



## **NEWSLETTER 2005, ICOM GLASS COMMITTEE**

### **REPORT ON THE 2004 ICOM GLASS COMMITTEE MEETING IN SLOVENIA CELJE**

**OCTOBER 11-14, 2004**

Submitted by the Secretary Gunnel Holmér  
Senior Curator  
Smålands Museum – Swedish Glass Museum, Växjö, Sweden

The 2004 Annual Meeting was organized by the Celje Regional Museum jointly with the ICOM National Committee of Slovenia, the University of Primorska – Institute for the Mediterranean Heritage, and the Slovene Archaeological Society.

A total of 29 participants attended the conference, who came from Australia, Austria, Croatia, Denmark, Czech Republic, Finland, Germany, Great Britain, Norway, Slovenia, Spain, Sweden and USA.

The topic of the meeting was "The Heritage of Glass in Central and South-Eastern Europe."

The week-long conference in Slovenia, provided the participants with ample opportunities to enter deeply into this subject due to a variety of lectures pertinent to the subject, as well as visits to various Slovene museums and cultural institutions.

#### **Sunday, October 10**

The conference commenced with registration at the Regional Museum in Celje.

#### **Monday, October 11**

The official opening of the meeting took place in the morning in the hall of Celjski Dom, a former German cultural center close to the Regional Museum. The ICOM Glass Committee was welcomed by Darja Pirkmajer, Director of the Celje Regional Museum, Adreja Rihter, the minister of culture of Slovenia. This official introduction

was followed by lectures presented by six invited Slovenian speakers on the theme "Glass Heritage of the Territory of Slovenia from Prehistory to the 20th Century."

Borut Kriz (Museum of Dolenjska in Novo Mesto) talked about "Prehistoric Glass in Slovenia," focusing on the great number of glass beads found in Dolenjska, which dated mainly from the late Bronze Age (9th-8th century BC) and from the Early Iron Age (6th-5th century BC).

Irena Lazar (Regional museum in Celje) gave a lecture entitled "The patterns of use of Roman Glass in Slovenia." The earliest Roman glass vessels in Slovenia were imported mainly from Aquileia in Italy already before the birth of Christ, but local glass industry also existed during the 2nd and 3rd centuries AD.

Tina Varl (Regional museum in Maribor) described the Glass tradition in the Pohorje area, where at least 16 glassworks are known to have operated from the period 1677-1909.

Joze Rataj (Regional museum in Celje) presented a paper about "Glassmaking in Kozjankso and the Celje area from the end of the 17th century until the 19th century." These workshops were later succeeded by the Hrastnik Glassworks and the Rogaska Glassworks.

"Non-destructive glass analyses" was the title of Mateja Kos' lecture (National Museum of Slovenia in Ljubljana), in which she described methods of analysing glass fragments of the 16th century from workshops in the Ljubljana region.

In her paper investigating "Is industrial design a heritage worthy of our attention?," Lenka Bajzelj focused on products for everyday use from the 1960s until the 1990s, and the importance of including these items today also in Slovene museum collections.

After the lectures, the conference participants were invited to a guided tour of the Museum of Modern History in Celje. Recently installed permanent exhibits illustrate "Life in Celje," following the changing lives of three generations living in Celje in the course of the 20th century, as well as "A stroll through the Town," a reconstruction of the Celjska street as it looked in the period between the World Wars. Another important section in this building was the The Childrens' Museum.

The long but very informative and inspiring day of lectures and site visits concluded with a special viewing of the impressive exhibition "Reflections from ancient times – Glass from antiquity in Slovenia," based on research by Iréna Lazar at the Regional museum in Celje. The show, located in the Museum's basement, allowed for a very elegant display with the items placed in illuminated showcases in the dark exhibition hall. This was a unique opportunity to study ancient Slovenian glass in detail together with Dr Lazar's comprehensive book "Roman Glass of Slovenia." Finally the participants were invited by Mrs. Darja Pirkmajer, director of the museum, to a very generous reception in connection with the Roman glass exhibition.

## **Tuesday, October 12**

The conference schedule continued with a whole-day excursion. The first stop was the Museum of Dolenjska with its current exhibition "Prehistoric glass and amber from Novo Mesto, as well as its interesting permanent collections of modern history, archaeology, ethnology etc. The afternoon was spent in Ljubljana at the National Museum, where the group had the opportunity to view the impressive permanent galleries with large permanent displays on archaeology, ethnography and Slovenian history and the comprehensive store rooms with glass objects from pre-historic time until today. Conference participants had also the opportunity to visit the National Gallery and the Modern Gallery. In the evening, the president of the ICOM National Committee of Slovenia, Mrs. Nina Zdravic Polic, welcomed the members of the ICOM Glass Committee and the ICOM Fine Arts Committee during a reception at the City Museum of Ljubljana. This museum, housed in a former Austro-Hungarian palace, has been transformed in recent years into an art gallery, which will in the future provide multimedia experiences giving insights into the history of Ljubljana, from the early Roman settlements to modern times. Although the Museum was largely closed for renovations, it was possible for the attendees to see some of the exhibitions and the plans for the new installations.

## **Wednesday, October 13**

The morning was devoted to lectures by seven invited speakers and ICOM members in the hall of the Celjski Dom.

Zrinka Buljevic (Archaeological Museum in Split) presented a paper entitled "The traces of the famous glassmakers in the Roman province Dalmatia." The source material were fragments of three glass cups found in Dalmatia in the last decade and attributed to the 1<sup>st</sup>-century glass blowers Ennion and Aristeas.

Jan Kock (De. Medieval Archaeology, Aarhus University) gave an archaeological overview of the Renaissance glass production in Scandinavia. He described the first glassworks in Denmark, founded in the 16th century, and the future plans of reconstructing such a glassworks with furnace in 2006.

In a second paper, Jan Kock talked about historic Demonstration Boxes on how to do glass from the end of the 19th century. Several of these boxes, which were originally prepared at Flensburg Glassworks, now belong to the Museum of Applied Art in Oslo.

Paul von Lichtenberg, a private scholar from Munich, presented a paper about the famous engraver Hieronymus Hackel, who in 1805 moved from the Czech Republic to Celje, where he worked until 1844.

Jitka Lnenickova (Museum of the City of Prague) also focused on Hieronymus Hackel in her lecture "The Way of Bohemian refiners to Celje" at the beginning of the 19th century.

Anders Reihnér (independant curator) talked about private collections, focused on

the Swedish collector Gunnar Hävemark, who had amassed a large collection of Swedish glass dating to the first half of the 20th century.

"Czech Utility Glass and the Reality of Everyday Life" was the title of Milan Hlaves' paper (Museum of Applied Arts in Prague). Many centres specializing in design were created in socialist Czechoslovakia. One task today is to investigate why these items were not used by the general public.

Nela Tarbuk (Museum of Arts and Crafts in Zagreb) presented "The Glass Collection in the Museum of Arts and Crafts in Zagreb". This collection consists of a large range of glass objects from the 16th century until modern times from Croatia, as well as from Venice, Bohemia, Germany, France etc.

In the afternoon, a tour was made to Rogaska Glass School and Glassworks. The school was founded in 1947 in the city of Rogaska Slatina with the purpose to educate young students to become expert glassworkers. Throughout the years, the school has developed into a modern glass factory with nearly 350 workers. It is the only school in Slovenia educating glassblowers, glass cutters, glass painters, and opticians.

Back in Celje again the programme continued at the Regional Museum with the opening of a beautiful exhibition especially arranged for this ICOM meeting - Glass in Styria in the 19th century - and with a visit of the permanent collection. The day ended with a reception given by the Municipality of Celje.

#### **Thursday, October 14**

The whole-day excursion began at the ancient Roman cemetery Sempeter west of Celje, with some very impressive mausolea and many smaller graves. The tour continued to mountainous Jurkoster with its monastery dating to the 13th century, and to Loka pri Zuzmu, the former location of a glassworks. In the small St. Leopold chapel there was a very unusual glass chandelier made at the Loka pri Zuzmu glassworks in the end of the 19th century. In the monastery of Olimje established in the 17th century one of the monks gave a very informative and entertaining guided tour, which also included a visit to the old pharmacy of the monastery. Close to the castle nearby the participants could buy the most delicious handmade chocolate. Next stop was in Koszje with its glass cutting shop Studio Gry. It keeps alive the traditional cutting and copper engraving techniques on crystal made at Rogaska Slatina. The studio has its own designers but is also working with outside artists. Its exclusive pieces are sold all over the world.

The last stop of the day was at Podsreda castle erected in the 12th century. Since 1983, the castle has been systematically renovated and at the same time, the castle's original architectural components have been carefully uncovered. The renovated storerooms are intended for exhibition activity, the hall for concerts and promotions. Of special interest for the glass group was the exhibition about the glassmaking tradition and the contemporary manufacture of master glassmakers.

from Rogaška Slatina, and the Kozjansko area.

After four fantastic days in Slovenia, it was finally time for closing the conference and for the farewell dinner that took place in the big medieval kitchen of Podsreda castle. All participants seemed to be very content with the programme of the conference that had been very comprehensive and varied, thanks to our hard-working Slovenian hosts.

The conference was followed by a two-day post-conference excursion. The tour was attended by 14 ICOM members and guided by a two of our hosts. The ambitious program was enjoyed by all, despite the often uncooperative weather. Unfortunately, the planned boat-ride had to be abandoned because of heavy rains. In the picturesque town of Piran, the aqua alta flooding the town square made it nearly impassable. The visit to the cinnabar mines stood out by many attendees as a particularly memorable experience.

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## **MINUTES OF THE BUSINESS MEETING**

### **1/ The current Board**

Board Member	Elected	Due to retire
Chairman: Jutta-Annette Page	2001	2007
Secretary: Gunnel Holmér	2001	2007
Geoffrey Edwards	1999	2005
Kaisa Koivisto	2000	2006
Milan Hlaves	2002	2008
Paloma Pastor	2002	2008
Joze Rataj	2004	2010
Randi Gaustad	2004	2010

### **2/ Elections**

Jutta-Annette Page (president) and Gunnel Holmér (secretary) were re-elected for another term of three years.



Joze Rataj and Randi Gaustad were newly elected to the Board. Helena Horn's term was concluded, as well as that of Jan Mergl.

### **3/ Call for nominations of Board Members for 2006**

As one of the board members will retire next year we would like to receive suggestions of other members that could be elected.

### **4/ Future venues for annual meetings**

An official invitation has not yet been received. Proposed venues were France, Ireland or Denmark in 2005, Toledo in 2006 and Vienna in 2007.

One proposal for 2006 was to join ICDAD in Norway. As Board Member Randi Gaustad explained during the business meeting, the glass collections were being packed up and stored for a major renovation campaign and relocation of the collections of the Museum of Applied Arts in Oslo.

### **5/ Membership**

The number of active members in June 2005 are 95 and our membership represents 30 countries.

The membership list we receive from ICOM is often inaccurate, as members are only removed from the mailing list if they (or their institutions) either do not pay the fees or they resign from the committee. If you have changed address, email-address, telephone numbers etc. we kindly ask you to fill in the form attached to this Newsletter. Please note if you prefer to receive the Newsletter in the future electronically or by post.

### **6/ Financial Report for 2004**

Assets 2004		2,676.27 EUR
Income 2004 (ICOM Paris)		612.00 EUR
Expenses (mailing of Newsletter 2004)	377.82 US \$	304,40 EUR
Total 2004		<u>2,983,87 EUR</u>

The bank account was transferred in the fall of 2001 to Sweden, and is now administered by the current Secretary Gunnel Holmér.

## **7/ Web site**

Report by the current chair, Jutta-Annette Page

At the business meeting in Celje the future of the ICOM Glass website was also discussed. Members agreed that it was vital to reinstate the website and to use it as a primary vehicle for information about the Committee and as primary means of communication. As the cost of printing, shipping, and postage of the Newsletter increases annually and more members have internet access, it is desirable to phase out the hardcopy and rely entirely on distribution online. Board Member Paloma Pastor volunteered to look into finding an expert volunteer to create a new website design. It has been proposed to host the website through a member institution. The Toledo Museum of Art is currently exploring that possibility as part of its new server package. We hope to bring the Website with a new appearance back online before the 2006 annual meeting. Stay tuned – updates will be provided to members via email.

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## **Letter by the Chair, Jutta-Annette Page**

The 2004 Annual Meeting in Slovenia had been in planning for several years, and would not have become reality without the commitment, enthusiasm, creativity, and thoughtfulness of a number of dedicated Members in that country. Irena Lazar and Joze Rataj of the Regional museum in Celje have to be especially commended for their efforts, as well as Tina Varl of the Regional museum in Maribor (which was unfortunately under renovation during our conference), Borut Kriz of the Museum of Dolenjska in Novo Mesto, and Mateja Kos of the National Museum in Ljubljana. Without their unfaltering organization and persisting good humor the 2004 meeting would not have been as insightful and thoroughly enjoyable as it is being remembered by all who attended the conference. Our Slovene organizers were supported in their endeavours by Darja Pirkmajer, director of the Celje Regional Museum, and Nina Zdravic Polic representing the ICOM National Committee in Slovenia.

The amount of dedication and countless volunteer hours donated by the ICOM Glass Members committed to host an Annual Conference cannot be stressed enough. With cut backs in funding felt by Museums worldwide, this task has become an almost impossible additional drain on both financial resources and staff time, which very few museum communities can afford. It therefore seemed prudent to skip the annual conference this year in order to ascertain financial resources and museum staff support to make the conference in the following year as memorable as the ones which have preceded it.

ICOM Glass is still hoping to hold a conference in France, ideally at a time when the Musée d'Arts Décoratifs has completed its renovations and is again fully open to the public. A continued request by the Membership has been to convene in Turkey. Although the ICOM Glass Committee does not have any active members in that country at present, the Board is currently working on a proposal to hold the 2006

Conference in Istanbul, with a post-conference tour to Bodrum and vicinity. A number of enthusiastic colleagues in our field in Turkey have been found, who are enthusiastic about this possibility and have volunteered their services and expertise. Although a preliminary program has already been mapped out that draws on the wealth of sites in Istanbul, the Board is at present still identifying a primary organizer who will ultimately coordinate the logistics of the Meeting. Stay tuned for updates distributed by email!

Jutta Page  
Chair – ICOM Glass Committee

## **ABSTRACTS**

**Borut KRIZ, Slovenia**

### **PREHISTORIC GLASS IN SLOVENIA**

In the second half of the 19th century the interest in archaeology rapidly increased, so that various provincial museums, which had to be supplied with objects, were established in Central Europe.

Large earth tumuli in Dolenjska (Lower Carniola), owing to their abundance and easy identification in the landscape, became a target for numerous treasure-seekers, as well as antique dealers and archaeologists. The finds were transported from Dolenjska to the Natural Science Museum in Vienna, to Graz, Ljubljana, Berlin and the USA, too. Very early on, attention was drawn to a great number of glass beads in different colours, which appeared in graves at Sticna, on Magdalenska gora, at Novo mesto, Smarjeta, Dolenjske Toplice, Libna, etc. Despite the abundance of glass finds, it was only in the mid 20th century that Thea E.Haevernick pointed out that these represented a local source of such jewellery and not an importation from Phoenician territory.

In addition to this great number of glass beads with their variety in colour, form and decoration, the rich beds of silica sand (one of the basic raw materials in glass-making) to be found in Dolenjska testify to local production.

Glass beads appear in Dolenjska already in Late Bronze Age urn graves belonging to the Ljubljana group of Urn-Field Culture (9th - 8th cent. BC). These graves contain rare, tiny, blue glass beads or somewhat larger, light blue, transparent beads, and some which are decorated with eyes of white or yellow glass. In the Ljubljana IIA period (8th cent. BC) the glass grave goods are even more frequent.

At the beginning of the Early Iron Age glass is still relatively rare in grave goods, whereas bone or amber beads are more numerous. In the Sticna-Nov mesto period (6th cent. BC) the number of glass beads begin to increase and reaches its peak in



the following periods. In the Certosa period (5th cent. BC) all types and ornamentation of glass beads are known.

Glass is used as decoration and a supplement to fibulas and needles. Glass vessels are rare, mostly imported. The most common colour is blue, besides turquoise, green, brown, white, yellow and almost black. The beads are round, oval, disc-shaped, in the form of rectangular and triangular prisms, and combinations of shapes. Glass beads in the form of ram's heads in five variations represent a special type. The beads have a hole in the middle for threading on a string, some of them have a metal (iron) ring for hanging; the latter are most often of a basket shape.

In the Late Iron Age the situation changes. The beads become larger, the ornamentation takes the form of a spiral or double eye. In this period there appear solid glass bracelets in different colours - from blue, yellow, green, white, brown, purple, to almost black.

**Irena LAZAR, Slovenia**

## **THE PATTERNS OF USE OF ROMAN GLASS IN SLOVENIA**

The earliest Roman glass vessels from the territory of modern Slovenia, i. e. mosaic and coloured cast glass, are known from the 1st century BCE and beginning of the 1st century CE. The earliest vessels were mostly luxury items and came from northern and central Italian workshops through *Aquileia*, the main commercial centre for East Alpine and Pannonian territory.

The amount of glass material from the second half of the 1st century increased enormously in comparison to the beginning of the century. The number of forms increased by more than 100%, showing that the use of glass had spread among all strata of the population, and further indicating the total Romanization of the region. Most of the blown glass was of an everyday utilitarian character. Glass vessels were made of naturally coloured glass with green and blue tinge and served as tableware, storage vessels and unguentaria. Some forms imitate products made from precious materials (footed goblets, two-handled beakers), vessels from decoloured glass are also popular, small globular bowl with ribs (*zarte Rippenschale*) is well represented. Most of the forms from the flavian period persisted into the next century.

In the 2nd and 3rd century the proportion of decorated wares declined in relation to vast quantity of ordinary table- and storage-ware. The range and number of shapes and types grew, but everyday domestic goods predominate, like plates, bowls, beakers, cups, bottles jars, jugs.

It is noticeable that during the 4th century the use of glass vessels is confined in the main part to table-ware and activities connected with drinking. The number of forms was drastically reduced, as was the number of individual variants. The commonest

vessels are hemispherical cups and conical beakers. At the end of the century the disappearance of many closed forms is seen. At the beginning of the 5th century the vessel glass assemblage is almost entirely restricted to drinking vessels and objects connected with liturgical activities.

The trade routes for glass products to Slovenia in the first centuries led mostly through northern Italy. The main merchant center for trade in the eastern Alps, Pannonia and the Balkans was *Aquileia*. Rare valuable products also arrived from the eastern Mediterranean and Egypt. The Aquileian influence in the south eastern Alpine region continued into the first half of the 2nd century, as the majority of products still came from Italic workshops. The influence of the glass production centers in the Rhine valley, particularly the Köln workshops, developed and spread after the middle of the 2nd century. In this period, the demand for glass products for everyday use to some extent began to be satisfied by local glass production centers. Local glass industry existed in R. period on the territory of modern Slovenia from the 2nd century onwards and lasted, as proved by the finds from Celeia and Poetovio, through the 2nd and 3rd century. The evidence about local glass production in the Roman period is known from *Celeia* (Celje) and *Poetovio* (Ptuj). The evidence includes material derived from glass working, i.e. glass waste, raw glass and distorted vessels, fragments of crucibles and raw glass. The production of glass in Late Roman period has, despite some finds of re-cycled glass deposits, so far not been proved - *Emona* (Ljubljana), *Carnium* (Kranj).

**Valentina VARL, Slovenia**

### **GLASS TRADITION IN POHORJE AREA**

Glass production in Styria in 17th, 18th and 19th Century falls into three regional areas: West-Styria (Weststeiennark, now in Austria), Pohorje area (on and around mountain Pohorje) and Kozjansko area (southern of Pohorje, east from Celje).

At least 16 glass-works are known on Pohorje. They worked from at least 1677, when the oldest one in the backwoods of Pohorje, in the monastery Zice (Seitz) near Slovenske Konjice was mentioned for the first time, until 1909, when the last one in Josipdol stopped its production. The glass-works were run mostly by Bohemian and German glass specialists, who moved to our region mostly in last decades of 18th and in the beginning of 19th century. Glassworks of the 18th century were small and simple. They've been moved from place to place, depending on wood and fine-stone utilisation. In the first half of the 19th century glazier's trade was the most important industrial branch in Styria beside iron works. Glass-works grew, and some of them employed more than hundred glass-makers and glass-decorators. They transformed into the half-industrial workshops. The most important were the glass-works owned by Benedict Vivat (glass-works Langerswald and Benediktov dol / Benedicthal), who exhibited its objects at several industrial exhibitions. Also important were glass-works Gornji Limbus / Oberlembach and Josipdol / Josefthal.

The main products of our glass-works were objects for daily use made by blowing and mould-pressing. The glass-works were producing colourless, clear and coloured, clear and opaque glass. Some of the objects were decorated with cutting and / or engraving, painted and gilded, and in the last decades of 19th century also etched. Benedict Vivat produced in the second quarter of 19th century interesting pressed-glass with historical and Christological motives. His luxurious objects, made for exhibitions or on special request, show the knowledge contemporary glass-colouring and cutting techniques of the first half of 19th century. They followed formal and stylistic influences of Bohemian glass-production.

In second half, and especially in last decades of 19th century, the glass-production in Pohorje region declined. Several glass-works were closed, those which survived competition, produced mostly cheap pharmacy, table, lightening and packing glass, which was mass produced. In 1892 the Glasswork of duke Zabeo (former Glasswork Benediktov dol / Benedicthal) in Ruse / Maria Rast was closed. Two years later the Glasswork in Oplotnica was also closed and as the last one, the glasswork in Josipdol was shut down in 1909. More than 200-years long tradition of glass-production in Pohorje area was died out.

**Joze RATAJ, Slovenia**

## **GLASSMAKING IN KOZJANKSO AND THE CELJE AREA**

The development of glassmaking technology has made an important contribution to the development of design culture right up to the present day. The rise of glass production in Kozjansko and the wider Celje region dates back to the end of the 17th century. Here, 'forest glassworks' operated, although by as early as 1794 we find the first coal-fired glassworks in Liboje.

Evidence of the existence of glassworks comes from place names (including names of fields, etc.) and the fragments of glass found in glassworks rubbish tips - which also prove that they produced a wide range of products. As well as simple glass, glassworks produced more complex items that were at least comparable to the achievements of other countries. The mainstay of production were the mineral water bottles that went on to be filled in Rogaska Slatina - and indeed the oldest glassworks were in this very area.

By the early 18th century Gomji Rogatec, Macelj, Vetrnik and Vitanje were already becoming important centres. A boom occurred in the 19th century and in this period we can trace glassworks in Caca Vas, Log ob Sotli, Loka pri Zusmu, Jurkloster, Trbovlje, Rakovec, Liboje, Zagorje ob Savi and elsewhere. The owners were landowners or burghers, while master glaziers came from Bavaria, Bohemia, Silesia and the Austrian provinces. The names of several master glaziers, for the most part anonymous, are behind the products that won medals at the crafts and industry fairs of Inner Austria in the 19th century. The second half of the 19th century saw the establishing of industrial glassworks.

The former manufacturing workshops were succeeded by the Hrastnik Glassworks, the Rogaska Glassworks and the Rogaska Slatina Glassmaking School. The GRY Design Studio, located in the heart of Kozjansko, complements the product range of the Rogaska Glassworks with exclusive cut crystal and engraving designs.

**Mateja KOS, Ziga SMIT, Slovenia**

## **NON-DESTRUCTIVE GLASS ANALYSES**

In 16th-century Ljubljana three glass workshops are documented which developed because of the increased interest in glass made in the Venetian mode. The National Museum of Slovenia holds about 800 glass fragments excavated on various Ljubljana sites; these can probably be attributed to Ljubljana glass production.

Since the measuring procedure should cause as little damage as possible to the finds, the method of proton-aroused X-rays (PIXE) was chosen. By irradiating with high energy protons the atoms of the object are ionised, which then radiate characteristic X-rays. The measurements were made on the tandemtronic ionic accelerator of the Jozef Stefan Institute. The object was technically irradiated by a proton ray of 2 MeV energy in air, which enabled a fast pattern exchange, and there were no limitations regarding the size of the object. Irradiation with charged particles causes only insignificant irradiation damage in the glass, which is macroscopically not visible. The diameter of the proton ray was approximately 1 mm. The measurement place was selected on a flat unpatinated part of the glass surface. Some objects were covered by a tiny crust of oxidant layer, which was removed by cellulose soaked in alcohol. The X-rays were perceived by a semi-conductible detector, which was c. 6 cm away from the place of measurement. This air layer functioned as an appropriate absorber for silicic x-rays, which predominate in glass, but consequently the softer x-rays could not be detected. A single sample was irradiated with an electric current of some nA for approximately half an hour, so that strontium rays K were also detected with 10% statistic uncertainty. 343 glass objects were measured, including some Late Roman specimens.

The measurements were restricted to naturally-coloured glass without supplements of metal oxides, but some informational measurements were made with coloured glass as well. The results were statistically processed by the method of principal components. On the basis of the elements Si-Sr, the Ljubljana glass could be roughly arranged into two groups. These two special (minor) groups consist of Late Roman glass and wood glass, which was made of wood ashes. We also measured some raw materials for glass production which indicated the choice of alkaline substance to be the most probable reason for dividing the Ljubljana glass into two groups. For producing the Ljubljana glass the ashes of the littoral plant *salicornia herbacea* was probably used as the alkaline substance.

The prevailing alkaline element in ashes is sodium, which could not be traced by the PIXE method. As magnesium and aluminium, which could not be measured either, are also very important elements for statistical glass evaluation, another series of

measurements was decided on. The most suitable method to determine these three elements proved to be the method of proton-aroused gamma-rays (PI GE). The experiment is similar to that with PIXE, only with stronger energy of the protons, which have to reach the nuclei of atoms in the target to start the nuclear reaction. The gamma-rays, which develop at particular reactions, are traced by a special semi-conductible detector, which must be protected from natural radiation by a layer of lead some centimetres thick. Approximately half of the specimens have been measured so far by the PIGE method (radiation by protons of 3.5 MeV energy). This amount has been sufficient for the first statistical results, confirming the division of glass into two groups and the use of different sources of alkaline compounds.

**Lenka BAJZELJ, Slovenia**

### **IS INDUSTRIAL DESIGN A HERITAGE WORTHY OF OUR ATTENTION?**

My contribution is a story about products for everyday use, about products that were not made with the intention of being handed down from generation to generation like some precious legacy. Made of fragile, breakable material, sensitive to any incautious move or slightly heavier touch, and yet in daily use, accessible, attainable and dear to all.

It tells of a time that has stamped an ascetic functionalism on our living space, a time when almost any ornamentation was sign of bad taste. I deliberately chose the time between the sixties and nineties, since I am convinced that precisely that period best portrays the potential creative power of our designers, and at the same time in all its almost tragic dimension points to the ignorance, indolence and lack of any courage and sane judgement on the part of manufacturers and retailers. It tells of wasted opportunities. Which pushed us increasingly into an unenviable position, into technological and economic backwardness, yet at the same time it tells of a brilliant creativity that placed us justifiably in the distinguished European arena.

The awareness that cultural heritage needs to be continuously preserved, studied, presented and collected in occasional thematic exhibitions, and that the general public should be familiarised with and informed of it through permanent presentations, is well-established practice in many countries. There are increasing numbers of museums and collections that also include items from the post-war period, design centres collect documentation and set up overview exhibitions for individual areas, provide relatively thorough presentation of individual designers and establish a broad base which is necessary for a familiarisation with one's own cultural past and the creativity of local designers. These collections also speak of the capability of domestic industry and retail trade, and are important witnesses of the economic trends of an individual environment. They also provide useful and much-needed information and stimulation for new generations of designers.

The contribution also seeks to be a challenge and encouragement for the dialog within the frame of profession; who is capable, who is responsible for selecting and



collecting of contemporary high quality production of industrial design, how to evaluate it, and how to present it.

**Zrinka BULJEVIC, Croatia**

## **THE TRACES OF THE GLASSMAKERS IN THE ROMAN PROVINCE OF DALMATIA**

In the last decade in Dalmatia the fragments of three cups attributed to the famous 1st century glass blowers Ennion and Aristeas were found. Dalmatian Ennion's cups come from the military camp in Tilurium (Gardun near Trilj) and from the Augusteum in Naron (Vid). The Naronitan vessel is the third or fourth such vessel found on the route to Tremithus in Cyprus - Naron - Cavárzere near Adria - possibly Tarragona. Similar fragments are known from Mogador in Morocco as well as aforementioned fragment from Gardun in Croatia which is too small to be attributed to a certain of Ennion's cups with one or two handles.

Aristeas, Ennion's follower, as a Cypriote signed the Naronitan cup from Augusteum and the cup in the Constable-Maxwell collection, and without the toponymic mark the cup in olive green glass in the Strada Collection, Pavia.

The inscriptions on the flat horizontal tongues of two handles of *scyphus* from the Augusteum in Naron, are worn and illegible so we don't know who of Sidonians signed it in the 1st century AD.

The Naronitan glass cameo of Livia with its youthful appearance and hairstyle with *nodus* certainly originated in Rome during the period of Tiberius, and is possibly a work of one of Dioskourides' sons: Eutyches, Hyllos and Herophilos.

Only Salona in Dalmatia is proved to be a glass working centre not only by the remains of glass furnace but with certain epigraphical evidences - a sarcophagus fragment with the inscription of a glassmaker Paschasius or Pascasius and a marble mould for glass bottles with the inscription of a glassmaker Miscenius Ampliatus.

Depictions of closed glass furnaces, and glassblowing scenes are preserved on two clay lamps from 3rd quarter of 1st century AD, consistent with the spread of glassblowing technique, one from Prati di Monestiroio (Ferrara region, Italy) and another from Asseria (Dalmatia). On the lamp from Asseria the names of two depicted glassblowers, freedmen are inscribed: [Tre]llus i Athenio, his assistant whose name suggests Athenian origin, his or his ancestor.

If the personal names on the bottoms of unguentaria are the names of glassmakers, on the territory of Roman Dalmatia from Argyruntum we know about Rufinius and A(ntonius) Volumnius Ianuarius; let us mention here the abbreviation QDE/ILPF from the bottom of a unguentarium from lader of which letters in the first line could be solved with the inscription from the bottom of a square bottle Almese (Torino): Q. DANI EVHELPISTI. On the bottoms of Dalmatian square bottles from lader,

Argyrunum, Asseria and Volcera we read the name of L. Aemilius Blasius. On the bottoms of two bottles from Zaton is the name of C. Salvius Gratus. Cn. Pompeius

Cassianus is the name that is confirmed on the glass bottom from lader. If they are glass makers their bottles are imported in Dalmatia from north Italy; this with remark that there is a hypothesis about Blasius' and Pompeius' Dalmatian branch glass shop of the 2nd part of the 1st - 3rd century AD.

**Jan KOCK, Denmark**

### **RENAISSANCE GLASS PRODUCTION IN SOUTHERN SCANDINAVIAAN ARCHAEOLOGICAL OVERVIEW (16m \_17m CENTURIES)**

In the middle of the 16th century, a wealthy period with many rich noblemen's, of which a few could afford to set up there own glassworks along with the Danish king. Glassworkers were called in from central Europe and with them the necessary technological knowledge. The noblemen's needed window glass for there new manor houses and drinking glasses for the table.

This period with glass production in Denmark stopped in the middle of the 17th century partly because of a depression in the economical situation caused by wars and partly because of lake of firewood for the furnaces. After this the glass was imported for the next hundred years. The paper will present the results of archaeological investigations in some of these glassworks including the workshops as well as the production.

These investigations will be followed up in the coming years and the intention is work through the preserved documentation, to compare with still existing ethnographical parallels, in the year 2006 to make a reconstruction of a glassworks with furnace, to blow replicas of renaissance glasses and finally to publish the result in 2007.

**Jan KOCK, Denmark**

### **DEMONSTRATION BOXES ON HOW TO DO GLASS FROM THE END OF THE 19TH CENTURY**

In the end of the 19th century the owner of Flensburg Glassworks, situated in today's northern Germany, produced about 14 series of how a specific glass technology is done step by step. The demonstrations series was granted to the Museum of Applied Art in Oslo, Norway. This short paper is a sort of questionnaire about you have knowledge about similar series of glass preserved in schools, Museum or in private collections.

**Milan HLAVES, Czech Republik**

### **CZECH GLASS DESIGN AFTER SECOND WORLD WAR AND EVERYDAY LIFE**

The glass design in the socialist Czechoslovakia enjoyed a huge state support. Many specialized centers of design were created and the government used their products to boast at various international exhibitions. Unfortunately, in Czechoslovakia, they were never introduced into a wider distribution. Paradoxically, the costumers were forced to use their cheaper ersatz forms, such as mustard and marmalade jars. To uncover the reasons behind this failure of the central planned economy is one of the present tasks to be solved by the theoreticians and historians of design.

**Nela TARBUK, Croatia**

### **THE GLASS COLLECTION IN THE MUSEUM OF ARTS AND CRAFTS IN ZAGREB**

Glass, in addition to ceramics and metal, is the third key collection of applied art in the museum. All together, these collections form the core of the basic museum holdings.

Since the foundation of the Museum of Arts and Crafts in 1880, the glass collection has been managed pursuing a good collection policy and systematically supplemented by items whose morphology and type reflected European art styles and development, and which also reflected the development of glass production in its technological sense.

As time passed the interest of the curators broadened to the collection of originals by contemporary Croatian artists in glass, and to the discovery of rare examples produced in old Croatian glass factories that unfortunately no longer exist. Today the museum glass is a well rounded collection of fine quality and respectable quantity, and provides insight into artefacts from the sixteenth century to the present. We will mention only the most important examples of glasswork, in chronological order:

one of the most valuable examples offish-shaped dishes, a Venetian work from the early seventeenth century. Welcome cups, glasses and decanters of Bohemian and German production from the sixteenth to the eighteenth century, Dutch cups, glasses and decanters from the same period, artworks such as a glass by the German master craftsman Johann Schaper from Nuremberg, and glass products from the nineteenth century, outstanding among which are those by Samuel Mohn and Anton Kothgaser.

Items from glass factories active at the end of the eighteenth and in the nineteenth century represent Croatian production, such as Mrzla Vodica, Osredok, Zvecevo and Ivanovo Polje.

We must especially mention Art Nouveau glass, which includes works by Emile Galle, the Daum brothers from Nancy, and Louis Tiffany from New York.

Of great importance for Croatia are works from the early twentieth century, when Croatian artists such as Antonija Krasnik, who lived and worked in Vienna, and the painter and graphic artist Tomislav Krizman, created glass objects of great beauty.

Modern design in the glass industry in the second half of the twentieth century is marked by the work of many Croatian artists, outstanding among which are Milica Rosenberg, Raul Goldoni, Ljubica Kocica, and we must also add the one-of-a-kind works of great art value created, in addition to the artists mentioned above, also by the painter Antun Motika.

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## UPDATE OF MEMBERSHIP INFORMATION

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