

THE EARLY ROMAN MILITARY ROUTE ALONG THE RIVER LJUBLJANICA (SLOVENIA)

JANKA ISTENIČ

The River Ljubljanica in central Slovenia is a typical Karst river. It is just 38 km long, and flows from approximately south-west to north-east (Figs. 1 & 2) (Bitenc & Knific, 1997: figs. 1, 2; Istenič, 2001: fig. 4). Its vigorous sources, typical of a Karst stream, rise on the western outskirts of Ljubljansko barje, just below the steep slopes of the Karst margin. From Vrhnika, less than 2 km from its sources, the Ljubljanica is already navigable, and in the approximately 20 km to Ljubljana, it flows through Ljubljansko barje (the Ljubljana Moors), a plain with several isolated low hills. Until drainage-work which began in the 18th century, this area was very marshy and difficult to cross. Even now, the central part of the Ljubljansko barje is subject to annual flooding. On its course through this region, the river is relatively narrow (up to c. 30 m wide) and slow-flowing, with steep banks and a deep bed (at low water level, 3,8 to 7,6 m; Sbrizaj 1903: 13) of silt, over clay sediments. At Ljubljana, it leaves the region of Ljubljansko barje, and flows over a gravel floor until it joins the River Sava.

From the prehistoric period until the advent of the railway in the nineteenth century, there was busy traffic along the River Ljubljanica. In the prehistoric period, this river was a part of the “Amber route” from the northern Adriatic to the Baltic and an important stage in the so-called “Argonauts route” from the Black Sea to the Adriatic¹. Strabo² noted that trade-caravans coming from *Aquileia* stopped at *Nauportus* (the present-day Vrhnika), and transferred their loads onto boats, for shipping onwards along the Rivers Ljubljanica and Sava to Sisak (*Segesta*), and then beyond, to the River Danube (Šašel Kos, 1990: 143-146; cf. Fig. 2). The Roman name for Ljubljanica was *Nauportus* and perhaps also *Emona* (Šašel Kos, 2007).

Nauportus, a Celtic settlement of the *Taurisci*, was taken into Roman control in the late Republican period, and settled by Roman merchants, becoming an important outpost on the eastern fringe of the Roman state, and, as indicated by the recently found boundary stone between the territories of *Aquileia* and *Emona* (Šašel Kos, 2002), part of the territory of *Aquileia*. Excavations in 1934 and 1936, at Dolge njive (part of Vrhnika), and recent geomagnetic survey have provided evidence of a fortified Roman settlement, full of warehouses, with a large market

¹ As recorded by Plin., *hist.* 3, 28.

² 4, 5, 10, c. 207.



FIG. 1. The River Ljubljanica in its wider geo-political setting in the early Roman period

and a wooden landing-pier. The finds (especially the pottery) suggest a floruit in the early- and middle-Augustan period, while inscriptions attest to its prosperity in the later Republican and early Augustan period. Material of the later date is sparse (Horvat, 1990; Horvat & Mušič, 2007; Šašel Kos, 1990). In 2005, rescue excavations on the western side of the River Ljubljanica revealed a settlement sequence from the middle Augustan period onwards (Horvat & Mušič, 2007). According to Tacitus³ reporting on soldiers' revolt in Pannonia following Augustus's death in AD 14, *Nauportus* resembled a "*municipium*".

Another Roman *emporium* on the Ljubljanica was at Ljubljana, Roman *Emona*. It developed at a strategically important location, the "Ljubljana gate", which is a gap of about one kilometre wide, between the southern fringes of the Julian Alps and northern fringe of the Lower Carniolan hills (Šašel, 1968: 541). In the Roman period, the river was less than one metre deep here and both river-banks were easily accessible, the marshland having ended at the edge of Ljubljana (Istenič, 2009; Sbrizaj, 1903: 13). Ljubljana was also situated at the point, where the overland "Amber route" and the route coming across the Pannonian plain, as well as the "Argonauts route" converged on the River Ljubljanica. In the 1990s, excavations below Ljubljana Castle Hill, revealed the remains of a Late Iron Age (Celtic) village, where Roman material culture was already significant in the pre-Augustan period and strongly predominated from the middle Augustan period onwards (Vičič, 1993; 1994; 2002; 2003: 22-23). Military artefacts (cf. Vičič, 1994: 31, pl. 3: 20, 21; 2002: 195-196, pl. 12, 13: 6-7, 9; 1999) suggest that this Roman settlement probably had some sort of military protection, at least intermittently. At the end of the Augustan period, a rectangular walled town was built on the opposite bank of the river and eventually, the area below the Castle Hill became part of a suburb (Vičič, 1993; 1994).

³ Tac., *ann.* 1, 20, 1.

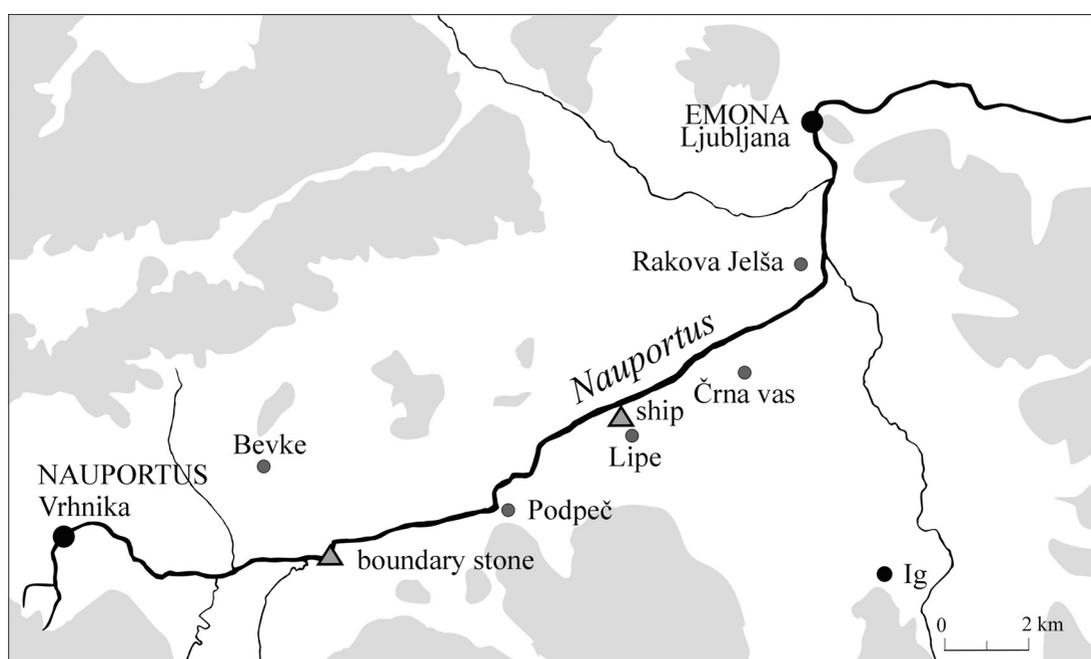


FIG. 2. The upper course of the River Ljubljanica with sites and finds mentioned in the text

From Vrhnika to Ljubljana the finds from the River Ljubljanica are abundant and span the Mesolithic period to the present day (Bitenc & Knific, 1997; Istenič *et alii*, 2007: 127-133, figs. 92-95). East of Ljubljana, their absence most probably relates to the change in the composition of river-bed, from silt to gravel. The finds derive from the dredging of the river-bed, from fishing with a net, and from underwater archaeological research, which started in 1884, and was among the first in Europe; a number of amateur divers have also amassed private collections. Where possible, the National Museum of Slovenia has been documenting and acquiring these finds.

Roman objects from the Ljubljanica are well represented, beside Roman military equipment particularly pottery, metal vessels (especially skillets and buckets), knives, axes, scythes, and pruning tools, as well as brooches and coins (Istenič *et alii*, 2007: 129 fig. 93). Early Roman finds predominate, particularly those dating to the end of the first century BC and the first half of the first century AD. Perhaps also from the Augstan Period (dated to the 1st century BC or first third of the 1st century AD from Carbon 14 analyses), is a ship, more than 30 metres long, which was found in 1890, at Lipe, on Ljubljana Moor, some 300 metres from the Ljubljanica itself (Gaspari, 1998; 2009). There was no report of any cargo or other small finds on it. It seems likely that the ship had been abandoned in a marsh near the river where it may have been deposited by one of the many floods on the Moor.

Apart from individual coin-finds (cf. Kos, 1988: 155/45; Kos & Šemrov, 1995: 84; Šemrov, 1998: 88, 91, 92, 103, 109/1, 115), four Celtic and Roman coin-hoards have been recorded, including a group of Roman Republican and Celtic coins deposited after 147 BC (Kos & Šemrov, 2003), Republican coins deposited after 42 BC (Šemrov, 1998: 109/2), and coin depositions dating to the second century AD (Kos, 1988: 155/6) and after AD 352 (Šemrov, 1998: 109/3).

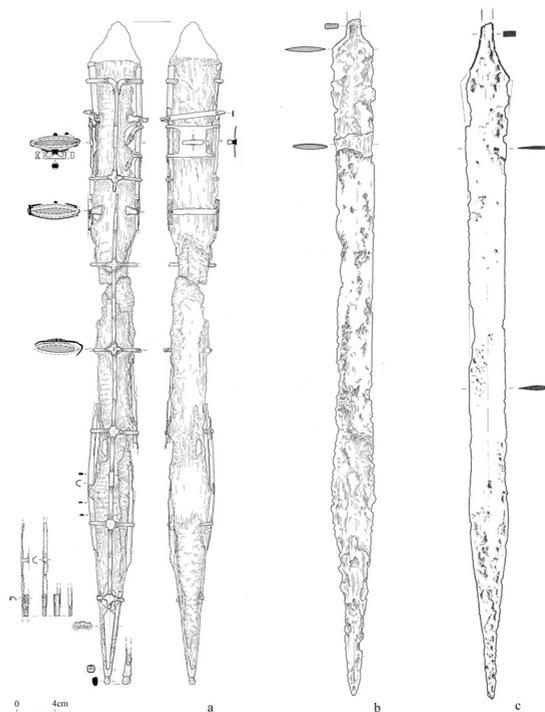


FIG. 3. Bronze helmet of Montefortino type from the Ljubljana

Roman military finds are abundant, and include 28 swords, sword-sheaths or sword-fragments, three daggers in their sheaths and one without, two helmets, 15 *pilae*, a shield boss, *dolabrae*, turf-cutters, iron spikes, probable *stimuli*, various parts of military belts, as well as two ornaments. The metal vessels, especially the skillets (*trullae*), as well as several early Roman brooches could also have comprised military equipment. Many Early Roman metal vessels from Ljubljana might reflect one of the ways of their transportation from Italy to Bohemia where the Germanic tribe of Marcomanni, ruled by Marbodius lived and where there is a clear concentration of Roman metal vessels of the Augustan period (cf. Karasová, 1998; Droberjar, 1998; the northern route from *Aquileia* through present-day Austria to Bohemia is taken into account by the cited/quoted authors. For an evidence of river-transport in a wider region see Šarić, 1985). The dating of such material is inevitably dependent on typological analogies, and this poses particular problems for the pre-Augustan and early Augustan periods, for which well-dated parallels are very scarce.

A bronze helmet of Montefortino type (Fig. 3) is the oldest Roman weapon from the river. The sword in a sheath with a net-like fitment (Istenič, 2000; 2000b) and two relatively long swords with an oblique shoulder and a particularly long tip (Fig. 4), seem to be late-Republican. In addition to the swords depicted on Fig. 4 there is another typologically similar Roman sword

FIG. 4. The earliest Roman swords (with or without scabbards) from the Ljubljana (Caesarian to Octavianic/early Augustan): a) = Istenič, 2000a, b; b) = National Museum of Slovenia, Inv. No. R 24449; c) = Horvat, 1990: pl. 27.7



with remains of the sheath which was perhaps also found in Ljubljana (cf. Bras Kernel, 2007: fig. 8: the first sword from the left). Most of the *militaria* are Augustan or more broadly dated to a period from Augustus to the (first half of the) first century AD (Fig. 5) (Rant *et alii*, 1994; Istenič, 2003; 2003b; 2008b; Istenič *et alii*, 2007: fig. 79). The only explicitly post-Augustan military find of the first century, is a sword of Pompeii type (Gaspari, 2002: pl. 8, 5). The extremely rare military finds of the second and third century, comprise a shield boss (Gaspari, 1999) and a ring-pommel sword. Late Roman military equipment is represented by belt fittings.

The military finds from the Ljubljana are particularly frequent between Vrhnika, and the bend where the boundary stone was found (Šašel Kos, 2002), the greatest concentration being in the area of Bevke (Fig. 2). A smaller concentration of Roman military finds occurs at *Nauportus*. After the river-bend at Bevke, Roman military artefacts (and other finds as well) are less numerous, but they subsequently cluster around the area of Podpeč, Črna vas, and especially Rakova Jelša, about 3 kilometres west of *Emona* (Gaspari, 2002: 215-219, Figures Priloga 10-11). The only surviving Roman military find from the Ljubljana at *Emona* is a sword of Mainz type in a sheath. In general, the distribution of the Roman military objects coincides with that of the other Roman finds.

Irrespective of whether these Roman military finds were votive offerings or accidental losses, their frequency suggests a high concentration of Roman military personnel along the Ljubljana in the Augustan period. Their chronological distribution resembles that recorded along the Rhine (cf. Klein, 2000; Künzl, 1996: 449-466, OI 11-19, M 9, P 8; Schalles & Schreiter, 1993: 43-63, 88-90, 98, 178-228, 260, pl. 20-47, 65, 78-79) and contrasts with the pattern of Roman military finds from Saône (France), where Augustan items are less numerous than those of the later 1st century (Dumont, 2002: 174-180). Particularly significant, for example, is the ratio of swords of



FIG. 5. A selection of Roman military finds of Augustan date from the River Ljubljanica (not to scale)

Mainz type to those of Pompeii type. From the Saône, four Mainz-type swords and 10 Pompeii-type swords are known (Dumont, 2002: 179), whereas for the Rhine, a preliminary assessment of the published finds suggests the ratio to be 14 swords of Mainz type to three swords of the Pompeii type (cf. Künzl, 1996: 449-466, OI 11-19, M 9, P 8; Schalles & Schreiter, 1993: Mil. 27-29, 31-32, 38). For the River Ljubljanica, the ratio is 18 swords of Mainz type to one sword of Pompeii type.

The Roman military finds from the Saône mainly derive from fords, where the river could be waded, whereas objects from the Rhine mostly originate near forts and fortresses. The Roman military finds from the Ljubljanica cannot be related to fords, because the course of the Ljubljanica through Ljubljansko barje was not suitable for wading. Only in the case of *Nauportus* can they be linked to known Roman settlement along the course of the river; it is probable that there was also a military establishment. Surprisingly, relevant finds from the Ljubljanica are almost absent at *Emona*. A small Roman (merchant) settlement might be assumed in the area of Bevke (Kamin; Šašel Kos, 2002: 373-374).

In our opinion, the high concentration of early Roman finds from the Ljubljanica relates to intensive traffic directed along it, because it constituted the logical continuation of the road from *Aquileia* via the *Ocra* pass and Postojna to *Nauportus*, and also because the Ljubljana marshes were impassable until the road from *Nauportus* to *Emona* was built, probably in late Augustan

period. The only information about when this road was built comes from written source mentioning that a road was made through the Julian Alps under Augustus⁴. This mentioning refers to the Roman road from *Aquileia* over the pass of *Ad Pirum* (Hrušica) to *Emona* which was shorter than the older (prehistoric but also Roman) road leading over Razdrto pass (Ocro & Horvat, 1999: 219). The importance of the riverine route along the Ljubljanica is further emphasised by the location of the boundary stone on the river-bank. Moreover, the high concentration of Roman military finds suggests that a major part of the traffic was connected with the Roman army.

During Octavian's campaigns in Illyricum (35–33 BC), the Roman army probably made full use of the riverine trade-route along the Ljubljanica (*Emonal/Nauportus*) and Sava (*Savus*). In fact, the Roman army penetrated towards *Segesta* (*Siscia*; present day Sisak, Croatia) not only via the Kvarner gulf (from *Tarsatica*/Rijeka and *Senia*/Senj), but also from *Aquileia* via *Nauportus*. The huge warehouses at *Nauportus* (Dolge njive) probably stored cargoes, which had arrived on wagons, and which were waiting for transport along the river. After the conquest of *Segesta*, this riverine route would have been invaluable for the shipment of supplies to the 25 cohorts based there. This same route was also probably used by the Roman army in the Pannonian wars of 14–9 BC, as well as during the Pannonian and Dalmatian rebellion of AD 6–9. The latter episode was associated with an immense concentration of Roman forces in the region (Keppie, 1998: 163, 166).

Contemporary with the revolt, and probably also originating earlier during the Pannonian wars (14–9 BC), was the military fort at Obrežje, on the right bank of the River Sava, which was excavated between 2001 and 2003. It was situated at eastern exit of the strategically very important Brežice Gates, which is a narrow between Krško polje (roughly between Krško and Brežice) and the broad valley of the River Sava which opens towards the plain of north-western Croatia (Mason, 2006b; 2008). In this region, recent excavations in advance of motorway construction have produced additional evidence for an Augustan Roman military presence at Sredno polje near Čatež, some eight kilometres west of Obrežje (Guštin, 2002) and probably also at Sv. Urh 1 on Krško polje (Mason, 2006; 2006b; 2008), 17 kilometres from Obrežje (Fig. 1). In the same area, in the River Sava near Mokrice (Fig. 1), was found a helmet inscribed with its owner's name (C. Matius from the third cohort of the century of P. Mussius Taurus; Hoffiler, 1937: 31-32, Figs. 4a, b). The helmet is of the Haggenau type; the shape and length of its neck-guard indicate a post-Augustan date, perhaps middle of the first century AD (cf. Waurick, 1988: 327-332; Feugère, 1994: 81-86).

The concentration of late Republican and, most notably, Augustan military finds along the Ljubljanica clearly reflects the intensive contemporary use of that river by the Roman army. Subsequently, the military presence in the area was rapidly and drastically reduced. Moreover, by then, the new road between *Nauportus* and *Emona*, was most probably in use.

It remains unclear as to whether the radical reduction of Roman military finds from watery locations generally, after the first century AD, and the suggested change in the habits of Roman soldiers (Thiel & Zanier, 1994: 69; Thiel, 2000: 73), should be linked to the chronological incidence of finds from the Ljubljanica. However, the evidence from the Saône indicates that votive offerings of Roman weapons continued there after the middle of the first century AD. Evidently, explanations for the occurrence of riverine finds generally are far from simple (for an evidence of river-transport in river Kupa, northern Croatia, see Šarić, 1985).

⁴ Festus, *Breviarium* VII 51, 10-13.

What can we say about the soldiers connected with the military finds from Ljubljana? *Pila* indicate that there were legionaries among them. Publius Oppius, the owner of one of the helmets (Fig. 5), was also a legionary, a Roman citizen, probably from northern Italy, who was serving in the century of Gaius Macc(ius) or Gracc(i)us⁵. Prestigious items (Istenič, 2003; 2003b) point to the presence of higher ranking soldiers.

The military finds from the River Ljubljana attest to the presence of Roman soldiers in the late Republican period, and in the Augustan period, in particular. Because their dating stems from typological parallels, it is uncertain precisely when the frequency of such military finds declined, but it seems to have happened at the end of Augustan period or soon after. The high concentration of early Roman finds probably relates to the intensity of the traffic along the River Ljubljana. For example, military personnel were probably engaged in survey, and in the organisation of military transport, as well as accompanying cargoes in transit to the Roman army and the transport of booty to Italy. In addition, soldiers themselves would have been transported by boat. The dating of the Roman military finds from the Ljubljana coincides with the period, when the Roman army was engaged in the conquest and consolidation of the future province of *Pannonia* – and that is the precise time, when the military would have needed to make frequent and essential use of the riverine route along the Ljubljana.

ACKNOWLEDGMENT

I would like to thank Dr. Vivien Swan (York) for editing and enhancing my English.

BIBLIOGRAPHY

- BITENC, P. & KNIFIC, T. (1997): "Arheološko najdišče Ljubljana" (The Ljubljana as an archaeological site, Summary)", *Argo* 40/2, 19-32.
- BRAS KERNEL, H. (2007): "'Vrhniški zaklad' je del zbirke iz Ljubljane pri Bevkah (Summary: The 'Vrhniko hoard' belongs to the collection of finds from the Ljubljana near Bevke)", *Argo* 49/2, 11-24.
- DROBERJAR, E. (1998): "L'Italia settentrionale e l'impero di Morobuduo. Testimonianze sulle reciproche relazioni in base al vasellame bronzeo e alle fibule", *Quad. Friulani Arch.* 8, 31-48.
- DUMONT, A. (2002): *Les passages à gué de la Grande Saône. Approche archéologique et historique d'un espace fluvial (de Verdun-sur-le-Doubs à Lyon)*, Rev. Arch. Est Suppl. 17, Dijon.
- FEUGÈRE, M. (1994): *Les casques antiques*, Paris.
- GASPARI, A. (1998): "Das Frachtschiff aus Lipe Moor von Laibach (Ljubljana)", *Jahrb. RGZM* 45, 527-550.
- GASPARI, A. (1999): "An unusual umbo from the Ljubljana river (SI)", *Instrumentum* 9, 18.
- GASPARI, A. (2002): *Latenske in zgodnje rimske najdbe iz Ljubljane. Doktorsko delo*, Univerza v Ljubljani, Ljubljana (unpublished PhD thesis).

⁵ I would like to thank Dr. Milan Lovenjak for the interpretation of the inscription on the helmet.

- GASPARI, A. (2003): "Archaeology of the Ljubljana River (Slovenia): early underwater investigations and some current issues", *Internat. Journal Nautical Arch.* 32, 1, 42-52.
- GASPARI, A. (2009): "A cargo ship of Mediterranean sewn construction from Lipe and its place in research into continental shipbuilding in the Roman period", P. TURK, J. ISTENIČ, T. KNIFIC & T. NABERGOJ (eds.): *The Ljubljana – A River and its Past*, Ljubljana.
- GUŠTIN, M. (2002): "Il campo militare romano a Čatež presso Brežice (Slovenia)", *Quad. Friulani Arch* 12, 69-75.
- HOFFILER, V. (1937): "Nove rimske vojničke kacige", *Časopis za zgodovino in narodopisje* 32, 29-32.
- HORVAT, J. (1990): *Nauportus*, Opera 33, Ljubljana.
- HORVAT, J. (1997): "Roman Republican weapons from Šmihel in Slovenia", *Journal Roman Military Equipment Stud.* 8, 105-120.
- HORVAT, J. (1999): "Roman provincial Archaeology in Slovenia following the year 1965: settlement and small finds", *Arh. Vestnik* 50, 215-257.
- HORVAT, J. (2002): "Hoard of Roman Republican weapons from Grad near Šmihel under Nanos", *Arh. Vestnik* 53, 117-192.
- HORVAT, J. & MUŠIČ, B. (2007): "Nauportus, a Commercial Settlement between the Adriatic and the Danube", M. CHIABÀ, P. MAGGI & Ch. MAGRINI (eds.): *Atti del convegno "Le Valli del Natisone e dell'Isonzo tra Centroeuropea e Adriatico. Atti del Convegno Internazionale di Studi (San Pietro al Natisone, 2006), Studi e ricerche sulla Gallia Cisalpina* 20, Trieste-Roma, 165-174.
- ISTENIČ, J. (2000): "A Roman late-republican gladius from the River Ljubljana (Slovenia)", *Arh. Vestnik* 51, 171-182.
- ISTENIČ, J. (2000b): "A late-republican gladius from the River Ljubljana (Slovenia)", *Journal Roman Military Equipment Stud.* 11, 1-9.
- ISTENIČ, J. (2001): "Un bronzetto di Apollo (Beleno?) dal fiume Ljubljana (Slovenia)", *Aquileia Nostra* 72, 73-86.
- ISTENIČ, J. (2002): "Bronze statuettes of Apollo from the River Ljubljana", A. GIUMLIA-MAIR (ed.): *I bronzi antichi: produzione e tecnologia, Atti del XV Congresso Internazionale sui Bronzi Antichi (Grado-Aquileia, 2001)*, Monogr. Instrumentum 21, Montagnac, 450-455.
- ISTENIČ, J. (2003): "The early Roman 'Hoard of Vrhnika': a collection finds from the river Ljubljana", *Arh. Vestnik* 54, 281-298.
- ISTENIČ, J. (2003b): "A uniface medallion with a portrait of Augustus from the River Ljubljana (Slovenia)", *Germania* 81, 263-276.
- ISTENIČ, J. (2009): "Emona: a Roman trading centre on the River Ljubljana", P. TURK, J. ISTENIČ, T. KNIFIC & T. NABERGOJ (eds.): *The Ljubljana – A River and its Past*, Ljubljana.
- ISTENIČ, J. (2009b): "The Ljubljana and the Roman army", P. TURK, J. ISTENIČ, T. KNIFIC & T. NABERGOJ (eds.): *The Ljubljana – A River and its Past*, Ljubljana.

- ISTENIČ, J.; KNIFIC, T.; NABERGOJ, T.; TRAMPUŽ OREL, N.; TURK, P. & MIŠKEC, A. (2007): *Steps into the past. Treasures from the archaeological collections of the National Museum of Slovenia*, Ljubljana.
- KARASOVÁ, Z. (1998): *Die römischen Bronzegefäße in Böhmen*, Fontes arch. Pragenses 22, Praga.
- KEPPIE, L. (1998): *The Making of the Roman Army: From Republic to Empire*, London.
- KLEIN, M. J. (2000): "Der Rhein bei Mainz als Fundstelle: Brücken, Häfen und Zeugnisse des römischen Heeres", L. BONNAMOUR (ed.): *Archéologie des fleuves et des rivières*, Paris, 56-64.
- KOS, P. (1983): "Der Schatzfund norischer Großsilbermünzen aus Bevke", *Arh. Vestnik* 34, 411-417.
- KOS, P. & ŠEMROV, A. (2003): "Skupna najdba keltskih in rimskih novcev v reki Ljubljanici. Doprinosa h kronologiji novcev plemena Tavriskov (A hoard of Celtic and Roman coins from the Ljubljanica River. A contribution to the chronology of the coinage of the Taurisci)", *Arh. Vestnik* 54, 381-395.
- KOS, P. (1988): *FMRSI I*, Berlin.
- KOS, P. & ŠEMROV, A. (1995): *FMRSI III*, Berlin.
- KÜNZL, E. (1994): "Gladiusdekorationen der frühen römischen Kaiserzeit: Dynastische Legitimation, Victoria und Aurea Aetas", *Jahrb. RGZM* 43, 383-474.
- MASON, Ph. (2006): "'Vojaški tabor in rimska cesta pri Obrežju', v: Rimske ceste in project avtocest", *Rast* 2 (104), 66-69.
- MASON, Ph. (2006b): "The Augustan fort of Obrežje", D. DAVISON, V. GAFFNEY & E. MARIN (eds.), *Dalmatia. Research in the Roman Province 1970-2001*, BAR Int. Series 1576, Oxford, 67-71.
- MASON, Ph. (2007): "The Roman Fort at Obrežje and Augustan military activity in the Sava valley in Slovenia", *Rom auf dem Weg nach Germanien: Geostrategie, Vormarschstrassen und Logistik*, Bodenaltertümer Westfalens 45, Mainz, 187-198.
- RANT, J.; MILIĆ, Z.; NEMEC, I., ISTENIČ, J. & SMODIŠ, B. (1994): "Neutron and X-ray radiography in the conservation of the Roman dagger and sheath = Neutronen- und Röntgendurchstrahlung bei der Konservierung eines römischen Dolches mit Scheide", *International conference non-destructive testing of work: Internationale Konferenz Zerstörungsfreie Untersuchungen an Kunst- und Kulturgütern*, Dt. Ges. Zerstörungsfreie Prüfung e. V., 45,1, Berlin, 31-40.
- ŠARIČ, I. (1985): "Rimski brončani material izvađen iz rijeke Kupe kod Karlovca (Les matériaux romains en bronze retirés de la rivière Kupa à Karlovac)", *Arheološka istraživanja na karlovačkom i sisačkom području* 10, 69-89.
- ŠAŠEL, J. (1968): "Emona", *RE Suppl.* XI, 540-589 (= *Opera selecta*), Situla 30, Ljubljana 1992, 559-579).
- ŠAŠEL KOS, M. (1990): "Nauportus: ancient literary and epigraphical sources", J. Horvat, *Nauportus (Vrhnika)*, Slovenska Akad. Clas. 1, 33, Ljubljana, 143-159.

- ŠAŠEL KOS, M. (2002): "The boundary stone between *Aquileia* and *Emona*", *Arh. Vestnik* 53, 373-382.
- ŠAŠEL KOS, M. (2008): "The Ljubljanica in ancient sources", P. TURK, J. ISTENIČ, T. KNIFIC & T. NABERGOJ (eds.): *The Ljubljanica – A River and its Past*, Ljubljana.
- SBRIZAJ, I. (1903): *Ljubljansko barje in njega osuševanje*, Ljubljana.
- SCHALLES, H.-J. & SCHREITER, C. (1993): *Geschichte aus dem Kies. Neue Funde aus dem Alten Rhein bei Xanten*, Xantener Ber. 3, Köln/Bonn.
- ŠEMROV, A. (1998): *FMRSI IV*, Berlin.
- ŠMIT, Ž.; PELICON, P.; SIMČIČ, J. & ISTENIČ, J. (2005): "Metal analysis with PIXE: the case Roman military equipment", *Nucl. instrum. methods phys. res., B Beam interact. mater. Atoms*, 239, 27-34.
- THIEL, A. (2000): "Römische Waffenfunde der frühen Kaiserzeit aus Gewässern", L. BONNAMOUR (ed.): *Archéologie des fleuves et des rivières*, Paris, 70-74.
- THIEL, A. & ZANIER, W. (1994): "Römische Dolche – Bemerkungen zu den Fundumständen", *Journal Roman Military Equipment Stud.* 5, 59-81.
- VIČIČ, B. (1993): "Zgodnjersko naselje pod Grajskim gričem v Ljubljani. Gornji trg 15 (Frührömische Siedlung unter dem Schloßberg in Ljubljana. Gornji trg 15)", *Arh. Vestnik* 44, 153-201.
- VIČIČ, B. (1994): "Zgodnjersko naselje pod Grajskim gričem v Ljubljani. Gornji trg 30, Stari trg 17 in 32 (Die frühromische Siedlung unterhalb des Schloßbergs in Ljubljana. Gornji trg 30, Stari trg 17 und 32)", *Arh. Vestnik* 45, 25-80.
- VIČIČ, B. (1999): "Die frühromische Fabrica vom Gornji trg 3 in Ljubljana", *Instrumentum* 10, 15, 31.
- VIČIČ, B. (2002): "Zgodnjersko naselje pod Grajskim gričem v Ljubljani. Gornji trg 3 (Frührömische Siedlung unter dem Schloßberg in Ljubljana. Gornji trg 3)", *Arh. Vestnik* 53, 193-221.
- VIČIČ, B. (2003): "*Colonia Iulia Emona*", M. ŠAŠEL KOS, & P. SCHERRER (eds.): *The autonomous towns of Noricum and Pannonia, Pannonia 1*, Situla 41, Ljubljana, 21-45.
- WAURICK, G. (1988): "Römische Helme", H. PFLUG (ed.): *Antike Helme. Sammlung Lipperheide und andere Bestände des Antikenmuseums Berlin*, Monogr. RGZM 14, Mainz, 327-364.

