A life with glass

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THE FRED HAMBURGER COLLECTION

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Al vanaf heel jong was Fred Hamburger (1932-2018) in glas geïnteresseerd. Als scheikundige ging zijn belangstelling behalve naar de schoonheid van de glazen die afhankelijk was van de goede verhoudingen, naar de chemische samenstelling ervan. Hier was hij tot op late leeftijd actief mee bezig.
Naar aanleiding van de tentoonstelling over Venetiaans en façon de Venise glas in de Nieuwe Kerk te Amsterdam in 1991, waarin een aantal glazen uit zijn collectie stond, schreef Fred Hamburger een artikel over de samenstelling van cristallo. Door plaatsgebrek kon het toen helaas niet worden gepubliceerd in de bijbehorende catalogus. We zijn heel blij dat dit nu goedkomt in deze catalogus waar het stuk in is opgenomen als inleiding voor de cristallo glazen die toen op de tentoonstelling prijkten.
Van de collectie werd een overzicht bijgehouden. Fred Hamburger plakte een klein rond stickertje met een nummer op de glazen. Dit zijn de FH nummers, die hier zijn genoemd onder het catalogus nummer. In een bruine multomap werden alle glazen minutieus beschreven, soms met begeleidende tekeningen. Sommige van deze tekeningen zijn afgebeeld naast de glazen zelf.
Fred Hamburger behoorde tot de allereerste glasverzamelaars die in onze zaak kwamen. Al in de vroege jaren zeventig kocht hij glazen bij ons. In de loop der jaren ontstond hierdoor een hechte vriendschap tussen onze ouders en Fred en Henny. Een vriendschap die boven het glas uitgroeide, hoewel het laatste er natuurlijk wel een belangrijk onderdeel van bleef.
De bruikleengevers van de glazen voor de expositie in de Nieuwe kerk kwamen op een avond bijeen om ongestoord de tentoongestelde glazen te bekijken. Aansluitend vertelde iedereen in het kort iets over de eigen verzameling. Fred en Henny gaven hier een totaal andere invulling aan dan de andere genodigden. Ze stonden op en declameerden een door Fred gecomponeerde dialoog tussen Thomasvaer en Pieternel. Hier laten we graag Thomasvaer nog even aan het woord. Na een discussie, waar het heftig aan toe gaat over waar al dat moois op de tentoonstelling nu zal zijn gemaakt, zegt hij

Mijn lieve Pieternel
Waarom zouden wij kniezen,
Zo fraai als het Venetiaans,
Is het Façon de Venize!
Wie maalt er om 't verschil,
Wie kan het onderscheiden?
En daarom drinken wij,
Een glaasje met ons beiden.
Mijn lieve Pieternel,
Kom hef het glas, voorwaar,
Op de gezondheid van
Deez lieve vriendenschaar!

Fred Hamburger (1932-2018) was interested in glass from a very young age. As a chemistry graduate he was fascinated not only by the way the beauty of a glass is dependent on its proportions but also by its chemical composition. The latter aspect still actively engaged his attention at a later age.
In 1991 he wrote an article about the manufacture of cristallo for the exhibition of Venetian and façon de Venise glass on show in Amsterdam's Nieuwe Kerk, where several of his glasses were being exhibited. Unfortunately the piece had to be left out of the accompanying catalogue due to lack of space. As such it gives us great pleasure to make good that omission and publish the piece here as an introduction to the cristallo glasses that were showcased in the prestigious 1991 exhibition.
Fred Hamburger catalogued his own collection of glasses, sticking a small, circular sticker with a number on each. These are the FH numbers referred to in the descriptions accompanying the catalogue number. Fred would describe each of his glasses in minute detail, sometimes embellishing the descriptions with an explanatory drawing before filing them neatly in a brown office file. We have included some of the drawings here alongside the glasses they depict.
Fred Hamburger was one of the first glass collectors to visit our shop, buying his first glasses from us in the early Seventies. As the years went by Fred and his wife Henny forged a close friendship with our parents. It was a friendship that grew to transcend glass, although glass naturally continued to play an important role.
Prior to the Nieuwe Kerk exhibition, the collectors who had loaned their glasses for the show came together one evening to admire them in private, away from the crowds. Each was asked to say something briefly about their respective collections. When it came to their turn, Fred and Henny opted for a wholly original approach. The two stood up and declaimed a dialogue penned by Fred between Thomasvaer and Pieternel, well-known characters from a 17th century Dutch farce who traditionally speak in rhyme. As a tribute, we'd like to give Thomasvaer the final word. After a heated debate about the place of manufacture of all those beautiful glasses in the exhibition he turns to his wife, saying:

My darling Pieternel
Why should we fret?
As pretty as Venetian glass
Façon de Venise is yet!
What difference does it make,
The distinction who can see?
And that's why we should take
A drink together, you and me.
My dearest Pieternel,
For sure come raise a glass
To wish our good friends well
And health and happiness at last

A life with glass

Henny Hamburger en de kinderen halen een aantal herinneringen op over Fred Hamburger en zijn liefde voor glas.

Regelmatig maakte Freds grootvader Hamburger (vermoord in Auschwitz 14-10-1942) reizen naar Italië. Hij had een grote liefde voor glas, en hij nam dan ook elke keer weer een grote hutkoffer tot aan de rand gevuld met glas, mee uit Italië. Op bezoek bij zijn grootouders in Amsterdam aan de Oudezijds Voorburgwal in de jaren '30, zal de nog kleine Fred de glazen vaak hebben gezien. Waarschijnlijk werd hier de kiem gelegd voor zijn liefde voor glas. Na de oorlog was de gehele glas-collectie verdwenen. Maar de hutkoffer is steeds in de familie gebleven.

Fred's grandfather Hamburger (killed in Auschwitz 14-10-1942) was an avid glass collector. He'd go on regular trips to Italy, always returning with a giant steamer trunk filled to the brim with glass. Back in the Thirties little Fred would have seen his grandad's glasses often, during the frequent visits the family paid to his grandparents' house on Amsterdam's Oudezijds Voorburgwal. Most likely Fred's own love of glass dates back to these times.
After the war the entire glass collection was gone, but the steamer trunk is still in the family.

Tijdens zijn studie Scheikunde in Delft vierde het Corps in 1953 zijn lustrum onder andere met een glas- expositie in het Museum Prinsenhof, alwaar hij meehielp met de organisatie van het geheel. Hier werd zijn interesse pas echt opgewekt.
In 1969 werd aan Fred gevraagd mee te helpen bij de inrichting (en afstoffen) van de glas-tentoonstelling van de Guépin collectie in het zelfde museum: Een glasie van Vrienschap. Vanaf dat moment zal het glas hem nooit meer loslaten. Later raakten de familie Hamburger

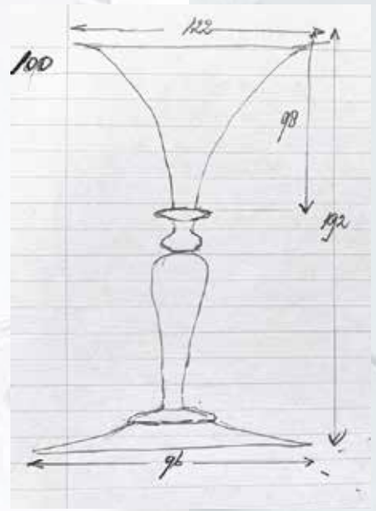
While Fred was studying chemistry in Delft, the university's student union marked its anniversary in 1953 with a glass exhibition in the Prinsenhof Museum that Fred helped organise. It was then that his interest in glass was really roused.
In 1969 Fred was asked to help to set up (and clean) an exhibition of glasses from the Guépin collection in that same museum: Een glasie van Vrienschap. From that moment on glass was to become an overriding passion. In later years the Hamburger and Guépin families became

Henny Hamburger and the children shared some memories of her husband Fred Hamburger and his love of glass.

en Guépin ook bevriend en is er een diner gehouden met de wederzijdse liefde voor glas als middelpunt. Vanaf de tafel kon je de glazen zien staan in ingebouwde kasten totdat de kleurig geverfde deurtjes weer dichtgingen.

friends and held a dinner party centred around their mutual love of glass. Seated at table one could view the glasses in their custom-made display cases until the brightly coloured doors closed once more.

Fred Hamburger houdt zich als verzamelaar bezig met de chemische samenstelling van glas en verdiept zich in de oude literatuur over het productie proces. Verder interesseert met name de vorm en de variëteit van vormen van de glazen hem. Hij probeert de ontwikkeling van de vormen te volgen van de Romeinse tijd tot de zestiende en zeventiende eeuw en daar, als het ware, een constante in te vinden. Een glas kan volgens hem het best bekeken worden als het vastgehouden wordt bij de voet en op armlengte geheven wordt.



As a collector Fred Hamburger researched the chemical composition of glass and delved into old literature on the production process. Another particular interest of his was the shape of glasses and their variety. Fred Hamburger attempted to trace the development of these forms from the Roman era to the sixteenth and seventeenth centuries and to try and discover a constant. In his view a glass was best examined when held at arm's length by the foot.

Fred was goed bevriend met de Familie Prins-Schimmelpenninck van der Oye die woonden op Kasteel Duivenvoorde. Om de één of andere reden verwachttwen de 'Schimmelpenninckjes' dat Fred nooit zou trouwen, en plaagden ze hem daar een beetje mee. Om hem uit te dagen beloofden ze dat hij een Venetiaanse tazza uit hun

Fred was good friends with the Prins-Schimmelpenninck van der Oye family who lived at Duivenvoorde Castle. For some reason the Schimmelpennincks believed that Fred would never marry, and they used to playfully tease him about it. As a challenge, they promised him a Venetian tazza from their collection if he

collectie zou krijgen mocht hij toch ooit in het huwelijksbootje treden. In 1963 was het zover en trouwde Fred met Henny Meester. Op Schiphol teruggekomen van hun huwelijksreis uit Zuid Spanje belde Fred de familie Schimmelpennick met de vraag of dit een geschikt moment was om langs te komen. Bij aankomst stond het glas al klaar in een doos.

were ever to tie the knot. And marry he did, wedding Henny Meester in 1963. Touching down at Schiphol Airport after their honeymoon in southern Spain, Fred phoned the Schimmelpenninck family to ask if it was a suitable time to drop by.
On arrival they found the glass put ready in a box.

Fred Hamburger erfde in 1972 een klapbuffet met zinken wasbak. Het meubel moest duidelijk gerestaureerd worden. Zijn vrouw en hij huurden een busje en reden naar een restaurateur - handelaar in het oosten des lands af. De man wilde het prachtige meubel graag restaureren. Verder wilde hij de mening horen van Fred over een glas dat toevallig in een kabinet stond dat hij had gekocht. Fred kreeg het glas in handen en viel lange tijd stil. Toen stelde Fred voor het glas te ruilen voor het meubelstuk dat hij gebracht had. De handelaar sloeg met verbazing steil achterover en ging maar wat graag in op het aanbod. In 1991 was het glas met geribde kelk te bewonderen in de glas tentoonstelling in de Nieuwe Kerk (Laméris and Laméris 1991, cat. nr. 16, p. 57).

In 1972 Fred inherited an antique fold-out buffet, complete with zinc washbasin. The cabinet was badly in need of restoration, so Fred and his wife hired a van and drove it to a furniture dealer and restorer in the eastern Netherlands. The man was keen to restore the magnificent piece. That decided, he asked Fred to look at a glass he'd acquired by chance in a cupboard he'd bought. Fred held the glass in his hands and fell silent. The dealer asked him if he could tell him a bit more about it. Fred said nothing for a long while. Finally, he spoke: would the dealer consider exchanging the glass for the antique buffet? His offer took the dealer completely by surprise, but he was only too happy to accept. In 1991 this glass with ribbed bowl was one of the exhibits in the prestigious glass exhibition held in Amsterdam's Nieuwe Kerk (Laméris and Laméris 1991, cat. nr. 16, p.57).

Als gezin zijn wij een aantal keer verhuisd. Steeds een nieuwe school, steeds een nieuwe klas. Niet altijd gemakkelijk, maar één voordeel had het wel: ik kon steeds opnieuw dezelfde spreekbeurt houden, over Venetiaans glas. Elke keer met succes! Want wat waren de meesters en juffen blij, eindelijk eens niet een verhaal over de 'voetbal' of 'mijn hamster'.
Geesje

'As a family we moved house a number of times. Every time it meant a new school, a new class. That wasn't always easy, but it did have one advantage: I could always do the same "show and tell", about Venetian glass. Success guaranteed! Because all the teachers were really pleased to hear something else for a change instead of the endless talks about "football" or "my hamster",' reminisces daughter *Geesje*.

Ik kan mij nog goed herinneren dat mijn vader zijn glazenverzameling altijd goed schoon probeerde te houden. Daarom ging hij één keer in de zoveel tijd de glazen afstoffen en wassen. Het was in de tijd dat wij in Velp woonden en ik nogal fanatiek was met voetballen. Dit gebeurde dan ook vaak binnenshuis. Op deze dagen werd mij wel heel duidelijk gemaakt dat ik niet welkom was om thuis te zijn. Het is met de glazen altijd goed gegaan maar met een antiek bordje liep het minder goed af...
Daan

Son *Daan* remembers how his father always tried to keep his collection of glasses clean and pristine. 'At regular intervals he would dust and wash the glasses. We were living in Velp at the time and I was pretty fanatical about football. So there'd be some footballing indoors. On the days that my father was tending to his collection I'd be given to understand in no uncertain terms that I wasn't welcome to stay home. As a result nothing ever happened to the glasses, but the same can't be said for a little antique plate....'

'Als wij als kind ziek waren, perste mijn moeder altijd een sinaasappeltje uit.
Mijn vader maakte daar dan een speciaal moment van: wij mochten het drinken uit een slingerglas. Dat was het enige moment waarop wij aan een glas mochten komen. Het maakte dat je je al een stuk beter voelde...'
Jet

'When we were sick as children, my mother would always squeeze fresh orange juice. My father would turn it into a special occasion by letting us drink the juice from a twist glass. It was the only time we were ever allowed to touch one of his glasses. That in itself meant that you immediately felt a lot better...' remembers *daughter Jet.*

Catalogue of the Fred Hamburger Collection

1 Monogrome ribbed bowl
FH 85

Blue-green glass
Late 1st century BC – early 1st century AD
Height: 4.3 cm, ø opening: 13.5 cm
Isings 1957 form 3a
Acquired August 17th 1997 from Schulman
Depicted in catalogue Jacques Schulman b.v. (216), cat.no. 73a

A monochrome, broad, shallow ribbed bowl in translucent natural sea-green glass. Almost vertical rim with an abrupt junction between the rim and the convex curved side. On the exterior, fourteen pronounced ribs set vertically on the body. The ribs end below the junction of the side and base. Ground and polished on the inside, on the top and on the outside of the rim above the ribs. Fire-polished on the exterior. Slightly indented base.

Comparanda:
Toledo Museum of Art (Grose 1989, cat.no. 232)
Collection Arts (Arts 2000, cat.no. 17)
Collection Bijnsdorp (Bijnsdorp 210, cat.no. NFB 0380)
Hermitage Collection, (Kunina 1997, cat.no. 55-56)
Princeton University Art Museum (Antonaras 2012, cat.no. 19, 20)

Experiments by London-based experts Mark Taylor and David Hill, who specialize in researching the techniques used to make Roman glass vessels, show that the Romans used a very simple and relatively fast method to make these ribbed bowls. Each radial rib is individually formed on a hot, flat glass disk, using a pair of special pincers. Working quickly with the pincers, the makers can usually pinch four or five ribs before the glass becomes too rigid and requires re-heating.
After all the ribs have been pinched, the hot disk is immediately placed onto a pre-heated form, and the vessel is re-heated and slumped. The softened disk is coaxed over the form using metal or wooden tools, until it meets the horizontal surface of the kiln batt and creates an even rim. After annealing and cooling, the bowl has to undergo cold glass working to remove all the partially fused deposits of clay separator from the inside of the vessel and the tool marks on the outside.

2 Cylindrical jug
FH 108

Transparent blue-green glass
Northwest part of Roman Empire, possibly Rhineland
Late first or second century
Height: 24.2 cm, ø opening: 5.0 cm, ø base: 9.9 cm
Isings 1957 form 51b
Gift from Henny Hamburger and the children
in 1996 in occasion of Fred's retirement.

Cylindrical jug with tapering neck and everted inwardly folded rim. Slightly concave base. Strap celery handle with around 22 ribs. The rectangular handle is applied onto the edge of the shoulder, drawn up and attached just under the rim, pulling away the excess glass that has left traces on the upper side of the handle. No traces of pontil mark.
The glassblower used a smooth-walled mould, which facilitated mass production. The shoulder slightly evades, showing where the mould finished.
Three bottles are depicted in a beautifully carved sarcophagus of a dead woman, excavated in Simpelveld in the southern province of Limburg. Two are round, like this one, with a square bottle placed between them.

Comparanda:
Fremersdorf 1958, tafel 45

Detail sarcophagus of Simpelveld (province of Limburg), 150-175 AD (Rijksmuseum van Oudheden (RMO) Leiden)

3 **Carinated flask**
FH 82

Pale, sea-green tinted glass
Probably Asia Minor
Probably 3rd century, possibly 2nd century AD
Height: 16.4 cm, ø opening: 2.2 cm, ø foot: 5.4 cm
Acquired March 17th 1978

Flask of almost colourless, pale, sea-green tinted glass. Squat, carinated body with long upward-flaring neck. Rim furnace-finished. Pushed-in hollow, tubular base ring, so called Roman foot, folded from the same bubble as the body. Pontil mark.

4 **Dish**
FH -

Transparent, light blue-green glass
Eastern Mediterranean
Late second, third centuries
Height: 3.9 cm, ø : 18.4 cm, ø foot: 8.6 cm
Isings 1957 Form 97a

Shallow bowl with outwardly curved sides and downwardly folded rim. Pushed-in hollow tubular base ring, so called Roman foot, folded from the same bubble as the body. Concave bottom. Pontil mark.

Comparanda:
The windmill collection of glass (Anonymous 2019, p. 72)
Princeton University Art Museum (Antonaras 2012, cat.no. 126)
Israel Museum (Israeli 2003, cat.no. 153)

5 **Bowl**
FH 75

Transparent green glass
Eastern Mediterranean
Fourth century
Height: 6.5 cm, ø opening: 11.5 cm, ø base: 6.2 cm
Acquired July 14th 1976 from Schulman,
reputedly bought in Italy

Almost cylindrical bowl broadening slightly towards the opening, with everted furnace-finished rim. Just under the rim, the end of the body is marked by a horizontal rib. Along the inside of the rim a horizontal groove made of scratches that could either be traces wear, a tool mark or a wheel-engraving. Thick, sharp pontil mark.

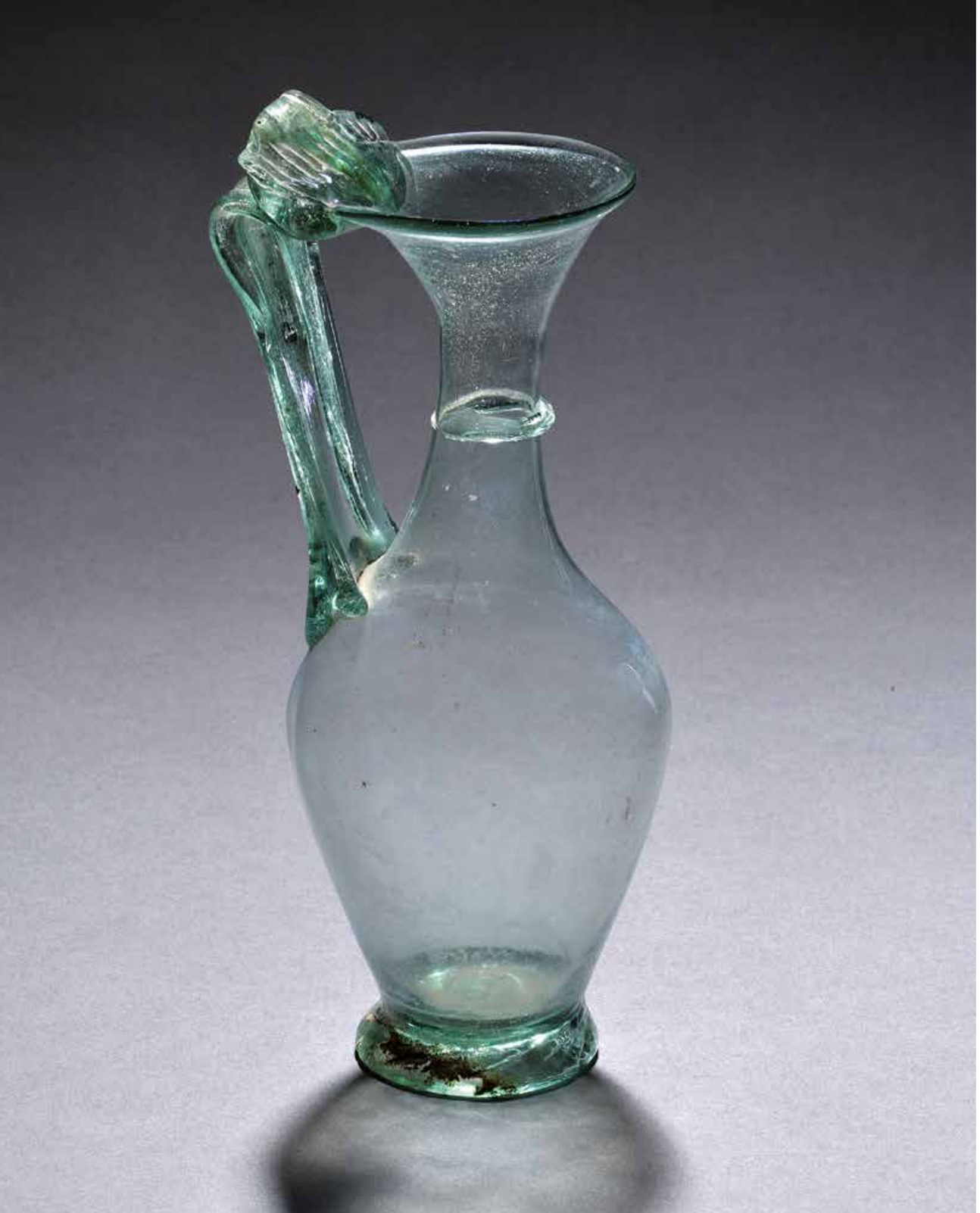
The bowl is mould blown

6 **Ribbed decanter with handle**
FH 79

Transparent yellowish-green glass
Neck and rim free blown.
Probably Syro-Palestinian
Late third, fourth century
Height: 10.0 cm, ø opening: 4.6 cm,
ø base: 6.0 cm
Acquired June 25th 1977
Gift of Henny Hamburger and the children
to mark Fred's 20th work anniversary as
an engineer

Globular body with concave kicked-in base with nineteen vertical ribs. Cylindrical neck with funnel mouth and in-folded rim. An ear-shaped handle is pulled from the shoulder and attached to the rim with a fold. Thick circular pontil mark. Body blown into a ribbed dip mould.

Comparanda:
Royal Ontario Museum (Hayes 1975, cat.no. 327)
Corning Museum of glass (Whitehouse 2001,
cat.no. 629)



7 Jug with handle
FH -

Transparent blue-green glass
Egypt or Eastern Mediterranean
Fourth century
Height: 22.2 cm, ø opening: 6.2 cm, ø foot: 4.9 cm
Isings 1957 form 120b

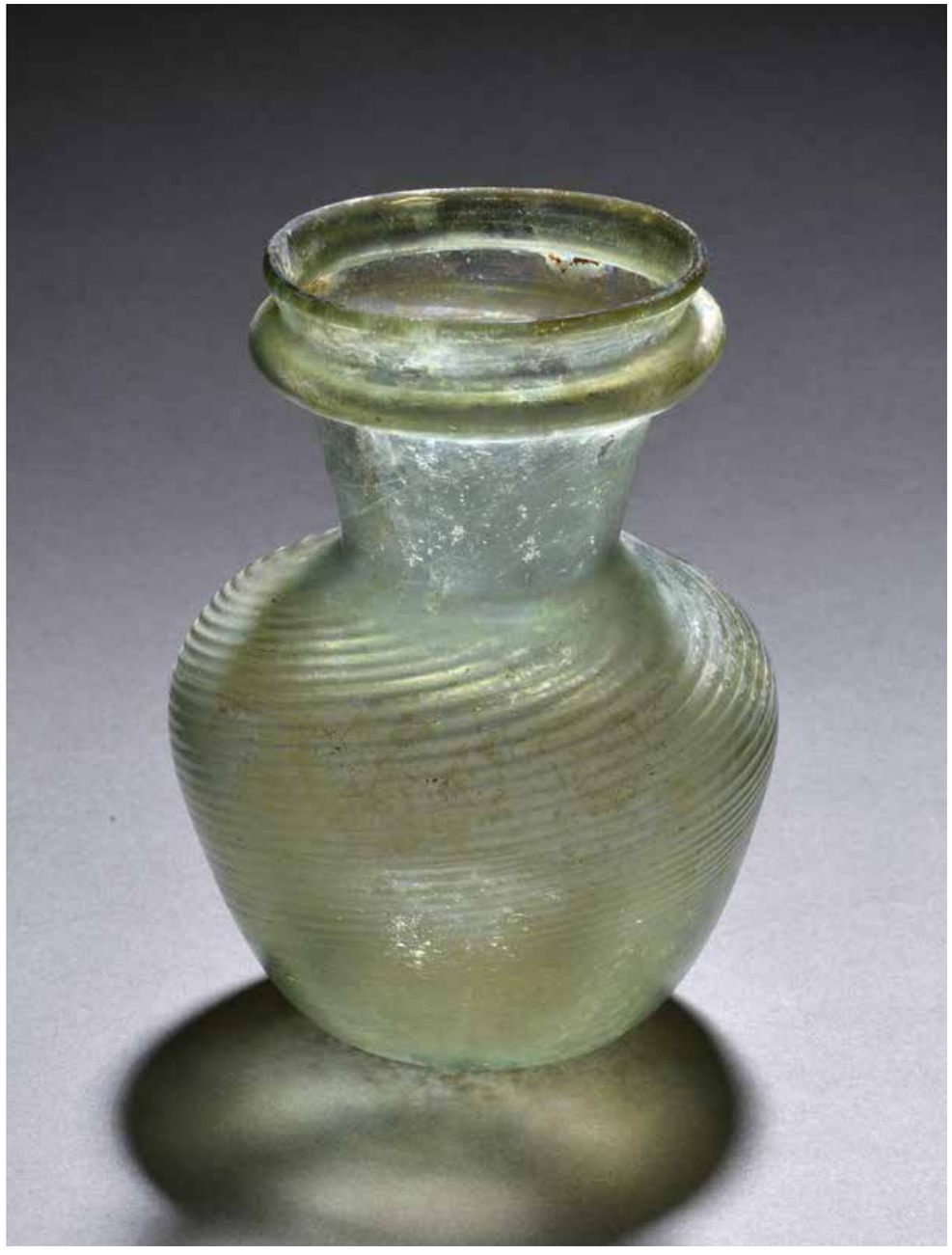
Oviform body with tapering neck narrowing towards the opening before changing into a funnel mouth with furnace-finished rim. The broad three-ribbed strap handle is applied on the edge of the shoulder and folded with a sharp angle towards the rim where it is attached to the edge with a fold, creating a thumb-rest. The upper side of the thumb-rest is decorated with many ribs. Splaying pad-foot with oblique tool marks, made of a separate piece of glass. Horizontal thread wound around the smallest point of the neck. Pontil mark.

Comparanda:
The Cuperus collection (Cuperus 2008, p. 106)

8 Decanter with handle
FH 87

Honey-coloured glass
Eastern Mediterranean
Fourth century
Height: 17.5 cm, ø opening: 4.3 cm, ø foot: 2.9 cm
Acquired December 21st 1980

Long, piriform body with twelve ribs. Cylindrical neck with funnel-shaped mouth and a broad, inwardly folded rim. The ear-shaped handle is attached to the shoulder and drawn towards the rim where it is attached to the edge with a fold. The low foot is made of a coiled, spiralling thick glass thread with three layers. No pontil mark.



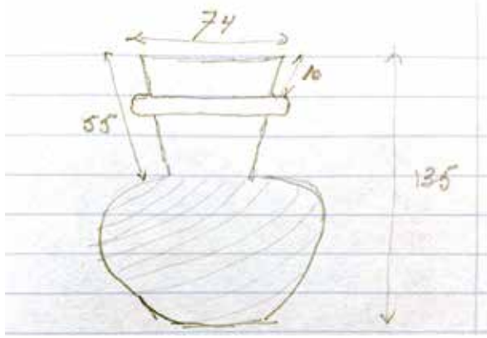
9 Large ribbed jar
FH 95

Transparent light olive-green glass
Eastern Mediterranean
Late fourth, early fifth century AD
Height: 13.5 cm, ø opening: 7.4 cm, ø base: 4.5 cm
Acquired June 17th 1982

Large jar of transparent olive-green coloured glass with 25 diagonal ribs in the Z direction (from bottom left to top right). Squat, conical body with rounded shoulder. Short conical neck with a hollow rounded fold below furnace-finished rim. Shallow kicked-in base. Pontil mark.
The body was blown into a 25-point dip mould, thus creating 25 ribs, before being twisted.

Neck and rim free blown.

Comparanda:
Princeton University Art Museum (Antonaras 2012, cat.no. 111)
Royal Ontario Museum (Hayes 1975, cat.no. 327)

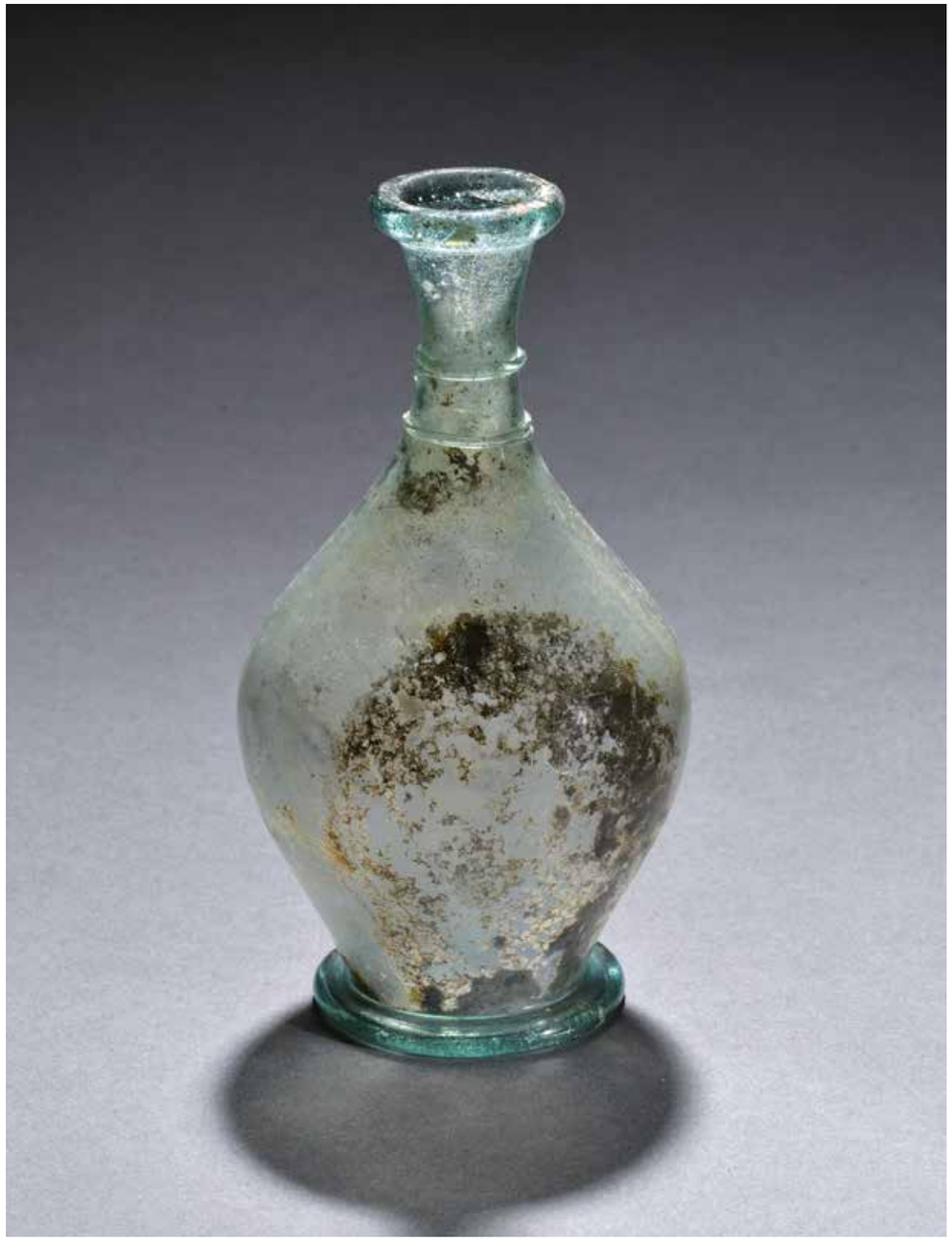


10 Flask on foot
FH 84

Honey-coloured glass
Eastern Mediterranean
Fourth, fifth century
Height: 15.2 cm, ø opening: 5.3 cm, ø base: 5.2 cm
Acquired April 4th 1979 from Schulman,
reputedly bought in Syria
Depicted in the catalogue of
Jacques Schulman b.v. 1979 (215), cat.no. 94

Inverted, fig-shaped body with a slightly tapering neck and a furnace-finished funnel mouth. The flask stands on a rudimentary stem on a foot. The entire flask is made from a single bubble, that is tooled in such a way that a foot of double glass with a hollow tubular rim has been created below the small stem. Pontil mark.

Comparanda:
Newark Museum (Auth 1976, cat.no. 157)
Israel Museum (Israeli 2003, cat.no. 183)



11 Flask
FH 80

Transparent blue-green glass
Eastern Mediterranean
Fourth, fifth century
Height: 14.4 cm, ø opening: 3.1 cm, ø foot: 5.2 cm
Acquired July 28th 1977 from Schulman,
reputedly bought in Lebanon

Oviform body with conical neck and inwardly folded thick rim. Hollow tubular base ring, so-called Roman foot, folded from the same bubble as the body. Pontil mark.
Around the thinnest part of the neck two horizontal glass threads, consisting of a single thread that crosses over diagonally from one to the other.

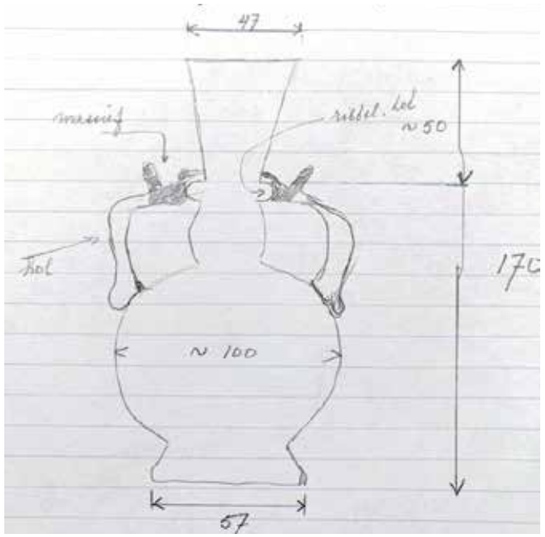
Comparanda:
Musée du Louvre (Arveiller-Dulong 2005, cat.no. 1265)

12 Decanter with two handles
FH 97

Transparent colourless and purple glass
Islamic
Twelfth century
Height: 17 cm, ø opening: 4.7 cm, ø foot: 5.7 cm
Acquired in December 1983

Hemispherical body with flattened shoulder with cylindrical neck and conical opening. A horizontal glass thread at the point where the neck becomes the opening. Two round handles start opposite one another at the shoulder, before being drawn towards the horizontal thread where they are attached and folded upward. Hollow tubular base ring, folded from the same bubble as the body. Slightly kicked-in base. Pontil mark.

The iridescence of the glass almost hides the transparent, slightly purple colour of the body of the glass. The handles are made of dark purple glass.



A pattern with only a rete canes

Kitty Laméris

Filigree glass is made with canes, of which several different types were used. These canes were arranged in various patterns. Research suggests that some patterns of canes are related to certain types of glasses and periods. In the sixteenth and early seventeenth century, for example, the most common pattern is a combination of a fili (a cane with one, usually white, thread in a colourless cane) and a rete (a cane with several, usually white, threads around a colourless cane) canes. Around 1700 this pattern is no longer used. A less common pattern is that featured in the glass in Fred Hamburg's collection: a pattern comprised exclusively of a rete canes.

The external threads around the a rete canes lead to the very characteristic appearance of

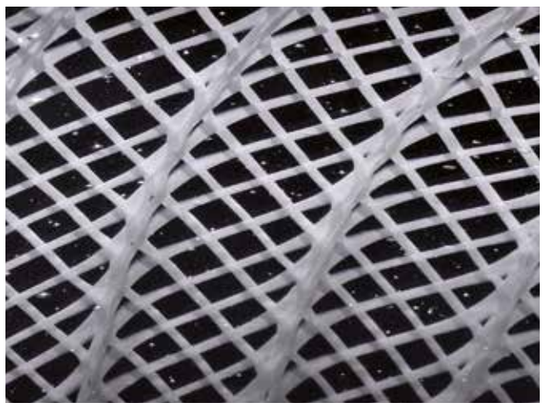


fig. 1. Detail of cat.no. 13

fig. 2. The Grand Curtius Museum, Liège, B/1938a-b

this pattern (fig. 1). Twice as many white threads come together where the canes meet, creating strong, clear, white vertical stripes in between a decoration resembling a net. The name of the cane refers to its appearance: 'rete' means (fishing) net in Italian (See for an article dedicated to this particular cane Laméris 2019).

This pattern appears to be one of the earliest filigree patterns ever made. Some of the very first filigree glasses already feature this pattern. These are glasses with the same shape as their counterparts decorated with gold and enamel, a popular technique around the date that filigree glass was invented in 1527 (Zecchin 1989, p. 182). Only a few pieces belonging to this first generation of filigree glasses have survived. Most of them are decorated with the famous a fili/a rete pattern, but at least three of them are made with only a rete canes: two footed bowls (fig. 2) (Chevalier 1999, cat.no. 54 and Schlosser 1951, p. 35) and a pilgrim

fig. 3 Collection Fred Hamburger, cat.no. 13

flask (Higgot 2011, cat.no. 14, Zecchin 1990, p. 297). These glasses were probably made until circa 1540 when other shapes became fashionable.

The Fred Hamburger glass belongs to a group of glasses that are part of the second filigree generation. These are characterized by their trumpet-shaped foot with a downwardly folded rim and a rudimentary stem in the shape of a hollow knop between two colourless mereses.

Of some of these glasses we found only a single example in the consulted literature, such as a tall mounted vase (Kremayr 1987, cat.no. 13), a glass with a two-ringed bowl and a quatrefoil rim (Chevalier 1999, cat.no. 66) and a glass with a five ringed bowl and a quatrefoil rim (Baumgartner 1995, vol. I, cat.no. 192). Of others more examples are known, like the glass described here (fig. 3). This shape occurs with at least eight other filigree patterns (see cat.no. 13 for a list of these examples). Of each only one example was found to be still extant, whilst at least four other glasses with the rete pattern have survived (see comparanda cat.no. 13). What's more, there is further glass of which it may be argued that it is another version of the same glass, the lovers' cup or double nez (fig. 4).

fig. 4 Collection Victoria and Albert Museum, London

This shape seems only to have been made with the a rete pattern, except for one example that is made of reticello, another net-like motif (Theuerkauff-Liederwald 1994, cat.no. 194).
Many glasses with a trumpet-shaped bowl and the same foot and stem are decorated with the a rete only pattern (fig. 5). It is a very elegant version of a type of glass that exists both in cristallo and filigree versions. Interestingly, it is this glass – without a foot and with all kinds of different mounts – that was often used in The Netherlands as a so-called 'drinkuyt': a glass that had to be emptied in one go before it could be put down (fig.6). We may never know whether such glasses were made specifically for use with these mounts, or if they were mounted after they were broken, or even broken on purpose...
Two unique examples have the same foot without the knop, a glass with an undulating rim (Archer 1977, cat.no. 20) and a small vase (fig. 7).

Some larger pieces have the same shape of foot, but instead of the downwardly folded rim they are strengthened with an extra coulourless glass thread on top of the rim on the foot, like a large decanter (Dreier 1989, cat.no. 45) and a vase (Theuerkauff Liederwald, 1994, cat.no. 71).
Fragments of filigree glasses with similar feet have been found during the archaeological dig at Acton Court, the home of a Tudor courtier. They were found between many other glasses. '(...) the coin evidence points to a mid-16th-century date for both the purchase and deposition of this group' (Rodwell 2004, p. 333, fig. 9.12.1, p. 336). It's possible that the whole set of glasses was ordered in Venice especially for the visit of Henry VIII and his wife Anne Boleyn in August 1535 (Rodwell 2004, p. 334). 'The prominence of so much glass (...) suggests that the life expectancy of such glass was short, and breakage no doubt commenced during the brief period of

fig. 5 Private collection, Belgium

fig. 6 Rijksmuseum Amsterdam

fig. 7 Gemeentemuseum Den Haag

Henry's visit ' (Rodwell 2004, p. 334). A single fragment of the a rete pattern was also found here (Rodwell 2004, p. 336, fig. 3).
Fragments of glasses with this pattern of a rete canes discovered in Venice's lagoon (private collection, Venice) indicate these glasses were made in Venice.
Two other glasses usually attributed to Venice are decorated with the same pattern, a high tazza (Tait 1979, cat.no. 109) and a large 12-lobed bowl on a Roman foot (Anonymus 1982, cat.no. 248). A Roman foot was also amongst the shards of Acton Court (Rodwell 2004, p. 336, fig. 6).
It appears that the a rete only pattern was especially popular during filigrana's early days in the sixteenth century. Examples of the Rosenborg castle type made around 1700 seem to be completely absent. In contrast to the a fili cane, the a rete cane was frequently used during this later period, but always in combination with other canes, like ballotini or mixed canes.

13 Tazza with filigrana a retortoli decoration
FH 33

Filigrana a retortoli made with two layers
A rete Z canes
Venice
Second half sixteenth century
Height: 9.0 cm, ø bowl: 17.3 cm, ø foot: 8.9 m
Acquired in april 1973

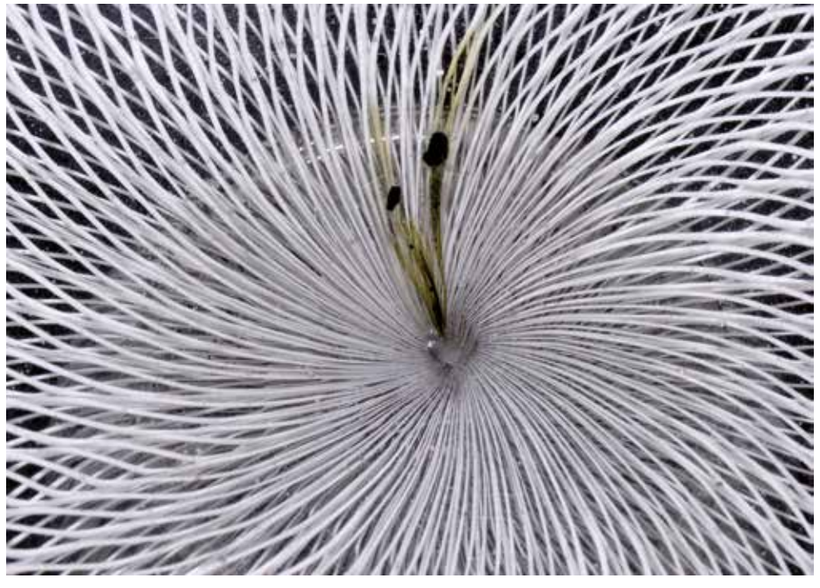
Exhibited: Venetiaans en Façon de Venise glas, 1500-1700, Nieuwe Kerk Amsterdam
The glass is depicted and described in: Frides and Kitty Laméris, *Venetiaans en Façon de Venise glas, 1500-1700*, Nationale Stichting Nieuwe Kerk Amsterdam, 1991, colour print IX, p. 31

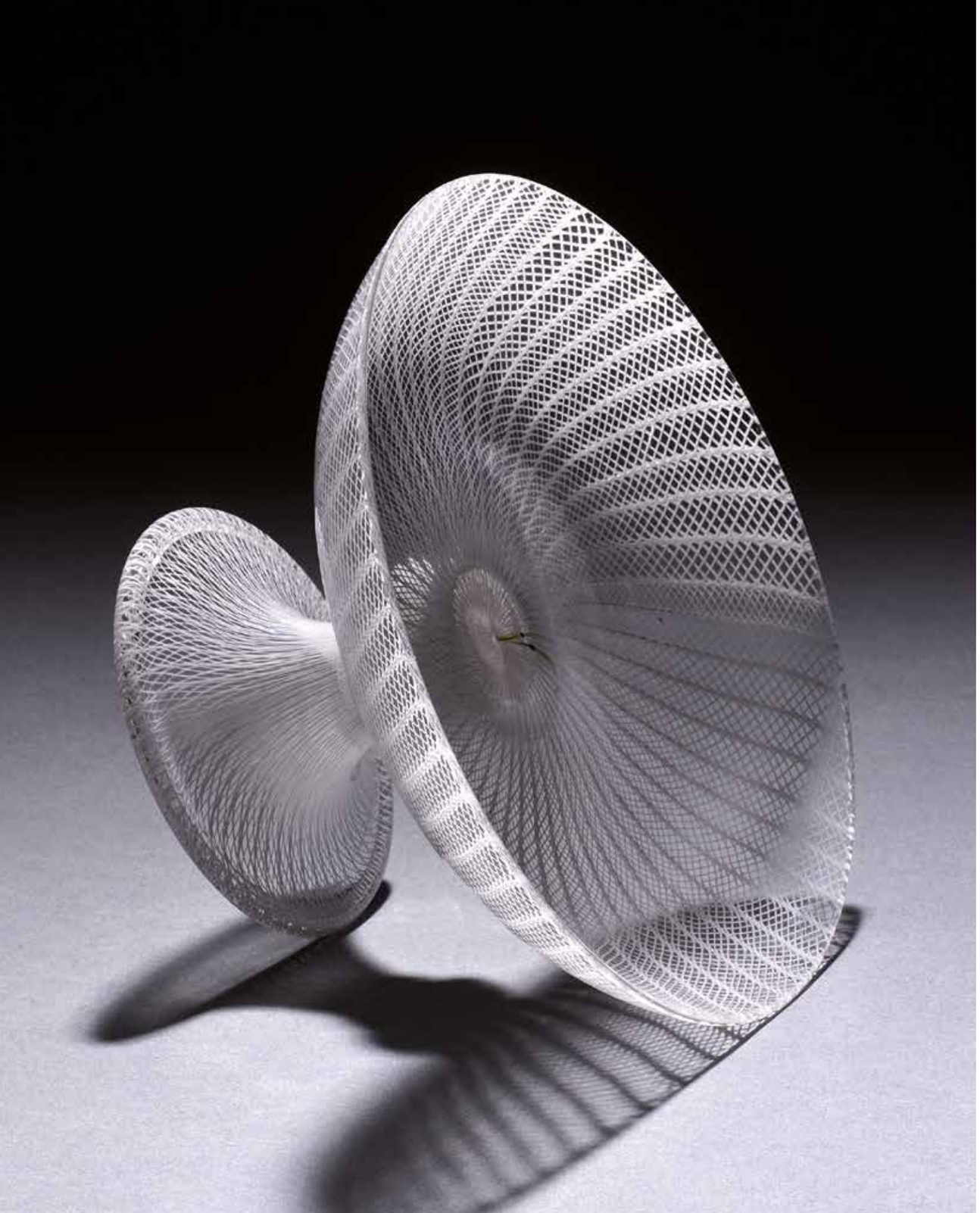
Tazza with broad, shallow bowl. Flattened knop between colourless mereses. Trumpet-shaped foot with downwardly folded rim. Small, round colourless pontil mark. Some black tool traces in the middle of the bowl.

Glass with two layers of glass, a layer of canes with a liner of colourless glass, most probably made with the sbruffo technique using a cane pick-up on a collar, before blowing a bubble in it (Laméris 2012: Technique III, p. 30)

The glass is made with a single type of cane: a rete Z, with probably eight threads.
The bowl, stem and foot are each made using 52 canes, which means they were made from the same pick-up.
A rete Z means that the cane is made with threads that, viewed from the front, run from bottom left to top right. Research has shown that most filigrana a retortoli glasses from the sixteenth and early seventeenth centuries are made with canes turned in this direction (Laméris 2019).

The shape of this glass is typical for a group of the second generation of filigree pieces. The first filigree glasses were made in the same shape as their counterparts with enamel decoration (Laméris 2018, p. 74-77, 82) probably from 1527 until around 1540, when new forms became fashionable.





Features of this glass and others of the same period are the trumpet-shaped foot and the hollow rudimentary knop. Fragments of filigree glasses with similar feet have been found during the archaeological dig at Acton Court, the home of a Tudor courtier. They were found in a layer in between many other glasses. '(...) the coin evidence points to a mid-16th-century date for both the purchase and deposition of this group' (Rodwell 2004, p. 333, fig. 9.12.1, p. 336).
Rosa Barovier Mentasti and Cristina Tonini suggest a similar date for this footed bowls with rudimentary stem, by comparing it with a glass depicted in the *Wedding at Cana* by Veronese in the San Giacomo dell'Orio Church in Venice. This is dated around 1540-1550 (Barovier 2018, p. 27, 48-49). The glass is also compared to one in Moretto's *Supper in the House of Simon Pharisee*, a painting dating from around 1544 (Barovier 2018, p.53).
In the first painting, the glass depicted is made of cristallo, in the second of cristallo with a golden rim. This shape of glass usually occurs with a filigree decoration. Besides this pattern with only a rete canes (see below for a list with the other three known to us), various other patterns exist: straight spaced a rete canes (Rosenberg 2013, cat.no. 18, fig. 13); diagonal spaced a rete canes (Baumgartner 2015, cat.no. 193); a rete canes in a nipt diamond waies pattern (Musée de la Renaissance, Ecouen E.cl 14 517).
Another variation is a criss/cross pattern sometimes called 'faux reticello', either with a fili canes (Baumgartner 2003, cat.no 48) or with a rete canes (British Museum). Other patterns include alternating a fili and a rete (Baumgartner 2015, cat. no. 52); a spaced mixed cane with an internal decoration of a wavering a fili cane with an external decoration of a band of several threads (Mariacher 1963, p. 98); a diagonal pattern with three canes: a fili, a rete and a cane with an external decoration with two bands consisting of two threads (Vreeken 1998, cat.no. 53) and even a variation incorporating reticello with an extra decoration of diamonds (Kunstgewerbe Museum Köln in Klesse 1973, cat.no. 262 or Erich 1963, cat.no. 173).

The pattern of this tazza, comprised exclusively of a rete canes, is one of the earliest filigree patterns ever made. Some of the very first filigree glasses already feature this pattern; see for example two footed bowls (Chevalier 1999, cat. no. 54 and Schlosser 1951, p. 35) and a pilgrim flask (Higgott 2011, cat.no. 14, Zecchin 1990, p.297).

Comparanda:
Museo del Vetro, Murano, Venice
(Dorigato 2006, fig. 26, p. 36)
Kunstgewerbemuseum Berlin
(Dreier 1989, cat.no. 44)
Victoria & Albert Museum (1936-01-01)

Technologie van de Venetiaanse cristallobereiding*

Fred Hamburger

Het succes van de Venetiaanse glasblazers vanaf het midden van de 15e eeuw, berustte op hun vermogen om op grote schaal een heldere, doorzichtige en kleurloze glasmassa te bereiden.
Hoewel voordien ook wel helder kleurloos glas werd gefabriceerd (denk b.v. aan de Sargon vaas (c.a. 710 v.C.), Keltische ringen uit de Tène I periode (450 - 300 v.C.), Perzische mesomphalische schalen (5e eeuw v.C.), Hellenistische luxeglas (3e - 2e eeuw v.C.) en Romeins glas) is toch de grootte van de Venetiaanse productie ongeevenaard.
Ook gedurende de middeleeuwen werden op Korinthe (Weinberg 1975, p. 127-141), in Frankrijk (Foy 1988) en in het Duitse gebied (Baumgartner 1988) heldere ongekleurde glazen geproduceerd.
Hoewel de laatste jaren steeds meer van dit middeleeuwse ongekleurde glas wordt gevonden lijkt ook deze productie qua omvang de vergelijking met Venetië niet te kunnen doorstaan.
Het vermogen om reproduceerbaar kleurloos doorzichtig glas op een welhaast industriële schaal te produceren is een technologische prestatie van de eerste orde.
Immers pas vanaf het begin van de 19e eeuw, nadat de atoomtheorieën waren geformuleerd, was men in staat om door middel van chemische berekeningen glasreceptuur te ontwikkelen.
Het is ook pas sinds het midden van de 19e eeuw, dat de grondstoffen voor de glasfabricage, (in het bijzonder de soda), fabrieksmatig werden geproduceerd en met een constante kwaliteit ter beschikking kwamen.
Voordien berustte de grootschalige fabricage van helder kleurloos glas volledig op empirie. Maar herhaling van experimenteel ontwikkelde receptuur gaf alleen dan reproduceerbare resultaten als ook vastgehouden werd aan de eenmaal gekozen grondstoffen. De stringente kwaliteitseisen voor de grondstoffen die het Venetiaanse glasblazersgilde aan zijn leden oplegde hebben ten aanzien van dit laatste zeker positief gewerkt.

Uit onderzoek in Venetiaanse archieven door Luigi Zecchin (1966, 1967a &b, 1968) is gebleken dat in 1457 de Muranese glaspatroons Angelo Barovier en Niccolo Mozetta van de Podesta van Murano het recht kregen om een experimentele cristallo fabricage te bedrijven. Volgens Zecchin zou dit het begin zijn geweest van de ontwikkeling van het Venetiaanse renaissance glas dat zich spoedig over geheel Europa zou verspreiden.

Hiervolgend zullen wij in het kort iets over de technologieën zeggen waarop de Venetiaanse cristallo productie was gebaseerd.
De gegevens zijn ontleend aan de beschrijvingen van de contemporaine glastechnologen Beringuccio, Agricola, Mathesius en Neri.
Voor een diepgaander behandeling van Venetiaanse glas technologieën wordt verwezen naar Turner (1956).

DE CRISTALLOBEREIDING

De Venetiaanse glasmakers gebruikten fijn wit zand, gemalen geselecteerde kiezel of zelfs gemalen bergkristal voor hun cristallo fabricage.

Technology of Venetian cristallo manufacture*

The rise to prominence of Venetian glassblowers in the mid-15th century was propelled by their ability to manufacture large quantities of clear, transparent and colourless glass.

Although clear transparent glass had been manufactured previously (take, for example, the Sargon vase produced around 710 BC; Celtic rings from the first Tène period (450 – 300 BC); Persian mesophilic bowls (5th century BC); luxury Hellenic glass (third to second century BC) and Roman glass) the scale of the Venetian production was unsurpassed.

In the Middle Ages transparent, colourless glasses were also produced in Corinth (Weinberg 1975, p. 127-141), in France (Foy 1988) and in Germany (Baumgartner 1988). Even though more and more of this medieval colourless glass has been discovered in recent years, the scale of its production cannot trump that of Venice. The ability of Venetian glassmakers to produce colourless transparent glass on a well-nigh industrial scale is a technological achievement of the first order.

This accomplishment is all the more remarkable when you consider that the atomic theories needed for the development of a glass recipe based on chemical calculations were only formulated in the early 19th century.
What's more, it wasn't until the mid-19th century that the raw materials for the manufacture of glass (particularly soda) were produced in factories and became available in a consistent quality. Prior to that, the large-scale production of clear colourless glass depended solely on empirical observation. But repeating experimentally developed recipes only produced replicable results if the raw materials used were exactly the same. As far as that goes, the Venetian glassmakers will have benefited from the stringent quality norms for raw materials imposed on them by their guild.

Research in Venetian archives by Luigi Zecchin (1966, 1967a &b, 1968) reveals that the glass patrons Angelo Barovier and Niccolo Mozetto were granted the rights to operate an experimental cristallo factory by the Podesta of Murano in 1457. Zecchin sees this as the starting point for the development of Venetian Renaissance glass, that was soon to become popular throughout Europe.

Below we will briefly make a few points about the technologies used in the production of Venetian cristallo. The details are taken from the descriptions of 16th century glass technologists Beringuccio, Agricola, Mathesius and Neri. For a more detailed treatment of Venetian glass technologies you are referred to Turner (1956).

THE PREPARATION OF CRISTALLO

For their cristallo, the glassmakers of Venice used fine white sand and specially selected, pulverized pebbles or even pulverized mountain crystal. This choice of raw materials means that very little iron, which tints the glass, was added to the mix along with the silica.

Polverine or rochetta were used as alkali. These were plant ashes imported from the Levant, Syria or Egypt. In the late 16th century, glassmakers

Deze grondstofkeuze leidt ertoe dat maar weinig van het glaskleurende ijzer met de silica aan het gemeng wordt toegevoegd.
Als alkali werden polverine of rochetta toegepast. Dit waren planten-assen die uit de Levant, Syriê of Egypte werden geïmporteerd. Aan het einde van de 16e eeuw paste men barilla toe dat in Alicante door verbranding van kustplanten werd bereid. Naast soda (Na_2CO_3) bevatte elk van deze alkali-grondstoffen grote hoeveelheden natriumchloride (NaCl), Natrium sulfaat (Na_2SO_4) en voorts fosfaat (PO_4, Calcium (Ca), Magnesium (Mg), ijzer (Fe) en Mangaan (Mn).

Deze alkali-grondstoffen waren niet zonder meer bruikbaar voor de bereiding van doorzichtig, ongekleurd glas:
De chloriden en sulfaten geven bij de glasfabricage aanleiding tot de vorming van onoplosbare bestanddelen waardoor het glas ondoorzichtig, blind, wordt. Bovendien kleurt het aanwezige Fe het glas, afhankelijk van de condities tijdens het smelten, groen, geel of blauwachtig.
Alvorens de plantenas aan het gemeng toe te voegen probeerden de Venetianen dan ook deze eerste te zuiveren door een proces van gefractioneerde kristallisatie uit heet water. In feite raakte men op deze wijze maar een klein deel van de chloriden, sulfaten en het ijzer kwijt terwijl daarnaast een belangrijk verlies optrad van de werkzame carbonaten en fosfaten.
Neri merkt op dat 300 pond as, na deze bewerking 80-90 pond gezuiverde grondstof oplevert. Geen wonder dan ook dat deze voorzuivering alleen voor de bereiding van fijn glas (cristallo) werd toegepast.
Vervolgens worden silica en alkali op de ovenvloer uitgespreid en langdurig verhit en om en om geroerd.

used barilla, produced in Alicante by burning coastal plants. In addition to soda (Na_2CO_3), each of these alkaline raw materials contained high levels of natrium chloride (NaCl) and natrium sulphate (Na_2SO_4) as well as phosphate (PO_4), calcium (Ca), magnesium (Mg), iron (Fe) and manganese (Mn).

But these alkaline raw materials could not be used in the manufacture of transparent colourless glass without further processing. During the manufacturing process, the chlorides and sulphates promote the formation of insoluble components, resulting in the glass becoming opaque or “blind”. What’s more, the traces of iron present in the glass give it a tinge of colour. Depending on the conditions during the smelting process, this can be a green, yellow or blueish hue.

That’s why the Venetians attempted to purify the plant ash before adding it to the mix. For this they used a process of fractionated crystallization from hot water. But this process only got rid of a small proportion of the chlorides, sulphides and iron, while significantly impeding the active carbonates and phosphates.
Neri remarks that 300 pounds of plant ash yielded just 80 to 90 pounds of purified raw material after processing. No wonder this pre-purification was only used in the manufacture of fine glass (cristallo).

Subsequently silica and alkalides would be scattered over the oven floor and heated for a protracted period whilst being turned regularly. During this so-called ‘fritting’ the silica and alkalides underwent a limited chemical reaction, but technologically this process served no particular purpose. Subsequently the mixture of silica and fluxes, now resembling small marbles, would be

Bij dit 'fritten' vindt de reactie tussen silica en alkali tot zekere hoogte plaats.
Technologisch gezien dient dit fritten geen enkel doel. De frit, in de vorm van knikkergrote ballen, wordt vervolgens in een smeltpot in de oven verhit. Hier vindt de reactie tussen silica en alkali plaats waarbij de onwerkzame chloriden en sulfaten in de vorm van een zeer corrosieve vloeistof op het glas komt drijven. Deze vloeistof, glasgal, wordt voorzichtig van de vloeibare glasmassa af geschept. Het werd apart verkocht en gebruikt voor het pekelen van vlees en als onkruidverdelger.
De vloeibare glasmassa, die nog steeds niet geheel van chloriden en sulfaten ontdaan was, werd vervolgens in water uitgegoten waarbij de chloriden en de sulfaten oplosten en aldus van het glas werden gescheiden. De glasmassa werd vervolgens weer in de pot gesmolten, waarna bovenstaande bewerking enige malen werd herhaald. Het is duidelijk dat dit telkens weer omsmelten van de glasmassa een uiterst kostbare zaak was. Het werd dan ook alleen voor de bereiding van fijn glaswerk toegepast. Bovenstaande glaszuivering werd niet in de middeleeuwse Waldglashutten toegepast; zij volstonden met het af scheppen van de chloriden en sulfaten.

Het glas, ontdaan van de onoplosbare chloriden en sulfaten, was nu volkomen helder en doorzichtig, maar het was wel gekleurd door ijzer dat voornamelijk via de alkaligrondstof was binnengekomen.
Nu wordt aan de glasmassa een kleine hoeveelheid bruinsteen (MnO_2) glasmakerszeep, toegevoegd waardoor het in het glas aanwezige ferroion geoxideerd wordt:

$$2MnO_2 \rightarrow Mn_2O_3 + 1/2O_2$$
$$Fe^{++} + Mn^{+++} \leftrightarrows Fe^{+++} + Mn^{++}$$

heated in a smelter in the kiln.

This is where the real reaction between silica and alkalides takes place. The inactive chlorides and sulphates are cast up over the surface of the glass in the form of a highly corrosive, whitish scum. This liquid, known as glass gall, would be carefully skimmed off the surface of the molten glass before being sold separately as a weedkiller or for pickling meat.

The molten mass of glass, still not entirely free of chlorides and sulphates, would subsequently be poured into water to make the chlorides and sulphates dissolve and separate from the glass. The molten mass of glass would then be reheated in the pot, after which the entire process would be repeated several times. Obviously this repeated smelting of the glass was an extremely costly process and therefore used only for the manufacture of fine glass. The Waldglas glasshouses didn’t bother with this procedure: they simply skimmed the chlorides and sulphates off the top.

The glass, purified of the insoluble chlorates and sulphides, was rendered completely clear and transparent, but it was slightly tinted due to the iron coming from the alkaline raw material. That’s why a small amount of manganese dioxide, glassmakers’ soap, would be added as a decolorizer to oxidize the traces of ferro iron present in the glass.

$$2MnO_2 \rightarrow Mn_2O_3 + 1/2O_2$$
$$Fe^{++} + Mn^{+++} \leftrightarrows Fe^{+++} + Mn^{++}$$

Elk van deze ionen heeft zijn eigen kleur. Door de juiste hoeveelheid MnO_2 toe te voegen kan een ionencombinatie ontstaan met complementaire kleuren, leidend tot kleurloos glas.
Het ontkleuren met behulp van MnO_2 is een uiterst subtiele aangelegenheid; te veel of te weinig MnO_2 geeft aanleiding tot de vorming van gekleurd glas, waarbij een scala van kleuren kan ontstaan: groen, geel, blauw, violet en bruin tot zwart.
Als we dan bovendien bedenken dat de ligging van het chemisch evenwicht - en dus de kleur van het glas - ook nog bepaald wordt door smeltduur, smelttemperatuur en het zuurstofgehalte in de atmosfeer van de smeltoven dan zal het duidelijk zijn dat het proces van ontkleuring met behulp van MnO_2 technologisch zeer moeilijk te beheersen is (Newton 1978, p. 59-69).

Each of these ions has its own colour. By adding just the right amount of MnO_2 an ion combination with a complementary colour can be created, neutralizing the tints present and resulting in colourless glass.
Decolorizing with the help of MnO_2 is an extremely exacting process: too much or too little leads to the formation of tinted glass in a range of colours: green, yellow, blue, violet and brown to black. Add to that the fact that the chemical balance – and thus the colour of the glass – is further determined by the time in the furnace, the temperature in the furnace and the oxygen levels in the furnace, and it becomes abundantly clear that the process of decolorization using MnO_2 was technologically extremely difficult to manage (Newton 1978, p. 59-69).

Romeins glas en ook het middeleeuwse waldglas bevat zowel Fe als Mn. Of dit Mn willens en wetens is toegevoegd is en zaak waarover het laatste woord nog niet is gezegd (Bezborodov 1975, Geilmann 1954, p. 456, Smith 1963, p. 283). Eén complicatie is dat in alle voor de glasfabricage gebruikte plantenassen Mn in grotere of kleinere concentraties voorkomt.
Het kan dus zijn dat het ongekleurde Romeinse en middeleeuwse glas bij toeval is ontstaan door een toevallig juiste Fe/Mn combinatie in de grondstoffen. De rijke kleurschakeringen van het Romeinse en middeleeuwse glas (geel, groen blauw, violet, etc.) worden veroorzaakt door het hierboven beschreven redoxsysteem van Fe en Mn.

Both Roman glass and medieval Waldglas contain Fe as well as Mn. Whether the Mn was added deliberately is still a matter of debate (Bezborodov 1975, Geilmann 1954, p. 456, Smith 1963, p. 283). A complicating factor in this discussion is that all the types of plant ash used in the manufacture of glass would have contained concentrations of Mn to a greater or lesser degree. As such it may well be that colourless Roman and medieval glass occurred more or less by accident, as the result of a serendipitously correct combination of Fe/Mn in the raw materials.
The rich range of colours of Roman and medieval glass (yellow, greenish blue, violet etc) are engendered by the redox system of Fe and Mn described above.

Uit de geschriften van Plinius kan worden opgemaakt dat de Romeinen bekend waren met het ontkleuren door middel van bruinsteen. In Duitsland was de methode reeds sinds de 13e eeuw bekend maar is waarschijnlijk pas in de 16e eeuw, in navolging van de Venetianen, daadwerkelijk toegepast (Rademacher 1963, p. 30).

Het ontkleuren met behulp van bruinsteen is in elk geval door de Venetianen met succes toegepast voor de bereiding van het fijne cristallo glas. Zij hebben deze gecompliceerde technologie volkomen beheerst. Dat zij ondanks de sterk verontreinigde grondstoffen waarmee zij moesten werken kans zagen een helder kleurloos glas te maken is in de eerste plaats te danken aan hun grote experimentele begaafdheid.
Dat het cristallo glas soms tijdens het blazen verkleurde (door verschuiving van het Fe/Mn redox evenwicht) onder invloed van de luchtzuurstof, zal ons niet verbazen. Deze lichte verkleuring wordt gelukkig wat gemaskeerd doordat de Venetiaanse glazen uit de 16e en 17e eeuw zo uiterst dun zijn geblazen.

From the writings of Plinius we know that the Romans were familiar with decolorization using manganese dioxide. The method was also known in Germany as early as the 13th century but was probably only implemented in the 16th century, following on from the Venetians (Rademacher 1963, p. 30).

We know for certain in any case that decolorization using manganese dioxide was successfully utilized by the Venetians in the manufacture of fine cristallo glass. They had completely mastered this complicated technology. That they managed to create a clear colourless glass despite the heavily adulterated raw materials they were forced to work with is entirely due to their gift for experimentation.
That the cristallo glass sometimes coloured during the glassblowing process (due to a shift in the Fe/Mn redox balance occasioned by oxygen in the atmosphere) can come as no surprise. Fortunately this light discoloration is partly masked by the fact that Venetian glasses from the 16th and 17th centuries were blown so extremely thin.

* Ongepubliceerd artikel, geschreven voor de catalogus van de tentoonstelling Venetiaans en façon de Venise glas, 1500-1700, gehouden in de Nieuwe Kerk te Amsterdam in 1991.

* Unpublished manuscript written for the catalogue of the exhibition in The Nieuwe Kerk in Amsterdam: Venetiaans en façon de Venise glas, 1500-1700, in 1991.

14 Wine glass
FH 100

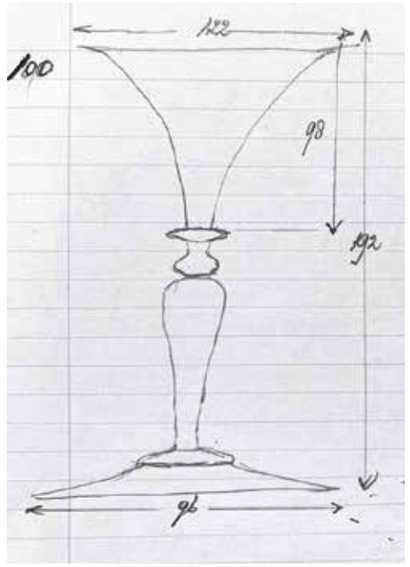
Cristallo or vitrum blanchum
Almost colourless glass with a hint of grey
Venice
Second half sixteenth, early seventeenth century
Height: 19,2 cm, ø bowl: 12,2 cm, ø foot: 9,6 cm
Acquired in 1987

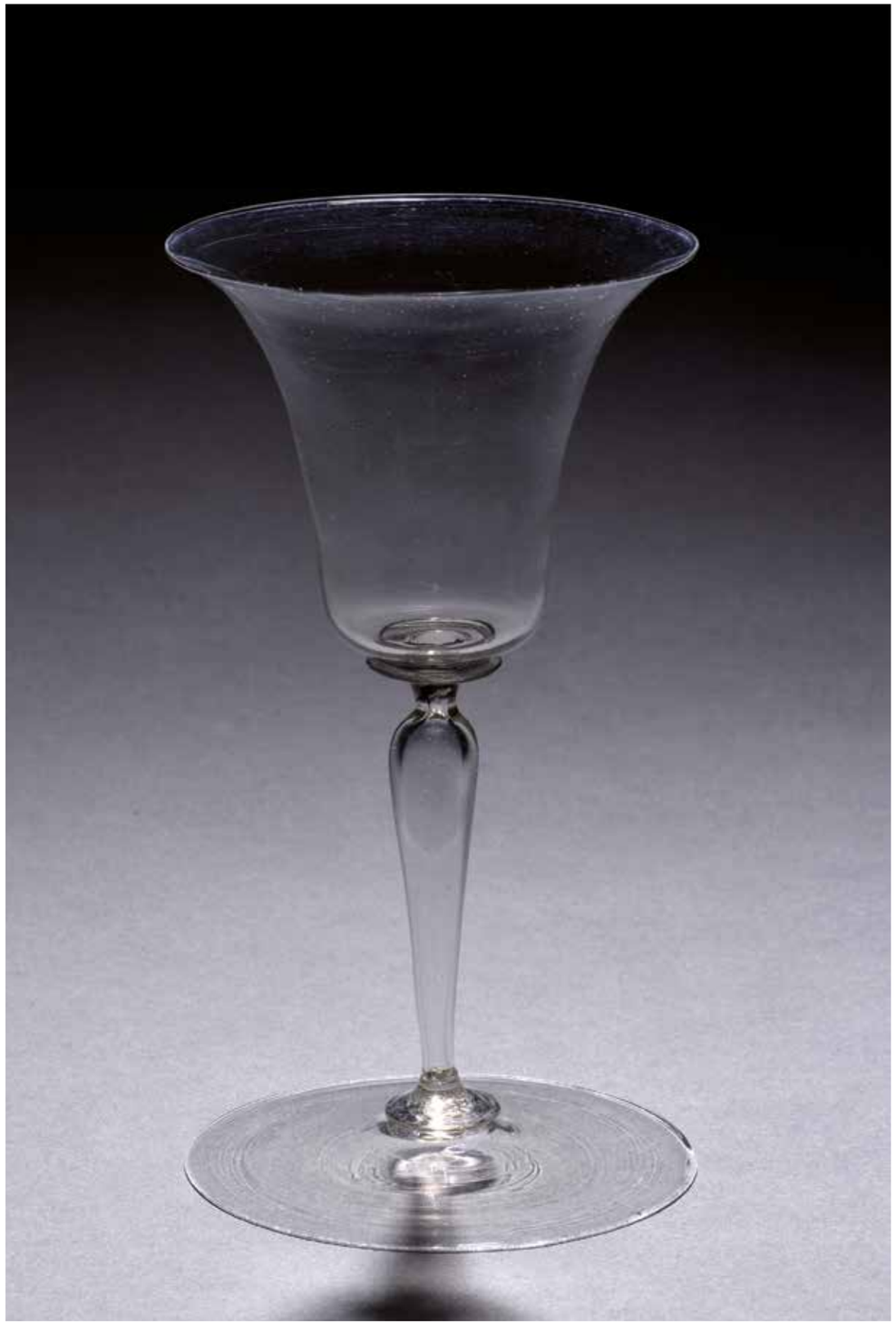
Exhibited: Venetiaans en Façon de Venise glas, 1500-1700, Nieuwe Kerk Amsterdam
The glass is depicted and described in: Frides and Kitty Laméris, *Venetiaans en Façon de Venise glas*, 1500-1700, Nationale Stichting Nieuwe Kerk Amsterdam, 1991, cat.no. 8

Wine glass with trumpet-shaped bowl. The stem, made of a single piece of glass, consists of a leg (verre a jambe) or cigar-shaped hollow section under a hollow knop, formed by a constriction of the upper part of the stem. Bowl and stem are connected by a merese. Stem and foot are joined by a very broad merese with a small cylindrical part on top that surrounds and holds the stem. Slightly conical foot. Small flat, sharp, pontil mark.

A glass with the same shape, but featuring a mouldblown diagonally ribbed stem is held in the collection of Veste Coburg (Theuerkauff-Liederwald 1994, cat.no. 271).

A glass with the same shape, except for the extra knop in the stem, is the famous glass mentioned by Charleston in his *Masterpieces of glass* (1980, cat.no.38).
The stem with knop is also found with other kind of bowls, like a hemispherical one (Barovier-Mentasti 1982, cat.no. 246).





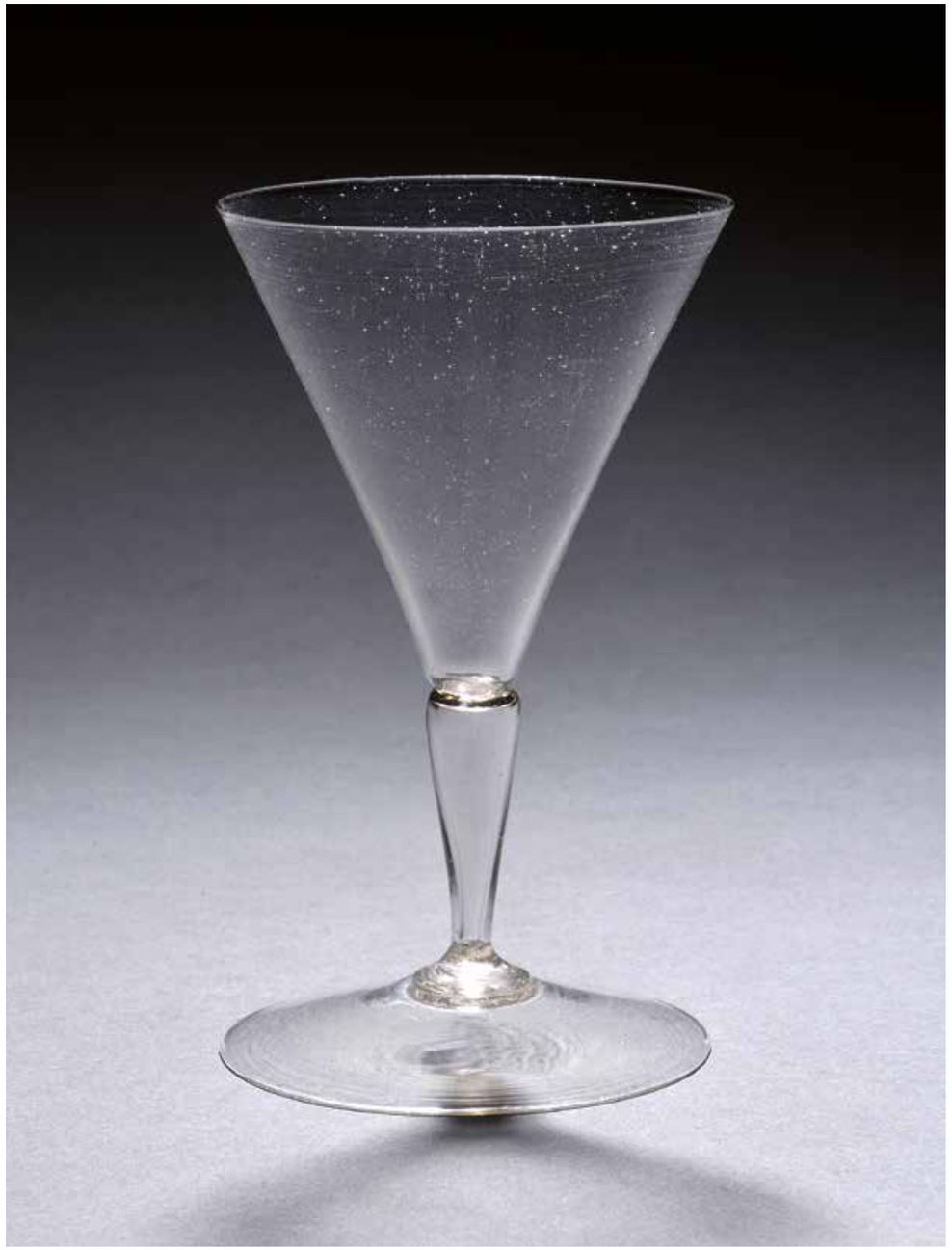
15 Wine glass
FH 32

Cristallo or vitrum blanchum
Almost colourless glass with a hint of grey
Venice
Second half sixteenth, early seventeenth century
Height: 16.2 cm, ø bowl: 9.2 cm, ø foot: 9.0 cm
Acquired in December 1972

Exhibited: Venetiaans en Façon de Venise glas, 1500-1700, Nieuwe Kerk Amsterdam
The glass is depicted and described in:
Frides and Kitty Laméris, *Venetiaans en Façon de Venise glas*, 1500-1700, Nationale Stichting Nieuwe Kerk Amsterdam, 1991, cat.no. 9

Wine glass with a bell-shaped bowl. Leg (verre à jambe) or cigar-shaped stem, connected to the bowl with a, partly double, merese. Slightly conical foot. Stem and foot are joined by a very broad merese with a small cylindrical part on top that surrounds and holds the stem. Small flat, sharp, pontil mark.

Comparanda:
Musée des arts Décoratifs (Baumgartner 2003, cat.no. 33)
Collection Du Mesnil (Rosenberg 2013, cat.no. 36, fig. 45)
Museo civico Milano (Mariacher 1963, p. 75, upper left picture)
British Museum (Tait 1979, cat.no. 58)



16 Wine glass of cristallo or vitrum blanchum
FH 38

Almost colourless glass with a hint of grey
Venice
Second half sixteenth, early seventeenth century
Height: 14.5 cm, ø bowl: 8.6 cm, ø foot: 8.6 cm
Acquired in 1975

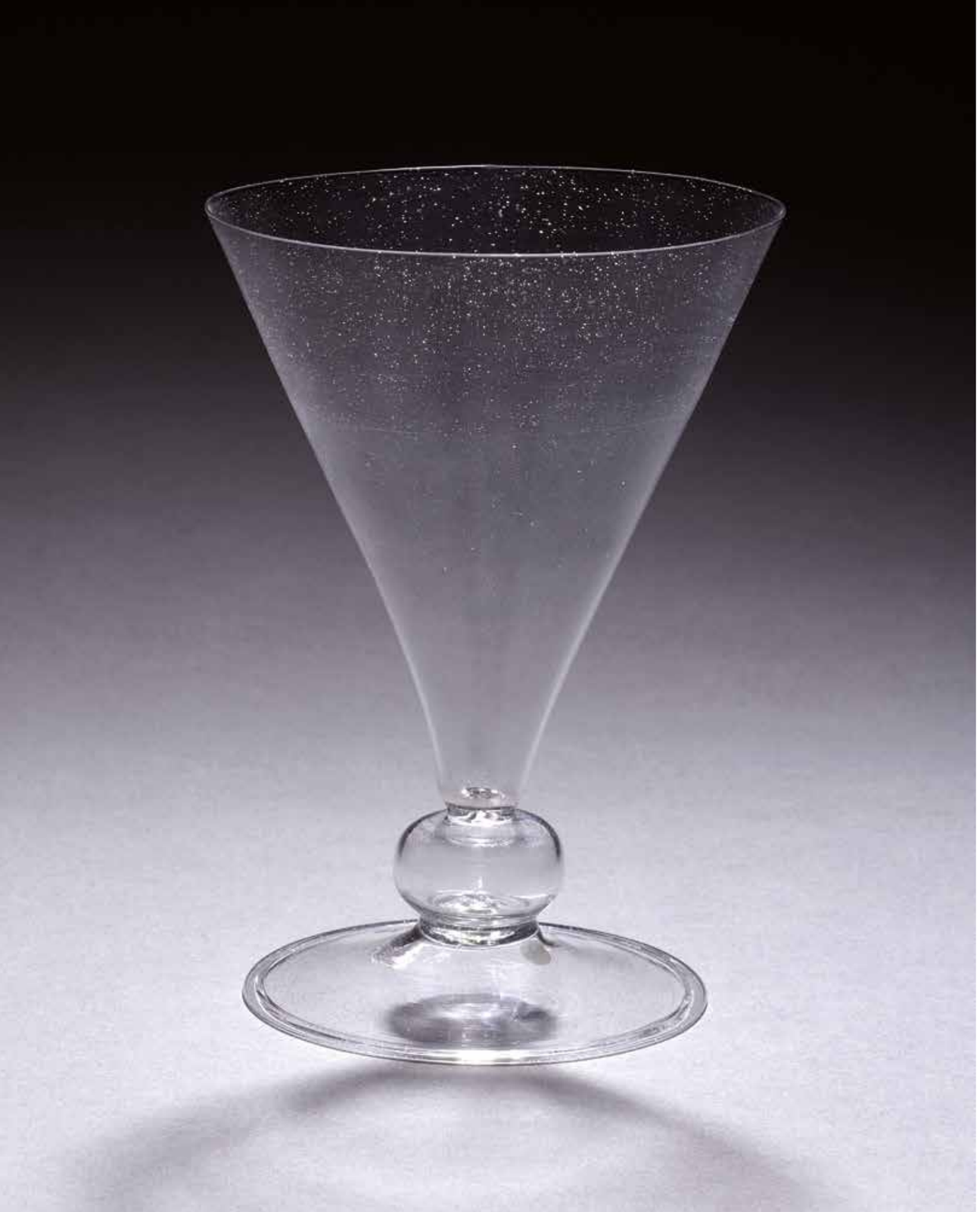
Wine glass with a conical bow. Twig-shaped (verre à tige) stem. Stem and foot are joined by a merese, topped by a small cylindrical section that surrounds and holds the stem. Slightly conical foot. Small flat, sharp, pontil mark.

Comparanda:
Musée des arts Décoratifs, Paris
(Baumgartner 2003, cat.no. 43)
Kunstgewerbemuseum, Berlin
(Dreier 1989, cat.no. 152)
Gemeentemuseum Den Haag
(Pijzel-Domisse 2009, cat.no. 81)
Collection du Mesnil (Rosenberg 2013,
cat.no. 45, fig. 42)
Landesmuseum Württemberg, Stuttgard
(Schaich 2007, cat.no. 117)

17 Wine glass with ribbed bowl
FH 92

Almost colourless glass with a hint of grey
Venice or façon de Venise
Second half sixteenth century
Height: 17.0 cm, ø bowl: 10.6 cm, ø foot: 9.1 cm
Acquired January 21st 1982

Trumpet-shaped bowl with fourteen ribs. Hollow leg or cigar-shaped stem. Where the base of the bowl meets the upper side of the stem, little points mark the attachment in between the ribs. Slightly conical foot. Stem and foot are joined by a very broad merese with a small cylindrical part on top that surrounds and holds the stem. Small, but crude, sharp pontil mark. The bowl of the glass was made by blowing a bubble in a four-teen point ribbed dip mould (See for the use of dip moulds Laméris 2015, p. 36-43).



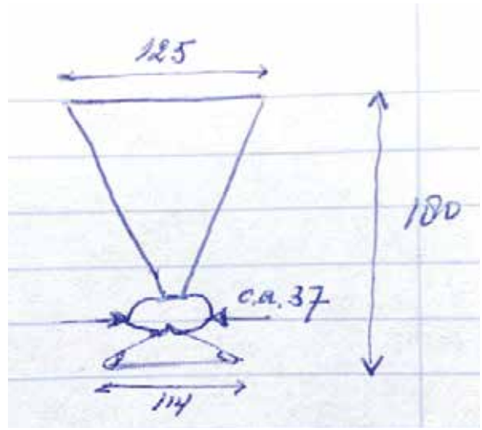
18 Beer or wine glass
FH 88

Almost colourless glass with a hint of grey
Venice
Sixteenth or seventeenth century
Height: 17.8 cm, ø bowl: 12.5 cm, ø foot: 10.5 cm
Acquired December 24th 1980

Exhibited: *Venetiaans en Façon de Venise glas, 1500-1700*, Nieuwe Kerk Amsterdam
The glass is depicted and described in: Frides and Kitty Laméris, *Venetiaans en Façon de Venise glas, 1500-1700*, Nationale Stichting Nieuwe Kerk Amsterdam, 1991, cat.no. 5

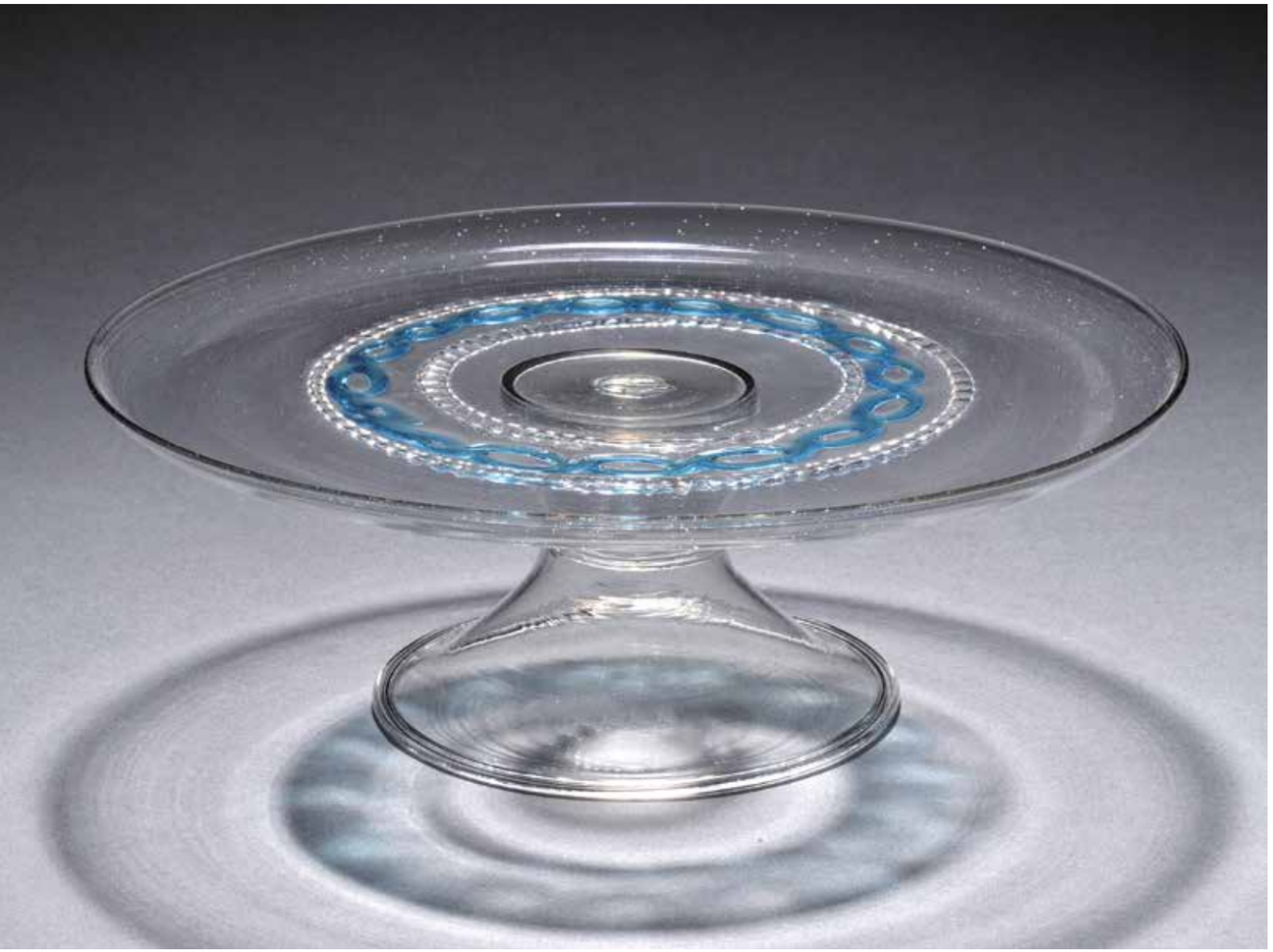
Wine glass with large slightly trumpet-shaped bowl. Rudimentary stem of a hollow flattened knop. Conical foot with downwardly folded rim.

This type of glass is usually linked to the John Green documents now held by the British Museum (Dreier 1989, cat.no. 141, Gasparetto 1958, cat.no. 111, Laméris and Laméris 1991, cat. no. 5). John Green ordered some glasses from the Venetian Glasshouse Morelli, sending several designs of the desired items (SLOANE MS. 857 (Departure of Manuscrips)). The shape and the proportions of some glasses on the designs of 1671 are very similar to this glass. However, the rudimentary knop of the glass is very different from the knops on the design: instead of a flattened knop, the knop is conically shaped on top (Laméris and Laméris 1991, p. 50). It looks more like a so-called 'true baluster'. There are some glasses that are very similar to this design (Brain and Brain 2015, fig. 4)
Closer to this glass is another scale drawing of drinking glasses for English glassmakers (Sloane MS 857, folio 430 bv) (Lanmon 2011, fig. 13, p. 37)
It is tempting to speculate that this glass could also be of a much earlier type, namely Venetian. Looking at its colour and substance, the metal is exactly like the glasses of cat.no. 14 and 15. In essence this model with a rudimentary stem was extremely popular in the second quarter and



second half of the sixteenth century. Numerous examples exist in cristallo and in filigree glass (for example fig. 5). The difference between those glasses and this example are the more slender bowl and the mereses both above and under the stem. A similar glass without these mereses features in a wall painting by Ulrich Springenklee for the Trinkstube in Bruneck (South of Tirol). Here the members of a *Stubengesellschaft* or *Drinkstubengesellschaft* came together to talk over a glass about their professions, about politics and religion (Egg 1962, fig. 11, Tafel VI).

Comparanda:
Collection Du Mesnil (Rosenberg 2013, cat.no. 64, fig. 65)
Kunstgewerbemuseum Berlin (Dreier 1989, cat.no 141)
Victoria and Albert Museum (Gasparetto 1958, fig. 111)



19 Alzata (tazza)
FH 43

Cristallo or vitrum blanchum
with aquamarine glass
Venice
circa 1700
Height: 7.4 cm, ø: 22.5 cm, ø foot: 11.0 cm
Acquired: March 1975

Alzata with a flat round plate, folded upwards at the rim. The plate is decorated on the underside by two ribbed concentric threads with a cable of aquamarine glass in between. Blown trumpet-shaped foot with a constriction one third of the way down. Downwardly folded rim. The constriction is marked by a horizontal colourless indented thread.
These alzate were very popular in the beginning of the eighteenth century. Many examples have survived (for example: Theuerkauff-Liederwald 1994, 53-59, p. 111-116). They exist in many different sizes. Their use is known as they are depicted in various paintings. In a painting executed around 1755-1760 by Pietro Longhi (Theuerkauff-Liederwald 1994, Abb. 11, p. 113) a servant with an alzata with two glasses and a decanter approaches a lady, while another with a beaker stands alongside. Like the eighteenth-century English tazzas they can also be stacked. In England these pyramids of footed trays were used to serve desserts. A stack of Venetian of façon de Venise ones piled with fruit is depicted in a painting by Sebastian Stosskopf (1597-1657) (Theuerkauff-Liederwald 1994, abb. 12, p. 114).
The trays were made with two types of feet: a trumpet-shaped foot and a foot such as the one of the glass depicted here. It is possible that the different feet mean the trays had different uses. The foot of the tazza shown here is very handy to hold. Glass artist Marc Barreda came up with the idea that these alzate were possibly designed to be used by servants, while the others with trumpet-shaped feet were intended to stand on a table, on their own or in a stack with others.

Comparanda:
The Van Beek collection (Laméris and Laméris 2015, cat.no. 18)
Veste Coburg (Theuerkauff-Liederwald 1994, cat.no. 53-59)

Longhi (1701-1785), La toiletta, Ca' Rezzonico, Venice

20 **Reliquary**
FH 67

Colourless cristallo and aquamarine glass
Venice
Seventeenth century
Height: 26.5 cm, ø bowl: 7.3 cm, ø foot: 12.7 cm
Acquired: June 1975

Reliquary with cylindrical body with folded horizontal rim on the underside. The stem consists of a knop with twelve ribs on a long avolio. Stem and bowl are connected with a merese. The knop is decorated with three small aquamarine raspberry prunts made up of a large central boss, surrounded by two concentric circles of smaller bosses. The prunts are stamped coiled threads. Both knop and raspberry prunts are gilded. Slightly conical foot with downwardly folded rim. Small, rough, sharp pontil mark.

Usually such glasses have a cover that leans on the bowl with a broad folded rim of the same width as the horizontal fold at the base, sometimes with a cross on top. The shape of this glass is inspired by reliquaries made of different materials. The glass folds imitate the metal mounts that usually hold a glass or rock crystal cylinder in which holy relics are kept. Transparent colourless glass or rock crystal was used so the relics could be seen and venerated by the faithful.

These glasses are kept in churches. Unlike elsewhere in the world, where reliquaries tend to be crafted from the most precious materials such as gold or silver and studded with gems, reliquaries in Venice were traditionally made of glass. The aquamarine additions may be meant to suggest gemstones. Glass reliquaries are held by many of Venice's churches. Well worth a visit is the Chiesa Redentore, designed by Andrea Palladio (1508-1580). This architectural gem holds a well-kept secret in its sacristy, hiding several reliquaries behind its wooden walls that will fascinate Catholics and glass lovers alike. Many other churches in the city have similar, but smaller collections, often obscured by curtains. On the glass island of Murano itself, a small collection is held in the Museo Parocchiale of the Chiesa di San Pietro Martire.

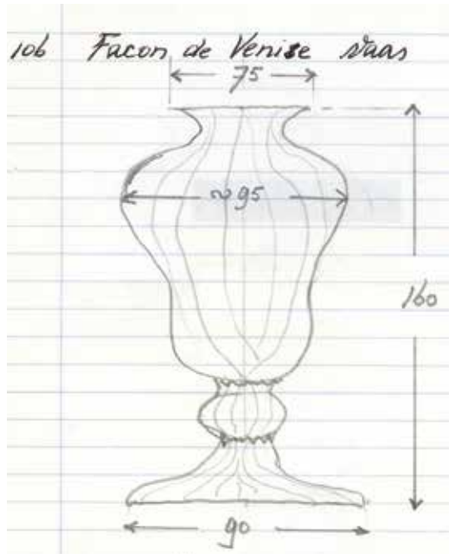
Comparanda:
Museo del vetro, Murano, Venice (Gasparetto 1958, cat.no. 66)
Veste Coburg (Theuerkauff-Liederwald 1994, cat.no. 312)

21 Apothecary pot with ribs
FH 106

Cristallo or vitrum blanchum
with a tinge of straw colour
Tuscany?
First half seventeenth century
Height: 16.0 cm, ø opening: 7.5 cm, ø foot: 9.0 cm
Acquired September 8th, 1993

Apothecary pot with inverted pear-shaped body with everted rim. Rudimentary stem in the shape of a hollow flattened knop. High conical foot with downwardly folded rim. Body, stem and foot are blown into a 14-point dip mould, creating fourteen vertical ribs. Small rough sharp pontil mark.

This rare pot could have been used as an apothecary pot or a reliquary. Other pots with a similar body but without the rudimentary knop are held in collections in Tuscany, both with ribs (Museo di Arte Medievale e Moderna, Laghi 1994, cat. no. 6) and without (Laghi 1994, cat.no. 119). The latter is part of the inventory of the pharmacy of the old hospital: Spedale Serristori in Figline Valdarno (Tuscany, Italy). The walls are lined with Renaissance majolica syrup flasks and albarelli and there's a cupboard full of glass: nasse (little covered decanters with spout, typical of Tuscany), albarelli, little flasks and these pots (Laghi 1994, cat.no. 119). These pots have a straight opening, and all have covers. The pot described here has, like an albarello, an everted opening, to be sealed with a piece of cloth or parchment, held with a string tied up under the rim.
The straw colour of the glass is typical of glass made in Tuscany.



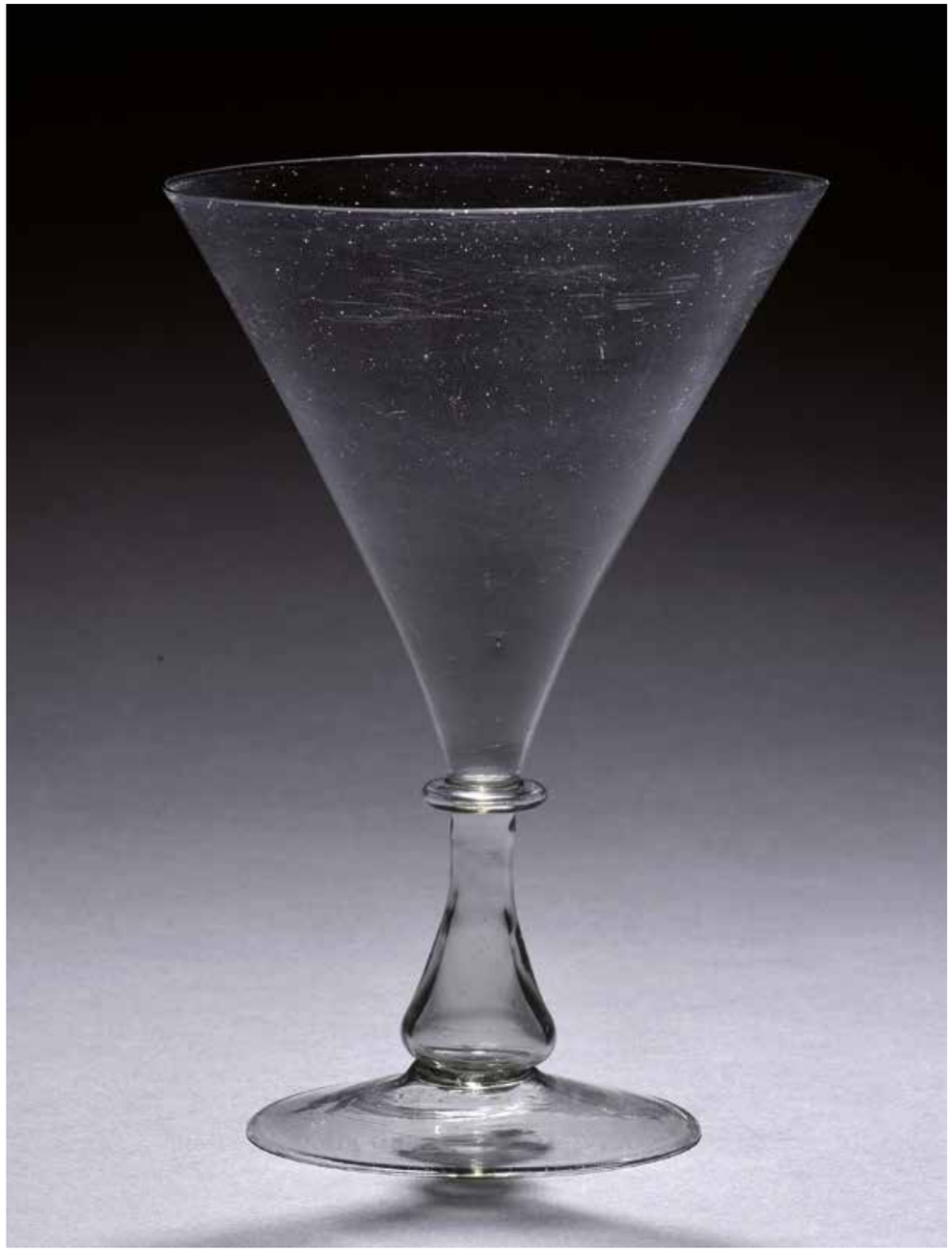
Sebastian Stoskopff (1597-1657), Metallgefässe und Gläser in einem Korb, before 1657,
Collection Staatliche Kunsthalle Karlsruhe

22 Wine glass with spiked gadrooning

FH 103

Cristallo, cristallijn or Vitrum blanchum
with a hint of straw
Façon de Venise
First half seventeenth century
Height: 15.5 cm, ø bowl: 7.1 cm, ø foot: 8.0 cm
Acquired December 8th, 1991

Wine glass with long conical bowl of which a third is decorated with two layers of spiked gadrooning under a horizontal glass thread. The underside of the glass is covered by a second layer of glass and then blown into a 14-point dip mould, producing 14 ribs. These ribs are cut at the top. This way the base of the bowl is covered with 14 small horizontal ribs pointed at the top, topped by a pointed drop or tear. A mould-blown lion mask stem, with a small cylindrical solid segment above fifteen upper gadroons topping two stylized lion heads with pointed ears and manes, alternating with a flower or rosette with four petals around a round heart, above festoons consisting of five roundels that part from just under the lions' ears. Twelve lower gadroons of uneven shape. Bowl and stem are connected by a relatively thick merese with rounded edges. Slightly conical foot with downwardly folded rim. Stem and foot are connected by a relatively thick merese with rounded edges.
Because these lionhead stems are made using a mould, it is sometimes possible to attribute glasses with these stems to a particular production centre. Mould-blown lionhead stems have been found in different places. Several were discovered in Venice's lagoon, and a number are now held in the Glass Museum on Murano. Several lion stems were recovered from the wreck of a ship that left Venice in 1583, proof that they were made in Venice around that time (Bova 2010, fig. Ia.51, p. 293). A great deal of glass waste has been excavated on the site of the glasshouse located in the Austrian Hall in Tyrol in the sixteenth and early seventeenth centuries. Dozens of lionhead stems were found between thousands of other shards (Awad 2015, fig. 1, 2, p.126). In addition at least another seven different lionhead stems were recovered from the waste of a glasshouse in Herrschaft Reichenau am Freiwald, in Lower Austrian (Tarcsay 2008, p. 130, 162). Hugh Willmott conducted research into similar stems found in England. Because they are mould-blown it's interesting to examine the peculiarities of the various stems. Willmott studied the exact characteristics and was able to attribute several stems to English glasshouses, based on the frequency they occurred in English excavations (Willmott 2000, p. 389-394). Jeanette Lefrancq conducted similar research with glasses from the collection of the Brussels-based Art and History Museum (Lefranq 2010, p. 378-381). She was also able to identify a number of stems thought to have been made in Antwerp. In his article 'Glazen met maskerons en leeuwenkopstammen uit Amsterdamse bodem' (Glasses with masks and lionhead stems from Amsterdam site) Michel Hulst depicts a little stem found among other city waste dating from before 1598 where now the Waterloo Square is sited. (Hulst 2013, illustration 6, p.25). He surmises that they were made in Middelburg. Lionhead stems were also made in the Amsterdam glasshouse belonging to Jan Hendrikz. Soop on the Kloveniersburgwal. Part of two stems were found among other production waste (Hulst 2013, illustration 15, p.30).
This lionshead is hardly true to life. It incorporates the required elements: ears, snout, and mane, but combined in a way reminiscent of the paintings by the famous artist Arcimboldo (1527-1593) who built up his portraits with fruits and vegetables. Unfortunately this stem is not one included in the above studies.
Glasses with a combination of spiked gadrooning and lionhead stems are usually thought to be façon de Venise (for example: Theuerkauff-Liederwald 1994, cat.no. 231, 232, Pijzel-Domisse 2009, cat.no. 107, 108, 109).



23 Wine glass
FH 44

Glass with a strong greyish tinge
Peyremoutou, Southwestern France
De Robert
Early seventeenth century
Height: 16.3 cm, ø bowl: 11,2 cm, ø foot: 7,8 cm
Acquired March, 1975

Wne glass with large funnel-shaped bowl. Hollow stem in the shape of a true baluster. Bowl and stem are connected by a merese. Slightly conical foot with small downwardly folded rim. Large rough sharp pontil mark on a glue bit.

After the 1981 discovery of a glass oven in Peyremoutou, a small village in France's south-western Montagne Noire region, archaeologists found a large amount of waste from the glass-house (Bertrand 2012, p. 3). The glasshouse was owned in the seventeenth century by one of the members of the De Robert glassblowing family. In between the shards, many fragments of wine glasses were found with very distinctive stem shapes, enabling them to finally be attributed to a place of manufacture. Based on the finds, a whole group of glasses featuring a particular greyish metal and wonderful shapes that differ from all other glasses of the period could be traced back to their origin. (Lhermite-King 2008, p. 43 and cat.no. 16-31).

The greyish tinge described above is the exact colour of the metal of this wine glass. Both the enormous funnel-shaped bowl and the true baluster-shaped stem are typical of some glass-es of this group of glasses made in the south-west of France. (Foy 1983, p. 93-101, Lhermite 2008, cat.no. 27)

Comparanda:
Musée du verre de Sorèze (Bertrand 2012, p. 5)
Musée des Arts Décoratifs, Bordeaux (Bellanger 1988, p. 53)
Collection Du Mesnil, France (Rosenberg 2013, p. 79)

24 Wine glass
FH 36

Glass with a strong greyish tinge
Southwestern France
Seventeenth century
Height: 13.9 cm, ø bowl: 8.0 cm, ø foot: 7.2 cm
Acquired in 1973

Wine glass with conical bowl with a faint ring indentation on one third of the base above a conical part with rounded base. A thin hollow stem in the shape of an elongated inverted baluster with four vertical lines in relief, on a small solid knop. Slightly conical foot. Large, rough, sharp pontil mark.

In her 2004 description of one of the French glasses depicted in *Beyond Venice* Jutta-Annette Page mentions 'the faint ring indentation' (Page 2004, cat.no. 12). She notes that the goblet is related to a number of other glasses with the same distinguishing characteristic and suggests that this feature probably may have identified a particular glass house.
After the 1981 discovery of a glass oven in Peyremoutou, a small village in France's south-western Montagne Noire region, archaeologists found a large amount of waste from the glass-house (Bertrand 2012, p. 3).

In her book on French glasses, Sylvie Lhermite (2008) is now able to attribute glasses with this peculiarity to the glasshouse in Peyremoutou, a small village in the Montagne Noire, a region in the south-west of France (Lhermite-King 2008, cat.no. 19, 20, 29).

The glass described here is a somewhat simpler version. However, the greyish tinge of the metal glass is similar to that of the glasses made by this glasshouse, which didn't confine its production to unique masterpieces but also manufactured glasses for daily use.

25 Bowl on foot
FH 4

Colourless glass with a hint
of yellow or straw colour
Façon de Venise, possibly France or Spain
End sixteenth or early seventeenth century
Height: 14.7 cm, ø bowl: 20.0 cm, ø foot: 8.9 cm
Acquired in 1973

Exhibited: *Venetiaans en Façon de Venise glas, 1500-1700,* Nieuwe Kerk Amsterdam
The glass is depicted and described in:
Frides and Kitty Laméris, *Venetiaans en Façon de Venise glas, 1500-1700*, Nationale Stichting Nieuwe Kerk Amsterdam, 1991, cat.no. 59

Large bowlshaped bowl with an outwardly folded rim. The bowl is decorated with four horizontal threads, the outwardly folded rim looks like a fifth one. A rudimentary stem composed of a ribbed knop with twelve ribs between two mereses. Trumpet-shaped foot with downwardly folded rim.

This is a very unusual glass, without any parallels in the consulted literature. The proportions of the glass with its huge bowl are reminiscent of a group of glasses thought to be French (Baumgartner 2003, cat.no. 17, Lhermite-King 2008, cat.no. 32).

Some of these have, horizontal thread decorations like the glass described here (Baumgartner 2003, cat.no. 17, Lhermite-King 2008, cat.no. 32, 37).
Various fragments of glasses with this type of stem and comparatively large bowls were found among the thousands of glasses recovered during archaeological excavations at the Cour Napoleon du Louvre site in Paris. Their height varies between 11 and 15 cm (Barrera 1990, type 14, p. 354). However, these glasses all have a more flattened ribbed knop and are made of colourless glass with a hint of grey. The glass described here features a rather round, ribbed knop and the colour tends more to straw or yellow, rather than grey.
The straw-coloured metal of the glass is known to occur in France (Lhermite-King 2008, cat. no. 36) but may also indicate a Spanish origin. Catalonian glasses in particular tend to have this type of yellowish colour (Philippart 2011, for example cat.no. 36, 37, 48, 54, 55, 74, 76).

26 Wine glass
FH 91

Colourless glass with a strong hint of straw colour
Façon de Venise, possibly Tuscany, France or Spain
Seventeenth century
Height: 13.2 cm, ø bowl: 8.9 cm, ø foot: 7.4 cm
Acquired November 4th, 1981

Wine glass with a trumpet-shaped bowl with a flat base. Hollow stem of an inverted baluster under a small round knop with a small cylindrical upper section. Stem and bowl are connected by a large merese. Stem and foot are joined by a merese with a small cylindrical part on top that surrounds and holds the stem. Conical foot that becomes less conical one third from the middle. Small flat, sharp, pontil mark.

An almost identical glass is held in a Tuscan private collection (Ciappi 1995, Tav. XXXIV) and is attributed to Tuscany. Given the straw-like tint of the metal, the glass could very well be from this region. However, the stem does not seem typical for this centre of production.
This raises the question of whether it could be a French glass? There appears to be a French production of Façon de Venise glasses using the same strongly straw-coloured metal (Lhermite-King 2008, cat.no. 10, 12, 13, 36). In his description of the glass Fred Hamburger also suggests a French origin, but unfortunately doesn't say why. We know of three glasses with a comparable stem but a conical bowl in different Dutch collections, all of which were originally acquired in France.
The glass with the same stem but a large ribbed bowl of the van Beek collection was bought in Paris in 1976 (Laméris and Laméris 2015b, cat. no. 24)

Comparanda:
Collection Du Mesnil (Rosenberg 2013, cat.no. 71)
Private collection, Tuscany (Ciappi 1995, Tav. XXXIV)

27 Wine glass
FH 71

Colourless glass with a strong hint of straw colour
Façon de Venise, possibly France or Spain
Seventeenth century
Height: 13.7 cm, ø bowl: 7.9 cm, ø foot: 8.0 cm
Acquired in October 1975

Wine glass with a large conical bowl with rounded base. Hollow egg-shaped stem topped by a small cylindrical section. Trumpet-shaped foot with downwardly folded rim. Small smooth pontil mark.

28 Ribbed flask
FH 83

Colourless glass with a strong
straw-coloured tinge
Façon de Venise
Sixteenth, seventeenth century
Height: 17.0 cm, ø bowl: 3.5 cm, ø foot: 7.0 cm
Acquired September 16th 1978

This very elegant flask seems to be quite rare. No parallel was found in the consulted literature. The flask does exist in a smaller version, used as a medicine bottle. The yellowish colour of the glass of both this flask and the smaller ones is reminiscent of Tuscan, Spanish or French glasses. However these medicine bottles are sometimes discovered at archaeological sites in the Netherlands (Henkes 1994, 66.20, Laméris and Laméris 2014, cat.no. 48).
This flask consists of one layer of glass. More often ribbed flasks are made with two layers of glass. In that case the entire body of the flask is covered with two layers. Except for the spout that is made only of the inner layer, the liner of the glass (For example Schaich 2007, cat.no. 485).

29 Flask with white trail
FH 69

Colourless glass with a strong hint
of straw and white glass
Venetian or façon de Venise, possibly Spanish
Seventeenth century
Height: 17.9 cm, ø opening: 4.6 cm,ø foot; 7.0 cm
Acquired August 15th 1975

Hemispherical body with high, kicked-in base. Elongated diabolo-shaped neck that evades horizontally into a square neck with an indentation before it widens. Small, sharp pontil attached to the sides of the kick, not filling it.
This shape of spout and the long neck of this flask are reminiscent of earlier Islamic glasses, dating back to the 12th and 13th centuries (Whitehouse 2014, cat.no. 913, 914). A coiled white thread is sometimes seen in Castillian (Spanish) glasses (Philippart 2011, cat.no. 162, 170).


30 **Mould-blown beaker**
FH 77

Colourless glass
Attributed to Bernard Perrot, Orléans
Last quarter seventeenth, early eighteenth century
Height: 8.0 cm, ø opening: 7.3 cm, ø base: 8.0 cm

Small, conical, mould-blown beaker with thin walls and thick solid base. Two seams indicate the use of a two-part mould. A shallow inverted base. Around the inversion traces of a circle that may be a trace of the mould, or a pontil mark.
The walls of the glass are decorated in relief with four arches under a horizontal decoration of a row of lozenges in between two rows of half lozenges. Under the arches two women and two men alternating. The women are both the same, with arms akimbo and holding a flower. One man, with a hanging pointed hat, holds a spear, the other leans on a stick.
Two of the figures look very similar to two figures on a glass in a private collection in France. Here the man with the pointed hat (called halberds by Jeanine Geyssant (Valence 2010, cat.no. 6)) and the woman are shown in mirror image.

Bernard Perrot (Altare 1640- Orléans 1709), descended from an Italian family of glassblowers from Altare, and started the Verrerie Royale d'Orléans in 1668. He introduced many new techniques, such as the manufacture of transparent red glass and several mould-blown techniques. After his death in 1709 his heirs continued to operate the glasshouse until 1738.

Read more
Valence, de, Christian, Ricke, Helmut, Baumgartner, Erwin, Geyssant, Jeannine, *Bernard Perrot, 1640-1709, Secrets et chefs-d'oevre des verreries royales d'Orléans*, Musée des beaux-arts d'Orléans 2010

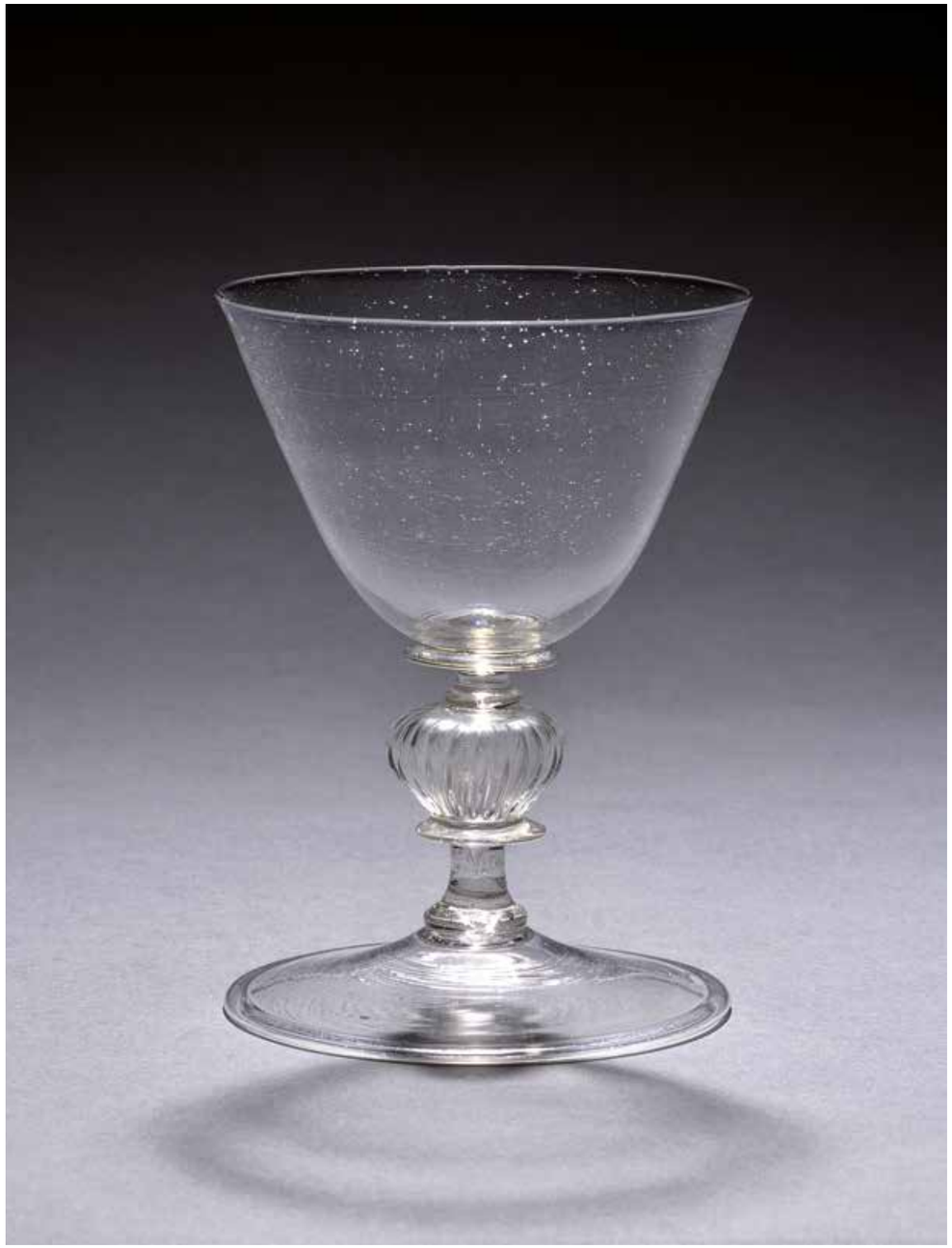
31 Necklace of glass beads
FH -

Netherlands and Germany
Seventeenth century

Necklace of glass beads. The necklace consists of different types of beads: drawn or cane beads and round furnace-wound beads.
Beads like the red, blue and white striped drawn beads have been found in the waste of the Amsterdam-based glasshouse De Twee Rozen, that produced glass from 1657 until 1679 (Gawronsky and Hulst 2010, 7.3.2, p. 120)

Drawn beads are made by tearing a glass bubble into two directions. Molten glass was gathered onto the end of a tool called a *puntile*, then a bubble was introduced into the centre of the glass, after which a second puntile was attached, before the glass and bubble were drawn out into a long cane, by one or two people. The original air bubble eventually became the hole in the bead. The cane was cut into small pieces: the drawn beads. Using this technique many beads can be made in a relatively short time. The cane-shaped beads on this necklace are made in this way. The round striped one is made using this technique with an extra elaboration.

Since many of the round furnace-wound beads were found in Amsterdam and Africa and North-America, where the Dutch traded, they are traditionally attributed to Amsterdam. However, there is no archaeological evidence that they were made there.
Archaeological finds in the Bohemian/Bavarian forests of these beads prove that they were produced there (Karklins 2019, p. 1-3).



32 Wine glass with ribbed knop

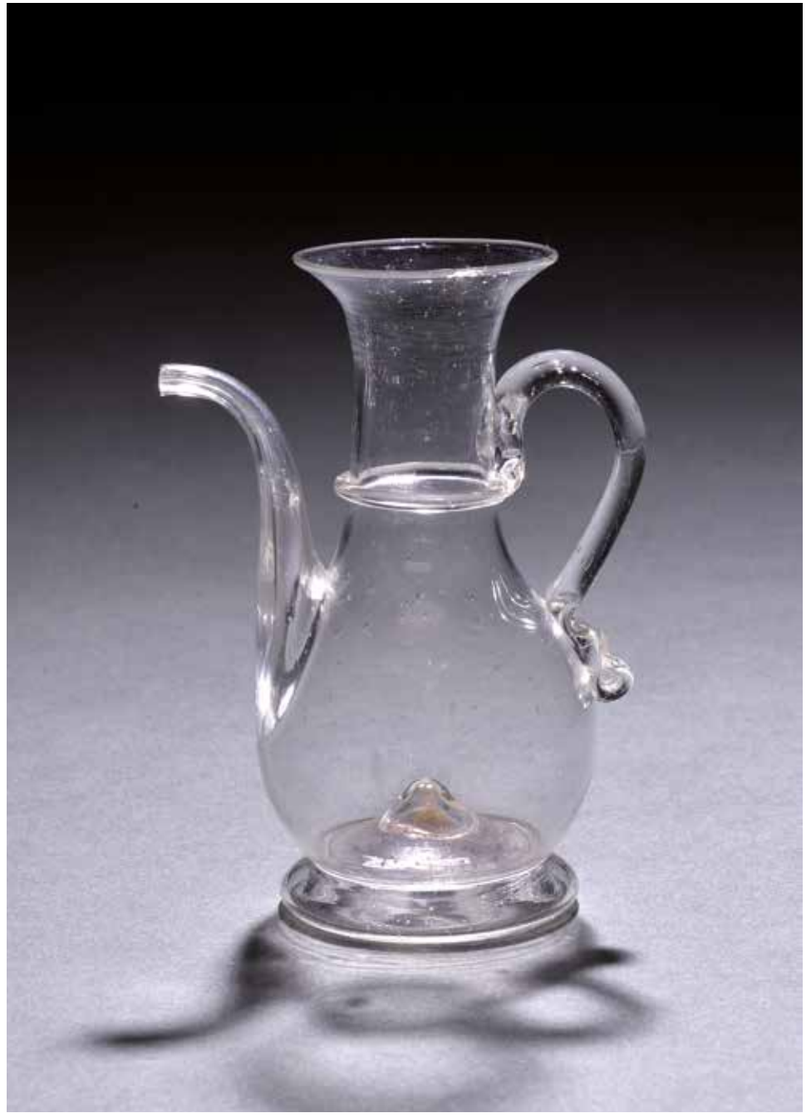
FH 104

Cristallijn
The Netherlands,
seventeenth century
Height: 12,0 cm, bowl: 9.0 cm, foot: 8.6 cm
Acquired July 1992

Wine glass with a hemispherical bowl.
Rudimentary stem consisting of a ribbed flattened knop with 26 ribs, between two avolios. Slightly conical foot with downwardly folded rim. Small rough pontil mark.

This type of glass with a ribbed flattened knop between two avolios, occurs in several variations: there are colourless examples with the same bowl, but two thick mereses between bowl and stem (SCEZ inv. no. 008,4), with a funnel shaped bowl (Baumgartner 2005, cat. no. 198, Gawronsky and Hulst 2010, cat.nr. 2.2.1 and 2.3.1, p. 139), with a ribbed funnel bowl (Vreeken 1998, cat.no. 89) or a shallow bowl (Pijzel 2009, cat.nr. 111 and 113) and green examples with the same bowl (Henkes 1994, cat.no. 47.4, Pijzel 2009, cat. no. 112) with a mould-blown bowl (Henkes 1994, cat.no. 47.7) and a funnel-shaped bowl (Duysters 2002, cat.no. 30).

Green examples have been found during archaeological digs in Zeeland, such as a glass that has an identical shape to the one described here, except for the knop, which is not ribbed (Stichting Cultureel Erfgoed Zeeland (SCEZ) inv. no. 2621-07) and also in Alkmaar (Henkes 1994, fig. 111). Some fragments of similar colourless ribbed knops and feet of green glasses have been found in the waste of the Amsterdam-based glasshouse De Twee Rozen, that produced glass from 1657 until 1679 (Gawronsky and Hulst 2010, p. 48). However all examples mentioned seem to have been a slightly different type of glass with a merese or a double merese between bowl and stem instead of an avolio.
The Hamburger glass may be a slightly later version of the glasses mentioned above.



33 Small jug with spout

FH 68

Cristallijn
The Netherlands
Seventeenth century
Height: 10.7 cm, ø opening: 4.1 cm, ø foot: 4.8 cm
Acquired in 1973

Small jug with spout and handle of colourless glass. A pear-shaped body with a cylindrical neck and outwardly folded conical opening. The little carafe is made out of one paraison or bubble and has a folded, so-called 'Roman foot'. On one third of the neck a horizontal glass thread. From this thread an ear-shaped handle, which is again attached on the shoulder with an outwardly folded curl. A small spout on the opposite side.

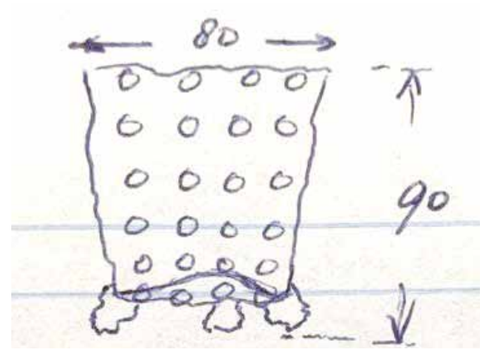
The shape of this little carafe is typical of Northern Europe and differs from its southern Venetian counterparts in the way the handle is made, for example. The slightly later Venetian examples made around 1700 feature handles that start at the bottom and go up (For example Theuerkauff-Liederwald 1994, cat.no. 436-.442). This handle is made the other way round. Often these little carafes have a wavy thread (Rijksmuseum Amsterdam, Ritsema van Eck 1993, cat.no. 142) or even a blue wavy thread. An example with a wavy blue thread and blue spout found in Amsterdam was probably made there, at the glasshouse De Twee Rozen (which operated from from 1657 until 1679 (Gawronsky and Hulst 2010, p. 48; cat. nr. 3.1.1, p. 142). Comparable, although not identical pieces were also found in Delft, Tilburg, Alkmaar and Rijswijk (Henkes 1994, fig. 145, p. 223, fig. 146, p. 224 and cat.nr. 49.2 and 49.3). Little carafes like this were used for (sometimes aromatic) liquids either for consumption or to use cosmetically. On a still life painting of 1661 by de monogrammist J.D.H. a small jug with spout and undulating thread is pictured filled with vinegar in between oysters, bread and a glass of white wine (Theuerkauff-Liederwald 1994, fig. 78, p. 401). On a print by Jacob de Geyn of Vanity, one such carafe is depicted among a collection of gold rings, pearls, money, playing cards and other luxury items (Henkes 1994, fig. 144, p. 223).

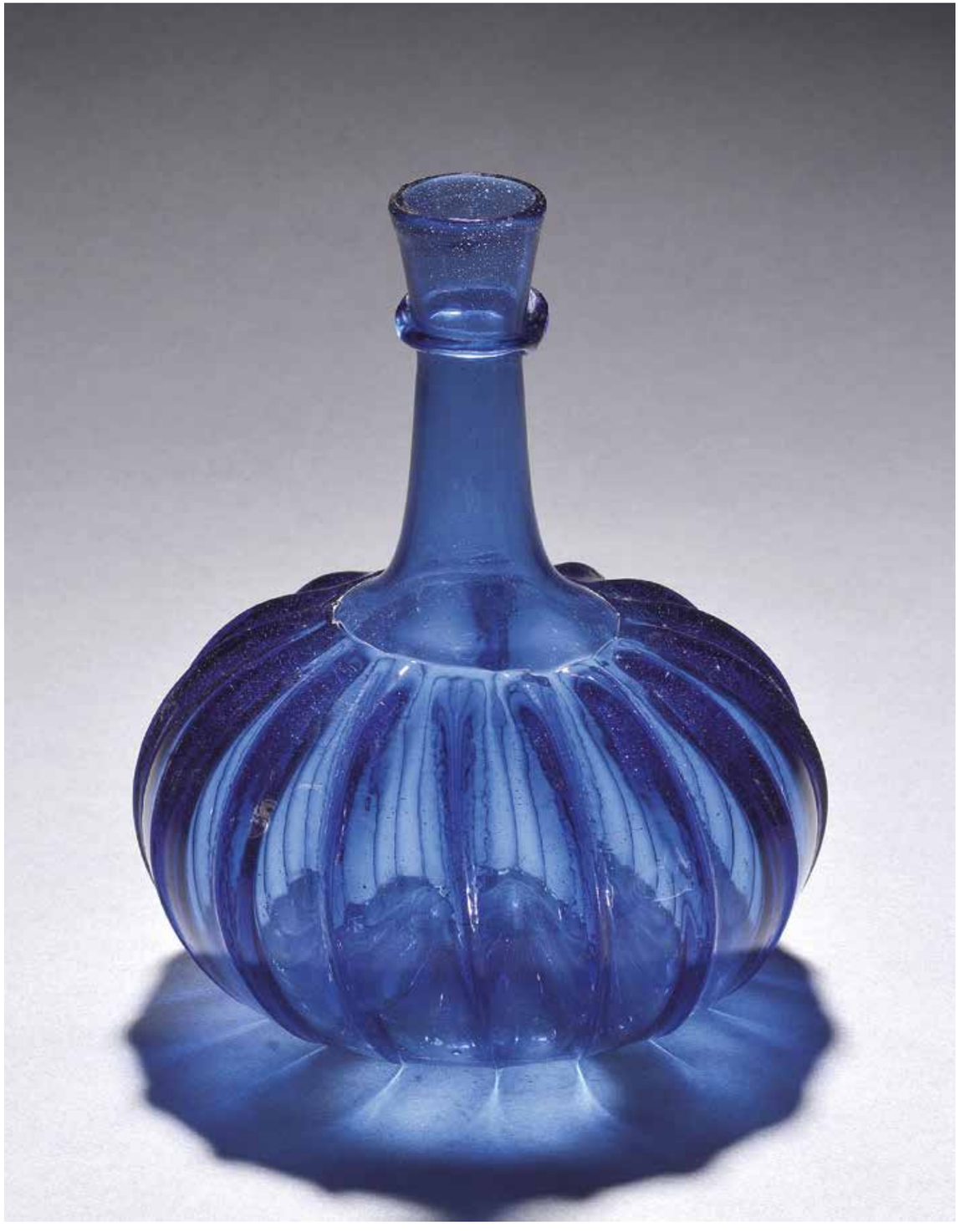
34 Bossed beaker on three raspberry prunts
FH 94

Cristallijn and aquamarine glass
The Netherlands
Seventeenth century
Height: 9.0 cm, ø bowl: 8.0 cm, ø base: 5.5 cm
Acquired May 13th 1982

Slightly conical, almost cylindrical mould-blown bossed beaker of cristallijn glass on three blue raspberry prunts. The glass is decorated with sixteen vertical rows of seven round bosses that are positioned in such a way that they alternate both vertically and horizontally. The large raised prunts are made with a single boss in the centre surrounded by two concentric circles, the first comprising six and the second ten bosses. On the underside of the base a flower with twelve petals in relief. Pontil mark.

This type of beaker occurs with milled glass threads (Henkes 1994, cat.no. 31.1 – 31.2), without feet (Henkes 1994, 31.3) and with little feet or prunts. The feet are usually made of aquamarine-coloured glass. Bossed beakers most frequently feature triangle-shaped bosses (Henkes 1994, cat.no. 31.4-31.7, Laméris and Laméris 1991, cat.no. 106, Schaich 2007, cat. no. 9, Ritsema van Eck 1993, cat.no. 126 – 130) instead of the round ones adorning this beaker. The undersides of the beakers are decorated with flowers executed in various ways (Schaich 2007, p. 49, Henkes 1994, p. 137).





35 Ribbed decanter of blue glass

FH 98

The Netherlands
Second half seventeenth century
Height: 17.0 cm, ø opening: 3.0 cm, ø bottle: 13.5 cm
Gift from Henny Hamburger in October 1986

Bottle with melon-shaped body with sixteen ribs and long tapering neck with slightly conical opening. At the point where the neck evades, a horizontal glass thread.
The body is made using the mezza stampaura technique. This technique originates in fifteenth century Venice. The glassblower half covers a glass bubble with a second layer of glass on the underside and blows it into a vertically ribbed dip mould. This results in a thicker, double-layered section with ribs.
In The Netherlands this type of carafe was used to serve wine at table, as shown in a painting by Nicolaes Verkolje (1673-1746). Wine was not yet bottled in the seventeenth century, but delivered in barrels to be stored in the wine cellar. For parties and festivities the wine would then be poured from the barrels into, for example, large, transparent bottles with pewter screw-tops that would be set aside to cool in large vats filled with water and sometimes ice. From there it would be decanted into carafes like the so called Jan Steen jugs or a glass carafe such as the one described here. Numerous paintings depict cooling vats standing in a corner, often presided over by a servant. These are shown decanting the wine in a carafe or rinsing glasses in the water (Breukers 2019, p. 100, 106 en 23).
This type of decanter takes various forms. The body is either smooth, ribbed (Anonymous 1995, cat.no. 29, Bossche 2001, cat.no. 66, Rosenberg 2013, cat.no. 81, fig. 90, Henkes 1994, cat.no. 56.2, Laméris and Laméris 2014, cat.no. 23, Schaich 2007, cat.no. 318) or features nipped diamond waies (Anonymous 1995, cat.no. 32, Bellanger 1988, p.269, Henkes 1994, cat.no. 56.1, McConnel 2018, fig. 1, 2, 3, p. 59, Pijzel 2009, cat.no. 144, 244, 145, Ritsema van Eck 1995, cat.no. 299, Theuerkauff-Liederwald 1994, cat.no. 553). Sometimes they have a handle (Anonymous 1995, cat.no. 32, Bossche 2001, cat.no. 67, Henkes 1994, cat.no. 56.1, Ritsema van Eck 1995, cat.no. 302). The collection of The Hague's Gemeentemuseum contains a rare specimen that has both handle and spout (Pijzel-Domisse 2009, cat.no. 144).
The sizes of the decanters vary. The tallest measures 25.5 cm (Klesse 1965, cat.no. 56) while the smallest found in the consulted literature is just 3.6 cm high (Klesse 1965, cat.no. 59). Furthermore they are made in many different colours: colourless (Pijzel-Domisse 2009, cat.no. 144, 244, 145, Klesse 1965, cat.no. 62, Henkes 1994, cat.no. 56.2, Theuerkauff-Liederwald 1994, cat.no. 553), dark blue (Anonymous 1995, cat.no. 30, 32, Pijzel 2009, cat.no. 140, Ritsema van Eck 1993, cat.no. 299), aquamarine (Anonymous 1995, cat.no. 29, Bellanger 1988, p. 269, McConnel 2018, 2, p. 59), purple (McConnel 2018, 1, 3, p. 59, Ritsema van Eck 1995, cat.no. 302), green (Theuerkauff-Liederwald 1994, cat. no. 544) and sea-green (Laméris and Laméris 2014, cat.no. 23, Pijzel-Domisse 2009, cat.no. 135).

Comparanda:
The Ritman collection (Anonymous, 1995, cat.no. 29)
Gemeentemuseum Den Haag (Pijzel 2009, cat.no. 140)
Museum für Angewandte Kunst (MAK), Vienna (Schlosser 1984, cat.no. 145)

Nicolaas Verkolje, Het verliefde vergrijp, detail, c. 1694 - c. 1695, Rijksmuseum Amsterdam

36 Wine glass with cylindrical bucket bowl

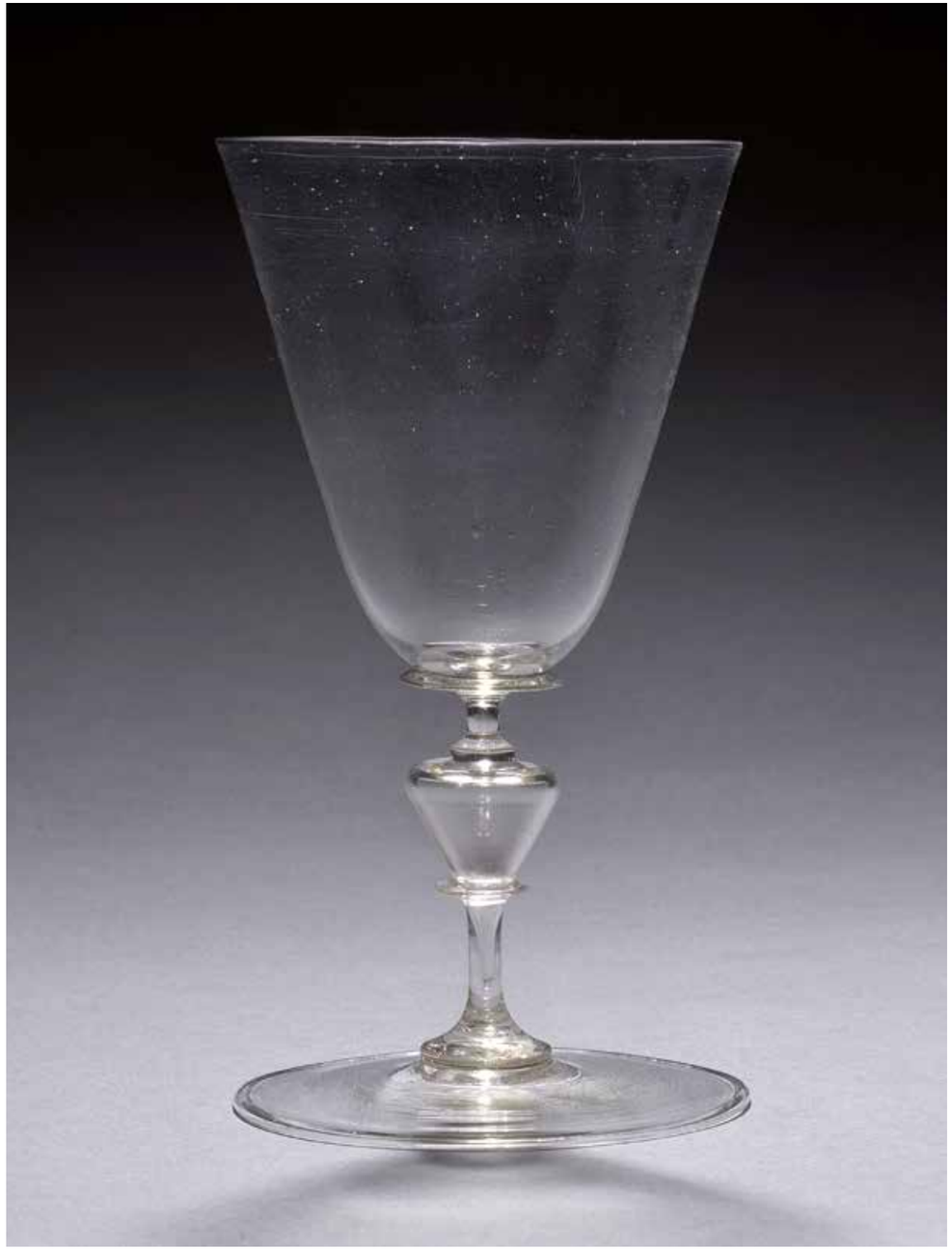
FH 107

Colourless cristallijn
The Netherlands
Last quarter seventeenth century
Height: 14.0 cm, ø bowl: 8.0 cm, ø foot: 8.5 cm
Acquired in April 1996

Wine glass wiih cylindrical bucket bowl. The stem consists of a quatrefoil knop between two avolios. Slightly conical foot with downwardly folded rim. Small rough, sharp pontil mark.

This type of glass with a large bucket bowl occurs in two versions. One has a stem with an inverted baluster (Henkes 1994, cat.no. 47.8, Laméris and Laméris 2014, cat.no. 25, Ritsema van Eck 1993, cat.no. 32). The other, like this glass, has a quatrefoil knop (Laméris and Laméris 1991, cat. no. 79b).
Glasses of this kind, especially those with an inverted baluster, were very popular in the Northern Netherlands. They are nearly always engraved. It seems as if such glasses with a cylindrical bowl so suited to engraving, may even have been made especially for this purpose. We know of at least 17 glasses of this type, with diamond line engraving (Smit 1994, 147.1-17). Some examples which can be dated indicate they were made in the last quarter of the seventeenth century, for example a glass engraved by Willem Jacobz. Van Heemskerk (Leiden 1613-1693) signed and dated Ao 1681 (Ritsema van Eck 1995, cat.no. 82). Other such examples are the glasses to toast the king and Stadtholder William III, who reigned as king of England from 1686 until his death in 1702, like a glass featuring a portrait of the king with crown and scepter and the text *William Rex* (Ritsema van Eck 1995, cat. no. 48) and a glass with his coat of arms and the text ‘Lang Leeft de Koning Koning/ in William en Maria’ (Long live the King, King/ in William and Mary) (Klesse 1987, cat.no. 162).
These goblets also occur with a wheel engraving. Such goblets are usually attributed to the Northern Netherlands between 1670 and 1690 (Ritsema van Eck 1984, ill. 27-34, p. 95-96) for example with the crowned coat of arms of the province of Holland (Ritsema van Eck 1995, cat. no. 185) or a covered goblet featuring the coat of arms of the Republic of the Seven United Provinces, the Dutch Lady of Liberty and a scepter resting on a cushion, probably made to celebrate the coronation of King William (Vreeken 1998, cat.no. 166).

Comparanda:
Private collection (Laméris and Laméris 1991, cat.no. 79b)



37 Wine glass with long conical bowl with rounded base
FH 76

Cristallijn
The Netherlands
Last quarter seventeenth century
Height: 16.3 cm, ø bowl: 8.8 cm, ø foot: 8.7 cm
Acquired in 1972

Wine glass with a large conical bowl with rounded base. The stem consists of a hollow inverted baluster between two avolios. Slightly conical foot with downwardly folded rim. Small, rough, sharp pontil mark.

The glass dates from the last quarter of the seventeenth century. In his book *Line-engraved glass, a concise catalogue of European Line-engraved Glassware 1570-1900*, Frans Smit (1994) mentions 94 diamond-point engraved glasses of the same type with both stems with inverted balusters and quatre-foil knops. The subject of eleven of these glasses is William III (1650-1702) as a Stadtholder (from 1672 onwards) or his wife Mary (1662-1694), whom he married in 1677 (Smit 1994, 143.34-44, 143.46).
Another eight glasses of this group are dated in the last quarter of the seventeenth century. Smit mentions six dated glasses of the same shape from the 1680s. These are: 143.1, a goblet showing a large lion rampant holding a crowned herring in each paw, the coat of arms of Orange-Nassau, Delft and Rotterdam, Schiedam and Den Briel and the date '1682' (Schadee 1989, cat.no. 87); 143.34, a goblet with an engraving of four coats of arms and 'Anno 1684' (catalogue Mak van Waay, Amsterdam 5.IV.1951); 143.64 'Een glasie van Vrientschap' and the date 1683 (Laméris and Laméris 1991, cat.no. 130); 143.65 a glass engraved by Willem Mooleyser signed and dated 'W.M. 1685 R[otterdam]' (Ritsema van Eck 1994, cat.no. 35); 143.66 a glass signed and dated 'Willem Mooleyser 1686/Rotterdam' (Vreecke 1997, p. 15); 143.78 a glass depicting a boar hunt and the text: ''T welvaren van 't vaderlandt. 1688' (Victoria and Albert Museum). The remaining two glasses date from the 1690s: 143.45 a portrait of the crowned Queen Mary and the text 'Maria Regina 1695' (Sheppard and Smith 1990, cat.no. 9); 143.87 and a marriage glass bearing the inscription 'Zijt getrouw 1696' (Klesse 1973, cat.no. 434) (Anna Laméris 2015, cat.no. 67).

38 Wine glass
FH 3

Colourless cristallijn
The Netherlands
Seventeenth century
Height: 15.2 cm, ø bowl: 8.7 cm, ø foot: 9.4 cm
Acquired in 1974

Wine glass with a funnel-shaped bowl with solid base. Quatrefoil knop. Bowl and stem are connected by two mereses above a solid knop. Slightly conical foot with downwardly folded rim. Stem and foot are connected by an avolio. Small rough sharp pontil mark.

This glass is a variation on the more common, typically Dutch glass featuring a quatrefoil knop inbetween two avolios, either with or without an extra merese above the avolio between stem and bowl (Laméris and Laméris 2014, cat.no. 27, Laméris and Laméris 2015, cat.no. 63-66).

39 Two-piece glass with a long and very slender stem, a so-called ‘pijpensteel’
FH 25

Cristallijn
The Netherlands
Circa 1700
Height: 20.4 cm, ø bowl: 5.3 cm, ø foot: 8.2 cm
Acquired in 1975

Glass made in two sections, with a trumpet-shaped bowl on a drawn, solid, stem. Light conical foot.

Comparanda:
Rijksmuseum Amsterdam (Ritsema van Eck, 1993, cat.no. 241-243)
Amsterdam Museum (Vreeken 1998, cat.no. 15-17)
Gemeentemuseum The Hague (Pijzel-Dommisse 2009, cat.no. 124)

40 Two-piece glass with a long and very slender stem, a so-called ‘pijpensteel’
FH 45

Lead glass?
The Netherlands
Early eighteenth century
Height: 19.0 cm, ø bowl: 7.3 cm, ø foot: 7.7 cm
Acquired in September 1973

Glass made in two sections, with a trumpet-shaped bowl on a drawn, solid, stem. Light conical foot.
The later ’pijpensteeltjes’ with broader stems are sometimes made of lead glass

Comparanda:
Rijksmuseum Amsterdam (Ritsema van Eck, 1993, cat.no. 244)

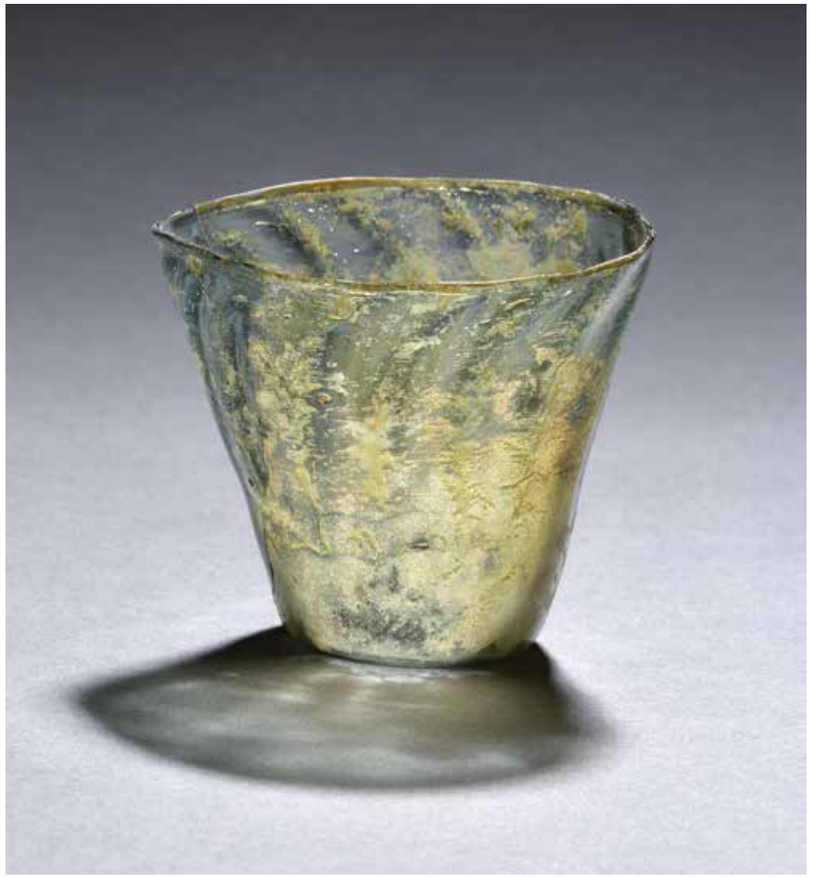
In order to make a ‘two-piece glass’ of this kind, the glassblower first blew a bubble – what was later to become the bowl. By subsequently reheating the glass bubble and swinging the blowpipe, the bubble became thicker at the bottom. From this glass the stem was drawn.

The name *pijpensteeltje* refers to the common seventeenth- and eighteenth-century tobacco pipes that had very long and slender stems.
This type of glass is clearly inspired by the glasses made *à la façon de Venise*. Until about 1750, *the pijpensteel* was a popular drinking glass in the Netherlands. Although this type of glass is fragile, quite a few have survived (Theuerkauff-Liederwald 1994, 247-248, p. 265).

Gesina ter Borch, Drinklied, detail naast de eerste drie coupletten, 1653, 31,3 cm X 20,4 cm
Rijksmuseum Amsterdam (BI-1890-1952-34)

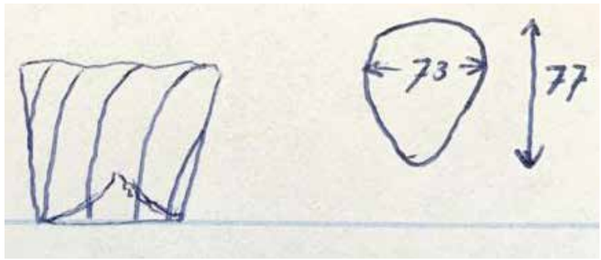
41 Small tankard reminiscent of a ridged beaker
FH 93

Waldglas
Germany
Fifteenth century
Height: 7.7 cm, ø bowl: 7.3, widest point 7.8 cm,
ø foot: 3.6 cm
Acquired May 13th 1982



Small, thinly-blown tankard with conical body and diagonal optical lines running up to the rim, from the bottom to top right. Kick-in base. The jug's base bears many signs of wear.
The tankard strongly resembles a so-called ridged beaker, but was shaped on one side into an angle that can be used as a spout.
The cup was blown into a sixteen-point dip mould. During the manufacturing proces the upper side of the ribs were slightly twisted.
Ridged beakers and cross-ridged beakers (that were dipped in the mould a second time and then turned in the other direction to create a crisscross effect) were the most common drinking glasses in the middle ages (Baumgartner 1988, p. 305). These types of glasses were used by the wealthy middle classes. (Henkes 1994, p. 38).
Henkes points out that the earlier ridged beakers were thinly-blown whereas the later ones are much thicker (Henkes 1994, p. 38).

No exact parallel was found.
The comparable pieces mentioned here are all beakers and not tankards. They all have a deeper kick-in base and the ridges end somewhat under the rim.
With diagonal lines in the opposite direction, running from the bottom to top left (S):
Museum für Kunsthandwerk Frankfurt (Baumgartner 1988, cat.no 360, Whitehouse 2010, cat.no. 64)
Cross-ridged beakers:
Karl Amendt Collection (Baumgartner 2005, cat.nos. 76-80)



42 Roemer with drawn knops and a drawn foot

FH 86

The Netherlands or Germany
Late sixteenth century, early seventeenth century
Height: 8.5 cm, ø bowl: 6.7 cm, ø foot: 4.6 cm
Acquired July 3rd 1980

Roemer with ovoid bowl above a cylindrical open shaft. Kick-in base. An applied and pinched glass thread to the edge of the base. On the transition from bowl to shaft a smooth glass thread. Applied to the shaft are two layers of six drawn knops. The prunts of the lower row are drawn upwards, the prunts of the upper row sideways.

A comparable roemer was painted twice by Georg Flegel (1565/1566-1638), see p. 96-97 (Wettengl 1999, cat.no. 18 and 19, Theuerkauff-Liederwald 1968, p. 136)

The berkemeier and the roemer are related, as the latter developed out of the former. The berkermeier is a conical prunted beaker with a pinched glass thread as a foot, drawn knops on the shaft and a smooth glass thread on the transition from bowl to shaft or just above the area with prunts. In general, a roemer is a glass with a convex bowl on an open cylindrical shaft and a foot made of a spiralling glass thread. The shaft is generally studded with raspberry prunts, with a milled glass thread on the transition from bowl to shaft. However many transitional shapes exist, which led to a great deal of confusion when classifying the glasses. In 1994 Henkes asserted that the bowl was the deciding factor: a glass with a conical bowl qualified as a berkemeier whether it had drawn prunts or raspberry prunts, a pinched or a spiralling foot. The roemer had a convex bowl (Henkes 1994, p. 189-192).
This deliberation is reflected in Hamburger's description of this particular glass. He first called it a berkemeier, as it was referred to in the literature to which he alludes, noted in blue pen. Later the word 'berkemeier' has been crossed out and the word 'roemer' added in black ink, echoing the description in Henkes' book. With the same black ink Hamburger added the title of Henkes' book to the bibliography.

Comparanda:
Museum Boymans Van Beuningen (Henkes 1994, 45.13, p. 196)
Rijksmuseum Amsterdam, diamond line-engraved and dated 1606 (Ritsema van Eck 1995, cat.no. 9)
The Karl Amendt Collection (Baumgartner 2005, cat.nr. 160)

← p. 96-97 Georg Flegel, Still Life with Cheese, Butter Dish, Wine Glasses and Clay Jug, 27 X 46 cm, Museum of Fine Arts, Budapest

43 Roemer
FH 31

Light green glass
Germany or The Netherlands
Last quarter of the seventeenth century
Height: 14.9 cm, ø bowl: 6.0 cm, ø foot: 5.6 cm
Acquired in 1973

Light green roemer with a round bowl on a cylindrical open shaft. The outstanding foot is made of a coiled glass thread. Just beneath the transition from bowl to shaft a milled glass thread. On the shaft two layers of four prunts with shallow grid. Only one knop has pronounced, cone-shaped bosses. In the last quarter of the seventeenth century the shaft becomes narrower and the foot higher. The grid of the prunts is shallower (Laméris and Laméris 2014, p. 71).

44 Roemer
FH 30

Green glass
Germany or The Netherlands
First half seventeenth century
Height: 14.0 cm, ø bowl: 6.6 cm, ø foot: 5.5 cm
Acquired August 1972

Green roemer with round bowl on a cylindrical open shaft. The low and outstanding foot is made of a coiled spiralling glass thread. On the transition from bowl to shaft a milled glass thread. On the shaft two layers of four distinct raspberry prunts. The bosses of the prunts are arranged in a grid, in quite high relief. Many are pointed or cone-shaped.
In the first half of the seventeenth century the shaft was quite wide and the foot low. Besides, the raspberry prunts had fairly pronounced nodes (Laméris and Laméris 2014, p. 71).

Comparanda:
Henkes collection, whereabouts unknown
(Henkes 1994, 54.1, p. 256)

45 **Wine glass with mould-blown stem**
FH 21

France? Germany?
Circa 1700
Height: 17.4 cm, ø bowl: 8.2 cm, ø foot: 8.8 cm
Acquired in February 1973

Thinly-blown wine glass with rounded funnel bowl. Mould-blown hexagonal stem with pyramids on the shoulder. Light conical foot with downwardly folded rim.

46 **Glass with mould blown decoration**
FH 18

Verre de fougère
France
Early eighteenth century
Height: 10.8 cm, ø bowl: 4.6 cm, ø foot: 6.7 cm
Acquired in August 1974

Glass with rounded funnel bowl, blown in a dip mould to create a pattern of 16 vertical ribs. The ribs are fairly wide and run to about a centimetre beneath the rim. The blown stem has a small, cylindrical section atop an elongated quatre foil stem. Light conical foot.

Comparanda:
Two goblets, but with a merese between bowl and stem:
whereabouts unknown (Barrelet 1957, fig. 15 two goblets on the left side).

47 **Glass with a mould blown decoration**
FH 17

Verre de fougère
France
Early eighteenth century
Height: 10.7 cm, ø bowl: 4.6 cm, ø foot: 6.7 cm
Acquired in in August 1974

Glass with rounded funnel bowl, blown in a dip mould to create a pattern of oval stripes above 16 vertical ribs. The ribs are fairly wide and run to about a centimetre beneath the rim. The blown stem has a small, cylindrical section atop an elongated quatre foil stem. Light conical foot.

Comparanda:
Two goblets, but with a merese between bowl and stem:
whereabouts unknown (Barrelet 1957, fig. 15 two goblets on the left side).

48 Wine glass with ribs
FH 99

Yellowish glass
France
Early eighteenth century
Height: 14.7 cm, ø bowl: 7.9 cm, ø foot: 6.9 cm
Acquired in December 1986

Wine glass with a conical bowl that transitions into an almost cylindrical section and a flattened base. The bowl is blown into a 12-point dip mould. Hollow, straight stem with small basal knop. Light conical foot. Pontil mark.

49 Small wine glass with large bowl
FH 42

Verre de fougère
France
Early eighteenth century
Height: 13.8 cm, ø bowl: 7.6 cm, ø foot: 7.0 cm
Acquired in 1972

Small wine glass with large, rounded funnel bowl on a short cigar-shaped stem. Light conical foot.

No exact parallels were found in the consulted literature. However the shape of bowl, stem and foot were very common in eighteenth century France.

50 Wine glass with drawn stem
FH 35

Brownish verre de fougère
France
Eighteenth century
Height: 12.9 cm, ø bowl: 6.7 cm, ø foot: 6.6 cm
Acquired in 1972

Glass made in two sections, with a trumpet-shaped bowl on a drawn, solid stem. Light conical foot.

In order to make a 'two-piece glass' of this kind, the glassblower first blew a bubble – what was later to become the bowl. By subsequently reheating the glass bubble and swinging the blowpipe, the bubble became thicker at the bottom. From this glass the stem was drawn.

51 Wine glass blown in a dip mould
FH 34

Greyish glass with a touch of yellow, verre de fougère
France
Eighteenth century
Height: 11.8 cm, ø bowl: 5.8 cm, ø foot: 6.0 cm
Acquired in 1972

Wine glass with a funnel bowl and a drawn stem, blown in a 14-point dip mould. Light conical foot.

In order to make a 'two-piece glass' of this kind, the glassblower first blew a bubble – what was later to become the bowl. By subsequently reheating the glass bubble and swinging the blowpipe, the bubble became thicker at the bottom. From this glass the stem was drawn.

Comparanda:
Musée des Arts Décoratifs, Paris
(Bellanger 1988, lowest picture, at left p. 478)

52 53 54

52 Wine glass with honeycomb pattern and vertical lines in the bowl
FH 26

Colourless verre de fougère
France
First half eighteenth century
Height: 14.4 cm, ø bowl: 7.4 cm, ø foot: 7.0 cm
Acquired in 1973

Wine glass with mould-blown rounded funnel bowl, with a honeycomb pattern above 18 ribs. The bowl is joined to the stem with one merese and a straight solid part above a blown elongated five-lobed stem. Light conical foot with folded rim. A comparable glass was excavated in 2014 at the latrine site of the third Pavilion du Levant, a building for visitors in the garden of the Château de Marly (Rochebrune 2017, p. 1, 4-9, fig. 4 and 5, p. 5). A comparable glass also blown in a mould with honeycomb pattern and vertical ribs, was depicted leaning against a tankard by Jean Baptiste Siméon Chardin (Paris 1699-1779) in 1728 (Barrelet 1957, fig. 8 p. 105, Laméris and Laméris 2015, p. 100).
Comparanda:
Private collection, whereabouts unknown (Bellanger 1988 fig. p. 481 in the middle)

53 Large wine glass
FH 74

Colourless verre de fougère
France
First half eighteenth century
Height: 17.9 cm, ø bowl: 10.4 cm, ø foot: 8.8 cm
Acquired in May 1976

Large wine glass with funnel-shaped bowl and thickened base, joined to the stem with one merese and a straight solid part above a blown elongated six-lobed stem. Light conical foot.
A comparable glass was shown by Jean Baptiste Siméon Chardin (Paris 1699-1779) in 1728 (The Buffet, Laméris and Laméris 2015b, p. 100).
Compare with Barrelet (1957, 14, second from the left, p. 109, 19 central glass with mould-blown bowl, p. 111), Bellanger (1988, upper picture, left glass, p. 458), Laméris and Laméris (2015b, cat. nr. 41).

Jean Slméon Chardin, The Buffet, detail, 1728, 1.94 m X 1.29 m, detail, Musée du Louvre, Paris

54 Wine glass
FH 22

Brownish verre de fougère
France
First half eighteenth century
Height: 13.7 cm, ø bowl: 6.8 cm, ø foot: 7.0 cm
Acquired in January 1973

Brownish wine glass with funnel-shaped bowl and thickened base, that was blown into a dip mould and turned to create a pattern with diagonal lines (from bottom left to top right, Z). The bowl is joined to the stem with a single merese and a straight solid part above a blown, elongated five-lobed stem. Light conical foot with folded rim.
A comparable glass without the diagonal pattern was depicted by Jean Baptiste Siméon Chardin (Paris 1699-1779) in 1728 (Laméris and Laméris 2015, p. 100). A similar goblet is depicted in *The Light Meal* by Henri Horace Roland Delaporte (Paris 1724 or 1725 - Paris 1793). See page 113.
Comparanda:
A glass with the same brownish colour, foot and stem, but blown in a different mould: The du Mesnil Collection (Rosenberg 2013, cat.nr. 99b, fig. 109).
A glass without diagonal lines: The Van Beek Collection (Laméris and Laméris 2015b, cat.nr. 41)

55 Wine glass with diagonal lines in bowl
FH 16

Verre de fougère or pivette
France or Belgium
Eighteenth century
Height: 14.1 cm, ø bowl: 6.0 cm, ø foot: 6.8 cm
Acquired in 1973

Wine glass with a funnel bowl that has been blown into a dip mould and turned to create a pattern of diagonal lines (from bottom left to top right). Straight solid stem with collar and basal knop. The stem is decorated with the same mould and turned as well. Light conical foot with downwardly folded rim.
These glasses occur quite often and were for everyday use.

Comparanda:
Whereabouts unknown (Barrelet 1957, fig. 17, second from the left, p. 110)
Musée des Arts Décoratifs, Paris (Bellanger 1988, lower fig. p. 478, third from the left)

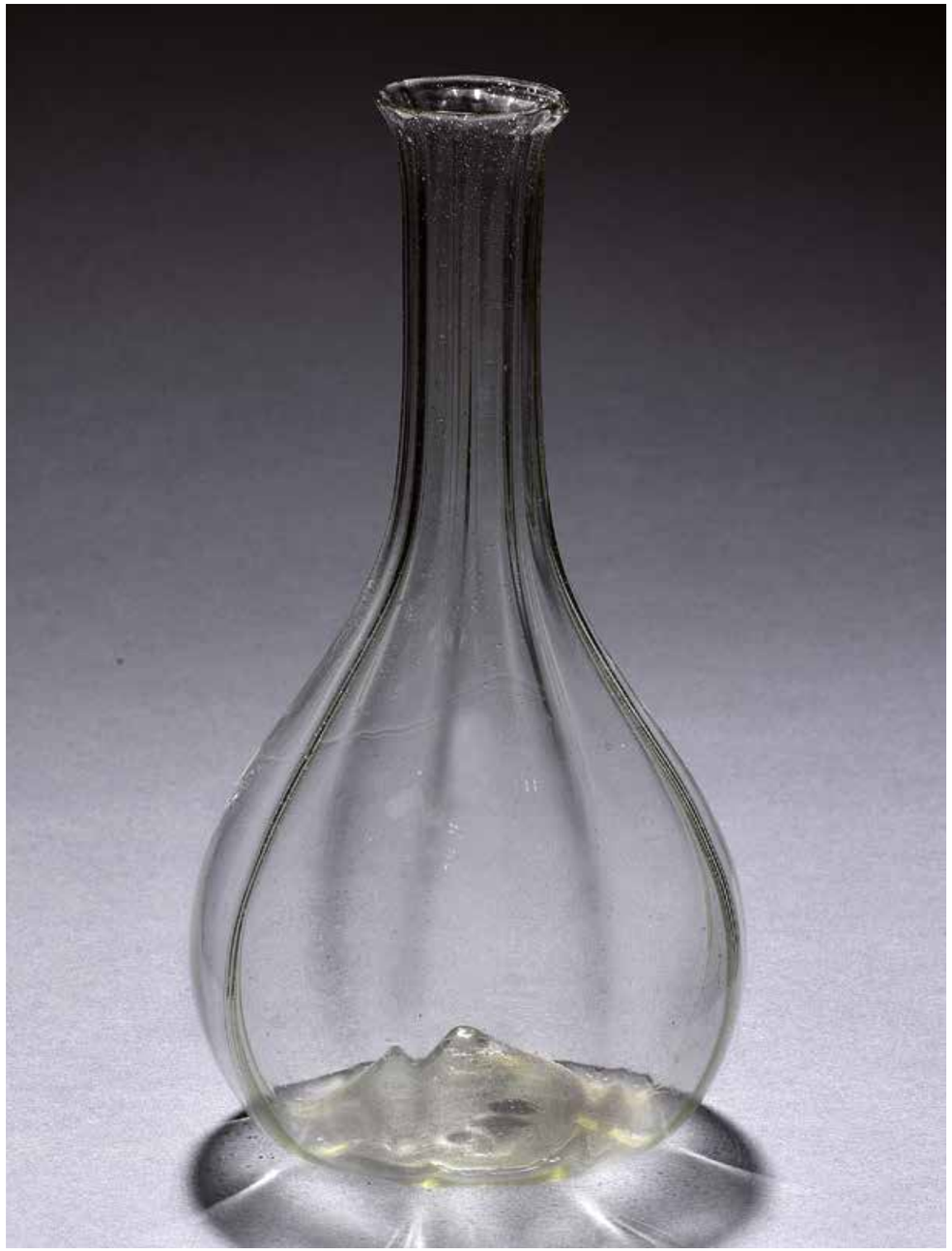
56 Wine glass with pattern of squares in diagonal lines in the bowl
FH 41

Verre de fougère or pivette
France or Belgium
Eighteenth century
Height: 14.8 cm, ø bowl: 6.6 cm, ø foot: 6.7 cm
Acquired in 1973

Wine glass with a funnel bowl that has been blown into a dip mould. Straight, solid stem with collar and basal knop. The stem is decorated using the same mould and turned as well. Light conical foot with downwardly folded rim.

These glasses occur quite often and were for everyday use.

Henri Horace Roland Delaporte The Light Meal, 1787,
37 X 46 cm, Musée du Louvre, Paris



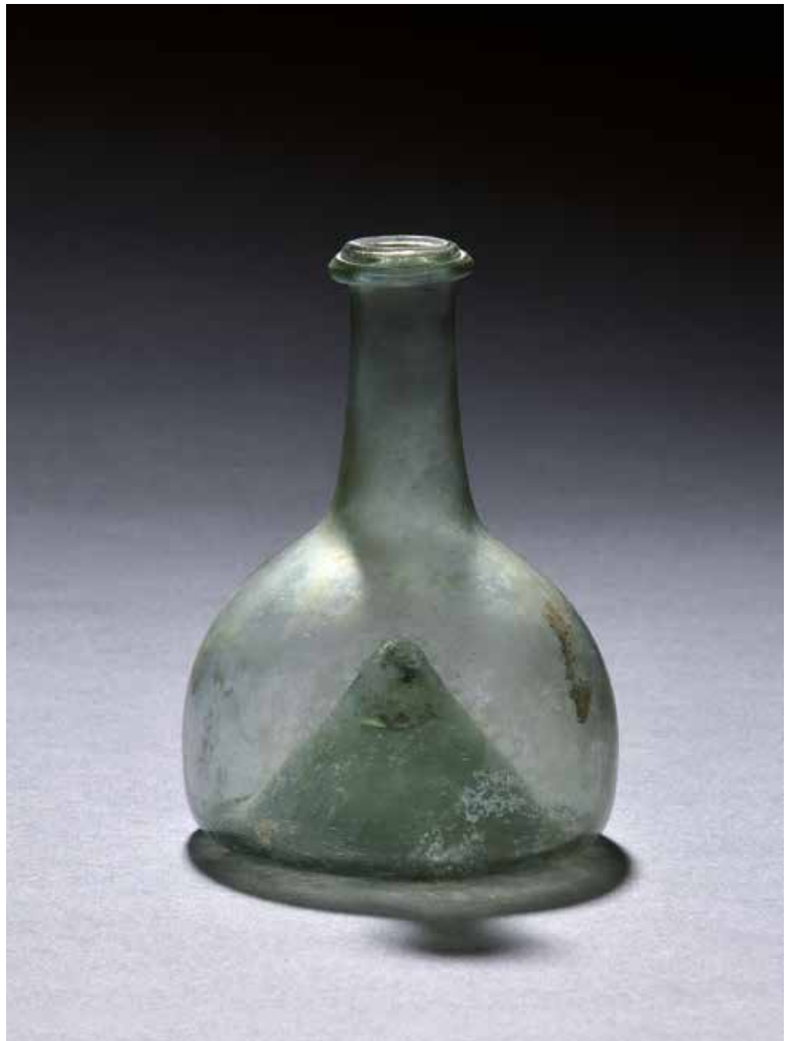
57 Ribbed flask
FH 70

Colourless glass
First half eighteenth century
Height: 16.8 cm, ø opening: 3.2 cm, ø base: 6.0 cm
Acquired August 15th 1975

Fig-shaped ribbed body with long neck with outfolded rim and kicked base. The bottle has eight ribs.

No exact parallels were found in the consulted literature. Two filigrana a fili glasses held by Veste Coburg have a very similar shape. These were possibly made in the south of France (Theuerkauff-Liederwald 1994, cat.no. 503, 504). A larger flask with a glass stopper is depicted in a painting by Antoine Monnoyer (1670-1747) entitled *Large Buffet with flowers, fruit and costly vases* (National Museum Stockholm, NM 794). Monnoyer, a French painter, travelled widely, visiting Rome, Amsterdam, London and Copenhagen. He painted this work for the Royal Palace during his stay in Stockholm in 1733 and 1734.
However, in a painting dated 1744 by the artist Jean Marc Nattier (Paris 1685-1766) a young man is shown holding the very same flask filled with red wine in his right hand. This painting, *Les Amoureux,* together with Monnoyer's canvas allows us to date the carafe first half of the eighteenth century.

Jean Marc Nattier, Les Amoureux, 1744, detail, 48 X 74 cm, Alte Pinacothek Munich



58 Small bottle
FH 12

Small bottle with deep kick-in base with traces of iridescence
Grey-green, thinly-blown glass
The Netherlands or Germany
Seventeenth century
Height: 9,5 cm, ø opening: 1.9 cm, ø foot: 6,5 cm
Acquired in March 1972

Thinly blown grey-green bottle with a long, slightly conical neck. Round body with flattened underside and deep kick-in base with a blow-pipe pontil mark. Just beneath the rim an applied glass thread. Traces of iridescence.

Gerard Dou (Leiden 1613-1675) depicted a comparable bottle in his painting De Kwakzalver dated 1652 (Museum Boymans Van Beuningen, inv.no. St 4).

Comparanda:
Small bottle but with downwardly folded rim: Whereabouts unknown (Henkes 1994, 66.20, p. 320)

Gerard Dou, De Kwakzalver (The Quacksalver), 1652, detail, 112.4 X 83.4 cm, Museum Boymans Van Beuningen

59 Small bottle with flattened body and iridescence
FH 96

Light-green glass
The Netherlands or Germany
Seventeenth century (?)
Height: 12.0 cm, ø rim: 1.7 cm,
width body 9.0 cm, width foot: 5.0 cm
Acquired 1983

Small shallow bottle with upwardly tapering neck. Round flattened body and kicked base. A glass thread beneath the rim. The thickness of the rim is very irregular. Iridescence.

The bottle looks like one that was painted placed on the ground in The doctor of the village (Kunsthalle Karlsruhe inv.no. 95) by David Teniers II (Antwerpen 1619-Brussel 1690).

60 Wine bottle, a so-called 'kattekop' or 'buikfles' with iridescence
FH 47

Dark-green glass
Germany, Belgium or the Netherlands
1720-1770
Height: 17.5 cm, ø rim: 2.7 cm, ø underside: 11.2 cm
Acquired in 1972

Dark green wine bottle with conical neck on a round body with deep kicked base. Glass thread underneath the rim. Iridescence in horizontal lines.

These bottles were made in large numbers and used for wine. The Dutch took them with them on their journeys all over the world (Bossche, Van den, 2001, p. 121). They were found everywhere the Dutch voyaged in the eighteenth century, for example in Surinam, Indonesia and Africa.

Comparanda:
Henkes Collection (Henkes 1994, 59.11, p. 287)
Whereabouts unknown (Bossche, Van den, 2001, plate 70 (3), p. 119, plate 72, p. 121)
The Kees Schoonenberg Collection (Laméris and Laméris 2014, cat.no. 42)

61 Large bottle with beautiful iridescence
FH 46

Yellow-green glass
Germany (France?)
Eighteenth century
Height: 25.5 cm, ø rim: 2.8 cm,
ø foot: 9.5 cm
Acquired in 1972

Bottle with a long neck, tapering towards the top, drooping shoulders and a tall, nearly cylindrical body. Kicked base with blowpipe pontil mark. Thick glass thread applied just beneath the rim. Beautiful iridescence.
Comparable bottles with a shorter body are depicted in the 1737 painting *Hunting Halt (Halte de Chasse)* by Charles André van Loo (also known as Carle van Loo, Nice 1705- Paris 1765, Musée du Louvre inv.nr. 6279, Kosler 1998, 135-136)

Comparanda:
Bottle with a shorter body: Henkes Collection, whereabouts unknown (Henkes 1994, 59.14, p. 288)
A bottle with a shorter body: the Schaich Collection (Schaich and Schaich 2012, cat.no. 608)
A bottle with lower shoulders and a shorter body in the Schaich Collection (Shaich and Schaich 2007, cat.no. 365)

61 Spa bottle with long slender neck and flattened round body
FH 102

Yellow-green glass with iridescence
Belgium
Height: 25.5 cm, ø rim: 1.5 cm,
width body: 16.0 cm, thickness: 5.5 cm
Acquired 7 December 1991

Spa bottle with cut rim, slender neck and round, fairly flattened body. The bottle has a kick-in base but can't stand upright. No pontil mark. The bottle was cut from the blowpipe at the rim.

Spa bottles were placed in a stand for use at table.
Medicinal water from the Ardennes in Belgium was very popular in the Netherlands and England. Although there were many different water sources in the Ardennes, 'Spa water ' or 'Spa' became the common name. The bottles were encased in a wicker cover. According to Henkes, the bottles' shape made them easy to pack for a journey (Henkes 1994, p. 289).

Comparanda:
Rijksmuseum Collection (Ritsema van Eck 1993, cat.nr. 294)
Henkes Collection (Henkes 1994, no. 59.19, p. 289-290)
Whereabouts unknown (Kosler 1998, fig. p. 250)
Whereabouts unknown (Bossche, van den 2001, plate 138, p. 189)

Agricola, Georg, *De Re Metallica,* 1556.

Anonymous, *Fascinerende luxe uit de oudheid, The Windmill collection of Roman Glass,* Blurb 2019

Anonymous, *Catalogue Christies* London, 26-5-1982

Anonymous, *The Joseph R. Ritman collection of 16th and 17th Century Dutch Glass,* Sotheby's 1995

Antonaras, A., *Fire and Sand: Ancient Glass in the Princeton University Art Museum,* New Haven – London 2012

Archer, Michael, *Glass and stained Glass,* without city, 1977

Arts, P. L. W., *A Collection of Ancient Glass 500 BC – 500 AD,* Lochem 2000

Arveiller-Dulong, V., Nenna, M. D., *Les Verres Antiques du Musée du Louvre II,* Paris 2005

Auth, S. H., *Ancient Glass at the Newark Museum from the Eugène Schaeffer Collection,* Newark 1976

Awad-Konrad, Anna, 'Glassworks Hall in Tirol 1534-1635', in: Rosa Barovier, Cristina Tonini, *Study days on Venetian Glass approximately 1700's,* Atti Classe di Scienze Fisiche, Matematiche e Naturali Volume 173, 2015, p. 59-63

Awad Konrad, Anna *Frühneuzeitliche Glasproduktion in das Glashütte von Hall in Tirol,* (Dissertation University Innsbruck)

Barovier Mentasti, *Mille anni di Arte del vetro a Venezia,* Venezia 1982

Barrelet, James, 'Le verre à boire en france au XVIIIe siècle', in: *Cahiers de la céramique et des arts du feu,* summer 1957, p. 100-117

Barovier Mentasti, Rosa, Tonini, Cristina, 'Venetian sixteenth century filigrana', **in:** *Study days on Venetian Glass, Atti classe di scienze fisiche, matematiche e naturali,* Istituto Veneto di Scienze, Lettere ed Arti, Venezia 2018, p. 13-60

Barrera, Jorge, 'Le verre à boire des fouilles de la Cour Napoléon du Louvre (Paris)', in: *Annales du 11e congrès de l'Association Internationale pour l'Histoire du Verre,* 1988, Amsterdam 1990, p. 347-364

Baumgartner, Erwin and Krueger, Ingeborg, *Phönix aus Sand und Asche, Glas des Mittelalters,* exhibition catalogue, München 1988

Baumgartner, Erwin, *Verre de Venise, Trésors inédits,* Genève 1995 (cat. musée Ariana, Genève, vol I)

Baumgartner, Erwin, *Verre de Venise et Façon de Venise*, Genève 1995 (cat. musée Ariana, Genève, vol II)

Baumgartner, Erwin, *Venise et Façon de Venise, Verres Renaissance du musée des Arts décoratifs,* Paris 2003

Baumgartner, Erwin, *Glass of the Middle Ages and the Renaissance Period, The Karl Amendt Collection*, Exhibition catalogue, Düsseldorf 2005

Baumgartner, Erwin, *Reflets de Venise,* Romont 2015

Bellanger, Jacqueline, *Verre d'usage et de prestige, France 1500-1800,* Paris 1988

Bertrand, Madelaine, *Le verre en Montaigne Noire,* Circulaire 2012

Bezborodov, M. A., *Chemie und Technologie der Antiken und Mitteralterlichen Gläser,* Mainz 1975

Bijnsdorp, N. F., *Fascinating Fragility, a Private Collection of Ancient Glass,* Rotterdam 2010

Biringuccio, Vannoccio, *De la Pirotechnia,* Facsimile dell'edizione originale 1540, Milano, 1977

Bolten, D., *Een glasie van vrienschap. De glazen van de collectie Guépin,* exhibition catalogue, Museum Het Prinsenhof. Delft 1969

Bossche, Willy van den, *Antique glass bottles, Their history and evolution (1500-1850),* Woodbridge 2001

Bova, Aldo, *L´avventura del vetro, dal Rinascimento al Novecento tra Venezia e mondi lontani,* Milan 2010

Brain, Colin, Brain, Sue, 'Drinking glass design around 1670', in: *European Journal of Glass Science and Technology,* Part A, Volume 56, Number 4, August 2015, p. 113-120

Breukers, Mariëlla, *Wijnkronieken, Twintig eeuwen Nederlanders en wijn*, without city, 2019

Charleston, R.J., *Masterpieces of Glass, a world history from the Corning Museum of Glass,* New York 1980

Chevalier, Ann, *The golden age of Venetian glass,* Tokyo 1999

Christie's, Auction catalogue, *The Guépin collection of 17th and 18th century Dutch glass*, Amsterdam 5 July 1989

Ciappi, Silvia a.o., *Il vetro in Toscana, Strutture prodotti imagini,* Poggibonsi 1995

Cuperus, Paul E., *A collection of Roman glass,* Blurb 2008

Dorigato, Attilia, *The Glass Museum,* Venice 2006

Dreier , Franz Adrian, *Venezianische Gläser und Facon de Venise,* Kunstgewerbemuseums Berlin, Berlijn 1989

Duysters, Kristin, *Facetten van Glas, de Glascollectie van het Historisch Museum Arnhem*, Arnhem 2002

Egg, Erich, *Die Glashütten zu Hall und Innsbruck im 16. Jahrhundert*, Innsbruck 1962

Engle, A, 'The ubiquitous trade bead', in: *readings in glass history,* nr,222, Jerusalem, 1990, p. 59-62

Foy, Danielle, Bourrel, Bernard, Averous, Jean-Claude, 'Peyremoutou: une verrerie du XVIIe siècle dans la Montaigne Noire (Tarn)', in: *Archéologie du Midi Médiéval,* 1983, p. 93-102

Foy, Danielle, *Le Verre Mediéval et son Artisanat en France Mediterranée*, Paris 1988

Fremersdorf, F., *Das naturfarbene sogenannte blaugrüne Glas in Köln,* Band IV, Köln 1958

Gasparetto, Astone, *Il vetro di Murano, dale origini ad oggi*, Venice 1958

Jerzy Gawronski, Hulst, Michel, *Glasafval op het achtererf, Archeologische opgraving Rozenstraat*, Amsterdam (2006), AAR, Amsterdam 2010.

Geilmann, W., Brückbauer, T., *Glastechnische Berichte* 27, 1954, p. 456

Grimm, Claus, *Glück und Glas: Zur Kulturgeschichte des Spessartglases*, München 1984

Grose, D F, *Early Ancient Glass*, The Toledo Museum of Art, Toledo 1989

Hayes, J. W., *Roman and Pre-Roman Glass in the Royal Ontario Museum*, Ontario 1975

Henkes, Harold E., 'Glass without gloss', in: *Rotterdam papers*, Rotterdam 1994

Higgott, Susanne, *Catalogue of Glass and Limoges Painted Enamels,* London 2011

Ferrand W. Hudig, *Das Glas,* Wenen 1925

Hulst, Michel, 'Glazen met maskerons en leeuwenkopstammen uit Amsterdamse bodem. Een aanzet tot identificatie van zeventiende-eeuwse façon de Venise', in: *Vormen uit Vuur* 221 (2013), p. 20-39

Israeli, Y., Barag, D., Brosh, N., *Ancient Glass in the Israel Museum, the Eliahu Dobkin Collection and Other Gifts,* Jerusalem 2003

Karklins, Karlis, 'Furnace-Wound Beadmaking in the Bavarian/Bohemian Forests and Environs, 15th-19th Centuries', in: *The bead forum 74,* 2019

Klesse, Brigitte, *Glasssamlung Helfried Krug*, München 1965

Klesse, Brigitte, Gisela Reineking-von Bock, *Glas, Kunstgewerbemuseum der Stadt Köln,* Köln 1973

Klesse, Brigitte, Hans Mayer, *Veredelte Gläser aus Renaissance und Barock, Sammlung Ernesto Wolf*, Vienna 1987

Kollmann, Erich, *Kunstgewerbemuseum der stadt Köln*, *Glas*, Cologne 1963

Kosler, Rainer, *Flasche, Bottle und Bouteille, Faszination eines Hohlglases,* München 1998

Kunina, N., *Ancient Glass in the Hermitage Collection,* St. Petersburg 1997

Laghi, Anna, *Fragili trasparenze, vetri antichi in Toscana,* Arezzo 1994

Laméris, Anna, Laméris, Kitty, *Glasses and their Portraits, The Kees Schoonenberg Collection*, Frides Laméris Art and Antiques, Amsterdam 2014

Laméris, Anna, Laméris, Kitty, *Op ien kusjen aen weerszijen, The collection Engels de Lange,* Frides Laméris Glass and Antiques, Amsterdam 2015a

Laméris, Anna, Laméris, Kitty, *Passion for glass, The Van Beek collection,* Frides Laméris Glass and Antiques, Amsterdam 2015b

Laméris, Frides, Laméris, Kitty, *Venetiaans & Façon de Venise glas,* 1500-1700, Amsterdam 1991

Laméris, Kitty, *A collection of filigrana glass,* Frides Laméris Art and Antiques, Amsterdam 2012

Laméris, Kitty, 'Ribbed glasses', in: Anna Laméris en Kitty Laméris, *Passion for glass, The Van Beek collection,* Frides Laméris Glass and Antiques, Amsterdam 2015, p. 36-43
Laméris, Kitty, 'Talking canes', in: *Study days on Venetian Glass, Atti classe di scienze fisiche, matematiche e naturali,* Istituto Veneto di Scienze, Lettere ed Arti, Venezia 2018 p. 69-82
Laméris, Kitty, 'Het a rete staafje', in: *Gebruiksglas 2018* (to be published in november 2019)
Lanmon, Dwight P, *The Golden Age of English Glass, 1650-1775*, Suffolk 2011
Lefrancq, Janette, 'Pour un corpus des éléments moulés et estampés dans le verre à la façon de Venise: l'exemple des musées royaux d'art et d'histoire (Bruxelles' in: *Fontaine-Hodiamont, Chantal, D'Ennion au Val Saint-Lambert, Le verre soufflé-moulé,* Actes des 23e Rencontres de l'Association francaise pour l'archéologie du verre 2008, Brussels 2010, 375-390
Lhermite-King, Sylvie, *Cent verres Francais, 1550-1750, Trésors des collections privées*, Galerie à la façon de Venise, Paris 2008
Lhermite King, Sylvie, *Verres de la Renaissance,* Origines & Influences, Paris 2013
Made, van der, H, *Seventeenth Century beads from Holland*, volume XIV, Lancaster, 1978
Mariacher, Giovanni, *Vetri Italiani del rinascimento*, Milan 1963
Mathesius, Johann, *Die Predig von dem Glaßmachen*, Nürnberg 1564
McConnel, Andy, *The Decanter, Ancient to Modern,* Suffolk 2018
Neri, Antonio, *The Art of Glass, wherein are shown the Ways to Make and Colour Glass*, London 1662
Newton, R. G., 'Colouring Agents Used by Medieval Glassmakers', in: *Journal of the Society of Glass Technology* 19:3, 1978, p. 59-60
Page, Jutta-Annette, a.o., *Beyond Venice*, Corning 2004
Philippart, Jean-Paul, Mergenthaler, Markus, *Frénésie Vénitienne, Le verre espagnol du 16e au 18e siècle*, Le Grand Curtius, Liège, Dettelbach 2011
Pijzel-Dommisse, Jet a.o., *Glinsterend Glas*, Zwolle 2009
Rademacher, Franz, *Die Deutschen Gläser des Mittelalters*, 1963, p. 30
Ritsema van Eck, P.C., Early wheelengravings in the Northern Netherlands, *Journal of Glass Studies* 26, 1984, p. 86-101
Ritsema van Eck, P. C. a.o., *Glass in the Rijksmuseum,* Zwolle 1993
Ritsema van Eck, P. C., *Glass in the Rijksmuseum*, Volume II, Zwolle 1995
Rodwell, Kirsty, Bell, Robert, Acton Court, *The evolution of an early Tudor courtier's house*, London 2004
Rochebrune, Marie-Laure de, 'Venetian and Façon de Venise Glass in France in the 16th and 17th Centuries', in: *Beyond Venice, Glass in Venetian Style 1500-1750*, Corning 2004
Rochebrune, Marie-Laure de, 'À propos de quelques pièces de verrerie et de faïence, découvertes en 2014 dans la fosse d'aisances du troisième pavillon du Levant, à Marly', in: *Bulletin du Centre de recherche du château de Versailles*, On line since 2017, consulted first of May 2019. URL: http://journals.openedition.org/crcv/14129
Rosenberg, Pierre, *Verres d'usage et d'apparat de la Renaissance au XIXe siècle, La collection du Mesnil au Musée des Arts décoratifs,* Bordeaux 2013
Schadee, N. I., *Met rad en diamant, gegraveerde glazen uit Rotterdamse collecties,* Historisch Museum der Stad Rotterdam Rotterdam 1989
Schaich, Dieter and Baumgartner, Erwin, *Reine Formsache, Deutsches Formglas 15. bis 19. Jahrhundert, Sammlung Birgit und Dieter Schaich,* München 2007
Schaich, Dieter and Schaich, Birgit, *Glas des Alltags aus Küche, Keller, Kirche, Wirtshaus, Handwerk, Pharmazie und Alchemie, Formglas 15. Bis 19. Jahrhundert der Sammlung Birgit und Dieter Schaich,* München 2012

Schlosser, Ignaz, *Venezianer gläser, Österreichisches,* Museum für Angewandte Kunst, 1951
Schlosser, J., *Das alte Glass,* Braunschweig 1984
Sheppard, Cristopher R S, Smith, John P, *Engraved Glass, masterpieces from Holland,* Mallet & Son Ltd, Sheppard & Cooper Ltd, London 1990
Smit, F. G. A. M., *Line-engraved glass, A concise catalogue of European line-engraved glassware 1570-1900*, Peterborough 1994
Smith, Ray W., *Advances in Glass Technology Part 2*, New York 1963
Tait, Hugh, *The golden age of Venetian glass,* London 1979
Tarcsay, Kinga, *Frühneuzeitliche Glasproduktion in der Herrschaft Reichenau am Freiwald, Niederösterreich*, Vienna 2008
Theuerkauff-Liederwalt, Anna Elisabeth, 'Der Römer, Studien zu einer Glasform', in: *Journal of Glass Studies* 10, The Corning Museum of Glass, 1968, p. 114-155
Theuerkauff-Liederwald, Anna-Elisabeth, 'Der Römer, Studien zu einer Glasform', in: *Journal of Glass studies* 11, The Corning Museum of Glass, 1969, p. 43-69
Theuerkauff-Liederwald, Anna-Elisabeth, *Venezianisches Glas der Kunstsammlungen der Veste Coburg, Die Sammlung Herzog Alfreds von Sachsen-Coburg und Gotha (1844-1900), Venedig, À la façon de Venise, Spanien, Mitteleuropa*, Veste Coburg 1994
Turner, W. E. S., 'Studies in Ancient Glasses and Glassmaking Processes', in: *Journal of the society of Glass Technology,* 40, 1956
Valence, de, Christian, Ricke, Helmut, Baumgartner, Erwin, Geyssant, Jeannine, *Bernard Perrot, 1640-1709, Secrets et chefs-d'oevre des verreries royales d'Orléans*, Musée des beaux-arts d'Orléans, 2010
Vreeken, Hubert a.o., *Glas in het Amsterdams historisch museum*, Amsterdam 1998
Weinberg, D. G., 'A Medieval Mystery: Byzantine Glass Production', in: *J. Glass Studies XVII*, 1975, p. 127-141
Wettengl, Kurt, a.o., *Georg Flegel, Stilleben*, Stuttgart 1999
Whitehouse, David, *Roman Glass in the Corning Museum of Glass*, Volume I, Corning 1997
Whitehouse, David, *Roman glass in the Corning Museum of Glass,* Volume II, Corning 2001
Whitehouse, David, Gudenrath, William and Wedepohl, Karl Hans *Medieval Glass, for Popes, Princes, and Peasants,* exhibition catalogue The Corning Museum of Glass, Corning 2010
Willmott, H., 'The Classification and Mould Grouping of Lion Mask Stems from London', in: *Annales du 14e Congrès de l'Association Internationale pour l'Histoire du Verre, Italië, Venetië, Milaan 1998*, Lochem 2000, p. 389-394
Whitehouse, David, *Islamic glass in The Corning Museum of Glass, Volume Two,* Corning 2014
Zecchin, Luigi, *Vetro e Silicati* no. 58, 1966
Zecchin, Luigi, *Vetro e Silicati* no. 62, 1967a
Zecchin, Luigi, *Vetro e Silicati* no. 66, 1967b
Zecchin, Luigi, *Vetro e Silicati* no. 57, 1968
Zecchin, Luigi, 'Una fornace Muranese all'insegna della Sirena', in: *Vetro e vetrai di Murano*, *Studi sulla storia del vetro*. Volume 2, Venetië 1989
Zecchin, Luigi, 'Famiglie vetrarie famose: I Serena', in: *Vetro e vetrai di Murano, Studi sulla storia del vetro* Volume I, Venice 1987