

## ROYAL COPENHAGEN'S

### CERAMIC LEGACY

Lone Rahbek, *mag.art*

*(scroll down for a Danish version)*

Starlit Sky, Butterfly Wing, Clair de Lune, Agouti Gold, Oxblood, Sung and Fang – what a sparkling array of poetic names! It may come as a surprise that they are all names of stoneware glazes created over the past century by Royal Copenhagen. As a historic company it has a huge legacy of knowledge about the production of porcelain, faience and stoneware that makes it a world leader in the field. It has developed over a quarter-millennium during which ten generations of chemists, technicians, craftsmen and artists, often through lifelong activity at Royal Copenhagen, have contributed their outstanding scientific, professional or artistic skills – all with the aim of aspiring to new heights.

Royal Copenhagen has always made use of the way innovation can arise from encounters among a variety of human skills, with artists contributing to the process either as permanent staff or as guests. Many of them have stimulated the company's scientific and professional staff to produce new, fantastic results. Over the past few years Cathrine Raben Davidsen has been invited to work at the company and to use its legacy to create fine unique ceramic works.

However, the establishment of Royal Copenhagen in 1775 was based on the self-acquired knowledge of a single person. Prior to this the founder, the mineralogist Frantz Heinrich Müller, had conducted scientific experiments to rediscover the recipe for porcelain production. From his fantastic descriptions we know how he struggled with kaolin, feldspar, quartz and cobalt, which came untreated directly from nature to the factory. When Royal Copenhagen began to work in earnest at the beginning of the 20th century with the production of stoneware, it was also a single person who created not only a firing technique but a whole range of glazes. This time it was an artist, the ceramicist Patrick Nordström. He made his own decisions on forms, experimented for himself with glazes made of chemical substances which he received in unweighed form from the factory's laboratory, glazed his own pieces, and kept a close eye on the process during firing. Patrick Nordström took most

of his ideals for stoneware glazes from the French ceramicists' interpretations of Japanese glazes, and made his own unique stoneware objects of great beauty. When he retired from the factory he left not only a fine intuition for beautiful stoneware as part of the Royal Copenhagen legacy, but also the desire to experiment. Not least he left the glazes themselves, written down in a recipe book that was kept for many years in the factory director's safe, because it was considered essential to the company's history and its survival. Among his glazes is Oxblood from 1914. Cathrine Raben Davidsen has worked with Oxblood; not Nordström's original, but a new one – to which we will return.

After Patrick Nordström the factory's chemists took over the development of new glazes for a period. They went to work scientifically, used pure chemicals and wanted formulas for the glazes. First they tried to recreate ancient Chinese glaze types, and succeeded for example with Celadon and Claire de Lune. After that they wanted to create brand new glazes, and in the course of the 1930s Solfatara, Agouti Gold and Olivin were created; some of these became famous because they were used by artists associated with the factory such as Axel Salto. Celadon is one of the glazes Raben Davidsen has worked with. This is not the original version either, but a new one.

Among the many people who have later contributed to the creation of the Royal Copenhagen stoneware glazes, the ceramicist Nils Thorsson should be singled out. He went back to experimenting with the chemicals as they occur in nature, not as pure substances, and created among other glazes Butterfly Wing in 1952. Unlike Patrick Nordström, Thorsson experimented in collaboration with the company's laboratory, especially the chemist Leif Lautrup-Larsen, who himself created the Bear Glaze in 1960. From this, much later, the company's laboratory director, the chemist Peter Poulsen, developed a new glaze that was given the name Starlit Sky; this too has been used by Cathrine Raben Davidsen.

Many factors make important contributions to the final appearance of the chemical compounds as finished glazes; not only the reactions of the various compounds to one another, but also the grain sizes of the minerals, the thickness of the glaze layer and the firing temperature, the type of kiln, its source of energy and the position of the individual piece among the other things in the kiln. Because the chemicals react so sensitively, the modernization of the manufacturing process has consequences for the glazes. The most important change has been the transition from smaller, coal-burning, specialized kilns to large, gas-burning kilns. This began in 1987, when Royal Copenhagen's stoneware department had to close because of a declining demand for stoneware. In order to maintain a certain amount of stoneware production the factory chose to make it more efficient in future by firing stoneware in the large, gas-burning production kiln used for the factory's porcelain production; however, up to 2000 a single small coal-burning kiln was used by the ceramicist

Ivan Weiss. But this involved the great problem that all the factory's glazes had been created for firing in coal-burning kilns and could not be fired in the gas-burning production kiln. The company's chemist Peter Poulsen succeeded in creating new glazes that are quite different chemically from the old ones, and which have their own identity, but still appear so close to the originals that in everyday speech they are given the same names: Oxblood, Celadon etc. Peter Poulsen has also created a wide range of glazes with brand new appearances for gas-burning kilns, many of which have been used by artists associated with the factory, while hundreds have not yet been used.

Stoneware artists at Royal Copenhagen have had various aims with the appearance they want their ceramics to have. It is said that Patrick Nordström aimed at perfection, while artists from the 1950s on worked to achieve a rustic, informal look.

Cathrine Raben Davidsen wanted an exploratory approach. Royal Copenhagen's host for collaboration with artists has therefore given her the opportunity to work with all the elements in the process, from the choice of body mass through the form to the chemistry that creates the overall expression of the glaze. The works have been thrown by Bjarne Puggaard, who has contributed to the development of many new forms at Royal Copenhagen. Raben Davidsen has experimented with several of Peter Poulsen's glazes, such as Oxblood, Celadon and Starlit Sky, as well as a transparent glaze and some that only have recipe numbers. She has also used a range of the oxides which give them colours – and even 24-carat gold – which the factory's experienced glazer has looked out in the laboratory. As an artist Raben Davidsen has been interested in possible transformations, and found a challenge in the fact that the outcome of the working process was unknown to her; she has therefore not been content to give a piece a single glaze with a subsequent firing which, depending on the proportions in the process, has affected the result. She has experimented with mixing the glaze and oxides wet-on-wet and then having the piece fired, and with applying one layer of glaze or oxide at a time, and then after firing applying yet another layer of the factory's glaze chemicals, after which the piece has been fired again and has come out of the kiln with a new look. One could almost say that Raben Davidsen has used her forms as three-dimensional canvases and painted on them with glazes and oxides, and fired them – as many as four times – to get appearances with which she was satisfied.

The result is not just fascinating, beautiful and mysterious works; they are also interesting because, thanks to the experimental approach, they bring new expression to the factory's great heritage of ceramic production.

## ROYAL COPENHAGENS

### KERAMISKE ARV

Lone Rahbek, *mag.art*

StjernehimmeL, Sommerfuglevinge, Clair de Lune, Guldharepels, Okseblod, Sung og Fang - hvilken perlerække af poetiske ord! Det vil nok overraske mange, at de alle er navne på stentøjsglasurer, som gennem de sidste hundrede år er skabt af Royal Copenhagen. Som en gammel virksomhed rummer den en gigantisk arv af viden om fremstilling af porcelæn, fajance og stentøj, som anses for førende i verden. Den er udviklet hen over det kvarte årtusinde, hvor 10 generationer af kemikere, teknikere, håndværkere og kunstner gennem deres ofte livslange virke i Royal Copenhagen har bidraget med deres ypperste videnskabelige, faglige eller kunstneriske færdigheder - alle med det formål at kunne nå nye højder.

At nyskabelse ofte sker i mødet mellem forskellige menneskelige færdigheder, og at kunstnere kan bidrage til processen, har Royal Copenhagen altid benyttet sig af ved at knytte anerkendte kunstnere til sig enten fast eller som gæster. Mange af dem har stimuleret virksomhedens videnskabelige og faglige medarbejdere til at frembringe nye fantastiske resultater. Cathrine Raben Davidsen er gennem de senere år inviteret til at arbejde i virksomheden og bruge af dens arv til at skabe fornemme keramiske værker.

Royal Copenhagens etablering i 1775 hvilede dog udelukkende på én persons selverhvervede viden, for forud havde grundlæggeren, mineralog Frantz Heinrich Müller, gennem videnskabelige eksperimenter fundet opskriften på porcelænsfremstilling. Fra hans fantastiske beskrivelser ved vi, hvordan han bøvlede med kaolin, feldspat, kvarts og kobolt, som kom helt ubehandlet direkte fra naturen til fabrikken. Da Royal Copenhagen i begyndelsen af det 20. århundrede for alvor begyndte at arbejde med stentøjsfremstilling, var det også en enkelt person, der skabte ikke bare en brændingsteknik, men også et stort register af glasurer. Denne gang var der tale om en kunstner, nemlig keramikeren Patrick Nordström. Han bestemte selv sine former, eksperimenterede selv med sine glasurer af kemiske stoffer, som han fik uafvejnet fra fabrikkens laboratorium, glaserede selv sine ting og holdt selv et godt øje med processen under brændingen. Patrick Nordström havde sine idealer for stentøjsglasur fra franske keramikeres fortolkninger af især japansk stentøjsglasurer, og han fik selv skabt unika stentøj af stor skønhed. Da han holdt op på fabrikken, efterlod han ikke bare en god

intuition for smukt stentøj i Royal Copenhagens arvemasse, men også lysten til at eksperimentere og ikke mindst sine glasurer nedfældet i en receptbog, som i mange år blev opbevaret i fabriksdirektørens pengeskab, fordi de ansås for væsentlige for virksomhedens historie og overlevelse. Blandt hans glasurer er Okseblod fra 1914. Cathrine Raben Davidsen har arbejdet med Okseblod; der er dog ikke tale Nordströms, men om en ny, hvilket vi vender tilbage til.

Efter Patrick Nordström overtog fabrikkens kemikere i en periode udviklingen af nye glasurer. De gik videnskabeligt til værks, anvendte rene kemiske stoffer og ville have glasurerne på formel. Først stræbte de efter at genskabe Kinas gamle glasurtyper og lykkedes bl.a. med Celadon samt Claire de Lune. Derefter ville de skabe helt nye glasurer, og i løbet af 1930'erne fødtes Solfatara, Guldharepels og Olivin – hvoraf nogle blev kendte, fordi de anvendtes af fabrikkens kunstnere som f. eks. Axel Salto. Celadon er en af de glasurer, Raben Davidsen har arbejdet med; også den er ikke den oprindelige, men en ny.

Blandt de mange, der siden har været med til at skabe Royal Copenhagens stentøjsglasurer, bør keramikeren Nils Thorsson fremhæves. Han gik tilbage til at eksperimentere med kemikalierne, som de er i naturen og ikke som rene stoffer, og skabte bl.a. Sommerfuglevinge i 1952. I modsætning til Patrick Nordström eksperimenterede Thorsson i samarbejde med virksomhedens laboratorium, især kemikeren Leif Lautrup-Larsen, der i øvrigt selv skabte Bjørneglasur i 1960. Udaf den udvikler fabrikkens laboratoriechef kemiker Peter Poulsen langt senere en ny glasur, som får navnet Stjernehimme; også den har Cathrine Raben Davidsen anvendt.

Mange faktorer har betydning for, hvordan de kemiske stoffer til slut fremstår som færdig glasur. Det gælder ikke alene de forskellige stoffers reaktioner på hinanden, men også mineralernes kornstørrelse, tykkelsen på glasurlaget og temperaturen ved brændingen, ligesom typen af ovn, dens energikilde og det enkelte emnes placering blandt de andre ting i ovnen. Fordi de kemiske stoffer reagerer så fintfølede, får modernisering af fremstillingsprocessen konsekvenser for glasurerne. Den væsentligste forandring har været overgangen fra kulfyrede og mindre specialovne til store, gasfyrede ovne. Den begynder i 1987, hvor Royal Copenhagens stentøjsafdeling må lukke på grund af dalende efterspørgsel på stentøj. For at kunne opretholde en vis stentøjsfremstilling vælger fabrikken at effektivisere ved fremover at brænde stentøj i den store, gasfyrede produktionsovn anvendt til fabrikkens porcelænsfremstilling; dog holder man frem til år 2000 gang i en enkelt, lille kulfyret ovn brugt af keramikeren Ivan Weiss. Det indebar imidlertid det kæmpe problem, at alle fabrikkens glasurer var skabt til brænding i kulovn og ikke kunne brændes i den gasfyrede produktionsovn. Det lykkedes fabrikkens kemiker Peter Poulsen at skabe nye glasurer, som kemisk er helt anderledes end de gamle, og som har deres egen identitet, men

alligevel fremstår så tæt på de originale, at de i daglige tale hedder det samme: Okseblod, Celadon osv. Peter Poulsen har også skabt et stort sortiment af glasurer til gasovn med helt nye udtryk; mange af dem har været anvendt af kunstnere tilknyttet fabrikken, mens hundredvis endnu ikke er taget i brug.

Stentøjskunstnere på Royal Copenhagen har haft forskellige mål med det udtryk, deres keramik skulle have. Det siges, at Patrick Nordström tilstræbte perfektion, mens kunstnere fra 1950'erne og frem arbejdede mod at opnå et rustikt og uhøjtideligt udtryk.

Cathrine Raben Davidsen har ønsket en undersøgende tilgang. Royal Copenhagenes vært for kunstnersamarbejde har derfor givet hende mulighed for at arbejde med alle elementer i processen fra valg af masse, over form til den kemi, der danner det samlede glasurudtryk. Værkerne er drejet af Bjarne Puggaard, der har medvirket i udvikling af mange nye former hos Royal Copenhagen. Raben Davidsen har eksperimenteret med flere af Peter Poulsens glasurer som f.eks. Okseblod, Celadon, Stjernehimel, klar glasur og også med nogle, der blot har receptnumre; desuden har hun anvendt en række oxider – som bibringer farve - og guld. Det er alt sammen blevet fundet frem fra laboratoriet af fabrikkens erfarne glaserer. Raben Davidsen har som kunstner udforsket de glasurer og oxider, hun har brugt; hun har været optaget af den mulige transformation og fundet udfordring i det, at arbejdsprocessens facit var ukendt. Hun har ikke ladet sig nøje med at påføre et emne én glasur med efterfølgende brænding, men har eksperimenteret både med at blande glasur og oxider vådt i vådt og derefter fået emnet brændt og med at lægge ét lag glasur eller oxyd ad gangen for så efter brændingen at lægge endnu et lag af de samme eller andre af fabrikkens glasurkemikalier ovenpå, hvorefter emnet atter er blevet brændt og kommet ud af ovnen med et nyt udtryk. Man kan næsten tale om, at Raben Davidsen har anvendt sine former som tredimensionelle lærreder og malet på dem med glasurer og oxyder og dernæst brændt dem – helt op til fire gange - for at nå udtryk, hun var tilfreds med.

Resultatet er ikke bare fascinerende, smukke og mystiske værker. De er også interessante, fordi de qua den eksperimenterende tilgang bringer nye udtryk ind i fabrikkens store arvemasse om keramisk fremstilling.