slučajno nađeni prilikom radova u vrtu oko njihove kuće u selu Gardun.¹⁴ Sva su četiri intaglija izrađena od dragoga kamena, a na njima su prisutni motivi i stilsko-tehnički elementi izrade karakteristični za rimsku gliptiku carskoga razdoblja. Intagliji su obrađeni prema ikonografskome repertoaru prikazanome na njima.

Na heliotropu¹⁵ (sl. 1) nalazimo prikaz Sola uo-

thanks to the continuous interest for the glyptic material of then-Museum director Monsignor Frane Bulić.⁸

In the glyptic collection of the Archaeological museum in Zagreb 5 gems originate from Gardun, to which another 5 gems from Trilj should be added.⁹ Apart from these, 4 gems from Gardun are kept in the collection of the Cetina Territory Museum.¹⁰

Apart from Croatia, gems from Gardun can be found in several foreign glyptic collections. Among the gems from Dalmatia, which were collected by Sir Arthur Evans, seven gems originate from *Tilurium*.¹¹ One engraved gem from Gardun is a part of the glyptic collection in Kunsthistorisches Museum in Vienna.¹²

Some archaeological material from Gardun can also be found in private collections in Croatia. Certain pieces of these finds (ceramics, bronze, glass and bone artefacts) have been published; however engraved gems have not been published yet.¹³

In private collection owned by Stipe and Martin Roguljić there are four engraved gems which they found during gardening around their house in the village of Gardun.¹⁴ All four engraved gems are made of precious stones, showing the motives, and stylistic and technical elements characteristic of the glyptic of the Roman Imperial period. All the engraved gems presented in this paper have been catalogued according to the iconographic repertoire found on them.

8 Gliptička zbirka Arheološkog muzeja u Splitu broji više od 2600 gema, što ju čini najbogatijom muzejskom gliptičkom zbirkom u Hrvatskoj (v. Nardelli 2012, 130). O odnosu don Frane Bulića prema gliptičkom materijalu usp. Nardelli 2002, 205, n. 10.

9 Pet je gema, nađenih na Gardunu ili u Trilju, objavio Franjo Maixner 1881. godine (Maixner I, 78, br. 12; 79, br. 19; 80, br. 21; Maixner II, 111, br. 51; 117, br. 89). Autorica ovog članka 2013. godine obradila je u doktorskoj disertaciji kolekciju antičkih gema iz Arheološkog muzeja u Zagrebu, u sklopu koje se čuva, uz onih pet gema koje je objavio F. Maixner, još pet neobjavljenih gema s Garduna (Kaić 2013, 172, br. 66; 183, br. 94; 187, br. 103; 198, br. 130; 220-221, br. 184; 240, br. 235; 245-246, br. 249; 260, br. 290; 271-272; br. 318; 303, br. 399).

10 Kaić 2010.

11 Hoey Middleton 1991, br. 68, 121, 153, 202, 203, 209, 217. Među njima se nalazi i jedan slojeviti ahat (ibid., 116-117, br. 209) s motivom bika, koji je datiran u posljednju trećinu 1. st. pr. Kr., a kojeg S. Hoey Middleton dovodi u vezu s bikom kao amblemom VII legije.

12 Lokalitet je naveden kao Gordun (AGWien I, 152, br. 491, t. 81).

13 Riječ je o arheološkim predmetima koje su sabirali stanovnici sela Gardun, koji bi u svojim svakodnevnim aktivnostima, primjerice prilikom oranja, često nailazili na arheološke nalaze. Tri takve privatne zbirke vlasnika Stipe Roguljića, Nenada Tadinca i Stipe Tadinca objavljene su 1998. godine (v. Bekić 1998).

14 Zahvaljujem Stipi i Martinu Roguljiću što su mi omogućili da obradim rimskodobne intaglije iz njihove privatne zbirke. Kuća Stipe i Martina Roguljića nalazi se na položaju Sonde A na kojoj su vršena arheološka iskopavanja od 1998. do 2006. godine (v. Sanader 1998, 248 i Sanader, Tončinić, Demicheli, Miloglav 2008).

15 Oblik 8; 7,88 x 10,7 x 2,83 mm. Oblik svih intaglija u radu određen je

8 Glyptic collection of the Archaeological museum in Split contains more than 2600 gems, thus being the richest museum glyptic collection in entire Croatia (see Nardelli 2012, 130). About Monsignor Frane Bulić and his acquisition of gems see Nardelli 2002, 205, n. 10.

9 Five gems, found at Gardun or at Trilj, were published by dr. Franjo Maixner in 1881 (Maixner I, 78, n. 12; 79, no. 19; 80, no. 21; Maixner II, 111, no. 51; 117, no. 89.). As part of doctoral thesis, the author of this paper analyzed the collection of the Roman gems from the Archaeological museum in Zagreb, in which, along with those five gems previously published by F. Maixner, another five unpublished gems from Gardun are kept (Kaić 2013, 172, no. 66; 183, no. 94; 187, no. 103; 198, no. 130; 220-221, no. 184; 240, no. 235; 245-246, no. 249; 260, no. 290; 271-272; no. 318; 303, no. 399).

10 Kaić 2010.

11 Hoey Middleton 1991, n. 68, 121, 153, 202, 203, 209, 217. Among them, there is layered agate (ibid., 116-117, n. 209), dated in the last third of 1st century BC and showing a bull, which S. Hoey Middleton connects with the emblem of the VII legion.

12 The site is cited as Gordun (AGWien I, 152, n. 491, pl. 81).

13 These archaeological artifacts were gathered by inhabitants of the village of Gardun, who often found them during their daily activities like ploughing. Three such private collections, owned by Stipe Roguljić, Nenad Tadinac and Stipe Tadinac, were published in 1998 (see Bekić 1998).

14 I would like to thank Mr Stipe and Martin Roguljić for enabling me to examine the engraved gems from their private collection. The house of Stipe and Martin Roguljić is built on the position of the probe A, where the archaeological excavations were done from 1998 till 2006 (see Sanader 1998, 248 and Sanader, Tončinić, Demicheli, Miloglav 2008).

bičajan u rimskodobnoj gliptici carskoga razdoblja. Sol nagoga tijela stoji frontalno, sa zrakastom krunom na glavi i s podignutom lijevom rukom, dok u desnoj spuštenu ruci, omotanoj plaštem, drži bič. Desno od boga stoji žrtvenik. Na zrakastoj kruni prikazane su samo tri zrake. Ovaj se ikonografski tip stajaćeg Sola s rukom podignutom u pozdravnoj gesti, na rimskim gemama izrađuje po uzoru na prikaze Sola koji se javljaju na rimskome novcu od razdoblja Severa.¹⁶ Nalazimo ga podjednako raširenoga u gliptici i istočnih i zapadnih provincija Carstva.¹⁷ Ovaj motiv Sola često nalazimo baš na heliotropu, dragome kamenu koji je u antici bio poznat po magičnim svojstvima radi kojih se koristio u izradi amuleta.¹⁸ Izravne ikonografske paralele i stil izrade blizak gardunskome primjerku nalazimo na heliotropu¹⁹ iz göttingenške kolekcije. Istu ikonografiju pokazuju heliotropi iz Salone²⁰ i Caerleona²¹, kao i dva jaspisa iz Galije²². Gardunski primjerak prema motivu, kamenu od kojeg je izrađen kao i prema stilskim osobinama, možemo datirati u 3. st. po. Kr.

Na oštećenome karneolu²³ (sl. 2) prikazan je Dioniz-Bakho nagoga torza koji stoji frontalno lijeve noge lagano savijene u koljenu, i s nisko omotanim himatijem oko bokova čiji je jedan kraj savio oko lijeve podlaktice. U lijevoj spuštenu ruci bog drži tirs, a desnu ruku pruža prema podignutoj glavi pantere koja stoji do njegovih nogu, prikazana u profilu prema lijevo. Ovaj je prikaz inačica čestog motiva Dioniza-Bakha koji u ruci ispruženoj prema panteri drži kantaros.²⁴ Takav prikaz nalazimo na prazemu²⁵ iz haške kolekcije koji osim ikonografskih, pokazuje i stilsko-tehničke karakteristike bliske gardunskome karneolu, prema kojima naš primjerak možemo datirati u 1. st. po. Kr.

Treći primjerak iz ove privatne zbirke još je

prema AGWien I, 15, sl. c i Mandrioli Bizzari 1987, 30, t. 2.

16 Sena Chiesa 1966, 115, br. 73; Berrens 2004, 40; Manders 2012, 126-127. Podignuta desnica boga Sola u pozdravnoj gesti blisko je povezana s carskom ikonografijom ceremonije adventa (*adventus*) (Berrens 2004, 218). Za kult Sola Invikta v. Halsberghe 1984.

17 Magni 2009, 42, n. 78.

18 Zazoff 1983, 337, n. 244; Magni 2009, 42. Možda i ovome gardunskome heliotropu možemo pripisati funkciju amuleta (usp. Nardelli 2002, 209).

19 AGDS III *Göttingen*, br. 607, t. 81

20 Nardelli 2002, 209, sl. 19.

21 Henig 2007³, 96, br. 31, t. 1.

22 Guiraud 1988, 91, br. 48, 49, t. 3.

23 Oblik 6; 12,19 x 9,87 x 1,83 mm. Gornja trećina karneola je odlomljena, pa ne možemo sa sigurnošću odrediti položaj Dionizove glave. Ona je, prema položaju tijela, vjerojatno bila okrenuta u profilu prema lijevo.

24 Za spomenuti ikonografski tip na gemama v. Sena Chiesa 1966, 180, br. 357, t. 18. Za brojne paralele na gemama v. Guiraud 2008, 113-114, br. 1177, t. 11.

25 Maaskant-Kleibrink 1978, 209-210, br. 482, t. 90. Dioniz-Bakho na ovome je prazemu prikazan s kantarom u ruci i s himatijem koji mu je prebačen preko desnog ramena, a ne podlaktice kao na gardunskome karneolu.

On the heliotrope¹⁵ (Fig. 1) one can see a representation of Sol common for the Roman glyptic of the Imperial period. Naked Sol is standing frontally, wearing a rayed crown on his head and with raised left arm, while in his right arm, wrapped with chlamys, he is holding a whip. On his right side there is an altar. There are only three rays shown on the rayed crown. This iconographic type of standing Sol holding his arm in a greeting gesture as presented on the Roman gems, is influenced by the depictions of Sol that can be found on Roman coins from the Severan period.¹⁶ We find it equally distributed in the glyptic of both Eastern and Western provinces of the Empire.¹⁷ This motive is often found engraved on heliotrope, a gemstone which was known in antiquity for its magical properties, for which it was used for making amulets.¹⁸ Direct iconographic and stylistic characteristics similar to this Gardun piece we can find on the heliotrope from the Göttingen¹⁹ collection. The same iconography is shown on heliotropes from Salona²⁰ and Caerleon²¹ and two jaspers from Gallia²² as well. The item from Gardun, according to the motive, gemstone and stylistic characteristics, can be dated to the 3rd century AD.

On the damaged carnelian²³ (Fig. 2) Dionysus-Bacchus is depicted standing frontally with his left leg slightly bent, draped in a *chymation* around his waist with a panel of drapery wrapped over his left forearm. In his left hand he is holding a *thyrsos*, his right hand is outstretched to the head of a panther standing by his feet in profile to left. This depiction is a variant of a common motive of Dionysus-Bacchus holding a *kantharos* in his hand outstretched towards the panther.²⁴

Such a depiction can be found on a prasio²⁵ from

15 Shape 8; 7,88 x 10,7 x 2,83 mm. The shape of intaglios presented in this paper is determined according to AGWien I, 15, Fig. c and Mandrioli Bizzari 1987, 30, pl. 2.

16 Sena Chiesa 1966, 115, no. 73; Berrens 2004, 40; Manders 2012, 126-127. Raised right hand of god Sol in greeting gesture is closely connected with the imperial iconography of the *adventus* ceremony (Berrens 2004, 218). For the cult of Sol Invictus see Halsberghe 1984.

17 Magni 2009, 42, n. 78.

18 Zazoff 1983, 337, no. 244; Magni 2009, 42. Perhaps this heliotrope from Gardun possessed an amuletic function as well (cf. Nardelli 2002, 209).

19 AGDS III *Göttingen*, no. 607, pl. 81

20 Nardelli 2002, 209, Fig. 19.

21 Henig 2007³, 96, no. 31, pl. 1.

22 Guiraud 1988, 91, no. 48, 49, pl. 3.

23 Shape 6; 12,19 x 9,87 x 1,83 mm. Since the upper one third of the carnelian is broken, it cannot be determined with certainty the position of Dionysus' head. He was probably, according to the body position, facing left.

24 For mentioned iconographic type on gemstones see Sena Chiesa 1966, 180, no. 357, pl. 18. For numerous analogies on engraved gems see Guiraud 2008, 113-114, no. 1177, pl. 11.

25 Maaskant-Kleibrink 1978, 209-210, no. 482, pl. 90. On this prasio Dionysus-Bacchus is shown holding a *kantharos* and wearing a *chymation*

jedan sačuvani karneol²⁶ (sl. 3) s prikazom ratnika koji stoji frontalno s glavom u profilu prema desno. U lijevoj ispruženoj ruci drži koplje, prebačeno preko lijevog ramena, a u desnoj spuštеноj ruci, omotanoj hlamidom, nosi mač. S obzirom na to da ratnik na glavi ne nosi kacigu i da nije naoružan štitom, on vjerojatno ne predstavlja boga Marsa.²⁷ Određene paralele u motivu pokazuju dva karneola iz Akvileje²⁸, na kojima ratnici stoje u tričetvrt profilu i oslanjanju se na okomito postavljeno koplje. Gardunski se karneol svojim stilsko-tehničkim karakteristikama može datirati u 1. st. po. Kr.

Posljednji intaglio iz ove kolekcije izrađen je iz kalcedona²⁹ (sl. 4), na kojemu je prikazan ratni brod s posadom. Brod plovi u profilu prema lijevo, a na njemu stoje četvorica mornara. Na krmi desno od njih možda stoji kormilar. Na brodu možemo uočiti šest vesala, dok sedmo možda prikazuje kormilo. Na pramcu broda vidi se kljun (*rostrum*) i manje četvrtasto jedro.

Teško je detaljnije odrediti o kojem se točno tipu broda radi, no najvjerojatnije je riječ o triremi.³⁰ Najbližije ikonografske i stilske paralele ovom gardunskome kalcedonu pokazuje nikolit³¹ iz haške zbirke, prema kojemu se i naš primjerak može datirati u 1. st. po. Kr. Kalcedon je ujedno i kamen koji se u nautičkim lapidarijima preporučivao kao osobito djelotvoran u zaštiti od brodoloma, međutim, prikaz broda nije dovoljan da se ovome intagliju pridoda svojstvo amuleta.³² Motiv ratnoga broda mogao bi ukazivati na to da je vlasnik ovog intaglija možda bio pomorac ili mornarički časnik.³³ Tiluriju najbliža luka bila je, dakako, ona salonitanska, u koju se najvjerojatnije dopremala različita roba potrebna za funkcioniranje i opskrbu samoga logora i njegovih vojnika.³⁴ Na ovome

26 Oblik 8; 10,48 x 8,46 x 2,59 mm.

27 Usp. Guiraud 1996, 105, n. 43.

28 Sena Chiesa 1966, 316-317, br. 898, 899, t. 45.

29 Oblik 11 b; 5,52 x 2,54 x 3,88 mm.

30 Za trireme, bireme i liburnije u periodu 1. st. pr. Kr.–1. st. po. Kr. v. Pitassi 2011, 116-132.

31 Maaskant-Kleibrink 1978, 241, br. 621, t. 110.

32 Perena Yébenes 2010, 459-463, 477-478. Lapidariji su preporučivali da se na kalcedon ugraviraju prikazi Marsa s oružjem, Viktorije ili Atene koja dži kacigu i pticu bukavca (ibid., 462-463, n. 16, 17). Zaštitu na moru pružali su i prikazi Posejdona, nimfe Amfitrite i Gorgone-Meduze (ibid., 475-476).

33 Usp. Henig, Ross 1998, 326. U Saloni je nađena i stela pomorca Gaja Utija iz ranog 1. st. po. Kr., na kojoj je ispod natpisa isklesan trgovački brod kojim se označilo pokojnikovo zanimanje za života (v. Cambi 2005, 12-14). O salonitanskoj luci i trgovačkim brodovima v. Kirigin 2012, 59-85.

34 Zaninović 2002, 72. Salonitanska je luka vjerojatno već u 1. st. po. Kr. bila pomorska postaja u kojoj su, bilo povremeno bilo trajno, boravile pomoćne postrojbe ravenatske i mizenatske flote (Domić-Kunić 1996, 44, n. 30). Na to ukazuju epigrafski natpisi iz Salone, među kojima se na njih pet spominju djelatni pripadnici mornaričkih flota, a na četiri veterani mornarice (Zaninović 2002, 73). O pripadnicima ravenatske i mizenatske flote koji su podrijetlom bili iz Dalmacije ili Panonije v. Domić-Kunić 1996 i Domić-Kunić 1996a.

the Hague collection which, apart from the iconographic, shows both the stylistic and technical characteristics close to the Gardun carnelian, by which our item can be dated to the 1st century AD.

The third gemstone in this private collection is another carnelian²⁶ (Fig. 3), depicting a warrior standing frontally with his head in profile to the right. In the left outstretched arm he is holding a spear over his left shoulder, while in his right hand, with *chlamys* draped over his right arm, he is carrying a sword. Considering that the warrior is not wearing a helmet and is not armed with a shield, he probably does not represent god Mars.²⁷ Certain iconographic parallels can be found on two intaglios from Aquileia²⁸, showing warriors standing in three-quarter profile and leaning on the spear. This carnelian, according to its stylistic and technical characteristics, can be dated to the 1st century AD.

The last intaglio from this collection is made of chalcedony²⁹ (Fig. 4), depicting a warship with crew. The ship is sailing towards left, carrying four sailors. On the right of them a steersman might be standing. On board, we can see six oars, while the seventh may be representing a helm. On the bow of the ship the beak (*rostrum*) and a smaller square sail can be seen. It is difficult to specify in detail the precise type of the ship, but most probably it is the trireme ship.³⁰ The closest iconographic and stylistic parallels for this chalcedony from Gardun can be seen on a nicolo³¹ in the Hague collections according to which our specimen can be dated to the 1st century AD.

In nautical lapidaries chalcedony is the stone that is recommended as particularly effective in the protection against shipwrecks; however, the depiction of the ship itself is not sufficient enough to add amuletic properties to this intaglio.³²

The motive of a warship could indicate that the gemstone was owned by a sailor or a marine.³³ The

over his right shoulder, and not over his forearm as on a Gardun carnelian.

26 Shape 8; 10,48 x 8,46 x 2,59 mm.

27 Cf. Guiraud 1996, 105, n. 43.

28 Sena Chiesa 1966, 316-317, no. 898, 899, pl. 45.

29 Shape 11 b; 5,52 x 2,54 x 3,88 mm.

30 For bireme, trireme and liburnians during the 1st century BC to the 1st century AD see Pitassi 2011, 116-132.

31 Maaskant-Kleibrink 1978, 241, no. 621, pl. 110.

32 Perena Yébenes 2010, 459-463, 477-478. Ancient lapidaries recommended that the motives of Mars with weapons, Victoria or Athens holding a helmet and a bird bittern should be engraved on the chalcedony (ibid., 462-463, n. 16, 17). Protection on the sea was also provided by the depictions of Poseidon, the nymph Amfitrite and the Gorgon-Medusa (ibid., 475-476).

33 Cf. Henig, Ross 1998, 326. A *stella* of a sailor *Caius Uttius*, found in Salona and dated in early 1st century AD, shows a merchant ship carved under the inscription, thus indicating the defuncted profession in life (see Cambi 2005, 12-14). On harbour of *Salona* and merchant ships see Kirigin

mjestu zanimljivo je spomenuti salonitanski nalaz vojničke diplome Platora, centuriona ravenske flote, na kojoj je kao jedan od svjedoka naveden Publije Cetenije Klement iz Salone, za kojega prema sačuvanom nadgrobnome natpisu znamo da je bio veteran VII legije *Claudia pia fidelis*.³⁵

Kao što smo već napomenuli, arheološka istraživanja Tilurija traju od 1997. godine.³⁶ Tijekom tih sustavnih arheoloških iskopavanja na lokalitetu Gardunu do sada su nađena dva intaglija. Oba su iskopana 2011. godine na položaju sonde D, na kojem se nalaze vojničke spavaonice.³⁷ Na narančastome karneolu³⁸ (sl. 5) prikazana su dvojica hrvača tijekom borbe u stojećem položaju. Lijevi je hrvač sagnut dok mu desni hrvač lijevom rukom zahvaća vrat. Lijevo od hrvača stoji herma s palmom namijenjenom pobjedniku. Ikonografske i stilske paralele pruža karneol³⁹ iz minhenske kolekcije na kojemu je uz hrvače prikazan i njihov učitelj koji drži štap. Gardunski primjerak možemo datirati u 2. pol. 1 st. pr. Kr. i u 1. st. po. Kr. S obzirom na prikazani motiv, napomenimo da se na području lokaliteta Gardun, zahvaljujući zračnim snimcima, uočio položaj na kojemu možemo pretpostaviti manji legijski amfiteatar namijenjen vojnicima. Na tome položaju još nisu otpočeta arheološka iskopavanja.

Drugi intaglio nađen prilikom iskopavanja vrlo je oštećeni crveni karneol,⁴⁰ na kojemu je prikazano poprse s glavom u profilu prema lijevo (sl. 6). Kako je odlomljena lijeva polovica kamena, tako nedostaje lice. Finoća izrade vidljiva je u frizuri koja je osobito precizno naglašena tankim, paralelnim i gusto poredanim linijama kose.

Kosa je na tjemenu odijeljena u četiri pramena, koji su na potiljku i prema uhu skupljeni u pet malih uvojaka.

Ovaj karneol, za koji nisu nađene direktne paralele, pokazuje neke elemente netipične za gliptiku rimskog razdoblja, posebno izažene u tipu frizure, a koji otežavaju precizno datiranje. Stoga bi ovaj intaglio mogao

closest harbour to *Tilurium* was surely the Salonitan one, where most probably various goods necessary for the functioning and supplying of the legionary fortress and its soldiers were delivered.³⁴ Therefore it is interesting to mention a Salonitan find of a military diploma belonging to *Plator*, who was a centurion of the Ravenna fleet, and on which was also mentioned, as one of witnesses, a certain *Publius Caetenius Clementus* from Salona, who was, as we know from the inscription on the preserved sepulchral monument, a veteran of legio VII *Claudia pia fidelis*.³⁵

As previously stated, the archaeological excavations of *Tilurium* have been carried out every year since 1997.³⁶ During these systematic excavations on the site of Gardun two intaglios have been found. Both were excavated in 2011, in the area of the probe D, where the military barracks were built.³⁷ On orange carnelian³⁸ (Fig. 5), two while the right one is grabbing the other one's neck with his left arm.

To the left of the wrestlers a herm with victory palm is standing. Iconographic and stylistic parallels can be found on a carnelian³⁹ from the München collection depicting a coach with a stick near the wrestlers. The Gardun gemstone can be dated in the second half of the 1st century BC to the 1st century AD. In connection with the motive shown, we can mention that in the area of the Gardun, by taking aerial photographs, a location of a possible smaller legionary amphitheatre constructed for soldiers, is noted. In that site archaeological excavation has not been conducted yet.

The second intaglio found during the excavations

2012, 59-85.

34 Zaninović 2002, 72. Salonitan harbour was probably already in 1st century AD a marine station where, either occasionally either permanently, the auxiliary units of Ravenna and *Misenum* fleet were stationed (Domić-Kunić 1996, 44, n. 30). Epigraphic inscriptions from Salona are pointing to that, amongst which 5 of them are mentioning active navy soldiers, and other 4 navy veterans (Zaninović 2002, 73). For members of Ravenna and *Misenum* fleet, who originated from the Roman provinces of Dalmatia and Pannonia see Domić-Kunić 1996 and Domić-Kunić 1996a.

35 Zaninović 2002, 73; Demicheli 2012, 49-51. D. Demicheli makes an interesting assumption that both of these soldiers, mariner and legionary, could have actually met in *Salona* in period when *Legio VII* was still stationed in *Tilurium*, and whose soldiers were having duties in *Salona*, as well as mariners of Ravenna fleet (Demicheli 2012, 51). For epigraphic monuments mentioning soldiers of the *Legio VII* on duty in Salona see Tončinić 2011, 175.

36 For archaeological excavations of *Tilurium* see note 5.

37 See Sanader, Tončinić, Demicheli, Miloglav 2008, 445-446 and Sanader, Tončinić 2010, 52, n. 74.

38 Inv. br. GAR 11 PN 158; probe D; quadrant G 20; SU 5; shape 8; 11,07 x 12,9 x 1,83 mm.

39 AGDS I, 3, 49, no. 2396, pl. 215. Erotes are often depicted wrestling, sometimes beside a herm (cf. AGDS IV *Hannover*, 271, no. 1464, pl. 197; AGNürnberg 51-52, no. 9, pl. 2).

35 Zaninović 2002, 73; Demicheli 2012, 49-51. D. Demicheli iznosi zanimljivu pretpostavku da su se oba vojnika, mornar i legionar, mogli upoznati u Saloni upravo u periodu dok je VII legija još bila stacionirana u Tiluriju, i čiji su vojnici također službovali u Saloni, kao i mornari ravenatske flote (Demicheli 2012, 51). Za epigrafske spomenike na kojima se navode vojnici VII legije na službi u Saloni v. Tončinić 2011, 175.

36 Za arheološka iskopavanja na Gardunu v. bilješku 5.

37 Vidi Sanader, Tončinić, Demicheli, Miloglav 2008, 445-446 i Sanader, Tončinić 2010, 52, n. 74.

38 Inv. br. GAR 11 PN 158; sonda D; blok G 20; SJ 5; oblik 8; 11,07 x 12,9 x 1,83 mm.

39 AGDS I, 3, 49, br. 2396, t. 215. U hrvačkim borbama često se prikazuju i eroti, a na nekima od tih prikaza također nalazimo i motiv herme (usp. AGDS IV *Hannover*, 271, br. 1464, t. 197; AGNürnberg 51-52, br. 9, t. 2).

40 Inv. br. GAR 11 PN 184; sonda D; blok D 19; SJ 1; oblik 8; 15,63 x 7,6 x 3,84 mm.

pripadati i novovjekovnom razdoblju.

Lokalitet Tilurij brojnošću gliptičkog materijala izdvaja se od ostalih vojnih lokaliteta u rimskoj provinciji Dalmaciji.⁴¹ Ovdje obrađeni rimskodobni intagliji uklapaju se u do sada poznatu sliku gliptičkog materijala s toga lokaliteta.⁴² Pripadaju rimskodobnim gliptičkim radnicama carskoga razdoblja, a motivi prikazani na njima predstavljaju dio standardne ikonografije koju nalazimo na rimskoj gliptici toga perioda. Jednome se intagliju zbog oštećenosti nije mogla odrediti datacija. Zaključno možemo ustvrditi da različiti motivi i stilovi izrade prisutni na ovih nekoliko primjeraka dodatno proširuju bogati stilski i ikonografski repertoar tilurijskih gema.

is a very damaged red carnelian⁴⁰, showing a bust with a head in profile to left (Fig. 6). Since the left part of the gemstone is broken, the face is missing. How delicate the work is can be seen on the hair which is characterised by thin, parallel and thickly lined hair strands. The hair is parted into four tresses which form four little curls at the back of the head and towards the ear. This carnelian, without precise iconographic parallels, shows some elements unusual for the glyptic of the Roman period, especially the hair style, which makes it hard to determine a precise dating. It could even belong to the post-antique period.

The site of *Tilurium* stands out from other military sites in the Roman province of Dalmatia by the quantity of glyptic material.⁴¹ Roman intaglios presented in this paper fit into the currently known picture of the glyptic from this site.⁴² They belong to the Roman glyptic production of the Imperial period, while the motives depicted on them are a part of the standard iconography found in the Roman glyptic of that period. Because of the damage, the dating of one intaglio could not be determined. We can conclude that different motives and production styles noted on these few items widen already rich iconographic and stylistic repertory found on the gemstones from *Tilurium*.

41 Nardelli 2012, 130. Za objavljene gema s vojnih lokaliteta Muća Gornjeg (*Andetrium*) i Burna (*Burnum*) v. Nardelli 2012, 130, n. 3. O rimskom vojnom uporištu Andetriju v. Zaninović 1996, 287 i Bekić 2011. Za rimski legijski logor *Burnum* v. Cambi et al. 2007. Izbor gema iz Burna koje se čuvaju u Muzeju hrvatskih arheoloških spomenika objavljen je u Šeparović, Uroda 2009.

42 Usp. Nardelli 2012, 131.

40 Inv. br. GAR 11 PN 184; probe D; quadrant D 19; SU 1; shape 8; 15,63 x 7,6 x 3,84 mm.

41 Nardelli 2012, 130. For published gems from the military sites of Muć Gornji (*Andetrium*) and Ivoševci near Kistanje (*Burnum*) see Nardelli 2012, 130, n. 3. For Roman military stronghold of *Andetrium* see Zaninović 1996, 287 and Bekić 2011. For Roman legionary fortress of *Burnum* see Cambi et al. 2007. A selection of gems from *Burnum* kept in the Museum of Croatian national monuments is published in Šeparović, Uroda 2009.

42 Cf. Nardelli 2012, 131.

- AGDS I, 3. E. Brandt, W. Gercke, A. Krug, E. Schmidt, *Antike Gemmen in deutschen Sammlungen. Band I: Staatliche Münzsammlung München, Teil 3: Gemmen und Glaspasten der römischen Kaiserzeit sowie Nachträge*, München 1972.
- AGDS III Göttingen. P. Gercke, *Antike Gemmen in deutschen Sammlungen. Band III. Die Gemmensammlung im Archäologischen Institut der Universität Göttingen*, Wiesbaden 1970.
- AGDS IV Hannover. M. Schlüter, G. Platz Horster, P. Zazoff, *Antike Gemmen in deutschen Sammlungen. Band IV. Hannover, Kestner Museum*, Wiesbaden 1975.
- AGNürnberg. C. Weiss, *Antike Gemmen in deutschen Sammlungen. Band V. Die antiken Gemmen in Sammlung Friedrich Julius Rudolf Bergau im Germanischen Nationalmuseum*, Nürnberg, Nürnberg 1996.
- AGWien I. E. Zwierlein-Diehl, *Die antiken Gemmen des Kunsthistorischen Museums in Wien. Band I: Die Gemmen von der minoischen Zeit bis zur frühen römischen Kaiserzeit*, München 1973.
- Bekić 1998. L. Bekić, *Tri manje privatne zbirke s Garduna*, *Opuscula archaeologica* 22 (1998), 233-242.
- Bekić 2011. L. Bekić, *Andetrij, rimsko vojno uporište. Topografske odrednice*, in: A. Librenjak, D. Tončinić (eds), *Arheološka istraživanja u Cetinskoj krajini: znanstveni skup, Sinj, 10. – 13. listopada 2006.*, Zagreb–Sinj 2011, 315-325.
- Berrens 2004. S. Berrens, *Sonnenkult und Kaisertum von den Severern bis zu Constantin I. (193-337 n. Chr.)*, Stuttgart 2004.
- Bulić 1986. F. Bulić, *Po ruševinama stare Salone*, Split 1986.
- Cambi 2005. N. Cambi, *Kiparstvo rimske Dalmacije*, Split 2005.
- Cambi et al. 2007. N. Cambi et al., *Rimska vojska u Burnumu = L'esercito romano a Burnum*, Drniš-Šibenik-Zadar 2007.
- Demicheli 2012. D. Demicheli, *Salonitani extra fines Dalmatiae (I). Svjedoci podrijetlom iz Salone na vojničkim diplomama*, *Tusculum* 5 (2012), 47-57.
- Domić Kunić 1996. A. Domić Kunić, *Classis praetoria Misensium s posebnim obzirom na mornare podrijetlom iz Dalmacije i Panonije*, *Vjesnik Arheološkog muzeja u Zagrebu* 28-29 (1996), 39-72.
- Domić Kunić 1996a. A. Domić Kunić, *Classis praetoria Ravennatum with special reflection on sailors that origin from Dalmatia and Pannonia*, *Živa antika* 46 (1996), 95-110.
- Guiraud 1988. H. Guiraud, *Intailles et camées de l'époque romaine en Gaule (Territoire français)*, Paris 1988.
- Guiraud 1996. H. Guiraud, *Intailles et camées romains*, Paris 1996.
- Guiraud 2008. H. Guiraud, *Intailles et camées de l'époque romaine en Gaule (Territoire français): vol. 2*, Paris 2008.
- Halsberghe 1984. G. H. Halsberghe, *Le culte de Deus Sol Invictus à Rome au 3e siècle après J. C.*, in: H. Temporini, W. Haase (eds), *Aufstieg und Niedergang der römischen Welt*, II.17.4, Berlin-New York 1984, 2181-2201.
- Henig 2007³. M. Henig, *A Corpus of Roman Engraved Gemstones from British Sites* (3rd edition), Oxford 2007.
- Henig, Ross 1998. M. Henig, A. Ross, *A Roman Intaglio Depicting a Warship from the Foreshore at King's Reach, Winchester Wharf, Southwark*, *Britannia* 29 (1998), 325-327.
- Kaić 2010. I. Kaić, *Četiri intaglija s Garduna u Muzeju Cetinske krajine*, *Opuscula Archaeologica* 34 (2010), 115-126.
- Kaić 2013. I. Kaić, *Rimski svijet u malome. Geme kao svjedočanstva svakodnevnog života: doktorska disertacija*, Zagreb 2013.
- Kirigin 2012. B. Kirigin, *Salona i more – neke napomene*, u: M. Jurković, A. Milošević (eds); *Munuscula in hinorem Željko Rapanić. Zbornik povodom osamdesetog rođendana = Festschrift on the occasion of his 80th birthday*, Zagreb-Motovun-Split 2012, 59-85.

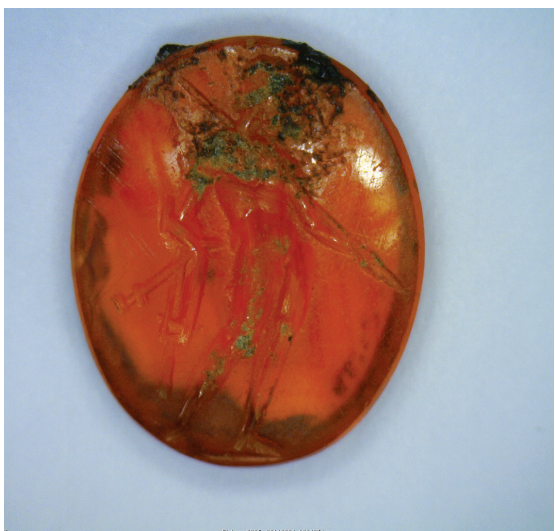
- Maaskant-Kleibrink 1978. M. Maaskant-Kleibrink, *Catalogue of the Engraved Gems in the Royal Coin Cabinet, The Hague*, The Hague 1978.
- Magni 2009. A. Magni, *Le gemme di età classica*, u: G. Sena Chiesa (ur.), *Gemme dei Civici Musei d'Arte di Verona*, Roma 2009, 17-142.
- Maixner I. F. Maixner, *Intagliji u zemaljskom muzeju zagrebačkom (I)*, *Viestnik Hrvatskoga arheološkoga društva* 3, br. 3 (1881), 75-84.
- Maixner II. F. Maixner, *Intagliji u zemaljskom muzeju zagrebačkom (II)*, *Viestnik Hrvatskoga arheološkoga društva* 3, br. 4 (1881), 108-121.
- Manders 2012. E. Manders, *Coining Images of Power. Patterns in the Representation of Roman Emperors on Imperial Coinage, A.D. 193-284*, Leiden 2012.
- Mandrioli Bizzari 1987. A. R. Mandrioli Bizzari, *La collezione di gemme del Museo Civico Archeologico di Bologna*, Bologna 1987.
- Nardelli 2002. B. Nardelli, *Sulle gemme di Salona*, in: E. Marin (ed.), *Longae Saloniae*, Split 2002, 205-216.
- Nardelli 2010. B. Nardelli, *Gemme e iconografia: appunti da Catoro e da Tilurium*, *Pallas* 83 (2010), 157-165.
- Nardelli 2012. B. Nardelli, *Late Roman Gems from Tilurium in Croatia*, in: C. Entwistle & N. Adams (eds), *Gems of Heaven: Recent Research on Engraved Gemstones in Late Antiquity*, London 2012, 130-134.
- Perena Yébenes 2010. S. Perena Yébenes, *Magic at Sea. Amulets for Navigation*, in: R. L. Gordon, F. M. Simón (eds), *Magical practice in the Latin West: papers from the international conference held at the University of Zaragoza, 30 Sept.–1 Oct. 2005*, Leiden–Boston 2010, 457-486.
- Pitassi 2011. M. Pitassi, *Roman Warships*, Woodbridge 2011.
- Sanader 1998. M. Sanader, *Tilurij - rimski vojni logor: prethodno izvješće s arheoloških istraživanja u 1997. i 1998.*, *Opuscula Archaeologica* 22 (1998), 243-255
- Sanader 2003. M. Sanader, *Tilurij I. Istraživanja = Forschungen 1997-2001*, Zagreb 2003.
- Sanader 2008. M. Sanader, *Rimska vojska i njezini tabori u provinciji Dalmaciji*, *Imago provinciarum*, Zagreb 2008, 79-91.
- Sanader 2009. M. Sanader, *Dalmatia. Eine römische Provinz an der Adria*, Mainz 2009.
- Sanader, Tončinić 2010. M. Sanader, D. Tončinić, *Gardun – antički Tilurium*, in: I. Radman Livaja (ed.), *Nalazi rimske vojne opreme u Hrvatskoj = The Finds of the Roman Military Equipment in Croatia*, Zagreb 2010, 33-53.
- Sanader, Tončinić, Ožanić 2004. M. Sanader, D. Tončinić, I. Ožanić, *Tilurij - arheološka istraživanja 2004. godine*, *Opuscula Archaeologica* 28 (2004), 221-243.
- Sanader, Tončinić, Demicheli, Miloglav 2008. M. Sanader, D. Tončinić, D. Demicheli, I. Miloglav, *Gardun (Tilurium): redni broj 205*, *Hrvatski arheološki godišnjak* 4 (2007) [2008], 444-467.
- Sena Chiesa 1966. G. Sena Chiesa, *Gemme del Museo Nazionale di Aquileia*, Padova 1966.
- Šeparović, Uroda 2009. T. Šeparović, N. Uroda, *Antička zbirka Muzeja hrvatskih arheoloških spomenika (izbor) = Ancient Roman Collection of the Museum of Croatian Archaeological Monuments (A Selection)*, Split 2009, 111-126.
- Tončinić 2008. D. Tončinić, *Votivna ara iz Tilurija*, *Opuscula Archaeologica* 28 (2004), 147-157.
- Tončinić 2011. D. Tončinić, *Spomenici VII legije na području rimske provincije Dalmacije*, Split 2011.
- Zaninović 1996. M. Zaninović, *Vojni značaj Tilurija u antici*, *Od Helena do Hrvata*, Zagreb 1996, 280-291.
- Zaninović 1996a. M. Zaninović, *Prata legionis na Kosovu polju kraj Knina s osvrtom na teritorij Tilurija*, *Od Helena do Hrvata*, Zagreb 1996, 259-271.
- Zaninović 2002. M. Zaninović, *Mornarička postaja u Saloni i ispostava u Phariji*, in: I. Babić, A. Milošević, Ž. Rapanić (eds), *Zbornik Tomislava Marasovića*, Split 2002, 69-79.
- Zazoff 1983. P. Zazoff, *Die Antike Gemmen*, München 1983.



Sl. 1 - Fig. 1



Sl. 2 - Fig. 2



Sl. 3 - Fig. 3



Sl. 4 - Fig. 4



Sl. 5 - Fig. 5



Sl. 6 - Fig. 6