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APPLIED ARTS IN ROME

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he cobesion of the political system allowed unimpeded freedom of movement to enterprising merchants from Asia, Hispania and Gaul, facilitated the widest initiative to contractors from all the provinces, and provided steady supply of all necessary raw materials to the craftsmen from the City - Rome. The ancient industry had an entirely different character, both in the way it developed as well as in the production system: it was an empire of people-often slaves, though-in which every individual had a chance to express their personal talents, and every product bore the mark of the artisan who made it. It is therefore all but impossible in the world of antiquity to set a precise border between industry and craft, because industry, even when diversified and technically organized with a division of labour of some kind, still consists of specialized craftsmen. When we discuss applied arts, we certainly have to point out the role of the craftsmen, regardless of whether they had signed their product or it had been left without a mark, the seal of a workshop or the master craftsman.

Key words: applied arts, Rome, craftsman, jewellery, luxury goods, Roman Empire, Roman provinces

The luxurious way of life of high-society Romans and massive population increase contributed to the development of various branches of clothing industry: linen-weaving workshops (*lintearii*) produced linen cloth, subsequently worked into robes by *vestiarii* (robe tailors) and soldier's cloaks by *sagarii* (makers of soldier's cloaks), while footwear was made by specialized artisans - *sutores* and *caligarii* for men, and *fabri solearii* for

women. Rome, however, rose to particular prominence in the manufacture of luxury goods, required by high standard of living of the nobility, well-off citizens andabove all-the imperial court. The capital was full of skilled goldsmiths, mostly Greeks, who crafted jugs (goblets) and jewellery of exquisite workmanship in precious metals. Mirror-makers (*specularii*), ring-makers (*anularii*), goldsmiths (*aurifices*) and artisans who worked ivory

¹ A small silver jug decorated with gilded maple leaves belongs to a treasure found at Hildesheim, now kept in a museum in Berlin.

Fig. 1. Italian terra sigillata pottery, Velika Mrdakovica, 1st cent. B.C., Gradski muzej Šibenik



(eborarii) helped make Rome a sumptuous metropolis.

In Italy, as well as in other provinces throughout the Empire, there were centres of manufacture of various goods, which were then shipped to the farthest centres of the Empire. Aquileia, for instance, was a centre of production not only of glass but also of amber (*sucinum*) imported from Germania, and worked into small boxes, bottles, mirrors and balls carried by Roman matrons in hand to enjoy the scent they gave off when rubbed. Among other goods, Aquileia was famous also for manufacture of vases and jewellery. Silver and bronze vases from Capua were found on the coasts of the Black Sea.

Peace and unity brought by *Pax Romana* improved trade connections also in the provinces, contributing among other things to the development of local crafts. Among the provinces of the eastern Mediterranean, Egypt played a particularly significant role due to manufacture of ivory goods, silverware and glass jugs made on a lathe. Syria also produced blown glass and metal artefacts. Among the western and northern provinces, Gaul produced glass.

The life of luxury that became the vogue in Rome after the conquest stimulated development of applied arts – a segment of crafts that encompassed craftsmen skilled in manufacturing goods of gold, silver, ivory and other precious materials: ranging from modellers (*figuratores*), turners (*tritores*) and incisors (*caelatores*) to gilders (*inauratores*), as well as master craftsmen who were essentially true artists, capable of making silver leaves in bas-relief for pasting them on vases (*crustarii*). There are also unforgettable and inevitable *aurifices* and *eborarii*, skillful workers of gold and ivory.

We read in the Roman chronicle based on Martial, Juvenal and other sources: "Desires of the Romans grew immeasurably as their wealth increased. Who thought a hundred or two years ago to decorate a house with a floor, mosaic or stucco? And who would have thought then that windows would be glazed with talc?²... And let us see now what beautiful things are made of glass. Not far from the Forum, in the house of a wealthy man-with certain tenures in the Gallic provinces-floor is covered with small incrustations of glass, marble, onyx and gold.

Goldsmiths, many of which were Greek, have chosen quieter streets and are beating their magical hammers, creating unbelievably beautiful and valuable objects. Those who want beautiful things have to be ready to pay for them. Rome is famous for these goldsmiths. The Greeks refined their workmanship and are making wonderful goblets (jugs) and jewellery, carving fish into them that would swim if placed in water, birds that look alive and flowers missing only the scent. . ."³

Wealth and applied arts are discussed in *Historia Augusta*,⁴ but also by Petronius in Satyricon.⁵ Objects of applied art figure prominently in the description of the famous Trimalchio's dinner: "When the fumes of the wine had been dissipated, we were conducted into another dining-room where Fortunata⁶ had laid out her own treasures; we noticed little bronze fishermen upon the lamps, the tables were of solid silver, the cups were porcelain inlaid with gold; before our eyes wine was being strained through a straining cloth".⁷

Although the value of *Historia Augusta* as a source does not compare to its length, it is nevertheless far from unimportant or without interest. Of course, when using *Historia Augusta* as a source we have to be careful, particularly when we deal with various documents, letters, senatorial decisions or biographies of certain emperors, but abundant anecdotal material hides a wealth of

² Talc = magnesium silicate.

³ ANTIČKI RIM 1967., 130.

⁴ HISTORIA AUGUSTA 1994., SHA 1965; THE SCRIPTORES HISTORIAE AUGUSTAE 1961-1967

⁵ PETRONIUS ARBITER 1986.

⁶ Trimalchio's wife.

⁷ PETRON. XV, 73





Fig. 2. Clay lamp showing the quadriga of Selene, Salona, 2nd cent. A.D., Arheološki muzej Split

Fig. 3. Clay lamp showing the married couple, Sisak, $2^{\rm nd}/3^{\rm rd}$ cent., Arheološki muzej Zagreb

interesting information. This pertains above all to various information on Roman culinary art, gladiatorial and other games, fashion, military life, applied arts and many other things.

The following data are of particular interest.

Julius Capitolinus writes in the chapter on Emperor Marcus Antoninus the Philosopher-Emperor Marcus Aurelius (161-180)...8 "With the simultaneous annihilation of the Marcomanni, Sarmatians, Vandals (Victuali) and Quadi he set Pannoniae free from slavery and, as he himself had mentioned, celebrated a triumph in Rome with his son Commodus, whom he had already proclaimed Caesar. As this war had drained the aerarium dry, and he refused to impose additional taxes on people in the provinces, he organized an auction sale of imperial property at the Forum of Divine Trajan. He sold gold, crystal and glass goblets, royal tableware, his wife's silk and gilded robes, even the many precious stones he had found in Hadrian's secret treasury. The sale took two months to complete, and so much gold was sold that later, when he successfully completed the rest of the war with the Marcomanni, he allowed the buyers-should they wish-to return what they had bought and reclaim their gold. And to no person did he do any harm, whether they returned what they had purchased or not".

In the chapter on Verus (161-169),⁹ Julius Capitolinus remarked: "To the guests at the feast he gave attractive boys who waited on them, and to each and everyone he gave attendants and serving dishes, as well as live animals - poultry and fowl and quadrupeds, whose meat he had served them, and whenever they finished their drinks, to everyone he gave the cups they drank from, glass and crystal goblets from Alexandria. He gave away also gold,

silver and pearl-decorated cups, and even wreaths woven of golden stripes and flowers that bloom in another season, small bottles with fragrances that looked like alabaster but were in fact gold, wagons with mules and mule-drivers and a golden shaft, to bring them home from the feast".

Julius Capitolinus further writes, in the chapter on Helvius Pertinax: 10 "This is what stood out in the auction of Commodus' things: gold-embroidered silk garments, tunics, cloaks, raincoats, dalmatics, soldier's mantles with fringes, purple chlamyses after Greek fashion and those worn in a camp, mountain raincoats, gladiator's cloaks and weapons decorated with precious stones and gold. He sold Herculean knives, gladiator's necklaces, vessels made of electrum, gold, ivory, silver and glass, phallic goblets of those same materials and Samian vessels for melting pitch for removing hair and cleansing skin".

In the chapter on the divine Claudius, Trebellius Pollio brings¹¹ Valerian's letter to Zosiomion, the procurator of Syria: "We appointed Claudius, a man of Illyrian origin, as a tribune of the bravest and most loyal Fifth legion of Mars, as he should be given advantage over all the most loyal and brave men from past times. You shall give him salary from our private aerarium, three thousand modii of wheat per year..., fifty pounds of silverware every year, hundred and fifty golden coins bearing my figure every year, on every New Year forty-seven gold coins and a hundred and sixty thirds of gold coins. Further, eleven pounds of goblets, cups and pots. Two red military tunics every year, two military mantles every year, two gilded silver buckles, a golden one with a Cypriot pin, a gilded silver belt, a ring weighing an ounce with two stones, a seven-ounce bracelet, a necklace weighing a pound, a gilded helmet, two gold-decorated shields, an armour that

⁸ SHA *XVII*, *3,4,5*

⁹ SHA *V, 2, 3,4*

¹⁰ SHA *VIII*, 2,3,4,5

¹¹ SHA XIV, 2, 3, 4, 5, 6

Fig. 4. Various forms of glass vessels, mainly Salona, Arheološki muzej Split



he would return. Two Herculean spears, two short spears, two sickles, four hay-sickles. ... A semi-silk tunic with a Girbitian purple, one with Mauretanian purple... Two pairs of Cypriot blankets, two undecorated tunics, two pairs of men's socks, a toga that he would return, a toga with a wide border that he would return."

In the chapter on the divine Aurelian, Flavius Vopiscus of Syracuse relates: 12 "He intended to forbid the use of gold for decorating ceilings, tunics, fur and silverware. He used to say that there was more gold in nature than silver, but that gold is wasted if used for gilding, if melted or if used for making threads, while silver always remains silver. However, he permitted everyone who wanted to use golden vessels and cups. Moreover, he allowed private persons to embellish their coaches with silver, where previously they had only bronze or ivory ornaments. He let matrons wear purple tunics and other purple clothes, where previously

they wore only clothes in ordinary colours, mostly light red. He was the first to allow ordinary soldiers to wear golden buckles, while before that only silver ones were permitted. And he was the first to give paragaudae-tunics having bands of embroidery-to his soldiers, who previously received only straight-woven tunics of purple, ¹³ and to some he presented tunics with one band, to others those having two bands or three bands or even up to five bands, like the tunics today made of linen".

In this short review on applied arts from the ancient sources we can figure out all the excellence that Rome had in the shaping and making of applied arts from the tiniest objects-jewellery-to making of weapons; from furniture to decoration of floors; making of expensive clothes and footwear as well as in the use of a variety of materials.

During the Kingdom and Republic the matrons combed their hair in a simple fashion: hair was gathered

 $^{^{12}}$ SHA XLVI

¹³ Paragauda is a type of Persian garment, a long-sleeved tunic with a purple band with gold embroidery.

at the nape of the neck and attached with bands and pins, playing the role of present-day hairpins to a degree, or was braided into a bun on the crown of the head. Locks gently falling on the forehead were the only sign of coquetry. A very simple and harmonious coiffure became the vogue in the 1st cent. A.D.: the parting on the middle of the head divided the hair that fell symmetrically around the face, framing it with an occasional lock. This fashion was soon replaced by increasingly elaborate elevated hairstyles; in order to stay firm, the ornatrices-slave hairdressersinserted fake hair into the coiffure; those were towering coiffures, twice the size of the head; diadems, pins, single flowers or braided into wreaths made them even more conspicuous.

Remains of applied arts in various materials are numerous.¹⁴ These are mostly imports, and only in rare cases some items were locally made. Numerous museum collections throughout Croatia store abundant luxury objects - relief ware (terra sigillata), korai and kouroi sculpture, clay and metal lamps, metal vessels, metal jewellery, amber jewellery, amber figurines, bone objects etc. Diverse types of materials speak of the continuous development through several centuries as well as of a delicate taste, perhaps even more so than in case of other so-called high arts.¹⁵ Unfortunately, objects of applied art are still insufficiently well-known and studied, except in the case of some published museum collections. 16 These objects were in most cases deposited in graves as goods, which is the reason they are so well preserved.

Ceramic objects were imported to the coast mainly from southern and central Italy, northern Italy and Asia Minor, 17 while Pannonian areas received goods mostly from northern Italy and Gaul.¹⁸ The largest number of ceramic vessels with relief depictions were found at a necropolis and Illyrian settlement Mrdakovica near Šibenik (Fig. 1).¹⁹ Some vessels stand out by their height, and these often bear stamps of workshops and specific masters. Motifs on the vessels are exceptionally well shaped three-dimensionally, while they recount themes ranging from mythology to the secular spheres.²⁰ Even though these wares were made in moulds, the most exquisite pieces exhibit delicate morphology, diverse forms appropriate for everyday use of the iconographic variant and a remarkable craftsmanship, in which the best pieces are second to no other work of art in other enduring materials.²¹ During the later Empire the forms are often simplified, schematized, motifs are repeated and even figural depictions are abandoned.²² What lies behind this is most likely a demand for less expensive goods, which resulted in poorer quality. The predominant forms on the coast come from northern Italy, and later also from Asia Minor, with forms that imitate those from northern Italy, in most cases without decoration.²³ The famous oinophora from Burnum with a Dionysiac motif was manufactured in Asia Minor.²⁴ We encounter such vessels in that part of the Mediterranean.²⁵ Ceramic ware was certainly produced in local workshops as well, but at the time being we know of no such production of fine ware on the coast. Except in the case of Istria, we presume that the reason for this was the lack of good-quality clays. However, high-quality vessels imitating the imported goods with relief decoration were produced in Pannonia. Numerous pottery kilns and high-quality local production were discovered in Vinkovci.²⁶

Lamps figure prominently among ceramic objects, and due to their irreplaceable everyday function we encounter them everywhere, for instance in graves, particularly during the early Empire (Fig. 2). Such use had a cult-religious character. Although they are more or less standardized, more lavishly executed forms are also found. Their discs bore scenes from cult, mythological and secular sphere, but there were also plain forms. Figures of divinities fulfilled the role of the guardians of the home of sorts. Gods appear in their commonest iconographic forms, borrowed from the sculpture and other arts. There are sequences of scenes from the theatre, amphitheatre, hunting and other fields of everyday life in which the people of antiquity found their pleasure. Lascivious and erotic scenes were a favourite topic. Some such scenes are splendid examples of figural expression; unfortunately, many pieces kept in the museums in Zadar and Split have not been published. The collections of lamps from the Archaeological Museum in Zagreb and the Sisak Municipal Museum, analyzed properly and in a modern fashion (Fig. 3) can serve as an illustration of various types and forms, decorated and undecorated discs. Some lamps were modelled in the shape of various figures - e.g. in the shape of a naked actor-mime, ²⁷ or another lamp, of a somewhat poorer quality, fairly stylized and stocky, in the shape of a gladiator.²⁸

Roman glass workshops developed production on a massive scale, and were located mostly in the East, in Syria, Egypt, Cyprus etc.²⁹ Glass bowls, bottles, cups and other vessels frequently display exceptionally inspired shapes, and were sometimes made even in the shape of human heads. Small bottles with a Mercury figure³⁰ on the base display ingenious solutions, meaning that practically each such piece is unique, although there were also those

¹⁴ CAMBI 2002., 195. 15 CAMBI 2002 195

¹⁶ For instance, ancient fibulae from Sisak, ancient bronzes from Sisak, lambs from Sisak, as well as the Benko Collection and lamps from the Sisak Municipal Museum. Certain objects are partly analysed and published. 17 ATLANTE 1981., 175 seq; I, 350 seq.;

¹⁸ MIKL CURK 1969., 8 seq.; VIKIĆ BELANČIĆ 1967.

¹⁹ BRUSIĆ 1988., 19-63; 1989, 93-158

²⁰ BRUSIĆ 1988.; Pl. I seq.

²¹ CAMBI 2002., 196.

²² BRUSIĆ 1988., P. III.

²³ ILAKOVAC 1968., 183 seq., Pl. I-IV; RAPANIĆ 1972., 141 seq., Fig. 4; BRUSIĆ 1993., Pl. IV.

²⁴ SUIĆ 1959., 95 seq., Fig. 1-5

²⁵ ATLANTE I, 233 seq., Pl. CXX 2,3; CLXIV 2, 3 a, b.

²⁶ ISKRA-JANOŠIĆ 1993., 193, Fig. 1-21; VIKIĆ BELANČIĆ 1970., 29 seq.

²⁷ The lamp was found in the sea in the vicinity of Makarska

²⁸ VODIČ 1973.

²⁹ ISIGNS 1957.: DAMEVSKI 1974., 62 seg., KIRIGIN 1984., 121 seq. About the roman glass see also, GREGL - LAZAR 2008... GIRARDI JURKIĆ - DŽIN 2003. 30 KIRIGIN 1980., 61 seq.; FADIĆ 1986.,

Fig. 5. Cameo showing a woman (Faustina Minor?), Sirmium, second half of the 2nd cent. A.D., Arheološki muzej Zagreb

Fig. 6. Small lidded bone box with erotes and a female portrait (lid), Salona, 1st cent. A.D., Arheološki muzej Split

Fig. 7. Small bone box showing the battle of the Pygmies and cranes, Narona, 1st cent. A.D., Arheološki muzej Split made in moulds. Glass was made in multi-coloured designs (*mille fiori*) with additional ornaments endowing the pieces with a three-dimensional effect.³¹ Such bottles were used for storing fragrances. Many glass pieces were found in Roman graves, and the inner containers for

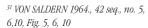




bones in stone urns were frequently made of glass. The Roman glass production reached a level that remained an unattainable ideal for subsequent periods. Glass was used also in manufacture of ornaments, pendants etc., as well as for engraving gems, whose artistic qualities were not behind those engraved in stone. Glass was imported (Fig. 4), but minor glass workshops were also present, for instance in Salona or in Siscia.³²

Intaglios and cameos of diverse and rich iconography were produced continuously through several centuries and were used as decorative or signet rings or as elements and pendants on necklaces.³³ In our lands, unfortunately, the origin, character and development of gem carving in hard stone are poorly researched, although certain works do focus on gems and cameos.³⁴

The bulk of the gems, several thousand pieces, were found in Salona. Decorative rings can be carved into the stone (intaglio) or projecting out of the background in relief (cameo). In both cases, usually semi-precious stone in vivid colours is used (amethyst, jasper, carnelian, onyx, sardonyx, mountain crystal, agate, chrysoprase, sard, chert, snail shell, glass paste) (Fig. 5). Less expensive gems are made of glass. Material with layers of different colours is preferred for making cameos, to achieve the relief in one colour and the background in another (Fig. 5). In general, gems (*intaglios*) are far more frequent than relief cameos. Depictions that appear on them are varied figures of gods, mythological figures, portraits of emperors and many other persons, bucolic scenes, genre scenes, warriors, actors, gladiators, gladiator duels, tropaia, erotic scenes, various animals, zodiac symbols, but also simple monograms. Intaglio representations were used mostly as signet rings. Differences in depictions and technical workmanship are great; while motifs are executed with great precision, figures are sometimes overly sketchy and depthless. Gems glorifying historical events, such as e.g. Gemma Augustea, have not been found in Croatia so far.³⁵ Those were miniature pieces around 1,5-2 cm big. Regardless of religious or other important scenes, gems were primarily intended for individuals, who choose the



³² CLAIRMONT 197., 56 seq. 147 seq., Fig. 30-36. A glass kiln was found in Sisak. BUZOV 2000., 189.

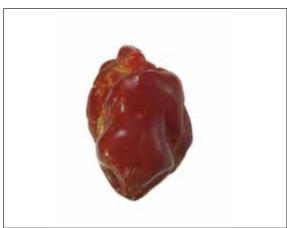
³⁵ EICHLER - KRIS 1927., 52, no. 7, Pl. 4, Fig. 21



³³ ZAZOFF 1983., 1 seq.

³⁴ BULIĆ 1879., 86; KIRIGIN 1995., 177









ring according to their wishes. The quality of depictions is sometimes exceptionally high, for instance in case of certain portraits such as that with a head of an elderly man, perhaps Caesar,³⁶ or a gem with a portrait of young Gallienus.³⁷ The use of gems is a custom derived from the east, which is evident in the fact that the Hellenistic influence, present also in other forms of art, had been and remained dominant. It is believed that it was introduced into Rome by Pompey after he took hold of Mithridates' daktiliotheke38 of oriental gems. Portraits on the gems reflect all the characteristics of their time, they are certainly not inferior to those on stone, and some are even better than the most. In view of the large number of gems found in Salona, we presume that they were also produced there, though it is probable that many were imported, as was the case in Siscia.³⁹ The gems from Aquileia are similar to those from Salona, but the point of origin of the imports has not yet been ascertained.

Highly interesting are also hair pins that enhanced female elegance, frequently ending with female figures posing as Venus, 40 portraits, 41 in the shape of palms holding a bust, 42 pine cones 43 and terminals in other shapes. 44 Among bone objects one should single out counters and gaming dice with various relief scenes. A collection from Zadar with a depiction of erotes stands out in particular. 45

The most interesting class of bone objects are small boxes, used in female toilet sets, as corroborated by the depicted scenes. Two small cylindrical vessels kept in the Archaeological Museum in Split bear depictions of erotes on the mantle and a woman in profile on the lid (Fig. 6), featuring hairstyles worn by the women of the Julio-Claudian family, which speaks of the time when they were made. The quality of depictions is not great, but the endeavour at presenting the coiffure is obvious. The small boxes is small boxes.

One of the most sophisticated objects of applied art is the small box made of bone with a drawing-lid from Narona (Fig. 7).⁴⁸ Most likely used for storing jewellery, it bears an engraved Hellenistic-Alexandrian scene of the fight between cranes and the Pygmies.⁴⁹ Such motifs enjoyed great popularity in the Roman period in all types of artistic expression, and this one is also dated to the 1st cent. Another interesting iconographic depiction is that of an eros leading a bull to sacrifice on a fragmented bone box from Zadar.⁵⁰ A fragment of a somewhat larger box depicts a motif of Triton and a naked Nereid, with discreet sexual allusions perceptible in the motion and expression of the sea deity and in female timidity.⁵¹ Although the workmanship of the relief is not great, it is obvious that

Fig. 8. Amber figurine of eros, the personification of autuman, Topusko, early 3rd cent. A.D., Arheološki muzej Zagreb

Fig. 9. Amber leaf of grapevine with the bird and fish, Topusko, early 3rd cent. A.D., Arheološki muzej Zagreb

Fig. 10. Amber figurine of eros, the personification of autuman, Topusko, early 3rd cent. Topusko, early 3rd cent. A.D., Arheološki muzej Zagreb

Fig. 11. Shell, Cube, Buttons, Topusko, early 3rd cent. A.D., Arheološki muzej Zagreb

³⁶ CCATALOGUE 1989., 90, no. 46

³⁷ CATALOGUE 1989., 105, no. 102

³⁸ Caesar and later emperors were also collectors of gems, and through gifts to sanctuaries (Caesar's collection was e.g. stored in the temple of Venera Genetrix) these collections were accessible to the public: ZWIERLEIN DIEHL 1969., 141; DEGMEDŽIĆ 1958., 28; PINTEROVIĆ

³⁹ KOŠČEVIĆ 2000., 13-16.

⁴⁰ CAMBI 2002., 200, Fig. 310; NAKIT 1981., 153, no. 23, Fig. 1, Pl. 22, 1.

^{1981., 153,} no. 23, rig. 1, ri. 22, 1.

41 NAKIT 1981., 193, no. 19, Pl. 21, 1;
153, no. 21, Pl. 21, 2

⁴² NAKIT 1981., 153, no. 26, Fig. 1, 26; 153, no. 27, Pl. 22, 2

⁴³ NAKIT 1981., 151, no. 9, Fig. 1, 9

⁴⁴ NAKIT 1981., 151, no. 1, 3, 5 etc.

⁴⁵ POSEDEL 1935-1949., 59, Fig. 1 ⁴⁶ CAMBI 1989/1990., 155 seq., Pl. I, 2,

⁴⁷ CAMBI 2002., 202

⁴⁸ ABRAMIĆ 1959., 59, Fig. 13-16

⁴⁹ BIEBER 1967., 96

⁵⁰ SUIĆ 1981., 294, Pl. XXXI, above

⁵¹ CICARELLI 1952., 138 seq., Pl. VII

Fig. 12. Parade greave, gilded bronze, Marsunia, late 3rd cent. A.D., Muzej Brodskog Posavlja Slavonski Brod Fig. 13. Bronze coin of the Siscian mint: Diocletian (obverse) and Jupiter Victor (revers), Late 3rd or early 4th cent., A.D., Arheološki muzej Zagreb



- ⁵² CAMBI 2002., 202, note 882 ⁵³ ABRAMIĆ - COLNAGO 1909., 99 seq., Fig. 65 a,b, 66, 67
- ⁵⁴ CATALOGUE 1989., 95, no. 64; NAKIT 1981., 161, no. 121, Pl. 24, 1
- 55 Compare note 43.
- ⁵⁶ The Lora necropolis has not been bublished.
- ⁵⁷ The necropolis has not been published and is still under investigation.
- ⁵⁸ ŠEGVIĆ 1979-1980., 125 seq., Pl. I;
 ŠEGVIĆ-ŠARIĆ 1983-1984., 167 seq.
 ⁵⁹ ABRAMIĆ COLNAGO 1909., 99, Fig. 70, 71
- ⁶⁰ The figurines bave not been published.
 ⁶¹ The figurines were found in an urn wrapped in a bronze chain, but have not been published.
- 62 MARDEŠIĆ 1988., 312 seq.
- 63 ŠEGVIĆ-ŠARIĆ 134., seq., note 31
- ⁶⁴ MIŠKIV 1993., 71 seq., Fig. 1-16
- 65 MIŠKIV 1993., Fig. 1-4
- ⁶⁶ CAMBI 2002., 203



what stuck to the head of the Nereid was the coiffure of the Antonine period, allowing us to date the object to the late 2nd cent.,⁵² which indicates that the contemporary fashion in mythological scenes is not uncommon in Roman art.

One of the most beautiful specimens of bone figurines is the head of Heracles covered by the pelt of the Nemean lion, found in Poreč and unpublished. Judging by the hollow interior and the rivet holes, the figurine probably decorated the top of a stick or another object of similar function. In Cambi's opinion, its large head and wide open eyes with almost round irises exhibit clear artistic features of the Tetrarchy.

Amber ornaments are a very interesting class of artefacts. Prominent among them are rings with female figures with coiffures of highly sophisticated forms of the Flavian and Trajan's period. The women in most cases exhibit the general features of fashion and portrait art of the Flavian period, 53 that is those characteristic of Plotina and other ladies of Trajan's entourage.⁵⁴ Portraits from later periods are missing, as if such heads went out of fashion on amber rings, although it is another and big question whether these figures represented real persons at all. Such rings were discovered in the graves of the necropolis in Starigrad (Argyruntum),⁵⁵ Split,⁵⁶ Skradin⁵⁷ and elsewhere. Exceptionally interesting amber figurines are known also from Topusko (Fig. 8, 9, 10, 11),⁵⁸ Starigrad, ⁵⁹ Split ⁶⁰ and Narona. ⁶¹ Among the figurines one finds animal figures (dog), fantastic beasts (hippocamp), the motif of a vine leaf with a roast chicken, duck etc.; there are also mythological figures (erotes), genre-scenes etc. A figurine of a hooded boy slave and a lion, discovered during the excavation of the Western necropolis in Salona, is a truly valuable iconographic and compositional object without known parallels at least for now.⁶² Amber figurines were certainly used for decoration and play, and were found in female and children's graves. It is not known for sure where such figurines were produced, but one finds them everywhere, northern Italy in particular.⁶³

A Roman parade greave taken out of the Sava river in Slavonski Brod (Fig. 12) merits particular attention.⁶⁴ Made in the repoussé technique of a thin gilded bronze sheet, it depicts a figure of naked Mars along the middle, with a spear in his raised right hand and a shield in the left. The figure stands in classical contrapposto, which is a standard practice in the portrayal of gods, heroes or rulers, 65 with the Doryphoros by Polykleitos, for instance, being a classical example of contrapposto. The god of war is surrounded by several fields with engraved depictions of Dionysus on a panther, Diana on a deer, another barely discernible scene where only a naked figure can be made out, a Silenus mask beneath him, followed by another hardly recognizable figure and a depiction of a Roman thorax armour, while the bottom two fields depict a fistfighting duel. 66 Although the scenes are rather sketchy and imprecise, this is nevertheless one of the most beautiful pieces of such greaves. The figures have wide open round







Fig. 14. Neckless, Sisak, 3rd cent., A.D., Arheološki muzej Zagreb

Fig. 15. Pin, Sisak, 2nd cent. A.D., Arheološki muzej Zagreb

Fig. 16. Neckless, Sisak, 2nd - 3rd cent. A.D., Arheološki muzej Zagreb

Fig. 17. Ring, Sisak, 3rd cent. A.D., Arheološki muzej Zagreb

Fig. 18. Ring, Sisak, 3rd cent. A.D., Arheološki muzej Zagreb

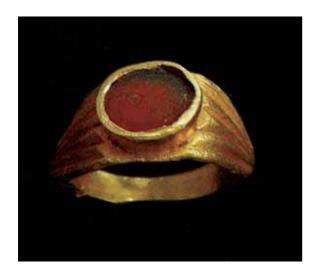
eyes, which is an indication that the iconization method of artistic expression was applied, which in Cambi's opinion would date the object to the later 3rd cent.⁶⁷ Such greaves were found in army camps and in other places where the military stayed and where spectacles, ceremonial parades and equestrian contests were organized.⁶⁸ However, it must be stressed that in spite of permanent military garrisons in northern Croatia during the later centuries of the Empire not many remains of lavishly decorated military equipment have been found.

In this regard worthy of mention are the fragment of a helmet from Sotin⁶⁹ and a grid-pattern eye-guard for a horse from Dalj.⁷⁰

The establishment of a mint in Siscia in order to facilitate the payment of soldier's wages on the limes was a very important cultural and artistic event.⁷¹ The Siscia mint was founded in the second half of the 3rd cent., and its coins depict standard motifs of specific numismatic iconography, serving the needs of the administrative and imperial propaganda. On the obverse, the fine workmanship of the figures of the rulers followed in the footsteps of the high-quality contemporary portrait art

(Fig. 13).⁷² The Siscia portraits feature an idiosyncratic expression and method of cutting, so they cannot be easily mistaken for portraits from another mint. Their stylistic and physiognomic features place them at the border of the eastern and western methods of modelling. They are neither "skinny" nor "plump", as stylistic extremes of the Tetrarchic portrait art.⁷³ The depictions found on the reverse are in contrast more schematic and rigid. The mint reached peak production and quality during the Tetrarchy, only to cease working a couple of decades later.⁷⁴

One of the most noteworthy metal treasure boxes comes from northern Croatia - Sisak, and is now kept in Budapest. It features the personifications of Carthage, Constantinople, Rome, Nicomedia and Siscia, as well as various mythological scenes and two friezes with a Centaur hunting scene. Siscia is shown veiled and holding a wreath, similar to Nicomedia. Only Roma stands out by virtue of different and richer iconographic presentation. It is dated to around AD 350 and may have belonged to Christians, even though it was not a reliquary. More precisely, such boxes were used as models for a widely distributed type of reliquaries.





68 JUNKELMANN 1996., 75 seq.;
GARBSCH 1978., 9 seq., Pl. 38-39
69 GARBSCH 1978., 72, no. Q 51, Pl. 26, 3
70 GARBSCH 1978., 86, no. 5, Pl. 45, 5,
86 seq., no. 10, Pl. 47, 2
71 ŠAŠEL 1974., 719; BUZOV 2009., 621645.
72 CAMBI 1991., 123 seq., Cat. no.109,
Fig. 105
73 CAMBI 2002., 204
74 ŠAŠEL mentions AD 387
75 HOFFILLER - SARIA 1938., 261, no.
565; BUSCHHAUSEN 1971., 23, A 2, Pl.
A 1-6

67 CAMBI 2002., 204

Fig. 19. Anchor-shaped fibulae, Hrtkovci (Ruma), Vojvodina, 2nd or beginning 3rd cent. A.D., Arheološki muzej Zagreb



The production of objects of applied art in the period from the 1st-4th cent. and later included pins, earrings, necklaces, bracelets, rings, pendants, fibulae, buckle frames, buckle pins, fittings, rivets, buttons and hoops (Fig. 14, 15.16, 17, 18, 19). The analysis of the mentioned assemblage from Sisak⁷⁶ filled a void, but provided also an insight into the wealth of forms; the comparative method also pointed to a possibility of gaining understanding of the everyday, civilian and military inventory of a Roman city of the highest rank.

In spite of the permanent discussion of the issues regarding the definition of functions of ancient bronze objects there are still uncertainties as to their purpose, which result from inadequate knowledge of certain types and pieces with double or multiple functions.⁷⁷ It is generally believed that the metal artefacts, and preciousmetal jewellery in particular, had been worn for a century on the average, but archaeologically documented cases of a much longer use are also known.⁷⁸ Objects are often repaired and modified, as corroborated by finds. When damaged beyond repair, they were melted and reused as raw material. The fact that worn-out gold-embroidered clothes were often burned in order to reclaim a part of the metal is considered as one of the reasons that such textiles are found extremely rarely.⁷⁹ As to the users of those objects,

when it comes to the material from Sisak but also from a wider area, it should be pointed out that in most cases they belonged to the military. It is impossible to ascertain the proportions of the military use or to classify the materials by female and male bearers. A certain symbolism, connected with primeval beliefs is inherent in the form or decoration of most objects of applied art. The meaning of symbols, through versions of various mythologies and traditions, had already during the antiquity became intertwined and complex, and in fact entirely lost for certain forms.⁸⁰ When it comes to pinpointing the cultural affiliation of the material from Sisak, we can distinguish between the Roman, autochthonous and Roman-provincial forms with regional components, as well as general and widespread forms of the Imperial period.

Although the metal assemblage from the Sisak collection offers a picture of forms similar to that from other major centres of the Roman province of Pannonia, its distinctive feature is a prominent Celtic component. Probably the most interesting question regarding the metal objects from Siscia is the issue of whether they were produced there. A significant proportion of Roman-provincial finds shows that the Pannonian input in the metal production of the Empire played a far more important role than generally thought,⁸¹ and within those, a large part of the products were made by manufactures from Siscia.

Modest-sized objects for personal and home use likewise reached high artistic levels. Their quantity and quality makes them comparable with those from other parts of the Roman Empire, which is another proof of the fact that our lands were immersed into the cultural ecumene that was developing in the wider Mediterranean region. This is, naturally, understandable, considering that these were not unique pieces.

In this abridged review of the applied arts we can conclude that, owing to the action of human intellect and hands, these objects were used in everyday life, bestowing and magnifying through the artistic expression a specific atmosphere on the people.

⁷⁶ KOŠČEVIĆ 1991.

⁷⁷ KOŠČEVIĆ 1991., 86

⁷⁸ SIVEC 1983., Pl. 22, 13; Pl. 30, 29

⁷⁹ GEIJER - THOMAS 196., 236

⁸⁰ KOŠČEVIĆ 1991, , 108

⁸¹ INTERCISA 1957., 203, 404, 431, 456; ALFÖLDI - RADNOTI 1940., 310, 317; ŠEPER 1962., 416

ABBREVIATIONS:

AH Archaeologia Hungarica, Budapest
Alug Archaeologia Iugoslavica, Beograd
ARR Arbeološki radovi i rasprave, Zagreb
Aves Arbeološki vestnik, Ljubljana

BAStorDalm Bulletino di archeologia e storia dalmata, Split

DIADORA Diadora, Zadar

Izdanja HAD Izdanja Hrvatskog arheološkog društva, Zagreb: "Arheološka istraživanja u Istri

i Hrvatskom primorju", sv. 11/2 (1986), Pula 1987.

"Arbeološka istraživanja u Slavonskom Brodu i Brodskom Posavlju", sv. 16

(1991), Zagreb 1993.

JÖAI Jahreshefte des Österreichischen archäologischen Instituts, Wien

Journal of Glass Studies Journal og Glass Studies, Corning, N. Y.

MeddelLund Meddelanden fran Lunds Universitets Historiska Museum. Mémoires du Musée

bistorique de l'Université de Lund, Lund

Mogućnosti Mogućnosti, Split OZb Osječki zbornik, Osijek

PWRE Pauly- Wissowa Realencyclopädie der classischen Altertumswissenschaft, Sttutgart,

München

RFfZ Radovi Filozofskog fakulteta u Zadru, Zadar
VAHD Vjesnik za arheologiju i historiju dalmatinsku, Split
VAMZ Vjesnik Arheološkog muzeja u Zagrebu, Zagreb

SOURCES:

HISTORIA AUGUSTA 1994. Historia Augusta, Antibarbarus, Zagreb 1994.

SCRIPTORES HISTORIAE AUGUSTAE 1965. Scriptores Historiae Augustae I-II, editit Ernestus Hohl. Editio stereotypa correctior.

Addenda et Corrigenda adiecerunt Ch. Samberger et W.

SEYFARTH, LIPSIAE 1965. The Scriptores Historiae Augustae 1961-1967. The Scriptores Historiae Augustae

I-III, English translation by David Magie, London 1961- 1967.

PETRONIJE ARBITER 1986. Petronije Arbiter Satirikon ili vragolaste pripovijesti, Grafički zavod Hrvatske,

Zagreb 1986.

PETRONII ARBITRI 1961. Petronii Arbitri Satyricon cum apparatu critico edidit Konrad Müller, Ernst

Heimeran Verlag München, München 1961.

BIBLIOGRAPHY:

ABRAMÍĆ 1959. M. Abramić, Pigmeji i ždralovi, Zbornik za umetnosno zgodovino V-VI, Ljubljana

1959., 53-67.

ABRAMIĆ - COLNAGO 1909. M. Abramić - A. Colnago, Untersuchungen in Norddalmatien, JOÄI XII, Wien

1909., 13-112.

ALFÖLDI - RADNOTI 1940. A. Alföldi - A. Radnoti, Zügelringe und Ziebeschläge von Römische Jochen und

Kummeten aus Pannonien, Serta Hoffilleriana, Zagreb 1940., 309-319.

ANTIČKI RIM 1967. Antički Rim, Panorama jedne civilizacije, Cesare Vasoli, Zanatstvo i industrija,

Beograd - Ljubljana 1967., 121-130.

ANTIČKI RIM 1967. Antički Rim, Panorama jedne civilizacije, Maria Paoli, Odevanje: moda i

tradicija,, Beograd - Ljubljana 1967., 81-90.

ATLANTE 1981. Atlante delle forme ceramiche I. Enciclopedia dell'arte antica, classica e orientale.

Ceramica fine romana nel bacino Mediterraneo (medio e tardo impero), Roma

1981.

BIEBER 1967. M. Bieber, The Sculpture of the Hellenistic Age, New York 1967.

BRUSIĆ 1988. Z. Brusić, Helenistička keramika u Liburniji, Diadora 10, Zadar 1988., 19-63. BRUSIĆ 1993. Z. Brusić, Vrste importirane helenističke i keramike u Liburniji, u: Umjetnost na

istočnoj obali Jadrana u kontekstu europske tradicije, Rijeka 1993., 81-90.

BULIĆ 1879. F. Bulić, Le gemme del Museo di Spalato, BASTOR. 9, Split 1879., 131-132.

BUSCHHAUSEN 1971. H. Buschbausen, Die spätrömischen Metallscrinia und frühchristlichen Reliquiäre,

Wien 1971.

BUZOV 2000. M. BUZOV, Topografija antičke Siscije na temelju arbeološke baštine, Disertacija,

Zadar 2000.

BUZOV 2008. M. BUZOV, Siscijska kovnica, u: Dioklecijan, tetrarbija i Dioklecijanova palača

o1700. obljetnici postojanja, Split 2009., 621-645.

CAMBI 1989/1990. N. Cambi, portret kao ukras koštanih kutijica, RFfZ 29(16), Zadar 1989/1990.,

155-162.

CAMBI 1991. N. Cambi, Antički portret u Hrvatskoj, Zagreb 1991.

CAMBI 2002. N. CAMBI, Antika, Zagreb 2002.

CATALOGUE 1989. Catalogue Retratos antiguos en Yugoslavia, Barcelona 1989.

CICARELLI 1952. K. Cicarelli, Dva mala figuralna reljefa od kosti iz Solina, VAHD LIV, Split 1952.,

138-142.

CLAIRMONT 1975. Ch. Clairmont, Excavations at Salona, Yugoslavia, 1969-1972, New Jersey 1975.

DAMEVSKI 1974. V. Damevski, Pregled tipova staklenog posuđa iz italskih, galskih i porajnskih

radionica na području SR Hrvatske, AVes 25, Ljubljana 1974., 62-87.

DEGMEDŽIĆ 1958. I. Degmedžić, Rimske geme iz Siska sa simbolima zodijaka, Tkalčićev zbornik,

Zagreb 1958., 23-34.

EICHLER - KRIS 1927. F. Eichler - E. Kris, Die Kameen im Kunsthistorischen Museum, Wien 1927.

FADIĆ 1986. I. Fadić, Četverokutni i poligonalni stakleni antički recipijenti iz Arbeološkog muzeja

Istre, Izdanja HAD 11/2 (1986), Zagreb 1987., 99-118.

GARBSCH 1978. J. Garbsch, Römische Paradenrüstungen, München 1978.

GEIJER - THOMAS 1965. A. Geijer - E.B. Thomas, The Viminacium Gold tapestry, MeddelLund (1964), Lund

1965.

GIRARDI JURKIĆ - DŽIN 2003. V. Girardi Jurkić - K. Džin, Sjaj antičkih nekropola Istre, Monografije i katalozi 13,

Pula 2003.

GREGL - LAZAR 2008. Z. Gregl - I. Lazar, Bakar Staklo iz rimske nekropole, Katalozi i monografije 5,

Zagreb 2008.

HOFFILLER - SARIA 1938. V. Hoffiller - B. Saria, Antike Inschriften aus Jugoslavien, Heft I., Zagreb 1938.

ILAKOVAC 1968. B. Ilakovac, Keramika iz antičkoga broda potonuloga kod Paklenih otoka, Diadora

4, Zadar 1968., 183-202.

INTERCISA 1957. Intercisa (Dunapentele) II. Geschichte der Stadt in Römerzeit AH XXXVI, Budapest

195/

ISIGNS 1957. C. Isigns, Roman Glass from Dalmatia, Roman Glass from Dated Finds, Groningen-

Djakarta 1957.

I. Iskra-Janošić, Keramičke radionice u urbanoj strukturi Cibala, Izdanja HAD 16,

Zagreb 1993., 193-201.

JUNKELMANN 1996. M. Junkelmann, Reiter wie Statuen aus Erz, Mainz 1996.

KIRIGIN 1980. B. Kirigin, Merkur bočice iz Arbeološkog muzeja u Splitu, VAHD LXXIV, Split 1980.,

61-65.

KIRIGIN 1984. B. Kirigin, Roman Glass Bowls from the Archaeological Museum at Split, VAHD 77,

Split 1984., 125-131.

KIRIGIN 1995. B. Kirigin, Antičke geme iz Staroga Grada, u: Otok Hvar, Zagreb 1995., 177-180.

KOŠČEVIĆ 1991. R.. Koščević, Antička bronca iz Siska, Zagreb 1991.

KOŠČEVIĆ 2000. R. Koščević, Arheološka zbirka Benko Horvat, Zagreb 2000.

MARDEŠIĆ 1988. J. Mardešić, Izvještaj o zaštitnim arbeološkim radovima na trasi splitske zaobilaznice

kroz Salonu 1986/1987, Mogućnosti 3-4, Split 1988., 307-314.

MIKL-CURK 1969. I. Mikl-Curk, Terra Sigillata iz Poetovija, Beograd 1969.

MIŠKIV 1993. J. Miškiv, Rimska paradna potkoljenica iz Slavonskog Broda, IzdanjaHAD 16,

Zagreb 1993., 71-81.

NAKIT 1981. Nakit na tlu sjeverne Dalmacije, Katalog izložbe, Zadar 1981. PINTEROVIĆ 1965. D. Pinterović, Geme s terena Murse, Ozb 9-10, Osijek 1965., 61-74.

POSEDEL 1935-1949. J. Posedel, Koštane pločice za igru u zadarskom Arbeološkom muzeju, VAHD LII,

Split 1949., 59-62.

RAPANIĆ 1972. Ž. Rapanić, Antički brod s teretom keramike kod Vignja, Zbornik otoka Korčule 2,

Korčula 1972., 141-147.

VON SALDERN 1964. A. von Saldern, Ancient Glass in Split, Journal of Glass Studies VI, 1964., 43-46. SIVEC 1983. I. Sivec, Kovinski in koščeni predmeti, u: Starokrščanski center v Emoni, KatMon

21, Ljubljana 1983., 60-62.

SUIĆ 1959. M. Suić, Kasnoantička enofora iz Burnuma, Diadora 1, Zadar 1959., 95-106.

SUIĆ 1981. M. Suić, Zadar u starom vijeku, Zadar 1981. ŠAŠEL 1974. J. Šašel, Siscia, PWRE XIV, Stutgart 1974., 702-741.

ŠEGVIĆ 1979-1980. M. Šegvić, Rimski grob u Topuskom, VAMZ 3. ser. XII-XIII, Zagreb 1979-80., 125-

150.

ŠEGVIĆ-ŠARIĆ 1983-1984. M. Šegvić-Šarić, Ponovno o rimskom grobu u Topuskom, VAMZ 3. ser. XVI-XVII,

Zagreb 1983-1984., 167-174.

ŠEPER 1962. M. Šeper, Rimska kola iz Poljanca kod Ludbrega, ARR II, Zagreb 1962., 335-428. VIKIĆ-BELANČIĆ 1967. B. Vikić-Belančić, Rimska keramička proizvodnja na području Save i Drave od I - IV.

B. Vikić-Belančić, Rimska keramička proizvodnja na području Save i Drave od I - IV. st. s osobitim obzirom na proizvodnju glinenih svjetiljaka, Disertacija (tipkopis),

Zagreb 1967.

VIKIĆ-BELANČIĆ 1970. B. Vikić-Belančić, Beitrag zur Problematik der keramischen Werkstätten in

Südpannonien in der römischen Kaiserzeit, Alug XI, Beograd 1970., 29-44.

VODIČ 1973. Arheološki muzej u Splitu, Vodič, Split 1973.

ZAZOFF 1983. P. Zazoff, Die Antiken Gemmen, Handbuch der Archäologie, München 1983

ZWIERLEIN DIEHL 1969. E. Zwierlein Diehl, Antike Gemmen in deutschen Sammlungen II. Staatliche Museum

Preussischer Kulturbesitz, Antikenabteilung, Berlin, Munich 1969.

SAŽETAK

UMJETNIČKI OBRT U RIMU

Marija BUZOV

Jedinstvenost političkog sustava osiguravala je poduzetnim trgovcima iz Azije, Hispanije i Galije potpunu slobodu kretanja, zakupcima iz svih provincija najširu inicijativu, a zanatlijama iz Rima stalno snabdijevanje potrebnim sirovinama. Antička industrija ima sasvim drugačiji karakter, i po načinu kako se razvila, i po sustavu proizvodnje: ona predstavlja carstvo ljudi, doduše često ljudi robova, u kome svaki pojedinac ima mogućnosti izraziti svoje osobne sposobnosti, a svaki proizvod nosi pečat zanatlije koji ga je izradio. Stoga je gotovo nemoguće u antičkom svijetu točno postaviti granicu između industrije i zanatstva, jer industrija, i kada je razgranatija i tebnički organizirana s određenom podjelom rada, ipak i dalje čine specijalizirane zanatlije. Kada govorimo o umjetničkom obrtu, svakako moramo istaknuti ulogu zanatlije bez obzira je li on signirao svoj proizvod ili je taj proizvod bez oznake, pečata radionice odnosno zanatlije-majstora. Razvojem Rima te luksuzom bogatih klasa i velikim porastom stanovništva razvijaju se razne grane zanatstva, od kojih posebno valja istaknuti umjetnički obrt. Rim se posebno isticao proizvodnjom luksuznih predmeta, koje je zahtijevao visoki životni standard plemstva, bogatih građana i carskog dvora. Prijestolnica je bila prepuna vještih zlatara, uglavnom Grka, koji su izrađivali vrčeve i nakit, koji su se isticali po vještoj izradi i skupocjenosti metala. Pored njih, proizvođači ogledala (specularii), prstenja (anularii), zlatari (aurifices) i zanatlije koji su obrađivali slonovu kost (eborarii) stvorili su od Rima raskošnu prijestolnicu.

Zahvaljujući djelovanju ljudskog uma i ruku, ti predmeti umjetničkog obrta korišteni u svakodnevnom životu te kroz umjetnički izričaj dali su i uveličavali čovjeku specifičan ugodaj.

Brojni su prežitci umjetničkoga obrta u raznovrsnom materijalu s područja Hrvatske, koji je uglavnom importiran, i samo u rjeđim slučajevima lokalne je proizvodnje. Brojne muzejske zbirke diljem Hrvatske obiluju luksuznim predmetima - reljefnom keramikom (terra sigillata), koroplastikom, glinenim i metalnim svjetiljkama, metalnim posudama, metalnim nakitom, jantarnim nakitom, jantarnim figuricama, koštanim predmetima i dr. Raznolike vrste materijala govore o razvojnom kontinuitetu tijekom nekoliko stoljeća te visok ukus, možda čak viši nego kad je riječ o drugim tzv. velikim umjetnostima. Na žalost predmeti umjetničkog obrta još su uvijek slabo poznati i nedovoljno proučeni, osim nekih muzejskih zbirki koje su objavljene. Ti predmeti potječu najčešće kao popratni nalazi u grobovima, što je razlog njihovoj dobroj očuvanosti.