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## An oil lamp from Slovenia depicting a Roman glass furnace

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In 2002 and 2003 at Spodnje Škofije near Koper (Slovenia) at an archeological site named Križišče ('Crossroad') part of a Roman burial ground beside the Roman road (via *Flavia Tergeste-Pola*) was investigated. One of the cremation graves included an oil lamp with a representation of a glass furnace.

The relief is showing a glass furnace and to the left and right of it a glass-worker, one of whom is engaged in blowing while the other assists at the furnace. In the centre is the furnace, divided into two sections. The lower one serves as stoke hole (or stoking compartment); the upper section of the furnace has a larger aperture and served as the glassblower's working port. The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps (*Asseria*, Ferrara, Spodnje Škofije). The relief is very well executed, crisp and not damaged. Probably we may assume that the lamps from *Asseria* and Spodnje Škofije were made in the same mould, since their individual details are identical.

The grave with the oil lamp from Slovenia can be placed in the second half of the 1<sup>st</sup> century or perhaps also at the beginning of the 2<sup>nd</sup> century.

*Key words: Roman period, Slovenia, glass-working, oil lamp, glass furnace, glass blowing*

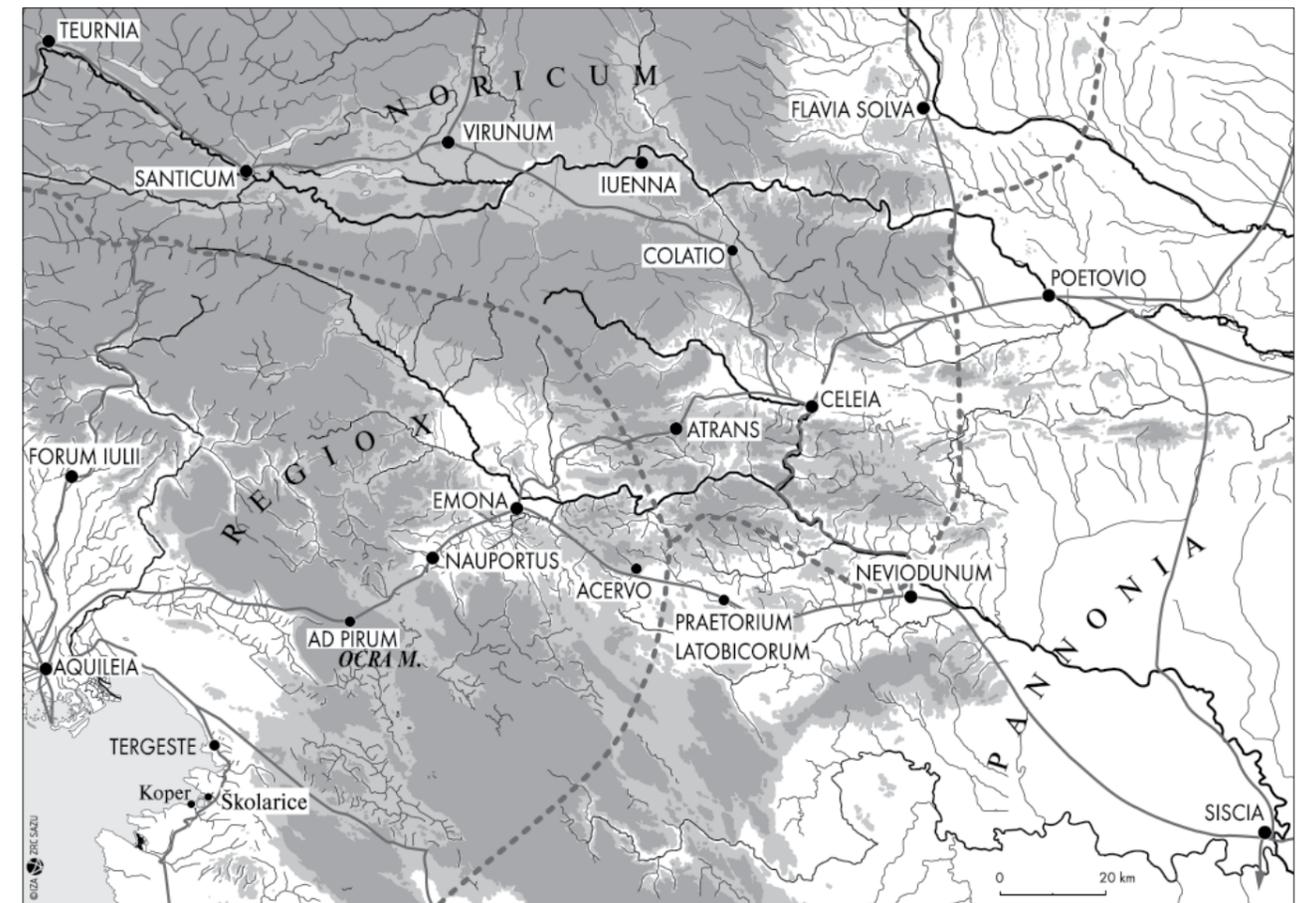


Fig 1.  
Map of Slovenia in the Roman period with the site Spodnje Škofije near Koper  
(map prepared by Mateja Belak, ZRC SAZU).

In 2002 and 2003, a rescue excavation along the route of the future motorway was carried out at Spodnje Škofije near Koper (Slovenia), at an archeological site named Križišče ('Crossroad'). Part of a Roman burial ground beside the Roman road (via *Flavia Aquileia-Tergeste-Pola*), which ran in a north - south direction, was investigated.<sup>1</sup> In the northern part of the necropolis two roads connected with the above-mentioned road, one leading towards a Roman villa in the immediate vicinity (Školarice on the hill Bečajevec), and the other towards the Roman settlement of Srmin (Fig. 1). The main road was still in use in the late Roman period.

The necropolis was investigated along the eastern edge of the road. It had paved grave plots, and was bordered on the eastern side by a 2-metre-high well-built wall of sandstone. Three grave plots were investigated. The most northerly one had a square shape (16 x 16 m) and lay exactly where the side road branched off towards the nearby Školarice villa.<sup>2</sup> The graves on these plots differ in the manner of burial and in their form. On the three plots

27 cremated and 16 skeleton burials and 6 graves of newborn babies were researched. They were dated to the period from the 1<sup>st</sup> to the 5<sup>th</sup> century. The ground-plan arrangement could not be observed, but the majority of the graves were of the cremation type. The predominant form was the so-called *bustum* type of burial - the cremation of the deceased directly above the burial pit.

Judging by the quality of the grave goods, some socially well-situated individuals were buried here. The position of the northern grave plot beside the road turning off towards the villa indicates that it was possibly the property of the owner of the villa in the earlier phase (1<sup>st</sup> century).

One of the cremation graves in the above-mentioned grave plot (grave no. 152) is particularly interesting<sup>3</sup>. The grave goods included an excellently preserved clay oil lamp (Fig. 2) with a representation of a glass furnace and glass workers beside it.<sup>4</sup> The motif is the same as that on the only two other oil lamps depicting

1 Novšak 2003a, p. 165; Šašel 1975, p. 75.

2 Novšak 2003b, p. 258.

3 I would like to thank Matjaž Novšak (Arhej d.o.o.) and Alfred Trenz (ZVKDS OE Piran) for permission to publish this find.

4 Lazar 2004, p. 28, Fig. 15, cat. no. 25; 2005, p. 17-19.



Fig. 2.  
Photo of the lamp from Spodnje Škofije near Koper (photo: Tomaž Lauko).



Fig. 3a.  
Drawing of the lamp, scale 1: 1 (drawing: Jerneja Kobe).

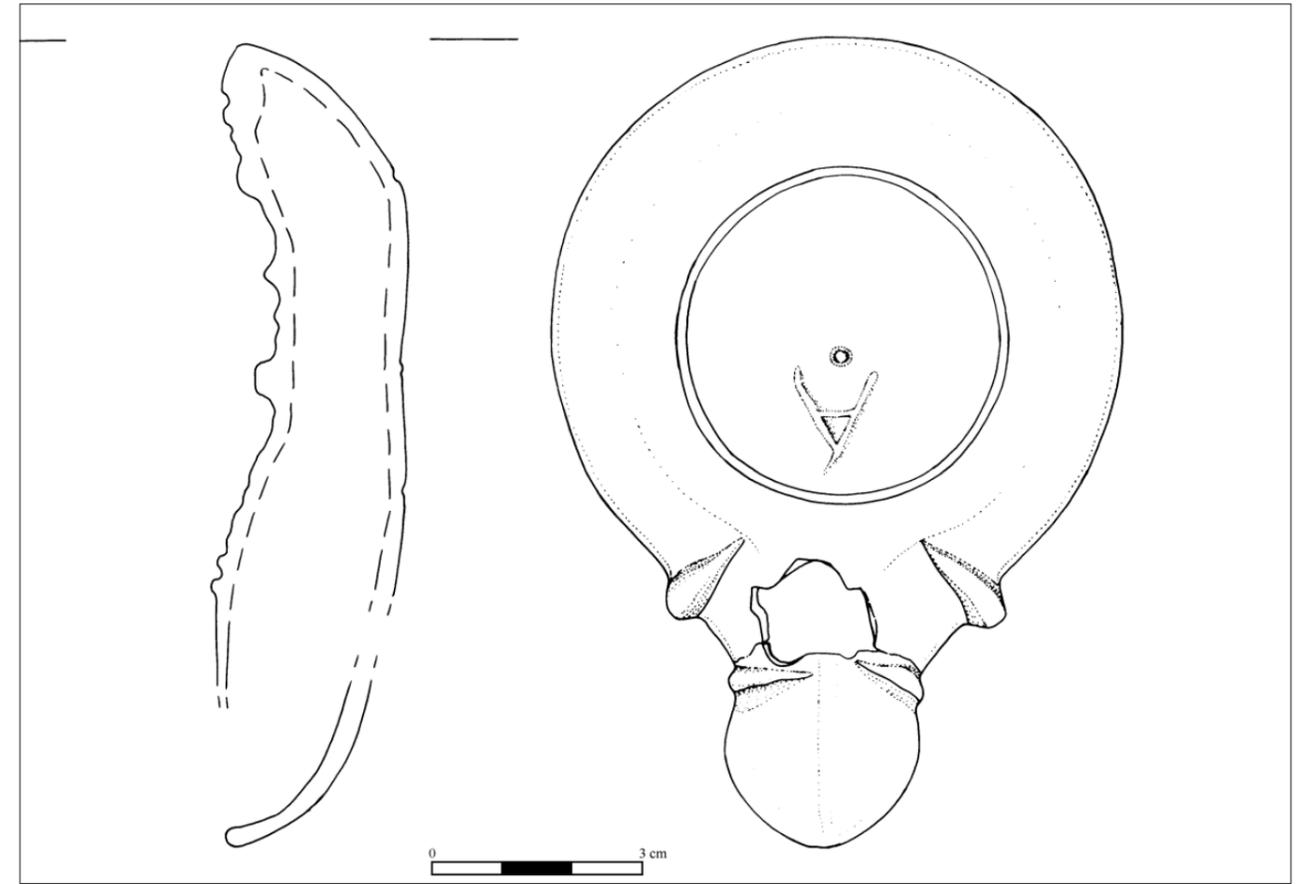


Fig. 3b.  
Drawing of the lamp, scale 1: 1 (drawing: Jerneja Kobe).

a glass furnace known so far - from *Asseria* (modern Podgrađe near Benkovac, in Croatia) and vicinity of Ferrara (in Italy).<sup>5</sup>

The new oil lamp, of grey burnt clay is 11.3 cm long, 8.1 cm wide and 2.6 cm high. It belongs to the group of so-called relief oil lamps of the Loeschke type IV, with a rounded nozzle and volutes on either side (Fig. 3). The disk is decorated with a relief showing a glass furnace and to the left and right of it a glass-worker, one of whom is engaged in blowing (a glass vessel) while the other assists at the furnace. The representation is excellent and the oil lamp itself very well preserved, so that many details which are blurred in the other two lamps can be seen clearly<sup>6</sup>. In the centre is the furnace, divided into two sections. The lower one obviously serves as stoke hole (or stoking compartment); the opening is hatched diagonally. The upper section of the furnace has a larger aperture, of semi-circular form. This was used for scooping molten glass out of the melting pot and served as the glassblower's working port. Inside the relief line surrounding the upper opening

or door appears a V-shaped object turned upside down. Probably we should not interpret this as the melting pot for glass. Possibly this schematic sketch draws attention to the working port's small door or fireguard (perhaps no more than a pot shard, as suggested by Stern)<sup>7</sup> which closed the working port while work was in progress, so as to maintain the temperature inside the furnace and at the same time protect the glassblower while he was working at the furnace<sup>8</sup>. On the left and right in the upper part two small shelves or working surfaces are shown, the right-hand one rests on a leg or stand. The right one can be interpreted as the working surface or slab on which the glassblower rolled a glass post before blowing and marvered the glass during his work above the furnace. Undulating lines incised in the upper left part above the furnace indicate the heat emanating from the furnace.

7 Stern 2004, p. 83.

8 At some medieval furnaces remains of pottery frames have been excavated; according to the excavator they served to change the size of the working port (information E. M. Stern; Steppuhn 2001, p. 40, Abb. 4). They can be compared to pottery frames discovered at Avenches (Amrein 2001, p. 88, Pl. 20: 74).

The right-hand figure sits on a low stool beside the furnace, dressed in a short tunic, the folds of which are emphasized with deep incisions. He is barefoot, as can be seen by the short slanting incisions at the front of his foot. On the floor by his foot lie three objects, which can probably be interpreted as raw glass and/or waste material formed during his work. The person's head is raised, his lips pushed forward and ready to blow into the pipe which he holds inclined in front of him. This is elliptically broadened at the end and draws attention to the oblong, rather big object that the glass-worker is blowing. If we take into account the proportions of the glassblower and his tool, the blowpipe is less than a metre long and looks quite robust. We can also observe that something is attached to the underside of the pipe. If the blowpipe is not made of metal, but of clay, as Stern suggests,<sup>9</sup> the long narrow strip tied to it may have served to reinforce the pipe while the glassblower blew a large, heavy object (pers. com. E. M. Stern). The round hole below the pipe is the oil lamp's air vent.

The figure on the left side of the furnace, probably the master craftman's assistant is less precisely drawn. He seems to be

squatting next to the furnace. He has a short object in his hands, placed upright. It is not a blowpipe. Could it be a "pointed" bellows of the vertical type depicted on several Roman monuments depicting a smith at work?<sup>10</sup> In that case, the triangular shelf seen on the left side of the furnace probably represents the support for the bellows.<sup>11</sup> However, according to the last experiments on Roman glass blowing by Mark Taylor and David Hill the bellows are not necessary. The desired heat in the furnace for melting and blowing can be achieved with proper stocking.<sup>12</sup> Therefore it is also possible, that the assistant on the left side of the furnace is only checking the finished object, which he took out of the annealing oven.

There is no inscription or name on the upper part of the disk, as on the oil lamp from *Asseria*.<sup>13</sup> A letter 'A' is scratched on the underside of the lamp. May we perhaps associate this with the name *Athenio* on the disk of the oil lamp from Benkovac?

5 Abramić 1959, p. 149-151; Baldoni 1987, p. 22-29.

6 For discussion and remarks about the relief on the lamp I'm indebted to Dr. E. M. Stern.

10 Weisgerber, Roden 1985, p. 6-10, Figs. 10-13.

11 Suggested by E. M. Stern; Weisgerber, Roden 1985, p. 9.

12 pers. comm. D. Hill and M. Taylor; www.romanglassmakers.co.uk

13 Abramić 1959, p. 150, Taf. 27; Buljević 2005, p. 100, sl. 8.

9 Stern 1999, p. 446.

The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps. The relief is very well executed, crisp and not damaged. The relief scenes on the lamps differ only in the placement of the air vent, which is on the lower side of the disk in the find from Benkovac, while on the lamps from Ferrara and Slovenia the small hole is below the blowpipe, on the right side of the furnace. Probably we may assume that at least the two lamps from Benkovac and Spodnje Škofije were made in the same mould, since their individual details are identical. The relief on the lamp from Ferrara is unfortunately too worn for all the details to be compared.

The grave in which the lamp was found produced also some glass objects. Fragments of four balsamaria were discovered<sup>14</sup>. They were blown from glass of a slightly bluish hue, well produced, without air bubbles, and with relatively thick walls. Of three balsamaria only a slightly rounded bases are preserved. Their forms agree with those of tubular-shaped balsamaria (the variant 8.6.1.)<sup>15</sup> that were characteristic of the 1<sup>st</sup> and the first half of the 2<sup>nd</sup> century.<sup>16</sup> One balsamarium was preserved up to half its height. It is a tubular balsamarium with a constriction at the base of the neck, a type which can be classified among the Slovenian material as the 8.6.2. variant. These occur from the second half of the 1<sup>st</sup> century onwards.<sup>17</sup>

There were almost no other grave goods, though we should mention some iron fragments and two coins, one of which was badly damaged and the other a rather worn bronze coin of Claudius (41-54)<sup>18</sup>. The bone (ash grave) remains were unfortunately too scanty for analysis. Considering the composition and modest extent of the grave goods, this grave can be placed in the second half of the 1<sup>st</sup> century or perhaps also at the beginning of the 2<sup>nd</sup> century.

Who can the grave be connected with? Was the deceased in some way linked with the glasswork trade (a glass-blower, perhaps a glassware merchant) or is the representation on the oil lamp purely coincidental? Is it possible that in the nearby villa (Školarice) a glass workshop operated as well as other branches of business? The excavations carried out so far have not provided data which would support such a hypothesis. Maybe the oil lamp laid in the grave was only an expression of interest in craft which in the course of the 1<sup>st</sup> century spread like wildfire throughout the whole empire due to the newly discovered technique of free blowing.

At present there is no evidence for local Roman glass production from the rather limited coastal region of present-day Slovenia.<sup>19</sup> But not far away lies Aquileia, where - to judge by the

finds<sup>20</sup> - glass workshops did operate as early as the 1<sup>st</sup> century. Moreover, the town was a strong commercial centre and played an important role in trade links of the northern Adriatic region and the south-eastern Alps in the first centuries AD, including trade in glass and glass products.

Translation: Margaret Davis

14 Lazar 2005, p. 18, Fig. 4.

15 Lazar 2003a, p. 175.

16 Idem, p. 196.

17 Idem, p. 176, 195.

18 The coins were determined by Alenka Miškec from the Numismatic Cabinet of the National Museum of Slovenia, Ljubljana.

19 Lazar 2003b, p. 78.

20 Stern 2004, p. 116, bilj. 56; Calvi 1968.

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**Sažetak****Uljanica iz Slovenije s prikazom rimske staklarske peći**

*Gljučne riječi: rimsko doba, Slovenija, staklarstvo, uljanica, staklarska peć, puhanje stakla*

Tijekom 2002. i 2003. godine izvršena su zaštitna istraživanja na dionici buduće autoceste pokraj Kopra u Sloveniji (sl. 1). Na nalazištu Raskršće u Spodnjim Škofijama otkriven je dio rimskoga groblja, koje se rasprostiralo uz rimsku *via publica* (*via Flavia Aquileia-Tergeste-Pola*). Jedan od paljevinskih grobova (broj 152) sadržavao je izvrsno očuvanu glinenu uljanicu (sl. 2, 3) s reljefom staklarske peći. Motiv je isti kao na dvije dosad poznate uljanice iz rimskog razdoblja iz *Asserije* u Dalmaciji (Benkovac) i Ferrare u Italiji.

Novootkrivena uljanica ima reljef na disku s prikazom staklarske peći i dva staklara, desno i lijevo do nje. Prvi je zauzet puhanjem stakla, dok mu drugi pomaže pokraj peći. Reljef je vrsno izrađen i očuvan u cijelosti, tako da možemo proučavati mnoge detalje koji zbog oštećenja na preostale dvije uljanice nisu vidljivi.

U središtu je staklarska peć podijeljena u dva dijela. Donji je dio služio kao ložište; otvor je dijagonalno iscrtan. Gornji dio ima veći otvor polukružnog oblika. Služio je kao radno mjesto staklara, za vađenje istaljenog stakla iz peći i njegovu daljnju obradu. Unutar reljefne linije, koja ocrtava otvor ili vrata peći, opaža se trokutasti objekt postavljen naopako. Moguće je da shematski prikazuje vrata peći ili zaslon, koji su zatvarali peć tijekom rada ili puhanja. Lijevo i desno na gornjem dijelu peći vidljive su dvije male police ili radne površine. Desna bi mogla biti interpretirana kao radna površina staklara tijekom puhanja, na kojoj se povremeno valjao staklo tijekom različitih stupnjeva obrade. Desna figura sjedi na niskom stolu pokraj peći odjenuta u kratku tuniku. Nema cipela, bosa je, što se primjećuje prema kratkim zarezima na prednjem dijelu noge. Na tlu leže tri predmeta, koje možemo tumačiti kao sirovo staklo ili otpad od puhanja nastao tijekom rada. Osoba ima uzdignutu glavu i sprema se puhati u cijev za puhanje koju drži ispred sebe. Cijev je na završetku eliptično proširena i stječe se dojam da staklar puše prilično veliku posudu (bocu). Cijev je duga manje od metra i izgleda prilično robusno. Zamjećuje se da je na donji dio cijevi vjerojatno nešto pričvršćeno. Ako cijev nije metalna već je izrađena od gline, ovaj dodatak na donjem dijelu mogao je služiti kao učvršćenje cijevi tijekom puhanja velikog i teškog predmeta.

Lijeva figura čuču pokraj peći. U ruci drži kratak predmet postavljen okomito. Možda je to mijeh za puhanje vertikalnog tipa ili pak pomoćnik samo provjerava već izrađeni predmet uzet iz dijela peći za hlađenje napuhanih posuda.

Uljanica iz groba u Sloveniji najbolje je očuvana od svih triju dosad poznatih uljanica s reljefom staklarske peći. Prema pojedinim istovjetnim detaljima možemo pretpostaviti da su uljanice iz *Asserije* i Slovenije izrađene u istom kalupu. Sudeći po sastavu i skromnim prilozima u ovom grobu, mogli bismo ga datirati u drugu polovicu 1. ili na početak 2. stoljeća.

Prijevod: Irena Lazar i Zdravka Hincak