VICTOR ARWAS

GLASS

ART NOUVEAU TO ART DECO

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VICTOR ARWAS

'A major contribution about the most fascinating period of innovative glass-making.'

Geoffrey Beard
THE TIMES LITERARY SUPPLEMENT

'All are presented with the right mixture of fact and opinion; and Mr. Arwas has added an introduction which puts us further in his debt . . . 19th-century glass needs a wise advocate; here it has one.'

Beryl Platts
COUNTRY LIFE

'. . . this is an excellent source for collectors.'

Rita Reif
NEW YORK TIMES

'The book gives a sympathetic impression, it is well and fluently written, and with obvious pleasure and interest in the subject.'

Ada Polak
THE CONNOISSEUR

The development of cameo carving in England heralded an international golden age of glass. Craftsmen, designers and artists vied with each other to create new and beautiful forms and colours, researching new and complex techniques, developing rare skills and achieving extraordinary effects. Art Nouveau and Symbolism provided the artistic foundations for such creators as Gallé, the Daum brothers, Tiffany and Loetz to produce consistently new and exciting wares. As artistic movements changed Art Deco and Functionalism succeeded as the stylistic vehicles for many new creators.

This book is the first to collect and evaluate the considerable amount of valuable research previously carried out on the glass producers of the period. All available information on the most important and a large number of lesser known but interesting glassworkers is here carefully weighed and presented, from the English cameo artists of the mid-nineteenth century to those glass designers and glasshouses of France, Belgium, the Netherlands, Bohemia, Germany, Austria, Italy, Sweden, the United States and Russia still producing at the outbreak of war in 1939. Wherever individuals or firms survived the war their story has been brought up to date. The historical background and development of each designer and firm is followed by a description of their styles and techniques and an evaluation of their achievement, all profusely

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RIZZOLI

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I am particularly grateful to Messrs. Jacques Daum and Pierre de Cherisey-Daum for the following corrections concerning the Daum firm: p52: Jean Daum (1885-1916) was not a cousin, but Auguste Daum's eldest son. He was killed in 1916 during the First World War. After the war Antonin remained Manager, aided by Jean's two surviving sons, Paul (1888-1944) and Henri (1889-1965) and his own son Michel, born in 1900; p56: the Daum glassworks were reopened in 1946 under the control of Henri (administrative matters) and Michel Daum (artistic director), aided by Antoine Froissart (1921-1971) son of Michel's sister Antoinette (technician) and by Jacques Daum (b. 1909), son of Jean (commercial director). Henri retired in 1960, and was succeeded as President by Jacques who in turn retired in 1976, to be succeeded by Pierre de Cherisey-Daum (b. 1936), son of Michel's younger sister Françoise; p.61: the production of pâte-de-verre was revived by Jacques Daum, not Michel; p.21: Pierre D'Avesn (not Paul) worked for René Lalique before the First World War, later working for several glassworks, including Daum, before setting up on his own; p.194: Charles Schneider worked full time for Daum until 1909. He never worked for Gallé. I am grateful to Mrs. E. Hickman for the following information: p.36: the City Glassworks, Glasgow (James Couper & Sons) was taken over by W. H. Richardson, eldest son of Benjamin Richardson of the Wordsley Glassworks, and remained in the family until 1922 when Mrs. Hickman's father, H. E. Richardson, sold it.

FOR MY PARENTS

Front cover
Gallé – Massive mould-blown symbolist vase with polychrome internal decoration, *c.*1899. (Collection Musée des Arts Décoratifs. Photo Sully Jaulmes)

Frontispiece
Lalique – *Suzanne Au Bain,* stained opalescent moulded glass figurine (Model No. 833) figure 22.5 cm 1920. (Editions Graphiques, London)

Title page illustration
The Glassblower. (19th century engraving)

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INTRODUCTION

1. Glass

Glass is the end-product of the fusion of siliceous matter, such as powdered flint or fine sand with an alkali, salt or metallic oxide. The type and proportions of its constituent ingredients give the glass its properties: colour or lack of it; transparency, translucency or opacity; clarity or distortion of light; and so on. Pliny attributes the discovery of glass to some Phoenician sailors who had taken refuge on the coast of Syria. Lighting a fire on the sand, they rested their kettles on lumps of natron with which their ship was laden. Sand, natron, fire were present: in the ashes they found pieces of glass. Whatever the romance of this tale, the Assyrians, the Syrians, the Egyptians all knew and worked with glass, as did the Hebrews, the Greeks, the Romans. Each people discovered their own mixing formulae, each wrought their glass differently. None kept records of their experiments of trial and error.

The nineteenth century was an age of scientific exploration. For the first time ancient artifacts could be analysed and their constituent ingredients positively identified. In glass, as in so many other fields, this brought about an explosion of experimentation. Allied with the increasing wealth of the bourgeoisie, who provided an expanding market, glasshouses produced more and more extravagant confections. These were made possible by the increasingly powerful and stable furnaces which were developed, as well as the continuing researches of chemists and glassworkers.

Over the centuries glasshouses had tended to congregate in centres where the essential basic ingredients were available: wood for the furnaces, fine sand or flint, natron or other salts. In Europe Bohemia and Lorraine became renowned glassmaking centres. The glassworking families became an aristocracy among artisans. When times were bad for their trade, they travelled to other countries and were welcomed as masters of their trade. In Great Britain the great glassmaking area of Stourbridge was developed by glassworkers from Lorraine as well as some Bohemian artisans. Their techniques were admired and imitated wherever glass was made.

Glass production throughout the nineteenth century was enormously inventive in technique but the end product was frequently overwrought. The emergence of individual creative artists, particularly in the second half of the century, led to the brief Art Nouveau movement in glass and to Art Deco, Functionalist and contemporary glass.

The revival of cameo glass began in England in the 1870s with the pioneer work of John Northwood, inspired by Benjamin Richardson. The rare, early cameo vases executed by Northwood, Joseph Locke, Lechevrel, whose every facet was painstakingly carved with miniature tools made by the artists themselves soon gave way to the products of a second generation of cameo-carvers, led by the Woodall brothers. These artists used hydrofluoric acid to block out their designs, and cutting wheels of various diameters on a treadle-operated lathe to carve the details. The Webb and Stevens & Williams glasshouses produced a vast quantity of such cameo glass but, faced with an increasing demand for it, soon began to produce cheaper versions of cameo glass which were,

in turn, threatened by pseudo-cameo glass (in which an enamelled design was placed on a glass vessel to simulate the look of cameo) imported mainly from Bohemia. The Powell glasshouse of Whitefriars executed glasses designed by Phillip Webb which prefigured twentieth century functionalism.

In France the great creative glassmakers congregated mainly around two centres, Paris and Nancy. In Paris Rousseau, with his craftsmen Michel and Reyen and his successor Léveillé formed one aspect of the great surge that was to bring French fin-de-siècle glass to a peak of creative and original craftsmanship. At Nancy Emile Gallé created and forged a style and techniques that were to be admired and imitated by glasshouses from Bohemia and Germany to France, Scandinavia and the United States.

Shifting political frontiers changed the nationality of several glasshouses. The defeat of the French First Empire created by Napoleon Bonaparte took the Vonêche glassworks out of France and into the new Kingdom of the Netherlands. The split of that Kingdom into Holland and Belgium took Vonêche into the even newer Kingdom of Belgium, where it was soon succeeded by the Val Saint-Lambert glassworks. The defeat in 1870 of the French Second Empire created by Napoleon III meant the loss of the province of Alsace and the North East of Lorraine to the new Germany uniting under Prussia. Glasshouses like Baccarat remained in France, while others like Saint-Louis, d'Argental and Burgun & Schverer found themselves in German-held territory. Nancy remained French. The Daum family, refugees from the German advance, moved to Nancy and there got involved with glassmaking. The Armistice of 1918 which followed the defeat of the Central Powers returned Alsace-Lorraine to France. It also signalled the break up of the Austro-Hungarian Empire. Bohemia, once an independent Kingdom and under Habsburg rule since 1526, was incorporated into the new republic of Czechoslovakia, and separated from its previous trade connections with the now shrunken Austria. The number of glassworks in Bohemia was enormous, the owners interconnected by marriage and inheritance, rival firms opening and disappearing at frequent intervals. Guillaume Janneau, writing in 1931, indicated that there were, in Czechoslovakia, 146 glassworks, 29 glassworks supplying the glass, 4000 factories and home workshops carrying out glass decoration. These employed 30,000 glass-blowers, as many glassworkers, and 90,000 glass decorators. Faced with such competition, the glasshouses clearly led the way in producing whatever fashions dictated. Changing women's fashions were a boon: 'the amazing variety of bracelets, necklaces, handbags and pochettes in coloured glass beads . . . Feathers and other ornaments are also made of bright supple threads of drawn glass . . . curtains and blinds charmingly decorated with cut-glass beads in softly gleaming patterns.' Janneau found that in the Bohemian province of Jablonec (formerly Gablonz) alone 80 factories and 4000 workmen were engaged in making beads, while 50 factories and 6000 men were engaged in making glass bangles and buckles.

Iridescent glass was used frequently by such firms as Pantin in France and Lobmeyr in Austria. It was also made by Webb in England. But it was not until Tiffany in the United States and Loetz in Bohemia began to work with iridescent glass that its extraordinary decorative possibilities were truly developed. Loetz and Tiffany influenced and, indeed, copied each other's ideas and soon inspired a spate of similar products throughout Bohemia, Germany and the United States.

Venetian glass forms a curious parenthesis to the Art Nouveau and Art Deco style in glass. The island of Murano has, for centuries, been devoted to glassmaking, and glassworker families have formed a continuing link with the past. The characteristic technique involved blowing the glass 'at the lamp', which consisted of an oil lamp with bellows. This technique led to the production of innumerable little glass 'details', knops, twists, curlicues and other

Gaffer putting the finishing touches to a glass vase still fixed to the punty, *c*1910. (Contemporary photograph)

decorative blobs which eventually overwhelmed every piece produced, to the great delight of the tourists to Venice who were the main purchasers of these objects. Original inventions and techniques of the Venetians, such as vetro di trina, latticino, and so on were soon used by glasshouses all over the world, while Venetian glass itself had, by the middle of the nineteenth century, degenerated into a mere tourist industry. In the 1870s Antonio Salviati attempted to revive Venetian glass by simplification and a return to the shapes and styles of the sixteenth century. In the early twentieth century brave individual attempts were made by such artists as Zecchin, Wolf Ferrari, and Stoltenberg-Lerche to create new decorative glass, but it was not until Ercole Barovier and Paolo Venini came on the scene in the 1920s that Venetian glass really took on a creative individuality. While very much in the Art Deco movement, their glass of the 1920s and 1930s has an unmistakeable look of its own.

The floral aspect of Art Nouveau manifested itself in a variety of ways. In Gallé and Daum it is mainly on the surface, flower designs carved and etched on the outer surface of the glass. Sometimes the vessel itself is given a floral look, Gallé forming vases in the shape of open calyx, body, onion and roots in a stylised ensemble, still with the surface decorated in cameo. Daum produced certain lamps with wrought metal bases in the shape of highly stylised plant tendrils executed by Majorelle, on which naturalistic open flowerheads of glass form the lamp shades. Tiffany went a step further, producing a range of floral-form vases in which a slender glass stem leads to an abstract flower-inspired vase, either in plain iridescent blue or gold glass or else decorated with combed or leafy patterns. The final step was taken by Karl Koepping and his aide and later rival Zitzmann. Here the vessel is totally impractical, a long thin stem joining bowl to foot and framed by twisted glass leaves. The floral decorative effect is all.

Glass in the various Art Nouveau styles and techniques went on being made into the 1930s. Much of the later cameo glass was purely derivative and repetitive. Most of the creative designs and techniques employed at the Gallé glassworks were abandoned within four or five years of Emile Gallé's death in 1904 in favour of an almost mass-produced industrial production. The majority of other glasshouses producing cameo glass in the second and third decades of the century followed suit. Glasshouses such as Daum succeeded in changing and adapting their styles and techniques to the requirements of changing tastes without producing purely industrial cameo glass for too long. One honourable exception to the general trend was the Schneider glassworks, which succeeded in adapting industrial techniques to an original series of stylised cameo designs in their Le Verre Français range.

All the complex strands of Japonism, Symbolism, historicism, crafts revivalism, which went into the weaving of Art Nouveau decorative art was being challenged as early as 1904 by the emergence of the new Wiener Secession style and a widespread search for more simplicity of line and a rejection of organic forms in favour of geometrism. Synthetic Cubism was to have strange offsprings in the decorative arts.

Three separate movements were now to emerge in art glass. The first, and most influential, was to be inspired by René Lalique. Perhaps the finest Art Nouveau jeweller, Lalique was to turn to the creation of decorative glass in moulded patterns: Sabino, Etling, Hunebelle, Genet & Michon, Cazaux, Jobling and thousands of other glasshouses throughout Europe and the United States were to turn out 'Lalique-type' glass in the 1920s and 1930s. These were models capable of mass-production, and requiring the resources of a major glasshouse for their full exploitation.

The second, inspired by Maurice Marinot, consisted of individual, furnace-worked and highly wrought vessels. One man, helped by one or at most two assistants, conceived and executed the piece. Jean Sala, Henri Navarre, André

Decorator carving a vase using a wheel operated by a treadle at the Baccarat glassworks, c1910. (Contemporary photograph)

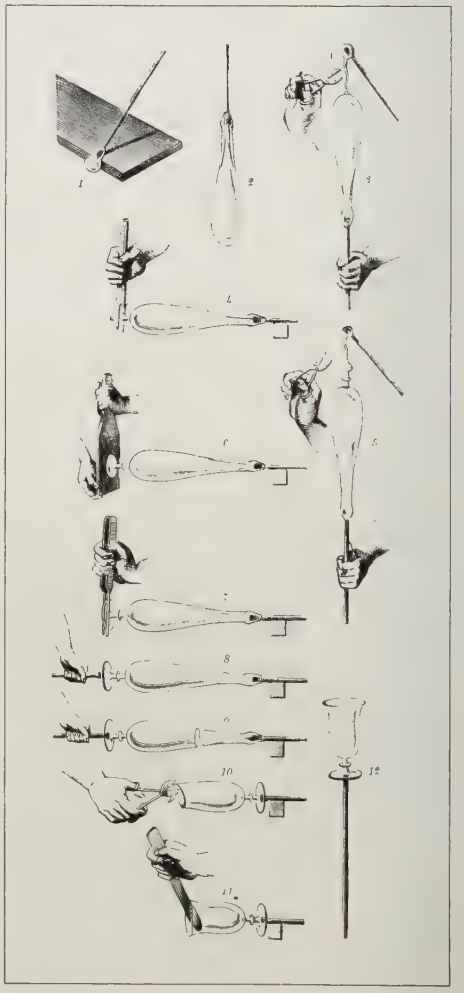
Thuret, were such individuals. A number of commercial glasshouses, notably Daum and Schneider, produced vessels inspired by Marinot's designs and techniques.

The third was a cross between industrial glasshouse and individual creator: the Scandinavian system exemplified by Orrefors, Kosta, and other firms. Dr. Gregor Paulsson, writing on 'Design and Mass Production', has described it thus: 'In order to convince the manufacturers of the importance of artistic quality in their products, we had to consider the economic basis of production. We insisted that the competition by means of low price and low quality should be regarded as an infantile stage of industrialism. It is not enough to bring the artist and manufacturer together: both parties must accommodate themselves to new conditions. The manufacturer must depart from his usual custom; he must give the artist a place in the schedule of his production. It is not enough to buy patterns; they are of no use by themselves, rather they do harm. The artist must be in the factory, and not as a hand but as a staff officer. He must have responsibility, and he must have freedom. He cannot make designs for three hundred and sixty-five days of the year, he must have leisure for inspiration. Most of our factories, therefore, require the artists to work only half the time.

'In the second place, the manufacturer must have patience. The first year's work is never good; the designs on paper may be so, but not the products. It is only when the artist has become accustomed to the technique, the materials, and other conditions that the products are good.

'In the third place, the right artist must be secured, and I shall now try to indicate the most important points of our policy in this respect. As a rule we do not employ the students of the arts and crafts schools as leading artists in factories. We have found that only in a few cases have they sufficient capacity. The place of the great mass of the students of arts and crafts schools is as assistant-designers to the artists, as factory foremen, or as skilled artisans for special work. The creation of new models is so important that only the very best men should be permitted to make them. So, instead of using the average designer to do this work, we try for the best artists that we can get: painters, sculptors, and architects. It is not, of course, an easy task to find an artist of high genius who is willing to change his work. Most artists are people who have studios and starve. But they have freedom, and they believe they are geniuses, and to go into a factory seems a humiliation. One must look, therefore, to the young intelligent artists with a progressive spirit and unsophisticated minds. I always feel that the most important and responsible part of our work is to put the right artists in touch with the manufacturers. When a manufacturer comes to us asking for an artist, we always take plenty of time to make our choice. We first draw up a programme of work with the manufacturer and then with the artist, not only for a season but for a series of years, and then, after all these preliminaries, the two men are brought together. It may seem to you that this is a very elaborate process, but one mistake spoils two successes, and, as I have said, I look upon the artist as a kind of executive officer, and one must, therefore, find two men who can co-operate, and then find the basis for that co-operation. The essentials are a cultivated manufacturer and an intelligent artist working together, and not the one ordering and the other delivering a specified number of designs. This is the crucial point of the co-operation of artist and manufacturer, and the only way to success.' It is unfortunate that so few other glasshouses throughout the world followed the Swedish lead. In Britain, only Stevens & Williams did to any extent, employing the talents of Keith Murray. In the United States, Steuben has, since the 1930s, consistently commissioned individual designs, while simultaneously fostering its own design group. In France Daum has recently commissioned a few designs from artists in other fields.

Twelve stages in the production of a stemmed vase. (19th century engraving)



Heading for the 1909 Nancy Exhibition drawn by Henri Bergé, designer for Daum and Walker. The circular medallion was drawn by Victor Prouvé.

2. The Glasshouse

The basic glasshouse employed three furnaces. The first was a calcar or fritting furnace. This was an oven with the heat reflected from its roof, and was used to start the chemical union of the basic ingredients of the silica (sand, flint, etc.), potash and metallic oxides. The temperature was kept low enough for the mixture to calcine, but not fuse.

The process was continued in the working furnace. This was generally of circular or rectangular form with a domed top terminating in a chimney, though pairs of furnaces were often used, connected to the common chimney. Within this furnace, placed all around the walls and equidistant from each other were vast pots. Made by hand of the purest clay, generally mixed with the powder of old pots, they were allowed about a year to dry out before being subjected to gradually increasing heat until reaching the temperature of the working furnace, after which it was ready for use. The insertion of a new pot into the furnace required knocking a hole into the side of the furnace, after which the side was again bricked up, leaving only an opening through which the pot could be reached. Each pot in the furnace was provided with its opening in the furnace wall so that several teams of glass workers would operate, each out of a separate opening. Additional openings, called 'glory holes', were used for inserting a glass vessel during its making in order to reheat it. It was in these pots that the frit (or 'batch'), mixed with some broken glass (called 'cullet'), was fused and became a viscous mass which needed to be mixed until fully refined, as otherwise it became a bubbled, rough-looking product called 'malfin' glass. (Jean Sala and his father Dominique used malfin glass to exploit these very effects.) The firing of the glass took place at a very high temperature, generally over 1300°C, which was maintained throughout the period in which it was worked. The process of making the glass was often carried out in a single furnace, moving the mixture through three pots, one for fusing, a second for refining, and a third used as a working pot while the first two were being refilled to make more glass.

The molten glass was now ready to be used by the glassworking team (or 'Chair'). Each member had his allotted task. The time taken for this task was dependent on the complexity of his task and the nature of the glass he worked with. Each member had to co-ordinate the time of starting, executing and ending his task with the other members, so that each step in the making of the vessel proceeded in its proper order and its correct pace. The task, and the order in which it was taken, varied of course from glasshouse to glasshouse, from team to team and from vessel to vessel.

Taking a stemmed vase as an example, the glassblower would start the process. The first step involved gathering some of the viscous glass onto the end of a blow-iron. This was a long, hollow iron tube, about five feet long (1·6 m approx. in France, where it is called a 'canne' or cane), one end shaped for blowing and the other widened to provide a better surface on which to

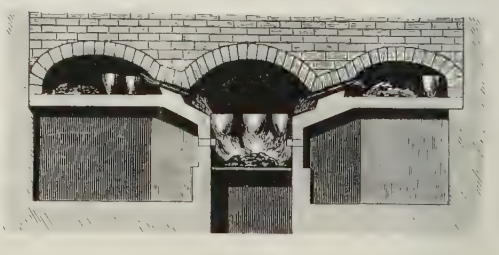
collect the glass. The gathering of the glass was made by the glassblower himself or by an apprentice, though in French glasshouses it was frequently begun by a young lad who dipped the iron into the pot then handed it over to a somewhat older boy who rotated it in order to pick up the glass, then handed it to the glassblower. The latter then carried the iron over to a slab of cast-iron, looking rather like a table-top, known as a marver (from the French 'marbre', or marble). The glassblower would then roll the mass of soft and malleable glass on the end of his iron onto the marver to smooth it, then blow down the iron into the mass of the glass, thus blowing it out like a balloon. By holding the iron vertically with the glass downwards, the parison (or glass mass) could be lengthened by the action of its own weight. (A short worker would stand on a stool, or platform.) The shaping was done by alternately blowing and smoothing on the marver while using shaped tools to pinch, waist or depress. The glassblower could have additional control by moving the iron in a side-to-side pendulum movement or revolving it around his head. The parison could also be reheated when necessary at a 'glory hole'.

Having completed his task, the glassblower then handed the iron over to the next member of the team, known in England as the servitor, or server, who added a lump of soft glass to the end of the blown bulb. Heating it in a glory hole to obtain perfect adhesion, the lump was then pulled out to form the stem, shaped as necessary with a pair of tongs. Another lump of glass was then added to the tip, reheated, then shaped into a foot by pushing the end onto a flat board, then shaping the foot with wide wooden 'tweezers' with flat ends.

The gaffer, or leader of the team, then took over. A punty, or pontil, was attached to the base of the foot using a small blob of glass for adhesion. This was a solid iron rod, about as long as a blow-iron, but thinner. The bulb was removed from the blowing iron by touching it at its desired size all around the circumference with a wet piece of iron. Tapping the blow-iron then caused the bulb to snap at the moistened line. The footed vessel was now attached to the pontil and ready for final attention. The gaffer would now sit at his 'chair', a type of bench provided with two parallel wooden arms or metal rails across which the pontil could be constantly rolled back and forth (so that the weight of the still-malleable glass vessel would not distort its shape if stationary) and use shears, tongs, and various shaped instruments to cut away any surplus glass, and give final form and smoothness to the vessel. The finished vessel was then removed from the pontil by giving the rod a sharp blow. This left a rough surface in the centre of the base of the vessel known as the pontil-mark. Certain glasshouses, such as Loetz in Austria, made a practice of always polishing away this roughness, thus leaving a characteristic smooth, polished circular depression in the base.

The final basic manufacturing process was the annealing of the vessel, and was carried out in the third furnace. During its various stages of manufacture, the vessel had been heated, cooled and reheated. Different parts were at different temperatures: the surfaces, in contact with the outer atmosphere, were clearly cooler than the inside of the vessel. Cooler portions hardened, while the warmer portions remained softer. This unequal cooling and hardening process created unequal stresses which would inevitably cause the vessel to crack. The annealing process consisted of very gently reheating it so that the whole vessel was brought to the same temperature; then very gradually cooled over a period of hours, days or even weeks, depending on how complex, delicate or unstable it might be. The original annealing furnaces had to be gradually cooled by reducing the quantity of fuel until the fire was totally extinguished. These were later replaced by a long heated tunnel called a lehr in which the temperature was evenly diminished all the way down it. The vessels for annealing were placed on platforms guided by chains and pulleys,

Fritting furnace. (19th century engraving)



Interior view of a glassworks. (19th century engraving)

and led down the tunnel until cool. The platforms were later replaced by modern conveyor belts.

Once annealed, the vessels were ready for polishing, etching, engraving, carving, enamelling, or any other surface decoration. Any that were found faulty were usually smashed and added to the pile that provided the cullet for new glass. Semi-industrial processes frequently used included machines to blow the glass and moulds to shape the vessel. The latter could either have the glass blown into the mould, or else poured into a press-mould which shaped it inside and out.

The variety of furnaces employed was enormous. Glasshouses were originally sited close to the forests, where wood, used for fuelling the furnace, was plentiful. Wood was replaced in turn by coal and then gas, which provided far greater control. In 1806 Robert Stirling introduced the idea of a regenerative furnace for glass, but it was not until 1857, when Friedrich Siemens perfected such furnaces, that they became widespread: these involved regenerating waste heat. Throughout the main body of this text the word 'kiln' has been used to mean any type of furnace or oven.

3. Pâte-de-verre

In contrast to the fashioning of the vessel while in a hot and molten stage, which meant that only its shape could be adjusted in that state and only surface decoration possible after annealing, the fashioning of pâte-de-verre may be accomplished in its cold state. Pâte-de-verre, or glass paste, consisted of finely crushed glass crystals mixed with a binding agent (which could be water) to make a malleable paste, and metallic oxides to provide colour. The paste could be sculptured like clay, using portions of different colours if required, and

Annealing furnace. (19th century engraving)

shaped as relief plaques or vessels. Placed into refractory moulds and heated to a temperature such as to vitrify the paste without allowing its different constituent parts and colours to run together, the result was a type of glass that was coloured and decorated throughout the mass. A very slow cooling process was necessary.

First essayed in 1884 by Henri Cros, pâte-de-verre can produce a variety of contrasting aspects, variously called pâte d'émail, pâte-de-verre or pâte-de-cristal, and can be produced as a feather-light composition or a chunky, heavy material. Few glassmakers have, in fact, used pâte-de-verre, and their products are highly sought after. Gallé and Lalique never used this technique.

It should be pointed out that French texts, auction catalogues, and dealers are in the habit of referring to *all* Art Nouveau and Art Deco glass as 'pâte-de-verre'. As a result incautious writers in other languages have assumed that pâte-de-verre was executed by many more artists and glasshouses than was, in fact, the case. In the past two or three years, and under the influence of certain English and American experts and dealers, the French have reluctantly begun to abandon this practice.

4. Repairs and damaged items

As a general rule, a broken glass object cannot be satisfactorily repaired. Nevertheless, a number of tricks are employed to conceal or eliminate damage. Where a vessel is chipped on its foot, or rim, the chip may be removed using fine sandpaper, or on a lathe. In the case of a fairly large chip on a circular base, the whole base is shrunk by cutting it down, and smoothed. A chipped base bottom may be thinned. A chipped rim cut down, often quite low. Where the decoration reaches high to the rim, rims may be cut down to a curly or curved shape to retain as much of the decoration as possible. In some cases damaged vases are turned into bowls, boxes into ashtrays, missing stoppers replaced, inkwells turned into vases. Large missing chunks from opaque glass vessels may be replaced with a composition plug and decorated over to conceal the plug.

Glassworker's chair. (19th century engraving)

Care should be taken to differentiate between old and new repairs. Pâte-de-verre items in particular frequently suffered from large exploding bubbles, or cracks, and these were repaired at the time by sanding the bubble surround and pasting over the crack with more paste and refiring. Faults in cameo and iridescent glass were frequently masked by carving or engraving. New repairs, however skilfully executed, often clash with the natural elegance and correctness of shape or the style and techniques of the decoration.

Damaged or repaired items are not necessarily to be disdained. Any vessel by Marinot, Dammouse, Cros, E. Michel, and many others are so rare that anything by them is worth preserving. Gallé himself retained interesting vessels that had gone wrong in the making, and are often cracked, by marking them 'Étude'. Tiffany sold damaged vessels to museums and other institutions at half the price of perfect items. Judgement should be used in selection. Damaged vessels of industrial production are not worth bothering with. Finely produced vessels, examples of good carving or enamelling, are always worth collecting, even when damaged. It is frequently better to retain the damaged section untouched if masking or eliminating will essentially change the shape or the proportions of the vessel. It is worth remembering that few salerooms indicate damage or extent of damage in their catalogue descriptions. It is therefore essential to examine such goods carefully before buying, or ask an expert to examine them. French auctions are 'guaranteed' by an 'expert'. It is worth noting that only a tiny handful of these experts know anything about Art Nouveau and Art Deco glass. Their expertise, dependent on state recognition, may well be based on knowledge of 18th Century porcelain, Oriental carpets, or Impressionist paintings.

5. Fakes and Forgeries

The most common aspect of faking in glass is the addition or substitution of a signature. Since the great majority of Loetz glass was unsigned, and signed Loetz is more expensive than unsigned Loetz, much unsigned Loetz acquires fake signatures. Loetz signatures are, however, extremely difficult to copy successfully, and fakes are therefore fairly easy to identify. Some Tiffany glass and much American Tiffany-type of iridescent glass was also unsigned. When acquiring fake signatures, they are almost always given one of the variations of the Tiffany initials and stock number and these, usually executed in the United States, are not so easy to identify unless the glass is obviously not by Tiffany. The fakers' enthusiasm, however, frequently carries them to curious excesses. Fake Tiffany signatures have been found on much Loetz glass, as well as on almost every other type of European glass: one fine Gallé marquetry vase was seen in the United States with an added Tiffany signature. Unsigned Rousseau and Leveillé vases have tended to acquire not their own signatures, but that of Gallé. Fake signatures are also found on vases which, because they were chipped or otherwise damaged, have had part of their surface ground or carved away by a restorer and lost their original signature in the process. It is possible to have some of these fake signatures removed by a competent restorer, provided they are shallow enough and the glass reasonably thick. The process is, however, always somewhat hazardous. Provided it is not immediately visible, and most are on the base, they do no harm to the vase, and can be an amusing absurdity. Signatures added to the side of the vessel, especially signatures which are acid-etched in relief, do affect both the aesthetic and the monetary value.

The substitution of signatures is far worse. This is a not uncommon occurrence in France in particular. Fine wheel-carved vases by Muller have had their original signatures ground away and replaced with Daum or Gallé signatures. This particular substitution rarely occurs now that the price of Muller is comparable to that of Daum and Gallé. The commonest substitution

now is the removal of Le Verre Français-Charder signatures and their replacement with an acid-etched Gallé one. In some cases where the Le Verre Français vessel is signed only with the embedded striped cane the forger may merely add his 'Gallé', leaving the cane untouched. Since the fake Gallé signature is almost invariably acid-etched in cameo relief, Le Verre Français vessels are particularly easy because their normal design involves large areas of untouched surface in the outer cased layer. Thuret and Navarre vases have occasionally had their signatures replaced with that of Marinot. Marinot-inspired vases by Schneider in particular are sometimes found with a fake Marinot signature, but their comparative lack of massiveness and shallow decoration gives them away. Needless to say, fake Marinot signatures are not infrequent. Curiously enough they are sometimes found on authentic Marinot vases. One such bottle and stopper appeared because its owner, never having heard of Marinot, and thinking it was a perfumer's name, patiently ground out the name before selling it. It was soon recognised for what it was, and the Marinot name reappeared magically on its base. In this case, the addition of the signature is irrelevant: a fine vessel is a fine vessel. Another very common substitution is the removal of the signatures on Lalique-style glass and its replacement by a Lalique signature. Sabino and Etling glass are the ones most commonly affected because most similar to Lalique glass, but Lalique signatures have been found on such curiously inappropriate items as coloured Ludwig Moser glass.

Modern forged vessels are in a different category altogether. Foolish people have been repeating for years that modern fake Gallé vases have been made in Japan and are almost impossible to tell from original ones. This writer has certainly never come across any: the proposition is absurd to anyone aware of the high degree of competence and team-work necessary for the production of such vessels. This is not to say that a few years of experimentation could not, eventually, produce reasonably competent replicas of industrial cameo wares; merely that the expenditure of the necessary time, money and effort makes it unlikely.

More worrying is the production in Venice and in the United States of iridescent gold, blue and decorated Tiffany-type glass. Most of it so far has been significantly different in feel and weight from the original. Of course it is not produced as forgery, but as a novelty glass. The danger lies in the fact that it exists at all, where the unscrupulous may add a signature and attempt to sell it as original Tiffany.

It is easy enough to overworry about the problem of fakes. It is worth repeating that a discreet fake signature in no way affects the beauty or value of a vessel; a visible fake signature can deface the design. The best defence against acquiring a fake vessel is to purchase from a reputable dealer. Even if the fake vessel is so good that the dealer is taken in, any subsequent proof that there is something wrong with it will be sufficient for the dealer to take it back. Most Art Nouveau and Art Deco vases may be considered as multiple originals. A very few indeed were unique. In most cases a successful design was repeated, if not absolutely identically, then with only very slight variations. Gallé certainly produced four to six of each of his rarest models. Even solitary workers like Décorchement, Marinot, Navarre and Thuret produced several examples of each design, though generally varying some minor aspect of each. This multiplicity is frequently useful in enabling one to compare various examples and help to judge the correctness or otherwise of a vessel; not merely whether it is authentic or a forgery, but also whether it has been tampered with in some way by a skilful restorer.

THE DESIGNERS & MAKERS

APPERT FRÈRES

The brothers Adrien and Léon Appert ran one of the most successful glassworks in nineteenth century France, situated at 4 rue des Chasses, in Clichy, Paris. Technically very versatile, they manufactured opaline and cathedral glass, for both small objects and wall cladding as well as optical glass, laboratory glassware and reinforced glass. They also experimented extensively in the production of new colours and techniques in art glass. They designed and produced several, now very rare, display vases and bowls, as well as making all the early glass designed by François Eugène Rousseau. Even after Rousseau opened his own glass-making studio he continued to rely on the knowledge, experience and expertise of the Appert brothers as well as on their technical research facilities. Émile Gallé is known to have consulted them on occasion on technical matters. In addition to their own production, they executed vessels to order from various decorators, including some very elaborate cased blanks for the Pannier brothers. Léon Appert wrote several technical books dealing with glass in association with Jules Henrivaux.

ARGY-ROUSSEAU

Joseph-Gabriel Rousseau was born on March 17th, 1885, at Meslay-le Vidame, a small village in the Eure-et-Loire. His family were farm-workers, but his cleverness at primary school won him a scholarship which enabled him to complete secondary school. His particular subjects were chemistry, physics and art, so at the age of seventeen he entered the National High School for Ceramics at Sèvres. This was in September 1902. Henry Cros, who had rediscovered the technique of pâte-de-verre, had his workshop at the Sèvres factory. His son, Jean Cros, was a fellow student of Rousseau's at the School.

Rousseau graduated in 1906, and soon took over the direction of a small ceramics research laboratory. He was clearly fascinated from an early age with pâte-de-verre, and soon opened a small workshop of his own at 52 avenue des Ternes in Paris. While experimenting with the technique he also manufactured porcelain teeth in a small factory which was, after a few years, taken over by an American firm.

In 1913 Rousseau married Mariane Argyriades, the sister of a former schoolmate of his at Sèvres. Her father, Panagiotis Argyriades, was a leading lawyer of Greek origin. On his marriage, Rousseau adopted the first part of his wife's surname as part of his: he was henceforth to be known as Gabriel Argy-Rousseau. In 1914, he exhibited his first designs in pâte-de-verre at the Salon des Artistes Français.

At the outbreak of war in 1914 Argy-Rousseau joined up as a national defence engineer. He continued to design new models to be executed in pâte-de-verre, as well as carrying out scientific researches in other fields which enabled him to take out several original patents in 1917, including one for a high-capacity bi-polar electrode, and another for a light accumulator.

Argy-Rousseau's earliest pâte-de-verre models were decorated with fruits, flowers and leaves in the naturalistic style derived from Art Nouveau. In 1915 he introduced a model with large blue or purple butterflies which formed a formal frieze around the vessel. Classical masks from the Greek theatre were also introduced that year. As soon as the war ended he introduced new shapes, in particular the night-lights and perfume burners which were ideal for the display of the pâte-de-verre designs and colours.

In 1919 Argy-Rousseau also began to produce a range of scent bottles in clear or opal glass, enamelled with motifs of flowers, butterflies and figures of women. The enamel was thick and multi-coloured, the bottles occasionally unsigned, but usually signed in the enamel with the initials 'G.A.R.' or in full 'G. Argy-Rousseau'. These were made for a number of shops, but principally for that of Marcel Franck. Glass and pâte-de-verre were exhibited at the Salons, as well as at the Palais Galliéra exhibitions and at the Bernheim Gallery.

Gustave-Gaston Moser-Millot, who owned a major decorative arts gallery at 30 boulevard des Italiens in Paris soon went into partnership with Argy-Rousseau. A limited company, Les Pâtes-de-verre d'Argy-Rousseau, was formed on December 5th, 1921, with a capital of 200,000 Francs. Moser-Millot was both principal shareholder and Chairman, while Argy-Rousseau was Managing Director. A comfortable workshop was opened at 9 rue de Simplon, in which several dozen workers and decorators were employed, while all the new designs were on sale at the Moser-Millot gallery.

Financial freedom enabled Argy-Rousseau to devote his energies to initiating new and more daring designs. He

Argy-Rousseau – Mottled grey pâte-de-verre vase moulded with a floral frieze in mauve, black and red, 26 cm *c*1928. (Sotheby's Belgravia)

Argy-Rousseau – Purple moulded pâte-de-verre shade on a tree-shaped base in hammered wrought iron, 35 cm *c*1927. (Private Collection, London)

adopted increasingly geometric Art Deco patterns for some decorated sections, while using a curious simplified realism for others. He developed techniques for executing his wares in extremely thin-walled and translucent metal, with decorative motifs modelled in relief in medallions or in a continuous band or frieze around the vessel. He used a variety of floral and fruit patterns, archaic masks, insects, animals and human figures. The models most sought after by collectors are the animal designs (vases with lions, wolves, running deer); the human figures (the apple pickers, various nudes, the water-jug carrier which he named *Libation*), and the more colourful insect bowls and vases with butterflies or spiders. Colour is extremely important and varies from item to item of the same model, for although Argy-Rousseau developed a semi-industrial technique of using moulds which enabled the same model to be produced a number of times, the actual glass paste had to be mixed with its colour-producing oxides separately for each item and even minimal variations in mixing or firing could produce wide variations in finished colour. Some of the designs form continuous patterns, while others have the principal motif framed in a geometric pattern frequently resembling wrought iron.

Argy-Rousseau produced a wide range of decorative

Argy-Rousseau – Purple pâte-de-cristal box, the cover moulded with an ibex, 15 cm *c*1924. (Collection Félix Marcilhac, Paris)

and useful items, which included vases, bowls and complete lamps, lamp-shades, night-lights, perfume burners, ash-trays, book-ends, candlesticks, trays, inkwells, fountains and paper-weights. He also produced small decorative plaques with decorations of flowers, fruit, abstract designs, animals and insects to be worn as pendants and also for application to lamp-shades and furniture. These small plaques are usually signed 'G.A.R.' in the mould.

In 1925 Argy-Rousseau introduced an exciting new model, an amphora-shaped vase in a single colour, blue, in which four rows of geometric scales were raised from the surface at the base of the vessel, while the handles, like folded wings, were made of a more translucent substance than the body, pâte-de-cristal. The sobriety of this design and its contrast with his usual search for polychromaticism heralded a new departure.

1925 was also the year of the Paris International Exhibition of Decorative and Industrial Arts. Argy-Rousseau had exhibited his wares regularly in the Applied Arts Section of the Salon des Artistes Français, gaining an Honourable Mention in 1920, a Bronze Medal in 1923, a Silver Medal in 1926, and a Gold Medal in 1928. He had been elected a Member of the Salon d'Automne and of the Société des Artistes Décorateurs, exhibiting at their Salons. He was invited to exhibit *Hors Concours* at the 1925 Exhibition, where he was also nominated a Member of the Jury for Glass. His brother-in-law and former school mate at Sèvres, Nicolas-Constantin Platon-Argyriades, sometimes accompanied him at the Salon, where he exhibited glass vases and bowls decorated with high-fired enamels.

The four years that followed the International Exhibition were to be Argy-Rousseau's busiest. At the height of his fame he designed many new models, including some with floral or leaf patterns which totally covered the whole surface of the vessel. While continuing the production of pâte-de-verre items, Argy-Rousseau began to experiment with pâte-de-cristal. As in pâte-de-verre this involved mixing crystals of finely crushed glass, made to his own formula, not only with metallic oxides for colour but also with an aqueous adhesive material, and packing this into a fireclay mould. The mould was fired at a low temperature for an extended period of seven or more hours until the crystals vitrified into a translucent, richly coloured crystalline glass which might be coloured through or streaked. The low temperature prevented the colours from running or fusing, while the mould became extremely brittle. An alternate method was to remove the mixture from the mould when only partially dried into a thick, but malleable, paste which could be retouched or finished like clay, then reinserted into the kiln for the completion of vitrification. The preparation of the moulds themselves was a complex operation involving two wax-covered plaster casts and several sections. Once vitrification was complete, the pâte-de-verre or pâte-de-cristal model had to be annealed for over fifteen hours. It was then carefully brushed to remove particles of clay dust from the mould, washed in hydrofluoric acid then water, again brushed and then polished using wood or cork wheels on a lathe, the wheels covered in fine sand particles and water. After the polishing it was washed and given its final hard brushing. Pâte-de-cristal vases were made in a variety of shapes, some with Egyptian motifs inspired by the vogue attendant on the discovery of Tutankhamon's tomb in 1923, others in chunky geometric Art Deco shapes, still others modelled as birds or animals.

In 1928 the sculptor Marcel Bouraine designed a number of models for Argy-Rousseau, which the latter executed in pâte-de-cristal. These included statuettes of nude or draped women, and massive fountains and lamps with nudes in bas-relief. They are normally signed in moulded shallow relief on the side of the base with both 'G. Argy-Rousseau' and 'Bouraine'. There is a monumental quality in all the pâte-de-cristal pieces, whether designed by Bouraine or by Argy-Rousseau himself. They are really glass sculptures, never 'decorated glass'.

Parallel with his work with glass Argy-Rousseau concentrated seriously on his great hobby, photography. In the course of his life he took several thousand photographs, forming an important body of work. He also experimented with the technical side of cameras, inventing several new techniques. In July 1925 he introduced a new apparatus for the taking of colour snapshots to the French Academy of Science. This won him a Silver Medal from the Society for the Encouragement of Progress in 1927.

A lessening of public interest in pâte-de-verre led to a gradual lessening of production from 1929 onwards. The financial crash of that year in New York soon brought

a severe and world-wide Depression and, in December 1931, Moser-Millot wound up the Société des Pâtes-de-verre d'Argy-Rousseau. Argy-Rousseau found himself unable to cope with launching a new business, and turned to small production in his own home. He received a few commissions for the manufacture of religious plaques in pâte-de-verre: scenes of the crucifixion, images of saints and crosses. Though their appeal is obviously limited, these had as much attention lavished on them as his more ambitious projects. These plaques are either unsigned or signed 'Argy' in shallow relief in the mould.

In the years after 1933 Argy-Rousseau concentrated on executing a very small number of highly geometric designs of vases and bowls in pâte-de-cristal. Translucent, in rich greens, blues, pinks or ambers, they have streaks and swirls within their walls, their sides rigidly angular. These vessels are signed 'G. Argy-Rousseau' in shallow relief in the mould on the side, as are all Argy-Rousseau's wares.

Argy-Rousseau went on exhibiting at the Salons until 1952. In the mid 1930s he also executed a few enamelled vases, and even mounted some of his vessels in gold, silver and silver-gilt, or platinum, as well as occasionally enamelling some of these mounts.

The post-war years were hard for Argy-Rousseau, who was then completely forgotten. His entries in the Salons aroused no interest. His sole income came from the royalties on the various scientific patents he had taken out. He died in Paris on February 20th, 1953.

Interest in Argy-Rousseau's wares has not ceased to grow since then, and they have become both rare and expensive. The early snubs directed at the fact that several examples of each model were executed have given way to admiration at the great variations in tone and colour, and understanding of the complexities involved in the manufacture of each individual vessel.

PAUL D'AVESN

Paul d'Avesn worked in Paris in the 1920s and 1930s, producing moulded glass vessels inspired by Lalique. Each model may be found in a variety of finishes, including transparent colourless glass, opaque coloured glass (including white, blue, green, brown and red), transparent coloured glass and transparent clear or coloured glass given an external wash of opaque coloured paint which settles in the moulded interstices of the surface decoration.

These vessels are well designed, with intricate moulded designs in a frieze around the body or covering the whole visible surface. An example is illustrated, the vase with a frieze of alternating lions and lionesses stalking their way in an endless line around the squat, bulbous vessel.

They are invariably signed on the base 'P. D'Avesn France', moulded in shallow relief.

BACCARAT

The Sainte-Anne glassworks was founded at Baccarat, within the forested area of the Vosges, in 1764. Its production was largely confined to utilitarian soda glass, both table-ware and for early industrial use, from window glass to glass for miner's lamps. By 1814 it was employing some sixty workers, and was only just surviving.

The most important glassworks in Napoleon's First Empire was Vonêche, founded in 1778, but flourishing only since its purchase in 1802 by Aimé-Gabriel d'Artigues (1778-1848), a Parisian who had earlier managed the Saint-Louis glassworks in Alsace. Concentrating on the production of lead-crystal, which had long been an English speciality, d'Artigues succeeded in building up Vonêche into not only the major supplier within France, but also into an important exporter into the rest of Europe.

The defeat and abdication of Napoleon brought about the dismemberment of parts of the French Empire by the Congress of Vienna in 1815, despite the vigorous opposition of France's representative, Talleyrand. Vonêche, in the Namur province of the Ardennes, found itself in the new Kingdom of the Netherlands, cut off from its French outlets, as well as having to compete for its exports with the English glassworks which were no longer troubled by the Continental blockade. It was forced to reduce its staff

from five hundred to only one hundred. Further hampered by the high French tariff barriers, d'Artigues succeeded in negotiating an agreement with the representatives of the new French King Louis XVIII. It was agreed that Vonêche could export 6000 hundredweight of rough crystal free of duty to France for each of the two years from March 1816 to March 1818, the crystal to be wrought in France, in exchange for which d'Artigues undertook to open a glassworks in France capable of producing 10,000 hundredweight of crystal per annum.

On May 15th, 1816, d'Artigues purchased the Sainte-Anne glassworks for 867 hectogrammes 52 grammes of fine gold. On April 9th, 1817, a Royal Warrant enabled d'Artigues to open his new Verrerie de Vonêche à Baccarat (Vonêche Glassworks at Baccarat), soon employing some three hundred workers. d'Artigues built a nearby factory for the production of minium, the lead oxide essential for the production of lead-crystal, to which the Baccarat glassworks was henceforth to devote itself. He set up cutting workshops, employing all the latest machinery, as well as machines for the production of pressed glass. Unable, however, to keep up the interest payments on the loans needed to purchase and equip Baccarat, and dogged by ill-health, d'Artigues was forced to sell the glassworks and associated factory on January 7th, 1823. In 1824 Vonêche-Baccarat became a limited company, dropping 'Vonêche' as part of its name only in 1843.

In 1823 Baccarat exhibited at the Paris National Exhibition, and was awarded a Gold Medal. That year they executed a table service for King Louis XVIII, a tradition they were to continue for his successors, Charles X and Louis Phillipe. Most of their production was devoted to lead-crystal, occasionally tinted, and they also produced opaline glass, in fact being the first glassworks to use the term 'opaline'. From 1832 to 1857 the Baccarat and Saint-Louis glassworks were united by close commercial agreements, and used the same outlets for their products. Discussions were even started about merging the two glassworks, but they were not successful. The possibility of a merger was made impossible a few years later when, following the loss of Alsace and much of Lorraine to Germany after the French defeat in the Franco-Prussian War in 1870, Saint-Louis found itself in the German-held territory while Baccarat remained in France.

In 1846 Baccarat began the production of paperweights with embedded millefiore canes, soon followed by paperweight decorated with flowers, insects, reptiles and cameo portraits.

In 1855 Baccarat exhibited at the Paris International Exhibition, the first such exhibition to be held in France, and was awarded the Great Medal of Honour. Baccarat was then employing some 1125 workers, and had pioneered several social services, including sickness, redundancy and retirement benefits, schooling for workers' children and medical care, as well as savings schemes. At the 1878 Paris International Exhibition Baccarat was awarded a Gold Medal. It was not, however, to exhibit at any other International Exhibition until the 1909 International Exhibition of the East of France, held at Nancy, where they received a Special Gold Medal.

The late nineteenth century established a tradition at Baccarat that was to be maintained to the present of developing an extremely wide range of cut glass table services. The designs were all worked out in an anonymous fashion by house designers, with a concentration on standard cuts, new patterns generally being variations of earlier ones. The firm maintains samples and pattern books of all its designs over the years, and is capable of reproducing any of these desired designs at any time. French Embassies abroad are each provided with its own patterned set of crystalware, replaced and supplemented whenever necessary, while each French head of State from Napoleon III onwards has had a special service made for him. Such individual models have also been made for foreign heads of State and for foreign embassies in Paris.

Baccarat has only very rarely departed from this practice. In about 1900 it commissioned the Dutch architect, H. P. Berlage, a pioneer of Functionalism, to design a set of table-ware. (He designed another set of table-ware at about the same time for the Pantin glassworks.) Art Nouveau barely intruded on Baccarat's production. Nevertheless, a small group of mostly two-layered cylindrical vases of circular or square section, acid-etched with floral designs, was executed. The backgrounds were of either frosted or lightly patterned glass, and bands etched with repeating patterns of stylised flowers or birds were sometimes placed just below the rim. While most of these are only comparable with the most ordinary production of the Nancy glassworks, some rise above this level through careful execution, strong colour and well designed floral patterns. Wheel-carving was occasionally used in conjunction with acid-etching. They are normally signed 'Baccarat' on the base.

Baccarat specialised in the production of elaborate chandeliers, and massive vases for display purposes, frequently mounted in ormolu or gilt-bronze. Such chandeliers were made for such diverse places as the Imperial Palaces of Saint Petersburg and the palace of the Negus, King of Kings, Lion of Judah, Emperor of Ethiopia at Addis Abbaba. Baccarat executed a six foot high bowl for the Negus in 1908, rivalling a ten foot high candelabrum made in 1903 for the Czar. Around the turn of the century some very attractive multimedia sculpture was produced using crystal in conjunction with gilt-bronze and, occasionally, marble. One very attractive Art Nouveau creation was *La Vague* (The Wave), in which a transparent crystal wave curls powerfully upwards: riding the crest of the wave is a gilt-bronze nymph. Bronze sea-shells conceal twin inkwells.

Pure luminous crystal became the hallmark of Baccarat products. At the 1925 International Exhibition of Decorative and Industrial Arts they showed a wide range of table

services, lamps and table centrepieces. One table service had each piece engraved with an aspect of a fountain, the final effect provided by a chandelier forming a waterfall of crystal drops. Though most of the production was in traditional patterns, a number of services were cut in cubist-inspired motifs, using geometric circles, squares and triangles. Several attractive sets of liqueur decanters and glasses, as well as dressing table sets, cut and enamelled with geometric patterns were also executed.

A number of crystal animal figures was issued in the 1930s, designed by Georges Chevalier (b. 1894), who also designed table-ware, scent bottles and glass sculptures cut from crystal blocks. He also decorated a number of glass vessels with enamelling.

BAKALOWITS

Originally opened as a retail shop for glassware in 1845 in Vienna, original designs were soon commissioned and carried out in their own works as well as in various Bohemian factories. In 1879 they were awarded a Diploma by the Austrian Museum for Art and Industry. They won a Silver Medal at Vienna in 1880, and Gold Medals at Frankfurt in 1881, Nice in 1883 and Antwerp in 1885.

In the late 1880s they began the production of iridescent glass in various lustres very similar to that produced by Loetz. They commissioned designs of vases encased in bronze from the architect Berndt, vases in bronze mounts from Professor Rudolf Bakalowits of Graz as well as crystal candlesticks from Professor Josef Maria Olbrich (1867-1908), which were all exhibited at the 1889 Winter Exhibition at the Austrian Museum in Vienna.

At the 1900 Paris International Exhibition they displayed glass designed by Olbrich and Kolo Moser, and were awarded a Bronze Medal. In 1889, they had begun to exhibit regularly at the Austrian Museum's Winter Exhibitions. Their 1900 display included a peacock-pattern desk set designed by Professor Rudolf Bakalowits in mounts by A. Lux; a hand mirror designed by Berthold Löffler; and iridescent lamps in bronze holders by Gustav Gurschner. In 1901 they exhibited at the Copenhagen Exhibition of Austrian Industry, in 1902 at the First International Exhibition of Decorative Art in Turin and the First International 'Studio' Exhibition in London with iridescent glass designed by Kolo Moser. This was reviewed in *The Studio* as follows: 'The bulk of the fine glassware shown by Professor Kolo Moser and Messrs. E. Bakalowits and Söhne seemed, indeed,

> – All too bright and good
> For human nature's daily food,

(. . .) Contemporary handicraft has given us nothing more exquisite of their kind than these vases and drinking vessels, mounted in many instances in silver holders which a rare gift of decorative invention had wedded perfectly to their fragile contents, whether in plain glass of the simplest modelling or in iridescent colours and fanciful forms, a rare grace and shapeliness characterised all these exhibits. Among them may be mentioned the ingenious little vase set in a light outline-frame of silver in the semblance of an owl, and another cunningly devised in the figure of a rose, the restrained treatment of the metal giving the utmost value to the pearly blue and green of the glass. The convenient shape of some of the small table-holders for short-stalked flowers was very welcome; for who does not know the torments of trying to fix half-a-dozen top-heavy roses in an ordinary bowl or jug?'

At the Austrian Museum in 1902 they showed designs by members of the Vienna School of Arts and Crafts, Baroness Gisela von Falke, Jutta Sika, Antoinette Krasnik and Joan Fomin from Moscow. They again exhibited in London in 1906.

From then until the outbreak of war in 1914 they showed their new designs regularly at all the major Austrian Museum exhibitions, commissioning table and art glass from Bakalowits, Kolo Moser, Emil Hoppe, Otto Prutscher, Hans Vollmer and leading members of the schools of arts and crafts. Bakalowits glass is always unsigned, and can only be identified by comparison with known illustrated designs and vases in museums and well known collections. The Austrian Museum of Applied Art in Vienna has a three volume Master Catalogue of Bakalowits designs, with sketched outlines of designs by Joseph Olbrich, Kolo Moser, their students and Wiener Werk-

Bakalowits – A group of vases, decanter and glasses designed by Otto Prutscher, exhibited in Vienna in 1908. (Contemporary photograph)

stätte members, Rudolf Bakalowits, Hans Bolek and many others.

While Bakalowits glass was executed in a variety of Bohemian glassworks, there is little doubt that the decorated iridescent vessels designed by Kolo Moser and Rudolf Bakalowits were executed by Loetz. Many of the metal mounts were executed by the firm of Klinkosch. Rudolf Bakalowits designed an attractive group of slender footless soli-fleur vases designed to be held in a bronze construction. Made in iridescent glass, these were executed by Loetz.

BALSAMO-STELLA

Guido Balsamo-Stella produced in the twenties a range of delicately wheel-carved glass vessels. His preference went to very simple shapes in vases, beakers, footed vessels and plates. The engravings were sometimes just a panel on the side of the vessel, but were more usually all around it in a continuous design, often with swags, chains or other decorative motifs along the rim and the foot. Subjects were sometimes mythological (fauns, venuses, cupids), but were most often of animals, nudes or scenes from life, often treated with humour. He frequently used scenes from Venetian life as the basis of a subject, including gondolas, churches, elegant women and steamboats in stylish and stylised compositions.

His style was an Art Deco clearly imprinted with the lessons of cubism as learnt by such artists as Laboureur, allied with a fine sense of composition. One of his plates is engraved with an undulating plain all around the rim, on which fishermen stand at five equidistant points, holding five corners of a fishing net which covers the central portion of the plate, in which are caught a mermaid surrounded by five fish. Each of the fishermen, each of the fish, are different, but the overall effect is symmetrical.

Balsamo-Stella worked in Venice, and had his vessels executed to his own designs in Murano by the Ferro Toso glassworks. Muranese effects are occasionally found in his vessels, with curled coloured glass knops and curlicues applied to the stems of his cups or the finials on covered vases. They are always discrete, however, and do not disturb the overall effect. His wife Anna was also an engraver, and they executed a number of designs together. They exhibited several of their engraved vessels in Paris at the 1925 International Exhibition of Decorative and Applied Arts. She was Swedish, and through her he came to know the work of the great Swedish engravers Simon Gate and Edward Hald of Orrefors.

Impressed by Swedish designs, his own technique in the thirties became less airy, humorous and complex, simultaneously becoming more simplified and more ponderous. He designed several plates and vases for the Venetian glass-decorating firm of Salir, which were engraved not by him but by the Bohemian engraver F. Pelzel. Balsamo-Stella died in 1941.

Balsamo-Stella – Plate wheel-carved with a Venetian scene. (Contemporary photograph)

Opposite
Above left
Argy-Rousseau – Streaked green geometric pâte-de-cristal vase, 16.4 cm 1933. (Author's Collection)
Above right
Argy-Rousseau – Polychrome pâte-de-verre vase modelled with a frieze of deer, 9.5 cm *c*1920. (Author's Collection)
Below left
Argy-Rousseau – Pâte-de-verre vase modelled with nudes, 15 cm 1924. (Author's Collection)
Below right
Argy-Rousseau – Pâte-de-verre vase modelled with three Grecian heads, 14.7 cm *c*1920. (Author's Collection)

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Above
Argy-Rousseau – *Left:* Pâte-de-verre vase moulded with Angel fish swimming through stylised waves, 15.5 cm 1915; *Right:* Pâte-de-verre vase moulded with a frieze of butterflies, 8 cm 1915. (Author's Collection)
Below
Argy-Rousseau – *Left:* Blue pâte-de-verre vase with crystallised handles, 20 cm 1925; *Right:* Blue pâte-de-cristal bowl, 8 cm 1927. (Author's Collection)

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Argy-Rousseau – Pâte-de-verre vase moulded with a frieze of lions, set on a silver holder, vase 22.5 cm 1920. (Author's Collection)


G. A-R.


G.A-R

ERCOLE BAROVIER

Descended from a long line of Muranese glassmakers dating back to the fifteenth century, Ercole Barovier received a thorough training in all aspects of glass working from his father, Benvenuto Barovier, who ran the Artisti Barovier glassworks. This was one of the very few Muranese glassworks progressive enough to even attempt to produce glass not wholly imitative of traditional Venetian glass, and was the glassworks chosen by Vittorio Zecchin and Teodoro Wolf Ferrari to execute their pioneering designs in 1913.

Shortly after the end of the First World War Ercole Barovier began experimenting with glass to attain new textures as well as variations of colours and surfaces.

'Primavera' (Spring) glass was developed in 1927. A light, thin glass, it was given an opaque, mottled surface. Barovier's graceful shapes in Primavera glass often have decorative details (handles, rims, etc.) in a contrasting solid coloured glass.

'Vetro gemmato' (gem glass) first appeared in 1936. Made of translucent glass of various colours, it had a rough pitted-looking surface in keeping with the plain shapes it was made in. The vases and bowls look as though they were hacked out of a natural substance. Any surface decoration found looks carved, while a solid part, such as a foot, is usually so dense and flecked as to be virtually opaque.

'Vetro rugiada' (dew glass) made its appearance towards 1940. Made from translucent glass in various colours, its characteristic is a delicate overall tracery of unevenness, as though the vessel were covered with a layer of early morning dew. The vessels, mostly bowl-shaped to give the maximum surface to the dew effect, always have a 'handmade' look to them. This roughly-fashioned look gives them a surprisingly fresh 'crafts' feel.

'Vetro ramarro' (green lizard glass) was made from green glass with a mottled, rough surface texture. It was often used with sculptural shapes.

Barovier produced an enormous range of textures, shapes and qualities of glass. As administrative and artistic director of the Barovier & Toso glassworks in Murano his designs ranged from sculptural glass to graceful, fluid vessels. He was later joined by his son, Angelo Barovier (b. 1927), an equally distinguished designer.

UMBERTO BELLOTTO

Umberto Bellotto was born in Venice in 1882. His father was a master-craftsman specialising in wrought iron, and he trained his son in his craft. At the age of 19 Bellotto inherited his father's workshop, gradually changing its character from the manufacture of the utilitarian to the esthetic. He changed the name to 'Umberto Bellotto – Artistic Wrought Iron' and opened a new showroom. Within a year he had set up small kilns for the production of glass and ceramics.

As early as 1903 Bellotto was commissioned to execute some decorative metal for the Café Restaurant at the Venice Biennale. By 1909 he was exhibiting some original tripods at the Biennale. In 1910 he was invited to run the Pietro Selvatico School of Industrial Arts in Padua, and there set up special courses teaching the techniques of wrought iron.

In 1914 Bellotto was honoured with an important exhibition of his works at the XIth Venice Biennale. He designed an entire room setting, supplying the furniture and objects on display. He was by then running a successful workshop, working not only in metal, but also in glass, ceramics, fabrics, leather and wood

Bellotto designed and manufactured a number of curious metal and glass vessels. The glass, which was almost invariably coloured, from pale azure to deep reds, greens, blues and purples, was blown and normally pattern-moulded into simple bulbous or elongated shapes, sometimes with swirls of a different colour at the extremities of the vessel. It often retained mineral impurities through insufficient refining, which gives it a pleasant rustic aspect. The glass vessel was then placed within a wrought iron carapace, tripod-shaped or single stemmed. The metal stem is almost invariably very tall in comparison to the size of the glass vessel, which appears dwarfed in comparison, but simultaneously appears to acquire a jewel-like value, as though a gem in a monstrous setting. The iron work is usually very simple, surprisingly unfussy.

After the First World War Bellotto received a number of commissions to decorate and supply decorative metalwork for public buildings in Rome and Venice. His workshop was closed down in 1936, and the contents sold off, many to a Milan gallery.

Opposite
Argy-Rousseau – Group of clear glass scent sprays enamelled with a variety of polychrome motifs, tallest 16 cm 1920. (Author's Collection)

JULES-PAUL BRATEAU

Born at Bourges, in France, Brateau was first apprenticed to Honoré Brateau, in the studio of the painter Auguste Nadaud at the École Nationale des Arts Décoratifs. He began working as both painter and sculptor, and soon began to concentrate on small medals and plaques in silver, bronze and pewter which he exhibited at the Paris Salons from 1874. In the 1880s he joined the firm of the Parisian jewellers and silversmiths Lucien Falize and Alfred Bapst (whose partnership lasted from 1879-1892). In 1889 he was awarded a Gold Medal at the Paris International Exhibition. He became a leading designer of decorative objects in pewter, ivory and bronze deriving inspiration from the Renaissance, then from objects discovered at Pompeii, developing a personal and unconscious form of Art Nouveau. In 1893 he and the enameller Paul Grandhomme began working together. The following year Brateau was decorated with the Legion d'Honneur. He exhibited at the 1900 Paris International Exhibition, at La Poignée in Paris in 1903 and 1904, at the 1904 St. Louis World's Fair and at the 1909 Exhibition of French Decorative Art in Copenhagen. La Poignée was a short-lived Arts and Crafts Society of which he became a member in 1903. In 1910 he began to experiment with pâte-de-verre and produced a number of vases and bowls moulded with simple floral decoration in pale pastel colours, very similar to the work of Albert Dammouse. Some vases are designed to fit wrought silver or bronze holders. He also used pâte-de-verre ornaments to decorate jewellery. Brateau exhibited his pâte-de-verre at the Salon des Artistes Français from 1910 onwards.

JOSEPH BROCARD

Philippe-Joseph Brocard was trained as a restorer of antiques and *objets d'art*, a lucrative profession at any time. At some point in his career he discovered, and became fascinated by, Islamic mosque lamps. He collected several of them, and spent several years studying general glass-making procedures and techniques. His experiments hinged on developing the correct glass enamels which would adhere perfectly to the glass vessel, as well as the correct timing which would enable vitrification of the enamel to occur without distortion of the vessel.

Brocard produced identical copies of mosque lamps, using Islamic decorative motifs and Koranic inscriptions. He also designed and executed a number of vases, bowls and ewers decorated with enamelled arabesques and stylised motifs, frequently interspersed with cabochons, and using both opaque and translucent enamels and gilding. He also copied the shapes of some Roman and Renaissance vessels. They are generally signed 'Brocard' in gilt script on the base.

Among his most notable designs are a series of vessels decorated with enamelling and gilding covering the whole surface in Persian arabesques and interlaced scrollwork, with a spiderweb of stylised little flowers filling the spaces between the bold lines of the overall pattern. Within a small reserve of the design he enamelled a representation of a galloping horseman, taken from a Persian miniature.

Brocard introduced his glass at the Paris International

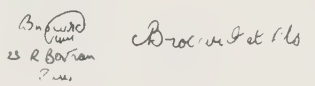
Brocard – Vase enamelled with an Islamic pattern, 24 cm *c*1878. (Collection Félix Marcilhac, Paris)

Exhibition of 1867. He was immediately admired as a great master of enamelling techniques, and his methods were copied by a number of lesser decorators. In 1873 he exhibited at the Vienna International Exhibition, where he was awarded a Progress Medal, and in 1874 exhibited again in Paris. At the 1878 International Exhibition in Paris Brocard was awarded a First Prize. The young Émile Gallé was a fellow exhibitor. Each influenced the other.

Gallé was fascinated by Brocard's rich treatment of enamels and gilding, and promptly set about recreating those effects. Brocard's Persian miniature vessels impressed Gallé particularly, and in the year that followed this first meeting he was to execute a number of them, though he made them more dramatic by combining the basic technique of enamelled arabesques and scrollwork with hydrofluoric acid to etch out the background motifs, thus giving the whole design more depth and perspective.

Brocard for his part began to simplify his designs, and turned increasingly to more realistic representations of floral designs, as well as adopting such decorative motifs as the Cross of Lorraine, honesty (monnaie-du-pape) and the lily.

In 1884 Brocard made his son Émile his partner, signing their new glass 'Brocard et Fils' (Brocard and son). At around this time they moved to new premises in Paris, at 23 rue Bertrand, an address frequently added to the signature. That same year Brocard exhibited at the Paris La Pierre, Le Bois, La Terre et le Verre (Stone, Wood, Earth and Glass) Exhibition. Gallé was again a fellow exhibitor. Brocard himself exhibited *Hors Concours*, but his son Émile was awarded a Silver Medal.



In 1891 the Brocards jointly applied for a Patent for new methods of applying enamel on glass; on slivers of gold, silver, platinum and copper; for applying translucent or transparent enamels below diaphanous enamel; for painting on glass with a brush beneath an enamelled layer; and for producing diaphanous and transparent enamels in imitation of precious stones.

Joseph Brocard died in 1896. From about that date until about 1900 his son continued the firm under the name Verrerie Brocard (Brocard Glassworks).

BUCHENAU GLASSWORKS

Founded as the Hilzenhütte (Hilzen Glass Works) in upper Zwiezel, Bavaria, between 1705 and 1715, the works were divided in 1856 by Benedikt von Poschinger (1785-1856), who willed his Oberzwieselau property to his son Benedikt and the nearby Buchenau property to his younger son Ferdinand (1815-1867). Each of the properties contained two glasshouses. On Ferdinand's death Buchenau, which included the original Hilzen works, were left to his new-born son, Ferdinand Benedikt von Poschinger (1867-1921).

Buchenau exhibited table and decorative glass at the Vienna International Exhibition in 1873, but it was not until the late 1890s that Poschinger began the production of Art Nouveau glass. Deeply impressed by Tiffany and Loetz glass, he launched a series of highly decorated iridescent vases and bowls. Graceful shapes elaborately pinched into sweeping in-and-out profiles, they have combed threaded patterns, blobs and multiple inset colours. Flowers are sometimes carved into the glass. Less successful are some cameo attempts in the style of late industrial Gallé.

Poschinger exhibited in 1893 at the World Columbian Exposition in Chicago, in 1896 at the Bavarian Industrial Trade and Arts Exhibition in Nuremberg and in 1900 at the Paris Universal Exhibition where he displayed a window in stained and opalescent glass designed by Hans Christiansen (1866-1945) of Darmstadt and iridescent and overlaid glass vases designed by Carl Scholl von Eisenwerth (1879-1947) of Darmstadt and Julius Diez (1870-1957) of Munich.

Around the turn of the century Poschinger designed or commissioned about 1000 different Art Nouveau models for his glassworks, many of which are highly attractive. Shortly after 1900 many of his models were designed by Richard Riemerschmid (1868-1957) who was to become director of the Munich Applied Arts School (1913-1924) and director from 1926 of the Crafts School in Cologne. Betty Hedrich was also one of his chief designers.

Poschinger exhibited regularly at the Leipzig Fairs from 1900, and also exhibited in 1906 at the Bavarian Industrial, Trade and Arts Exhibition in Nuremberg. The first two decades of the twentieth century proved increasingly difficult for the firm, which turned to the production of mirror glass in 1918. In 1935 the glassworks was destroyed in a snow storm.

Poschinger vases are normally found signed on the base in gilt lettering. There are several variant signatures, one of which forms a perfect circle, the upper half of which reads 'Ferd. von Poschinger Buchenau Bayern', the lower half 'Glashüttenwerke', all in script. Another variant has 'Ferd. von Poschinger' forming the lower half, 'Buchenau' and 'Bayern' being placed inside the circle. Model numbers are also frequently found. Many vases were, however, unsigned.

BURGUN, SCHVERER

Burgun, Schverer & Cie is one of the oldest surviving glass manufacturers in Alsace-Lorraine. Founded in 1711, the firm produced a variety of Venetian-style and utilitarian glass throughout the 19th Century, supplying the firm of Charles Gallé-Reinemer with quantities of glass for blowing. The subsidiary firm of Burgun Walter, Berger & Cie, founded at Goetzenbruck (Moselle) in 1721, was a major producer of watch glasses and lenses for spectacles. In 1866 Charles Gallé-Reinemer's son, Émile Gallé went to Meisenthal for a three year apprenticeship in glass techniques, during which he had a research laboratory at his disposal. He may well have designed some vases for the firm.

This was the start of a long and friendly relationship between Émile Gallé and Burgun, Schverer & Cie. The defeat of France in the Franco-Prussian War of 1870 brought about the annexation of Alsace and large parts of Lorraine by the new Germany. The Meisenthal firm found itself in Germany, and to a great extent cut off from its principal customers, though they managed to retain a number of their French outlets. They maintained informal contacts with Émile Gallé, who soon took over his father's firm, and was acquiring a great reputation for the quality of his new glass. In about 1885 these contacts were formalized by a contract. The precise terms of the contract are not known, as all the documents have disappeared. There is no doubt, however, that for the next ten years the firm produced large quantities of glass, mostly table-ware but also display glass, for Gallé. All this glass was designed by Gallé himself or designers on his staff, and manufactured under his direct instructions. All of it was signed Gallé. Gallé in turn undertook to supply both the orders and the instructions, at an economically thin time for the Meisenthal firm.

Burgun, Schverer & Cie began the production of independent original art glass designs under the artistic direction of Désiré Christian. In 1889, Antoine Burgun succeeded to the directorship of the firm, which he was to guide to the position of leading glasshouse in Alsace-Lorraine. At the 1895 Strasbourg Exhibition, Burgun, Schverer & Cie exhibited its new art glass with great success. They produced multi-layered cameo vases with painted decoration of flowers, dragonflies or abstract motifs between the layers; metallic lustres and trapped foil: streaked and threaded glass bodies. The technique they developed of painting the design in various colours over the inner layer, then sandwiching this with an outer layer of transparent glass which was then cameo-cut over the painted design, produced a curious three-dimensional effect sometimes reminiscent of Gallé's marquetry technique. Although hydrofluoric acid was used to block out the basic

Burgun, Schverer – Rectangular bowl, acid-etched with Othello and Desdemona, 8 cm *c*1890. (Collection Dépôt 15, Paris)

design, these vases are invariably carved, often with hammered background areas. Most vases are finished with some gilding to highlight the design. Apart from their vases with intercalary decoration, Burgun, Schverer & Cie produced a vast range of art glass, including finely carved single- and two-layer vases, enamelled and gilt vases, and vases with silver mounts.

The chief artistic designer from 1885 to 1895 was Désiré Christian, but his brother François and his son Armand also worked there as designers. He left in 1896 to open his own firm. Other designers included Georg Frankenhausen and Joseph Stenger.

Burgun, Schverer & Cie exhibited at the 1900 Paris Universal Exhibition and were awarded a Silver Medal, a second Silver Medal being awarded to Désiré Christian as decorator. After 1900 the firm exhibited regularly at the Leipzig Fair. In 1901 it became a public company and survives today under the name of Verrerie de Meisenthal, S.A.

Burgun, Schverer & Cie vases are signed with a complex etched and gilt trade mark on the base. It consists of a Cross of Lorraine containing the vertical letters 'BS & Cie', partly overlaid with a V-shaped scroll containing the words 'Verrerie d'Art de Lorraine', with a thistle in the top right of the design and spiked leaves in the background.

The word 'déposé' in lower case script is on the right of the base of the Cross of Lorraine.

DUC DE CARANZA

Born in Istanbul, Turkey, the Duke of Caranza studied both music and painting. In 1875 he joined the ceramics firm of Longwy in the Meurthe-et-Moselle *département* of France as a decorator, working mainly with enamels. He also worked for another ceramics firm, J. Vieillard et Cie, in Bordeaux. In the middle 1890s he joined the firm of Henri A. Copillet et Cie at Noyon (Oise), where he designed, executed and decorated a variety of bowls, glasses and vases in opaque glass with metallic iridescence very similar in finish to that of Massier pottery. The shapes were usually simple and traditional, with a floral or fruit decoration in dark purples, greys and browns. The use of metallic oxides to produce the iridescent 'pottery' glaze makes him unique in Art Nouveau glass. Caranza exhibited at the 1904 Paris Salon des Artistes Français. His vases are often unsigned, or signed with stencils on the side or base 'A. de Caranza' or 'Duc A. de Caranza', sometimes also with 'H. Copillet'.

A. de CARANZA A de CARANZA

DUC A. de CARANZA

ÉDOUARD CAZAUX

Born at Canneilec (Landes), Cazaux became a distinguished ceramist in the years before the Second World War, producing a variety of ceramic vases decorated with painted figures somewhat reminiscent of the style of René Buthaud, but less graphic in line and more polychrome. He became a member of the 'La Stèle' and 'L'Evolution Artistique' groups, decorating ceramics designed by Sybille May as well as by himself, which were edited by the Paris firm of Goldscheider. Several of these early designs were exhibited at the 'La Stèle' pavilion at the 1925 Paris Exhibition of Decorative and Industrial Arts.

Cazaux became a member of the Salon d'Automne, exhibiting his ceramics there from 1928, as well as a member of the Société Nationale des Beaux-Arts.

GUERON GUERON
MADE IN FRANCE CAZAUX

In the late 1920s and during the 1930s Cazaux designed a number of vases and figurines which were made in moulded glass by the firm of Guéron. Highly decorative, they depict friezes of dancing or harvest figures in a stylised pattern, the clear crystal alternately frosted, polished, or sandblasted for contrast between modelled figures and background. Some of the figurines were adapted to illuminated bases to make lamps and night-lights. Cazaux's glass is normally identified with a moulded signature in capital letters reading 'Cazaux' or 'Guéron' or both, sometimes with the addition of the word 'France'.

Cazaux – Frosted glass vase moulded in relief with panels of a nude male dancer, a nude male subduing a gazelle and a nude woman with cymbals, the ground sandblasted and stained brown, zig-zags between the panels, 30 cm *c*1930. (Collection Mr. & Mrs. Farwagi, London)

DÉSIRÉ CHRISTIAN

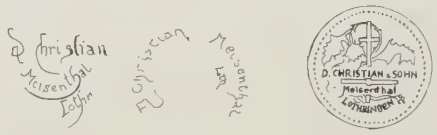
Born at Lemberg on May 23rd, 1846, Désiré Jean-Baptiste Christian studied painting, then trained as a glass decorator. He became chief designer for Burgun, Schverer & Cie in 1885, and there developed a number of new techniques, in particular that of painting the design in various colours over the inner layer, blowing an outer layer of clear glass over this, then carving this clear layer so that the prominent aspects were placed over the painted sections. Thus the flowers or other decoration, though carved from transparent clear glass, appeared to be coloured because of the painted undersection, giving an illusion of many more layers of glass than were actually used.

Désiré Christian left Burgun, Schverer & Cie in 1896. After working for a few years in a small decorating workshop in his house, he joined with his brother François and his son Armand to found the firm of Christian Frères et Fils. This was later changed to Désiré Christian & Sohn, also known by its French name of Désiré Christian & Fils.

Both François and Armand (1874-1953) were accomplished glass designers, decorators and carvers, and it is impossible to differentiate between the three Christians, as they all used identical techniques. Some of their more interesting designs include the use of deep intaglio cutting of, say, a single flower, into a two-layered vase, the outer layer being of a rich, opaque colour, the cut-out section standing out from the body of the vase because of its contrasting colour or shade, and fine carving.

Christian exhibited at the 1895 Strasbourg Exhibition of the Arts and Industries of Alsace-Lorraine where he was awarded a Diploma. In 1898 he exhibited at the 8th International Art Exhibition in Munich; and was awarded a Silver Medal at the 1900 Paris Universal Exhibition, a Silver Medal at St. Petersburg in 1901 and a Diploma at the First International Exhibition of Modern Decorative Arts at Turin in 1902. He also exhibited in Dresden in 1901, the St. Louis World's Fair in 1904, the Munich Secession in 1904 and at Dresden in 1906. His vases are normally signed 'D. Christian Meisenthal' or 'D. Christian, Sohn Meisenthal' on the base in shallow incision, often with 'Lorraine' or 'Lothr' (i.e. Lothringen, the German equivalent of Lorraine). Individual vases designed and executed by his brother François are normally signed 'F. Christian Meisenthal'.

D. Christian – Vase carved in cameo with trees, pines and clouds in the amber outer layer, a swarm of dragonflies painted over a textured inner layer, 15.5 cm *c*1895. (Private Collection, London)



CHRYSO-CÉRAME

The Manufacture Française de Chryso-Cérame, also known as the Société du Chryso-Cérame, situated in Lorraine, was the only firm to attempt the industrial production of pâte-de-verre. The methods and techniques were developed by M. Jonkergouw, and the firm produced a variety of architectural tiles, wall-cladding, paving stones and table tops in pâte-de-verre. These were decorated through in repeating patterns of both naturalistic and stylised floral designs, almost invariably in Art Nouveau patterns. The colours were generally strong and varied.

The Société du Chryso-Cérame exhibited their designs in various trade fairs and exhibitions. At the 1909 International Exhibition of the East of France, held at Nancy they were awarded a Gold Medal.

ARISTIDE COLOTTE

Aristide-Michel Colotte was born at Baccarat on August 31st, 1885. Settling in Nancy in 1920, after working as a jeweller and glass engraver for several years, he soon embarked on a new development for him, the direct cutting of glass, in which he became a master. Working from large and heavy blocks of crystal, he would carve out the shape he had designed, attacking the block with hydrofluoric acid and cutting and grinding tools, achieving a pure transparency of sculpture without the use of moulds. Sparkling highlights were achieved by the use of the chisel. His vases are generally deeply carved and etched, some with geometrical patterns having alternating rough-hewn, polished and mat sections, others with figures of animals or human figures, frequently using Biblical subjects. When producing glass sculpture he often had the figure emerging from the rough block of glass, in a technique similar to that used by certain artists with marble blocks. His first sculptured vessels were exhibited at the 1927 Salon des Artistes Décorateurs in Paris. At the Salon he later exhibited a carved fish made from a 100 lb block of glass, and a dramatic bust of the *Sorrowing Christ* carved from a 500 lb block.

Colotte was also a member of the Salon d'Automne, exhibiting there in 1927 a cabinet containing vases, as well as several items of jewellery he had designed and made in gold, silver and bronze with carved glass. The following year he exhibited a cabinet with five of his glass vases.

Aristide Colotte's carved glass is normally signed on the base with the words 'Colotte Nancy' in capitals, though the actual lettering varies from item to item. Some are also marked 'Piece Unique'. The signature is usually engraved in diamond point, but is occasionally etched.

Colotte – Multifaceted crystal bloc carved with a lizard, marked 'piece unique', 19 cm *c*1928. (Collection Dépôt 15, Paris)

He lived and worked in Nancy for several years, and was awarded the Medal of Best Worker of France (Meilleur Ouvrier de France) by the state. He died on September 2nd, 1959.

COLOTTE
NANCY

H.A.COPILLET & CIE

Founded by Henri A. Copillet for the manufacture of ceramics and glass. He was joined in the middle 1890s by Amédée, Duc de Caranza and M. Neuville. From then on they produced a variety of bowls, vases, shades, cups and stemmed glasses in opaque glass with floral decoration, sometimes in shallow relief, and dark metallic iridescence very similar to the finish on Massier pottery. These wares are often unsigned, sometimes signed with stencils 'H. Copillet' in script capitals. Those designed by Caranza are signed similarly either with 'A de CARANZA' or 'DUC A de CARANZA', sometimes also with Copillet's name. The shapes are usually simple and straightforward, often traditional, but occasionally more adventurous. One curious free-form crumpled bowl illustrated here is signed 'L'HOMME-LEFEVRE', a signature found on several vessels with the characteristic Copillet-Caranza metallic

glaze. Copillet and Caranza items are rare. The firm was destroyed during the First World War.

H. COPILLET Copillet 12 Cr Meyon 239 L'HOMME LEFEVRE

JAMES COUPER & SONS

James Couper & Sons was a Glasgow glasshouse which developed a new and exciting glass finish in the 1880s. In direct opposition to both the search for purer crystal and the fashion for heavily ornamental coloured glass, Couper's ware was a deliberately bubbled and streaked transparent or translucent coloured glass with no applied decoration on the surface with the exception of handles or spouts. It was given the name **Clutha** glass, apparently from an old Scottish word meaning 'cloudy'. Another suggested origin for the word is the ancient name for Glasgow's river Clyde.

Clutha was made by rolling a gather of lightly coloured glass onto a marver sparsely covered with powdered coloured glass and flecks of mica until these adhered smoothly to the surface. The gather was then reheated and shaped to the designer's specification. Silver foil inclusions or patches of aventurine are sometimes found, as are opaque coloured glass sections combed into feathered patterns.

In the late 1880s Coupers employed Christopher Dresser (1834-1904) as their principal designer. Born in Glasgow, Dresser had studied at the Government School of Design in London, and had specialised in botanical drawing and botany, in which he held several professorships in the course of his life as well as receiving a Doctorate of Philosophy from the University of Jena for his services to the subject. He also published several works on botany, ornamentation and design. In the course of his life he became a leading Victorian designer, frequently a precursor of twentieth century trends. He designed carpets, fabrics, wallpaper, metalwork, cast iron, silver and plate, pottery and glass, as well as interior decorations. In 1876 he visited the Philadelphia Centenary Exposition en route to Japan, where he spent some four months in 1877, bringing with him a range of samples of the work of British designers for the new Japanese National Museum as well as buying many Japanese wares partly for himself, but mainly on behalf of Tiffany & Co. of New York. He later published a book of his experiences in Japan.

Dresser had written about glass as early as 1870. 'Glass has a molten state in which it can be blown into the most beautiful shapes,' he had written, 'If a material is worked in its most simple and befitting manner, the results obtained are more beautiful than those which are arrived at by any roundabout method of production.' This credo clearly marked him out as an ideal designer for Couper's Clutha, even though his earlier designs for painted glass were elaborate and more appropriate to book illustration than glass. (There is no evidence that these were carried out.)

Couper – Free-blown vessels designed by Christopher Dresser, *c*1898. (Contemporary photograph)

Several of Dresser's designs were original, but he did not disdain using models of ancient glass or even models of ancient pottery, taking as his sources Rome, the Middle East, and even Peru. Many of his shapes are awkward, even clumsy, though this very clumsiness has tended to endear his designs to generations nurtured on the do-it-yourself amateurishness of much of the Arts and Crafts movement. Nevertheless, at his best he created airy, graceful shapes, especially those with elongated necks or twisted bodies. The Peruvian gourd shapes are sturdy and sensible, as are some hand-bell shapes and squat, frequently waisted vessels. Perhaps his weakest point of design was the lip: gracefully curved and even extravagant on occasion, a number of his otherwise acceptable designs are marred by lips that are too mean and small, or else so medicinally ill-sized that they look like large funnels absent-mindedly

Opposite
Above left
D'Avesn – Blue tinted vase moulded with a frieze of lions and lionesses, 20.7 cm *c*1930. (Editions Graphiques, London)
Above right
Copillet – Freely blown bowl with metallic iridescence signed 'L'Homme Lefevre,' 7 cm *c*1910. (Editions Graphiques, London)
Below left
Bakalowits – Two decorated iridescent glass vases in bronze holders designed by Prof. Bakalowits, 39 cm 1901. (Author's Collection)
Below right
Delatte – Vase with Grecian figures in polychrome enamels, 30 cm *c*1935. (Private Collection, Los Angeles)


DELATTE
NANCY

fused to the vessel. Dresser's designs for Couper are frequently signed on the base with an acid-etched design of a large flower with the word 'Clutha' in Celtic capitals curved above the flower and the words 'Designed by C.D.' in capitals curved below the flower and the word 'Registered' in larger capitals curved below that to complete the circle formed by 'Clutha'. Many Clutha vessels known to have been designed by Dresser are unsigned.

Dresser would appear to have designed glass for Couper until about the mid 1890s. A year or two later Coupers employed the services of George Walton (1867-1933) as principal designer. Walton was both an architect and designer, and his designs for Clutha glass tend to be less extravagant and often more symmetrical than Dresser's. His glass is also frequently richer in colour, with more use of aventurine and gold flecks in the glass.

Couper supplied Liberty & Co. of London with a number of Clutha vessels and liners for use with Liberty's 'Tudric' range of Art Nouveau pewter.

In the later 1880s Clutha had become sufficiently popular to inspire a number of similar wares, the most notable of which was Thomas Webb & Sons' 'Old Roman', which caused Couper to complain that it was a deliberate imitation of Clutha. Production of Clutha ceased shortly after the turn of the century.

In the late 1920s and 1930s a number of imitations of Clutha glass were produced in the United States by the A. Douglas Nash Corporation, Victor Durand's Vineland Flint Glass Works and by the Steuben Division of the Corning Glass Works, where Frederick Carder actually called his wares 'Cluthra'.

HENRI CROS

César Isidore Henri Cros was born on November 16th, 1840 at Narbonne (Aude), a town some 37 miles east of Carcassonne and eight miles inland from the Mediterranean coast. He came from a well-educated family. His grandfather, Antoine Cros (1765-1843), had written textbooks, translated the *Idylls* of Theocritus into French, and taught literature. His father, Simon Charles Henri Cros (1803-1876) had studied law and taught philosophy, on which he had written two books. Henri Cros had two brothers. Antoine (1835-1903), the elder, studied medicine, and wrote on scientific and philosophical subjects, as well as writing poetry and plays. The younger brother Charles (1842-1888) was a poet and inventor, showing an automatic telegraph in 1867, experimenting with colour photography, and expounding the principles of the phonograph as early as 1877.

Henri Cros had a fairly unsettled childhood, his father being frequently out of a job. Settled in Paris in 1844, Simon Cros moved his family to Joigny in 1847 on taking up a teaching job at the school there. When King Louis Philippe was overthrown in the 1848 revolution, however, Simon Cros expressed his republican and socialist ideas so vehemently that he was replaced at the school, and the family returned to Paris.

Henri Cros became proficient in Greek and Latin, and even learned the rudiments of Hebrew. He was attracted towards art, and became a student of the sculptor François Jouffroy and the painters Jules-Emmanuel Valadon and Louis-Jules Etex. At the 1861 Paris Salon the twenty-one-year-old Cros exhibited a plaster bust of his brother Charles. He went on working in the ateliers of his masters, and attempted a succession of jobs in which to earn a living, including one in an institute for the deaf-mute, but he remained in none. His entry for the 1863 Salon was turned down, and he exhibited with the Salon des Refusés (Salon of the Rejected Artists). From 1864 onwards, however, he exhibited regularly at the Salons, specialising in portrait busts, medals and medallions in bronze and plaster.

In the years that followed Cros began to experiment with a wide variety of substances, including terracotta, alabaster and marble. Fascinated by the idea of polychrome sculpture as practised in ancient Greece and Egypt, he began to work with wax sculpture. At the 1867 Salon he exhibited a wax figure of Charles VII. Alexandre Dumas Fils (1824-1895), then at the height of his fame as playwright having written *La Dame aux Camélias* (Camille) in 1852, was intrigued, and became Cros' first patron. Dumas

Opposite
Above left
Décorchemont – Bubbled pâte-de-cristal vase moulded in relief with female masks, 20 cm 1911. (Collection Félix Marcilhac, Paris)
Above right
Décorchemont – Streaked green pâte-de-cristal vase, moulded and intaglio etched with geometric patterns, 12 cm 1923. (Author's Collection)
Below left
Burgun, Schverer – Carved vase internally swirled and painted, 18 cm *c*1890. (Private Collection, London)
Below right
Burgun, Schverer – Carved vase internally coloured, surface gilding, 14 cm *c*1890. (Author's Collection)

H. Cros – Pâtè-de-verre polychrome plaque moulded with an amazon on horseback, 30 × 30 cm *c*1895. (Collection Félix, Marcilhac, Paris)

H. Cros – Portrait in pink pâte-de-verre and polychrome plaster in a painted wood frame, 12 cm *c*1895. (Collection Dépôt 15, Paris)

(the son of the author of *The Three Musketeers* and *The Count of Monte-Cristo)* commissioned Cros in 1869 to go to Lille and execute a copy of a splendid wax head in the Wicar Collection there. This first commission led to several more: a series of portrait busts and medallions in wax, bronze and terracotta.

Other patrons appeared. Philippe Burty, a critic, commissioned Cros to execute a portrait of his daughter. Edmond de Goncourt (1822-1896), who had collaborated with his brother Jules (1830-1870) until the latter's death in writing art and historical works, as well as several novels, and after whom the literary Académie Goncourt was to be founded in 1903, was an inveterate diarist, and went on writing the *Journal* which had been begun with his brother in 1859. Part of his entry for December 10th, 1872 read 'Today Burty takes me to a workshop in the rue des Champs. He is having a portrait of his daughter executed by a wax artist, a delicate sculptor who has rediscovered the ancient processes of the technique. His name is Cros. He is a skinny lad, very dark, very bearded, with a disquieting fixity in his sunken eyes.'

At the 1873 Salon Cros exhibited his most important wax bas-relief *Le Prix du Tournoi* (The Tournament Prize), showing a medieval Princess holding the victor's sword. This was purchased by Charles Blanc, director of the Fine Arts Institute, on behalf of the French State. The price was 3000 Francs, an important sum (roughly equivalent to £1500 or $3500 of present currency).

In 1877 Cros married Marie-Louise Catherine Bernard. His preoccupation with ancient techniques brought him to the revival of encaustic painting. In 1884 he published the results of this research, written with Claude Henry, in a book entitled *L'Encaustique et les autres procédés de Peinture chez les Anciens. Histoire et Technique* (Encaustic and other techniques of painting of the Old Masters. History and Techniques.) An encaustic painting of his wife hangs in the Louvre Museum in Paris.

In his various researches into ancient Greek and Egyptian coloured sculpture, he realised that those figures made of glass which were coloured through in several colours could not have been made as normal glass, moulded to shape and colour in the kiln. The heat invariably caused the colours to run and mix. The colours had to be separated and the object shaped when cold. Wax, though easy to handle and colour, was far too fragile a substance for him. In 1884 he began experimenting with glass. The basic technique was quickly developed. Glass, ground into fine powdered crystals and mixed with metal oxides for colouring, was to be packed into a mould, then fired until vitrified. His earliest trials were shapeless, the colours uncertain, the material brittle and pierced with cracks. He considered running copper wire through the mould to bind the crystals, but rejected this method. Through trial and error he devised a binding agent

which mixed with the ground crystals to form a malleable paste. He executed his first glass paste medallion, a portrait of his niece, in the oven in his kitchen. Pleased with the result, he built himself a kiln in his workshop in the rue de l'Amiral Roussin.

The amount of packing, the materials used for the refractory mould, the type and size of crystals, the correct dosing of metal oxides, the degree and duration of firing, required long experimentation in order to achieve stability. Cros prepared separate batches of pastes made from the powdered glass mixed with metallic oxides for colour and a binding agent. A refractory mould was then packed with a basic paste, appropriate sections in different colours being added with a brush, while various spatulas and other tools were used to sculpt the paste in low relief. The mould was then placed into the kiln at a temperature sufficient to melt the paste, but not to run and thus mix the colours. At the appropriate temperature and after an appropriate time the paste vitrified, and the long, slow process of annealing begun.

Cros produced a large number of plaques and medallions sculptured in low relief. Nearly all were on allegorical or mythical subjects, which always attracted him. Using soft, pastel colours, he modelled archaic or classical figures, with no attempt at a contemporary vision: Greece and Rome were his models. The effect is made greater still by a blurring of the outlines of his compositions made by the unavoidable slight blending of the different coloured pastes when melting in the kiln.

At the 1885 Salon Cros exhibited his first bas-relief plaque in pâte-de-verre, entitled *La Source Gelée et le Soleil* (The Frozen Spring and the Sun). Other major plaques to follow were on such subjects as *L'Education d'Une Amazone* (An Amazon's Education), *Joueuse de Flute* (The Flute Player), *Incantation, La Verrerie Antique* (Ancient Glassware) in 1888; *La Peinture* (Painting), *Le Fil d'Ariane* (Ariadne's Thread) and *Europe* in 1889; and *Circe* in 1891.

His work with pâte-de-verre did not prevent him from working in other media. At the 1887 Salon Cros exhibited a bust of a girl in painted marble. Pâte-de-verre was, however, to occupy him increasingly, and he was henceforth to exhibit it regularly. At the 1889 Salon Cros was awarded a Medal 3rd Class, while at that year's International Exhibition held in Paris he was awarded a Silver Medal. Monsieur Larroumet, the Director of the Académie des Beaux-Arts (Fine Arts Academy), was greatly impressed with the work of Cros, and he recommended that the *Manufacture Nationale de Sèvres* (Sèvres National Manufactury) should place a kiln at his disposal. After some initial reluctance at Sèvres to find a spare kiln, Henri Roujon, Larroumet's successor as Director of the Fine Arts Academy succeeded in persuading Sèvres to place a small workshop equipped with a kiln at Cros' disposal in 1891. Roujon also succeeded in persuading the Fine Arts Ministry to give Cros a research grant.

Henri Cros continued to produce plaques and medallions of various sizes in pâte-de-verre and in polychrome ceramics as well as a few portrait busts, but also began to work on more ambitious projects. These were, specifically, huge figurative pâte-de-verre panels moulded in relief on a specific subject, finished in sections which were then assembled to form a whole. The first of these was completed in 1894, and was entitled *L'Histoire de l'Eau* (The Story of Water).

In 1895 Cros was decorated with the French Legion of Honour. No longer satisfied with the kiln at his disposal at Sèvres, he rejected the alternatives offered to him. After much argument, he settled on a disused windmill as his chosen workshop, and had a specially designed muffle furnace built there. When his new workshop was ready in 1896, Cros moved to Sèvres, at 34 ter rue Brancas, in order to be close to his work. A solitary man, he had few friends. He had a Government pension to live on, and great projects to execute. A display of his pâte-de-verre at the Libre Esthétique Exhibition in Brussels in 1897 made a great impact on both critics and public.

His second great pâte-de-verre panel was completed by 1900. Called *L'Histoire du Feu* (The Story of Fire), it was exhibited at the Paris 1900 Universal Exhibition, where it won Cros a Silver Medal. The panel is now in the Paris Museum of Decorative Arts.

The third major panel was *l'Apothéose de Victor Hugo* (The Apotheosis of Victor Hugo). Completed in 1905, this was installed in the house of the great French poet, novelist and dramatist, who had died in 1885. Hugo's house in the place des Vosges in Paris is now a Museum.

Cros's last major undertaking was *La Légende du Feu* (The Legend of Fire), designed as an overmantel for the Prince de Wagram's castle at Grosbois. Henri Cros died on January 31st, 1907, leaving this panel unfinished. Cros had always been extremely secretive about his techniques and methods, and nothing is known of them. He kept no notes. The only person he initiated into his secrets was his son Jean, with whom he worked closely in his last years. It was Jean Cros who completed the panel for Grosbois.

The bronze founder Hébrard had frequently exhibited and sold items in pâte-de-verre, wax and ceramics by Cros in his showroom. In 1908 Hébrard held a major retrospective exhibition of pâte-de-verre items as well as some ceramic plaques.

Pâte-de-verre items by Henri Cros are extremely rare, and often damaged. They are sometimes signed 'Cros', more often unsigned. A paper label marked 'Hébrard' is occasionally found. With the exception of a few graceful nudes, most of the subjects on the plaques look primitive, unfinished, archaic, but with both the harshness and the charm of those attributes.

JEAN CROS

Henri Cros had three children. Of these only Jean studied and worked with his father, becoming his principal aide on his larger pâte-de-verre works. Greatly influenced by his father, he executed a series of plaques of Provençal landscapes modelled in low relief, as well as plaques and plates inspired by the Nabis painters. On his father's death in 1907, Jean Cros completed the great pâte-de-verre overmantel for the Prince de Wagram's castle at Grosbois. This panel was called *La Legende du Feu* (The Legend of Fire).

From 1907 to the outbreak of war in 1914 Jean Cros executed several works in pâte-de-verre after models by his friends Bourdelle and Rodin. These included the beautiful bust of Camille Claudel by her lover Auguste Rodin. Camille Claudel was herself a sculptor, frequently sitting for Rodin as a model. Their tempestuous affair lasted from 1882 to 1899. Rodin's bust was cast in pâte-de-verre by Jean Cros in 1911. From 1919 onwards he specialised in making moulded plaques for wall lights and lamps. He was never to reveal the secrets of his father's and his own techniques.

J. Cros – Pâte-de-verre head of Hanako the Japanese actress modelled by Rodin, 21.9 cm 1908. (The Rodin Museum, Philadelphia)

ALBERT DAMMOUSE

Albert-Louis Dammouse was born in Paris in 1848, the son of Pierre-Adolphe Dammouse, himself a painter and sculptor, and former student of Antoine-Louis Barye the animalier sculptor, who worked for the Manufacture de Sèvres as a sculptor. The young Dammouse studied at the École Nationale des Arts Décoratifs (National School of Decorative Arts) before entering the studio of the sculptor Francois Jouffroy at the École Nationale des Beaux-Arts (National School of Fine Arts) in 1868. His father's work at Sèvres no doubt spurred his own increasing interest in ceramics, and he soon apprenticed himself to Marc-Louis Solon (1839-1913) a great ceramist who developed the pâte-sur-pâte technique of surface decorating by means of a brush and a mixture of earth, water and a colouring agent, forming a relief design. At the outbreak of the Franco-Prussian War in 1870 Dammouse had finished his apprenticeship and had become Solon's assistant. Solon left for England, where he was to spend the rest of his working life at the Minton Porcelain Works.

In 1869 Dammouse had entered a contest held by the Union Centrale des Arts Décoratifs (Central Union of the Decorative Arts) and had been awarded a prize for Decorative Composition. After Solon's departure he took a small workshop at Sévres at 12 rue des Fontaines, where in 1871 he began to produce porcelain vessels inspired by Turkish and Far Eastern models. These he exhibited with considerable success at the biennial exhibition held in Paris by the Union Centrale in 1874, when he was awarded a Gold Medal, and in 1876, when he was awarded a Prize of Honour.

His exhibition success meant that he was soon supplying Limoges porcelain manufacturers with a number of designs, as well as sometimes decorating them himself. At the Paris International Exhibition in 1878, Dammouse exhibited a complete porcelain dinner service decorated with 'transparent pastes bordered with gilding', designed for the Limoges firm of Pouyat, and was awarded a Silver Medal.

Dammouse had already designed a porcelain table service decorated with birds in relief for Charles Haviland's workshop at Auteuil. The Havilands were an American family which had begun dealing in china in New York

in 1821. In 1842 David Haviland had come over to France and set up a factory at Limoges, almost the entire production of which was exported to the United States. David's son Charles Haviland, a great collector of paintings, books and Japanese works of art, founded the workshop at Auteuil, a suburb of Paris, at 116 rue Michel-Ange in 1873 in order to produce fine ceramics, naming Felix Bracquemond, a noted etcher and founder of the Society of Etchers, as well as one of the first men to discover the beauties of Japanese art, as its head. Edouard-Alexandre Dammouse, Albert's brother and a student of Bracquemond's, was one of Haviland's decorators at Auteuil, specialising in floral designs. The competition from Rookwood in the United States plunged Haviland's Auteuil workshop into great difficulties, and Bracquemond was replaced by Ernest Chaplet (1835-1909), who decided to produce stoneware, and a workshop and sales outlet was taken at 153 rue Blomet in the Vaugirard district of Paris. In 1882 Charles Haviland invited Albert Dammouse to join Chaplet. Dammouse had just exhibited some of his own production at the first Salon des Arts Décoratifs held by the Société des Artistes Français.

Stoneware proved fascinating to Dammouse, who was to spend the next ten years working with Chaplet and his own brother Edouard. He experimented, designed and executed porcelain and pottery in addition to the stoneware. At the 9th Exhibition of the Union Centrale, held in Paris in 1887, Dammouse was awarded a Gold Medal. He was again awarded a Gold Medal at the 1889 Paris International Exhibition. He was an exhibitor in 1891 at the first Salon organised by the Société Nationale des Beaux-Arts, of which he was to be elected a full member.

In 1892 Albert Dammouse set up on his own at his workshop in Sèvres, being joined there by his brother Edouard. They there produced stoneware and faïence, as well as some porcelain, using models by several designers in addition to themselves. The first stoneware produced there was greatly influenced by Japanese models, solid well proportioned shapes in single colours. Later production was soberly decorated with floral and plant designs. He continued to exhibit at each annual Salon of the Société Nationale des Beaux-Arts until 1913, and exhibited at the ceramics exhibition held in 1897 at the Salon du Champ-de-Mars in Paris and at that held in Berlin in 1898. S. Bing's Maison de l'Art Nouveau had his wares in stock, and in 1899 he had an exhibition at a Berlin gallery.

During the 1890s Dammouse began to experiment with pâte-de-verre. There are no records to indicate the composition of the binding agent he used, but a glass paste was made by mixing powdered glass with the agent, and this paste was then put into a mould and placed in the kiln until it vitrified. He introduced his first pâte-de-verre at the 1898 Salon, small vases, cups, chalices, bowls and goblets. They were opaque, and rather plain, with a relief pattern of plants, flowers or seaweed below the rim, somewhat similar to pâte-sur-pâte.

He continued to experiment with the composition of the paste, gradually obtaining a certain degree of translucence and an incredible lightness. His pâte-de-verre vessels at the 1900 Paris Universal Exhibition were greatly admired. Many were designed by his brother Edouard, who died in 1903.

Dammouse was one of the first members of the Societé des Artistes Décorateurs at its foundation in 1901, and exhibited regularly at their Salons from the first in 1903 until 1911. He also joined an artists' association called 'La Poignée' (The Fist) at its foundation in December 1902, and exhibited with the group in January 1903 at the Galerie des Artistes Modernes (Gallery of Modern Artists), 19 rue Caumartin in Paris, and again in January 1904. He also exhibited at the 1904 Louisiana Purchase Exposition held in St. Louis, Missouri (U.S.A.).

Dammouse was handling the glass paste with increasing confidence and originality, frequently adopting ceramic techniques for modelling and firing. Vessels were decorated with subtle colour gradations, shapes were frequently adapted to their floral design as, say, petals. From about 1904 Dammouse began to produce very thin-walled pâte-de-verre vessels with open cloisonné patterns of repeating flowers and leaves, made without any metal supports. The open cloisons were then filled in with a paste of his own composition, which he called *pâte d'émail* (enamel paste), then reheated the whole vessel at low temperatures. Jules Henrivaux has described *pâte d'émail* in his *La Verrerie du XX^e Siécle* as a paste made from pulverised glass with a low melting point mixed in with various borates and silicates, and given a wide variety of bright or soft colours by the addition of various metallic oxides. It is clear that *pâte d'émail* is basically the same substance as pâte-de-verre and pâte-de-cristal, a substance capable of enormous variations in its physical aspects, which itself has provoked the diversity of suitably descriptive terms. The description *pâte d'émail* has frequently been applied to all of Dammouse's pâte-de-verre production. Henri Frantz, writing in *The Studio* in 1905, pointed out: 'As for the enamels of this master of ceramics, he alone seems to have the secret of this production'. Guillaume Janneau, thoroughly misunderstanding the medium, wrote in his *Modern Glass* (1931): 'Actually, it is an enamel paste and not glass, as employed by the other artist. What he makes is really a soft porcelain, extremely delicate and diaphanous, with the enamel set between minute casings made of harder enamel. There is only a slight difference between this technique and that of the enameller, as once practised by Thesmar, and today by Heiligenstein'.

Certainly the look of these vessels is very similar to the pliqué-à-jour enamelled vessels of Thesmar (or for that matter of Chinese pliqué-à-jour enamelled vessels). There is no doubt that Dammouse had seen Thesmar's enamels at the Paris 1900 Universal Exhibition, and was inspired to adapt their physical aspect to pâte-de-verre.

The pâte-de-verre vessels of Dammouse are now very

rare, and invariably very fragile. The thin walls of the vessel are at their thinnest at the rims, which are also frequently shaped as pointed petals. They are thus frequently found chipped or otherwise damaged, though this has not proved a deterrent to collectors. All Dammouse vessels are signed on the base with the moulded mark of a large letter 'S' (for Sévres) surrounded by 'A. Dammouse' in capital letters forming a circle completed by the lower curve of the 'S'. A few of his pâte-de-verre vessels are found in silver or silver-gilt mounts.

In 1907 Dammouse exhibited at the Ceramics Exhibition held at the Galliéra Museum in Paris. In 1908 he became a founder member of the Société de l'Eclectique (The Eclectic Group), and exhibited with them at the Galerie des Artistes Modernes in Paris. That same year he exhibited at the Franco-British Exhibition held in London. In 1909 he became a founder member of the Société de l'Art Décoratif Français (Society of French Decorative Art) along with François Décorchemont and the ceramists Albert Decœur and Taxile Doat.

In 1910 Dammouse exhibited at the La Verrerie et la Cristallerie Artistique (Artists Glass and Crystal Ware) Exhibition in Paris. One of his most spectacular creations was on show there, a tall chalice in which the pâte-de-verre bowl, decorated in relief with dancing figures in a technique very reminiscent of pâte-sur-pâte on porcelain, was enclosed in a thorny wrought iron tree-form designed by Félix Gilon and executed by Nics Frères, its roots firmly grasping an ivory base. Dammouse also executed a pâte-de-verre cross with a head of Christ, enclosed in a thorny wrought iron holder designed by Gilon and executed by Nics Frères.

In 1911 Dammouse exhibited at the Galliéra Museum Ceramic Exhibition as well as in a commercial gallery, the Galerie Reitlinger in Paris, in a joint exhibition with Emile Decœur. He also exhibited at the Turin International Exhibition. He was still executing vessels in stoneware, porcelain and pâte-de-verre, variations on his basic designs. His last pre-war show was at the 1913 Salon of the Société Nationale des Beaux-Arts, in which Maurice Marinot exhibited his first enamelled glass vases. Shortly after the death at Sèvres of Albert Dammouse in June 1926, a major retrospective exhibition of his wares was held in Paris.

LOUIS DAMON

Louis Damon purchased a shop called Au Vase Étrusque (At the Etruscan Vase) at 20 boulevard Malesherbes in Paris in 1887, selling table-ware and decorative articles. In the late 1890s Damon commissioned the Daum glassworks at Nancy to provide him with a supply of cased glass vases in a shape of his design, a simple, well-proportioned flattened bottle shape with two appliqué glass 'tears' running down each shoulder from the rim. The vases were then wheel-carved in cameo and intaglio in his workshop.

The carved designs were mostly Damon's own. Floral and plant designs were used, as well as a number of figurative designs, mostly taken from mythology. The quality of the carving is invariably excellent, and generally deeply cut into the glass. The colours are not too varied, blue, pink and green predominating. They are normally signed 'L. Damon Paris' in incised script on the base.

Damon exhibited at the 1900 Paris Universal Exhibition where he was awarded a Silver Medal. In addition to the carved vases, he also produced engraved table glass and other decorative glass. In 1911 he went into partnership with his brother-in-law, changing the firm's name to Damon et Delente. His brother-in-law died in 1936, Damon himself died in 1947. The family firm still exists.

DAUM, NANCY

Jean Daum (1825-1885) was born in Bischwiller, Lower Rhine. He became a Solicitor's clerk at Hagenau, then at Niederbronn. There he met an innkeeper's daughter, Louise Isenmann, and married her in 1851. That same year they moved to Bitche, where he bought a Solicitor's practice. He became fairly successful, and listed among his clients several glassworkers from Meisenthal and Saint-Louis. He entered municipal politics, and became assistant Mayor. The Franco-Prussian War of 1870 turned his family into refugees. Bitche was largely destroyed as the German troops advanced, and the Daums went to stay with one of Louise Daum's uncles at Sarrelbe (Moselle). After the defeat of France, Prussia annexed much of Alsace-Lorraine, including Bitche. The Daums chose to remain in France, and moved to Dombasle, then to Nancy in 1876. Peace enabled Jean Daum to sell his practice and receive the proceeds in France.

In the early 1870s Guillaume Avril, the owner of the Verrerie de 3 Fontaines (Three Fountains Glassworks) in Moselle and Josué-Victor Bertrand, a partner in the Sars Poterie in the Nord, agreed with the brothers Eugène and Auguste Villaume to open a new glassworks together. Although the factory was built on land belonging to the Villaume brothers, they had withdrawn from the partnership, becoming only the landlords. The Verrerie Sainte-Catherine was opened in August 1875 for the manufacture of watch glasses, plate glass and table-ware. Building and running costs proved greater than the owners' capital, and they persuaded Jean Daum to lend them money. The first small loans in 1876 soon escalated to a considerable part of Jean Daum's savings, while the glassworks continued to produce very little revenue. Daum's loans were unsecured, and in 1878 he attempted to call in the loans. Avril and Bertrand, unable to repay Daum, put the glassworks up for sale. Hoping to recoup part of his losses, Jean Daum bought the glassworks with its contents, the leasehold of the land and an option to purpurchase the freehold. He recovered the amount paid out for the purchase, which was less than a quarter of the total loan, but was never to recover the balance of the money owed to him.

Jean Daum had neither technical nor business knowledge or experience when he took over these glassworks in a suburb of Nancy. Changing its name to Verrerie de Nancy, he engaged a former manager of the Sars Poterie works to run the technical side of the firm while he did his best at the office, but without success. Towards the end of 1879 his eldest son Auguste (1853-1909) came to the rescue.

Auguste Daum had no more technical or business experience than his father. Born in Bitche in 1853, he had studied there, then at Metz and Nancy before going to the Faculty of Law of Paris University. After graduation he had returned to Nancy and became a Solicitor's Clerk. The great difficulties in which his father found himself persuaded Auguste Daum to give up his chosen career and enter the glassworks in 1879. He quickly familiarised himself with all aspects of running a glassworks, and gradually brought the overheads down to manageable proportions while expanding the market for their products. In 1883 he married Jeanne Constantin, the daughter of the founder of the Nancy gasworks. Her dowry finally set the Daum glassworks on its feet.

Jean Daum's younger son Antonin (1864-1931) joined the firm in 1887. He had studied at Lunéville and Nancy before going to the prestigious École Centrale, where he got an engineering degree. Entering the glassworks straight from university, he took over the production side while Auguste concentrated on the business aspects. Their partnership was to prove both an artistic and a financial success.

The Paris Exhibition of 1889 with its displays of art glass by Émile Gallé, Lévéillé, and others obviously influenced the Daum brothers who exhibited table-ware there. Bedridden for some months during 1890, Antonin began to sketch various vases with floral decoration which he had executed at the works as soon as he got better. The results pleased him enough to change the whole direction of future production, although the successful manufacture of watch glasses went on until 1928. In 1891 a decorating shop was opened under the direction of Eugène Dammann which soon employed some fifty of the three hundred men working at the Verrerie de Nancy. The chief engravers were Victor Marchand, Racadot and Sévère Winckler. Jacques Grüber joined in 1894 to study glass engraving, and remained there until 1897. During those years he executed some superbly detailed vases decorated with scenes from Wagner's operas, a passion he shared with Antonin Daum. Grüber left to open his own works, later becoming France's most famous leaded-glass window designer.

One of the first decorators to join in 1891 was Dufour, a former porcelain decorator. He launched a style of decoration in imitation of 18th Century miniatures. The earliest items are decorated with formal swags, entrelacs or palm leaves either painted in gilt or engraved and gilded. But his speciality was the tiny detailed landscape either as a panel or all around the vessel in a continuous scene, often carried out in fine-line engraving filled in black enamel, although he sometimes used polychrome enamelling. These are often very pretty pastiches of country or Dutch scenes, farmyard views, rustic scenes

Daum – Grey glass vase etched and gilt with seagulls and a rising sun, carved with tortoises rising from the sea, 32.5 cm *c*1910. (Private Collection, London)

in the style of Fragonard or Boucher, illustrations to La Fontaine's fables and nursery rhymes. Towards the end of the century Dufour began a series of farmyard animals as well as a variety of floral decorations.

Henri Bergé was also one of the earliest decorators to join, remaining at the Daum glassworks for some thirty years. He soon became chief decorator and, when Antonin Daum began setting up a series of art laboratories at the works for the training of decorators, designers, engravers, glass-blowers, etc. as well as to experiment with new techniques and styles, he taught drawing. From 1900 to 1914 he became principal of the school for apprentice decorators. Bergé designed many of the decorative motifs used over the years, as well as many of the shapes. When a pâte-de-verre workshop was established under the direction of Almaric Walter, Bergé designed most of the models executed there.

Eugène Gall, the son of a Daum worker, joined in 1900, remaining there some forty years. He was undoubtedly Daum's most accomplished craftsman. The vases he executed were built up architecturally, using all the glass-blower's skill to fashion both shape and decoration. Some appear like complex glass sculptures. Gall's vases are sometimes found with carved wood or cast metal bases in the Art Nouveau style executed by Majorelle. Other important Daum designers and workmen include Émile Wirtz, Adolphe Claude and Gustave Toussaint.

The Daum brothers exhibited their new wares in all the great international exhibitions. At the 1893 Chicago World's Fair they exhibited *Hors Concours*, and showed their first examples of acid-etched cameo. These were given elegant elongated shapes, floral decoration cut with hydrofluoric acid, then fire polished. They also exhibited at the 1895 Libre Esthétique Exhibition, and the 1897 International Exhibition, both in Brussels. Their great triumph was at the Paris 1900 International Exhibition, where they were awarded a Grand Prix, Antonin Daum was created a Knight of the Legion of Honour, Henri Bergé was awarded a Silver Medal, while Marchand, Dammann and Winckler were each awarded a Bronze Medal.

Hydrofluoric acid was used at the Daum glassworks to achieve a variety of effects. Vases made of a single thick layer of clear glass were etched with a floral design which was usually gilt, as was the rim. The etched design was often given some hand carved finishing touches. Later versions were made with two or more layers of glass in different colours to provide contrast in the cameo design, or else had the floral design finished in polychrome enamels. A characteristic feature of Daum designs involved plunging a vase, with its decoration suitably masked, into a hydrofluoric acid bath. This gave the whole of the exposed background a frosted appearance. Daum vases of this type often combined several techniques, with an etched, carved and enamelled decor (flowers, birds, fish etc.) against a frosted ground.

Carving the ground with a wheel to obtain small circular facets of roughly equal size, thus simulating a

Opposite
Daum – Wheel-carved cameo vase with a tulip shown in five stages of growth, 15 cm *c*1900. (Author's Collection)

Page 48
Above left
Daum – Wheel-carved cameo vase with etched leaves and matching silver rim, 14.8 cm *c*1900. (Private Collection, London)
Above right
Daum – Wheel-carved blue cameo vase, 12 cm *c*1900. (Private Collection, London)
Below left
Daum – Wheel-carved cameo vase with green mistletoe inscribed *'Au gui l'an neuf'* (Mistletoe for the New Year), 14 cm 1899. (Private Collection, London)
Below right
Daum – Wheel-carved cameo bottle and stopper, 16.3 cm *c*1900. (Private Collection, London)

'hammered metal' finish, was frequently used by Daum to great effect. The basic design was generally acid-etched in two- or three-colour cameo, while part or all of the rest of the vessel was given a hammered look. Some vessels were rendered even more precious by carving the floral design as well.

It was soon realised that it was not necessary to blow several layers of glass together to obtain the varying colours necessary to the cameo effects. One alternative involved 'padding' the glass, in which a blob or sliver of coloured glass was laid over the surface of the hot parison. As the vessel cooled, the padded sliver became firmly attached to the vessel, and could then be shaped with acid or the wheel. The danger of cracking was there, but less than when laying a complete layer of glass over the parison. If the parison with the padded sliver was rolled on a marver, it could become totally incorporated within the body of the vessel. This gave a result very similar to that achieved by Gallé in his marquetry technique.

Daum developed still another and even simpler technique for carrying out polychrome cameo effects, which they called **vitrification**. It involved laying ground coloured glass on the marver, then rolling the parison onto this. Once the parison had picked up the ground glass, it was reheated at a temperature such that the ground glass on the surface fused and vitrified, leaving a rough surface to the vessel. This surface could then be etched into shallow cameo patterns, particularly leaves or peacock feathers. Glass cabochons carved as insects, gems, teardrops, snails, etc. were sometimes applied to this surface. The cabochons were normally of clear glass, and were sometimes given colour by applying a coloured insert beneath the cabochon. Vitrified parisons were sometimes blown into the moulds to produce shaped vessels, some of the more unusual being in the shape of vegetables, sometimes with appliqué glass stems.

Daum frequently used powdered coloured glass to provide background effects which they called **jade glass** *(verre de jade)*. The parison was rolled on the powdered coloured glass on the marver before having an outer layer of glass blown over it. The powdered coloured glass trapped between the layers fused to give the finished vessel a semi-opaque clouded look. The jade glass was then given a surface vitrification or cased, and then etched or carved into floral or scenic designs. Etched designs were sometimes additionally enamelled to give more colour. One particularly successful series of decorated vessels was made in a variety of shapes and sizes with a decor based on the four seasons. The winter vessels show barren trees in a landscape, their gaunt branches heavy with snow. Spring vessels are decorated with burgeoning trees. Summer vessels have a brightly colourful landscape, all greens and yellows. Autumn has a greyish landscape under rainfall. All are made of jade glass with the design in

Daum – Freely blown tall pitcher with applied handle, 41.5 cm *c*1900. (Author's Collection)

Page 49
Daum – Wheel-carved pitcher with applied glass handle, 17 cm *c*1900. (Author's Collection)

Opposite
Above left
Daum – Etched vase with four cockatrices set in a bronze foot, 22 cm *c*1905. (Private Collection, London)
Above right
Daum – Cameo glass lamp wheel-carved with a moonlit landscape, bronze holder by Majorelle, 52 cm *c*1895. (Private Collection, Tokyo)
Below left
Daum – Deep blue flecked vase carved with grapes in intaglio, 23 cm *c*1925. (Private Collection, New York)
Below right
Daum – Massive amber glass vase, deeply etched, *c*1928. (Editions Graphiques, London)

Daum – Mottled amber reticulated vase with metal foil inclusions, blown into a wrought iron frame made by Majorelle, 24 cm *c*1920. (Sotheby's Belgravia)

shallow cameo relief enamelled to the appropriate colours.

Intercalary Decoration (i.e. decoration between the layers) was a very complex technique sometimes used at Daum. Here the basic vessel was decorated with powdered coloured glass, or enamelled with a design, sometimes padded, etched or even carved. It was then gradually re-heated and an outer layer of glass blown over it. When finally annealed, the vessel was then etched, carved or polished to bring out the full effect of the internal decoration. This could itself be changed or distorted during the final heating phase (e.g. a straightforward enamelled landscape could by heating be distorted into trees bending in the wind). A cameo landscape could be given depth and perspective by having part of it (buildings, clouds, trees) executed between the layers.

One interesting range of vases made at Daum in various sizes consist of free-blown vessels with a wide base fluting up to a tall, slender neck. Within the basic shape the final effect was entirely dependent on the glass-blower's talent. At their worst they are misshapen, lumpy, earth-bound. At their best they are elegant, aerial, perfect examples of the glass-blower's art. They normally have an opaque, vitrified surface, although some were made of clear glass. Daum called these *Berluzes*.

Blow-moulded vases were made in several patterns at Daum. One scenic variety has moulded trees framing a village or river scene which is normally wheel-carved, sometimes etched. These are sometimes found in a single colour, usually a dark brown, and sometimes in several colours, predominantly green. Other vases were moulded with a three-dimensional floral decoration which was then given its final shape with wheel-carving. These tend to be in a shaded single colour. A rare group of curious moulded vases in the shapes of pine-cones, fish, ducks, were designed by the sculptor Bussières around 1900 in a geometric, Art Deco style ahead of its time.

In 1906 Daum opened a pâte-de-verre workshop under the control of Almaric Walter. He there executed some leaded-glass windows as well as large tiles for wall-cladding, but worked mainly on small statuettes and objets d'art. Several models were based on Greek Tanagra figures in the Louvre Museum, but most are modelled in a naturalistic style and represented birds, animals, reptiles and insects. Several leaf-form bowls had colourful lizards, frogs or crabs placed at one end, while trays, vases and bowls were modelled with newts, butterflies and other decorative beasts. Most were designed by Henri Bergé, but other designers also modelled for Walter. The American dancer Loïe Fuller inspired two models, one by Victor Prouvé, the other by Bergé. All pâte-de-verre items were clearly signed Daum Nancy with the Cross of Lorraine, usually incised on the base, but occasionally moulded on the side. The outbreak of war in 1914 closed down Walter's pâte-de-verre workshop, but he set up his own in 1919 after the war, when he signed with his own name as well as with that of the designer.

The Paris 1900 Universal Exhibition was a celebration of the age of electricity. The pavilions and fountains were a blaze of light, and the various glass firms rivalled in producing table lamps and wall and ceiling light fittings. Daum introduced a range of floral lamps in which sculptured glass shades shaped as magnolia, lotus or thistle blossoms were fitted to bronze stalks and bases wrought by Louis Majorelle (1859-1929). Majorelle had been a schoolfriend of Antonin Daum, and their collaboration was to last for many years. Majorelle supplied lamp bases, and vase and cup bases and pedestals in bronze, wrought iron and carved wood.

The Daum brothers were very active in the foundation of the School of Nancy in 1901. Émile Gallé became its first president, while Antonin Daum was elected a vice-president. Antonin was also in the forefront of the long debate and struggle to set up an International Exhibition at Nancy. This eventually took place in 1909, and Daum Frères exhibited *Hors Concours*. Antonin Daum himself was a jury member along with Émile Gallé's widow, Louis Majorelle and Victor Prouvé, and he also wrote the report on the School of Nancy for the *Revue Générale de l'Exposition de Nancy, 1909*.

After Auguste Daum's death in 1909 a cousin, Jean Daum, who was an attorney in Paris, joined the firm and

took over as commercial director. He was to remain until the outbreak of the First World War.

Daum glass went on being exhibited annually from 1900 at the Salons des Artistes Français in Paris. It was also exhibited at the 1901 Ceramics Exhibition in St. Petersburg; the First International Exhibition of Modern Decorative Art at Turin in 1902; at the Ecole de Nancy Exhibition in Paris in 1903; at the 1904 Louisiana Purchase Exposition in St. Louis, Missouri; at the Decorative Arts of Lorraine Exhibition at Nancy in 1904; at the 1909 Nancy Exhibition; and at the 1910 'La Verrerie et la Cristallerie Artistique' Exhibition in Paris.

Auguste's son, Paul Daum, joined the firm around 1911, and was eventually to change the Daum style in accordance with the changes of taste in decorative art in general. He very quickly pioneered greater simplicity in design,

Left
Daum – Miniature greyish-blue pail enamelled with a Dutch landscape, 3.5 cm *c*1890. (Author's Collection)

Right
Daum – Miniature vase etched and enamelled with a winter landscape, 4 cm *c*1910. (Private Collection, London)

Left
Daum – Pink and green vase wheel-carved with an orchid and leaves, silver foot, 14.5 cm *c*1900. (Author's Collection)

Right
Daum – Set of miniature vases, etched and enamelled with a floral design, 10 and 5 cm *c*1910. (Private Collection, London)

Daum – Tall ribbed brown vase, 41.7 cm *c*1930. (Private Collection, London)

producing a range of transparent crystal or coloured glass vessels decorated with thick enamel in continuous patterns of lines and dots.

The outbreak of war in 1914 soon closed the Daum works down. A few months later one section was reopened for the production of essential glass for medical and scientific purposes. The factory resumed full production in 1919, after the defeat of the Central Powers and the demobilisation of its workers.

The production of many of the pre-war models of vases, lamps and table-ware was continued for some years, though generally only of the simpler, less elaborate models. Heavier, opaque coloured glass was used frequently to produce plain, sturdy designs. Gold and silver foil inserts, which had been used in conjunction with applications or other decorations now often became the sole decoration. Trapped air bubbles were frequently used, sometimes with intaglio carving in abstract patterns, or in the shape of a bunch of grapes. Louis Majorelle, Edgar Brandt (1880-1960) and André Groult had supplied metal bases for Daum vases before the war. The collaboration was renewed in the 1920s with the introduction of a range of reticulated glass vases and bowls in which the glass was blown into a bronze or wrought iron armature. Transparent and opaque coloured glass was used, decorated with intercalary swirls or foil inserts. Vessels with Majorelle armatures are invariably signed on the base of the glass by both Daum and Majorelle. Those with armatures by Brandt or Groult were often completely unsigned. Brandt also designed several wrought iron lamps with reticulated glass by Daum. These are occasionally, but not invariably, signed.

The techniques used by Maurice Marinot clearly influenced Daum in the production of thick-walled transparent coloured glass vases and bowls with deep acid-etched decorative patterns, usually in geometric designs. Additional interest was created by alternating polished and acid-frosted bands in the design. Blue, green, amber and grey were generally used. The pre-war floral and scenic etched designs on all-glass lamps gave way to similar

Left
Daum – Tall *Berluze* vase, freely blown in green glass, the surface granulated with acid, 71.4 cm *c*1900. (Editions Graphiques, London)

Opposite
Above left
Daum – Cameo-etched pitcher with wrought silver mounts by Tixier Deschamps, 30 cm *c*1895. (Collection Manfred Seymour, London)

Above right
Daum – Orange and green crocus cameo vase with wrought silver mounts with a silver lizard, 22 cm *c*1895. (Editions Graphiques, London)

Below left
Daum – Grey-blue vase cameo-carved with blue thorns, two applied clear glass tears, gilt metal base set with glass, 28 cm *c*1900. (Private Collection, Paris)

Below right
Daum – Grey and yellow vase acid-etched with a frieze of toadstools in polychrome vitrified enamel, 21.25 cm *c*1910. (Sotheby's Belgravia)

Daum – Reticulated orange glass shade blown into a metal armature, designed and made by Edgar Brandt, 52.5 cm *c*1930. (Sotheby's Belgravia)

Daum – Tall cameo lamp, etched with a seascape in green and yellow, the etched floral foot with a wrought iron base, 82 cm *c*1900. (Private Collection, London)

geometric patterns, and the shade shape itself lost its roundness and became a sharp circumflex accent. Cameo vases in crystal or single coloured glass were etched with stylised designs of animals, repeating floral patterns, sunbursts or swirls, almost invariably with a rough 'sand-blasted' background achieved with acid.

The new range of glass executed under the direction of Paul Daum was shown at the 1925 Paris Exhibition of Modern Decorative and Industrial Arts. Antonin Daum was commissioned by the organisers to write the report on the glass section.

During the occupation of France by the Germans in the Second World War Paul Daum was deported to a concentration camp, where he died in 1944.

The Daum glassworks were reopened in 1946 under the control of Paul Daum's two sons, Jacques being the commercial director and Michel the artistic director. Trained at the apprentice's school at Daum, Michel Daum changed the direction of glass creation at Daum once again. The new glass was now of the purest, most sparkling crystal with the highest lead content of any such crystal. It is made and wrestled into natural shapes, curved, frilled, or twisted at very high temperature, and always freely blown to retain its individuality. In addition to vases, bowls, lamp-bases, clock-cases, ashtrays and so on, they have produced stylised animals and large ornaments, one of the most successful looking like a boat with a huge triangular sail.

Daum – Cameo vase etched with a floral design over a carved ground, silver-gilt mounts, 20.5 cm *c*1910. (Editions Graphiques, London)

Daum – Cameo vase wholly wheel-carved in brown over clear glass, 19.5 cm *c*1900. (Editions Graphiques, London)

Above left
Daum – Mould-blown vase with its floral design etched and carved, 24 cm *c*1900. (Sotheby's Belgravia)

Above right
Daum – Free-blown gourd, its surface granulated with powdered polychrome glass, applied stem, 25 cm *c*1910. (Collection Dépôt 15, Paris)

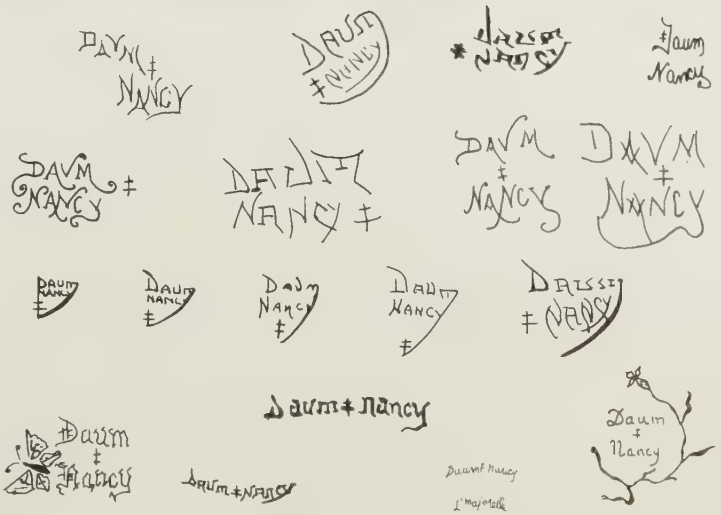
Left
Daum – Cameo vase wheel-carved with a floral pattern, hammered ground, 21 cm *c*1900. (Editions Graphiques, London)

All the art glass produced at the Daum glassworks has been signed. The early small pieces were usually signed in etched stencil on the base, the signature often gilt. The more industrial and rather uninteresting production was usually signed with the rigid enclosed trademark in shallow relief cameo on the side. Carved, or free-blown vessels, or those with a greater or lesser degree of special work were signed

Opposite
Above left
Gallé – Vase with mould-blown and etched raspberries and leaves, 27 cm *c*1905. (Private Collection, London)
Below left
Gallé – Floral wheel-carved marquetry vase with trapped shreds of silver and platinum foil, 18.8 cm *c*1900. (Private Collection, London)
Right
Gallé – 'Verrerie parlante' carved, etched and enamelled vase inscribed *'L'hiver a labouré les sillons de nos cœurs/La neige maternelle a couvé leurs semaille – Gallé'* (Winter has laboured the furrows of our hearts/Maternal snow has covered their seed – Gallé), 44.5 cm *c*1890 (Author's Collection)

Daum – Deeply etched translucent blue bowl, 10 cm *c*1930. (Private Collection, New York)

in intaglio on the side, the formal trademark being interpreted in an increasingly free and fanciful way the more complex the technique or the more successful the result. The trademark was the words 'Daum, Nancy', the upright of the 'D' extending to become a Cross of Lorraine, the end of which joined with the curve of the 'Y' to form the enclosure. From about 1910 they began to use the words 'Daum Nancy' with the Cross of Lorraine in a straight line incised along the outer edge of the base. The word 'France' was normally added after 1919, the letters all being chunky.



In 1970 Michel Daum resumed the production of pâte-de-verre, interrupted in 1914. He commissioned a series of original glass sculptures from a variety of artists, including Salvador Dali and César, each of which was produced in a limited edition. In addition to their ever increasing range of art glass in lead crystal, with very occasional use of colour, and their pâte-de-verre, Daum continues to produce a range of very fine table glass.

Opposite

Above left

Léveillé – Vase intaglio carved in serpentine pattern, internally crackled with coloured clouds of metallic oxides, 13.8 cm *c*1895. (Private Collection, London)

Above right

Leerdam – Transparent amber vase designed by A. D. Copier, 36.2 cm *c*1930. (Private Collection, London)

Below left

Graf Harrach – Iridescent opaque glass vase, the rim shaped with scissors, 27.2 cm *c*1900. (Private Collection, London)

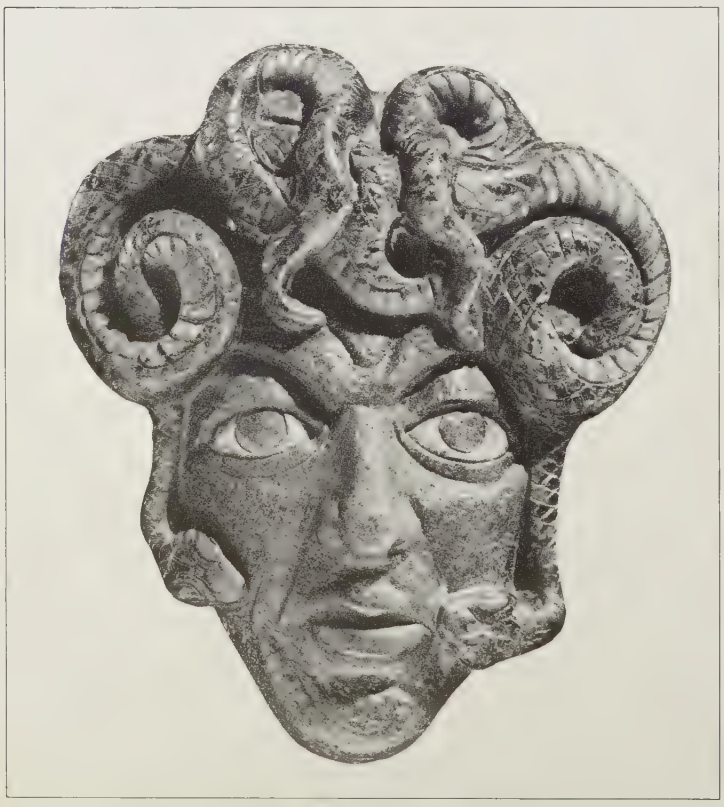
Below right

Leerdam – Iridescent clear glass vase enamelled with a dragon and a dragonfly by de Lorm, 16.2 cm *c*1928. (Private Collection, London)

DÉCORCHEMONT

François-Émile Décorchemont was born on May 26th, 1880, at Conches, Eure. His family had been Norman artists for several generations, his father L. Émile Décorchemont being a teacher at the École Nationale des Arts Décoratifs after having been an assistant sculptor to Jean-Léon Gérome. He studied at his father's school between 1896 and 1900, painting mostly landscapes, while simultaneously working in a small ceramics workshop set up in his parents' home in Paris, learning the potter's craft. Between 1900 and 1903 he potted a number of stoneware vases of plain shapes with shaped decoration based on flower and leaf forms in the Art Nouveau style with trailing colours over the body.

In 1902, flushed with enthusiasm for the work of Dammouse, he began to experiment with pâte-de-verre. He began with the absolutely basic start, the raw glass, which he made himself with silicates mixed with lead or metallic oxides to obtain the crystal, opal or coloured glass. This he then crushed, the pulverised glass forming the raw material for the pâte-de-verre. Using quince pips as a binding agent for the crushed glass, he inserted the paste into a mould in which it was allowed to dry into a soft, malleable substance. Once dried, it could be given additional sculptured details and subtle touches before being reinserted into the mould and fired at low temperature for an extended period of time. Taken out of the kiln, the model was now painted with a brush using metallic oxides for colour, then given the final firing in the kiln at a high temperature (about 1200°C) for some twenty to twenty-four hours. The annealing process took several days. The difficulties inherent in the multiple processes involved and the uncertainties of the coke kiln used meant a very high proportion of models which cracked or were otherwise damaged in the making. These first products were small, thin and extremely light in weight, opaque, with a grainy, mat surface of pale colour. Although made from the same ingredients as other pâte-de-verre, these wares look so different that they are called pâte d'émail (enamel paste).



Décorchemont – Pâte-de-verre Medusa mask, 28 cm 1938. (Private Collection, Paris)

Within a year he had become more adventurous. The paste he used was somewhat similar to soft porcelain, and he sculpted it with delicate Art Nouveau designs, slender tendrils curling into the design; sinuous patterns woven into the fabric of the paste; ethereal patterns half emerging from the surround. Where appropriate to the design he would pierce the body of the vessel to create portholes of light. He would occasionally fill the crevices with translucent enamels, then refire the piece.

Décorchemont first exhibited paintings at the 1903 Salon des Artistes Français, where he received an Honourable Mention. He went on exhibiting his new vases and bowls at the Salons des Artistes Français, and was awarded a Medal 3rd class in 1905, a Medal 2nd class in 1906, and a Travelling Scholarship in 1908.

After six years concentrated on perfecting his technique, the break caused by travel may well have triggered the desire for fresh fields to conquer. On his return he moved to his native Conches, where he and his father built new petroleum-fired kilns. His experiments took a new turn, as he sought to emulate the brilliance of gemstones in glass. He began to use the *cire-perdue* (lost wax) process, in which a design was modelled in clay or plaster, covered in wax to the thickness desired for the final vessel, then the outer mould made. A final investment covered the whole, which was then heated and the melted wax allowed to run out through small apertures in the investment, thus leaving a space of the exact shape and thickness desired for the final model between the inner and outer moulds. This space was filled with the glass paste which was already mixed with metallic oxides for colour.

Décorchemont experimented over several years with various temperatures and periods of heating. High temperatures allowed the paste to vitrify into a substance which pleased him. After a prolonged annealing, extending over some eight or more days, the vessel was polished and ready. Some decorative surface details were sometimes cut, while surface imperfections such as large ex-

ploded bubbles were polished away. By 1910 he had succeeded in producing a completely different aspect, true translucent pâte-de-cristal. The shapes changed with the technique. He eschewed thin-walled vessels and graceful, ethereal decoration. Vases and bowls became thicker, more richly coloured. Patterns became simpler, naturalistic fish, scarabs, dragonflies, leaves and flowers, swirls and masks in relief. He showed his new wares at the 1911 Salon des Artistes Français, where he was awarded a Medal 1st class, and the 1912 Salon d'Automne. That year he began to purchase the raw opal glass at the Saint-Denis glassworks. The First World War interrupted his work. Décorchemont closed down his kilns in 1914, and was not to return to them until 1919. For the first two years after his return he continued producing similar wares to his pre-war production, though with a preponderance of masks symbolising the anguish of war and the serenity of peace. He was now ordering his raw glass from the Daum glassworks at Nancy.

Décorchemont's wares throughout the 1920s showed considerable simplification. The bowls of vases are sometimes large, always thick-walled with surface decoration: stylised waves, fruit, feathers or geometric patterns. Remnants of figuration occasionally subsist in the handles, which may be in the shape of snakes, chameleons, fish or caryatids. The colours remain rich, but are often veined and streaked and bubbled. He developed new finishes, including an imitation of tortoiseshell. Décorchemont's growing reputation enabled high prices to be obtained for his wares, which were sold through Geo. Rouard, a store which promoted some of the most advanced applied art designers of the day. By the middle 1920s he was increasingly using geometric shapes for his vases and bowls.

At the 1925 Paris International Exhibition of Decorative and Industrial Arts Décorchemont exhibited his wares in a number of pavilions, most notably in Émile-Jacques Ruhlmann's Hôtel d'un Collectionneur. Various official honours continued to come his way. He was elected a member of the Société des Artistes Français, member of the Salon d'Automne and Committee Member of the Salon des Artistes Décorateurs, where he was also to exhibit *Hors Concours*. In 1926 he became a Knight of the Légion d'Honneur. His vases and bowls were exhibited in major exhibitions all over the world, Geneva, the San Francisco Panama-Pacific Exposition, Amsterdam, Bucharest, Athens, Barcelona.

In the latter part of the 1920s his wares became exclusively geometric in shape. Handles are variations on the cube shape. The body is smoothly circular or carved into flat panels. Decoration is either non-existent or confined to a narrow frieze of repeating circles or triangles. The colour is much plainer, usually a single solid colour with swirls of one other colour or a different shade of the same colour. 1930s pieces become increasingly simplified and chunky: the French call them 'monumental'. Some plain geometric models are almost identical with some of Argy-Rousseau's 1930s vases.

In the 1930s Décorchemont became increasingly preoccupied with the production of stained glass for decorating windows, spending less and less time on his art glass. The years from 1935 to 1938 were spent working almost exclusively on the stained glass windows for the church of Sainte-Odile in Paris, though he did produce a few pâte-de-cristal items during that time.

The Second World War again interrupted his progress, with the lack of raw materials and wealthy clients. When the war ended in 1945 he was 65 years old. He was to work productively for a further quarter of a century. Much of his time was still spent with stained glass, but he produced some delightful pâte-de-verre vases and bowls and sculpture, softening the rigour of his patterns with a partial return to stylised figuration in the decoration, which otherwise is completely plain, each piece being a single colour. Décorchemont died on February 19th, 1971, just short of his 91st birthday.

Décorchemont vases are almost invariably signed in the mould with his name curved in a horseshoe shape based on the Conch shell design which represents his native city. Most are also numbered in diamond point on the base with a work number which is an indication of the period of manufacture. The very earliest pieces, dating between 1903 and 1909, normally bear a letter and a number and sometimes have the date added in ink on the base. These are immediately identifiable as pâte d'émail by their unmistakeable look. The first pâte-de-cristal items, from 1910 to 1912, bear two letters followed by a number. In December 1912 he began to number these simply begin-

Décorchemont – Cobalt blue pâte-de-verre vase moulded with roses, 20.5 cm 1912. (Collection Dépôt 15, Paris)

Décorchemont – Amethyst pâte-de-cristal bowl in a geometric pattern, 9 cm *c*1925. (Collection Dépôt 15, Paris)

ning with 1. He reached 999 in November 1921, when he started numbering his vessels 01 to 0999, reaching this latter figure in December 1924. From then until August 1927 the numbering went from A1 to A999. From August 1927 until November 1930 the numbering went from B1 to B999. From November 1930 to May 1939 the numbering went from C1 to C433. In July 1945 he resumed production with D1. Some of these post-liberation vessels are also marked with the Cross of Lorraine. His last vessel, numbered D507, dated from January 1971. Any vessels marked with the letters 'MA' were made for Décorchemont's wife.

Décorchemont's vessels and figurines are rare and very much sought after by collectors.

DEGUÉ

The range of glass found with the Degué signature is almost identical to that of the Schneider glassworks. Cameo glass was produced both in the style of two-layer acid-etched late industrial Gallé and in the more interesting geometric Cubist-inspired patterns, using contrasting, strong colours. The signature on these is in script and relief cameo.

Degué also produced a range of coloured smooth glass vessels with contrasting-coloured rims, feet, handles or applied features. These vessels were generally blown into moulds for shaping. The script signatures on this range is either lightly engraved or, more frequently, acid-etched using stencils to produce a mat script on the polished glass.

ANDRÉ DELATTE

André Delatte founded a small glassworks at Nancy in 1921. A fairly large quantity of glass vessels with internal patches of random streaked colour was produced, as well as long-stemmed globular glass vases with an acid-finished surface, in both cases similar to those produced by Daum and Muller Frères.

Delatte's production of cameo glass was considerably more interesting. Although the two- or three-layered glass vessels had their design etched with hydrofluoric acid with little or no additional wheel-carving, the actual design patterns and shapes are usually very sound. Floral and landscape designs, though in no way original, are well conceived and executed, and invariably appropriate to the chosen shape. The shapes themselves are normally well-proportioned, and frequently very attractive, with good strong colours, such as rich blues or orange. A Delatte speciality was to scissor-cut the stem along its length while still in a plastic state, and curl the sheared half-stems back towards the body to form handles.

Delatte vessels are invariably signed 'A. Delatte Nancy' in shallow relief cameo script on the side of cameo vessels, or lightly etched using stencils, and polished to stand out against the surrounding mat surface on streaked and acid-finished vessels.

Delatte – Blue cameo vase etched with trees in a riverscape, 23.5 cm *c*1923. (Editions Graphiques, London)

DELVAUX

Delvaux is a retail shop in the rue Royale in Paris, stocking luxury gift goods. In the 1920s and 1930s it had its own workshop, in which glass and ceramics were decorated. Liqueur decanters and glasses and other sets of table glass were designed and decorated with enamels in bright floral, bird and abstract patterns. Most of it is signed 'Delvaux Rue Royale Paris' in enamel letters on the base. In the case of sets, the decanters and some of the larger glasses were signed, the smaller glasses usually unsigned.

Delvaux exhibited glassware designed and executed by Sala and G. Neilz at various Salons and group shows, including the First Exhibition of Contemporary Decorative Arts organised by the Union Centrale des Arts Décoratifs in 1923 and 1925 International Exhibition of Decorative and Industrial Arts, both in Paris.

GEORGES DESPRET

Born in Belgium on December 7th, 1862, Georges Despret was trained as an engineer. On the death of his uncle, Hector Despret, in 1884 Georges inherited a small French glassworks, the Glacerie de Jeumont, which had been founded in 1859 at Jeumont (Nord). He very quickly began expanding the range of products, bringing a fellow Belgian engineer, Émile Fourcault (1862-1919), to help him.

Physical expansion of the glassworks took place by a series of takeovers of other glassworks, notably at Recquignies in 1893 and at Boussois in 1908. The consolidated firm became the Compagnies Réunis des Glaces et Verres Spéciaux du Nord de la France, manufacturing a wide range of mirrors, glass wall-claddings and tiles as well as plate-glass.

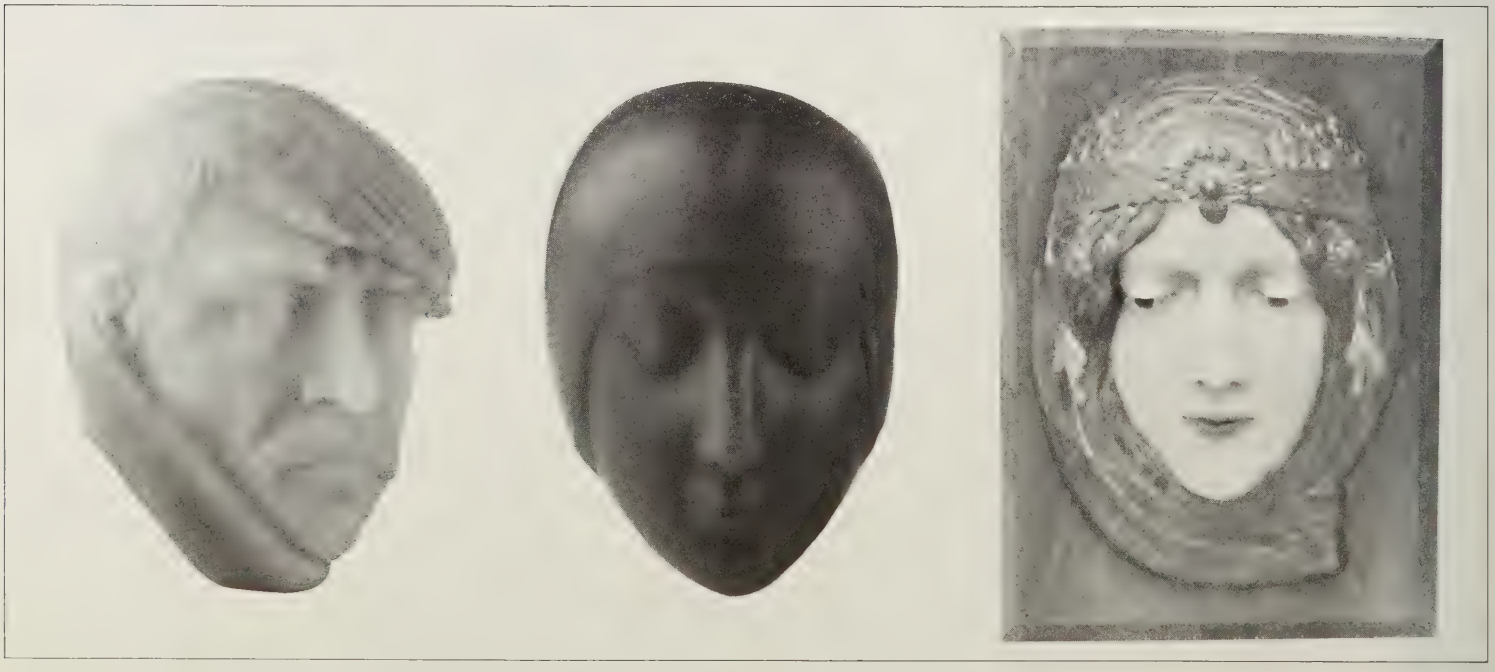
Georges Despret himself soon found that commercial success was not enough to satisfy him. He began to experiment with various glass pastes made with crushed glass and a binding agent. Unknown to Despret, Henri Cros was carrying out parallel experiments, though their final products were to look quite different from each other.

Despret first exhibited his company's glass at the Paris International Exhibition of 1889, and was awarded a Grand Prix. By the following year Despret had begun manufacturing small items in pâte-de-verre, after some years of experimenting. These first items are crude and roughly shaped. They were executed in several layers, each colour being superimposed on the preceding one, each layer requiring a separate firing in the kiln. The moulds used were frequently inadequate, giving a barely-modelled look to the pâte-de-verre. He also found difficulties in strengthening the paste sufficiently to hold as a complete model without cracking or breaking down.

The next ten years consolidated his experiments and enabled him to completely master the techniques of his chosen medium. His pâte-de-verre proved solid, heavy, with a smooth mat surface. Although completely opaque, its velvety surface takes the light in a way which produces an illusion of translucence. There is some occasional pitting from bubbles, particularly visible on the bases.

Despret first exhibited pâte-de-verre at the Paris Universal Exhibition of 1900. Although these small vases and bowls formed only a tiny part of his display of general glass, several were purchased by the Museum of Decorative Arts of Paris and the Berlin Museum of Applied Arts.

He soon concentrated on the production of small sculptures in pâte-de-verre. The earliest were direct copies of the Tanagra figurines in the Louvre Museum, but he quickly gathered a team of sculptors who designed and modelled for him. These included Georges Nicollet, Charles Toché, M. de Glori, Jean Goujon, Yvonne Serruys and Pierre le Faguays. Some of the vases and bowls were plain and smooth, shaped and coloured to look like sturdy Chinese, Japanese and Korean pottery. Others were made to look like carved hardstones, agate, chalcedony, or



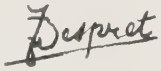
Despret – *Left:* Polychrome pâte-de-verre mask, 14.5 cm *c*1905; *Centre:* Purple pâte-de-verre mask, 11 cm *c*1905, (both Author's Collection); *Right:* Polychrome pâte-de-verre mask of Cléo de Mérode, 20 cm 1900. (Contemporary photograph)

even veined marbles. Others were moulded with grapes, sea-horses or scarabs. Others still were modelled as open flowers.

A vast range of masks was produced, some with hollowed backs, others with flat backs, like paperweights. They ranged from a portrait mask of Cleo de Merode, the famous Parisian 'cocotte' on whom men showered both fortune and love; to masks of crying or laughing babies; smiling, sad, grave or mysterious women's faces; to a variety of men, including Napoleon Bonaparte. An extraordinary range of models of gaping-mouthed, monstrous fish was made after models by Yvonne Serruys. Born at Menin on March 26th, 1874, she had studied sculpture under Égide Rombeaux and painting under E. Claus. She exhibited at the Salon of the Société Nationale des Beaux-Arts from 1897, at the Salons d'Automne and the Salons des Tuileries from their inception, and at the Salons des Artistes Décorateurs. She was later to exhibit at the Galerie Barbazanges in Paris, the 1925 International Exhibition of Decorative Arts, and the 1931 Colonial Exhibition at Vincennes. She was awarded both the French Legion of Honour and the Belgian Order of Leopold, and her works were purchased by French and Belgian museums. She also sculpted several public monuments in France, Belgium and Tunisia.

Other pâte-de-verre items made by Despret included sculptured book-ends, candlesticks, bowls, and ash trays. Gustave Kahn relates that Despret's search for naturalism once led him to use a live toad encased in paste and fired to get a perfect mould. Despret also produced a range of stained glass designed by Ehrmann and executed by Gaudin..

Despret pâte-de-verre is frequently made in a single, solid colour. The same model was often produced in a wide range of colours. Other items were made in polychrome, Despret having succeeded in producing several colours simultaneously in a single firing. Some items have several subtle colours blending to form, say, a naturalistic portrait. Others have splashes of fierce colour forming dazzling abstract patterns. They are usually signed 'Despret' in fine script, not always legibly or visibly, and sometimes have a serial number lightly scratched on the base.



Georges Despret exhibited his pâte-de-verre regularly in the Salons of the Société Nationale des Beaux-Arts from 1900 onwards, as well as the 1908 Franco-British Exhibition in London, the 1910 La Verrerie et la Cristallerie Artistique (Artistic Glass and Crystal Ware) Exhibition in Paris, at the 1911 International Exhibition in Turin.

Despret's glassworks was destroyed during the First World War, as was the collection of his finest pieces which he had donated to the Jeumont Communal Museum, struck by bombs. Reopened in 1920, the Despret glassworks worked at a much reduced output. Their last major exhibition was at Liège (Belgium) in 1930. The glassworks closed down in 1937. Georges Despret himself died on Christmas Eve, 1952.

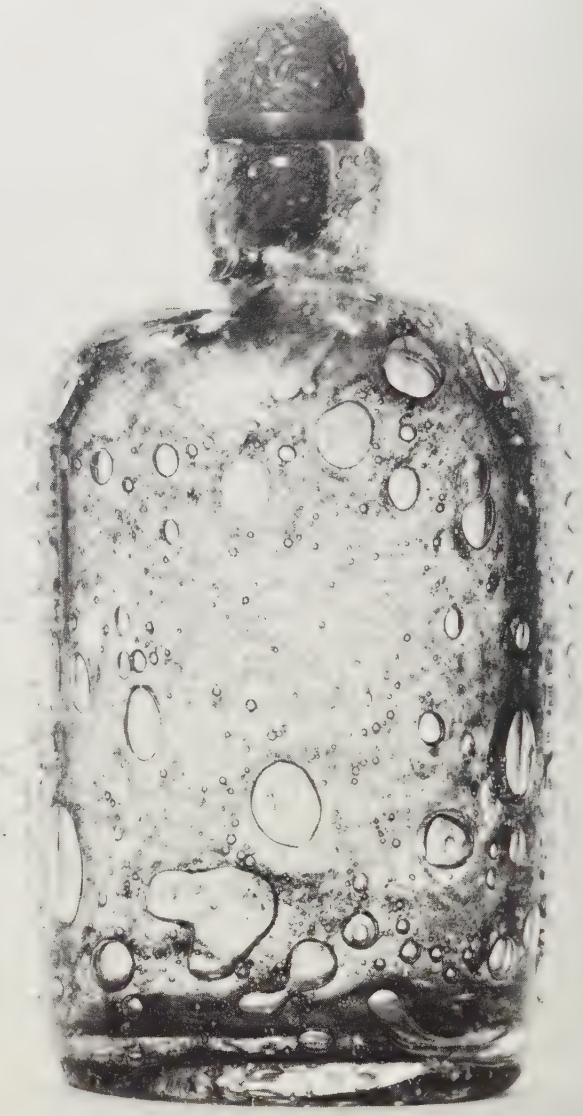
GEORGES DUMOULIN

Born at Vittecreux (Côte d'Or) on May 18th, 1882, Georges Dumoulin worked for eight years as a ceramist at the Manufacture Nationale de Sèvres before beginning to work with glass. He exhibited regularly at the Salon des Artistes Français in the Applied Arts Section, and received an Honourable Mention in 1913, a bronze medal in 1914, a silver medal in 1921 and a gold medal in 1924, after which he exhibited *Hors Concours*. He also exhibited his paintings in the Salon from 1922 onwards.

Dumoulin was deeply impressed by Maurice Marinot's furnace worked glass and, in the late 1920s, produced a number of vases and stoppered bottles of heavy glass with bubbled internal decoration. The vessels themselves are often externally decorated with serpentine decorations spiralled around the often waisted shape. Solid coloured vessels of less massive glass were also decorated with glass trailings and applications.

These vessels are normally signed 'G. Dumoulin' on the base, engraved with a diamond point. Some were, however, unsigned.

Dumoulin – Brown vase with applied clear glass pastilles *c*1925. (Collection Félix Marcilhac, Paris)



Dumoulin – Turquoise glass bottle with bubbles and serpentine applications, mass-produced stopper, 16 cm *c*1925. (Collection Dépôt 15, Paris)

WILHELM VON EIFF

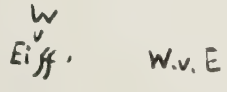
Wilhelm von Eiff was the son of a craftsman at the WMF glassworks at Göppingen, and was brought up surrounded by the glass and metal crafts. He learned to engrave on glass and metal when still a child, and attended the local art school where he studied drawing and design. As a young lad he was already familiar with all the techniques practised at the WMF glass and metal works, and began several years of travel around Europe, working briefly wherever he could or wished. Thus he worked for some time in René Lalique's jewellery studio, which was already being wound down, as well as in Charles Michel's glass engraving studio in Paris.

In 1913 von Eiff visited the Stuttgart Art School, where he was impressed and inspired by the Munich teacher and designer, Bernhard Pankok. He also met Stefan Rath (1876-1960), nephew of J. & L. Lobmeyr, who owned glassworks in Vienna and Bohemia. After the defeat of the Central Powers in the First World War and the dismemberment of the Austro-Hungarian Empire, when Bohemia became part of an independent Czechoslovakia, Stefan

Rath opened a new glassworks at Steinschönau in Bohemia, the J. & L. Lobmeyr's Neffe Stefan Rath, which von Eiff joined for some months in 1921. In 1922 von Eiff was appointed professor in cutting and engraving on glass and precious stones at the Stuttgart Art School.

Throughout the 1920s and 1930s von Eiff designed and executed a large variety of glass vessels in generally simple geometrical shapes, frequently globular, with superbly executed cut decorations in wave, repeating, abstract and random shapes and patterns. He also executed a number of miniature portraits on glass and gemstones with great expertise and intricate detail. Classical scenes and portraits were executed in *Hochschnitt*, or high relief, giving a sculptural quality to the engraved glass, all of which was superbly polished. In the 1930s he invented a hand-held tool which enabled craftsmen to execute engraved windows of enormous size. He was also a painter and etcher.

As a teacher von Eiff was enormously influential, and his pupils were drawn to him from many countries. Helen Monro Turner, the distinguished Scottish glass engraver who took over the Glass Design Department at the Edinburgh College of Art in 1947 and founded the Juniper Workshop (also in Edinburgh) in 1956 trained under him, as did glass craftsmen from as far away as Japan.



von Eiff's glass is normally signed with the initials 'W v E' and frequently bears the date of manufacture.

von Eiff – Intaglio-carved bottle, *c*1927. (Contemporary photograph)

ETLING

This was one of the most important editors of popular bronzes, statuettes and ornaments for the home in the inter-war years, with a retail shop at 29 rue du Paradis in Paris. Most of the Dimitri Chiparus designs for bronze and chryselephantine (bronze and ivory) figures were executed for Etling, which also edited figures by such artists as Maurice Guiraud-Rivière and Claire-Jeanne-Roberte Colinet. Ceramics and earthenware models were also executed by them, often by the same artists who executed bronzes for them (including Chiparus).

Etling also commissioned a wide range of decorative glass, vases and bowls as well as figurines. These were invariably made of moulded glass, most often a greyish glass with a frosted surface, sometimes contrasted with polished reserves or sections of the design. The figures were usually made of a highly polished, richly opalescent glass.

Geneviève Granger, born in Paris in 1877, and a student of Massoulle, designed both vases and figures for Etling. Her stylised, draped nudes and other figures were always highly decorative. She was a fine sculptor and engraver of medals, and exhibited at the Paris Salons from 1895, as well as at the Salon d'Automne. She was awarded an Honourable Mention in 1889 and a 3rd Class Medal in 1901. She was a Member of the Société des Artistes Français (Society of French Artists).

Lucille Sévin was an industrial designer whose style was more naive and primitive than Mlle Granger's. She designed several vases modelled with female nudes forming the handles, or else as part of the vase, as in a vase called *Femme Échevellée* (Dishevelled Woman) in which a nude, standing by a simplified palm tree leans sensuously backward, her hair swirling all around the body of the vase. Another vase, called *Oiseau de Paradis* (Bird of Paradise),

Etling – Opalescent glass figurine, 20.5 cm *c*1925. (Editions Graphiques, London)

Etling – Opalescent glass figurine, 23 cm *c*1925. (Editions Graphiques, London)

has the bird moulded in relief on the lower part of the vase, its majestic plumed tail rising up the body of the vase to form an elaborate, almost abstract relief pattern. She designed several figurines of standing and seated nudes, as well as a model of a sailing ship in a stylised sea called *Caravelle*.

Géza Hiez was a Hungarian sculptor, born in Budapest, where he had studied at the School of Fine Arts. He exhibited regularly at the Paris Salons des Artistes Français from 1924. He designed a figure of Leda, as well as birds and animals to be cast in glass by Etling.

Georges Béal, born in Paris in 1884, was both a sculptor and an industrial designer. A member of the Société des Artistes Décorateurs (Society of Decorative Artists), he was awarded a First Prize by the Société d'Encouragement à l'Art et à l'Industrie (Society for Encouraging Art and Industry). He was an exhibitor and Member of the Jury at the 1925 Paris International Exhibition of Decorative and Industrial Arts, and was awarded both Diplomas of Honour and Gold Medals at the various Salons. He exhibited regularly at the Salons of the Société des Artistes Français and the Société des Artistes Décorateurs. He designed a number of vases for Etling, in which the moulded relief is less prominent than in those by other designers, with simplified patterns of plants or pine cones. A model of three birds perched on a flower vase was fitted with an illuminated base.

ETLING FRANCE

Jean-Thèodore Delabasse, a French sculptor born at Lille in 1902 also designed models for Etling. A Member of the Société des Artistes Français, he exhibited regularly in their Salons, where he was awarded a Bronze Medal in 1928.

FENTON ART GLASS CO

The company was set up in 1905 by Frank Leslie Fenton as a decorating shop at Martins Ferry, Ohio, using glass blanks purchased from various glassworks. He was successful enough to open his own glassworks in Williamstown, West Virginia in 1907, where he was joined by his brothers John, Charles, James and Robert Fenton. John Fenton eventually left to open his own glassworks in Millersburg, Ohio. Frank Fenton remained as president and general manager until his death in 1948, and also designed much of the production. Jacob Rosenthal was employed as glassmaker for some twenty-five years, and was succeeded by his son Paul.

The early crystal produced by Fentons soon gave way to a popular imitation of Tiffany iridescent glass, although in the 1920s they diversified by producing richly coloured green, red, turquoise and ivory iridescent glass, usually decorated with a pattern of leaves and vines. They also produced a range of glass with mottled multi-coloured random decoration, usually on a cobalt-blue body. Fenton Art Glass was unsigned, and was identified by paper labels worded 'Fenton Art Glass'. The company survives as a successful glassworks.

GEORGES DE FEURE

Born in Paris on September 6th, 1868, Georges Joseph van Sluijters, whose mother was French and father a Dutch architect settled in Paris was taken, while still a child, to the Dutch East Indies. He was to spend most of his youth there before spending a while in the Netherlands and finally returning to Paris in 1890, where he became a student of Jules Chéret (1836–1932). He was also greatly influenced by Eugène Grasset, and Japanese and Javanese art. He was soon contributing illustrations to such newspapers as *Le Courrier Français* and *Le Boulevard*, and had begun to execute theatre designs for costumes and décor for the Montmartre nightclub Le Chat Noir and others. After first trying G. van Feuren as a pseudonym he finally settled on Georges de Feure.

He first exhibited his paintings and watercolours at Le Barc de Boutteville's gallery in 1892. His paintings and drawings on Symbolist themes inspired by Baudelaire and other poets soon attracted the attention of the Sâr Péladan, and he exhibited at the Salons de la Rose + Croix in 1893 and 1894. 1894 was also the year of his first one-man exhibition in Paris, held at the Galerie des Artistes Modernes, for which the Symbolist writer Paul Adam wrote the catalogue introduction. And 1894 was also the first year he was to exhibit at the Salons of the Société Nationale des Beaux-Arts (National Society of Fine Arts). In 1896 he exhibited with the Munich Secession.

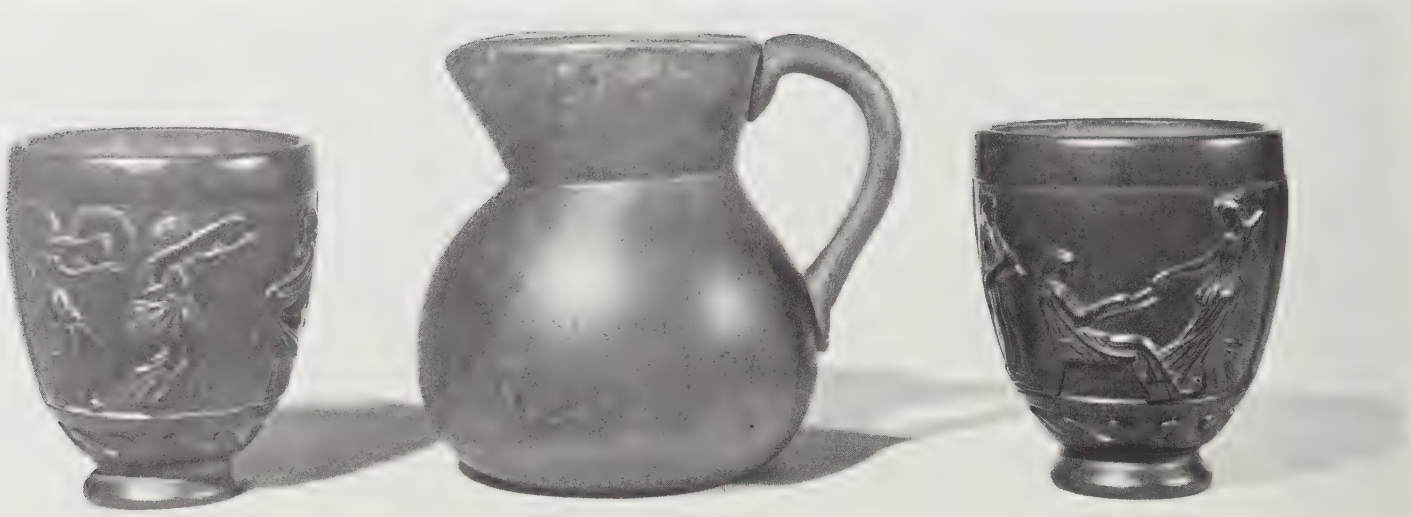
Georges de Feure was both a painter and decorative artist. In his paintings, drawings and book illustrations he developed a world of extraordinary, beautiful, sinister women, whose aristocratic features cannot hide the promise of doom implicit in their embrace. Plants and flowers luxuriate, proliferate, equally beautiful and menacing. He carried this theme through also in a series of tapestries, one of his most famous ones, *La Fée Caprice* (The Fairy Caprice) being exhibited in 1896. These were executed in the Atelier de Feure (de Feure Workshop), which he had established in Paris in association with the architect Theodore Cossmann. Here he designed furniture, fabrics, carpets, stained glass windows and panels, etc.

In 1899 he designed the furniture for the Fleury house, and executed a set of watercolours to illustrate Marcel Schwob's book *La Porte des Rêves* (The Gate of Dreams), his finest book illustration. The book also contained a fine etched and hand-coloured tryptich frontispiece. He designed lithograph posters and album covers in which the influence of Chéret and Grasset are equally clear, though the execution is unmistakably his.

He was one of the designers of the L'Art Nouveau-Bing pavilion at the 1900 Paris Universal Exhibition, decorating and furnishing one of the rooms as well as supplying large painted panels for the façade. Bing, in fact, had exhibited works by de Feure in his Maison de l'Art Nouveau from its inception, and gave him a major exhibition in 1903.

de Feure became professor of Decorative Arts at the École Nationale des Beaux-Arts (National School of Fine Arts) in Paris, but still found time to execute various commissions, notably decorated porcelain designs for the Porcelaines GDA (Gérard, Dufraisseix, Abbot) firm at Limoges, which was in association with Charles Haviland's firm there.

Only three models of art glass vessels are known to have been designed by de Feure, though he also designed some table glass. One is a handled pitcher, made of heavy glass whose colours blend from green to amber, with a mat surface roughened with hydrofluoric acid. The



de Feure – Two moulded glass vases in streaked purple glass, and pitcher with acid-finished surface, 12 cm and 17.4 cm *c*1910. (Private Collection, London)

colours vary from pitcher to pitcher, as do their intensity. The base of the pitcher is polished, and is signed with 'G. de Feure' in script with acid, using a stencil.

Another is a moulded vase with a frieze of Hellenic women dancing and playing musical instruments. Commissioned by the firm of Fauchon, it was produced in very large quantities. The earliest were in purple glass, streaked with amber, and signed 'G. de Feure' in a moulded script in low relief on the side of the vessel. Later ones were produced in purple glass, usually without the streaks, as well as pale blue-grey and transparent glass. The glass used was of poor quality, and frequently bubbled. All the later models have the signature on the base. These vases were normally sold filled with chocolates or sugared almonds.

The third vase was a cameo vase, with panels of Hellenic figures acid-etched using a template, in brown and yellow glass. This vase is also signed in relief script on the side. Some care appears to have been taken in the earlier issues of the two Hellenic vases to ensure that the modelling of the figures is properly rounded, and the details clear. Some later ones are very poor indeed, with blurred details and flattened forms. The three models date from about 1910.

G. de Feure

In his later years de Feure adjusted to the changing artistic climate, and painted and drew in the Art Deco style, notably a series of theatrical costume designs. Many of these were executed after his return to France in 1929 after spending several years in England.

FOSTORIA

This company was set up in 1899 by J. B. Crouse, his son J. Robert Crouse, Henry A. Tremaine and B. G. Tremaine in Fostoria, Ohio. Their first glass was produced in 1901. Within six years they had two factories in operation and a third in course of construction, and were employing some 700 workers. Much of their output was directed towards the lighting industry, including globes and chimneys for oil lamps as well as bulbs for incandescent lamps, arc-lamp globes, and industrial tubing.

Fostoria soon began the production of iridescent glass. Although some vases were made, as well as bowls, plates, dishes and other table-ware, most of their production consisted of light shades and globes, as well as some lamp bases. They are highly lustred, often with clear pulled decoration. Hearts with wire or Spider Webbing, linear patterns of dots or herringbone, pulled feathers, were all used in a variety of colours.

Fostoria registered its trademark for iridescent glass products in 1912, calling it 'Iris'. Iris glass is always unsigned. It originally bore a small oval label stating 'Iris. Fostoria, O'. Other Iris glass has been found bearing an original retailer's label listing 'Fostoria' as the manufacturer. Iris glass is otherwise impossible to differentiate from similar unsigned glass produced by Steuben, Union, Quezal, Vineland or Lustre Art. Undecorated gold iridescent Iris glass is equally impossible to differentiate from similarly unsigned Tiffany gold. Fostoria also produced a quantity of cut glass wares.

Fostoria was taken over by the General Electric Company of New York, to whom all their patents and trademarks were assigned. In 1917 General Electric closed down Fostoria and moved their works to Cleveland, Ohio and Niles, Ohio. No more art glass was produced by them.

ÉMILE GALLÉ

Émile Gallé was born at Nancy on May 4th, 1846. His father Charles Gallé, a native of Clermont-sur-Oise where he had traded in ceramics and glassware, had moved to Nancy in 1844, and there met and married Mlle Reinemer. Her father, who was of Protestant stock, owned a workshop producing mirror-glass. Charles Gallé took over the running of his father-in-law's business, and soon expanded into the production of table glass, which was blown at the Pantin and Saint-Denis glassworks, then decorated in a workshop which he opened at Meisenthal, usually with simple floral designs. He further expanded by taking over the Saint-Clément works, whose production of faïence had declined in both quality and popularity since its heyday in the eighteenth century.

Charles Gallé had, in the manner of the region, adopted his wife's surname as part of his own, and now called himself Charles Gallé-Reinemer. He launched much simply designed faïence at Saint-Clément, usually decorated with traditional motifs and views inspired by earlier ceramics, and these were normally signed with the initials 'G' and 'R' (for his surname) separated by the Cross of Lorraine. His best designer was Gengoult Prouvé, a native of Dieuze (Moselle), who had originally come to Nancy as a designer of embroidery, for which that city was famous, but the decline of that trade had forced him to change jobs. He joined Gallé-Reinemer shortly after the takeover of Saint-Clément, and there produced a number of designs which proved enormously popular, including the heraldic lions, owls, rabbits, dogs and the famous cats, all of which went on being produced for many years.

Émile Gallé was a prize pupil at the Lycée Impérial at Nancy, and was determined to follow an artistic career. At the age of sixteen he was already familiarising himself with the techniques employed at Saint-Clément, as well as drawing devices and motifs for glassware and pottery. Fascinated by botany, he took a course with Professor Vaultrin, and spent a great deal of time in the Botanical Gardens, as well as roaming the countryside. He also took lessons in drawing with Professor Casse and landscape painting with Paul Pierre.

In 1862 the young Gallé was sent to Germany by his father. He studied mineralogy, art history and botany at Weimar until 1864. Weimar, then a great artistic centre in Germany, was also useful in introducing Gallé to arts other than those of immediate concern to him. He met the composer Franz Liszt, then at the height of his fame, and was by him introduced to the music of Richard Wagner.

On his return to Saint-Clément in 1864 Gallé spent a year working with his father, then left for Meisenthal, where he was to spend the next four years studying glass techniques. Charles Gallé-Reinemer had a good working relationship with the Meisenthal glassworks of Burgun, Schverer & Cie. They supplied him with most of the basic glass he needed, and also maintained his small glass-decorating workshop. Émile Gallé was to continue this close working relationship for most of his life.

At Burgun, Schverer & Cie Gallé was initiated into all the complex techniques then in use and, within a year of his arrival, was given his own workshop in which to carry out his experiments. He even designed and decorated some vases for them, first under the direction of Désiré Christian, then on his own. But his most important researches were carried out in the firm's laboratories, where he studied the chemistry of glass.

Visiting London, Gallé spent many hours at the South Kensington Museum (now the Victoria and Albert Museum); the British Museum, where he saw the *Portland Vase*, as well as the collection of Roman glass, the Egyptian and Far Eastern collections; and also the Royal Botanic Gardens at Kew.

He returned to Saint-Clément in 1870, but shortly thereafter war broke out between France and Prussia. The young Gallé promptly volunteered to join the 23rd Regiment of the French army. It was a short war. By 1871 France had been defeated, the Emperor Napoleon III had left for exile in Great Britain, and Germany had annexed Alsace and much of Lorraine.

In 1871 Charles Gallé-Reinemer exhibited in London at the Arts of France exhibition, and Émile spent several months there acting as his father's representative. He attended some lectures at the South Kensington Museum, and continued to absorb the multiplicity of art that was on view. On his return to France he spent some months in Paris visiting the various museums, but particularly the Louvre. He was clearly reluctant to return home. Meisenthal was in German-occupied territory, as was Saint-Clément. On leaving Paris he went to work for the Raon-l'Étape ceramics factory.

In 1873 Charles Gallé-Reinemer built himself a large house set within extensive gardens at Nancy called 'La Garenne', at 39 avenue de la Garenne. Émile moved in, and founded a small glass workshop at Nancy. A year later his father turned over his business affairs to him. Émile persuaded his father to move the ceramics works to Nancy, and all the workmen and equipment were brought over from Saint-Clément. In 1875 Émile married Henriette Grimm, the daughter of a local pastor.

Gallé had very definite ideas about the 'right' way to make glass. It should be transparent and preferably colourless or palely tinted. The use of hydrofluoric acid was vulgar, crude, and should be rigorously avoided. Shapes needed to be classical and traditional, with slight variations. Enamelled decoration was fine, preferably inspired

Gallé – Cameo bottle wheel-carved with orchids in red over a pale blue ground in imitation of hardstone, 19 cm 1900. (Author's Collection)

by the past. And so Gallé produced a whole series of glass vessels with enamelled decoration in the style of the eighteenth century. He frequently used traditional decorative motifs normally used on ceramics, including swags, curled bows, and simplified landscapes or peasant scenes. He developed subtle colours for tinting the glass, pale browns, yellows, greens. In about 1875 he developed 'clair de lune' (moonlight), which was to become enormously popular and imitated in many countries. Made by adding potassium and cobalt oxide, 'clair de lune' was tinted a pale blue which turned to a brilliant sapphire when the light struck it.

Gallé soon managed to combine his twin loves of nature and glass, and began to decorate the glass with enamelled flowers and insects. Fanciful interpretations of flower forms were rigorously excluded. The plants and the insects were to be copied from nature, correct in every particular. Nature was to be the inspiration and guide, not merely a starting point. He was to remain faithful to his inspiration for the rest of his life.

The 1878 International Exhibition in Paris was Gallé's first contact with his contemporaries. He took an entire pavilion, and there achieved his first success, being given four Gold Medals. It was also there that he saw his first modern cameo glass in the English sections, carved by John Northwood, Alphonse Lechevrel and Joseph Locke. He saw Françoise Eugène Rousseau's experiments in glass, carved and applied, inspired by hardstones and mossy lichens. He saw the iridescent glass and adventurous shapes produced by the Cristallerie de Pantin. The combined impact of all this diversity had an enormous influence on Gallé. Clearly there was no single 'right' way to treat glass: clear and opaque, hard enough to carve and soft enough to mould, its properties and possibilities now appeared infinite and contradictory. He was to devote the rest of his life to exploring them.

Rousseau had shown him the way. Gallé saw his experiments with glass inspired by hardstones, then went back to the Louvre to see the carved rock crystals and gems. 'Do glassmakers not have the power to knead their own agates, marbles and rock crystals?' he wrote. His first experiments were in imitation of rock crystal, and were enamelled. Later he was to carve these in intaglio, and later still experiment with the imitation of other hardstones, calling himself a 'counterfeiting lapidary' (lapidaire faussetier).

Gallé continued to expand in other directions as well. In 1883 he built vast new workshops, keeping a large central studio for his own researches. The production of ceramics was maintained throughout his life, the ever-popular early designs created by Gengoult Prouvé being produced with colour variations, while new designers produced new wares. Japanese shapes were used, as were both grotesque and fanciful ones. The decoration was increasingly based on Gallé's beloved plants.

A large new carpentry shop was opened. The first furniture to be produced was fairly traditional, but he soon allowed it to become freer in design and decoration. Within a few years most vertical and some horizontal surfaces were covered in marquetry designs, ranging from illustrated nursery rhymes to elaborate pictorial scenes and floral representations, frequently with inset poems and quotations. Various coloured woods were used, as was mother of pearl for the more elaborate compositions.

Gallé's furniture was first introduced at the 1889 Paris International Exhibition, where it had a great impact. Orders flowed in, and he expanded the workshop to cope with the demand. The quantity of furniture made at the Gallé works was vast. Nests of tables, one-, two- and three-tier tables, desks, chairs, display cabinets, bedroom and living room furniture, music cabinets, torchères and sellettes, billiard-cue racks, stick-and-umbrella stands, mirror frames all flowed from Nancy. Great care and thought was lavished on the expensive pieces. Carving was frequently used, sometimes on the plane surfaces and usually on the feet and edges. Gallé's favourite motifs, the dragonfly, the 'ombelle' (cow-parsley), the banana leaf, the lily pad, were used both as subjects for decoration and as carved shapes for the actual furniture.

Gallé's glass experiments did not cease. At the 'La Pierre, le Bois, la Terre, le Verre' (Stone, Wood, Earth, Glass)

Exhibition, organised in Paris in 1884 by the Union Centrale des Arts Décoratifs, he exhibited a whole new range of enamelled glass. Describing it in his Notice, he wrote 'There is now no shade, however evanescent, which my palette of relief enamels on glass cannot reflect, from orange and sealing wax red, to violet and purple . . . These enamels may be overlaid with soft colours and receive metallic foils by insertion.' Some vases were decorated with both opaque and translucent enamels which 'give the eye complete satisfaction, whether examined by reflected or refracted light'.

Gallé had first met Joseph Brocard in 1878, when they had been fellow exhibitors at the Paris International Exhibition. Brocard's enamelled glass in direct imitation of Moslem Mosque lamps had already tempted Gallé to essay his hand at similar enamelled glass. Gallé's influence in turn had led Brocard to a wider range of decorative subjects, particularly floral. They were again fellow exhibitors in 1884, when Brocard exhibited vases of Middle Eastern inspiration, in which an overall enamelled pattern of arabesques was backed by a continuous ground of tiny flowers joined by a tangled web while a single cartouche or reserve framed a small scene of a rider on horseback, in the style of a Persian miniature. Gallé was to make a series of almost identical copies of these, in which the only variation was the use of hydrofluoric acid to etch the floral ground rather than enamel it. This gave it a depth and definition that Brocard's vases did not possess.

All Gallé's early strictures on glass had now given way to an avid search for new effects. Hydrofluoric acid was used freely to shape patterns, normally in conjunction with other techniques. He next abandoned transparency and clarity as an absolute, and began to use both opaque coloured glass and layered glass with intercalary decoration. Crystals of metallic oxides, silver, gold and platinum leaf inserts, crackling, all were used frequently from 1884 onwards. This was also the start of his *verreries parlantes*, while he made increasing use of wheel-carving.

The Paris International Exhibition of 1889 was a great triumph for Gallé. He had prepared several new types of glass which were greatly admired. There were several cameo vases with designs and motifs borrowed from Egyptian friezes. There was the series of *Noir* (Black) vases, sombre and beautifully carved, including the great *Orpheus* vase, after a design by Victor Prouvé. There was a much admired vase, now in the School of Nancy Museum, in which a large toad was carved, staring up at a dragonfly with outstretched wings. Just above some flowers was the inscription 'Nul Souci de Plaire' (No desire to please). It was a dark vase, with one bright contrasting patch of blue. The whole design had been etched with acid, then finished with wheel-carving, a technique Gallé was to use increasingly in the future.

Another innovative vase was the *Papillons Blancs* (White Butterflies), now in the Paris Conservatoire des Arts et Métiers Museum. A blue-green *verrerie parlante* vase with

Gallé – Free-formed footed bowl applied with a carved dragonfly, 26 cm 1904. (Conservatoire National des Arts et Métiers, Paris)

applied carved cabochons, the numerous white butterflies were made from enamelled glass segments applied to the surface of the parison, then embedded by rolling on the marver. This was the first attempt at what he was to call glass marquetry some nine years later.

Gallé was awarded a Grand Prix and a Gold Medal at the 1889 Exhibition, and was created an officer of the French Legion of Honour.

Two apparently conflicting tendencies had appeared in Gallé's work. On the one hand was the desire to create increasingly complex works, in which he could express his literary and artistic desires, his 'vitrified poems'. Much research and experimentation was needed for these vases, frequently preceded by many unsatisfactory prototypes which cracked, broke, shattered or fell apart during the making. They took much thought, time, energy to execute and had to be very expensive. On the other hand was the desire to create equally beautiful works which could be manufactured cheaply enough to be afforded by more than just the very wealthy and the State.

Gallé's craftsmen were supreme masters. A whole range of shapes was devised and numbered. The studio and workshops were surrounded by plants and flowers, close to fields where wild flowers bloomed, insects crawled,

Gallé – Persian Miniature vase, etched and enamelled, 16.5 cm 1884. (Collection Dépôt 15, Paris)

Gallé – Joan of Arc vase etched in black over green glass, inscribed '*De par le roy du ciel*' (By the grace of the King of Heaven) 25.5 cm *c*1888. (Sotheby's Belgravia)

jumped, hovered and flew. His designers were free to use whatever designs they wished, their only restriction being the need to be absolutely true to nature. In his *Écrits pour l'Art*, a collection of his written Notices on his glass, Gallé mentions a statement by Jacobus Moleschott: 'It is through plants that we long for the earth, they are our roots.' This was the basis of Gallé's profession of faith: 'Our roots are in the depths of the woods, on the edge of the springs, on the mosses.' ('Nos racines sont au fond des bois, au bord des sources, sur les mousses.') The only part of Gallé's workshops to have survived is a door, carved by Eugène Vallin and bearing this statement.

Once a designer had come up with a new subject for decoration, this was submitted for approval to Gallé, who frequently made changes or suggestions. All work had to be done under his control, but the direct supervision was carried out by his manager, Julien Roiseux, while the etching and engraving workshop was headed by Ismaël Soriot and Émile Lang. His leading designers were Louis Hestaux, Paul Holderbach and Auguste Herbst: while his principal glassworkers were Albert Daigueperce, Émile Meunier, Daniel Schoen, Émile Nicolas, Ferdinand Schmitt, Rose Wild, Gillet, Meyer, Louis Diebold, Jean Cordier, Mercier fils, Mariatte, Henri Mauchard, Émile Villermann, Émile Nuss, Henri Windeck, Louis Lazarus, Louis Rousseaux and Auguste Hardy.

Gallé himself designed a whole range of vases. He would make several sketches, detailing every side of the vase, then give an indication of the shape desired, if a standard one, or draw it if not. He would then provide copious notes on

the techniques desired, the exact colours required, and any additional details. He would even draw the signature he required, and indicate whether he wished a polished pontil and its size. It seems unlikely that he personally executed many vases, if any. He headed a major industrial factory, which must have required a fair amount of attention, and he certainly needed the rest of his available time to supervise and direct the research into new techniques that he was constantly seeking, as well as designing and supervising the manufacture of elaborate furniture as well as glass. The ceramics factory continued to produce new models in addition to the traditional ones, and he also opened a metal foundry to produce bronze bases for his lamps and vases as well as bronze appliques, handles, etc. for the furniture.

Gallé employed some three hundred craftsmen by 1889, and the demand for his work was becoming so great that he made a secret arrangement with Burgun, Schverer & Co. at Meisenthal, commissioning them to execute a number of vessels to his designs and instructions, and signed with his name. The precise details of this agreement are not known, as the relevant correspondence was apparently destroyed. Nevertheless, Burgun, Schverer & Co. certainly found the commission very useful in otherwise lean days. The agreement appears to have lapsed in about 1896.

The Gallé glassworks were now known as the Cristallerie d'Émile Gallé, and variations on this name were frequently used as signatures. Wheel-carved vases were produced in a variety of colours, sometimes with very deep carving on thick-walled vessels. Hydrofluoric acid was invariably used to rough out the cameo designs, which were then wheel-carved, but it was also used increasingly to obtain special effects.

Elected a member of the Societé Nationale des Beaux-Arts in Paris at its foundation, Gallé exhibited regularly at their Salons from 1892. In 1893 he exhibited at the World Columbian Exposition in Chicago and in 1894 at the Decorative Arts Exhibition at Nancy. In 1897 he exhibited at the VIIth International Art Exhibition in Munich, where he was awarded a Medal 1st Class. In 1898 he exhibited twice in Germany, at the Munich Secession Exhibition and at the Darmstadt Art Exhibition. Many elegant shops stocked his wares, but he also opened his own depositories in Paris in 1885, in Frankfurt-am-Main in 1897 and in London a year later.

Gallé was always responsive to that which moved him, 17th and 18th Century ceramics, Roman glass, Moslem enamels, Egyptian bas-reliefs, the experiments of his fellow glassmakers, all had inspired designs and techniques from him. Nature was and remained throughout his life the prime source and inspiration. Chinese art, and particularly Pekin cameo glass, inspired several designs in the 1890s, although as early as 1878 he had executed a strange glass vase in the shape of the head of a Chinese lion, the opening being the mouth. Also enamelled on

Gallé – Cameo lamp etched with a floral design in a wrought iron mount, 58 cm *c*1900 (Collection Félix Marcilhac, Paris)

it was a grasshopper and plants, and the signature was shaped like an ideogram. Japanese art, a major inspiration for all European Art Nouveau, showed him a new way of looking at nature. The simplicity of Japanese stoneware exhibited at the 1867 Paris Exhibition, as well as Japanese woodcuts, first led him to attempt some 'Japonification' of his vision of nature in his enamelled glass. At the 1878 Exhibition, a few works 'soberly decorated with sprigs of green in the Japanese manner' were noted. Tokouso Takashima, a Japanese botanic artist, spent the years from 1885 to 1888 in Nancy. He and Gallé became friends, and the latter took instruction from the Japanese master in brush techniques. In the later 1890s Gallé produced some fine carved cameo and marquetry vases in which the floral decor clearly bears the imprint of Japanese influence.

Gallé – Padded vase carved with a leaf design, 41.2 cm *c*1900. (Private Collection, Paris)

Gallé – Subtly carved floral vase, 35 cm *c*1900. (Private Collection, Paris)

The Impressionists had an equally great influence on him. Their rejection of ordinary pictorial realism in favour of the fleeting 'impression' brought about by the play of light and shadows resulted in a key change in the relative importance of the artist and his creation. The academic idea of the importance of the conception of a 'realistic' composition which would illuminate the anecdotal subject in such a way as to evoke the required mood in the viewer gave way to the central importance of the artist himself, his own feelings, sensibilities, conception and vision of the world, expressed by a build up of light and colour, often intangible, evanescent. Gallé's own ideas of artistic sensibility and creativity echoed those of the Impressionists. He was to spend years attempting to produce in glass the effects they obtained with paint on canvas, using every chemical reaction he could. In the late 1890s and until his death he produced some vases with fleeting, dream-like decoration, patches of colour which were truly abstract art, prefiguring a later movement in painting.

The final great influence on his work was literary. Poetry was the gateway to his dreams, and his vases were both an interpretation of poems and a poetic expression: he called them 'vitrified poems'. Romantic poets, such as Lamartine, Alfred de Musset, Chateaubriand, influenced him, but the Symbolists were closest to his heart. And the three poets to whom he was to turn over and over again were Charles Baudelaire, Victor Hugo and Robert de Montesquiou.

In a speech in May 1900, given to the members of the

Stanislas Academy at Nancy to which he had just been elected, Gallé said 'Those masters of the verb, the poets, are also the masters of decoration; they have the genius of the image, they create the symbol.' Baudelaire was the master of the 'harmonic resonances' of nature, and Gallé used both images and quotations from the poet's work over and over again in glass as well as on marquetry on furniture.

As a romantic youth Gallé had been an avid reader of Victor Hugo's novels, which had aroused his social conscience. In later years Gallé was to express Hugo's beliefs in peace, love, justice, truth and freedom in his own writings as well as in quotations from Hugo's poetry on his glass and furniture. As an omnivorous reader Gallé also used quotations from a vast number of writers, both French and foreign, the latter including Dante and Shakespeare.

The Symbolist poets, however, were closest to him in later years. Maurice Maeterlinck was one influence on his work: Gallé loved his curious melancholic verse, and frequently used quotations to complement some of his 'vases of sadness'. Maeterlinck's fervent verse often approached a hint of religious mysticism which also appealed to Gallé. But the Symbolist poet who most influenced Gallé was Montesquiou.

Count Robert de Montesquiou-Fezensac (1855-1921) was the archetypal aesthete, on whom J. K. Huysmans modelled the character of Duc Jean Floressas des Esseintes in his novel *À Rebours* and Marcel Proust the character of Baron de Charlus in *À la Recherche du Temps Perdu*. A close friendship grew between Montesquiou and Gallé, fed by an extensive correspondence which began in 1887. Montesquiou introduced Gallé to Proust, and persuaded him to go to Bayreuth to meet Richard and Cosima Wagner. Their letters ranged over their common interests in art and literature, but frequently roved through the curious by-ways of mysticism and religion, which enabled Gallé to enter the aesthetic world of obfuscation, of verbal parallels in which he attempted to put into words that which he was attempting to achieve in glass. The interchanges between the two men were frequent. Montesquiou dedicated several poems to Gallé. Gallé frequently used quotations from Montesquiou on his *verreries parlantes*. Montesquiou wrote a number of poems on the subject of bats, published them in a collection called *Les Chauves-Souris* (The Bats) in 1892. Gallé executed a whole series of vases using the bat as principal motif. Gabriele d'Annunzio, the Italian poet, reviewing *The Bats*, wrote that the poems were seemingly 'engraved on onyx or simulated amethyst' and likened them to 'the wrought glasses of Gallé'.

Gallé's fame increased throughout the 1890s. It became fashionable to offer Gallé vases as presents, and Proust, Montesquiou, Baron Rothschild, Germain Bapst, novelists, poets, politicians and the merely rich all joined in the fashion. The French State, the Paris Municipality, frequently commissioned vases from Gallé for presentation to visiting Heads of State and other notable visitors. The critic Roger Marx, himself a collector of Gallé's vases, eloquently sang his praises of Gallé's work. But not all critics wrote in admiration. Gabriel Mourey, writing in *The Studio* in 1897 with admiration for the work of Karl Koepping and Louis Comfort Tiffany, continued: 'By comparison, M. Émile Gallé's works in glass are barbarous objects, clumsy and pretentious in conception and in realisation alike. It is all in vain that he has become inspired by M. de Montesquiou's infantile verses – for these latter can add no value to articles worthless in themselves.'

Gallé – *Rose de France* vase, the rose carved in relief in the applied cyclamen glass, the leaves applied in different colours, 13.5 cm *c*1900. (Sotheby's Belgravia)

In April 1898 Gallé took out patents for two new techniques on glass, patination and marquetry. Patination involved the use of either the marver or a special kiln for covering or spraying part or all of the parison with coal or other dust which then reacted with the plastic glass in such a way as to create a rough or smooth mat surface. This could be left as the actual surface or cased in an outside layer of untreated glass. The actual vessel could then be decorated in all the usual ways, including the insertion of metallic foil and marquetry.

Marquetry consisted of applying shaped slivers of coloured glass into the plastic parison in predetermined places as part of a design. It was essential to choose slivers of glass with a coefficient of expansion which was as close as possible to that used in the parison, since uneven expansion would cause the glass to crack, and it was necessary to reheat the parison for each sliver insertion.

Gallé – Chinese-style lamp etched with flowering prunus, 26.4 cm *c*1900. (Sotheby's Belgravia)

After the annealing process was completed the marquetry vase was normally wheel-carved to complete the design. A final external layer of clear glass was occasionally added, trapping the carved marquetry underneath it. Needless to say, any other technique could be used in conjunction with marquetry.

Gallé made, or was commissioned to make, several unique vases, for commemorative or presentation purposes. Some were for presentation to the Queen of Italy, the Empress of Russia or the Countess Greffulhe. Some were dedicated to friends: Edmond Rostand, the novelist; Louis de Fourcaud, a leading industrialist who was both friend and patron; Victor Lemoine, a great horticulturist of Nancy who created a new variety of primrose and named it after Mme. Gallé; Victor Prouvé. Special commissions included the *Pasteur* vase, commissioned by the École Normale Supérieure for presentation in 1893 to the great scientist Louis Pasteur on his seventieth birthday; and the extraordinary *La Soude* vase (Soda vase), commissioned in 1902 by the Belgian chemist Ernest Solvay (the manufacturer of soda from ammonia) who had the most stylish Art Nouveau home built for him in Brussels by Victor Horta. *La Soude* recreates a geological formation even more than Gallé's 1896 vase *Géologie*, rising from a rough, rocky crystal base upwards through appliqué rough, rock-like cabochons to the main body of the vase, representing matter in fusion, while lava-like applications pour down the body from the lip.

In 1894 Alfred Dreyfus (1859-1935), a French officer from a Jewish family of Mulhouse, in Alsace-Lorraine, was falsely accused of betraying military secrets to Germany. He was court-martialled and sent to Devil's Island on the perjured evidence of the true traitor. Although this was found out in 1896, the French High Command attempted to suppress this information, and provided forged documents in support. A great movement in support of a retrial was led by the novelist Émile Zola and Georges Clémenceau, the politician, while a virulent campaign of anti-Semitism swept the country, frequently led by artists and writers, including Caran d'Ache, Forain and Poulbot, the latter even running for office as an 'Anti-Semitic Candidate'. In 1897 Proust launched the 'Manifesto of the One Hundred and Four' for a retrial, and Gallé and Montesquiou were both signatories. A retrial in 1899 still found Dreyfus 'guilty with extenuating circumstances', and it was not until 1906 that the Court of Appeal finally declared him innocent, and reinstated him to his military rank. The anti-Semitic feelings were still further complicated by a French feeling of loss and betrayal of Alsace-Lorraine, and a great distrust of Frenchmen with German-sounding names. In 1899 Gallé executed a vase called *Les Hommes Noirs* (The Black Men) after a design by his friend Victor Prouvé, which symbolised the lies and fanaticism provoked by the Dreyfus Case. Gallé had been a tireless champion of Dreyfus, writing letters and articles and drumming up support.

Apart from a few such unique vases, most of Gallé's glass creations were made in more than one example. The most complex may only have been made in from two to six examples, but once Gallé had devised a fine vase, he liked to produce more than one if only in case that one cracked during the annealing process (a frequent occurrence) or later. Variations were frequently used, so that a certain decoration would be used on various different shapes. It is perhaps worth pointing out that since all these vases were hand made, even two examples of the same decorative design on the same shape and made at the same time will have certain differences from each other.

The products of the Gallé glassworks had become so popular that a number of other glassworks were making cameo and enamelled vases 'in the style of Gallé'. 'In my cheaper productions', he wrote, 'I have avoided the false, the absurd and the fragile. I have, sometimes to my own detriment, opened the gates to other glassworkers and prepared lucrative paths for major factories to follow. Imitations of the "Gallé style" have been made. This makes me happy. May moderation, sobriety and good taste always preside over the use to which my little discoveries are put'. Unfortunately, of course, that did not always happen. Certainly the immediately contemporary work of the Daum brothers, Burgun & Schverer, D. Christian, were creative and original. But the 'Gallé imitations' that were to flood the market for years, coming from Bohemia, Germany, Scandinavia and a host of factories in Lorraine are rarely of more than historical interest: derivative, deliberately imitative, totally uncreative, frequently ugly and surprisingly crude in execution. Unfortunately, Gallé was himself at least partly responsible for this enormous outpouring.

Gallé – Cameo vase wheel-carved with orchids in red over grey-blue glass, bronze foot by L'Escalier de Cristal, 14 cm *c*1900. (Private Collection, London)

Gallé – Wheel-carved floral cameo vase in translucent green, inscribed '*Emile Gallé delt & fect.*', 16.2 cm *c*1900. (Editions Graphiques, London)

Gallé's early industrial production had been of great quality. Whether enamelled, carved or etched, it was always studied, accomplished, beautifully finished. Though this was his 'cheaper production' as opposed to the very expensive highly wrought vases, quality and finish were never sacrificed. Curiously enough, the master artisan Gallé had an urge to become an industrialist as well.

Auguste Legras, one of the major manufacturers of industrial cameo glass in Paris, wrote: 'M. Gallé's production, though small, is interesting in its variety. It is true art glass, dreamy glass, poetic glass, whatever you wish to call it except commercial glass . . . M. Gallé is the Meissonier or the Carolus-Duran of glass'. Though partly admiring, Legras' jibe clearly rankled. Gallé began the production of purely acid-etched pieces which could be produced in series.

The method was fairly simple. Using a 'verre double' (two-layered) blank, hydrofluoric acid was used to cut out the pattern of plants, or a landscape, using a template. Thus the same pattern could be used over and over again. The technique was there, fully developed. Gallé, of course, was not satisfied. He would have the glass layered both sides and a floral pattern etched both outside and inside, particularly on open bowls or lamp shades. Or he would have the inside sections of the vase directly behind part of the cameo pattern, say a flowerhead, thinned by acid so that the light, coming through the vase, would give a particular glow to it. The purely acid-etched two-layered cameo vase production during Gallé's lifetime was fairly small, starting in the late 1890s. It was paralleled by an increasing production of series furniture, in which marquetry designs for flat surfaces was standardised and shapes, particularly legs, vastly simplified.

Gallé himself was, however, preparing for the Paris 1900 International Exhibition, the 'Exposition Universelle' that was to herald the arrival of the new century. His stand was spectacular. In the centre was a glass-maker's kiln, with a full set of tools, a collection of models of ancient glass and the remnants of vases which had been cracked, split or been otherwise damaged in the making. In front of the kiln he had had inscribed a verse from Hesiod:

> But Men are counterfeiters and prevaricators
> Come to me, Demons of the Fire
> So that all may learn to practice
> Justice

Glazed cabinets surrounded the kiln, filled with the most sumptuous of Gallé's creations, marquetry vases, verreries parlantes, vases mounted in silver, bronze, wrought iron and wood, landscape, floral and impressionist designs, simulated hardstones and glass sculptures, as well as a full range of acid-etched, wheel-carved, fire polished and enamelled vases and bowls. It was a triumph for Gallé and his men. He was awarded two Grand Prix, one for glass and one for furniture, and was elevated to the rank of Commander of the French Legion of Honour. A Gold Medal was awarded to Louis Hestaux; Silver Medals to Albert Daigueperce, Émile Meunier, Julien Roiseux and Ismaël Soriot; Bronze Medals to Émile Lang, Daniel Schoen, Émile Nicolas, Ferdinand Schmitt, Rose Wild, Gillet, Meyer, Jean Cordier and Louis Diebold. That same year Gallé was elected to the Stanislas Academy at Nancy.

Gallé had long hoped to see the great art craftsmen of Lorraine united in some form of artistic and professional

Gallé – Wheel-carved orchid vase set in a bronze mount by Emile Falize, engraved with the verse '*Ecoutez la chanson triste/Qui ne pleure que pour vous*' (Listen to the sad song/Which only weeps for you), with an applied opal glass tear, 20 cm, inscribed '2 Mai 1876, 2 Mai 1901'. (Private Collection, Paris)

Gallé – Greyish glass vase overlaid in dark purple deeply cameo-etched, carved and fire-polished with a continuous pattern of marguerites and leaves echoed in the elaborate silver mounts at neck and foot, 17.25 cm *c*1900. (Editions Graphiques, London)

association. The Paris 1900 exhibition had shown him the great advantages of the powerfully promoted foreign exhibitors, as well as those of the solidly based Parisian firms. He soon succeeded in persuading several Lorraine artists, artisans and architects to unite. The 'School of Nancy, Provincial Union of Art Industries' was set up in February 1901. Émile Gallé was President, with Antonin Daum, Louis Majorelle and Eugène Vallin as Vice-Presidents. Gallé had already helped finance the launching of a newspaper called *L'Étoile de l'Est* (The Star of the East), and had helped found a 'Popular University' with Victor Prouvé and Eugène Perreau. Now he led the School of Nancy to organise a series of courses in the various arts and crafts in order to nurture and foster a continuing tradition of sane, creative craftsmanship.

Gallé exhibited in 1901 at the Dresden International Exhibition and in 1902 at the First International Exhibition of Modern Decorative Arts in Turin. In 1903 he exhibited with his fellow members at the School of Nancy Exhibition organised in Paris by the Union Centrale des Arts Décoratifs, for which Gallé wrote the introduction to the Catalogue, emphasising the School's aesthetic dependence on Nature. In 1904 the School of Nancy held its second exhibition, this time at Nancy.

Émile Gallé had suffered from ill-health for some time, and was directing the production of new glass and furniture

Gallé – Spiderweb vase in translucent glass overlaid in iridescent burgundy, the web acid-etched in relief with random bubbles carved in intaglio, the falling and trapped leaves wheel-carved in cameo relief, signed on the base within an elaborate carved leaf, 17 cm *c*1900. (Author's Collection)

Gallé – Shell-shaped vase carved in intaglio with a design of cherubs and snails drawn by Victor Prouvé, the foot enamelled, inscribed on the base '*La limnée de nos étangs m'a conseillé la forme de ce vase – E‡G – Exposition 1889 Galerie d'Honneur*', 30.5 cm 1889. (Manfred Seymour Ltd., London)

for the coming 1905 Paris Salon from his bed. On September 23rd, 1904, he died of leukaemia.

He was succeeded as President of the School of Nancy by his closest friend, Victor Prouvé (1858-1943). Born in Nancy, the son of Charles Gallé-Reinemer's designer Gengoult Prouvé, Victor Prouvé was apprenticed as a child to a banner painter. At the age of twelve he designed an amusing set of farmyard designs for the Saint-Clément works. In 1873 he studied successively with the sculptor Petre and the painter Devilly, while working part-time at the Saint-Clément works. Prouvé then left for Paris, where he studied under Cabanel at the École des Beaux-Arts.

Although twelve years younger than Émile Gallé, a very close and enduring friendship grew between the two men. Prouvé first exhibited at the Paris Salon in 1882, one of the paintings being a portrait of Madame Gallé with her daughters. Prouvé spent several years shuttling between Paris and Nancy, and he spent six months travelling in Tunisia in 1888, then again visited that country in 1890, both times as a result of winning travel scholarships. He became increasingly sought after as both painter and sculptor.

Although he never worked for Gallé, Prouvé frequently collaborated with him. Prouvé designed the decoration for a number of vases for Gallé, including *Night* in 1878,

Gallé – Vase in clear glass with clouds of black inclusions deeply carved with a large winged insect, lotus leaf and decorative motifs, gilt and enamelled, with an elaborate bronze holder by L'Escalier de Cristal, vase 10 cm, base 10.5 cm *c*1890. (Private Collection, London)

Sleep, Silence, the famous *Orpheus Imploring the Shade of Eurydice* of 1889, *Amor Chasing the Black Butterflies* also of 1889 and the Dreyfus *Black Men* vase of 1899. It is said that all Gallé vases which have designs incorporating human figures were designed by Prouvé, but there is no real proof of this. Prouvé also executed a number of designs which were carried out in wood marquetry by Gallé's workshops, including table and desk tops, pianos and cabinets. He also carved some panels in bas-relief for Gallé cabinets. Gallé wrote to Prouvé 'It will be a great honour for me to have collaborated at your side on the same work'. Referring to Prouvé's marquetry panels on the subject of the Rhine dividing the Gauls from the Germans, which he was inserting into a long table, Gallé wrote to him 'I have made a great effort to set these precious stones, and accompany your powerful bassoon with a modest little flute, as is only fitting'. Prouvé also executed designs for marquetry panels for Louis Majorelle.

In 1892 Prouvé painted a portrait of Gallé at his bench decorating a vase, and surrounded by several other vases. Prouvé described the painting (now in the School of Nancy Museum) in a letter to his mother: 'Here is Gallé at work – not without his! and hos! and has! and screams! and arms flung up in the air, but I couldn't care less, I have him. There's enough here to do something good . . . A symphony in grey with a taste of crystal, of those crystals whose hues are so delicious'. The painting was exhibited at the Paris Salon in 1893, and was instrumental in getting Prouvé elected to full membership of the Societé Nationale des Beaux-Arts. When Prouvé was created a Knight of the French Legion of Honour in 1896, Gallé presented him with a vase especially designed for him.

As Gallé's successor at the School of Nancy Prouvé proved an energetic President. He persuaded a number of firms to subsidise design contests, and sought to set up a school of artistic crafts. Though this was set up in 1908, it was not successful. In 1907 he became President of the Provincial Union of Decorative Arts, an organisation very similar to the School of Nancy. He led an official delegation to the 1908 Munich Exhibition, as a result of which a number of Munich artists participated in the 1909 East of France Exhibition held at Nancy. In 1912 Prouvé was elected a local councillor.

The School of Nancy was dissolved in 1914, at the outbreak of the First World War. Its aesthetic base had been

Opposite
Gallé – Blow-moulded and carved water-lily vase, 25.5 cm *c*1900. (Private Collection, Johannesburg)

Page 86
Gallé – Cameo lamp, the three-coloured base acid-etched with a continuous landscape, the shade etched with eagles flying across stylised clouds, 62 cm *c*1900. (Collection Elton John, Windsor)

Page 87
Above left
Gallé – Double scent bottle modelled as two iridescent glass birds, the removable heads forming the stoppers, perched on a macassas ebony base, 13.5 cm *c*1898. (Private Collection, Paris)
Above centre
Gallé – Floral carved marquetry vase of Japanese inspiration with shaped bronze base, 23 cm *c*1898. (Private Collection, Paris)
Above right
Gallé – Large blow-moulded vase etched with plums, *c*1900. (Editions Graphiques, London)
Below left
Gallé – Crocus vase, the threaded base representing the roots, the mottled knop representing the bulb, the carved and etched flower backed with internal decoration, the whole fire-polished, 28 cm *c*1898. (Private Collection, London)
Below centre
Gallé – Internally decorated vase overlaid with silver-grey glass carved as three dragonflies, their eyes in enamel jewels simulating opals, 23 cm *c*1898. (Author's Collection)
Below right
Gallé – Patinated glass vase, the floral design carved, set within an organic silver mount set with gemstones, 22.7 cm *c*1898. (Author's Collection)

undermined as early as 1908, when van de Velde had stated crushingly that: 'all botanic motifs carry in themselves something trivial'. The elaborate ornamentation which had been its glory was no longer fashionable. It was not even acceptable. Prouvé spent the war years designing patriotic posters. Nancy was being heavily shelled, so he hired a studio in Paris in 1917, but returned to Nancy after the Armistice. In 1919, at the age of sixty-one, Prouvé became Principal of the Nancy School of Fine Arts, a post he retained until 1940. He died in 1943.

After Émile Gallé's death his son-in-law Paul Perdrizet, an art historian, took over the running of the works on behalf of Gallé's widow and daughters. Preparations for the 1905 Paris Salon were nearly complete. It was to be a posthumous triumph.

For a short while after Gallé's death the Gallé glassworks continued to produce fine quality glass in small quantities, including marquetry, carved, patinated and polished vases. Paul Perdrizet, however, took the decision to concentrate on the production of simplified two-layered acid-etched cameo glass. The decision was undoubtedly correct: without the guiding hand of a creative innovator like Gallé, the invention would have gradually degenerated and eventually devalued the earlier work. As it was, the break was so total and complete that late industrial Gallé vases, bowls and lamps can in no way be confused with those produced in Gallé's lifetime: they were a commercial undertaking and, as such, highly successful. The only pity is that the name 'Gallé' was still used.

To mark the death of Gallé, all glass produced after September 1904 was signed 'Gallé' with the addition of a star. This starred signature was used until 1914, when the Gallé works were closed down at the outbreak of war. It is also found on the few fine quality pieces produced in the year or two following Gallé's death.

The Gallé glassworks did not exhibit in the glass section at the East of France International Exhibition held in 1909 at Nancy. Some Gallé glass was, however, exhibited there in the School of Nancy Pavilion, designed by Eugène Vallin, in which Victor Prouvé's portrait of Gallé held pride of place. Mme Gallé was a Member of the Jury, along with Antonin Daum, Louis Majorelle and Victor Prouvé. The glassworks did, however, exhibit in Paris in 1910 at the 'La Verrerie et la Cristallerie Artistique' Exhibition.

Gallé – Bottle in purple glass carved with a large bat, inscribed with two lines by Robert de Montesquiou *'La bonté de la nuit caresse l'âme sombre/Le silence des nuits panse l'âme blessée'*, 26 cm *c*1892. (Private Collection, Paris)

The Gallé glassworks reopened in 1919 after the Armistice. Again only acid-etched assembly-line cameo glass was produced, the base colour usually a dull grey, the overlay being brown, purple or green in most cases, the design usually floral, occasionally scenic. Some special orders were occasionally executed, usually of enamelled glass, such as that for the La Marquise de Sevigné chain of coffee shops. Artistically minimal, these late works were commercially highly successful for many years. At the Paris 1925 Exhibition of Modern Decorative and Industrial Arts they took a sales stand, but were either ignored or reviled by the critics. The late twenties showed a flagging

Opposite
Left
Gallé – 'Verrerie parlante' oak leaves, acorns and stag beetle vase, carved, etched and fire-polished, inscribed *'O forêts, ciel pur/Ombre des grand chênes/Au delà des haines/ Vous cherchez l'azur – Victor Hugo'* (O forests, clear sky/Shadow of the great oaks/ Beyond hatreds/You seek the azure – Victor Hugo), 64.8 cm 1900. (Collection Elton John, Windsor)
Right
Gallé – Green waisted vase applied with polychrome carved glass flowerheads, 24 cm *c*1898. (Private Collection, London)

Gallé – Vase mould-blown in brown, amber and yellow glass with some acid-etching, 29.5 cm *c*1920. (Private Collection, London)

public interest in their production, and the glassworks finally closed down in 1931.

Enamelled Glass: Gallé's first vases were enamelled and he continued to use the technique for the rest of his life. These first vases, dating from 1878, were made of transparent glass on which an outline design was drawn in brown with a brush. The vase was then given to an enameller to fill in the outline with enamel colours, sometimes leaving the brown outlines visible, after which the vase was refired at low temperature to enable the enamel to vitrify. The colours used were red, opaque green and turquoise, white, blue and gold. He later widened his palette to include a wide variety of colours and shades. The very first designs based on 18th Century French faïence, Bohemian glass or Japanese models, enamel painted in a single colour with a little landscape, continuous scene or bit of plant soon gave way to freer floral or plant designs. The example of Joseph Brocard tempted him to essay Islamic patterns, frequently covering the whole surface with enamels.

In the 1880s Gallé began a Medieval phase, producing a series of vessels with armorial decorations, as well as a more interesting series representing medieval personages which included Joan of Arc, a number of ecclesiastic personages, and illustrations of poems by François Villon. The latter were inspired by the look of illuminated manuscripts, and represented his first attempts at *verrerie parlante*, including as they did a line or so of quotation. Villon's *Ballade des Dames du Temps Jadis* appealed to him most, and he executed a large number of vases and bowls on themes drawn from it.

From the 1880s Gallé used enamelling increasingly in conjunction with other techniques, including acid-etching and carving. Instead of applying the enamel directly onto the smooth vessel, a pattern was first acid-etched onto the glass, then filled with enamel, which gave both a better adherence and a shallower surface. He also initiated the more complex technique of first decorating the vase with opaque enamels, then applying translucent enamels on top. In reflected light the design glows with an inner fire: He also occasionally used the 'verre églomisé' technique, in which a small enamelled piece of metal was sandwiched between two layers of glass. Metallic foil sandwiched between the glass layers was frequently used in conjunction with enamelled designs, particularly on transparent vessels.

Gallé also developed what he called *émaux-bijoux* (enamel jewels), in which successive layers of enamel were built up on a fine metallic base which provided the strength, and was then applied with heat to the surface of the vessel. This enabled Gallé to execute a dragonfly's globular eyes, or a beetle's raised carapace. In thinner layers it could extend the range of colours and thickness of decoration possible.

'Verreries Parlantes' (Speaking Glassware). This was Gallé's name for vessels inscribed with quotations. The earliest were enamelled on the 'Medievalist' vases and bowls, designed to look like a paragraph heading from an illuminated manuscript, with an illustrative 'miniature' and the opening lines of a poem, probably by François Villon, also in the appropriate calligraphy. Later quotations were acid-etched or wheel-carved, were made up of a single line or a whole stanza, normally bearing the poet's name following the quotation. The conception of the vessel was invariably an impressionist expression of the phrase or poem quoted. Occasionally Gallé would do things the other way around: that is, he would create a vase to which he would later apply a quotation. In this case he would usually incise the poem in intaglio on the base. The range of writers quoted was vast: French classical, Romantic and Symbolist poets, particularly Baudelaire, Victor Hugo, Lamartine, Théophile Gautier, Marceline Desbordes-Valmore, Leconte de Lisle, Sully Prudhomme, Alfred de Musset, Chateaubriand, and his friend Robert de Montesquiou; foreign writers like Maurice Maeterlinck, who wrote in French, or French translations of Virgil, Dante or Shakespeare. He also occasionally used a few lines of his own.

'Poemes Vitrifiés' (Vitrified Poems). Gallé's term for those vessels which were an actual impressionist or symbolist statement. Using all the techniques at his command, he would evoke moods of sadness or pleasure,

the evanescent swirls of the mist, the first burgeoning of spring, the heralding of the dawn, night. Marcel Proust, writing in his *A La Recherche du Temps Perdu* (Remembrance of Things Past) made several references to Gallé: 'The sea . . . set between the angles of my window . . . fixed on this white enamel, creamy and unchangeable, which represents a layer of snow in Gallé's glass'. In another reference he wrote: 'Soon the lights in the angle of the window like a vase by Gallé, a vein of hardened snow'.

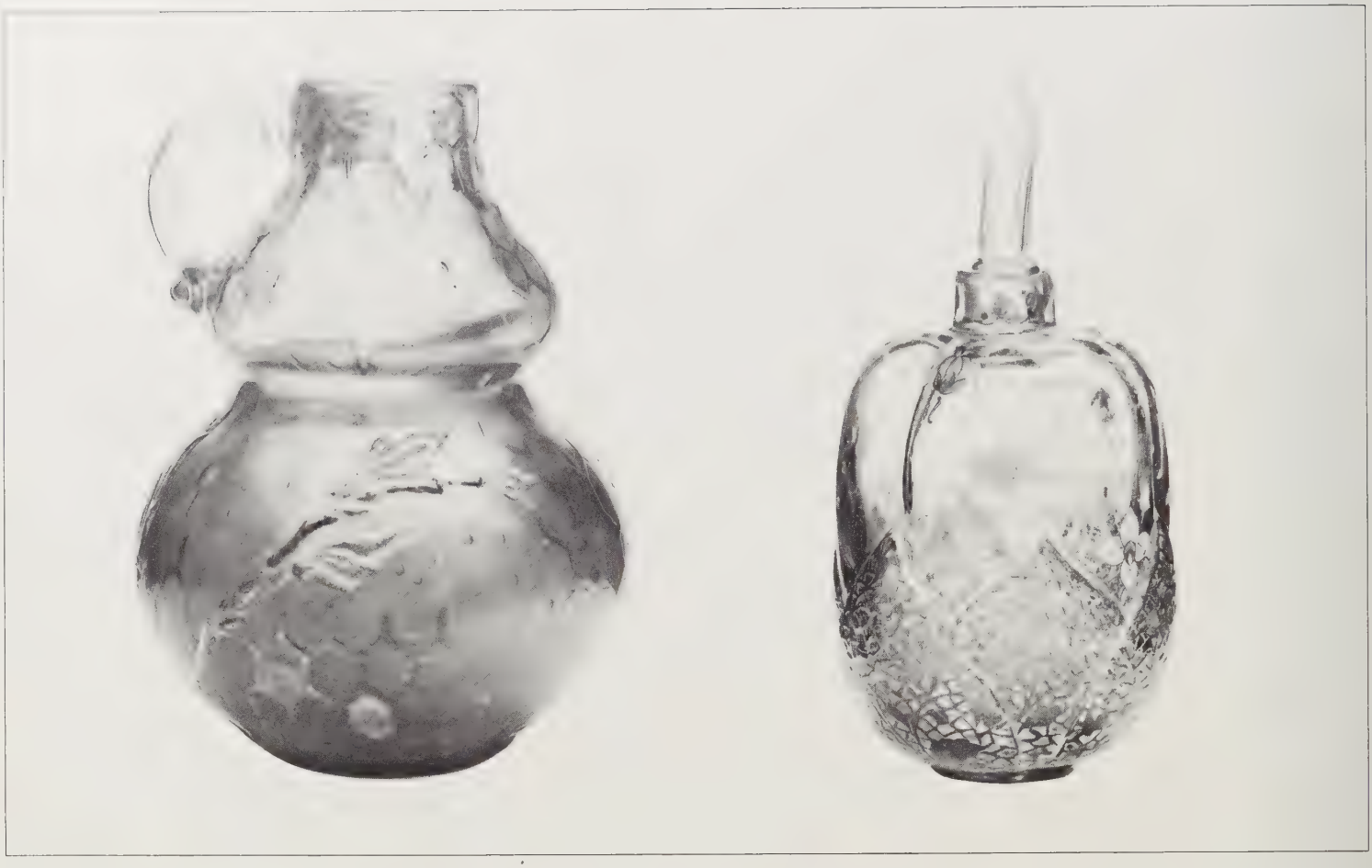
'Vases Noir' (Black Vases). Also referred to as *Verres Hyalites* (Hyalith Glass), this was a group of vases produced by Gallé for the 1889 Paris International Exhibition. Here a transparent glass vessel was overlaid in black or dark brown glass, then carved. Included in this group are the *Orpheus and Eurydice* vase designed by Victor Prouvé (now in the Paris Museum of Decorative Arts), and others carved with swarms of butterflies or moths, leaping monstrous insects, *Amor Chasing the Black Butterflies* with his little bow and arrow, plants and flowers. The finely carved subjects made full play of the contrast between the dark surface and the transparent base, with all the subtle cloudiness made possible by thinning the outer layer. The subjects, with the possible exception of the somewhat curious *Amor Chasing the Black Butterflies*, are invariably impregnated with dying, death and the ephemeral nature of life. In the *Orpheus* vase, Orpheus 'implores the shade of Eurydice': his hopes will be in vain. The clouds of butterflies symbolise souls leaving the bodies of the dead. One floral vase called *Le Sens de la Vie* (The Meaning Of Life) dedicated by Gallé to his friend Edmond Rostand, the novelist and playwright, has engraved on it a line by Victor Hugo: 'I have nothing else to do down here but to love'. With a few exceptions, such as the *Orpheus* vase, most *Noir* vase designs were produced in two or three examples of each. They are frequently in the so-called 'Renaissance' shape, with a bulbous body on a shaped foot connected by a short stem with collar, often with a similar collared neck. Some have a lid with finial. One very effective vase has tiny flowers carved in a dense mass which is only identifiable when seen very close. From a distance the design looks like a rained-on window pane. The vase is inscribed with a line from Joséphin Soulary: 'Le brouillard sur la vitre en larmes condensé' (the fog on the glass in condensed tears).

'Vases de Tristesse' (Vases Of Sadness). This generic title was used by Gallé from about 1890 to cover all the vases whose moods evoke melancholy thoughts, feelings of sadness, death and decay. They are more subtle than the *Noir* vases, using a variety of techniques and colours. The designs are frequently of dead or dying flowers or flowers like the snowdrop with its hard, brief life. Insects are predatory. Flowers shiver in the dying rays of a winter sun. Several *Vases de Tristesse* were designed in memory of dead friends. Others were commissioned. They frequently have appropriate words engraved on them, sometimes the name of the person whose memory is being evoked. Shapes vary from straightforward vases to funerary urns.

Gallé – Three-layered vase, the amber body with green stylised clouds etched in cameo and mould-blown in relief with a green palm tree and a continuous freeze of elephants in dark brown glass, 38 cm *c*1920. (Author's Collection)

Carved Glass: Gallé experimented with wheel-carving on glass as early as 1878, but this was carving in intaglio. The examples of cameo carving exhibited on the British stands at the Paris International Exhibition of that year soon persuaded him to try his hand at carving multilayered glass. Using *verre double, verre triple* (two- and three-layered glass) etc., Gallé designed floral and other patterns which were displayed by carving the glass layers in such a way as to reveal the colour layers beneath the surface. By gradually thinning down successive layers he could obtain an enormous range of colour shades and effects. He employed a type of lathe with a variety of emery, copper, lead or wooden wheels of dimensions ranging from fairly large ones down to the tiniest. He also devised a vertical lathe for greater flexibility. In addition, a variety of hand tools were used to obtain certain detailed effects. Wheel-carving was used in conjunction with nearly every other technique on some vessels. In the 1890s Gallé produced a few chunky, very thick-walled vessels which were then deeply carved to produce an effect akin to a relief-sculptured panel.

Hydrofluoric Acid: The young Gallé rejected the use of hydrofluoric acid as being too coarse. Outright condemnation gradually gave way to qualified acceptance



Gallé – Honey-coloured vase etched and enamelled with bees, plants and honeycomb, applied handle, 9 cm *c*1895. (Private Collection, London)

Gallé – Perfume flask in smoky and green glass inscribed *'La véronique/pour les simples cœurs/Qui dans les traverses humaines/Vont cherchant les petites fleurs – Pierre Dupont'*, 14 cm *c*1880. (Collection Dépôt 15, Paris)

and, by the early 1880s, he had begun to use acid to hollow out the surface of the vases in preparation for enamelling. He soon realised the immense potentiality of the technique, and began to use acid in conjunction with enamelling in the production of the Medievalist vases and Brocard-inspired Mosque lamps and 'Persian miniature' designs. For these vessels the blank was covered in a protective ground on which the most delicate of continuous or random patterns could be drawn with a pointed instrument. On placing the vessel into a bath of hydrofluoric acid, the drawn design was etched into the surface at a depth dependent on the length of time it was left in the acid bath. These etched patterns formed the very important background to the enamelled design.

When Gallé began to produce cameo vases using two- or more layered vessels, acid was used to rough out the design which was then finished with wheel-carving. Acid-etching again came into its own to achieve certain fine effects in even his most elaborate compositions. The vein on leaves, the delicate tracery of a spider's web or a dragonfly's wings was frequently delineated in acid. In a small but extraordinarily effective group of vases made between 1900 and 1904 Gallé produced some multilayered marquetry vases in which the black outer layer was acid-etched to simulate the rough look of tree bark. The vessels were then wheel-carved in cameo and intaglio, the yellow marquetry representing flowers, the intaglio carving revealing leaves in the green inner layer.

In the 1890s Gallé produced several very handsome vases which were almost exclusively acid-etched. Floral or scenic designs were used on two-, three- or four-layered vases, the floral designs cameo etched in bold designs. These were then usually fire polished, that is, the etched vessel was placed into a moderately hot kiln which softened the surface sufficiently to blur the sharp etched edges of the design into a smooth whole. When finally cooled, the vase was then given its final smooth polish, using wood, felt or cork wheels on a lathe.

Late industrial Gallé cameo vases were produced exclusively using acid on two- or three-layered vessels.

Transparent Vessels: The earliest Gallé vases were made of transparent clear or coloured glass, and were enamelled. The colours were usually soft, such as honey, or his own creation, clair-de-lune (a pale sapphire produced by adding potassium and cobalt oxide to the glass). A number of transparent crystal vases were carved in intaglio and then polished to simulate rock crystal. An exceptionally fine early example is a footed freely-formed shell vase in the School of Nancy Museum with a wheel-carved intaglio design of children leading, and riding on, gigantic snails,

Left
Gallé – Ruby red cameo vase, etched, carved and fire-polished, 56.5 cm *c*1900. (Private Collection, London)

Right
Gallé – Cameo vase wheel-carved with a floral design, 24 cm *c*1900. (Collection Félix Marcilhac, Paris)

Left
Gallé – Carved cameo vase with applied flowerheads exhibited at the Paris Exhibition in 1900. (Collection Félix Marcilhac, Paris)

Right
Gallé – Floral vase carved in cameo and intaglio, the flowers in carved yellow marquetry, the green glass overlaid in black glass acid-etched to simulate wood bark, 28.5 cm 1900. (Author's Collection)

after a drawing by Victor Prouvé, and executed in 1884.

Gallé went on using clear glass from time to time, frequently in conjunction with wheel-carved designs involving figurative subjects, then in conjunction with internal decoration and external enamelling. One group of vases made of thick-walled crystal was deeply intaglio cut in a continuous spiral or repeating spiral patterns. These vessels are sometimes totally transparent, or else the surface is totally covered in enamel, either of a solid colour, such as red or maroon, or mottled with black or brown. Thus the transparent intaglio is strongly contrasted with the richly-coloured surface.

Glass Cabochons and Applications: Cabochons are glass studs or pastilles of various shapes or sizes which were applied to the surface of the vase and adhered through heat. They could be used simply as decorative motifs in their own right, frequently symmetrically placed around the vessel and neck, mid-body or foot, or used as part of an overall design, and could be left as smooth bulges or carved. Transparent glass cabochons placed over metallic foil or a coloured sliver would acquire the colour beneath when viewed head on. Cabochons placed within an overall design were frequently carved as a flower's corolla.

Handles of ewers were applied in the same way, frequently becoming a part of the decorative design by having the glass handle end in a fluid and graceful sweep into the body of the vase. Other glass applications included 'tears', lava-like sweeps running down the body of the vase; free-formed swirls or sweeps at the neck or foot; finials on covers.

In the late 1890s Gallé designed a very beautiful series of vases to which a large glass blob of contrasting colour was applied on the side. This was later carved as a single sculptured flower emerging three-dimensionally from the body of the vase. The vase itself could be a single opaque colour or an elaborately coloured vessel with a variety of internal decoration. Variations on this series include enormously elaborate appliqué flowers with huge sweeping stamens swooping over the body of the vase, as well as large vases with clusters of small applied and carved flowers.

Hardstone Vessels: Glass made in imitation of hardstones and other natural substances were first introduced by Gallé at the 1889 Paris Exhibition, and included

Gallé – Etched and enamelled bowl simulating an illuminated manuscript citing a line by Villon *'Où sont-ils Vierge souveraine'* (Where have they gone, Sovereign Virgin) 6.25 cm 1884. (Private Collection, London)

imitations of amethyst, rose quartz, jade, amber, alabaster, onyx, and agates. Various chemical substances were added to obtain the right colours, copper oxide for rose quartz, manganese oxide for amethyst, potassium bichromate for jade, but to obtain the precise proportions involved long experimentation. Rose quartz, onyx and agate are found streaked in nature, and Gallé would imitate nature with appropriate internal decoration. His 'jade' vases ranged from pale mutton-fat jade to the deepest imperial jade. Shapes were often appropriate to the country of origin of the material imitated. 'Jade' vases were often given Chinese-inspired shapes and, if overlaid, were carved in patterns derived from ideograms or stylised decorations. The School of Nancy Museum has a splendid 'amber' flask perfectly simulating a Chinese snuff bottle. 'Rose Quartz' glass was frequently given the shape of eighteenth-century French real rose quartz vases, occasionally with silver mounts in the appropriate style. 'Stone' glass was given a roughly shaped bowl, as though indeed carved out of stone, while simulated ivory or horn was used to produce appropriately shaped vessels.

In the 1890s Gallé also produced a series of opaque simulated hardstone verre-double vases, cameo carved with orchids or irises in the red layer over a pale greyish green body, rather like agatised jade.

Internal Decorations: Gallé used every possible variety of internal decoration to obtain his effects. Plunging the parison into cold water crackled the glass (a technique frequently used by Eugène Rousseau). Covering the parison with flecks of mica picked up from the marver, then blowing an outer layer of glass over this gave an effect of a snow or sand storm, as the mica did not suffer change when heated in the kiln. Powdered coloured glass picked up from the marver onto the parison could, when heated up, supply patches of colour, while coloured glass threads could be pulled into parallel lines, or become flower stems. The surface of the parison could be induced to bubble by reaction with certain chemicals, and the bubbles permanently fixed onto the surface, which was then covered with an outer layer, forever trapping the pattern of bubbles within the glass. Metallic foil was frequently used, silver or copper or gold, either as rectangular pieces, or else torn, shredded. These were always carefully placed within the context of the finished outer surface of the vase.

Internal decoration served a double function. Its first and most obvious function was to complement the complete design, to supply the right background for the atmosphere evoked by the whole composition. Fog, snow, spring, underwater effects, could all be evoked brilliantly by the use of the right internal decoration. The second function was in the creation of dichroic effect. This was designed by Gallé to totally change the aspect of certain vases depending on whether they were viewed by reflected light or by back light coming through them.

Blow-Moulded Glass: A large number of Gallé vases were blown into moulds to achieve the desired shapes before carving or enamelling. Blow-moulded vases, however, that is vases which were wholly designed to take shape within a mould, are fairly rare. One of the earliest blow-moulded vases, now in the School of Nancy Museum, is decorated with a curious bent giant of a man in green glass, produced around 1890. In the years that followed a number of flower and fruit vessels were designed for the technique, including the water-lily, the hyacinth, the fuchsia, the clematis, the rhododendron, raspberries, purple plums and greengages. These lent themselves especially well to the blow-moulded technique, the fruit, leaves or flowers bulging naturalistically from the body of the vessel. Another, and very curious, model consisted of a frieze of elephants.

The basic technique was simple. The desired shape was sculpted in wax, the wax encased in a fireproof mould. When heated the wax melted and escaped through tiny holes pierced in the base of the mould, which was then ready to receive the molten glass. The moulds were in two halves which enabled them to be used several times over. That, needless to say, was only the beginning for Gallé.

All the flower and fruit models were blow-moulded in two-layered glass, a grey, pale blue, beige or yellow body overlaid with a brightly coloured red, purple, green, brown or blue. Hydrofluoric acid was then used to remove all the outer layer covering the background of the design, leaving the pattern of fruit or flower, leaves and stems in the colourful outer layer. Acid was also used to delineate certain details of design. Identical models were frequently produced in different combinations of colours, while certain wide mouthed vessels had acid applied on the inside to thin out the glass in parts of the design to enhance the modelling by increasing the luminosity. The water-lily vase appears to be the only blow-moulded vase whose details are finished with wheel-carving. Blow-moulded vases were sometimes polished to remove any

residual mould-marks, and the protruding surfaces of the designs were polished up to contrast with the mat surface of the body of the vase. Mould-marks are sometimes visible in the outer layer.

The majority of mould-blown vases fall into the category of early industrial production, but some were produced after Gallé's death. The same careful attention to detail was, however, applied to these later vases, and they are all fairly rare.

Patination: Gallé took out a fifteen-year Patent for this process in April 1898. It was the culmination of some nine or ten years of experimentation. Patination was designed to produce a mat surface resembling 'fabric, crêpe, spider's web with or without bubbles, or dotting' as he described it. It could be produced by a process of devitrification caused by extensive heating, or else by the action of organic or mineral impurities, picked up on the marver or applied within the kiln, either over the whole surface or on a reserved portion of it. It was normally used in conjunction with other techniques, particularly marquetry.

Marquetry: This technique was to be the crowning glory of Gallé's researches. Also patented in April 1898, it consisted of inserting hot pieces of coloured glass into the parison, and imbedding them so that they were flush with the surface by rolling on the marver. When annealed, the vessel could then be carved into its final design. The coloured glass was, of course, cut to the shape required by the design (a flower, a leaf, or other subject) before insertion. Metallic foil was also sometimes placed below the inserted glass. This seemingly easy technique was made enormously difficult by the variations in coefficient of expansion of different batches of glass. Those used had to be carefully matched to expand and contract at the same rate during the multiple reheatings needed for each insertion, otherwise the vessel would crack. A vast number did, of course, crack during the process of manufacture, making those that have survived doubly precious. Some marquetry vases also had an additional layer of clear glass applied to the outer surface after the design was completed.

Marquetry vases cover a wide range of mood, sad, joyful, introspective, Japanese-inspired. Some especially curious ones seem to anticipate abstract art.

Étude: A vast number of vases of complex techniques suffered internal cracks or risked destruction if further anticipated work was carried out. If any of these 'wounded warriors' or unfinished essays were considered by Gallé to be fine enough, then they were duly signed with the addition of the word 'Étude' (Study). This indicated their imperfect state, but also that they had been considered sufficiently worthy to be distributed and not merely scrapped. They are frequently very beautiful.

Sculptured Glass: All Gallé glass which was free-blown rather than mould-blown can be said to have some sculptural qualities, as does that with more or less elaborate applications. The term is, however, normally reserved for a small and extraordinary group of vases he produced between about 1899 and the time of his death. Free-formed, twisted, shaped with heat and instruments, using the full force of experience and technique, they are completely different from all his other work in their expressionist freedom and power.

Gallé – Free-formed pierced gourd in aubergine glass, enamelled and gilt, 23 cm diameter *c*1900. (Sotheby's Belgravia)

The most characteristic of this group is *The Hand*. Translucent and irridescent, the sculptured glass hand reaches upwards from an opaque blue-green base, seaweed trailing from the fingers. The expressive mute appeal, or benediction, is emphasised by the beauty of colouration of the glass.

Other sculptural vases included a number with underwater themes, the surfaces encrusted with barnacles, entwined with seaweed, often with appliqué sea-horses. Others have free-formed cups or bowls with floral designs or overlaid with multiple strands of glass applications.

The lily inspired two of Gallé's most beautiful glass sculptures. One, called *Le Lys*, represents a footed freely-formed tall multicoloured cup with the lily growing up its side to form a continuous handle. The other, called *les Lys* has lilies, bud and fully opened, applied entwined around the sculptured corolla of a red flower forming the body of the vase.

Sculptured vases are not unique, though all are extremely rare. It is unlikely that more than four or five examples of each were ever made, and many of these are now in museums or other permanent collections.

Naturalistic Shapes: Gallé occasionally essayed absolutely naturalistic representations in glass which were direct depictions. One very curious such work is a glass scent bottle modelled as two birds perched on a block of ebony, one a blue bird with oxydised enamel plumage, the other coloured orange and purple, the two heads being removable stoppers. More characteristic, perhaps, are a number of equally curious vases inspired by the shapes of flowers, fruit and vegetables. Floriform vases appeared divided into three main sections, the roots, the bulb and the flower.

Gallé – Cameo vase, etched, carved and fire-polished with a Chinese ideogram pattern in three shades of blue, 20 cm *c*1895. (Author's Collection)

Gallé – Pale amber vase enamelled and gilt with a country scene and leafy swags, 25.7 cm *c*1878. (Private Collection, London)

The roots were, of course, represented in the foot of the vase, and were often depicted by the use of *latticino* spirals. The bulb was made in a variety of techniques, using translucent glass with iridescence, glass with coloured inclusions smoothed on the marver, or glass with various internal decoration. The flower itself formed the body of the vase, and could be a normal cornet shape decorated in cameo with flowers, or else itself be shaped into the flower's corolla.

The vegetable and fruit shapes are even more curious. 'Garlic' vases are formed with the bulb and its encasing sections, the glass shaped with appropriate applications. 'Corn-cob' vases are highly naturalistic, reproducing both colour and shapes, inserted into a base as though truly spiked on it. The 'Tomato' is an appetising, plump bottle, the stopper curved as a stem. The 'Pumpkin' is large and pierced. The 'Artichoke' has the characteristic vegetable tubers forming the base, while the stem rises from this, decorated internally and also with marquetry. Most of these vessels date from 1900.

Metal and wood bases and mounts: The taste for luxury in the nineteenth century had led several silversmiths to mount porcelain and pottery vases in elaborate silver mounts. Gallé had several vases mounted in delicate wrought silver and silver-gilt mounts, some with rococo patterns, in the 1880s. In the 1890s, however, he rejected the use of irrelevant mounts in favour of mounts which were appropriate to the design of the vase or bowl.

Gallé had, by then, fully developed foundry and carpentry workshops, in which elaborately carved wooden bases or finely executed bronze ones were made for some of his glass. Carved wood and cast bronze were frequently shaped as leaves, plants, or insects (butterflies, dragonflies). Wrought iron bases and stands were also made, particularly for some large vessels, as well as for some amphora shapes. Bronze bases were made to hold glass lamp shades.

Silver (and silver-gilt) were not neglected either. A simple foot with an impressed pattern of leaves could be used on occasions, but it was far more likely to be designed as a part of the vase, curled silver seaweed for an underwater vase, a silver flower for a floral vase, a silver plant form where appropriate. The base was no longer separate, but an integral part of the composition, frequently rising up the side of the vase, wrapping itself around the vessel, reaching the lip of the vase. Gallé had these silver mounts executed by some of the greatest French silversmiths, such as Émile Falize, Froment-Meurice, Gérard Sandoz, Bonvallet, Guerchet, Cardeilhac, Francis Peureux, Joindry. Some, like Falize, wrought elaborate mounts in bronze because of the wide range of

Gallé – Mauve, amber and opal glass vase carved to represent a windy day with carved marquetry butterflies in purple and violet, 27 cm *c*1900. (Collection Dépôt 15, Paris)

Gallé – Shaped vase with applied glass flowers, exhibited at the Paris 1900 Exhibition. (Collection Félix Marcilhac, Paris)

colour patinations possible in that medium. Some simpler bronze bases were also executed by L'Escalier de Cristal, a Paris retail shop with its own decorating workshop, and which specialised in decorative art in the Art Nouveau style. It was run by Pannier Frères.

Decorative Subjects: The range of decorative subjects on Gallé glass was very wide, and the treatment of similar subjects changed radically over the years as new techniques were brought into play. The earliest subjects were derived from 18th Century ceramics and glass, harvest scenes, peasant subjects and decorative motifs (swags, sheafs of wheat, tufts of grass, sprigs of greenery etc.). Enamelled vases, and enamel in conjunction with acid-etching and wheel-carving brought in Medieval subjects, Islamic and particularly Persian subjects, and a few subjects inspired by Ancient Egyptian bas-reliefs. A few Roman and Greek mythological subjects were also depicted.

Animals and birds were sometimes used. Some were farmyard creatures, such as hens and their chicks, others were wild flying birds. Bats, and even pterodactyls are found, as well as salamanders, dragons and dinosaurs. Marine scenes are frequent, involving underwater plants and fish, crabs, frogs, jelly fish, shells.

Nature in all its aspects was exploited. Plants, flowers, mushrooms and toadstools were depicted in all their aspects of birth, splendour and dying. Landscapes provided a number of decorations known as *Paysages de Verre* (glass landscapes). Forests, rivers, a glimpse of roofs, the sun rising or setting behind trees, bats flying at dusk, appear frequently. Insects, particularly dragonflies and butterflies, but also bees, scarabs and spiders (though spiderless webs are frequent) are found.

Table Glass: Gallé produced a fairly full range of table glass, including lemonade sets, liqueur glasses, tumblers, footed wine glasses, decanters and trays. Some of the earliest was merely clear glass enriched with gilding, but from the 1880s onwards it became quite elaborate, with enamelling and acid-etching on well-shaped clear and coloured glass. Several designs used on Gallé art glass were used, sometimes in simplified form, on some table glass. Decanters and jugs were often treated as elaborately as vases.

Lamps: Lamps constituted an important part of Gallé's production from the 1890s onwards. Some of the earliest consisted of an elaborate bronze base curving forward to hold a cameo glass shade, wheel-carved to form an appropriate scene. Some of the most effective shades have night scenes, with flying bats. The bronze base was normally executed at the Gallé foundry, and is often found signed 'Gallé'.

The largest group of Gallé lamps have a glass base and shade. The base has a landscape, floral or plant design, while the shade has a matching design or one incorporating flying eagles, butterflies or swallows. These lamps are usually acid-etched on two-, three- or even four-layered glass, giving the subject a depth and variety emphasised when both shade and base are lit from within. A few have wheel-carved designs, or glass with metallic iridescence, or are fire polished. Gallé sometimes thinned the glass behind portions of the design (say flowerheads) to make it glow even brighter when lit. The shades on some lamps had the cameo design on the underside, with the top smooth, so that the design became startlingly visible when lit and seen imbedded within the shade.

The all-glass lamps were made in a variety of shapes and sizes, and included bases that were stick-shaped, globular and flattened, while shades were lid-shaped with a high crown, a narrow crown or a geometric reversed V shape (Chinese Mandarin style), as well as other shapes. The mounts were usually made of bronze, occasionally silver-plated, and sometimes made of silver from firms such as Boucheron. Acid-etched cameo glass was also used in the production of ceiling light bowls, hanging globes and bronze-mounted wall and corner light fittings.

A particularly spectacular group of all-glass lamps were made with mould-blown and acid-etched floral and fruit designs, the protruding sections taking the light most effectively.

In the last few years of his life Gallé devised some extraordinary lamps. The mushroom inspired several lamps with elaborate wrought iron roots and leaves from which the tall glass stem rises to the etched shade. It also inspired a lamp called *Les Coprins*, made in some four examples in 1904, with three tall glass mushroom lamps sprouting from the wrought iron base. Other lamps were in the shape of stemmed flowers or buds, wheel-carved, sometimes with marquetry inserts, frequently with a delicate tracery of glass veins drawn between the layers. These are normally on bronze bases incised or cast with butterflies or dragonflies.

Most of the lamps produced in the late industrial period were of the simple acid-etched floral and landscape patterns.

Late Industrial Productions: This comprises the output of the Gallé glassworks from the time of his death in 1904 to 1914, when they were closed for the duration of the First World War, and from their post-war reopening in 1919 until their final closure in 1931. It excludes, however, the small production of fine quality glass that was made for a short while following the death of Gallé.

Under the direction of Gallé's son-in-law, Paul Perdrizet, the output of the glassworks was restricted to mostly two- or three-layered glass, acid-etched with cameo floral or scenic designs in repeating patterns, and some enamelled glass, mostly of the table variety or made to special order. The floral, plant or scenic patterns were made using templates, while the vessels themselves were made in a variety of shaped moulds. The later post-war production is characterised by mostly two-layered vessels with badly delineated cameo design, caused presumably by the breaking down of the edges of the templates. They are frequently in pale greens and purples, or else in very dark aubergine and brown. Some late industrial vases are quite spectacular, either by virtue of the size or the play of light on the glass colours.

The fairly large quantity of late industrial glass has tended to associate this particular type of glass with Gallé in the mind of the public, particularly since this is the type of glass which was imitated all over Europe for many years. It was, indeed, relatively inexpensive and very popular for a long time.

Signatures: Glass produced at the Gallé glassworks is, almost without exception, signed. Those vessels found unsigned have frequently had their signatures removed, either ground down because of the signature's close proximity to a chip or other damage which was being smoothed away or else to substitute, say, a retail shop's name. The only real exception consists of some liqueur or other glasses which form part of a set of which only the larger pieces were signed.

An enormous variety of signatures was used. Enamelled clear vessels normally have a tiny 'É. Gallé à Nancy' shallow engraved in diamond point on the base. Etched and enamelled vessels have rather elaborate signatures in cameo relief on the side of the vessel. Wheel-carved and marquetry vessels have a simple incised signature on the side. Cameo vases with wheel-carving or acid-etching with fire polishing may have a cameo relief signature on the side or a shallow one on the base, in which case it usually comprises the words 'Cristallerie d'É. Gallé, Nancy'. Blown-out models are signed in cameo relief on the side. Registered designs often have on the base the words 'Déposé' or 'Modèle et décor déposé' or 'Ges. Geschutzt'.

The cameo signatures may be 'Gallé' or 'Émile Gallé', and be in separate block letters (generally vertical on tall vases) or in various scripts, including the so called 'Chinese' signature. There is no separate significance to any such signature. Gallé deliberately varied these signatures and drew them carefully to tally with the chosen design of the vessel and the lettering of any quotation used if it is a

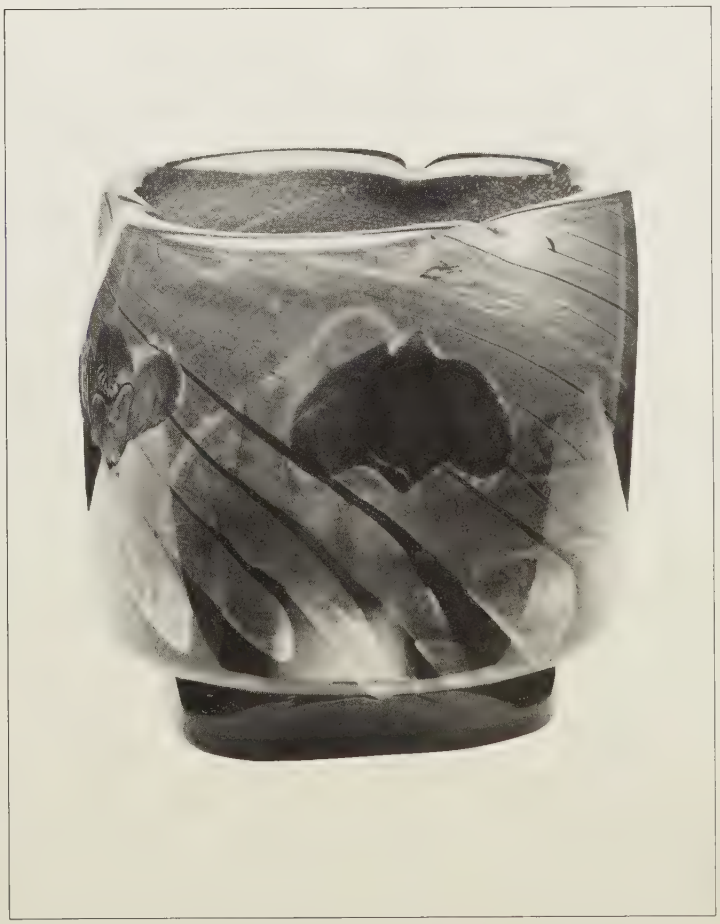
Opposite

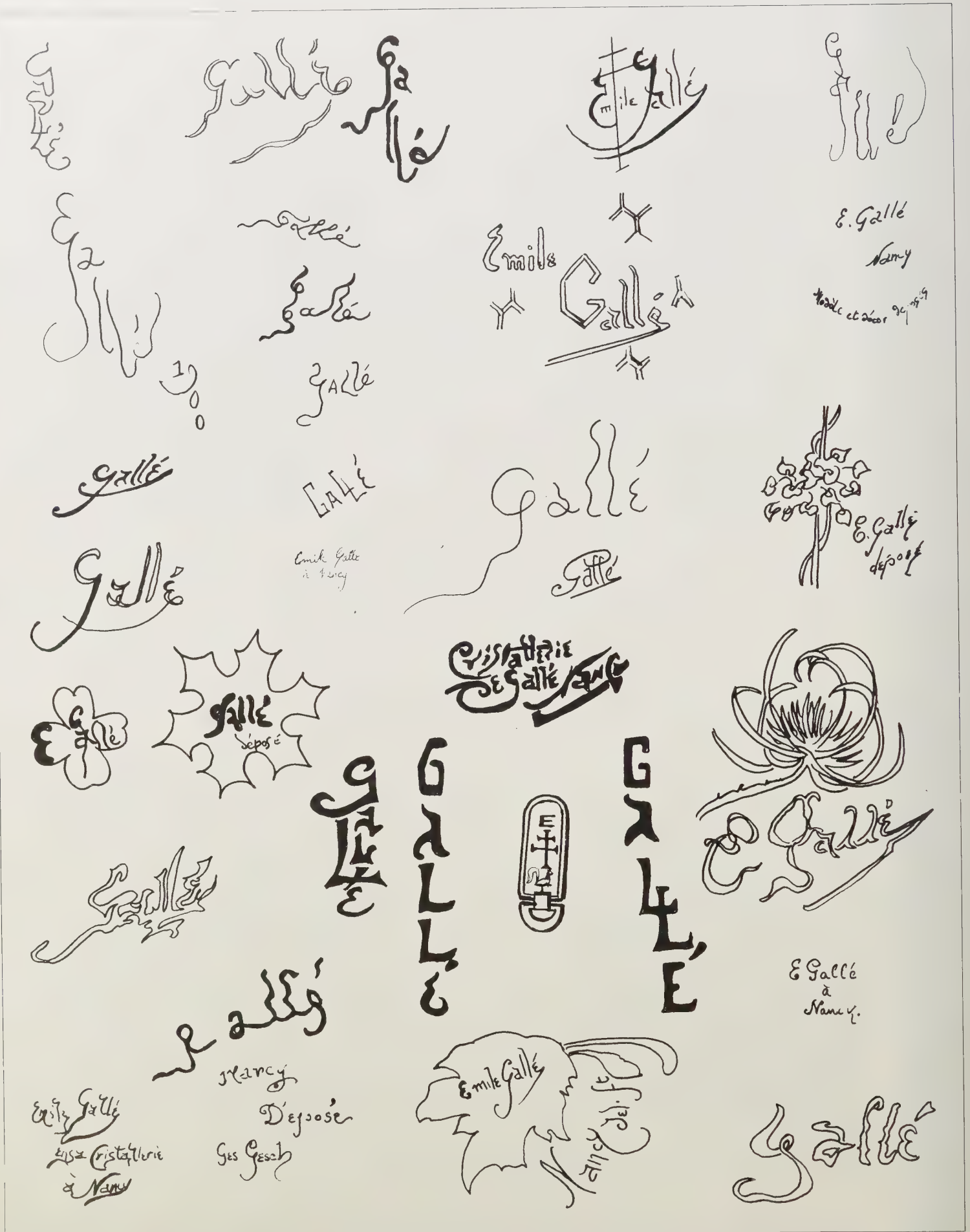
Above left
Gallé – Carved floral marquetry vase, 12.5 cm *c*1900. (Sotheby's Belgravia)

Above right
Gallé – Carved floral marquetry vase, 19 cm *c*1900. (Collection Dépôt 15, Paris)

Below left
Gallé – Vase de tristesse carved in black glass, exhibited at the 1889 Paris Exhibition, 15.5 cm. (Private Collection, Paris)

Below right
Gallé – Floral carved marquetry vase of Japanese inspiration, 10 cm *c*1900. (Author's Collection)




Gallé
Emile Gallé
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Modèle et décor déposés
Emile Gallé
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verrerie parlante. Late industrial cameo glass is invariably signed with 'Gallé' in a fairly plain cameo relief script. A star was added to this signature as a mark of mourning in 1904, and used until 1914. When industrial production resumed in 1919, the star was omitted. The star is thus also found on the better quality of glass that was produced for a brief while after the death of Gallé, though not on vessels produced during his lifetime but released after his death.

Elaborate signatures on the base are usually found on vessels of fairly good quality, and may involve leaves, flowers (the clover was also used in some cameo signatures on the side of the vessel), butterflies or other insects, or abstract patterns. The letters 'É.G.' separated by a Cross of Lorraine are sometimes found on the side or base, either on their own or in addition to a fuller signature. Titles of vases, or a little quotation are also sometimes found on the base.

Dedications to particular individuals are sometimes found incised on the base or side. Some vases were specifically made for the dedicatee, others were inscribed for friends, or to special order.

In general Gallé vessels were dated only when a specific design was made for an Exhibition, and they bear the date above or preceded by the word 'Exposition'. Designs made for one Exhibition, but remade for a subsequent Exhibition are normally marked 'Reédité'. The date on the vase is not necessarily an absolute indication of the date it was made, particularly if the date accompanies a dedication, as the date may refer to the time of the dedication of the vase rather than that of manufacture. It might also be a commemorative date.

Some vases are signed with the full signature and the addition of 'fect' or 'ft' or 'fecit' or 'faciebat' or 'compt et fecit', Latin words or abbreviations indicating that the vessel was executed or designed and executed by Gallé. This has generally been taken to mean that Gallé personally executed the particular vessel. Some doubt must be expressed at this. Gallé undoubtedly studied the rudiments of all techniques in use, undoubtedly developed many of them himself, and directed the laboratory research that led to his many experiments. Nevertheless the physical work of executing a complex vase is one that generally involves the skills of several people, often simultaneously. It is unlikely that Gallé could have had the time and leisure to develop the physical skills involved and, in his later years when the most complex vessels were executed, it is even more unlikely that his health would have permitted him to try. The surviving evidence tends to

Gallé – Clear glass vase moulded to represent waves enamelled and gilt with a Japanese carp, 27 cm *c*1895. (Private Collection, London)

point to the extremely detailed instructions he prepared in writing for his craftsmen. His particular designs were worked out on paper with several detailed sketches amplified by long written explanations of every facet of his design, from the type and colour of the glass to the chemical reactions desired, the precise shape, including the base and size of pontil mark if required and the signature he desired. Craftsmen mixed and gathered the glass, blew it, shaped it. It is possible that he personally drew or painted a desired design on the annealed vessel. The wheel-carving would have been put in the hands of one of his competent craftsmen. Enamelling too, would almost certainly have been given to a craftsman to execute, though here again he may have drawn the outline on the vessel.

Identifying the actual executants of Gallé's designs is not really important. All those who worked for Gallé were supreme masters of their individual craft. The artistic control and direction, the creative mind and poetic heart were uniquely Gallé's own.

GENET & MICHON

A French firm set up by two engineers who, after the end of the First World War, specialised in designing light fittings, lighting schemes and illuminated panels in pressed-glass. In 1921 they introduced a system of illuminating a room with one or more rows of light bulbs following the line of the room's cornices, arches and lintels, the light bulbs concealed in a continuous convex pressed-glass half-tube.

The problem involved in diffusing light and simultaneously reducing glare while using uncoloured clear glass was solved by treating the glass with acid to render it slightly opaque, engraving and etching it to break up the light, or a combination of these. Genet & Michon devised illuminated panels for use in hallways, bathrooms and public buildings. One of their more spectacular commissions was the scheme of illuminated panels for the Hall of the Hotel Splendid at Dax, in which glass tiles, engraved with repeating geometric patterns and inset with pressed-glass cabochons, are set into a metal armature and, starting from the head of the stairs, go up the wall and across the ceiling to act as an illuminated dais.

Genet & Michon's light fittings and table lamps were equally inventive, combining pressed-glass globes and panels with bronze bases and supports. One table lamp was modelled as a terrestrial globe, the mobile glass globe moulded with the continents, seas, stylised animals and fish.

CARL GOLDBERG

After a long apprenticeship in glass decoration, Carl Goldberg became a much sought after craftsman and, in 1881, he founded his own workshop in Haida. In 1893 he brought in a commercial manager in order to devote himself entirely to the technical side. That same year he exhibited at the Chicago Worlds Fair. By 1895 he had over 200 craftsmen working in his glassworks. His products included cut and moulded coloured glass, engraved table glass and iridescent glass, sometimes with galvanised silver overlay or gilt decoration, polished ruby glass and cameo glass with floral designs. Goldberg was awarded a bronze medal at the 1900 Paris Universal Exhibition. He also exhibited regularly from 1900 at the Leipzig fair; in 1902 at the First International Exhibition of Modern Decorative Arts at Turin and at the Austrian Arts and Crafts Exhibition in London; in 1906 at the German-Bohemian Exhibition at Reichenberg; and in 1915 at the Vienna Exhibition of Austrian Art Glass and Glass for Export. Goldberg worked with the designers Gustav Croy of Prague and Fritz Walter of Haida as well as the engravers Reinhold Herretin of Steinschönau and Franz Heller of Haida. From 1906 he worked to the designs of Gustav Schneider of Vienna. Goldberg's iridescent glass is difficult to tell apart from other similar Bohemian glass. His cameo glass (helpfully signed 'Goldberg' in cameo) is usually fairly dull and comparable to that produced by Loetz and late industrial Gallé.

MARCEL GOUPY

Marcel Goupy studied architecture, sculpture and interior decoration at the National School of Decorative Arts in Paris. Painter, silversmith and jeweller, the whole direction of his career changed when he met Georges Rouard, the owner of the Maison Geo. Rouard.

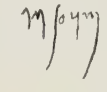
Goupy joined Rouard in 1909, remaining artistic director of the firm until 1954. Their retail shop at 34 avenue de l'Opera in Paris carried a large stock of luxury glass and ceramics which included ceramics by Delaherche, Decoeur, Lenoble and Mayodon, hammered metal work by Dunand and glass by Lalique, Décorchemont, Navarre, Thuret, Heiligenstein and Goupy.

Goupy designed and decorated a large range of glass between 1918 and 1936. Carafes, decanters, jugs, liqueur

and lemonade sets were designed using pretty and unfussy shapes, decorated with simple enamelled motifs. The glass was usually colourless, but transparent colours were sometimes used. Decorative vases and bowls were usually decorated with enamels on both inner and outer surfaces. The inner enamelling gave plain or shaded colour background to the outer design, which varied from mythological subjects to floral and repeating patterns as well as stylish 1920s ladies. The inner enamelling, seen in the openwork spaces of the outer design, was given depth and sparkle by the glass.

Marcel Goupy went further than most glass decorators and designers of his generation by personally supervising the blowing of his vessels at the glassworks. From about 1925 he designed several vessels using coloured glazes which were fused onto the parison and heated until they vitrified. The resulting vessel had a somewhat lustred marbled or veined surface. He also designed undecorated table-ware with clean, simple themes made of translucent smoky or coloured glass, as well as chunky vases in transparent coloured glass in softened geometric shapes cut to planar angles.

Matched sets of table glass and porcelain were designed with great ingenuity by Goupy. Rather than have a simple motif repeated on each piece to provide the continuity, he would have the porcelain motif, say, be a variant or a contrast to that on the glass. Sometimes the glass shape would be a three-dimensional projection of the geometric pattern on the porcelain. Concentric circles, say, on the porcelain, would be turned on their sides to produce an undulating line on the glass. Matched silver was also sometimes designed by him.



Goupy's enamelled glass normally had his signature 'M. Goupy' in enamels on the base or side. His table-ware is often unsigned, though it and the chunky range of vases sometimes has his name engraved on the base.

Goupy – Vase decorated on the outside with centaurs hunting a wolf in green and gold enamel, the inner surface in orange enamel, 20 cm *c*1925. (Collection Dépôt 15, Paris)

Goupy exhibited his glass, faïence and porcelain (manufactured by Théodore Haviland at Limoges) at several major exhibitions, including the First Exhibition of Contemporary Decorative Arts organised by the Union Centrale des Arts Décoratifs in 1923 and the 1925 International Exhibition of Decorative and Industrial Arts, both held in Paris. At the 1925 Exhibition Goupy was Vice-President of the Jury in Class 33 (glass).

JACQUES GRÜBER

Jacques Grüber was born at Sundhausen, in Alsace, on February 25th, 1870, some five months before the outbreak of the Franco-Prussian War which was to lead to the defeat of France and the cession of Alsace and part of Lorraine to the newly-united Germany. Grüber's family moved to Nancy, where he became a scholarship student, eventually going to Paris to study under Gustave Moreau, the great Symbolist painter.

On his return to Nancy, Grüber joined the Daum glassworks in 1894 as a glass decorator. He studied engraving on glass, as well as other decorating techniques, and designed a number of exceptional vases which included figurative scenes (fruit harvesting in a vase called *Fructidor*), landscapes and scenes inspired by Wagner's operas. He left Daum in 1897 to set up on his own.

Grüber ran both a small carpentry shop and a small glassworks. His furniture was inspired by organic shapes, swirled and graceful, though with a massiveness reminiscent of the furniture of Eugène Vallin. It was normally executed to special order. The glassworks was designed solely for the execution of coloured glass panels (some of which he purchased from other glassworks) for use in assembling leaded-glass panels to his designs.

He was soon making very curious small, usually

rectangular three-layered glass panels which he then acid-etched and polished with landscapes and riverscapes. These were originally designed for inclusion as panels in his furniture, and were particularly effective when placed within the leaves of a folding screen. He also used the panels as trays, set within a metal handled frame, or as pictures, hung within a wooden frame. These panels were also used inserted into the shades of ceramic and bronze lamps. These panels were in muted purples and browns. They are found signed in shallow relief cameo, usually on the lower right hand corner of the composition. A number of different signatures were used, invariably in script. 'J. Grüber' was used, sometimes with the addition of 'Nancy'. 'Géer' was also used, a phonetic representation of 'GR' in French, the first letters in his name. Another variant was 'Géef', the phonetic transliteration of 'GF', for 'Grüber Fecit'.

J Grüber Géef Géer

Grüber became professor of Decorative Art at the Nancy School of Fine Arts, and joined with Gallé, Daum and others to become one of the founder members of the School of Nancy in 1901 of which he also became one of its first vice-presidents. He was by then also painting murals and designing textiles and embroidery patterns.

Leaded-glass panels were, however, to be Grüber's major artistic contribution. His earliest designs were greatly influenced by Moreau, the Symbolists and Art Nouveau. His style gradually changed, becoming more geometric, using Cubist lines adapted to decorative themes.

Grüber began exhibiting at the Salon des Artistes Décorateurs in 1908, and at the Salon des Artistes Français from 1911, when he was awarded an Honourable Mention. He was awarded a Bronze Medal in 1920, a Silver Medal in 1921 and a Gold Medal in 1923, exhibiting *Hors Concours* in 1924, when he became a Knight of the French Legion of Honour. He also exhibited at the Salons d'Automne and at the Galliéra Museum.

At the 1925 Paris International Exhibition of Decorative and Industrial Arts, he executed the stained glass panels in the dining-room of the Ambassade de France (French Embassy) pavilion, among others.

Grüber – *Paysage des Vosges*, laminated leaded polychrome glass panel, 1908. (Contemporary photograph)

Grüber's leaded-glass windows and panels were commissioned for churches, casinos (such as Biarritz), hotels, department stores, town halls and private homes, though many have since been destroyed.

JULES HABERT-DYS

Jules Auguste Habert was born on September 23rd, 1850 at Fresnes, near Blois. His parents were very poor, his mother illiterate, his father only just able to read. When the child was seven his family moved to Blois so that he could attend the communal school. Though a poor student, Jules Habert discovered a liking and a talent for drawing. At the age of thirteen his father apprenticed him as house-painter to a firm whose speciality was decorating churches and chapels. The boy continued to draw in his spare time and, at the age of seventeen, was admitted as a decorator to a large ceramics factory at Blois.

The factory belonged to Ulysse Bernard, himself a painter, who also liked to paint little scenes on his porcelain to complement the rest of the decoration executed by his staff. He kept a collection of periodicals illustrating various decorative motifs for the use of his staff, and liked to lecture to them on art and literature. Habert spent five years there, during which Bernard helped him to develop

his artistic sensibilities, and helped him with advice and instruction. Habert also learned the techniques of making ceramics.

Determined to study painting, Habert moved to Paris in 1874 and was admitted to Gérome's studio at the École des Beaux-Arts (School of Fine Arts). He built himself a kiln at the rue des Fourneaux, hoping to manufacture and sell enough pottery to keep himself at the School, but sales were so meagre that he soon had to give up and went to work for the potter Laurin at Bourg-la-Reine, where he remained for several years. The distance involved made it impossible for him to attend Gérome's courses regularly, but even his sporadic attendance helped him to become an exceptional draughtsman. In 1876 he exhibited two earthenware panels at the Paris Salon des Artistes Français. One was painted with a portrait after Holbein, the other with an original Venetian scene. Both were signed Jules Habert.

In 1877 Habert went to work for the Haviland ceramics workshop, then run by Felix Bracquemond. He was to spend two years there, during which he, Charles Haviland and Bracquemond discovered a mutual fascination for Japanese art which had been on display at the 1878 Paris International Exhibition. In 1879 Habert joined the Schopin ceramics works at Montigny-sur-Loing. A few months later he married Clémentine Thirouin.

They spent a year at Montigny-sur-Loing, during which he spent as much time as he could roaming the countryside, sketching plants, birds and insects. On their return to Paris he did a little more work for Haviland, then Bracquemond introduced him to Gaucherel, the artistic director of a magazine called *L'Art*. In 1881 he joined the magazine, and his drawings first appeared in 1882. By the time the magazine closed down in 1887 he had executed 500 drawings for it. His first published drawing was signed Habert-Dys, a name he was henceforth to use: Dys had been his mother's maiden name.

His fame grew rapidly. In 1883 he was forced to turn down a commission from King Leopold II of the Belgians because he was too busy. A year later, between contracts for *L'Art*, he provided several other magazines with drawings, and gave lessons to some visiting Swedish princesses. He also executed a series of drawings for a projected illustrated edition of a life of Louis Pasteur written by the chemist's son-in-law, Dr. Valléry-Radot. Habert-Dys worked closely with Pasteur on the illustrations, which were to cover the various fields of his research, but the book was never published. That same year an enthusiastic article about Habert-Dys by Theodore Child appeared in an American magazine, *The Art Amateur* (1884).

At the 1883 Salon des Artistes Français Habert-Dys had submitted an etching of the Venetian church of Santa Maria della Salute after Francesco Guardi. At the 1884 Salon he sent an original etching, *Panic In A Frog Pond*, and was awarded an Honourable Mention. A short while later the death of his young son caused Habert-Dys to have a nervous breakdown. He spent six months at Pau convalescing, an expensive trip which was largely financed by Baroness Nathaniel de Rothschild, who was one of *L'Art*'s backers.

In 1886 *L'Art* published a volume of drawings by Habert-Dys called *Fantaisies Décoratives* (Decorative Fantasies). These were decorative designs for use as fans, wall paper, jewellery, ceramics, glassware, or adaptable to any other useful function. Like his other drawings, they drew on nature for inspiration with a strong influence of Japanese decorative patterns, a clear precursor of the coming Art Nouveau.

When *L'Art* closed down in 1887 Habert-Dys supplied a variety of anonymous designs for ceramics, kitchen and table-ware for British and American firms, while working as designer at the Boulanger pottery at Choisy-le-Roi. A German publisher, Julius Hoffmann of Stuttgart, also published a number of decorative documents by him.

In 1889 he was commissioned by a firm called Pillivuyt to design the shape and decoration of a large table service of some fifty pieces to be exhibited at the forthcoming Paris International Exhibition. As the service was to be exhibited within four months, Habert-Dys was unable to supervise the execution, which was carried out at the firm's works at Mehun-sur-Yèvre. The result was a somewhat over-decorated service, though it sold promptly for the large sum of 15,000 francs.

That same year Theodore Deck, the great ceramist who ran the Sèvres manufactury, commissioned Habert-Dys to design a table service which was to be offered to the French President Carnot before the end of the year. Habert-Dys's designs took so long to execute that the project was abandoned, and only a few individual items were executed, most of which were purchased for the Sèvres Museum.

In 1891 Habert-Dys sent a large painting of cranes flying at night to the Salon. He was awarded another Honourable Mention, and the painting was purchased by the State and sent to the Arras Museum. During the First World War the Museum was bombed and the painting destroyed. In 1892 he published a second collection of decorative designs called *L'Ornement Pratique* (Practical Ornaments). The plates were printed by a leading printer of art books, Lemercier. In 1895 he was to join Lemercier as Artistic Director, a position he held until 1897. The year before he took up the position he had exhibited a series of mural decorations at the 1894 Lyons International Exhibition, and had been awarded a Gold Medal.

Between 1891 and 1903 the publisher Guérinet had produced various decorative documents by Habert-Dys. In 1901, however, Habert-Dys produced a new set of 32 decorative plates under the title of *Caprices Décoratifs* for another publisher, Laurens. These, too, were decorative motifs and scenes painted in watercolours and with much use of gilding, but without shape designs, so that they were adaptable to any object or surface.

From the turn of the century Habert-Dys began to devote more of his time to executing some of the objects he had spent so many years inventing and designing on paper. He executed a number of beautifully detailed vases, boxes and other objects in silver, frequently in combination with bronze, ivory, gold, horn, ebony, pearls, or semi-precious stones; he used every available technique to vary the finishes, from enamelling, to burnishing, to acid-etching. His first exhibits at the 1903 Salon were awarded a Medal 3rd Class. In 1904 he was awarded a Medal 2nd Class. In 1904 his daughter married Fernand Poisson, a silversmith who had studied with the Fannière brothers before succeeding to their business. He was to prove a great helper to Habert-Dys, who exhibited his silver at the 1905 and 1906 Salons.

In 1907 Habert-Dys became Professor of Drawing at the École Nationale des Arts Décoratifs. In his spare time he began to experiment with glass.

In 1910 Habert-Dys exhibited the first results of his experiments at the Brussels Exhibition. This was a plain crystal bottle decorated with a chequerwork pattern in red glass. The shape of the bottle was quite ordinary, having been blown into an old mould. The technique of decoration was, however, quite new. Similar effects had been achieved in the past with a clear glass vessel overlaid with a coloured glass which was then etched away with hydrofluoric acid to produce the required cameo pattern. What Habert-Dys had developed, however, was a form of incrustation somewhat akin to the marquetry work of Gallé. Into the shaped, but still malleable, transparent crystal vessel the hot coloured glass was inserted in the required pattern. The glassworker's ability was the only limit to the decorative possibilities. When annealed, the vessel was polished. The encrusted coloured glass pattern was flush with the vessel's surface, while the very nature of the pattern turned the transparent sides into prisms which broke the light into a myriad reflections.

Habert-Dys took out a patent for this technique with Lenthéric, a well-known perfumer in the Fabourg Saint-Honoré in Paris. Lenthéric was to use this technique to make all his perfume bottles. It was also hoped to develop the technique to manufacture vases, lamps, table-ware and decorative windows. A group of experimental perfume bottles encrusted with patterns in red, green, blue and yellow glass had been executed when Lenthéric suddenly died. His name and business was taken over by a firm which was not interested in further developing the use of the technique. Habert-Dys was unable to work any further, since the firm held half the patent rights which he could not afford to buy from them. The experimental group of bottles remained the only examples, part of the perfumery's shop fittings.

Habert-Dys – Multi-layered glass vases, partly covered in trailing metal, *c*1913. (Contemporary photograph)

Nothing daunted, Habert-Dys began to experiment in a new direction with glass. He produced multi-layered vases, bowls, decanters and other vessels using alternating transparent colourless and transparent coloured layers in various orders. Some vessels might only have two layers. Most had more, six layers being frequent, using three or four different colours sandwiched between clear layers. The resulting vessel had an extraordinary depth of colouring and translucency, especially when lit from the inside or from behind. The vessel was then partly covered in trailing metal which formed teardrops, blobs, or torn patterns. The metal could be a thin layer or a thick, pitted surface covering the whole vessel, the glass visible only through pierced craters. Some vessels with thin tracings of the pewter-grey metal had a final outer surface of transparent glass blown over the metal layer. First exhibited at the 1913 Salon these vessels won Habert-Dys a Gold Medal. He was henceforth to exhibit *Hors Concours*.

In fact, although Habert-Dys exhibited his work regularly at the annual Salons of the Société des Artistes Français, of which he had been elected a full member, he had also exhibited at the Salons d'Automne, in which he was a Member of the Jury, and at the Salons of the Société des Artistes Décorateurs.

In addition to the glass he was also executing some original lacquer-work panels and developing new lacquer techniques for use in decorating furniture, boxes, etc. They were never shown. He was also designing, executing and decorating ceramics which, for contractual reasons, had to be sold under another artist's name. The outbreak of the First World War was to be the end of his practical work. Financial worries, allied with his wife's ailing health prevented him from doing any more than concentrating on teaching. When his wife died in 1922 he was seventy-two years old. He was to live for several more years, still full of ideas which he was unable to put into execution.

HANDEL & CO

Philip Handel (1866-1914) was born in Meriden, Connecticut, of German descent, and was trained as a glass designer and decorator at the Meriden Flint Glass Company. At the age of nineteen he went into partnership with Adolph Eyden, opening a small glass decorating shop under the name of Eyden & Handel. He bought out his partner in 1893 and moved his premises, changing the name of the firm to Handel & Company. Handel never actually manufactured the glass he decorated, merely ordering it from a variety of glassworks. Glass vases, tazzas, and other objects were decorated with etching, enamelling or painting, often with hideous results, although occasional pieces succeeded in transcending the late-nineteenth century concept of popular illustration.

In 1904 Handel patented a method of 'chipping' glass in which the items were first sandblasted, then covered in film glue. When the glue hardened the item was placed in the kiln at a temperature high enough to contract the glue, which then fell off, taking with it minute portions of the glass surface, which then acquired a frosted, textured finish.

Handel became a noted lamp manufacturer. The variety produced is enormous. A large range of leaded-glass shades was produced, usually of floral or geometric inspiration. Metal shades were made with cut-out patterns, often of scenic subjects, then lined with coloured glass inserts which were thus seen through the cut-outs. Leaded-glass panels were treated to look like parchment, or decorated on the inside so that the designs suddenly appeared when the light was switched on. More elaborate ones were sometimes decorated inside and out, so that the unlit decoration changed when the lamp was lit. The glass surface was often given a 'chipped' surface before decoration. Handel produced his own metalwork, normally making the lamp bases of spelter with a patinated bronze finish. These varied from plain bases to elaborate confections, imitations of the Tiffany tree-trunk and cast sculptured nymphs. In 1902 Handel took out a patent for a pond-lily lamp in which shade and unlit bud were made of striated bent glass in a metal holder. The base is sometimes found with different shades, while a variant was made with three shades and two buds.

Philip J. Handel died on July 14th, 1914, and was succeeded to the presidency by his widow, Fannie Handel, who remarried in 1918. Handel's cousin, William F. Handel, joined the firm as manager in 1919, becoming vice-president in 1926. After Handel's widow retired, William Handel tried to keep the company running as long as he could through the Depression years, and even produced a line of decorated porcelain, using undecorated china imported from Limoges and Bavaria, but he was forced to close the factory down in 1936, and the company was wound up in 1941.

Handel items are normally identified with the name impressed or embossed on the bronze base of lamps or other metalware. Where the lamp base had a felt protector, a cloth label with Handel's name was glued to the felt. Glass items usually had Handel's name painted or stencilled on the base. In addition, one often finds the names of Handel decorators on individual items. These include Henry Bedigie, F. Gubisch, Albert A. Parlow, George Palme, Walter Wilson and William Runge.

GRAF HARRACH

Founded in 1630, the Neuwelt glassworks changed hands several times until finally taken over in 1798 by Graf (i.e. Count) Harrach, who put Johann Pohl in charge. By the time of Pohl's death in 1850, the firm had expanded considerably, and in the latter half of the century had become second only to the Vienna firm of J. & L. Lobmeyr in the production of table glass, which they exhibited at the 1876 Philadelphia World's Fair.

From 1884 to 1900, under the direction of Bohdan Kadlec, they produced glass in the traditional Bohemian style as well as glass inspired by the Venetian style, including iridescent glass. At the 1898 Jubilee Exhibition in Vienna, Harrach had on display a variety of direct copies of Tiffany vases in floral forms and with combed decorations. Two years later they produced iridescent and enamelled vases decorated with designs taken from Alfons Maria Mucha, Sarah Bernhardt's poster designer and a leading Art Nouveau artist. They also began the production of cameo glass in the style of Nancy. This is rarely particularly inspired, being generally of the quality of late industrial Gallé. They continued the production of cut and engraved crystal, as well as producing glass in the

style of nearly every European firm.

At the Paris 1900 International Exhibition they were awarded a gold medal. In 1901 the painter Julius Jelinek (1874-1918) became artistic director. Directors and designers included Jan Mallin from 1901 to 1913; Carl Lederle from 1901, painter, former curator at the North Bohemian Crafts Museum at Reichenberg, and designer of galvanised silver overlays for Loetz and Adolf Zache; and the Prague architect Jan Kotěra (1871-1923) from 1903, the man whose plain geometric designs were to influence the whole industry. Members of 'Artel', a Prague Arts Society, also designed for the firm, including the painter Jaroslav Horejc, the architects Rudolf Stockar, Vlastislav Hofmann, Pavel Janák, Antonin Rozsipal, Otakar Vondracek and the painter Václav Spála. Alois Pohl carried out some fine engravings of floral decorations. Harrach exhibited at the 1901 and 1902 Winter Exhibition in Vienna. At the height of their fame, they had sales outlets in Prague, Vienna, Karlsbad, Moscow and St. Petersburg.

Harrach

FRITZ HECKERT

Founded by Fritz Heckert in 1866, the Petersdorf glassworks produced mirror-glass, tankards and table glass, frequently in imitation of old German designs as well as Indian and Persian decorations. From 1890 to 1905 Heckert's son-in-law Otto Thamm ran the firm, followed by Heckert's son Bruno Heckert, who directed the glassworks until 1910.

From about 1898 Heckert began the production of a more original range of designs, the **Cyprus** glass (Cyperngläser). Many of these designs were based on antique forms, but the Jugendstil influence soon manifested itself in the choice of both shape and decoration. Cyprus glass was normally either opaque or barely translucent. Made in a wide range of coloured glass, the vessel had a mat, iridescent surface with enamelled and/or gilt decoration. The earliest Cyprus designs were faithful copies of the abstract patterns on old mosque lamps, but a wide range of new patterns emerged after 1900, when Max Rade and Ludwig Sütterlin were engaged as designers. Willy Meitzen of Ribnik also designed for Heckert.

Max Rade (1840-1917), a pupil of Wiedemann, was a professor at the Applied Arts School in Dresden. His designs were frequently naturalistic representations of animals, plants and flowers, as well as mythological designs. He also used decoratif motifs, such as ribbons, stars, leaves and geometrical forms, such as circles, triangles, etc., to form continuous bands at foot and rim. Successful designs were frequently repeated with slight variations.

Ludwig Sütterlin (1865-1917) had studied under Emil Doepler and Max Kock at the Royal Applied Arts Museum School in Berlin. He later taught the art of book production at the Berlin School of Handicrafts. During his career he designed posters, designed for leatherwork,

Heckert – Iridescent vase with 3 applied handles, enamelled and gilt with a peacock, designed by Max Rade, 36 cm *c*1900. (Editions Graphiques, London)

devised a new typeface, and spent a short while at the Heckert glassworks designing glass. His designs are both abstract and floral, the linear patterns executed in enamels and gilt, using the usual Heckert iridescent surface.

Some Heckert vases are found with totally abstract but colourful designs derived directly from Vienna Secession Jugendstil, which clearly had great impact in Germany. These vases are frequently found marked on the base in enamelled or gilt lettering. The most usual mark is a serial number, say three figures, an oblique stroke, then a further figure. Sometimes a Roman numeral is found above or below the serial number. The initials 'F.H.' (Fritz Heckert) are also sometimes found, as are the 'MR' Monogram (Max Rade) or the word 'Orig' (Original) in script. The marks are frequently partly or totally obliterated. Nevertheless identification is relatively easy because of the basically opaque mat iridescent surface and the style of enamelling and gilding.

Some Heckert vases are found with galvanised silver overlay in floral patterns similar to that found on some Loetz and Adolf Zache iridescent glass. A small quantity of relatively uninteresting acid-etched floral cameo glass, mostly in two layers, was also carried out. This is found signed 'Heckert' in relief cameo script on the body of the vessel.

Heckert exhibited regularly at the Leipzig fairs from 1900 onwards. At the First International Exhibition of Modern Decorative Arts held in Turin in 1902 Heckert was awarded a Silver Medal.

The glassworks survived economic crises as best it could under the direction of Adolf Schoeps from 1910 until 1918, when it was turned into a limited company. In 1923 the firm merged with the Gräflich Schaffgotsch'en Josephinenhütte and the firm of Neumann & Staebe of Hermsdorf, Kynast to form a joint stock company called Jo-He-Ky based in Petersdorf.

The Josephine glassworks had been founded in 1842 by Count (Graf) Leopold Schaffgotsch in Schreiberhan, Riesengebirge. Under the artistic direction of Franz Pohl (1813-1884) it had been built up into a major firm, and this was continued by Pohl's son, also called Franz Pohl (1843-1896) from 1884 until his own death, when the firm was run by Lichtenberg until 1912. The artistic direction from about 1900 onwards was in the hands of

Heckert – Vase with 3 applied handles, enamelled and gilt with flowers and an angel face, designed by Max Rade, 18 cm *c*1900. (Phillips)

Siegfried Härtel (1870-1940), a professor at the Breslau School of Applied Arts and Handicrafts. Specialising in fine table glass and vases in crystal with occasional use of abstract and floral decoration in enamels, the firm exhibited regularly at the Leipzig fairs from 1900 and was awarded a Gold Medal at the Paris Universal Exhibition in 1900. Outside designers employed by the firm included the Berlin painter Julius Maess from 1900 and from 1910, also from Berlin, Rudolf and Fia Wille.

F.H.
428/W.
MR. III.

Heckert

In 1925 the enlarged firm took the name Reichsgräflich Schaffgotsch'sche Josephinenhütte Aktiengesellschaft (Imperial Count Schaffgotsch's Josephine Glasshouse Limited) and the firm survives today under the marginally shorter name of Graf Schaffgotsch'sche Josephinenhütte GmbH.

HEILIGENSTEIN

Born at Plaine Saint-Denis on the outskirts of Paris on December 6th, 1891, Auguste-Claude Heiligenstein went to work for the firm of Legras at the age of eleven and a half. After a thorough training there in various aspects of glassmaking, he was eventually introduced to glass decorating. Towards the end of 1906 he left Legras for the Prestat works, where he spent a few months as a gilder, then moved on to a firm of ceramic decorators. In

Heiligenstein – Vase enamelled with Greek dancers and a straw pattern, *c*1928. (Collection Félix Marcilhac, Paris)

September 1907 he went to work for Baccarat as a glass decorator.

In 1910 Heiligenstein left Baccarat to work as a commercial artist, specialising in posters. This new career continued until the outbreak of war in 1914, when he joined up, ending the war with the award of the military Legion of Honour. By 1919 he had joined the firm of Geo. Rouard, working in its glass and ceramics decorating studio under its artistic director, Marcel Goupy. He executed a large number of enamelled glass vases, table sets and boxes to Goupy's design, all of which were signed with Goupy's name.

Through his friend the ceramist Jean Mayodon Heiligenstein met a young woman ceramist, Odette Chatrousse, who had a well equipped studio at 255 Boulevard Raspail. 1923 was to prove a decisive year for him. He left the Maison Rouard, married Odette Chatrousse and exhibited vases, bowls and boxes enamelled with floral and insect designs in soft colours at the Salon des Artistes Français under his own name, being awarded an Honourable Mention. He also exhibited at the Modern Glass and Enamelwork exhibition held at the Galliéra Museum, and became artistic and technical adviser to the decorating firm of Leune, a position he retained for some three years. In 1924 at the same Salon des Artistes Français he was awarded a Gold Medal, his wife receiving a Silver Medal for her display of ceramics. He was thereafter to exhibit *Hors Concours*, and became a member of the jury.

Under his wife's influence and instruction Heiligenstein increasingly turned to ceramics while still working in glass, and his wares were on permanent display for sale at the Maison Geo. Rouard. He received his first private commission in 1923 from Mrs. Florence Blumenthal, a wealthy American living in Paris, who was also having her apartment decorated by Léon Bakst, whose opulent costumes and stage designs for Diaghilev's Ballets Russes had been stunning Europe since 1909. Heiligenstein executed a large number of bottles, jars and boxes enamelled

Heiligenstein – Brown and gold enamelled bottle and stopper made for Mrs. Florence Blumenthal, 18.5 cm 1930. (Collection Dépôt 15, Paris)

Heiligenstein – Bowl enamelled with Leda and the Swan, Danaë and another figure, 14.5 cm *c*1928. (Collection Dépôt 15, Paris)

in glowing colours to Bakst's designs for Mrs. Blementhal's dressing table. She was to supply him with various models for his execution for some eight years.

In 1926 Heiligenstein left the Leune firm to return to Legras, now taken over by the Souchon-Neuvesel glassworks, and transfered his personal wares from Rouard to the Edgar Brandt Gallery in the Boulevard Malesherbes. Using glass vessels blown at the Daum works at Nancy, he continued to decorate them with enamels, the floral designs now giving way to Grecian maidens, nudes and mythological scenes, some in glittering colours, others in muted tones, often with gold and silver highlights. Some of those vessels had an enamelled pattern or design which covered the entire surface; where the design only covered a portion of the exterior he frequently used a fine enamel sprayed over the vessel's inner surface, giving a marbled look to the undecorated portions of the glass.

Private commissions flowed his way. Emile Chouanard, owner of the Forges de Vulcain, a major steelworks, commissioned Heiligenstein and the sculptor Richard Guino (1890-1973) to build his tomb at the Père-Lachaise cemetery. Heiligenstein decorated the glass panels in the vault's door with enamelled garlanded nudes. Other major clients included the King of Siam and Harold Sidney Harmsworth, 1st Viscount Rothermere, the newspaper magnate. Several French, Italian and Belgian museums also purchased items he designed.

In 1931 he went to work for the Legras Pantin glassworks, designing a range of chunky, thick-walled vessels in opaque or translucent colours, powdered enamels rolled onto the parison on the marver to produce internal streaks or marbling. These vessels were then generally acid-etched on the suface with shallow geometric patterns, frequently contrasting polished and rough areas of surface. Derived from Marinot's glass, they are fairly similar to other glass produced at that time by Daum and Schneider. All of Heiligenstein's glass for the Pantin firm was issued with their Montjoye trademark transferred onto the base. Some are engraved 'Montjoye Aug. Heiligenstein' in diamond point, sometimes with a number.

Although he worked for Pantin until 1935 the Depression was taking its toll, and Heiligenstein became

Heiligenstein – Vase enamelled with a dancing nude, *c*1927. (Collection Félix Marcilhac, Paris)

one of the founders and first president of a union of art workers, set up in 1933. Some two years later this led to the formation of an unemployment fund.

In 1935 he helped decorate a new retail shop, Au Vase Etrusque (The Etruscan Vase) in the Place de la Madeleine, supplying ceramic panels for its front. He began to exhibit there and at the Hébrard gallery, and sent his wares to exhibitions in Athens, Rotterdam, Cairo, Barcelona, Florence and Liège. Among various honours he received seven citations to his Diploma of Honour for Decorative Arts.

When war broke out in 1939 he was again called up, but in 1941 he returned to German-occupied Paris and spent much of the rest of his life working with ceramics, though he returned to glass from time to time after 1946. At the 1947 Salon des Artistes Français he exhibited a large enamelled glass cup which brought him a Medal of Honour. Enamelled vases, bowls and bottles continued to be made by him, often reproducing earlier designs of his, though these later ones are technically sometimes cruder, with some running together or cracking of the enamel during firing. In 1951 he essayed a return to chunky glass, producing some eighty vases at the Clairay glassworks. Thick-walled with internal bubbling, marbling and clouds of colour, their surfaces were not etched like the Montjoye ones but left smooth and blank, some with a belt of colourless glass waisting the vessel, others with surface decoration of a bird, animal or fish gilded and then fixed with shallow incisions with a diamond point. These vessels were all signed 'Clairistal'.

Various decorations were awarded to him. In 1952 he became an officer 'du Mérite Artisanale' (i.e. Merit in Craftsmanship); three years later an officer 'du Mérite Combatant' (i.e. Military Merit); and in 1960 he became a Commander in the military section of the Legion of Honour.

Auguste Heiligenstein's decorated glass is usually enamelled all over its surface with intricate polychrome designs, some with floral or drapery designs, but at their best with bold subjects based on Greek mythology. He often used repeating geometric patterns or highly stylised wave or cloud designs. Rich and luminous in the enamel, he occasionally allowed the transparent glass to show through the enamel patterns as a contrast. He produced vases, bowls, and boxes. He also produced pendants designed to be worn on a cord or mounted in gold, frequently enamelling the foreground of the design on the front surface, then enamelling the background on the back of the pendant, the thickness of the glass emphasising the effects of perspective. He often used gold enamel either in combination with translucent enamels or used to outline the pattern. Several of his enamelled vessels and pendants were produced as unique designs, and while he reused some of his earlier models after the Second World War, these differ considerably in both colour and execution from the original models.

Most of these enamelled vessels are engraved 'Aug. Heiligenstein' on the base, sometimes also with a number, the date, or a title or brief description of the vessel in question. Many of the pendants are also signed, except when enamelled on both sides or where the design does not leave space for the signature. While all the vessels executed to Goupy's designs at Rouard and sold through their retail shop were signed with Goupy's name, Heiligenstein kept a few for himself, and these he later signed with his own name. He died at Montreuil on January 23rd, 1976.

HONESDALE

This was a decorating shop set up in January 1901 by C. Dorflinger & Sons, a glassworks from White Mills, Pennsylvania. Carl Francis Prosch (1864-1937) was hired to run it. Born in Vienna, Prosch had worked for several years as a glass and ceramics decorator for Bawo & Dotter, a Bohemian firm which exported most of its production

to the United States. Prosch was sent to their New York office in 1890 as a sales representative. In 1897 he was elected a member of the New York Art Students League, becoming a Life Member in 1907. After some correspondence with Dorflinger, he moved to Honesdale in December 1900 and took over the decorating shop when it opened a month later.

Dorflinger supplied Honesdale with a variety of glass blanks which were then decorated with etched and gilded designs. Dorflinger manufactured a variety of table glass in imitation of Venetian models, as well as pastel glass in optic patterns similar to that produced by Tiffany and Steuben. Since this was unsigned, merely identified by an applied paper label, it is difficult to differentiate from similar glass produced by other glassworks.

Prosch's decorations for Honesdale include cameo designs in acid over two or three layers of generally transparent coloured cased-glass, the outlines usually delineated in gold then fired at high temperature. The more delicate pieces produced by Dorflinger sometimes collapsed in the kilns. Some of the enamelled and gilt decorations supplied to Dorflinger were of farmyard subjects or amusing motifs, but their most interesting designs were sweeping Art Nouveau patterns based on the [illegible] of Van de Velde. In this respect, the decoration is often similar to that produced at the same time by Val Saint-Lambert in Belgium and Baccarat in France.

In 1916 Prosch purchased Honesdale from Dorflinger, and began to purchase his blanks from other manufacturers, including A. H. Heisey & Company and the Fostoria Glass Speciality Company. These supplied him with lime-glass blanks, which were better able to sustain the high temperature necessary to fix the enamelled and gilt decorations than the lead-glass blanks supplied by Dorflinger. Prosch continued to run his company until 1932, when ill-health forced him to close down.

The earliest Honesdale glass is sometimes signed on the base 'Honesdale' in gold etched script, but was most often identified by a printed paper label with the 'H.D.C.' (Honesdale Decorating Company) monogram superimposed over a line drawing of a stemmed glass, which was used until 1920. Sometimes both were present. After Prosch took over the company in 1916 he used a mark representing the letter 'P' within a shield, while some of the blanks supplied by Heisey bore their mark, the letter 'H' in a diamond shaped shield.

ANDRÉ HUNEBELLE

A leading designer of table glass in the 1920s and 1930s, André Hunebelle also designed a number of decorative moulded vases. Although obviously influenced by the style and technique of René Lalique, Hunebelle's designs are more geometric and stylised. His flowers are totally unrealistic, the petals being merely symmetrical decoration. The design of his vases is often carried out in very deep moulded lines in grey or colourless glass. Though not particularly original, they are frequently very stylish and attractive.

André Hunebelle is the inventor of the port decanter with the axis at forty-five degrees to the vertical, so that its handle is placed at the top instead of at the side. Thus when served, the wine has less distance to travel to the glass. The design became very popular for a while, and was widely copied in France, Bohemia and elsewhere.

A HUNEBELLE
FRANCE

After the Second World War Hunebelle became a noted French film director, with such films as *Millionaire d'Un Jour* (Millionaire for a Day), *Mefiez Vous des Blondes* (Beware of Blondes), *Ma Femme est Formidable* (My Wife is Fantastic), *Mon Mari est Merveilleux* (My Husband is Wonderful) and *Casino de Paris* to his credit. He later specialised in directing swashbuckling spectacular films, usually starring Jean Marais, including *Les Trois Mousquetaires* (The Three Musketeers), *Les Mystères de Paris* (The Mysteries of Paris) and *Fantomas*.

Hunebelle – Deeply moulded vase alternately polished and mat in finish, 23.5 cm *c*1925. (Editions Graphiques, London)

IMPERIAL GLASS CO

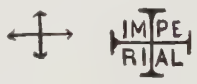
'Captain' Ed. Muhleman, whose courtesy title had been acquired as a result of a childhood job working on an Ohio river steamer whose captain had been his brother, had worked for several glassworks, including the Elson Glass Works in Martins Ferry, Ohio, and the Crystal Glass Company in Bridgeport, Ohio. He left the latter while it was in the throes of amalgamation with other companies to eventually become the National Glass Company of Pittsburgh, Pennsylvania. His ambition was to open a new glassworks. After some two years of preparation and canvassing of wealthy and influential men, the Imperial Glass Company was formed in 1901. J. N. Vance became the company's first President, Muhleman General Manager and a member of the Board of Directors, as well as acting President for a brief period when Vance was ill. Muhleman brought in Victor G. Wicke, a German manufacturer's agent specialising in glass, as Sales Manager.

Wicke succeeded in selling most of Imperial's early production to F. W. Woolworth & Co., and gradually set up an international sales organisation which covered Central and South America, the West Indies, Australia, New Zealand, the Union of South Africa and Germany. Muhleman retired in 1910, dying in 1924. Vance died in 1913, and was succeeded as President by Wicke.

The great popularity of iridescent glass encouraged Imperial to produce a cheap substitute. In about 1910 they introduced a line of crude pressed coloured glass with a lustred finish. This is known as 'Carnival' glass, although Imperial originally gave it a variety of names, including 'Helios', 'Azur', and 'Red Iridescent'. It was produced in very large quantities, and was sold very cheaply. Production of Carnival glass using the original pattern moulds was revived by Imperial in the 1960s, signing these with an impressed 'IG' monogram.

Imperial Jewels was a line introduced in 1916. Blown and moulded vessels of good quality glass were made in glowing iridescent colours, including gold and pearly white, green, amethyst and ruby.

Free Hand Ware was introduced in 1923 as Imperial's most luxurious glass. The shapes covered a very wide range of vases, bowls, candlesticks and baskets, made in a variety of bright iridescent colours, including gold, blue, yellow, brown, opal and green. Many were decorated with looped or vine patterns or with applied handles, feet or decorative swirls. Some were produced in transparent crystal or coloured glass, often with decorations, including applied glass threads.



In 1914 Imperial adopted a trademark of a cross with arrow-heads at each point of the cross. This was changed a few months later to a 'German' cross, in which each arm of the cross ended in the centre of a short bar at right angles to it. In 1921 the name 'Imperial' was incorporated in the German cross. One of these trademarks was usually impressed on the base of their Imperial Jewels ware. The Free Hand were usually identified with a paper label bearing the German cross and name within a circle bearing the words 'Free Hand'. Needless to say, many of the paper labels have disappeared over the years.

Victor Wicke died in 1929, and was succeeded by J. Morris Dubois, who steered Imperial through the financial crisis of the 1930s. The Depression brought Imperial to bankruptcy in 1931, but Dubois persuaded the courts to allow the company to continue to operate while efforts were made to refloat it. By emphasising the importance of the company to the economic well-being of the community, Dubois persuaded several wealthy citizens to support the company, which was reorganised a few months later as the Imperial Glass Corporation. Earl W. Newton had kept Imperial at work during those difficult months by producing enormous quantities of pressed glass knick-knacks to be distributed as premiums by the Quaker Oats Company. Newton soon succeeded Dubois as President, and he initiated several of the successful lines of table-ware patterns. He retired in 1960, and was succeeded by Carl Gustkey. The company is still successfully in operation.

IMPERIAL RUSSIAN

Founded in 1777 by Prince Potemkine, the Imperial Russian Glassworks came under the control of the Imperial Cabinet in 1792. For the next half century much of their production went directly to the Imperial Palaces. In the latter half of the nineteenth century they were producing a full range of table glass, as well as decorative glass enamelled with Russian peasant designs and Byzantine motifs. They were awarded a Diploma at the 1873

Imperial Russian – Three-layered floral vase wheel-carved in cameo, 27.5 cm 1901. (Hermitage Museum, Leningrad)

Imperial Russian – Two-layered vase wheel-carved in cameo with leaves and a dragonfly, 30.6 cm 1898. (Hermitage Museum, Leningrad)

Vienna International Exhibition.

In 1890 the Imperial Russian Glassworks were united with the Imperial Russian Porcelain Factory (founded in 1744) under the direction of Victor Knieper. Dimitri Gonrieff was named manager of both divisions in 1890, a position he retained until 1900. Only that part of the production destined for the Imperial Palaces was outside his jurisdiction.

Czar Alexander III (1845-1894) had succeeded to the throne in 1881 after his father's assassination by Nihilists. Under the influence of his wife Dagmar (the Empress Maria Feodorovna), daughter of King Christian IX of Denmark, and sister of the future Queen Alexandra of the United Kingdom (wife of King Edward VII), the Czar became fascinated by Danish arts and crafts. In 1892 he imported Danish craftsmen to the Imperial Porcelain Factory to produce ceramics capable of rivalling the products of the Royal Copenhagen Porcelain Factory. They brought with them not only their technical ability, but also the floral stylisations of Art Nouveau.

Czar Nicholas II came to the throne in 1894. In 1900 Baron Nicholas de Wolff took over the management of the combined Imperial Russian Glass and Porcelain Works, a position he was to retain until 1910. Encouraged by the Dowager Empress Maria Feodorovna, he directed both divisions towards Art Nouveau designs. The porcelain designs by Petrov, Romanov and Krasnowsky were astonishingly similar to the contemporary products of Royal Copenhagen. The glass designs were clearly inspired by Gallé and Daum via the Scandinavian glassworks of Kosta and Reijmyre. The Russian glassworkers were superb craftsmen. They had exhibited *Hors Concours* at the 1900 Paris Universal Exhibition. Their new Art Nouveau glass was on display at the 1901 St. Petersburg Ceramics Exhibition. This was designed by P. Krasnowsky and J. Romanov (both also ceramics designers) and S. Vilde, with engravers and decorators Dimitri Pavlovitch Lukin, Bourzev, P. Marinezev, A. Zotov, de Orlovsky and V. Filomonov as well as Petouchov, who had worked with the Imperial Court

jeweller Carl Fabergé.

The glass was overlaid in mainly opaque glass, superbly carved in floral and plant designs in a style which simulated the look of carved hardstone. The shapes are simple and unfussy, giving a full surface for the carved design. Rare and of great craftsmanship, these vases are little known.

Baron de Wolff was succeeded in 1910 by N. Stroukhov, who retained his position until the revolution in 1917.

The Imperial Russian glass is signed with the same monogram as the porcelain. This has the Czar's initial, surmounted by a small crown, and with the date of manufacture of the article below the initial. Painted on the porcelain, this is engraved on the base of the glass, though it was enamelled on some of the earlier glass.

The initial of Alexander II was used until his death in 1881. That of Alexander III was used between 1881 and 1894. The Art Nouveau glass was produced in the reign of Nicholas II, and his initial was used from 1894 to 1917, when he abdicated, only to be killed along with his wife and all his children at Ekaterinburg in 1918. Nicholas II's monogram consists of the Cyrillic letter 'N' (which looks like the letter 'H') with the Roman numeral 'II' inserted between the two uprights of the letter.

AUGUSTE JEAN

Ceramist and potter, Auguste Jean produced a considerable body of work in glass. His first vases consisted of uncoloured transparent glass vessels enamelled all over with Persian patterns. He soon began to add applied glass decorations to these enamelled vases, shaping the hot appliques with pliers and pincers. Jean successfully exhibited a large group of his glass vases at the Paris International Exhibition in 1878. His glass falls into two main categories. The first consists of vases of clear or coloured glass, often with appliqué feet or handles or decorative collars, covered with enamel-painted and gilt designs, often of Japanese or Persian inspiration. They are very colourful, and somewhat exotic. They are signed 'A. Jean' in gilt script on the base, the pontil being usually polished. It is not uncommon to find that the signature has disappeared through cleaning.

The second, and very impressive, category consists of vases freely-formed in the kilns by blowing, then using a variety of tools to knead, prod, twist and otherwise persuade the glass into extraordinary shapes. These are not decorated vases: the form itself is the decoration. Made in transparent clear or palely coloured glass, they anticipate the direction of contemporary glass by over half a century. They are usually signed 'A. Jean' in moulded relief on a glass pastille applied to the side or base of the vase. The Conservatoire des Arts et Métiers (Arts and Crafts Museum) of Paris has a group of Jean vases, purchased at the 1878 Exhibition, in its collection. It includes enamelled vases; a blue Orchid vase in which the glass flower grows out of the body of the vase; a long-necked 'berluze' vase of Japanese inspiration in which the iridescent purple chiné glass outer layer traps an overall pattern of silver fragments within the inner glass layer, thus flecking the surface in black and silver; and a tall transparent glass vase on three feet, its centre wrapped in 'smoky waves', furnace-formed dark glass freely sweeping around the body of the vase.

Jean – Transparent amethyst vase, freely blown and shaped, 25.3 cm *c*1880. (Private Collection, London)

GAËTAN JEANNIN

Primarily an engineer and designer, Gaëtan Jeannin established himself as a leading manufacturer of decorated and architectural glass panels engraved with sandblasting. In the 1920s and 1930s he ran an establishment at Boulogne-Billancourt, a Paris suburb, in which he executed leaded-glass windows and panels and decorative signs for shop fronts, as well as running an enamelling and engraving department.

Jeannin also made a number of vases in clouded and bubbled glass, usually decorated on the surface with stylised floral or geometric patterns carried out with hydrofluoric acid, though he sometimes patterned his vases with sandblasting. His vases are normally signed on the base with his engraved monogram.

KARL KOEPPING

Born in Dresden on June 24th, 1848, Karl Koepping studied chemistry before enrolling at the Munich Academy of Arts in 1869. He there acquired a thorough grounding in various artistic disciplines, including etching, which interested him enough to join the studio of A. Waltner in Paris to further study etching techniques. In 1890 he held master classes in etching and engraving at the Berlin Academy while successfully executing engravings reproducing Old Master and contemporary paintings. By 1892 he had abandoned reproductive engraving and begun to etch original compositions. His illustrations were frequently published in the magazine *Pan* from 1896, and he began to collect Japanese art.

In about 1895 Koepping began experimenting with glass designs, using blown glass tubes turned into stemmed cups somewhat reminiscent of old Venetian glass. He had begun to design floral forms he wished to execute in glass, but for which he lacked the necessary expertise. In 1896 he therefore joined with Friedrich Zitzmann (1840-1906), an expert glass-blower who had worked at Murano, and for several months the two men worked closely together in Berlin. Zitzmann had the craft and the technique, and he executed Koepping's designs with great ability, but the two men quarrelled. Koepping accussed Zitzmann of breaking their agreement and dismissed him. In the years that followed Koepping had his designs carried out by the Grossherzogliche Sächsische Fachschule und Lehrwerkstatt für Glasinstrumentmacher und Mechaniker, a school and teaching workshop for glass instrument makers and artisans founded in Ilmenau (Thüringia) in 1894 under the patronage of the Grand Duke of Saxony. Zitzmann had begun to produce glass very similar to that designed by Koepping, and from 1897 Koepping began to sign most of his glass as a measure of protection.

Koepping's designs were a pure expression of Art Nouveau. His involvement with the magazine *Pan* and his own collection of Japanese *objets d'art* had clearly prepared him for the application of floral Japonism to the renaissance in the applied arts which was taking place in France and Belgium. Decoration clearly interested him less than form. He began to design glass vases which had no utilitarian value, an exquisitely fragile stem growing from a plain circular foot, the stem frequently with a jaunty curl or twist in its centre, terminating in an equally fragile blown cup, either rounded or tulip-shaped. The stem often had slender glass leaves sprouting from it, or curved around it. The glass was naturalistically coloured, and frequently iridescent.

Samuel Bing, the leading supplier of Oriental art in Paris, had transformed his shop in 1895 into La Maison de l'Art Nouveau, and there exhibited and sold furniture, fabrics, wallpaper, glass and *objets d'art* by the leading designers in the new style. Koepping's new glass was on view from the first. He also exhibited at the Paris Salons from 1896 to 1899. Some critics professed to find his glass spidery and sinister, but Gabriel Mourey, reviewing the

Koepping – Group of floral stemmed cups, 1898. (Contemporary photograph)

1897 Salon of the Champs de Mars in the *Studio* wrote: 'There are a few things, however, deserving distinction, and I will place in the first rank the blown glass by M. Karl Koepping . . . M. Koepping's glass is delightfully simple and light, and supremely artistic. How infinitely preferable this plainly treated, graceful material, which is really glass, to the over-elaborate metallic complications of Tiffany.'

In 1897 Koepping exhibited at the VIIth International Art Exhibition in Munich, and at the Libre Esthétique in Brussels; in 1899 at the Fine Arts Exhibition in Darmstadt and the German Arts Exhibition in Dresden. At the Paris Universal Exhibition in 1900 he was awarded a Gold Medal. He also exhibited at the First Exhibition of Modern Decorative Arts in Turin in 1902 and at the Brussels International Exhibition in 1910. His range of glass, which had been marginally widened in 1898 by the addition of some pretty but unadorned stemmed wine glasses whose only decoration was one or more little glass rings on the stem, was always on view and sale at L'Art Nouveau Bing in Paris and at Keller & Reiner in Berlin. Much of his small production is now in museums, and no doubt a proportion has been destroyed. It is thus extremely rare. Most of his glass is signed on the base with a script signature 'Koepping' or 'C. Koepping', but some of it is found unsigned. Koepping died on July 15th, 1914, in Berlin.

KOSTA GLASBRUK

Founded in 1742, the Kosta glassworks was named from a combination of the first syllable of the family names of its two founders, General Anders Koskull and Georg Bogislaus Stael von Holstein. It was turned into a limited company in 1875. In 1897 they began the production of cased cameo glass in the style of Gallé using fairly naturalistic floral and scenic decoration. They used the talents of a number of designers, including some who had earlier worked for Reijmyre. Kosta's leading designers of Art Nouveau glass were Gunnar Gunnarson Wennerberg (1863-1911) from 1898 to 1901; Alf Wallander (1862-1914) from 1905 to 1910; Karl Lindeberg (1877-1931) from 1902 until his death; J. Bronau from 1904; A. E. Boman and Ferdinand Boberg. Kosta cameo glass is mostly acid-etched, with only occasional use of carving. The shapes are graceful, but not adventurous, and neither are the techniques used, since they strove to produce glass on a limited production run of models rather than unique pieces. Nevertheless some individual models are very beautiful. Silver was sometimes used to make a base or a collar. They are usually signed 'Kosta' in cameo script on the body, often also engraved 'Kosta' on the base, sometimes also with the designer's name and the model number. They exhibited at the 1900 Paris Universal Exhibition, where they were awarded a gold medal; the 1902 First International Exhibition of Modern Decorative Arts in Turin, and at the 1904 World's Fair in St. Louis.

Within a few years the fashion for cameo glass had changed, and Kosta gradually ceased producing it. At the 1917 Homes Exhibiton in Stockholm, organised by the Swedish Society of Arts and Crafts, a concerted attempt to influence Swedish industry to raise its level of design by employing artists was made by that body. The response to the slogan 'Let the Artist design for industry' was surprisingly good, and painters, sculptors and graphic artists were taken on by a variety of firms, taught the rudiments of the craft, and encouraged to design. The shortage of materials caused by the First World War (although Sweden was neutral) meant that the designers went for an austere functionalism that was to become the hallmark of Swedish design for years to come. Kosta took on Edvin Ollers (1888-1960) a member of a group of artists called the 'Optimists', and he produced several elegant, simply blown forms.

The whole direction of glass production was changed with a new generation of designers. In the 1920s the painter Sven Ericson (b. 1899) joined; from 1926 to 1929 Ewald Dahlskrog (1894-1950), also a member of the 'Optimists' group, who introduced new methods of glass cutting by using a curvated grinding technique; Sven Erik Skawonius (b. 1908); and, in 1927, Elis Bergh (1881-1954), who specialised in glass cut with gently waving patterns which emphasise the brilliance of the glass without harshness or exaggeration. Edvard Strömberg (1872-1946) joined Kosta in 1917-1918, the year that decided the future direction of the firm. Vicke Lindstrand (b. 1904), formerly of Orrefors, became senior designer at Kosta in 1950. The firm is today one of the most important producers of modern table and decorative glass in Sweden.

WILHELM KRALIK SOHN

In 1831 Johann Meyr (1775-1841) inherited a glassworks at Eleonorenhain which had been founded by his Grandfather Josef Meyr. By 1834 he had built it up into one of the major glassworks in Bohemia. From his death in 1841, his nephews Wilhelm Kralik (1806-1877) and Joseph Taschek (d. 1862) ran the three glassworks of Kaltenbach, Adolf and Eleonorenhain under the collective name of Meyr's Neffen (i.e. Meyr's Nephews). In 1854 they expanded by purchasing the glassworks of Ernstbrunn and Franzensthal, later adding those of Idathal and Louisenhütte. From 1862 Wilhelm Kralik had sole control of Meyr's Neffen. He was technically inventive, discovering and perfecting techniques and processes which were to remain standard practice in the firm for years after his death in 1877. In 1881 Kralik's property was divided among his four sons. Karl and Hugo Kralik took over the Idathal, Adolf and Louisenhütte glassworks, running them as Meyr's Neffen. Heinrich and Johann Kralik took over the Eleonorenhain and Ernstbrunn glassworks. The Kaltenbach and Franzensthal glassworks were sold off. On Johann's retirement, Heinrich Kralik (1840-1911) gained control of the Eleonorenhain and Ernstbrunn works, incorporating them as the firm of Wilhelm Kralik Sohn. From 1899 the firm produced a considerable quantity of iridescent glass with both metallic and mother of pearl lustre, often in organic shapes, or with the neck sheared while hot and bent to form handles. Coloured glass was produced in fanciful shapes, often with simple glass applications to form turning leaves or snakes. Some of the glass was overlaid in silver. The iridescent glass is very similar in finish to that of Loetz, but it does not normally have a ground pontil, the base being finished in a mould. It is never signed. Kralik also produced a line of cameo vases of floral designs. These are in shallow relief produced by acid, occasionally with a little carving to finish the design, usually in the beige/pink/brown range of colours, and often have some gilding added. The cameo pieces are usually signed 'Wilhelm Kralik Sohn – Bohemia' on the side, either in cameo or with stencils using acid. Kralik vases were retailed through the Viennese firms of E. Bakalowits Söhne and J. & L. Lobmeyr, and Tiffany in New York, often producing items for them to special order. They exhibited regularly at the Leipzig fairs from 1900 onwards. The firm closed down during the Second World War.

Lalique – *Sirènes face à face couchées*, moulded frosted glass blotter, 16.5 cm long *c*1925. (Editions Graphiques, London)

RENÉ LALIQUE

Born at Ay (Marne) on April 6th, 1860, René Lalique left the Turgot School at the age of sixteen, having shown great talent and aptitude for drawing. His mother guided him towards jewellery, and in 1876 he apprenticed himself to Louis Aucoc, a leading Paris goldsmith and silversmith. During his apprenticeship he attended courses at the School of Decorative Arts whenever he found the time. In 1878 he travelled to England, and completed his training at Sydenham College, where he spent two years.

Lalique returned to Paris in 1880, working first for the jeweller Petit fils, then setting up in association with an old family friend called Varenne. He supplied firms such as Cartier, Boucheron, Destape and Aucoc with models for jewellery and was simultaneously studying sculpture with Lequien and designing fabrics and wall papers. In 1885 he joined the jeweller Destape as manager and, a year later, took over the business.

Lalique was at last his own master. In the course of the next few years, he was to abandon all the traditional canons of jewellery. He was to reject the tyranny of the diamond at a time when the outstanding display of sparkling diamonds in whatever unobtrusive setting was *de rigeur* in smart society, and replace it with a choice from the full range of coloured stones whose use had fallen out of favour. The unobtrusive setting made of gold was to be rejected in favour of the setting as *objet d'art*, the jewel taking form as naïad, mermaid, chimera, or dragonfly, the stones being merely used to stud the composition with a little colour.

His first small collection of jewellery was exhibited at the Paris International Exhibition of 1889. New and more daring experiments were shown at the various Paris Salons from 1894 onwards. Gold was frequently replaced by other metals, silver and even base metals on occasion. He introduced carved horn and carved ivory into his jewellery, used every variant of enamelling from 1895 onwards, opaque, transparent and translucent enamels, cloisonné over metal and openwork pliqué-à-jour. The smartest and wealthiest of the avant garde took him up, and he designed several pieces of jewellery for Sarah Bernhardt in the 1890s. S. Bing, a friend of his, showed his jewellery in his Maison de l'Art Nouveau from its inception. His friend Alfons Maria Mucha, now Sarah Bernhardt's chosen poster artist, undoubtedly inspired him with the Byzantine and barbaric jewellery shown in his lithographs and paintings.

Several leading Paris jewellers were now producing Lalique-inspired jewellery, though they still tended to go for more sumptuous materials, sometimes to the detriment of the composition. Eugène Feuillâtre, who was to design and execute some superb jewellery and enamelled vessels, was a pupil of Lalique.

In 1897 Lalique became a member of the Société des Artistes Français. That same year he became a Knight of the French Legion of Honour.

Lalique the jeweller had not abandoned his interest in other crafts. He continued to sculpt, both small medallions and medals in bronze, silver and gold, and larger sculptures, using not only bronze and precious metals, but also carved ivory and enamelling, sometimes in conjunction with opals and other stones. He decorated leather with poker-work patterns (pyrogravure), and designed book bindings.

The use of glass soon tempted him. He began to experiment with glass in a small way at his workshop in the rue Thérèse, using clear and coloured glass in his jewellery. Some had glass studs acting as jewels, others had coloured glass or clear crystal sections carefully engraved with landscapes, plants or women's faces. He also used glass in some multimedia sculpture.

Lalique's display at the 1900 Paris Universal Exhibition was a great triumph. Already the darling of many wealthy patrons, his name and creations were now on view to the whole of Paris and the many who flocked to Paris from the rest of the world to visit the Exhibition that was designed to commemorate the arrival of the new century. Lalique himself was already looking to new fields to conquer.

In 1902 René Lalique rented a small workshop at Clairefontaine, near Rambouillet, equipped it, and hired four glassworkers. His interest in glass was, from the first, in its sculptural aspect. Using the *cire-perdue*, or lost wax process, he would model individual figures, or vase shapes decorated in high relief with figures, plants, etc., in wax. A mould was then cast around the wax model and molten glass poured into the mould. The wax model melted away, the moulded glass model replaced it and, once annealed, was a unique cast. Lalique's *cire-perdue* glass was, however, glass, and should not be confused with pâte-de-verre. Lalique's early *cire-perdue* glass is very rarely signed, although some were occasionally marked with the imprint of his thumbprint in the soft wax, reproduced in the glass mould. In 1903 he designed a huge glass door, moulded with pine trees, for his house at the Cours Albert 1er, and he had it cast at the Saint-Gobain glassworks.

Lalique exhibited in 1902 at the First Exhibition of Modern Decorative Arts in Turin. A major exhibition of works by René Lalique was held in London at the gallery of Thos. Agnew & Sons in Bond Street in 1905. He designed fourteen large showcases in which to display his

Opposite
Lalique – *Bacchantes*, opalescent glass vase deeply moulded with dancing nudes on an illuminated bronze base modelled with leaves (Model No. 997), vase 24.5 cm, base 9 cm 1921. (Author's Collection)

designs: brooches, rings, earings, necklaces and bracelets, pendants, tiaras and diadems, combs, hair ornaments and hat pins, stomachers, seals and watches; collars embroidered in silver and gold threads; inlaid with carved ivory motifs, or held with carved horn and silver clasps; salt and pepper mills and knives of carved horn; enamelled silver cups and saucers; enamelled gold boxes encrusted with opals; a dagger of rhinoceros horn, steel and silver, inspired by Milton's *Paradise Lost*; sculptured glass vessels; an ivory, gold and enamel drinking vessel and a silver and glass mirror. A gold pendant enamelled with swans belonged to Queen Alexandra. Two complete cabinets displayed items from Calouste Gulbenkian's Collection. Gulbenkian was a great connoisseur of works of art, feminine pulchritude and oil contracts: the latter had culminated in his ceding important holdings in the Turkish Petroleum Company, which was to develop the rich oil fields of Iraq in exchange for a five per cent interest to be paid to him for the whole of his lifetime, half to be paid by the Anglo-Persian Oil Company and half by the Royal Dutch Group, an arrangement which led to him becoming known as 'Mr. Five Per Cent'. A great friend, admirer and patron of Lalique, he commissioned a number of pieces from him, and bought many others at various exhibitions. Gulbenkian built a house containing over one hundred rooms in the Avenue d'lena in Paris to house his collection of paintings and works of art. The bathroom of his personal suite in the house had been designed by Lalique. This Lalique collection, built up over some fifty years, along with many of the original drawn designs, is in the Calouste Gulbenkian Museum in Lisbon (Portugal).

The 1905 London Exhibition was to be the last major exhibition of jewellery Lalique was to hold. In 1907 François Coty commissioned René Lalique to design some labels for his perfume bottles. Lalique designed not only the labels, but also the bottles. These first perfume bottles were executed in the Legras & Cie glassworks.

Left
Lalique – *Grande Nue, Long Cheveux*, tall statuette moulded in greyish-brown glass with a little brown staining, fitted to its original carved wood stand in the Chinese style (Model No. 835), 41.5 cm 1920. (Author's Collection)

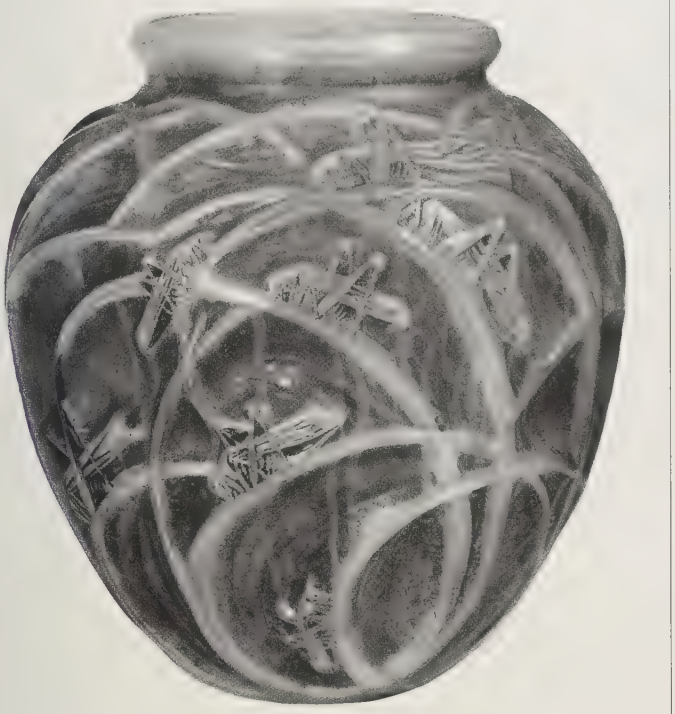
Opposite

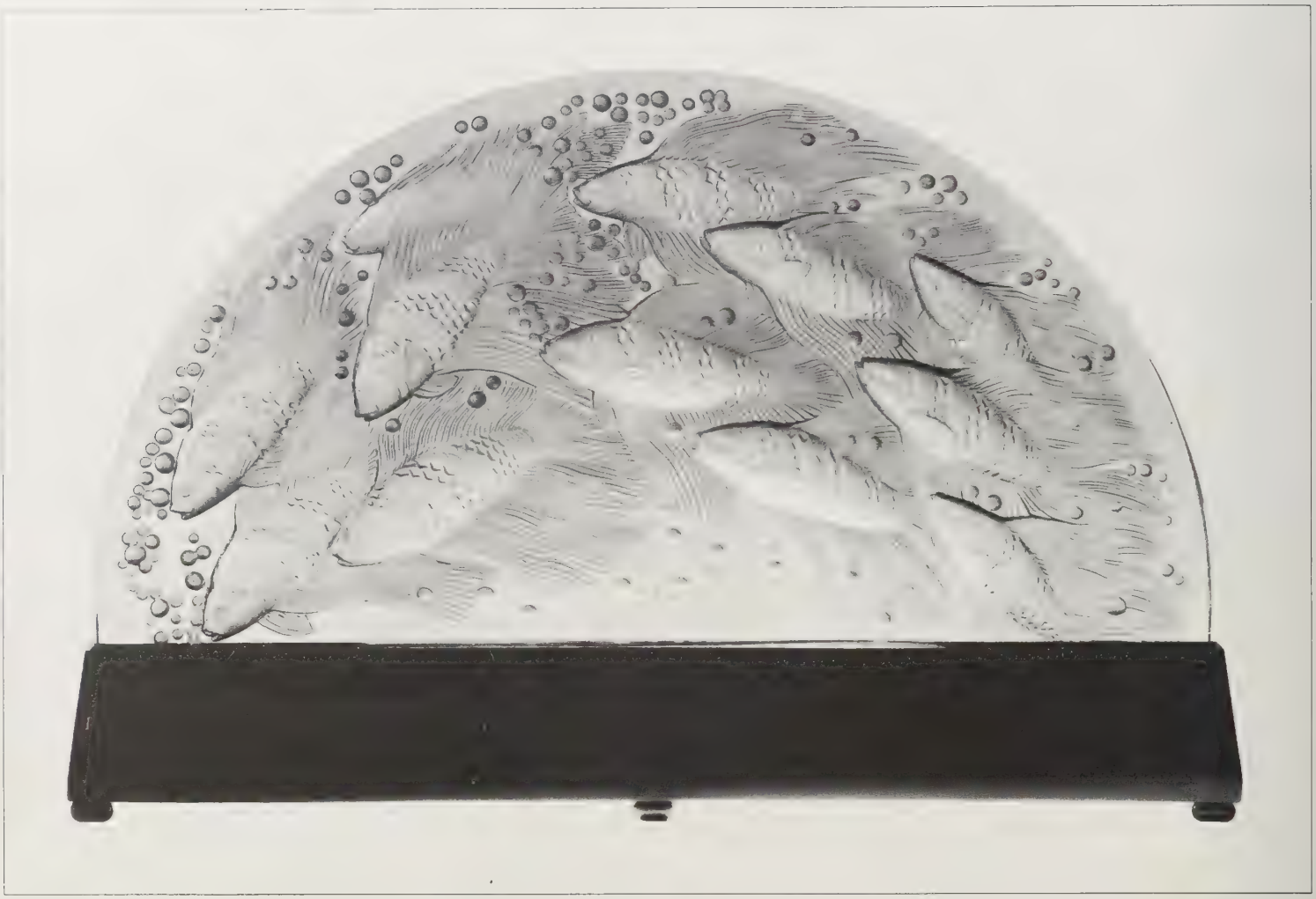
Above left
Lalique – *Sauterelles* vase moulded with green stained grasshoppers on a transparent vase stained an opaque blue (Model No. 888), 27 cm 1921. (Editions Graphiques, London)

Above right
Lalique – Vase in zig-zag pattern of cog-wheel section moulded with birds, 20.5 cm *c*1925. (Editions Graphiques, London)

Below left
Lalique – Reddish amber vase moulded with stylised acanthus leaves, the outer surfaces polished, the inner surfaces frosted (Model No. 1014), 22.8 cm 1922. (Author's Collection)

Below right
Lalique – *Archers*, moulded vase in reddish brown glass (Model No. 893) 26.7 cm 1921. (Author's Collection)





Lalique – *Surtout Yéso*, fan shaped glass plaque deeply moulded in intaglio set into an illuminated metal base (Model No. 1170) 33.5 cm 1922. (Editions Graphiques, London)

In 1908 Lalique rented the Verrerie de Combs-la-Ville, a glassworks at Combs (Seine-et-Marne). A year later he purchased it. More perfume bottles were commissioned from him over the years, from Coty as well as many other perfume manufacturers, such as Forvil, Morabito, Worth, Orsay, Vigny, and Roger & Gallet. All were executed in his own glassworks. In 1910 Lalique exhibited at the Buenos Aires International Exhibition, as well as at the La Verrerie et la Cristallerie Artistique (Artistic Glass and Crystal Ware) Exhibition in Paris. In 1912 he held his first all-glass exhibition in Paris. The following year was the last in which he was to execute precious jewellery.

The Armistice of 1918 brought an end to the First World War. As a result of the defeat of the Central Powers, Alsace and the part of Lorraine which had been annexed by Germany in 1870 was returned to France. In 1918 René Lalique purchased his second glassworks, a large factory at Wingen-sur-Moder (Bas-Rhin), close to the German border. He was then fifty-eight years old, and about to embark on a new career.

René Lalique was determined to produce fine quality glass using modern industrial techniques capable of a degree of mass-production without the loss of quality. Some of his glass was blown into moulds. This traditional technique involved considerable experimentation in creating the right type of mould, for Lalique designed vessels decorated at times in very high relief. Some of his glass was produced in the stamping press, a technique he pioneered.

Guillaume Janneau writing in his *Modern Glass* (1931) describes it thus: 'The glass-maker's press is composed of two elements: the actual mould, consisting of two jaws, one of which is fixed, and the mandrel, controlled by a large lever. The operator collects a certain quantity of glass in a state of fission, which he allows to run into the mould. At the proper moment his assistant severs with shears the thick, glowing-red mass, then pulls down the lever as far as it will go. The mandrel is set in motion and pushes the molten glass into the jaws of the mould, which press it and shape it simultaneously from within and without, imprinting on the soft mass every detail of the decoration. This method, of course, cannot be used for closed vessels, and there is, too, a risk of breakage

Opposite
Lalique – *Serpent*, frosted glass lamp, the central boss deeply moulded in relief with intertwined snakes each holding a cabochon in its mouth, in grey stained glass, 43 cm *c* 1925. (Author's Collection)

Lalique - 'Cire perdue' vase moulded in grey glass with blue staining, 22.8 cm *c*1910. (Sotheby's Belgravia)

during the cooling process. There is also some difficulty in constructing anything on a large scale – 'statuary, for instance – the problem being to avoid the premature contraction of the cooling surface over a core which retains the heat. In René Lalique's opinion an operation of this kind would take several months.' Unique vessels, plaques and panels were still occasionally produced by the *cire-perdue* method of casting, although this technique was also used to produce more permanent moulds which were reusable, and thus could be used to produce several examples of the moulded glass. Its major advantage over other mould-making processes was that it produced moulds of exceptional quality, capable of reproducing the subtlest detail, however fine or shallow, in the wax model.

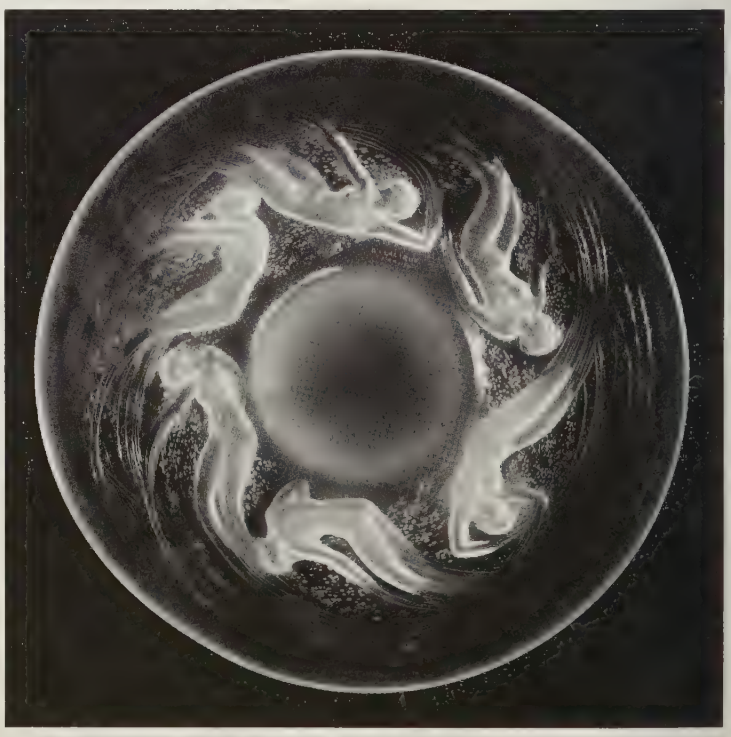
Lalique produced an enormous range of articles in glass. These included vases, bowls, trays, ash trays, saucers, clock cases, decanters, jugs, glasses and tumblers. Table glass included lemonade and wine sets of decanters or jugs with glasses. Chunky models were moulded with modernistic designs, while wine glasses were frequently blown into moulds in very thin-walled glass which was then often engraved with a decorative pattern. A variety of lamps was produced, some table lamps with glass bases and shades or metal (frequently chromed) bases. A wide variety of ceiling fittings were produced, moulded bowls strung on thick cords or chains, often with matching wall fittings. Enormously elaborate electroliers were designed, with shaped glass panels moulded with designs strung together to form circular patterns, sometimes at several levels, rather like geometric birds' nests.

Glass jewellery was produced in a number of shapes. Moulded pendants of coloured or colourless glass shaped as buttons, crosses, T-shapes, O-shapes, shield shapes and others were strung on knotted neck cords with tassels. Other moulded glass pebbles were mounted in gilt metal to form brooches. Glass beads were strung as long necklaces, while oblong ones were strung as bracelets on elastic cord.

Wall-cladding, illuminated decorative panels, tables, doors, were made in massive pressed glass. Statuettes were designed either to stand decoratively or in conjunction with a base containing a concealed light which illuminated the figure. These bases were sometimes made of marble, but more usually of bronze, either in a plain geometric shape or decorated with an appropriate design, cast in Lalique's own foundry. Nude nymphs with long hair; a graceful figure of *Suzanne au Bain* (Susannah at the Bath) inspired by the Biblical story of Susannah and the elders; St. Geneviève, the Patron Saint of Paris, as well as a host of other saintly figures; large fan shaped panels decorated with nude women or mermaids, knights on horseback jousting in a tournament or a startling chimera, were all made to fit illuminated plinths, as were some spectacular moulded vases.

The metal of Lalique's glass has frequently been criticised, particularly by English writers, as being rough and undistinguished. E. M. Elville, writing in his *English Table Glass* (1951) in a chapter on 'L'Art Nouveau in France', declares: 'Lalique's fame . . . depended more on his ability

Lalique – *Ondines*, clear glass plate moulded in relief on the base with six nude naïads in green, 27.5 cm diameter *c*1925. (Author's Collection)



Lalique – *Masque*, clear glass decanter, its deeply concave sides moulded and stained with masks of Bacchus, the silver stopper modelled with grapes. This model was also available with a glass stopper, 30.5 cm 1926. (Sotheby's Belgravia)

Lalique – Frosted glass bottle moulded in relief with six nude couples dancing, glass stopper moulded as a kneeling nude, 29 cm *c*1927. (Author's Collection)

as a mould maker than that of glass-maker, for his metal left much to be desired.' An opposite opinion is expressed by Guillaume Janneau, who wrote in *Modern Glass*: 'Lalique's glass has the ethereal brilliances of Arctic ice. Its texture is hardly visible, and one can scarcely believe that it was once a thick, opaque substance, shaped by running into a mould; it would seem rather to consist of immaterial ether, the frozen breath of the Polar night.'

What may well have disturbed certain critics was the fact that Lalique deliberately chose not to use lead crystal, despite its purity, but to use a more malleable and responsive demi-cristal. Most of his creations are made from clear, uncoloured glass, the shape and design alone creating the impact.

Lalique occasionally used coloured glass: brown, red, green, blue, grey, yellow or black. Whenever a particular model was produced in coloured glass it was invariably also produced in a colourless version. Coloured Lalique glass is, however, both rare and very attractive and thus eagerly sought after by collectors. Lalique also created a different type of surface colouring by dipping a completed moulded vessel (in colourless or palely coloured glass) into a specially mixed paint. The vessel was then wiped clean on its protruding sections, the dipped colour being allowed to remain in the interstices, darkening and colouring highlights of the design. He even occasionally used more than one colour thus on a single vessel.

Lalique also used a subtle, opalescent glass for some models, which varies from pale blue to rich brown, depending on the direction and intensity of the light reaching it. Some fine early models were also made in a pale, smoky brown glass which is particularly attractive. Opaque white with a bluish tint was also occasionally used.

Some Lalique models have strong Art Nouveau designs, particularly in the characteristic use of nymphs with long hair, or mermaids with expressive tails. Others are more characteristically Art Deco, with geometric friezes of birds, figures or plants, rigorously zig zag patterns in both shape and decoration.

In 1920 Lalique supplied the new French liner, the Paris, with glass panels, lights and other decorations. This transatlantic ship was launched as 'the most beautiful liner in the world'. Other public commissions included a number

Lalique – *Victoire*, frosted and polished glass car mascot, commonly referred to as the 'Spirit of the Wind', 15 cm high 26 cm wide *c*1928. (Editions Graphiques, London)

of spectacular fountains, moulded in various glass sections, usually within a glass mosaic basin. Exterior fountains were made for the Esplanade des Invalides and the Rond Point des Champs Elysées, while delicate indoor fountains were also made.

The 1925 Paris International Exhibition of Decorative And Industrial Arts was, like the 1900 Exhibition, a great triumph for Lalique. His works appeared in several places. At the pavilion of the Manufacture de Sèvres Lalique designed the dining-room. The walls were covered in marble incised with a forest scene with animals. The large central pedestal table was covered with a full service of Lalique glass: four stemmed glasses and a decanter for each of the eight place settings, with two three-light glass candelabra prominently displayed. The stunner was the ceiling: divided into small opal glass panels by moulded glass divisions, the whole ceiling was illuminated.

Placed in front of the Cour des Métiers pavilion was a monumental fountain by Lalique. Set on a star-shaped base a slender, phallic glass column rose skyward. When turned on, the water jets shot out from nozzles placed all

Opposite

Above left

Lalique – *Grande Libellule*, car mascot moulded in clear glass with some grey staining, 18 cm *c*1929. (Private Collection, London)

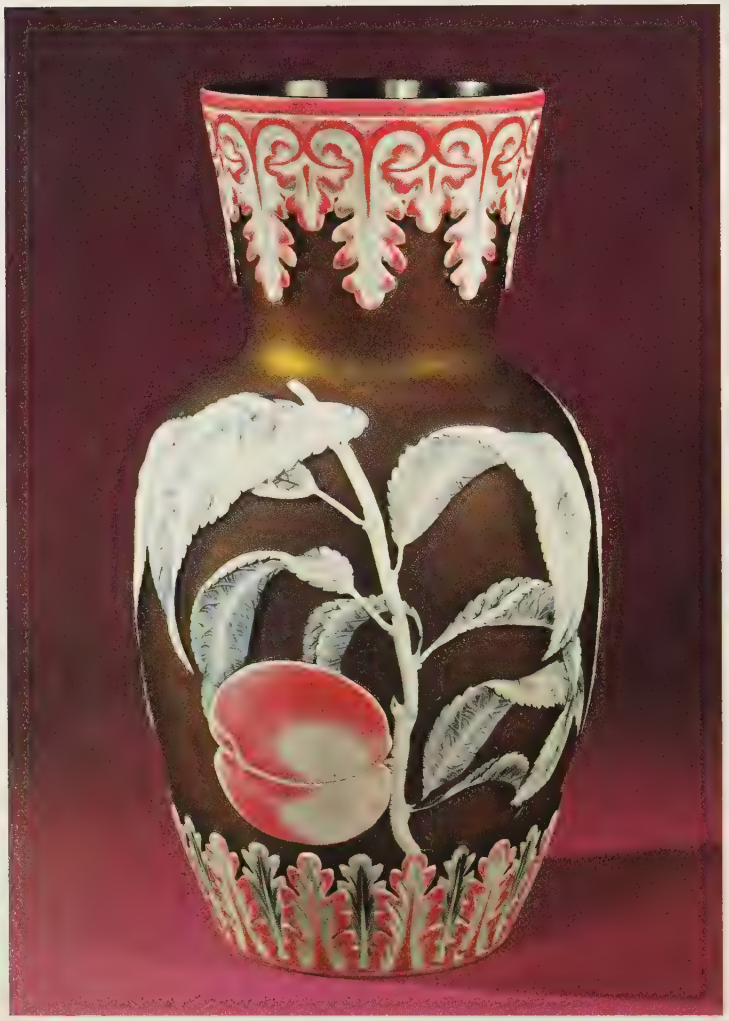
Above right

Lalique – *Le Jade*, moulded green glass scent bottle made for Roger & Gallet, 8.3 cm *c*1927. (Private Collection, London)

Below

Lalique – Moulded coloured glass pendants, *c*1925; Tiffany – Favrile gold glass seal, 4.5 cm *c*1900; Heiligenstein – Glass pendant enamelled on both sides with a landscape, 6 cm *c*1925; Argy-Rousseau – Circular pâte-de-verre pendant, 6.7 cm *c*1925. (Editions Graphiques, London)


JADE



around the column up its entire height. At night it was lit up, the water jets like gossamer threads wrapped in a dying fall around the column.

Lalique had his own pavilion, a simple square structure decorated by him and designed in conjunction with the architect Marc Ducluzand. Here, too, Lalique had designed a dining-room. The top of the sycamore pedestal table was inset with glass panels. Here again the table was set with a full range of table-ware and two three-light glass candelabra. A simple glass nest electrolier hung from the ceiling.

Lalique introduced a whole range of new designs at this exhibition, including an opalescent vase moulded with budgerigars; a chunky vase very deeply moulded with arabesques whose outside surface was enamelled black to contrast with the transparent body of the vase; and vases and boxes moulded with fish, mermaids and dragonflies. He had created a completely new style of glassware, which was to create its own fashion. Somewhat cheaper versions were, inevitably, to be provided by other glassmakers. Some were abject copyists, even to just marginal variations of Lalique models. Others were to create their own designs, frequently original and attractive. Good quality 'Lalique style' glass was produced by Sabino, Etling, d'Avesn, Genet & Michon and other firms. Cheaper and nastier copies are found frequently unsigned, or just with a moulded 'Made in France' on the base. Many were produced in Czechoslovakia, while a number of firms in other countries (including Jobling's in Britain) produced Lalique-style glass.

In 1927 the transatlantic liner Ile de France was launched as a floating example of all that was best in contemporary French decorative art. Lalique provided the moulded glass tile-shaped light fittings for the huge First Class dining-room, designed by Pierre Patout.

Lalique continued to exhibit his glass at the Salons d'Automne, the Salons des Artistes Décorateurs and other Paris Salons, and sent an important display to the 1930 International Exhibition at Liège (Belgium). The 1931 *Daily Mail* Ideal Home Exhibition, held at Olympia in London, was dominated by a splendid Lalique glass fountain. A major Lalique retrospective exhibition was held in Paris in 1933 at the Pavillon de Marsan.

Lalique – Dark blackish-brown vase with two moulded handles, 16.25 cm *c*1925. (Author's Collection)

A new type of glass ornament was manufactured by Lalique in the 1930s: the car mascot. Cars were becoming sleeker, faster, ever more elegant. An appropriate mascot forming a mast-head on the car's bonnet was an essential. Many car manufacturers commissioned their own: the Rolls Royce 'Spirit of Ecstasy' mascot designed by Charles Sykes is famous. Some drivers chose their own: the Japanese artist Foujita had a Rodin bronze placed on the bonnet of his car. Lalique produced a series of glass mascots moulded to various designs, and set into a brass cap which both connected the mascot to the radiator cap and served to conceal a shaped two-coloured transparent filter, a light bulb, and wiring which was connected to the dynamo. Thus when the car was in motion, the mascot was illuminated through the colour filter, which provided a changeable light which was especially effective at night.

The two most spectacular mascots were the figure of *Victoire* (Victory), now commonly known as the *Spirit Of The Wind*, a woman's head straining forward, open mouthed, its geometrically aligned hair streaming back; and the *Libellule*, a large, aerodynamic dragonfly, poised hovering over the bonnet, its body set firmly back, its wings pointing firmly skywards. Other attractive ones included a couple of finely modelled horses' heads, a ram's head, a peacock's head and a fine figure of a nude nymph straining backwards called *Vitesse* (Speed). Rather less attractive are the flat figures, circular medallions moulded in intaglio with a kneeling figure of a male archer or a Saint-Christopher; an amusing tailed comet; a greyhound or a group of five leaping horses. Modelled in the round were a falcon, a swooping swallow, a cockerel, a fish, etc. There was also a somewhat sinister eagle's head, reputedly fitted by Hitler's officers to their cars. The

Opposite

Above

Moncrieff – Three 'Monart' vases all with internal decoration, tallest 29 cm *c*1930. (Private Collection, London)

Below left

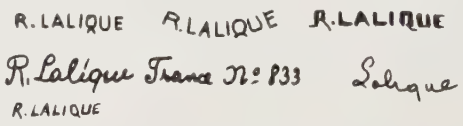
Four-colour English cameo glass vase, carved with peach sprigs, 26.7 cm *c*1890. (Christies, London)

Below right

Four-colour English cameo glass vase carved with cineraria, the reverse with abutilon, lug handles on the shoulders, 12 cm *c*1885. (Private Collection, London)

mascots are normally found in clear glass, sometimes highlighted by black staining in the interstices. They are occasionally found in smoky, opalescent or lightly tinted glass. They are fairly rare, and sought after. All are signed 'R. Lalique', either moulded on the side or engraved or acid-etched on the base.

With the exception of tiles, beads and certain panels, or parts of lamps, all Lalique glass is signed. The earliest vases and models were signed 'R. Lalique France' in a fine copperplate script with a model number, the whole engraved on the rim of the base. Popular models were produced over a number of years, the moulds remaining in storage until required again. Later pressings of early models abandoned the earlier script signature with model number in favour of whatever signature was currently in use. As a rough guide, the first thousand models are pre-1922, the following two thousand models were produced in the following three years. Some numbered models were, however, little more than variations on earlier ones. Each model had, in addition, a name. A few early models are also found with 'R. Lalique' in capital letters incised on the body of the vase.



Numbering was abandoned after about the middle 1920s, and signatures changed. The 'R. Lalique' in capital letters was either moulded in shallow relief on the base or acid-etched using a template. In the latter case it is sometimes barely visible to the naked eye. 'R. Lalique France' is sometimes found engraved on the base, often in addition to a moulded or etched signature.

Lalique carried out a number of monumental commissions in the 1930s. At the 1931 Salon d'Automne he exhibited a glass chapel. In 1932 he completely decorated the interior of St. Matthew's Church in Jersey with panels of moulded glass tiles and panels modelled with madonna lilies in high relief. Glass panels moulded with running figures were made for incorporation into doors or fanlights; examples were used in the redecoration of Claridge's Hotel in London. He also provided the large glass wall panels and light fittings for the new French luxury transatlantic liner, the Normandie, in 1935. In 1937 Lalique closed down his small Combs-la-Ville glassworks.

In 1940 German forces again occupied Paris and a large part of France. The Lalique factory at Wingen-sur-Moder was taken over by them. René Lalique was then eighty years old. He died five years later, on May 5th, 1945, shortly after the Liberation. Lalique's son, Marc Lalique, who had been in charge of production and the business side from the 1920s, took over the firm in 1945. While earlier models have continued to be produced (and, indeed, some early models are revived every year) many new designs are launched every year. Tinted, coloured and opalescent glass were abandoned, as were surface colouring, in favour of a clear and purer metal than in the past. All post 1945 glass is clearly marked 'Lalique France' without the use of the initial 'R' (it is, however, worth noting that some bowls produced in the 1930s were also signed just 'Lalique' in an incised script). In the 1970s Marc Lalique reintroduced the use of coloured glass, but this time in conjunction with colourless glass, and used sparingly and effectively for contrast. Lalique's daughter, Suzanne Lalique, was a distinguished designer of fabrics and decorator of ceramics, particularly for the Limoges firm of Théodore Haviland and the Manufacture de Sèvres, as well as a fine painter. She exhibited regularly at the Salon d'Automne from the age of sixteen, at the Bernheim-Jeune Gallery in Paris in 1930, at the Salon des Tuileries from 1932, and at the Salons of the Société Nationale des Beaux-Art and the Artistes Décorateurs. She painted a fine portrait of her father.

LEERDAM

Founded in 1765, the Leerdam glassworks, located near Rotterdam, manufactured bottles and mass-produced table glass during the nineteenth century. Shortly before the First World War, P. M. Cochius became director. Aware that the Netherlands had produced no original glass designs in over a century, Cochius hoped to raise the artistic level of Leerdam production by commissioning designs from eminent men. Dutch Art Nouveau designers had worked with great originality with ceramics, furniture, textiles, graphics, and metal, but never with glass. With great intuition, Cochius decided in 1915 to commission designs from pioneers of Functionalism, the architects Hendrik Petrus Berlage (1856-1934) and Karel Petrus Cornelis de Bazel (1869-1923). Cornelis de Lorm (1875-1942), an industrial designer, began working for Leerdam in 1917, as did the potter Christiaan Johannes Lanooy (1881-1947). The American architect Frank Lloyd Wright (1869-1959) also designed for Leerdam. Their table glass was of a severe simplicity and purity of form, eschewing all unnecessary decoration, while vases and bowls were made in heavy crystal, chunky forms cut in large facets. In 1918 Leerdam began the production of annual commemorative glasses called 'jaarbeckers', made of heavy cut crystal, often intricately geometric, with engraved or gilt

Leerdam – Moulded frosted glass elephant. The firm still makes this model in clear glass. 5.6 cm *c* 1928. (Private Collection, London)

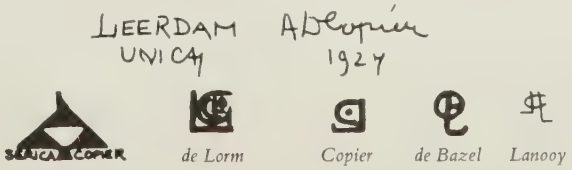
Leerdam – Unica vase in amber glass by A. D. Copier, 21.3 cm 1927. (Editions Graphiques, London)

inscriptions. In 1923 Berlage, who had designed table glass for the French Pantin and Baccarat factories in 1900, designed a range of elegantly simple table-ware in yellow glass.

Joris Johannes Christiaan Lebeau, known as Chris Lebeau (1878-1945), joined Leerdam in 1922, designing a vast array of models, including elongated shapes, mottled and iridescent surfaces, as well as cased and crackled glass. Trained in Amsterdam and Antwerp, Lebeau was a painter and graphic artist, as well as an industrial designer. In 1900 he worked with batiks before opening his own studio two years later. After designing table-cloths, he taught at the Antwerp Academy from 1907 to 1909 then at the School of Arts and Crafts in Haarlem from 1909 to 1913. At Leerdam he helped establish the 'Unica Studio' which produced unique, single items by various designers. When Lebeau left Leerdam in 1923 he was succeeded as principal designer for the 'Unica Studio' by Andries Dirk Copier.

Even after his departure from Leerdam, Lebeau continued to contribute original designs for the 'Unica' series. In the late 1920s he travelled through Bohemia, familiarising himself with the designs and techniques of its glassworks. During the German occupation of the Netherlands in the Second World War Lebeau was deported to the Dachau concentration camp, where he died in 1945.

Born at Leerdam in 1901, Copier studied at the Utrecht School of Graphic Art and at the Rotterdam Academy. He joined Leerdam at the age of sixteen, training as a glass-blower while working with the design team. He soon established himself as a leading and original designer. His first designs were exhibited in 1919, and Leerdam vases designed by him won first prize at the 1925 Paris International Exhibition of Decorative and Industrial Arts and in Antwerp in 1930. Appointed Artistic Director of the firm, he retained that position for over fifty years, designing and commissioning mass-produced table glass of good quality as well as the collector's pieces. The 'Unica' vases were one-offs, but he also launched the 'Serica' series, original vases produced in limited editions which, though still expensive, were less so than the 'Unica' items. Copier designed sober, elegant vases, often ribbed, in thin glass, colourless or tinted, as well as more functionalist models, opaque vases with inner blown spirals, thick-walled vases with internal bubbles or 'seaweed' effects, irregularly facetted vases and vases of Persian or Eastern inspiration. In 1928 he designed vases shaped as perfect spheres, a model that was copied all over the world during the 1930s. At the 1937 Paris International Exhibition Leerdam was awarded a Grand Prix.



Leerdam glass is often unsigned, the factory label usually missing. Some designers, such as Cornelis de Lorm, who

designed a variety of vases, including some enamelled on iridescent clear glass, signed with their own monograms, usually stencilled with acid on the base. 'Unica' vases are engraved 'Unica' on the base in diamond point script with the signature of the designer.

In the 1930s Leerdam produced a number of miniature stylised glass animals, usually with a frosted surface. Some of these figurines are still in production, though the late ones are usually made of transparent crystal.

The firm survives, still producing original designs.

LEGRAS & CIE

Auguste-Jean-François Legras, an experienced glass-maker, took over the Verreries et Cristalleries de Saint-Denis et des Quatre-Chemins in 1864. Under his direction the glassworks prospered, producing an enormous range of table and fancy glass. New shapes and colours for decorative vases were constantly developed, though none were of startling artistic merit. The firm was a commerical undertaking, and as such was eminently successful.

Legras exhibited his wares with great success at a number of international exhibitions. The firm exhibited in 1888 at the Barcelona International Exhibition, where they were awarded a Gold Medal. The same year Legras became a Knight of the French Legion of Honour. A year later, at the 1889 Paris International Exhibition, the firm was awarded a Grand Prix.

Coloured glass, marbled glass, gold flecked glass, mottled and streaked glass, enamelled and gilt glass, alternated with clear crystal vessels and curious bottles shaped as individuals, buildings or boats. In 1894 Legras took out a patent for the application of coloured glass flowers or other decorative motifs onto blown glass vessels. In 1897 Legras took over the Vidié glass works in the neighbouring suburb of Pantin. He was then employing some 1400 glassworkers, including 150 decorators. At the Paris Universal Exhibition of 1900 Legras was again awarded a Grand Prix.

Auguste Legras was himself a great admirer of Gallé, though he did not consider Gallé glass to be commercial. In about 1900 Legras began the production of Art Nouveau glass under the direction of François-Théodore Legras, who was now managing the glassworks at Saint-Denis and Pantin. The most interesting of these is a range of cameo and enamel vases and bowls simulating the look of carved cornelian. Made of several layers of opaque, beige-pink glass, the outermost layer is cameo-cut using hydrofluoric acid into a floral (chrysanthemums, irises etc.) or fruit (holly, berries, cherries, strawberries) or seaweed pattern. A second acid bath cuts the linear veins in

Legras SD – Miniature cased beige vases enamelled and etched to simulate carved cornelian, 8.2 and 7.2 cm *c*1900. (Private Collection, London)

Legras – Red glass vase etched in intaglio with stylised clouds, 14.5 cm *c*1925. (Editions Graphiques, London)

the leaves and completes the design. The vast expanse of beige-pink background is roughly cut in places to further simulate the look of carved hardstone. Finally the leaves are enamelled green, the flowers, fruit or seaweed enamelled (frequently red or brown) and fired. The resulting vase has a striking look quite different from the production of other glassmakers. These vases are normally signed 'Legras SD' (i.e. Saint Denis) in cameo script, though the reverse signature 'Sargel SD' is sometimes found. They are found in various sizes and shapes, including some delightful miniatures.

A second range of Legras vessels was made in straightforward two or three layer cameo glass, acid-etched in floral or landscape designs, frequently using a green background. The background glass in these is sometimes given a rough, granular finish with acid. They are sometimes found in very large sizes, and are signed 'Legras' in cameo script.

A less elaborate range of vases, varying in shapes and sizes, but also made in very large sizes, consisted of a pattern of red plane-tree leaves, or fig leaves rising up the stem from the base, executed in very shallow cameo relief using two acid baths, one to shape it and the other to delineate the leaf veins. These vases were not made using two-layered glass, but by using the technique pioneered by Daum in which the parison picked up powdered glass on its surface from the marver. When reheated, the newly adhering particles would vitrify, thus creating the patches of additional surface which could then be used to produce the cameo design. These, too, are signed 'Legras' in cameo script on the side of the vessel.

In 1908 Legras exhibited in London at the Franco-British Exhibition. This was in many ways the ending of an era for them. For some two years they had been executing perfume bottles in moulded glass designed by René Lalique for Coty and other perfume manufacturers. Now Lalique was opening his own glassworks. In 1909 Auguste Legras retired, and was succeeded by his son Charles.

The range of glass decoration roughly within the Art Nouveau style was expanded by the addition of several new lines. One set of vases and bowls had an outer surface of acid-granulated green, yellowish or brown glass, cameo-cut with stylised berries, mistletoe or other plant, in formal patterns, heavily gilt. The inside surface of these vessels is frequently red. They are signed on the base with a large capital letter 'L' pierced in the centre by 'Cie' and the words 'St. Denis – Paris' in a convex line below this, in gilt letters. Age and wear have frequently rubbed part or all of this mark away. A considerably more interesting variation of this design has the outer surface cameo-etched in poppy designs in such a way as to remove the outer coloured glass casing from the flowers, revealing the transparent glass body through which the red inner surface is visible. This gives a fine illusion of depth within the apparently red poppy petals. These vessels have the same signature as those above with the addition of the Trade Mark 'Indiana', in a convex line above the 'L'. They frequently have a formal border around the rim, cameo shaped and gilt.

Another range of cameo glass, frequently using a transparent body with frosted surface, or pale pastel colours in floral designs with considerable gilding and formal edges, as well as some enamelling, was marketed under the Trade Name 'Mont Joye'. The gilt mark on the base represents the head and shoulders of a mitred bishop with an inverted horse-shoe shape above him containing the words 'Mont' on the left and 'Joye' on the right, with 'L & Cie' below the figure. Here again part or all of the mark has frequently been obliterated. They were manufactured at the Pantin works.

A cheaper range of vessels was produced in which simple shapes of clear glass are enamel painted over their entire surface with frequently very colourful floral patterns. They are signed 'Leg' in paint on the side of the vessel.

Legras exhibited in 1910 at the La Verrerie et la Cristallerie Artistique (Artistic Glass And Crystal Ware) Exhibition in Paris, and in 1911 at the Turin Inter-

Legras – Clear glass vase etched in intaglio with a frosted floral design, 21.5 cm *c*1925. (Editions Graphiques, London)

national Exhibition. The glassworks closed down in 1914 at the outbreak of the First World War. They re-opened in 1919 as the Verreries et Cristallerie de St. Denis et de Pantin Réunis (United Glass and Crystal Works of St. Denis and Pantin). The postwar production was largely slanted towards table glass, and some pseudo-cameo work was produced with floral and landscape designs in which the vessel had its surface mottled all over in acid, then had the design painted on it, thus giving a good imitation of acid-etched shallow cameo work. These are signed 'Legras' on the side.

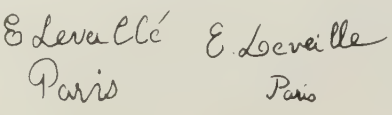
In the 1920s and 1930s a number of very interesting vessels were produced in which clear crystal or transparent coloured glass vessels had floral or Cubist-inspired Art Deco designs acid-cut in intaglio on the surface. Opaque vessels were similarly decorated in intaglio or cameo with friezes or oblique bands of geometric design or stylised birds. All of these are signed 'Legras' on the side in intaglio or cameo. Plainly shaped vessels with bubbled and streaked internal decoration was also produced.

LÉVEILLÉ

Léveillé is known to have been running a shop retailing glass and ceramics as early as 1869 at 74 boulevard Haussmann in Paris. He became a student of François Eugène Rousseau, and assisted him as a glass decorator, as well as commercially. In 1885 he bought Rousseau's workshop and retail shop. He retained Eugène Michel and Alphonse Georges Reyen as chief designers and decorators, and continued the production of Rousseau's designs as well as new designs using Rousseau's techniques of crackled glass with metallic oxides and gold leaf inclusions; flushed and overlay glass; cameo and intaglio cut vases of oriental inspiration; and free-form vessels. He was awarded a Gold Medal at the 1889 Paris International Exhibition, exhibited at the 1892 and 1896 Paris Salons, was awarded a medal at the 1893 Chicago Worlds Fair, won a Gold Medal at the 1900 Paris Universal Exhibition, and exhibited at the 1904 Worlds Fair in St. Louis, Missouri (U.S.A.).

Léveillé's own designs, while not technically innovative, are often very striking. Using Rousseau's techniques, he devised more elegant and organic shapes, in which the sinuous line of Art Nouveau is used to interpret the model, as in his beautiful 'bamboo' vase.

Shortly after 1900 Léveillé merged with the Paris retail shop of Maison Toy, which had prestige premises at 10 rue de la Paix. He produced a range of table-ware in colourless and honey-coloured engraved glass, signed 'Toy & Léveillé' for sale there. Within a few years the firm was taken over by Haraut-Guignard, who maintained production of existing models as well as some fine engraved crystal for a few years before giving up the production of art glass. Their production is normally signed with the letters 'HG' entwined, sometimes followed by the words 'Le Rosey, Paris'.



It is virtually impossible to differentiate between unsigned Rousseau and Léveillé vases. All items in stock at the time of Léveillé's takeover in 1885 were signed with Léveillé's name if unsigned or had Léveillé's signature added to Rousseau's. Both signatures were used for a further five years, after which only Léveillé's name was used. The signature is usually engraved 'E. Léveillé' or 'E. Léveillé Paris' or 'E. Léveillé à Paris'.

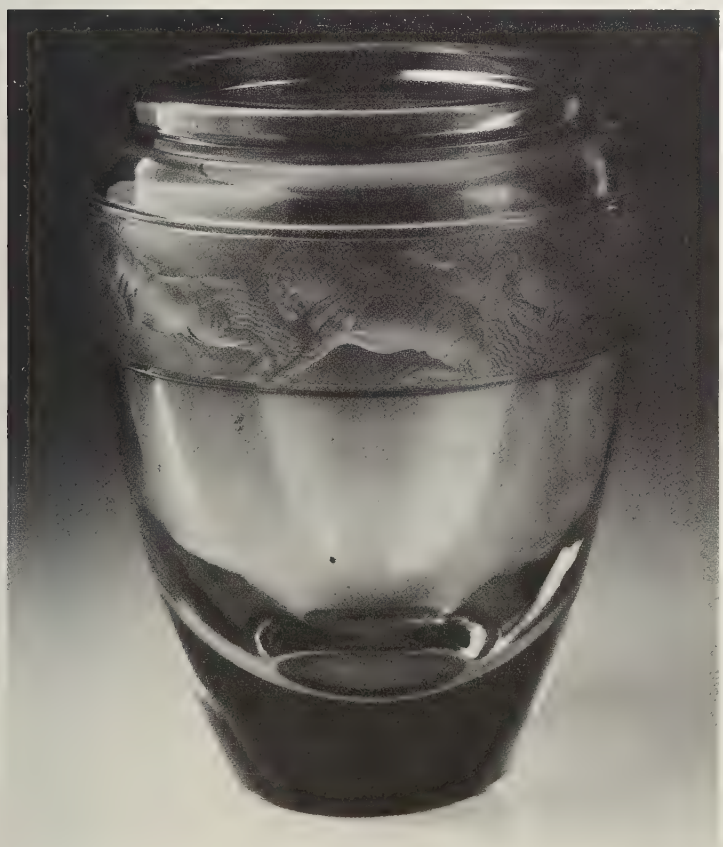
Léveillé – Crackled smoked pitcher with green and maroon patches, applied circlets and handle, 27.5 cm *c*1890. (Collection Dépôt 15, Paris)

J. & L. LOBMEYR

Granted permission to open a glass business in Vienna in 1822, Josef Lobmeyr (1792-1855) opened his first shop a year later, moving to larger premises in 1824. That same year he was given the right to the title of 'Master' and became a Freeman of the city. In 1835 he was commissioned by the city to execute a table service for the Imperial Court. He soon began to expand in both retail and manufacturing, purchasing a glassworks in Marienthal in 1837, taking over the rival Viennese firm of Janke & Gömer in 1838, and leasing another glassworks in Zwechewo (Slavonia) in 1841. In 1851 he allied himself with one of the great Bohemian glass manufacturing families when his daughter Louise married Wilhelm Kralik (1806-1877), owner of Meyr's Neffe. That same year Lobmeyr opened a glass refinery in Blottendorf, near Haida.

On Josef Lobmeyr's death in 1855 his son, also called Josef, took over the firm. He was joined in 1859 by his brother Ludwig. A year later they named the company J. & L. Lobmeyr. When Josef junior in turn died in 1864 Ludwig took over, remaining as sole director until 1902. In 1864 Ludwig's sister Mathilde married August Rath.

Lobmeyr exhibited in 1864 at the Paris International Exhibition, when they were awarded a silver medal, in 1868 at Reichenberg, and *Hors Concours* at Vienna in 1873 where they showed some of the earliest examples of modern iridescent glass. A year later Ludwig Lobmeyr published a standard technical book on glass with A. Ilg and W. Bocheim. In 1876 Lobmeyr received a special award at the Philadelphia Exposition, then showed in Munich a table service commissioned by the Austrian Emperor Franz Joseph for presentation to the new Vienna Town Hall. In 1878 they exhibited at the Paris International Exhibition. They had by then become a very important glasshouse, producing a vast range of fine quality table and art glass in crystal and coloured glass, which was cut, engraved, painted, enamelled or gilt, often with silver or bronze mounts. They employed a team of designers, as well as commissioning designs from outside artists, a practice they were to continue later by using the talents of many of the most original artists in Austria. All their resources were fully employed, while the Bohemian firm of Meyr's Neffe devoted most of its production to orders from Lobmeyr. They also gave out work to other firms, particularly for metalwork and engraving. In 1879 the Austrian Museum for Art and Industry held an exhibition of Lobmeyr's glass. In 1882 Lobmeyr exhibited at the Trieste Austro-Hungarian Exhibition. A year later they showed their first electric lamps at the Vienna International Electricity Exhibition. They exhibited in 1884 in Trieste and London; in 1888 at the Vienna Jubilee Crafts Exhibition as well as at Barcelona and Munich; in 1893 at the Chicago World's Fair; in 1894 at Antwerp; in 1897 at the Austrian Museum in Vienna; and in 1900 at the Paris Univeral Exhibition they were awarded a Grand Prix. From 1901 they exhibited regularly at the Winter Exhibition of the Austrian Museum.



Lobmeyr – Clear glass vase wheel-carved in intaglio with repeating frieze of galloping horses, 17.6 cm *c*1925. (Private Collection, London)

The firm was turned into a public company in 1902 by Stefan Rath (1876-1960), son of Mathilde and August Rath, who had earlier joined the board. That same year they exhibited at the First International Exhibition of Modern Decorative Arts in Turin and at the Exhibition of Austrian Fine Arts and Decorative Furnishings in London. Their leading designers then were Ludwig Lobmeyr, Rudolf Marschall (b. 1873), Urban Janke (b. 1887, a student of Berthold Löffler), Antoinette Krasnik, and Otto Tauschek. In 1907 they opened a branch in Karlsbad. In 1910, the year they won the Grand Prix at the Buenos Aires International Exhibition, they began to commission designs from members of the Vienna Secession, Otto Prutscher, Josef Hoffmann and Ludwig Jungnickel, then later from many members of the Wiener Werkstätte. Hoffmann created a new type of decoration for them involving painting the vessel in generally repeating patterns of simple geometric lines and floral

Lobmeyr – Group of blown glass vessels designed by Osvald Haerdtl. (Contemporary photograph)

motifs in jet black or dark grey over clear or mat glass. This was called 'bronzitdecor', and was also used by Ludwig Heinrich Jungnickel (1881-1967), who decorated glass with stunning stylised animal patterns of great strength, as well as by many of the Wiener Werkstätte designers for Lobmeyr. The Steinschönau Technical School also used this technique.

In 1914 Lobmeyr exhibited in Cologne and in Vienna, in 1915 in Vienna only. Ludwig Lobmeyr died in 1917 as the defeat of the Central Powers became certain. In 1918 the victorious allies dismembered the Austro-Hungarian Empire. Bohemia, with all its glass factories, technical schools and workshops, was now in Czechoslovakia. Virtually overnight Lobmeyer in Vienna found itself the only sizeable glassworks left in Austria. Stefan Rath, unwilling to sever the many family and business connections in Bohemia, went to Steinschönau to found a new glassworks, the J. & L. Lobmeyr's Neffe Stefan Rath ('J. & L. Lobmeyr's Nephew Stefan Rath').

In 1923 the Vienna firm celebrated its centenary and exhibited new designs by Dagobert Peche of the Wiener Werkstätte at the Austrian Museum, where they continued to show at all the various crafts exhibitions held there. In 1925 they exhibited at the Paris International Exhibition of Decorative and Industrial Arts, and were awarded a Grand Prix. The name of Lobmeyr is inextricably entangled with the style and the history of the Wiener Werkstätte and, in fact, Hoffmann, Prutscher, Powolny and Oswald Haerdtl went on designing for them for many years; but they were also developing in other directions, commissioning muslin glass from Oskar Strnad, enamelled glass from Lotte Fink, and vases both regularly shaped and free-formed superbly engraved with complex scenes involving people, animals and plants by Ena Rottenberg and Marianne Rath. Jaroslav Horejc engraved various vases in cameo on clear glass with classical scenes. In 1927 they exhibited in Essen, in 1933 in Milan, where they were awarded a Grand Prix; in 1937 in Paris at both the International Exhibition where they again won a Grand Prix and at the Exhibition of Austrian Art at the Jeu-de-Paume Museum.

In 1938 Stefan Rath's son, Hans Harald Rath (1904-1968), took over the direction of the Vienna firm. Austria was taken over by Hitler's Germany. And Lobmeyr exhibited in Berlin and in Frankfurt, where they won the German State Prize. They continued to produce and exhibit, mostly in Vienna, during the Second World War, with several new designs by Adolf Loos.

The year following the end of the war saw a gradual expansion of the Vienna firm to international proportions. The Communist revolution in Czechoslovakia in 1948 was quickly followed by a spate of nationalisations of firms which included Rath's Steinschönau glassworks. In 1949 Lobmeyr exhibited at the Museum of Modern Art in New York, in 1950 in Prague, in 1954 at the Austrian Museum, in 1957 at the Milan Triennale where they were awarded a Grand Prix. They have continued to commission and exhibit new glass. After Hans Harald Rath's death in 1968 his three sons succeeded to the firm, opening branches in Salzburg and New York, supplying glass for the Kennedy Center in Washington as well as the Kremlin in Moscow. They celebrated their 150th Anniversary in 1973.

Opposite
Loetz – Iridescent glass vase with combed trails pulled up from the base, 33 cm *c*1900. (Private Collection, London)

Page 140
Above
Loetz – Green papillon glass iridescent vase with a twist, 23 cm *c*1900; metallic violet glass vase with silver-blue iridescent ribbons, 16.3 cm *c*1900; cobalt papillon glass vase with silver overlay, *c*1900. (Editions Graphiques, London)
Below
Loetz – Rainbow papillon glass vase, 19.5 cm *c*1900; Candia Silberiris vase with green snake entwined, 35 cm *c*1900; ruby iridescent vase with three handles pulled from the body, 17.6 cm *c*1900. (Editions Graphiques, London)

JOHANN LOETZ-WITWE

A glassworks was founded in 1836 at Klöstermühle by Johann B. Eisner von Eisenstein. This was bought in 1840 by Johann Loetz (1778-1848), a master craftsman in glass. At his death, his widow Susanne Loetz took over the direction of the firm, calling it the Glasfabrik Johann Loetz Witwe (i.e. the Widow Johann Loetz Glassworks). Loetz's grandson, Max Ritter von Spaun (Ritter is the German title of Knight), took over in 1879. The firm had already acquired a small reputation for the production of good quality glass. Spaun modernised and expanded the glass-works, devoting himself to both the artistic and financial aspects. He named Eduard Prochazka as Manager in charge of production in 1879, a position he retained until 1914.

Spaun initiated a vast range of different types of glass, frequently taking out patents to protect various new techniques and finishes. In 1888 he exhibited at the German National Arts and Crafts Exhibition held in Munich. He there introduced his first glass in imitation of hardstones, **Onyx** and **Cornelian** glass, marbled chestnut brown and reddish glass; as well as **Intarsia** glass, in which a clear crystal vessel was coated with a shallow layer of coloured glass shaped as plant tendrils, and then sometimes engraved; and **Octopus** glass, a curious free-formed type of vessel in tan and turquoise blue glass with opal glass serpentine applications with gilding. Loetz was awarded a Diploma. Loetz exhibited that same year at the Brussels International Exhibition, and was awarded a Prix d'Honneur. At the Vienna Jubilee Crafts Exhibition Loetz exhibited two large amphora-shaped vases honouring the Emperor Franz Joseph. A year later Loetz exhibited at the 1889 Paris International Exhibition, where the glass in imitation of hardstones (not only onyx and cornelian, but also agate, chalcedony, aventurine and jasper) were greatly admired. Loetz was awarded a Grand Prix. Louis Comfort Tiffany visited the Exhibition in company with his father's chief designer, Edward C. Moore, and undoubtedly saw the new Loetz glass, as well as the enamelled and other glass by Gallé, the Stourbridge cameo glass and the early iridescent glass produced by Lobmeyr, Webb and Pantin, all of which must have combined to fire him with desire to create his own glass vessels.

In 1890 Loetz introduced some iridescence into Cornelian glass. The firm now employed some 200 workers, with main distributors in Vienna (E. Bakalowits & Söhn), Paris (Solon Diespeker), Berlin (Ludwig Fränkel)

Loetz – Irisdescent vase with combed decoration fitted to a bronze mount, 18 cm *c*1900. (Sotheby's Belgravia)

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Above
Loetz – Iridescent gold vase with lotus pads and pulled thread decoration, 9.7 cm *c*1900; green iridescent vase with pulled thread and silver-blue ribbons, three applied handles, 11.4 cm *c*1900; iridescent cobalt vase with pulled threads, 10.7 cm *c*1900. (Editions Graphiques, London)
Below
Loetz – Persian flask gooseneck vase in cobalt papillon glass, 29 cm *c*1900; Persian flask vase in green papillon glass, 35.3 cm *c*1900; Persian flask gooseneck vase in cobalt Phenomenon glass, 32.9 cm *c*1900. (Author's Collection)

Opposite
Above left
Loetz – Candia Silberiris vasė with applied chain, 17.3 cm *c*1900. (Author's Collection)
Above right
Loetz – Cobalt vase with pulled thread decoration, 17.3 cm *c*1900. (Author's Collection)
Below left
Loetz – Iridescent vase with trailing decoration and random dots, 21.3 cm *c*1900. (Author's Collection)
Below right
Loetz – Green threaded vase with silver-blue ribbons, 24.7 cm *c*1900. (Author's Collection)

Loetz – Vase enamelled with a leaf pattern designed by Hans Bolek, 1910. (Contemporaty photograph)

Loetz – Double-ended enamelled vase designed by Michel Powolny of the Wiener Werkstätte, 1914. (Contemporary photograph)

and Hamburg (Ernst Cordes). By 1895 they had additional main distributors in London (F. Krasa & Co.) and Madrid (Julio Fleischner).

Loetz introduced several new types of glass at the 1893 Columbian World's Fair in Chicago. These included Venetian style glass; **Columbia** glass, novelty vessels with deep metallic iridescence, decorated with medallions bearing the head of Christopher Columbus; **Pavonia** and **Persica** glass, the former a heliotrope coloured glass merging to amber, the latter a red glass merging to amber, each with a lustre background that went through the glass, with a gold overlay and relief decoration; **Alpenrot** and **Alpengrün** (Alp Mountain Red and Green) glass, an opaque red and/or yellowish green glass merging into a sky blue ground decorated through with gilding and high relief; and **Kamelienrot** (Camelia Red) glass, a red and gold coloured glass with lustre, decorated with rococo designs in relief. The Loetz display was greatly admired, and was awarded a Grand Prize.

Spaun concentrated his firm's research on the increased development of iridescence. He took out a patent for a metallic finish in 1895, and applied the following year for a further patent for a glass with a deep blue or gold metallic lustre. This was granted in 1898. That same year Loetz held a major exhibition of iridescent glass designed by Max von Spaun in Vienna.

A year later Spaun introduced his **Papillon** and **Phenomenon** glass in Paris. Papillon (Butterfly) glass was glass flecked with multiple closely clustered iridescent spots of raindrop shapes. This was produced in many colours: Ruby-Papillon (Red), Candia-Papillon (Gold), Cobalt-Papillon (Blue) and so on, the glass looking like an enlarged section of a colourful butterfly's wings. Phenomenon glass was iridescent glass decorated with glass threads pulled at random all over the surface. At the 1900 Paris Universal Exhibition Loetz was awarded a Grand Prix. It had by now become one of the largest and most successful glassworks in Europe.

At the 1901 Michaelmas Leipzig Fair Loetz introduced iridescent Papillon glass in conch-shell shapes, both upright and reclining; as well as **Actglas**, a type of glass with clear and coral decoration: and **Rusticana** glass, decorated with serpentine designs. At the 1901 Easter Leipzig Fair **Pampas** glass was introduced, a creamy, opaque, opal glass gradually merging into a clear base decorated with a simple design of a plant form in green glass embedded in the glass and polished. They also exhibited at the Dresden International Exhibition.

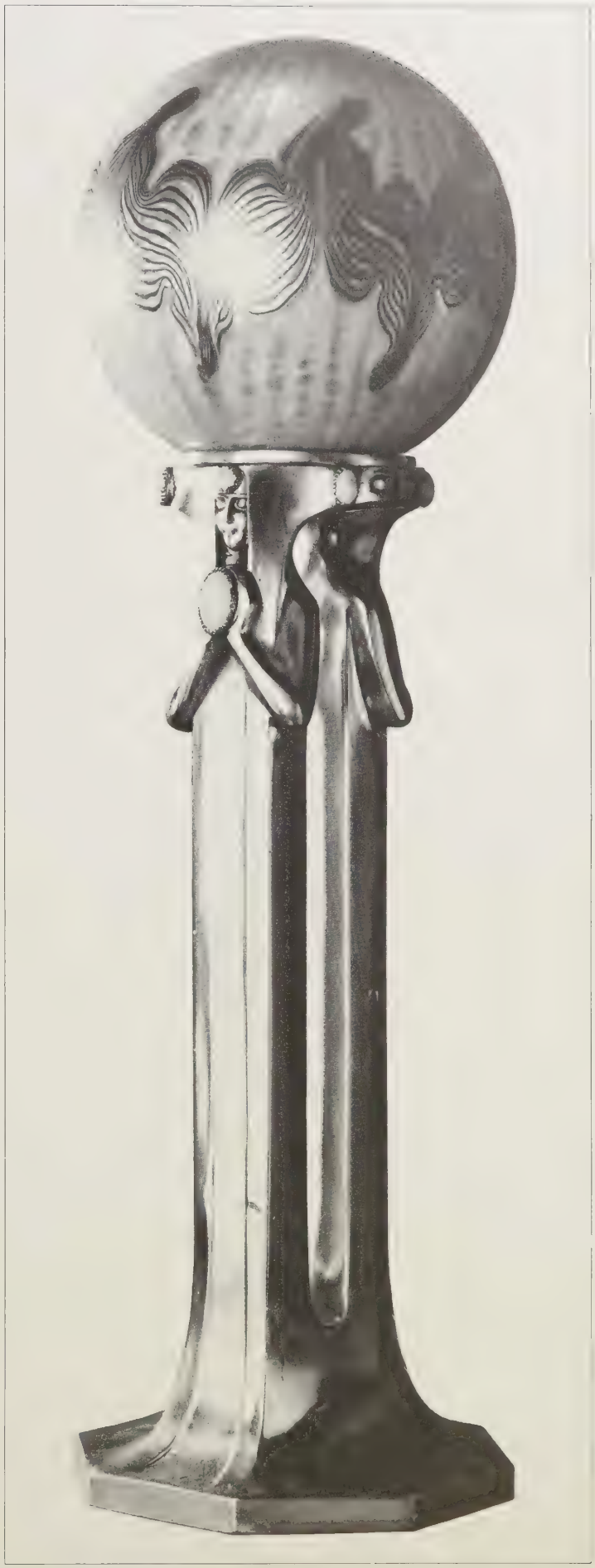
At the 1902 Leipzig Fair Loetz introduced **Calliope** glass, an iridescent blue-green glass with applied floral designs; **Formosa** glass, vessels with blue glass threads over a green ground; and **Kreta** glass, free-formed vessels with iridescent relief ornaments; as well as a new collection of vases in Phenomenon glass. They also exhibited at the Austrian Museum in Vienna, which was to become an annual occasion, and at the first International Exhibition

of Modern Decorative Arts in Turin as well as at the National German Art Exhibition in Düsseldorf. A year later Eduard Prochazka was awarded the Austrian Gold Cross of Merit with Crown.

While Max von Spaun initiated many of the new techniques and designed much of the production, Loetz also employed the services of many other designers. In 1902 Koloman Moser (1868-1918) and several of his students designed vases made by Loetz for sale through the Vienna retail shop of E. Bakalowits. Other members of the Wiener Werkstätte to design for Loetz included Josef Hoffmann (1870-1956), Otto Prutscher (1880-1949), Dagobert Peche (1887-1923) and Michael Powolny (1871-1954). Marie Wilfert-Waltl of Prague and Hans Bolek of Vienna, Franz Hofstätter, Carl Witzmann, Arnold Nechansky (1888-1933), Milla Weltmann and Leopold Bauer also designed for Loetz.

In 1903 Maria Kirschner (1852-1931) joined the firm of Johann Loetz Witwe, remaining there until 1914. Born in Prague on January 7th, 1852, she studied painting there with Joseph Navratil and the Piepenhagen family, then with A. Lier in Munich for a year from 1870, before joining the studio of J. Dupré and A. Stevens in Paris. In 1887 she went to Berlin, where she became interested in experimenting with various crafts. In 1900 she designed and executed painted and embroidered wall-hangings, as well as running the 'Society for Artists and Art Lovers'. During the years at Loetz she designed over 200 models of vases. She pioneered a simplification of form, using straight, functional lines with little decoration other than large, squared appliqué handles where appropriate. The glass is normally a semi-opaque iridescent gold or pale purple without patterning. Some of Maria Kirschner's glass is signed with her monogram (a capital M with serifs, the uprights joined with a hyphen) incised on the base. She also executed the interior decoration for Max von Spaun's house, which had been designed by Leopold Bauer. Robert Holubetz, when a student of Kolo Moser's at the Vienna School of Arts and Crafts, designed a number of vases for Loetz which have a similar simplicity of shape. Most of these are variations of a bulbous base surmounted by a tall, slender neck ending either in a wide horizontal collar or scissor-cut to form two or three short loop handles. Those terminating with a circular horizontal collar were usually provided with three appliqué handles joining the base to the neck. These vases are in opaque iridescent gold glass with an undecorated surface. Kolo Moser also designed such vases, and very similar ones were also executed by the firm of E. Bakalowits & Söhn. They are normally unsigned.

Kolo Moser himself designed a number of unfussy shapes for Loetz, often with several small appliqué glass handles, which were executed in multicoloured, wavy



Right
Loetz – Iridescent glass globe with combed decoration fitted to silvered lamp attributed to Peter Behrens, *c*1900. (Collection Félix Marcilhac, Paris)

Loetz – Iridescent gold vase with blue and purple highlights, the silver mounts in Celtic style designed by van de Velde for La Maison Moderne, with their poinçon, 14.3 cm *c*1898. (Private Collection, London)

Loetz – Iridescent vase with combed decoration and lily-pads. (Sotheby's Bond Street)

patterned opaque iridescent glass. These are frequently signed 'Loetz Austria' engraved on the base, sometimes with the addition of the monogram 'MK' (Kolo Moser).

At the 1904 Louisiana Purchase Exposition in St. Louis Loetz introduced **Cytisus** glass, vessels with mother of pearl and gold iridescent effects; **Isis** glass, vessels in various tones of decorated blues; and **Orpheus** glass, amber vessels with iridescent gold lustre. They also exhibited several designs in Phenomenon glass, and an important group of vases by Maria Kirschner. Their display was awarded a Grand Prize. A year later they exhibited at the Liège International Exhibition, as well as at the Leipzig fairs, where they showed a range of globes and shades for lamps.

In 1906 Loetz commissioned a number of designs from Täschner, of Prague, which they exhibited along with their other production at the German-Bohemian Exhibition in Reichenberg.

In 1908 Spaun's son, Max von Spaun junior, took over the firm. Loetz exhibited a group of moulded and etched crystal vases, mostly equipped with multiple sections at various levels for use in flower arrangements, designed by Leopold Bauer. A year later Spaun senior died. Adolf Beckert (1884-1929) was appointed artistic director at Loetz, and he remained there until 1911. Born in Bohemia, Adolf Beckert studied at the Bor-Haida National Technical School as well as at the Arts and Crafts School in Prague. In 1905 he joined the Applied Arts Studio of Teaching and Experimentation, where he designed glass. During his tenure of office at Loetz he designed and commissioned a wide range of glass. He designed a series of table glass (vases, bowls, beakers, jars with covers, bottles, glasses, lamps) in clear or frosted glass overlaid with enamel decorations of animals (deer,

Loetz – Iridescent vase with combed decoration, three applied handles, *c*1900. (Sotheby's Belgravia)

Loetz – Persian Rosewater Sprinkler vase in iridescent gold with combed decoration, the applied silver rim extending to form a handle and five rooted lily pads, 22.5 cm *c*1900. (Private Collection, London)

swallows, hens) within swirling borders, regular patterns of enamel cabochons, and occasional use of facetting. Beckert also introduced a range of cameo glass. His own designs are exceptional. Using hydrofluoric acid on two- and occasionally three-layered glass, he devised bold, stylised patterns of birds, landscapes, seascapes and flowers. The seascapes in particular are strongly influenced by Japanese wood-block prints, though this influence is also visible in some of his treatment of birds and flowers. They are signed 'Loetz' in shallow relief cameo on the side of the vessel. A paper sticker marked 'Entwurf Adolf Beckert' (Designed by Adolf Beckert) was normally stuck on the base, but few of these have survived.

A wide range of acid-etched cameo glass with simple floral, plant and scenic designs imitative of late industrial Gallé wares, including vases, flacons, scent bottles and carved boxes was produced at Loetz, particularly after Beckert's departure in 1911. These are rarely of any great merit, either in shape or decoration, though an occasional vase was successful, and tend to be collected more for their curiosity value than for any intrinsic merit. They are invariably signed 'Loetz' in cameo relief on the side, usually with a swirl resembling a capital C preceding the name and underlining it. Adolf Beckert also designed a very attractive range of vases blown to shape, then having their surface granulated with acid. Some have intaglio

Loetz – Iridescent pale purple vase with applied handles designed by Maria Kirschner, 16 cm 1904. (Private Collection, Washington DC)

patterns acid-etched into the surface. The main decorative effect is achieved with rich colours (green, reds, browns, golds) and a 'high-fired' finish. These are normally signed 'Loetz' in cameo relief, sometimes with Beckert's name or monogram, though a number were unsigned, or engraved on the base. Beckert exhibited many of his designs at the 1910 Vienna International Exhibition. In 1911 he joined the National Technical School at Steinschönau, teaching glass design. He became the School's director in 1918, a position he retained until 1926. During those years he continued to design in a variety of techniques for many Bohemian firms. He also worked for the Mügeln glassworks at Dresden (Germany).

Loetz exhibited in 1914 at the Cologne Crafts Alliance Exhibition, showing designs by Michael Powolny, Joseph Hoffmann, Dagobert Peche, Arnold Nechansky and Milla Weltmann. Several of these were in coloured glass painted or enamelled with parallel horizontal or vertical lines, beading, geometric designs or stylised motifs in strongly contrasting colours. These were engraved 'Loetz' on the base, or had paper stickers attached bearing the name 'Joh. Loetz Wwe. Klostermuhle'. In addition, they usually had the designer's name engraved or inscribed in gilt script on the base: 'Arch Nechansky' (i.e. Architect Nechansky), 'Prof. Powolny', 'Prof. Hoffmann', or 'Arch. D. Peche' or 'Milla Weltmann'.

After Max von Spaun senior's death, things did not go well with the firm. In 1911 Loetz went into bankruptcy, but was reorganised as a limited company in 1913, and went public after the First World War. They exhibited at the International Exhibition of Decorative and Industrial Arts in Paris in 1925, showing several new designs by Otto Prutscher which were a curious mixture of Wiener Werkstätte ornamentation on opaque iridescent or opalescent glass. These are usually unsigned. The Loetz glassworks was partly destroyed by fire in 1930, and closed down during the Second World War.

Most Loetz glass is unsigned. The few that are signed were generally made for export to those countries which had regulations specifying that imported objects had to bear an indication of origin. This meant particularly the United States. Signed items have one of the following marks acid etched on the pontil: 'Loetz Austria' or 'Austria' or the trade mark of two crossed arrows with

four stars all inside a circle, with or without the word 'Austria'. The crossed arrows mark is very occasionally accompanied by the factory name, spelled either 'Loetz' or 'Lötz', while the engraved signature 'Spaun' is sometimes found, though more usually on items sold or given by Spaun to Museums. Loetz vases invariably have the pontil ground and polished to form a circle of varying diameter, often nearly as wide as the base.

Loetz glass was sometimes used with silver, bronze or other metal mounts. Czar Nicholas II had Loetz glass lamps mounted in silver by Fabergé for use on his yacht. Some vases have galvanised silver overlay, in Art Nouveau, classical or floral designs. Vases identical to Loetz designs are known to have been made by Adolf Zache in Gablonz using galvanised silver designs by the painter Carl Lederle of Reichenberg. Loetz manufactured iridescent glass shades for lamps designed by a variety of artists and firms, notably the sculptor Gustav Gurschner and Peter Behrens.

The iridescence of Loetz vases is usually extremely rich, and their colours sumptuous. They used golds, greens, peacock and royal blue, turquoise, pinks, browns and reds. 'Rainbow' vases are half pink and half green, with iridescent gold 'Papillon' streaks like rainfall. Shapes vary from the plain and stodgy to waisted vases, pinched sides, the use of appliqué handles, chain overlay, appliqué snakes, branch forms, frilled necks and, perhaps most successfully, variations on the Persian rose-water flasks, some with goose necks. Repeating designs were sometimes added to the surface of finished vases through the use of stencils with acid.

Every texture, colour and design was given a name, though some designs involved several different patterns together. The characteristic textured glass with tiny pitting used in plain designs and design with relief chain patterns was called 'Candia Silberiris' when gold and 'Cobalt Silberiris' when blue. This texture was also used in conjunction with some serpentine designs in the 'Rusticana' models. The ribbon serpentine decorative patterns were called 'Silberband', while a more pitted surface than 'Silberiris' with a gold flecked blue colour of changing hues was called 'Delphi'. The range was immense. While some vases were undoubtedly produced in deliberate imitation of Tiffany designs for export to the United States, where they provided an attractive and cheaper alternative to Favrile glass, this formed only a tiny part of their output, which concentrated on original designs and techniques which are completely different from American iridescent glass. At its best, Loetz glass is superb, and greatly sought after.

Loetz – Iridescent gold vase with green flecks and applied medallions in the style of their 'Columbia' ware, 13.5 cm 1893. (Private Collection, London)

JEAN LUCE

Born in Paris on May 25th, 1895, Jean Luce worked in the shop run by his father since 1888 retailing a wide range of table-ware. He left in 1923, eventually running his own shop from 1931, specialising in ceramics and glass. Jean Luce worked as a designer in a basically Cubist-inspired style, rejecting the use of too much design in form or figurativeness in decoration. He designed simple, unfussy shapes for ceramics and glass, the latter in a clear or single colour crystal, decorated with clear geometric patterns made up from circles and triangles.

Luce was not a glassworker, but a designer: his designs were executed to his instructions. His vases and bowls are plainly elegant, cool and abstract artifacts. His earliest designs were enamelled onto the glass, but he soon rejected

Luce – Mirrored surface glass vase with sandblasted bands, *c*1925. (Collection Félix Marcilhac, Paris)

Luce – Glass vase enamelled with a floral pattern, *c*1930. (Collection Félix Marcilhac, Paris)

enamelling as being too bright, and had his patterns engraved and etched in order to contrast the polished and mat sections of the design, which is usually small and centrally placed on one face of the vessel. Vessels are only very occassionally decorated all over the surface. Some of his most striking and personal designs were executed on thick-walled vessels of mirrored glass, with geometric designs acid-etched onto the sides, the mat, grainy texture of the etched pattern contrasting with the dazzling mirrored surface. He also designed matched sets of table-ware in glass and porcelain, with the same stylised motif applied to every item in the set. He was commissioned by the Compagnie Générale Transatlantique to design all the glass and porcelain ware for their new transatlantic liner, the Normandie. The Company was so pleased with his designs that these were adopted for use on all their liners.

Jean Luce first exhibited at the Galliéra Museum in 1911, then at the Salon d'Automne and the Salon des Artistes Décorateurs from 1913. He exhibited at both the 1925 and the 1937 International Exhibitions in Paris *Hors Concours*, as he was named a member of the Jury at both Exhibitions. He also lectured at the College of Applied Arts, and was appointed a Member of the Technical Committee at the Manufacture de Sèvres. His vessels are usually signed either with enamel or engraved with a diamond point.

Opposite
Marinot – Group of bottles with stoppers with internal decoration, some moulded, some shaped at the kiln, some deeply etched with acid, 1922-1935. (Private Collection, Paris)

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Above left
Muller-Lunéville – Poppies lamp, acid-etched in cameo, 67.3 cm *c*1900; Riverscape shade with deer on a wrought iron base, 47 cm *c*1910. (Private Collection, London)

Above right
Muller-Lunéville – Vase overlaid with vitrified enamel colours and deeply carved in cameo with pink and white fuchias, 23.5 cm *c*1900. (Private Collection, London)
Below left
Muller-Lunéville – Small lamp in reticulated glass blown into a wrought iron armature made by the designer Chapelle, 16 cm *c*1910. (Private Collection, Los Angeles)
Below right
Muller-Croismare – Freely shaped pitcher in fluogravure, enamelled and etched with an owl and bats, applied handle, 16.5 cm *c*1900. (Author's Collection)









LUSTRE ART GLASS CO

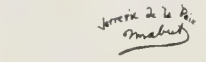
T. Conrad Vahlsing and Paul Frank were both gaffers at Martin Bach's Quezal Art Glass and Decorating Company in Brooklyn, New York. Vahlsing was also Bach's son-in-law. In 1920 they left Quezal and set up the Lustre Art Glass Company in Maspeth, Long Island, along with William Overend.

Very few vases were made at Maspeth, most of the production being confined to glass lamp shades and globes. These are absolutely identical in the range of design, shape and decoration with the shades and globes produced by Quezal. They are usually signed 'Lustre Art'.

Vahlsing's defection inevitably brought a rift between the two sections of the family. Lustre Art continued in production for only a very few years, and went out of business between 1923 and 1925.

JULES MABUT

This small Paris luxury shop dealt in art glass from various manufacturers, but also produced a small quantity of cased and cameo carved vases and bowls, mostly floral, in coloured glass. These were designed by Henri-Alphonse-Louis Laurent-Desrousseaux. Born in Joinville-le-Port in 1858, he had studied under Maignan and was a painter of mostly religious scenes and genre subjects. Though there is nothing particularly original or unusual about this production, they were carefully executed in excellent techniques. Jules Mabut exhibited at the Paris 1900 International Exhibition. The vases and bowls are signed on the base in script 'Verrerie de la Paix J. Mabut'.



MAURICE MARINOT

Maurice Marinot was born at Troyes on March 20th, 1882. His father ran a small family business manufacturing cotton bonnets, and employed some fifteen workers in his workroom. As a child, Marinot proved a lazy and inattentive student with a passion for drawing. He never sat for the *baccalaureat* (the national school graduation certificate) but persuaded his parents to send him to Paris to the École des Beaux-Arts. He there became a student of Fernand-Anne Piestre, known as Cormon, a painter who specialised in prehistoric scenes. Although Marinot's relations with Cormon were cordial at first, his unorthodox and individualistic work infuriated his master, who presented him with the ultimatum of conformism or departure. Marinot chose to leave. Or very nearly. He continued to attend the life class whenever Cormon was away. The museums, the Salons, the art galleries educated him. Shy and solitary, he joined no student groups. He made few friends, though the friendships he made lasted. They included the artists André Mare, Jacques Villon, André Derain, Charles Despiau and André Dunoyer de Segonzac. His summers were always spent at home in Troyes. In 1905 he returned home for good, never again to leave Troyes except for very brief trips.

Marinot submitted a painting to the 1905 Salon d'Automne. The man in charge of managing the exhibits saw a common violence of treatment and harshness of colour in certain paintings which he decided to group in the same room. The paintings were by Henri Matisse, André Derain, Jean Puy, Louis Valtat, Henri Manguin, Kees Van Dongen, Albert Marquet, Émile Othon Friesz, Albert Camoin, Maurice Vlaminck and Maurice Marinot. A tame classical bronze by a sculptor called Marque had somehow strayed into the same room. Walking into this room, Louis Vauxcelles, the critic, is supposed to have exclaimed with horror 'Donatello amongst the wild beasts' (Donatello au milieu des fauves). A new movement had thus appeared and been named. The horror, dismay, hilarity, derision and disgust their pictures aroused, particularly among the critics, ensured their exposure. People came to scoff, a very few to admire, but their exposure then and in the years to follow meant that their lessons were gradually to filter into the main-

Marinot – Bottle enamelled with flowering lotus, *c*1913. (Collection Félix Marcilhac, Paris)

stream of twentieth century art.

Marinot was to continue to exhibit his paintings at the Salon d'Automne and the Salon des Indépendants annually until 1913. The Fauves painters continued to be reviled by the official critics, though Marinot, along perhaps with Manguin, Valtat and Camoin, was less violent, more studied in his colour contrasts than Matisse, Vlaminck or Van Dongen. In 1910 he exhibited a painting of Medea, which was singled out for praise by the poet Guillaume Apollinaire. A more typical comment, however, was written by André Warnod, who wrote: 'By Maurice Marinot, *Medea killing her children*. How right she is: they are so ugly! One can but hope that in eating them she will be poisoned, and the indignant gods will destroy the landscape in which this drama takes place. Thus everything in this picture would disappear, which would be just as well.'

In 1911 Maurice Marinot first visited the small glassworks run at Bar-sur-Seine by his friends the brothers Eugène and Gabriel Viard. Marinot was stunned by the beauty of the molten glass, the extremes and contrasts of heat, light, colour, fire, the attempt by man to control elemental forces. His was, he wrote, 'a violent desire for this new game'. The Viard brothers gave him every help he asked for.

Marinot began to design models for vases, bowls and bottles which were made under his direction, and these he decorated with enamels. He began by covering the whole vessel with rich enamel paints, but very quickly realised that by masking the glass he was rendering its medium irrelevant. He therefore diminished the quantity of enamelled decoration, heightening the contrast between opaque, jewelled enamel and transparent glass. The enamel was applied in several successive layers, each of which required a separate session in the kiln, each of which risked damaging the previous layer or ruining the vessel. Marinot therefore set himself to studying the chemistry of enamelling, as well as that of glass.

In 1912 André Mare created the 'Cubist House' for the Salon d'Automne. The façade was designed by Raymond Duchamp-Villon in a basically traditional style, but with sharp angles and triangular or pyramidal lines of decoration above the door, windows and on the balconies. The entrance led to two complete rooms, for which Mare had designed the wall paper and the furniture. One of the rooms had four tall mirrors surmounted by paintings by Marie Laurencin, the painted woodwork was by Roger de la Fresnaye, while Jacques Villon, Paul Véra, Marie-Thérese Laura, André Versan and others provided further aspects of the decoration. Pride of place was given to several enamelled vases by Maurice Marinot. On the walls Mare had hung pictures by Fernand Léger, Albert Gleizes and Jean Metzinger. Some of the visitors and a few critics praised extravagantly. Most were, as usual, horrified. Insults were hurled at the Cubist House and its artists from the newspapers and the floor of the Chamber of Deputies, while Marie Laurencin, Villon's wife Gaby and Mare's wife Charlotte were on daily guard, armed with umbrellas, to foil the destructive attacks launched by members of the public.

For the 1913 Salon d'Automne André Mare decorated a living room with sumptuous red damask, and furnished it with imposing furniture made with rare woods. The paintings were by Roger de la Fresnaye, low reliefs by Raymond Duchamp-Villon. An extraordinary liqueur table occupied pride of place, its multiple sections opening fan-like to reveal a whole collection of glassware by Marinot. This time the critics and the public were full of admiration.

Marinot exhibited his new glass not only at the Salon d'Automne but also at the Salon des Indépendants from 1911 to 1913. One of the first critics to hail his work was Léon Rosenthal, who wrote in the *Gazette des Beaux-Arts* in 1912: 'It has been a long time since an innovation of such great importance has come to enrich the art of glass.'

1913 was to be the last year in which he was to exhibit his paintings, and he participated in the great Armory show in New York, which introduced all the most advanced tendencies in French art to the United States. He continued to paint throughout the rest of his life, but purely for his private pleasure, and he became almost totally forgotten in that sphere. It is a curious fact that

hardly any study of the Fauvist painters mentions him.

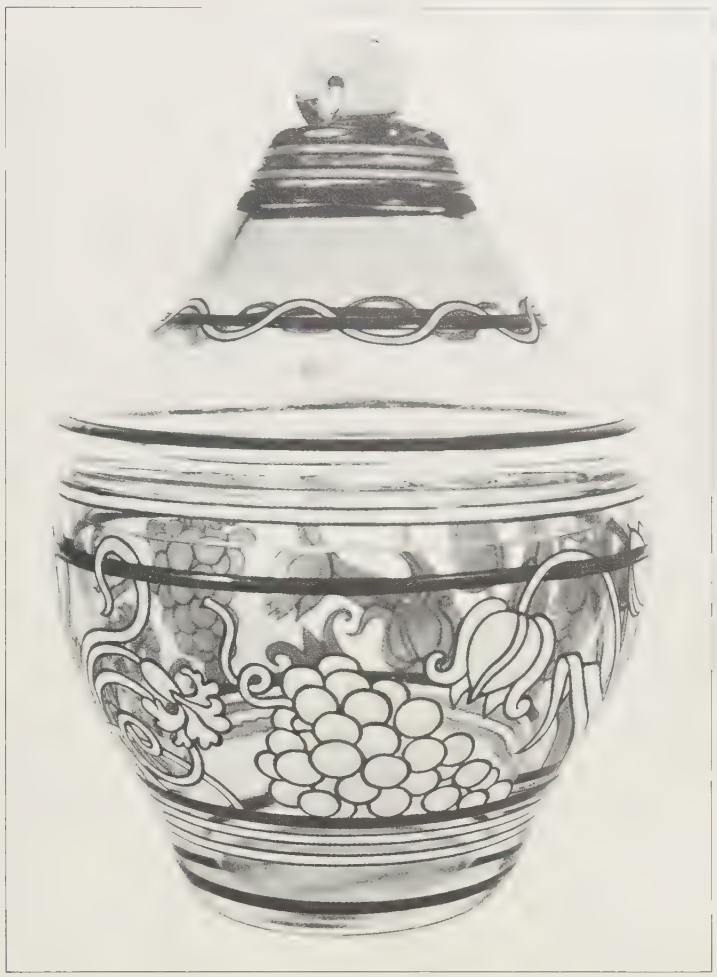
1913 was also the year of his first major exhibition as a glassmaker. Adrien Hébrard, the great bronze founder who had cast Dégas' sculptures, became his sole agent, and held this and subsequent exhibitions in his gallery in the rue Royale in Paris. The Luxembourg Museum in Paris, Baron Robert de Rothschild and Mme. Louis Barthou, the wife of the French Prime Minister (who as Foreign Minister was to be murdered with King Alexander of Yugoslavia in Marseilles in 1934) were among the first to buy Marinot glass.

Marinot himself was determined to study every aspect of glass. The Viard brothers gave him a bench at their works and a set of tools. He was shown the rudiments of glass-blowing and then left to his own devices. He would arrive daily during the lunch break, and practice when the staff was not present. 'To make a true glass worker, and there is no higher grade, takes a long training of some ten years, and that if you start very young, which is not my case,' he wrote. He was thirty years old when he started on the glass-blower's bench. 'Everything I have done I have done with difficulty' ('tout ce que j'ai fait, je l'ai fait difficilement').

He was soon making the glass he enamelled. Stylised flowers, swags or birds decorated his vases, but he also painted with enamels a variety of women's heads, nudes, dancers and colourfully dressed women which are sophisticated and delightful, perfect artifacts of their time. He became more daring in the preparation of the glass, and began to experiment with *malfin* glass, that is, imperfectly refined glass, which was normally rejected. This had a granular, impure look, with random bubbles trapped within the glass.

At the outbreak of war in 1914, Marinot was called up. He continued to draw throughout the war, and went on a trip to Morocco in 1917, bringing back a large number of watercolours and drawings. In 1919 he was back at his bench at the Viard glassworks, determined to retrieve the five years away from his beloved glass. He went on producing a few more enamelled pieces until 1923, but he was now working directly with the mass of the glass, rejecting extraneous decoration. From 1922 onwards his glass falls into two basic categories; smooth glass and engraved glass.

The smooth vessels are usually vases or stoppered bottles, with no surface decoration. The shapes are often chunky, solid, the stoppers small globes. The material itself was the aim, created entirely by his cunning and art on the punty and in the kiln. Working with thick layers of glass, he trapped colours between the layers, produced by the application of metal oxides. The colours appeared to float like vaporous clouds suspended within the clear thick walls of the vessel, or were shaped into moss or fern, or textured. Sometimes he scattered clusters of air-bubbles within the glass, occasionally colouring them. These furnace creations (travail à chaud) were carried out entirely by him, from the design, the chemical formulae, and the

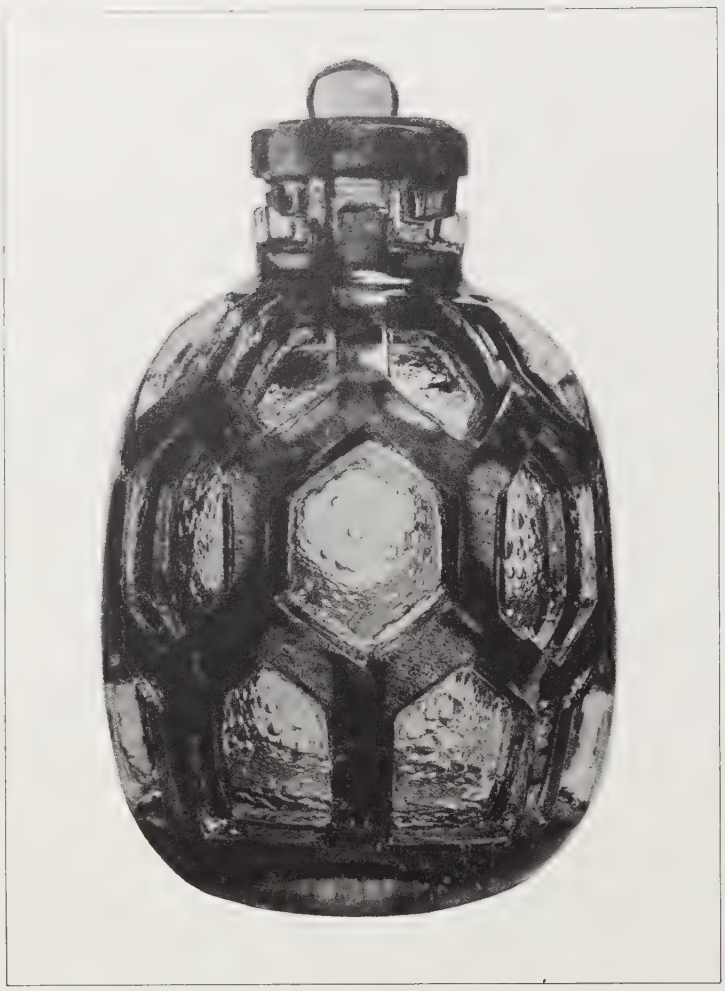


Marinot – Bottle enamelled with grapes, flowers and decorative motifs, *c*1921. (Collection Félix Marcilhac, Paris)

mixing to the blowing and the finishing. Throughout his career as a glassmaker his only assistant was to be a boy. They have been called 'powerful and naked' *(puissantes et nues)*. Ada Polak, writing in the *Connoisseur* in 1965, reported; 'I shall never forget the beaming expression of his kind and intelligent face when I stood with one of these coloured flacons in my hand, no doubt looking rather puzzled, and he suddenly exclaimed, *"Sandwich!"*'

The engraved glass is equally chunky, often transparent, and frequently decorated with trapped colour swirls or air bubbles, or else made from a richly coloured glass. Marinot worked the surface into sculptured geometric designs, using repeated immersion in hydrofluoric acid occasionally contrasting with some wheel-carving. The bite of the acid is extraordinarily deep, eating into the thick glass walls to reveal the depths. The smooth and polished outer surface is often contrasted with the rough, rocky surface given to the etched concavities.

The process of creation for Marinot was long and fraught with danger. Each single vase could take up to a year of repeated work before he was satisfied with it. Each successful vessel was the survivor of 'a century of failed pieces'. Marinot rejected the ambitions of functionalism or the use of 'decorative art' with reference to his glass. It might have the shape of a glass or a bottle, but this was



Marinot – Deeply etched faceted bottle in yellow glass, *c*1928. (Contemporary photograph)

Marinot – Bottle in *bistre dégradé* glass with air bubbles and furnace applied glass drapery, *c*1928. (Contemporary photograph)

incidental: his glass was to serve no function beyond that of being itself. It was the outcome of a creative act, similar to a painting or a sculpture, though the act itself was a struggle. 'It is each time a fine battle,' he wrote, 'a deep pleasure in the physical effort.' His creations are, nevertheless, functional in the sense that shape and pattern grow organically from the properties of the material. They are brutal solutions, ruthlessly excluding any extraneous 'prettification'.

The annual exhibitions of Marinot's glass at Hébrard's gallery brought it critical acclaim and many admirers. The 1925 Paris Exhibition of Decorative and Industrial Arts was to make Marinot's name universally known and admired. Marinot himself was vice-president of the admissions jury and a member of the awards jury. His glass was exhibited *Hors Concours* in several pavilions. The gallery of the Ambassade Française designed by Henri Rapin and Pierre Selmersheim, had a cabinet full of Marinot glass. Marinot glass was on display in the curious domed Museum of Contemporary Art designed by Süe and Mare for their Compagnie des Arts Français. And a stunning display of Marinot glass illuminated Hébrard's shop on the Alexandre III bridge, one of a continuous series of shops designed by Maurice Dufrène on the bridge which had been built for the 1900 Exhibition.

1925 also saw Marinot's first glass exhibition in New York, while his dominating position in France was further confirmed when he was appointed a member of the Council of National Manufacturers and Applied Arts, in which he made great efforts to help the young. The following year he was appointed to the office of the Society of Artist Decorators.

Marinot's influence soon spread throughout the world. Several individual glassmakers such as Henri Navarre, André Thuret and Georges Dumoulin worked in similar techniques, while commercial firms from Daum in France to others in Scandinavia, Italy, Germany and the United States turned out glass derivative from Marinot's researches. Marinot himself was in full possession of his creative powers, and his furnace work from 1927 onwards is totally concentrated and creative, each vessel the outcome of a greater challenge.

In 1932 Marinot exhibited once again in New York, this time at the Brummer Gallery. Walter Pach, writing the catalogue preface, compared Marinot's glass to the paintings of Matisse and Derain and the sculpture of Rodin, Despiau and Duchamp-Villon exhibited earlier at the gallery, and found a similar sense of form and colour.

A year later Jean Benoit Lévy and the art historian René Chavance made a film about Marinot, showing him at work. It was distributed in 1934, and was shown regularly for several years.

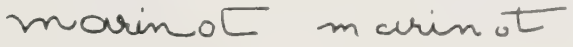
The Viard glassworks closed down in 1937, and Marinot was never to work with glass again. His health had in any case been affected by the years of work at the furnace, and he would probably have had to give it up. Hébrard gave him a major final exhibition, while the Paris International Exhibition once again saw his glass exhibited *Hors Concours* in several pavilions.

Marinot had never stopped painting, though he had ceased exhibiting his pictures. He had given up his Fauvist colours and contrasts in 1912, entering his so-called black period. He would paint his wife Marcelle, his daughter Florence or his sister Héléne with powerful brush strokes, harshly shaping the outlines with sombre, expressive colours. He spent his summer holidays in the Auvergne, painting sober, sombre landscapes, occasionally lightened by nudes. His style in those years was very close to that of his friends Derain, Dunoyer de Segonzac or Othon Friesz. From 1937 onwards he concentrated on painting and drawing, gradually evolving.

He continued to paint during the years of the war and German occupation of France. In 1944 Troyes was liberated by the allies. In the bombing that preceded the liberation, Marinot's atelier was blown up, destroying some 2500 paintings, several thousand drawings and much of his glass. Fortunately, he had left some of his work with his sister Hélène, and these were saved.

In 1945 Marinot exhibited some forty watercolours at the Tedesco Gallery in Paris, while he exhibited paintings at a one-man show at the Galerie Charpentier in 1948. For the next eleven years he showed his paintings in group and one-man shows in Paris, New York and in Israel. The years spent facing the incandescence of the furnace coalesced in a series of canvases begun in 1955. Called the *Soleils* (Suns), it is a series of landscapes suffused with brightness, the colours sharp, alight.

After a long illness, Maurice Marinot died at Troyes on February 8th, 1960, shortly before reaching his seventy-eighth year.



Marinot's glass is always clearly signed with his name incised on the base. Several museums and institutions acquired glass by Marinot during his lifetime, and that which is in private collections very rarely comes on to the market. When it does, it is expensive. Marinot's daughter, Mademoiselle Florence Marinot, has, with extreme generosity, donated the glass in her possession to a number of museums throughout the world, including eleven vessels to the Victoria and Albert Museum in London, eleven to the Corning Museum of Glass in Corning, New York, and some twenty to the Kunstmuseum, Dusseldorf. Her most important donation has been to the Musées Royaux d'Art et d'Histoire in Brussels, in which a special room has been prepared to accommodate the 101 glass vessels, 27 paintings, 48 drawings and watercolours, and 106 working studies for glass, as well as his glassworker's tools, his palette and brushes. A major retrospective exhibition of Marinot's career was held at the Fine Arts Museum in Lyon in 1965. The Brussels Marinot room is a permanent reminder of Marinot's inventiveness and great achievements. André Derain, the painter, wrote: 'A glass by Marinot: I have never seen anything as beautiful which was at the same time so precious and so simple.'

MEYR'S NEFFE

In 1814 Josef Meyr took over the Adolfshütte glassworks, named after its first owner, Prince Adolf Von Schwarzenberg. He had already founded another glassworks at Eleonorenhain, which was inherited by his grandson Johann in 1831. In 1841, when Johann died, his nephews Wilhelm Kralik (1806-1877) and Josef Taschek (d. 1862) united the glassworks of Adolf, Eleonorenhain, and Kaltenbach (which dated from 1798) into a single firm called Meyr's Neffe (i.e. Meyr's Nephews). In 1854 they expanded by purchasing the glassworks of Ernstbrunn and Franzensthal, later adding those of Idathal and Louisenhütte. After Taschek's death in 1862, Wilhelm Kralik had sole control of the firm. In 1881, some four years after Kralik's death, the firm was divided among his four sons, Heinrich and Johann taking over the Eleonorenhain and Ernstbrunn glassworks, later to be known as Wilhelm Kralik Söhn; Karl and Hugo Kralik took over the Adolf, Idathal and Louisenhütte works, retaining the name of Meyr's Neffe; and the works at Kaltenbach and Franzensthal were sold off. Meyr's Neffe entered into close collaboration with the Vienna firm of J. & L. Lobmeyr, supplying them with virtually all the glass produced as raw material by the Adolf works, as well as running an engraving and decorating workshop. At the 1873 Vienna International Exhibition they exhibited iridescent glass jointly with Lobmeyr. They also exhibited at the 1876 Philadelphia World's Fair. In the 1890s they made copies of old Bohemian glass, as well as enamelled

and gilt vases in Moorish style designed by F. Schmoranz (1845–1892). They exhibited at the 1900 Paris Universal Exhibition. From 1900 they executed a number of vases, bowls and beakers designed by Koloman Moser and Josef Olbrich (1867–1908) commissioned by the Vienna firm of E. Bakalowits & Söhn. From 1922 they executed a number of designs by various members of the Secessionist Wiener Werkstätte, particularly Otto Prutscher (1880–1949), Josef Hoffmann (1870–1956) and Koloman Moser. In 1922 they were taken over by the firm of Ludwig Moser & Son to form the Karlsbad Crystalglassworks.

Meyr's Neffe – A group of decorated iridescent glass vases, 1900. (Contemporary photograph)

EUGÈNE MICHEL

Born in Lunéville (Meurthe-et-Moselle), Michel first came to prominence in 1867 when he joined François Eugène Rousseau as a glass engraver. He worked closely with Rousseau, and remained to work with Léveillé when he took over the Rousseau glassworks. Early in the twentieth century Michel set up an independent workshop in association with Eugène Lelievre though this association did not last long, and he continued to work on his own. He is believed to have died some time before the outbreak of the First World War.

Michel's independent work is surprisingly varied, considering his limited means, and includes free-formed glass in several layers, often with appliquéd decoration, cameo and intaglio vases, and crackled glass in the manner of Rousseau. His intaglio-cut vases, normally on clear lead-crystal, are exquisite in design and workmanship. Several have elaborate silver mounts by Boucheron and other silversmiths.

Eugène Michel developed a new sculptural style for his cameo vases. Using very thickly-walled vessels he would very deeply carve his floral or plant subjects, which would stand in very high relief against the body of the vase. He frequently used only two layers, the outer layer being of thick glass, though often transparent and lightly tinted. The contrast in such cases was provided by the body of the vessel, which was often made of crackled glass. At other times Michel used several layers of richly coloured glass, the body being streaked with patches of colour. He exhibited at the 1903 Paris Salon and at the

Michel – Crystal vase wheel-carved in intaglio with silver mounts by Boucheron, 30.5 cm *c*1895. (Sotheby's Bond Street)

1910 Paris 'La Verrerie et la Cristallerie Artistique' (Artistic Glass and Crystal Ware) Exhibition.

Michel vases are often unsigned. Signed ones are engraved 'E. Michel' in script. A number of acid-etched cameo vases of industrial production with floral or scenic designs are found signed 'Michel Nancy' or 'Michel Paris'. These should not be confused with the works of E. Michel, which are highly wrought and individual. Eugène Michel's vases are very rare and much sought after.

MONCRIEFF

The North British Glassworks were founded in Perth, Perthshire, Scotland in the 1880s by John Moncrieff. Bottles and glassware for medical and chemical use were produced for many years. In 1922 Salvador Ysart (1877-1955), a Catalan glassmaker from Barcelona, joined the firm, and created a range of decorative glass which was marketed under the name 'Monart' (Moncrieff Art Glass). Vases, bowls, paperweights, decanters, plates, baskets, boxes and other objects were made in a wide variety of colours. The glass is invariably smooth, the surface undecorated. The whole decoration resides within the rather thick-walled glass, which is often oxidised, may have small or large bubbles, swirls of colour in regular or random patterns or marbled effects. Some items are coloured through in a single shade, pastel greys, blues, blacks, pinks, etc. Some are multicoloured, the effect being frequently very attractive indeed.

Most Monart vases have a receding base with a raised pontil, polished smooth. Though never signed, a circular paper label was affixed to the raised pontil, generally printed in black on gold.

Ysart's most prolific and inventive period was between the wars, when he frequently used designs suggested by Mrs. Moncrieff. The glassworks had by then changed their name to John Moncrieff Ltd. After Ysart's death, his son Paul took over as principal designer of Monart glass, though he eventually left the firm. Though Monart glass is no longer being made, the firm is currently producing a line of art glass under the trade name of 'Monax'.

KOLOMAN MOSER

Born in Vienna on March 30th, 1868, Kolo Moser (his Christian name is almost invariably contracted thus) studied at the Vienna Academy from 1886 to 1892, then at the School of Arts and Crafts from 1892 to 1895. In 1897 he joined with a number of young Viennese painters, sculptors and architects to found the Vienna Secession, a movement of artists which rejected the traditional academic 'official' art in favour of a more adventurous style inspired by Art Nouveau. Within six months they had constructed a building designed by Josef Maria Olbrich in which they were to hold their successive exhibitions. In 1899 Moser joined the staff of the Vienna School of Arts and Crafts, and was appointed a Professor a year later. The VIIIth Secession Exhibition in 1900 was devoted to the Arts and Crafts. Organised by Josef Hoffmann and Kolo Moser, it consisted of a number of fully furnished rooms to cover every aspect of everyday life. In addition to the exhibits of the Secession members, Charles Robert Ashbee and his Guild of Handicrafts, Charles Rennie Mackintosh and his wife Margaret Macdonald, Henry van de Velde and the Paris shop 'La Maison Moderne', had been invited to exhibit.

In 1900 Kolo Moser was commissioned by the Viennese firm of E. Bakalowits Söhne to design decorative vases, table glass and stained glass windows. These were executed by Johann Loetz Witwe, Meyr's Neffe and the Rheinische Glashütten. The vases were mostly of metallic iridescence in 'Papillon' glass or with large lustre circles trailing all over the vase or even of plain translucent glass of faint iridescence. They almost invariably had decoration of galvanised silver or applied wrought silver holders in exciting Art Nouveau shapes: dragonflies, stylised plants, birds or animals, Celtic entrelacs. The table glass was largely in variations of traditional shapes: the glass usually stemmed, the bowls elegantly shaped in tinted crystal, often cut in graceful Art Nouveau designs, or moulded to create optical patterns. A group of Moser's vases and glasses was exhibited at the First International Studio Exhibition in

K. Moser – Iridescent glass vases with metal holders and galvanised silver overlay designed for E. Bakalowits und Söhne, 1902. (Contemporary photographs)

London in 1902, which Moser and Josef Hoffmann attended. It enabled them to renew their friendship with the Mackintoshs and Ashbee, and they spent some time in England and Scotland. They returned to Vienna fired with enthusiasm for the workshops system set up by Ashbee in the East End of London, where he trained and worked with local craftsmen skilled in a wide range of crafts. In May, 1903, they persuaded Fritz Wärndorfer, a young banker and art collector, to finance the creation of a system of crafts workshops similar to Ashbee's Guild of Handicrafts. A month later the Wiener Werkstätte (Vienna Workshops) was founded, with Wärndorfer as commercial director and Hoffman and Moser as artistic directors. Over the next few years they were to produce a wide variety of objects in gold, silver and baser metals, bookbindings, leatherware, furniture and fittings, as well as glassware, eventually employing over one hundred workmen, including 37 leading designers, achieving a characteristic decorative style.

In 1905 a split developed within the Secession movement, and the painter Gustav Klimt formed a breakaway group, which Moser joined. He died on October 18th, 1918.

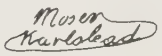
LUDWIG MOSER & SÖHNE

Ludwig Moser (1833-1916), an experienced glass craftsman with some years of experience as a retailer, opened his own workshop at Karlsbad in 1857, providing a glass polishing and engraving service for North Bohemian designers. At the 1873 Vienna International Exhibition he exhibited goblets designed by Wilhelm von Kaulbach (1805-1874), Friedrich Gauermann (1807-1862) and others, and was awarded a medal. Shortly thereafter, he was awarded an Imperial Warrant to supply the court. As the glassworks expanded their scope and facilities Moser employed a variety of designers; including Johann Hoffmann (d. 1883), Josef Urban (d. 1895) and his son Julius Urban (born 1855), Rudolf Hiller (1827-1915) and his son (born 1855). In 1893 glassworks at Meierhöfen were added to the Moser complex, which was incorporated in 1900 as Ludwig Moser & Söhne, with Ludwig and his sons Rudolf and Gustav as Directors, and employing over 400 craftsmen.

L. Moser – Vase in clear glass with some iridescence, applied handles, enamelled with ancient Egyptian motifs, *c*1895. (Collection Dépôt 15, Paris)

L. Moser – Tall vase in clear glass with a pale purple base padded with blue and green glass cameo-carved flower-heads, the leaves and stalks carved in intaglio, 46 cm *c*1905. (Private Collection, Karlsruhe)

Moser designs included moulded clear glass vessels with blobs of coloured glass inserted; dark blue and purple vases, often of geometric cut patterns with a frieze of classical scenes or animals in shallow relief and gilt; and goblets, book-ends, lampstands and ornaments designed by Johann Hoffmann in opaque purple or black glass moulded with animals or nude women. The most interesting Moser designs, however, involve vases, bowls and cups in clear crystal or clear crystal with blue or purple and green glass blobs overlaid onto the clear glass, and the whole then carved into naturalistic floral designs, with deep cutting in cameo for the coloured glass (purple flowers, green leaves) and intaglio for the clear glass (stems and other leaves), often with some colour in the glass of the base of the vessel to give a suffusion to the lower part of it, and some gilding. Moser vases are often unsigned, sometimes signed 'Moser Karlsbad' on the base in shallow engraved script. Johann Hoffmann designs are usually signed 'J. Hoffmann' in engraved script on the base.



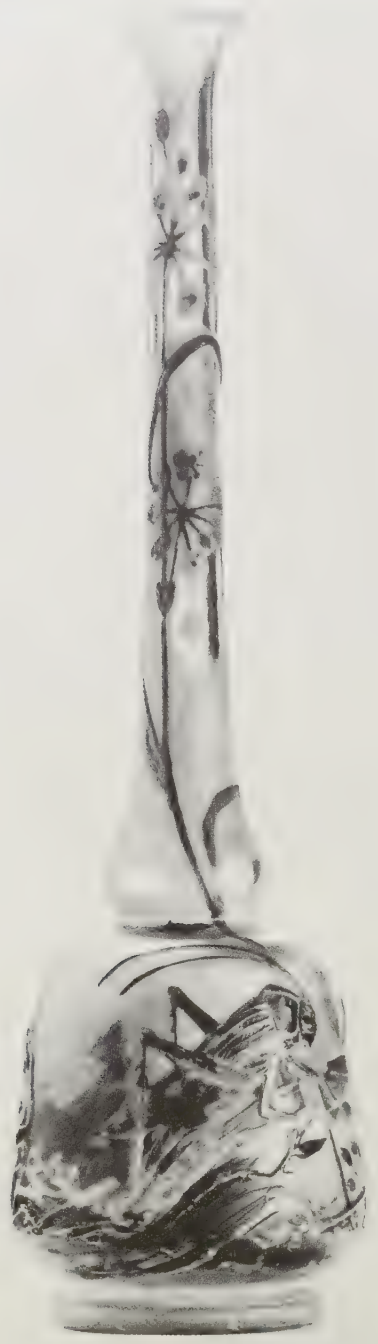
Moser exhibited at the 1878 Paris International Exhibition, the 1897 Brussels Exhibition, and the 1900 Paris Universal Exhibition, where they were awarded a silver medal. In 1900 they briefly produced some cameo glass in the style of Nancy, somewhat similar to late industrial Gallé. In 1902 they exhibited at the First International Exhibition of Modern Decorative Arts in Turin and at the Austrian Arts and Crafts Exhibition in London, in 1905 at Liège, and in 1906 at the German-Bohemian Exhibition, where they were awarded a Diploma.

After the break-up of the Austro-Hungarian Empire Moser found itself in Czechoslovakia, and Karlsbad became Karlovy Vary. In the 1920s they executed designs for members of the Wiener Werkstätte including Josef Hoffmann (1870-1956), Hilda Jesser (b. 1894), E. J. Wimmer (1882-1961), Dagobert Peche (1887-1923) and Julius Zimpel (1896-1925). In 1922, under the direction of Leo and Richard Moser they took over their greatest rival in the production of art glass in Bohemia, Meyr's Neffe, purchasing the Adolf glassworks. The firm survives today.

MULLER FRÈRES

The Muller family came from Kalhausen (Moselle), and were traditionally glass-workers. Shortly before the outbreak of the Franco-Prussian War of 1870 the older of the nine brothers and one sister had already become apprentices at the neighbouring Saint-Louis glassworks. The annexation of Alsace and part of Lorraine by Germany following the French defeat forced the Mullers to flee to Lunéville.

The two oldest brothers, Désiré and Eugène, were the first to join Émile Gallé's workshop at Nancy, specialis-



Muller – Fluogravure vase in green and burgundy etched with a locust and plants, 30 cm *c*1910. (Collection Dépôt 15, Paris)

ing in glass engraving and carving, in about 1885. The rest of the family apprenticed themselves to various glassworks and were soon expert craftsmen. Henri, Pierre and Victor Muller soon joined their brothers at the Gallé glassworks.

In about 1895 Henri Muller left to set up on his own, and opened a small glass decorating workshop in Lunéville, in the rue Sainte-Anne. He was soon joined by his sister and brothers, all now expert glass decorators. The vessels were blown to their instructions at the Hinzelin glassworks in nearby Croismare, then decorated at Lunéville.

The Mullers constantly experimented with decorative techniques. Expert carvers, they would use the wheel to obtain the subtlest effects. At one end of the scale simple two layer vases were wheel-carved with a single large flower. At the other a vase would be cased with up to seven different coloured glass layers and deep-carved with intricate landscapes, flowers or birds.

The Mullers also used hydrofluoric acid creatively, and not merely as a short-cut for mass-produced designs. Using multiple layers of coloured glass, acid was used to obtain sharply drawn designs which are very effective in landscapes with animals. Larger items, particularly lampshades, are especially effective.

One technique they developed was called 'fluogravure'. Here the vessel, usually a single layer, but occasionally overlaid, was enamelled with patches of intense colour, certain portions of the vase being painted with enamels with specific aspects of the desired pattern. Once vitrified, the enamel could then be etched along with the body of the vase. Hydrofluoric acid was normally used, using several baths to obtain the required depths of design. The multicoloured enamel design was thus starkly outlined against the vase in cameo, while the glass body itself was also etched, often given a rich look by remnant patches of enamelling. Metallic oxides were frequently used in the enamel to give it an iridescent finish. Some of these vessels were treated almost like enamel paintings, the subject treated in shallow relief with jewelled colours. Some eerie night scenes are particularly effective, with owls and bats in a landscape.

Appliqué glass handles and trailings were sometimes used, as were applied glass cabochons carved as beetles, flowers, etc. These cabochons were often gilded. 'Verrerie Parlante' in the style of Gallé was occasionally produced, emphasising or delineating a particular design with the addition of a quotation etched or carved on the vessel. Muller shapes are frequently adventurous.

In 1906 Désiré and Henri Muller were invited to the Cristallerie de Val Saint-Lambert in Belgium by its General Manager, Georges Deprez, who wished to break into the market for the enormously popular art glass in the Art Nouveau manner made by Gallé and Daum. The Mullers were commissioned to design vases 'in the style of Daum'. In the less than two years they spent at the Val they designed some 411 different models, mostly for the 'fluogravure' technique. Most patterns are floral (with the occasional addition of an insect) on opaque or translucent glass overlaid in strongly coloured enamels, sometimes with metallic oxides, the design made using hydrofluoric acid. These vases are signed 'VSL' on the body of the vessel.

In 1908 the Mullers exhibited at the Franco-British Exhibition in London. In 1910 they exhibited at the Paris Verrerie et Cristallerie Artistique (Artistic Glass and Crystal

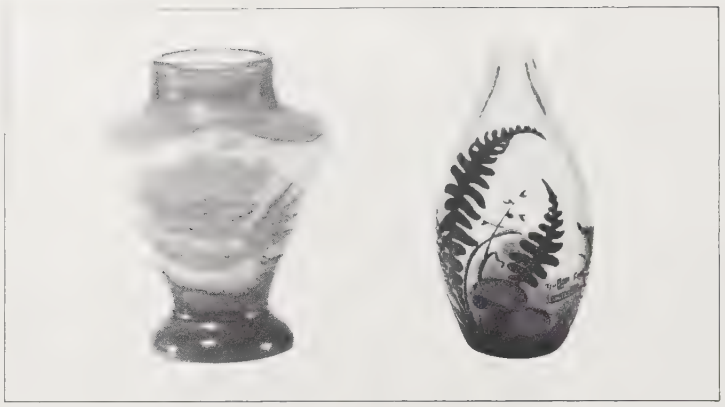
Muller – Padded vase deeply wheel-carved in cameo in a floral design, *c*1900. (Collection Félix Marcilhac, Paris)

Muller Croismare – Vase in purple overlaid glass cameo-etched and carved with a peacock and plants, 19.4 cm *c*1910. (Editions Graphiques, London)

Ware) Exhibition. That same year the Mullers moved to larger premises at rue de la Barre in Lunéville.

The Mullers followed Gallé's practice of using a wide variety of signatures. Most wheel-carved vessels are signed 'H. Muller' or 'Muller' or 'Muller Croismare' or 'H. Muller Croismare' or 'Muller Croismare près Nancy' (i.e. close to Nancy) or just 'Croismare'. The 'enamel paintings' vases in fluogravure are signed on the base in a technique similar to that used for the decoration, and is therefore often difficult to find and decipher. A circular trademark with 'H. Muller Croismare près Nancy' around a butterfly was sometimes used incised or etched on the base. The base pontil mark was sometimes ground after it was signed, thus leaving only the peripheral edges of the signature still visible. Only a very few acid-etched vessels bear the Croismare mark.

Most acid-etched vessels are signed 'Muller Frères Lunéville' or 'Muller Frès. Lunéville' or 'Muller près Lunéville' or merely 'Lunéville' in intaglio script or etched in cameo on the side. These etched vessels and lamps



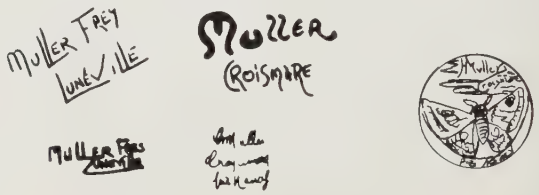
Muller – *Left*: Small wheel-carved vase in amber and beige, 10 cm *c*1905; *Right*: Small fluogravure vase in clear glass overlaid with brown glass, 11.5 cm *c*1900. (Private Collection, London)

frequently have very elaborate designs, and are usually in strong colours that come vibrantly alive when light shines through them. The Lunéville signature was also used on some rare vessels which were both cased and enamelled and then wheel-carved in cameo.

An extraordinary range of lamps shaped as naturalistic birds or animals was produced in association with Chapelle, who both designed them and executed the wrought iron construction. In each case a wrought iron armature shaped to the outline was made: an owl, a cockerell; a snail, a stork. The head was frequently detailed, the cockerell in particular provided with a fine crest and splendid metal tail feathers. Richly coloured glass (red, blue, yellow) was then blown into the wrought iron armature, the glass bulging out through the metal. The reticulated glass and iron figure stood on metal legs and feet placed on a metal plaque, then mounted on a marble base.

The outbreak of war in 1914 forced the Mullers to close down and disperse. Eugène Muller was killed. The other brothers went to work for various glassworks in France. Camille, Jean and Auguste went to the Sèvres glassworks of Landier et Houdaille, while Émile joined the Choisi-le-Roi works.

After the Armistice the Mullers returned to Lunéville and, in 1919, purchased the Hinzelin glassworks at Croismare. Their post-war production was almost exclusively commercial, concentrating on the mass-production of ceiling light fittings, bowls and shades. They were generally made of an outer layer of transparent glass sandwiching streaks of colour which were applied on the surface of the transparent inner layer. Both surfaces were then given a mat finish by the use of acid. The final aspect was of a translucent mottled glass which was particularly suitable for light fittings, allowing the maximum transmission of light while concealing the light bulb. These bowls, shades and vases are normally signed 'Muller Frères Lunéville' by the use of acid on stencils, so that the signature looks polished on the mat-finished surface. At the height of the twenties the Mullers were employing some three hundred workers.



The financial crash of 1929, followed by the economic Depression which caught both the United States and Europe in its grip, eventually forced the Mullers to cease production in 1933 and finally close down in about 1936.

A. DOUGLAS NASH CORP.

A. Douglas Nash was the eldest son of Arthur J. Nash (1849-1934), an Englishman, who had been the manager of the White House glassworks, a Webb subsidiary in Stourbridge. A. J. Nash emigrated to the United States in 1892 with his family. He there met Louis Comfort Tiffany, with whom he set up the Stourbridge Glass Company, later known as Tiffany Furnaces, of which he was both vice-president and manager. He retired from active participation in 1919, and was succeeded as manager by his son, A. D. Nash, an able businessman and original designer, who ran the works successfully until 1928 when Tiffany, who apparently objected to the 'commercialisation' of the production, withdrew his financial support and ordered the works to close down. Very shortly afterwards Nash managed to buy the works from Tiffany who, however, insisted that his name and trademark was not to be used. The A. Douglas Nash Corporation was incorporated in December 1928, with Nash, his father, and several of his friends as stockholders.

Only one glass shop was in operation, with Jimmy Stewart, who had worked for the old firm since 1895, as gaffer. Even when a second gaffer was employed, only one shop at a time was in operation. A showroom for their wares was opened in Fifth Avenue, with A. D. Nash's son Donald in charge. Gold and blue iridescent glass was produced, usually decorated or shaped with moulded optic patterns. Pastel glass was made, as was some transparent coloured glass with some iridescence. Vases were made with

transparent colourless or multicoloured bubbles throughout. An extensive range of table-ware was made of lightly tinted glass, and included a curious range of ewers and decanters in single and double ring designs. This involved depressing the centre of the vessel, then cutting through the glass, so that a circular hole was made there. In a double ring design the second hole was generally placed above the first, and at right angles to it.

The most interesting innovation in glass patterning was Nash's **Chintz** glass. This was produced in a wide combination of colours. It consisted of a basic pattern of alternating broad and narrow stripes in various ribbed shapes, sometimes combined with optic patterns. The technique was complex and involved great skill. The glass had first to be blown into a ribbed mould, then rolled over powdered coloured glass to provide the alternate colour, then back into another mould to give a fine line decoration. As it needed to be reheated several times during this process, the colours tended to run together while the shape was difficult to maintain. It was, however, very beautiful, and became quite popular for a while. Nash also made some metalware, usually enamelled. The earliest Nash glass was signed on the base 'Corona' or 'A.D.N.A.' (for A. Douglas Nash Association). After incorporation in December 1929, the glass was signed 'Nash'.

Nash employed salesmen to place his glassware throughout the country, and much of it was sold through Tiffany & Co. in New York. The depression that had followed the Stock Market crash of 1929 made it extremely difficult to sell decorative glass, and the enormous competition of cheaper glass imported from Czechoslovakia made it very difficult for Nash to continue production. In 1931 the works closed down.

A year later Nash went to work for the Libbey Glass Manufacturing Company in Toledo, Ohio, where he designed a variety of engraved and coloured glass. Nash took out several patents for glass which he assigned to Libbey, including one for his Chintz glass and one for a curious Art Deco cubist vase, but none was ever put into production. In 1933 Libbey issued a catalogue of luxury glassware designed by Nash, prototypes of which were exhibited to an invited audience at the Waldorf Astoria Hotel in New York. Much of it proved too expensive to sell in any quantity, and production was not continued. Nash did, however, design some fairly inexpensive glass for Libbey, including cut crystal and simple threaded and pulled decorations as well as coloured and opalescent glass. He also designed some novelty patterns for them, including a simple variation of Tiffany's Moravignian glass in which the vessel was of clear crystal and the applied lily-pads were of coloured glass; and a range of table-ware in which the crystal bowl was connected to the crystal foot by a stem consisting of an animal form in black or coloured opalescent pressed glass, including bears, rabbits, antelopes and monkeys. Nash-designed glass made by Libbey was usually signed 'Libbey' on the base or, if unsigned, originally had a paper label marked 'Libbey Glass Co., Toledo, Ohio'.

Nash left Libbey in 1935, but was never able to work with art glass again. He had a variety of jobs, some with glassworks in Pennsylvania. He died in New York in 1940.

HENRI NAVARRE

Henri-Edouard Navarre was born in Paris on April 4th, 1885. Trained as an architect by his father, he studied sculpture at the Bernard Palissy School in Paris before going through an apprenticeship as gold and silversmith. He then studied at the School of Fine Arts before studying the technical side of leaded-glass and mosaics manufacture at the Arts and Crafts Conservatory. As a sculptor he executed many important public as well as private commissions. Among his major monuments are the statues commemorating Guynemer, the French aviator, carried out in 1922, and that of Galand, carried out in 1926, while he carved the bas-reliefs for the monument commemorating America's war effort in the First World War at Pointe-de-Grave. He was commissioned to design and carry out the sculpture for the Gate of Honour at the 1925 Paris International Exhibition of Decorative and Industrial Arts, and executed important decorative sculptures for the Michodière Theatre and the Maison du Japon at the Cité Universitaire, both in Paris. He executed a large figure of Christ in moulded glass as well as a gilded bas-relief reredos representing Martha and Mary for the chapel in the Ile-de-France liner in 1927, and designed the Grille of Honour for the Colonial Museum in 1931.

Working on a smaller scale, Navarre executed a number of small statues and plaques, as well as a large number of medals, many inspired by Diaghilev's Ballets Russes. He exhibited regularly in Paris at the Salons of the Société Nationale des Beaux-Arts, the Salon d'Automne and the Salon des Artistes Decorateurs, and was elected president of the jury for sculpture at the Salon d'Automne. He exhibited internationally in Brussels, Cairo, Stockholm, Copenhagen, Oslo, Athens and in New York in 1928 and 1930.

Navarre – Furnace-wrought vase, *c*1935. (Collection Félix Marcilhac, Paris)

Navarre – *Mask of Madame H.N.*, crystal block modelled with hydrofluoric acid, 20 cm *c*1930. (Collection Dépôt 15, Paris)

Navarre had mastered stone, marble, bronze and wood. Before 1914 he had worked briefly as a goldsmith and then, about 1924, finally came to glass. The work of Maurice Marinot had clearly impressed him deeply, and he began to design glass panels and windows, some of which were made for the Mairie (Town Hall) of the XXth Arrondissement in Paris in 1930 and for the offices of the *Intransigeant* newspaper.

Navarre exhibited his first vases at Edgar Brandt's shop, but soon signed a contract to exhibit at the Maison Geo. Rouard. Working with heavy thick-walled glass, he favoured plain, simple shapes, employing the technique of modern pressed glass to achieve the shapes. The essence of Navarre glass is in the internal decoration, using swirls and whorls of colour, internal granulations and intercalary textures, all achieved by the use of powdered metal oxides patterned on the marver, onto which the parison was rolled before encasing it in its outer layer. All his later glass was executed at the Verrerie de la Plaine Saint-Denis, near Paris.

Among the rarest and most curious works produced by Navarre are a series of sculptures in glass. These were first moulded, and then finished with the use of hydrofluoric acid. Generally made of clear crystal, they sometimes have coloured streaks within. The subjects are mostly masks of human faces, some being portraits of his wife. There is some influence of African art present in these masks, which have a massive simplicity.

H. NAVARRE HNAVARRE

The vessels are normally signed 'H. Navarre' on the base, engraved with a diamond point. The glass sculptures are sometimes signed in the same way, but many are fragmentary or incomplete, and these are invariably unsigned.

Among several honours he received, Henri Navarre was created a Knight (Chevalier) of the French Legion of Honour. He died in Paris in 1971.

JOHN NORTHWOOD

John Northwood was born at Wordsley, Staffordshire, in 1836, one of several brothers and sisters. A prize pupil at the Stourbridge School of Art, he was apprenticed when twelve years old to the Wordsley glasshouse of *W. H. B. & J. Richardson*, where he was taught painting and enamelling on glass. In 1852, when Northwood was only sixteen years old, the firm closed down and he was taken on by his elder brother, William Northwood (1828-1867), to learn carpentry. A year or so later, however, his former employer Benjamin Richardson (1802-1887) reopened the glassworks and hired back several former employees, including Northwood, Edwin Grice (1839-1913), Thomas Bott (1829-1925) and W. J. Muckley. Northwood remained there for several years, acquiring a thorough grounding and experience in every aspect of glass decoration. Frequently during those years, Benjamin Richardson would bring in a Wedgwood jasper copy of the *Portland Vase*, show it to the men and offer a thousand pounds to the first one able to copy it in glass.

The *Portland Vase* was a Roman cased glass vessel dating from between the First Century B.C. and the First Century A.D., carved with various personages, and had been in the Barberini family in Rome for several centuries. It had been sold to Sir William Hamilton, the British Ambassador to the Court of Naples, for £1,000, resold by him to the Duchess of Portland for £1,800, damaged by the Duchess of Gordon, put up for sale in 1785 in the disposal of the late Dowager Duchess of Portland's property and bought for 980 guineas by the Duke of Portland. Josiah Wedgwood had promptly borrowed the vase and spent three years making jasper ware replicas in an edition of forty-five, after which the original was loaned to the British Museum. In 1845 a young painter called William Lloyd hurled a carved stone at the vase and smashed it into some 200 fragments. The law was such that Lloyd could only be prosecuted for damaging the glass case which housed the vase, and he received a nominal fine. Moulded copies of the vase by Pichler and Tassie as well as Wedgwood replicas were used as models for the task of restoration. The incident and the subsequent trial had, however, served to focus public attention on the cameo vase, and had brought out the fact that it had been made of glass, a fact that had become obscured through the fame of the Wedgwood replicas. Clearly impressed by Richardson's offer, Northwood promptly began to experiment with the techniques involved in casing glass and carving it.

Northwood – The *Milton Vase*, carved with the avenging angel Raphael in blue glass overlaid with white, the reverse with Adam and Eve. The shape was designed by Philip Pargeter, the subject from Milton's *Paradise Lost*, 34 cm 1878. (Sotheby's Belgravia)

Starting in the mid 1850s, Northwood experimented with blue vases coated with white glass, which he painstakingly carved with neo-classical designs copied from a design book by Professor Kiss of Berlin. Few if any of these early experiments have survived intact.

In 1861 John Northwood, his brother Joseph (1839-1915), Henry Gethin Richardson and T. Guest set up a small independent etching shop in Wordsley. About a year later Richardson and Guest left to open a separate etching shop at Brettell Lane called Guest Brothers, while the Northwood brothers set up as J. & J. Northwood.

In 1864 J. B. Stone (later Sir Benjamin Stone), a proprietor of the Birmingham glassworks of Stone, Fawdry & Stone, commissioned John Northwood to execute the *Elgin Vase* for him. The fifteen and a half inch high clear flint glass blank was made at Stone's glassworks, and Northwood spent some eight years on it, carving a Hellenic frieze all round the vase representing two equestrian scenes copied from the Elgin Marbles from the Parthenon exhibited at the British Museum. Northwood himself designed most of the carving tools he used, and in using them acquired invaluable experience in the patient task of glass carving. Completed in 1873, the vase was presented to the Birmingham Art Gallery in 1878 by Stone.

In 1873 Northwood was approached by his cousin Philip Pargeter (1826-1906), who believed he could make the blank of a replica of the *Portland Vase* if Northwood could carve it. Born at Wordsley, Pargeter had entered his uncle Benjamin Richardson's glassworks on leaving school, and had learned all aspects of glass manufacturing during his years there, as well as becoming a fine glass engraver. In 1863 Pargeter became one of the founders of the Hodgetts, Richardson & Pargeter glassworks which, however, was dissolved in 1869, at which time he took over The Red House glassworks while his former partners founded Hodgetts, Richardson & Co.

Pargeter assembled a team (or 'chair') comprising Daniel Hancox (workman), Joseph Worrall (servitor), Charles Hancox (Daniel's son, footmaker), and Benjamin Downing (taker-in). They were sent to the British Museum to see and study the original vase, then made several models to size in flint glass. Considerable experimentation had to be carried out to produce a thin blue glass vase overlaid in opaque thick white glass, both layers of which would need to contract at the same rate to prevent its collapse. Many blanks were made. The technique finally adopted consisted of making the outer white layer first, then using this as a cup into the centre of which the blue plastic glass was carefully placed and blown to size, being very careful not to allow it to touch the white sides until it reached the required size. The chosen blank had neither flaws nor air bubbles in it.

Northwood spent over three years engraving the vase. Edwin Grice, who made the handles for the vase, built a fitted wooden box for the blank, which Northwood would periodically take to the British Museum to compare the course of his work with the original, taking frequent notes on minute details. After two years of work, the vase cracked through uneven expansion when it was held with warm hands on a cold night. A little later it split into two pieces. Fortunately it was a perfectly clean break and after gluing it together, the crack was barely visible (though the blast from a bomb in 1916 reopened the crack).

When the vase was finally completed in 1877 it became an immediate sensation. Richardson's challenge had been met some twenty years later.

Pargeter exhibited the vase widely. Put on show at Stoke-on-Trent in January 1877, it led to a commission for Northwood from Wedgwood, who asked him to polish a new pottery edition of the vase. He agreed provided there was no time limit and, after some two years, finished fifteen replicas.

No sooner was the *Portland Vase* completed than Pargeter commissioned Northwood to execute one more vase and three tazzas in cameo glass. Pargeter had himself designed the thirteen inch high vase with subjects drawn from Milton's *Paradise Lost*. The tazzas, each eight inches high and nine and a quarter inches in diameter, were designed to represent *Art, Science* and *Literature*. The bowl of *Art* was carved with a profile of Flaxman, with a circular band of holly just inside the rim. *Science* was carved with a profile of Newton with a band of hawthorn. *Literature* was carved with a profile of Shakespeare, the band being oak foliage. Each profile was ringed with a circle made up of flat bead shapes. *Art* and *Science* were exhibited at the 1881 Plymouth Art and Industrial Exhibition, where they were awarded a First Silver Medal. All were displayed in Pargeter's London showrooms.

Northwood's involvement with these special commissions did not prevent him from leading a very full artistic and commercial life. His brother Joseph looked after the business side of the firm, which undertook an enormous range and variety of decoration for many different Stourbridge and other glasshouses. John Northwood himself not only worked as a supreme decorator and designer, but also taught at the Stourbridge School of Art as well as inventing a whole range of machines which, among other things, etched, threaded and combed glass. Northwood often taught his apprentices, and often took on some of his pupils into his firm. Frederick Carder, who worked for several years at Stevens & Williams before becoming one of the founders of the Steuben glassworks in Corning, New York, was one of his pupils. George and Thomas Woodall were both apprenticed to J. & J. Northwood, and were both pupils at the Stourbridge School of Art before entering the firm of Thomas Webb & Sons.

In 1876 Thomas Wilkes Webb, head of Thomas Webb & Sons, commissioned Northwood to produce for him a fine cameo vase. This was to be Northwood's last great cameo undertaking, and it took him six years to complete

Above, right and below
Northwood – The *Portland Vase*, two sides and the base. Deep translucent blue glass overlaid with opaque white, carved as a copy of the Roman glass vase from the Palazzo Barberini, 26.4 cm 1876. (Sotheby's Belgravia)

it. Referred to at first as the *'Amphitrite' Vase,* it has since become known as the *'Dennis' Vase*, after Webb's Dennis Glassworks, where the blank was made, or as the *'Pegasus' Vase*, after the figure forming the finial of the cover. Twenty-one inches high, it is made of blue glass overlaid with white, and decorated with figures of Aurora and Amphitrite, inspired by the Greek vases in the British Museum and the classical style of Flaxman, whom Northwood greatly admired. The vase has two short projecting white arms, carved as the heads of winged seahorses, while the lid is surmounted by a white finial carved as the full figure of Pegasus, the winged horse.

The basic carving of the handles and finial was executed by Edwin Grice (1839-1913), after wax models by Northwood, and was carried out with files dipped in paraffin. Apprenticed when very young to a Stourbridge iron manufacturer where he remained until he was twenty-two years old, Grice then went to work for J. & J. Northwood at Wordsley as a glass decorator. He remained there for eighteen years, working closely with John Northwood on several projects. He left in 1879, and joined Guest Brothers at Brettell Lane, where he remained for twenty-five years, retiring in 1904.

Three of Northwood's cameo vases were exhibited at the Paris International Exhibition in 1878. The *Milton Vase* was on display in James Green & Nephew's stand; the *Portland Vase* was on display in the stand of R. P. Daniell, a dealer; and the unfinished *Dennis Vase* was on display in Thomas Webb & Son's stand, a spectacular stand with a wide range of glass including elaborate chandeliers, which won the Grand Prix for glass as well as the Legion of Honour for Thomas Wilkes Webb. Cameo glass was also on display in Hodgetts, Richardson & Co.'s stand, mostly executed by Alphonse Lechevrel, but including an unfinished version of the *Portland Vase* by Joseph Locke.

The *Dennis Vase* was completed in 1882, when it was sold to Tiffany & Co. in New York, who then sold it to Mrs. Pierrepont Morgan for a sum supposed to be around $15,000. In 1886 part of Mrs. Morgan's estate was sold at auction by the American Art Association in New York, and the vase fetched $5,900; while a small Chinese Peach Blow porcelain vase sold for $18,000, inspiring a spate of glass imitations in the United States and Britain. After entering the Collection of W. D. Breaker, the *Dennis Vase* was eventually sold in 1928 to John Gellatly for $1,800, and he presented it a year later to the National Collection of Fine Arts, Smithsonian Institute.

The carving of cameo glass by hand using a range of tiny chisels and files, most of which were designed and made by the craftsmen who used them, was a necessarily long and painstaking process and not commercially viable. Nevertheless public interest in the revived art of cameo glass had to be satisfied, and faster techniques evolved. Hydrofluoric acid was used to rough out the design on the glass. Highspeed lathes were used to polish backgrounds. And the engraving wheel became the carving tool, hand instruments being used only for final details, if at all. Northwood pioneered all these new techniques.

In 1882, actively encouraged by his former pupil, Frederick Carder, John Northwood became art director at Stevens & Williams, a position he retained until his death twenty years later. During those years he directed the production of an enormous range of moulded, blown, enamelled, decorated, etched, engraved, threaded and carved glass. The firm of J. & J. Northwood became virtually the cameo workshop for Stevens & Williams. Under Northwood's direction, the style of cameo decoration became largely floral in a classical and restrained idiom. There were, of course, variations, and other designs were used, including birds, abstract patterns, landscapes and designs of Chinese inspiration (dragons, etc.).

Hand carved cameo items were still occasionally made by members of Northwood's team, including his son, John Northwood II (1870-1960), his nephew William Northwood (1857-1937) and Joshua Hodgetts (1857-1933). More commercial cameo, however, occupied much of their time during the brief flowering of demand for this glass. It was, indeed, produced in a variety of qualities, from elaborate two, three and four colour overlays with intricate, complex designs involving minute changes in depth of the glass layer designed to convey every aspect of, say, the surface of a leaf; to simply acid-etched designs on thin-walled vessels dipped into a pot of white molten glass to become coated with an even thinner part layer of it.

On Northwood's death in 1902, he was succeeded as art director and technical manager by his son, John Northwood II, who remained with Stevens & Williams until his retirement in 1947.

JEAN NOVERDY

Jean Noverdy operated a glassworks at Dijon in the 1920s, producing a quantity of long stemmed vases with globular bodies, similar to the 'berluzes' produced by Daum and Muller Frères. They were in a variety of colours, the lower part of the body usually being in a darker colour than the upper half, which was frequently enlivened with internal flecks of coloured glass. The surface is mat-finished with acid. They are signed 'Noverdy France' in script on the lower half of the side using acid through a stencil to produce a polished glass signature against the mat surface.

A certain amount of acid-etched cameo glass was also produced by Noverdy in the style of late industrial Gallé. These have the same signature as above, but etched in shallow relief cameo.

Noverdy exhibited at the Salons des Artistes Français in 1926 and 1928.

ORREFORS

The Kosta glassworks were founded in Småland, a province in south eastern Sweden, in 1742. Over the years a vast number of glassworks branched out from Kosta and from each other, some surviving, some not, but turning the district into the principal glass-producing area in Sweden. In the eighteenth century an iron foundry was established at Orrefors. As its production became less profitable, a small glassworks was established in 1898 for the production of window-panes, ink bottles and cheap table glass. The factory was bought in 1913 by consul Johan Ekman of Göteborg, who decided to reorganise it for the production of more ambitious decorative glass. He hired Albert Ahlin as manager, and they closed down the iron works, expanded the facilities, and travelled to various European centres to see the best available glass produced. In 1914 Knut Bergqvist, a master glass-blower, joined them. After some considerable correspondence with various artists, Simon Gate (1883–1945) was hired in 1916, and Edward Hald (b. 1883) a year later. Neither had had any previous experience of working with glass. Gate, a wealthy farmer's son, was a graduate of the Stockholm Academy, where he had been trained as an academic painter of classical subjects. Hald, born in Stockholm, was cosmopolitan and sophisticated. He had travelled widely, studied painting with several creative artists, including Johann Rohde and Henri Matisse, and had designed ceramics for Rörstrand. Bergqvist showed them the properties and basic techniques of glass, from blowing to decorating. A subsidiary glassworks was set up at Sandviken for the production of table-ware, and Gate and Hald very quickly designed a variety of table glasses for this factory. Fascinated by the possibilities of glass-blowing, Gate also designed some elegant tall, thin vases in tinted glass, some with handles.

The first glass produced in 1913 consisted of a variety of bottles and traditional cut crystal. As early as 1914, however, after Bergqvist had joined the firm, Orrefors had begun the production of cased glass in the style of Nancy. Though the designs, mostly by Heinrich Wollman, were attractive enough, representing such subjects as peacocks in plant and floral surroundings, the acid-etched compositions over two or three coloured glass layers were not artistically satisfactory.

Shortly after his arrival at Orrefors Gate began working on possible technical improvements with Ahlin and Bergqvist. The technique they developed was given the name 'Graal' (after the Holy Grail). The very first 'Graal' glass designed by Gate in 1916 is kept at the Orrefors Museum. Its simple shape was acid-etched in cameo, the resulting vase then fired at the furnace to soften the harsh edges of the design caused by the acid, and finally clearly cased and polished smooth. The decorative possibilities of this glass were obviously great, and Gate, as well as Hald shortly after his arrival, designed a great variety of decoration for 'Graal' glass. With increased confidence, their designs became increasingly adventurous, Gate's often showing shadowy syncopated figures in movement, Hald's being very linear, often non-figuratively ornamental.

A great variety of glass vessels, designed and executed by Bergqvist, was also made during those early years. These included many vessels of Venetian inspiration, and several *tours-de-force*, complex shapes in coloured glass involving all the glass-blower's skill. Gate and Hald also tried their hand at designing such pieces. Other vessels in transparent glass were made in undulating optic patterns.

Gate and Hald were then set to designing for the engraver's workshop set up under Gustaf Abels. A very clear, transparent crystal was used, the decorative pattern was drawn on it with adhesive ink, and engraved in intaglio using a lathe equipped with copper wheels in a large variety of diameters charged with a mixture of oil and emery powder. Since the wheel revolves in a circle, the decorative motifs perforce have to be curved, lending themselves exceptionally well to the depiction of the nude.

Orrefors – Geometric faceted grey glass vase wheel-carved in intaglio with a stylised nude, designed by Simon Gate, 23 cm *c*1928. (Art Gallery & Museum, Glasgow)

Orrefors - Bulbous clear glass vase wheel-carved in intaglio with a kneeling nude, designed by Vicke Lindstrand, 26 cm *c*1938. (Sotheby's Belgravia)

It is a curious fact that the deeper the glass is hollowed, the more prominent it appears in the finished design. Gate invariably preferred to design chunky models of heavy glass, often panelled, deeply wheel-carved with classical and biblical subjects, though his more functionalist shapes are most often decorated with stylised nudes. Hald tended to design for thinner-walled glass using shallow engraving with amusing simplified figures, often in the style of Matisse. Orrefors engraved glass became enormously popular and often imitated and was greatly admired at the Göteborg Jubilee Exhibition in 1923 as well as at the Paris International Exhibition of Decorative and Industrial Arts in 1925, when Orrefors, Simon Gate and Edward Hald were each awarded a Grand Prix, while Knut Bergqvist, Gustaf Bergqvist, Gustaf Abels, Gustav Augustsson and Viktor Jakobsson were awarded Gold Medals. René Lalique commented: 'Ça, c'est du verre. C'est bon.' ('This is glass. It's good.') Marinot's admiration was expressed somewhat more laconically: 'Il n'y a que ca.' ('This stands alone.')

At the Paris Exhibition Gate and Hald were greatly struck by the glass of Maurice Marinot, and they designed several vases and bottles inspired by him. In 1927 Orrefors exhibited at the New York Metropolitan Museum of Art in the Swedish Industries Exhibition, then at Amsterdam in 1928, Barcelona in 1929, Stockholm in 1930 and London in 1931.

Vicke Lindstrand (b. 1904) joined Orrefors in 1928, designing for all their various techniques, and exhibiting his glass along with that of Gate and Hald at all the major international and national exhibitions, including the 1933 Milan Triennale, the 1937 Paris International Exhibition, and the 1939 New York World's Fair. He left Orrefors in 1941, spent ten years designing ceramics at Upsala-Ekeby, then joined Kosta in 1950 as principal designer.

In 1930 a new technique called 'Ariel' was developed at Orrefors. This involved sandblasting patterns into the inner layer of the vase, then laying an outer glass layer over this, enclosing the sandblasted air channels which form patterned air bubbles. Further variety could be produced by the use of different coloured glass inlays.

In addition to individual vessels, Orrefors executed a number of important commissions, which included glass wall-claddings, doors, panels, chandeliers and other light fittings, Gate and Hald designing these individually and together. In 1925 they provided the decorations for Rosenbads Restaurant and the Concert Hall, both in Stockholm. The Göteborg Concert Hall was decorated in 1935, while the Swedish-American liner Stockholm was decorated in 1939. The vast glass panels on walls and doors were sandblasted with intricate scenes designed by Gate and Hald. Gate also designed glass panels and stucco reliefs with religious scenes for several churches and chapels.

Many other fine designers worked for Orrefors. Edvard Strömberg (1872-1946) after working from 1917 to 1918 at Kosta, came to Orrefors as technical director from 1918 to 1928, when he moved to the Eda glassworks before opening his own glassworks, the Strömbergshyttan. John Selbing (b. 1908) joined in 1927, designing light, airy shapes as well as specialising in glass photography. Sven Palmquist (b. 1906) joined in 1928 working as an engraver, then with coloured glass, and developing a variant of 'Graal' glass called 'Ravenna', in which the surface of the very thick, heavy glass is divided into a pattern of regular coloured openings which reveal inner layers of other colours in different regular patterns. Nils Landberg (b. 1907) also began as an engraver then moved to free-blowing of glasses of elegant shape on very slender stems.

Orrefors vases are usually signed 'Orrefors' or 'Of' with a design number on the base, sometimes also with the name of the designer. Glass designed by Gate is usually

marked with the letter 'G' for engraved glass, 'GS' for soda glass produced at Sandviken, 'GU' for furnace-worked glass, 'GA' for cut glass. The letters 'H', 'HS' 'HU', 'HA' similarly apply to glass designed by Hald. Graal glass is marked 'Graal', and the initials 'KB' represent Knut Bergqvist, 'HW' represent Heinrich Wollman, 'Hd' or 'EH' represent Hald, 'L' represents Lindstrand. Exceptional pieces were signed in full by the designer either on the base or within the design. The firm has continued to train and employ many new designers, and produce blown, engraved and decorated table glass and presentation and collector's pieces, as well as glass sculpture and special commissions. Their style is widely imitated but rarely equalled.

PALLME-KÖNIG & HABEL

In 1786 Ignaz Pallme-König founded a glass refinery in the name of Pallme und Ullmann in Steinshönau. His grandsons Joseph and Theodor Pallme-König took over in 1887, merging two years later with the Elizabethhütte glassworks at Kosten (near Teplitz) run by Wilhelm Habel, which had been their principal supplier of raw materials, to form the Gebrüder Pallme-König & Habel (i.e. Pallme-König Brothers & Habel). By 1900 they employed some 300 craftsmen. Their art glass production was mostly of iridescent glass overlaid with glass threads meshed in patterns all over the surface (very similar to the Loetz 'Phenomenon' glass) in a variety of shapes both traditional and free-formed, including variations on the American Jack-in-the-pulpit. Some vases had glass 'flowers' in various colours pressed into their sides while still hot, then glass threads applied to form the stem and leaves. From 1910 to 1919 Josef Velik, a Pallme-König relative trained at the Elizabethhütte, took over as chief designer, working in collaboration with his brother-in-law Alois Ritter (b. 1870) to produce free-formed decorated glass. In 1920 the firm was turned into a limited company, the Vereinigte Glashüttenwerke Pallme-König Habel, Jg. Grossman's Sohn g.m.b.h., with its head office at Kosten, and incorporating the Eastern Bohemian Marienhütte and a glass refinery at Pollerskirchen.

Pallme-König iridescent glass is very similar to that produced by Loetz and other Bohemian factories. It is never signed. The pontil is normally not visible, the base being usually finished in a mould.

Pallme-König – Green iridescent glass vase with random trailings in the style of Loetz phenomenon glass, silver rim, 13 cm 1903. (Editions Graphiques, London)

PANNIER FRÈRES

The Pannier brothers took over l'Escalier de Cristal (The Crystal Staircase) in Paris in the last quarter of the nineteenth century. This was both a retail outlet and workshop, originally situated in the Palais Royal, but transferred in 1874 to a corner site at 1 rue Auber and 6 rue Scribe. Dating from the early days of the century, the shop had

specialised in fine decorative ornaments, furniture and fittings, particularly making metal mounts for glass.

The Pannier brothers continued the tradition of making finely wrought and chased metal mounts for vases, using bronze and silver-gilt. They also designed several original cased glass vases which were executed by Appert Frères, and which they wheel-carved in their own workshop.

One such vase, executed in 1888, is in the Paris Museum of Decorative Arts. Its shape is curved, like a truncated bull's short horn with its point plunged into the red base with parallel black lines of varying thickness. The body is deeply carved in cameo with a brilliantly coloured parrot, its head and tail in the red outer layer, the plumage in the jade green inner layer. Pannier vases, which they decorated with birds and insects using blanks ordered from Appert Frères, are normally signed 'Pannier – Escalier de Cristal' in diamond point. Their metal mounts are usually marked 'Escalier de Cristal' in capital letters. They exhibited their designs at the Paris Exhibitions of 1892, 1894 and 1898.

Around the turn of the century the Escalier de Cristal stocked a variety of decorative articles in the Art Nouveau style, including vases by Emile Gallé, for which they frequently supplied metal mounts.

PANTIN

E. S. Monot founded a glassworks at 4 rue de Thionville, La Villette, near Paris, in 1851. This was transferred to the then suburb of Paris, Pantin, in 1855, and its name changed from Cristallerie de la Villette to Cristallerie de Pantin. Monot exhibited opaline vases, cut glass and ruby glass at the 1855 Paris International Exhibition. F. Stumpf bought a share in the Company in 1868. Monot was succeeded as Director by his son in 1873. At the 1878 Paris International Exhibition the firm exhibited a variety of opaline glass and glass decorated in the Venetian style, glass imitation of rock crystal, as well as their first examples of iridescent glass, which they called 'Chiné Métallique'. Another original technique they employed involved mixed copper and gold crystals trapped between two layers of transparent colourless crystal. This gave an overall gold aventurine look to the vessel. They called this technique 'Rouge de Chine' (Chinese Red). The variety and scope of the techniques on display dazzled the critics, though they were less impressed with the designs, which they found traditional and repetitive, 'offering little artistic interest' as the Official Report stated. One exceptional model acquired by the Paris Conservatoire des Arts et Métiers (Arts and Crafts Museum) in 1880 represents a polished, metallic snake in iridescent glass, its body coiled, the head poised to strike. At the 1883 Amsterdam Exhibition they were awarded a Diploma of Honour.

The holding company's name had changed several times to reflect the varying ownership from Monot et Cie to Monot, Stumpf & Cie to Monot Père et Fils & Stumpf. In the 1890s the Monots retired from the Company which became Stumpf, Touvier, Viollet & Cie and, under the direction of Touvier, greatly increased the production of original designs. In about 1900 the Dutch architect H. P. Berlage (1856–1934) was commissioned by Touvier to design table glass for the firm.

At the 1900 Paris Universal Exhibition Pantin exhibited a wide variety of table and art glass, and were awarded a Grand Prix. Touvier was decorated with the Legion of Honour. Pantin art glass was now almost invariably made of glass with a greater or lesser degree of iridescence. The shapes tend to be fairly simple and symmetrical, the surface either mottled or overlaid and acid-etched with a design of flowers, landscapes, birds or animals. The landscape designs sometimes have human figures in them. The vases are often finished with gilding. Pantin exhibited at the Franco-British Exhibition in London in 1908.

Shortly before 1910, the firm was joined by Camille Tutré de Varreux, who took over the artistic direction. He designed a great variety of cameo vases normally using iridescent glass, but with more adventurous choice of décor, including landscapes, floral subjects and bird and animal designs. They are carefully executed, in two or three layers with acid cutting, and much sought after by collectors. They were first exhibited at the Gàlliéra Museum Exhibition in 1910, where they were immediately admired. All vases designed by de Varreux are signed with the pseudonym 'de Vez' in cameo script.

Art glass production from Pantin is normally signed on the base 'Cristallerie de Pantin' in script forming a circle surrounding a monogram comprised of the holding company's initials 'STV&C'. 'Cristallerie d'Art' in script forming a circle around the monogram was also used, as was the monogram with just 'Pantin' in capital letters above the monogram. Pantin used the name 'Aigue Marine' (Aquamarine) to refer to their line of iridescent art glass.

Pantin – Coiled snake in amber metalised iridescent glass, 7 cm 1880. (Conservatoire National des Arts et Métiers, Paris)

Vases designed by de Varreux were signed 'de Vez', normally on the side of the vessel. It is believed they also produced other cameo vases, normally acid cut, but with some carving, signed 'Thiancourt' in script on the base or side. These tend to be of floral design, often in unusual combinations of colour, such as pink and white, or white and amber. Thiancourt may well have been an independent designer at Pantin.

PAULY & CIA

The firm of Pauly & Cia was founded in 1836 in Venice by a family of Swiss origin. They set up to both manufacture and retail glassware in traditional 'Venetian' style, mostly for the tourist trade and for export. By the end of the nineteenth century they were established in a palace on the Ponte dei Consorzi.

At the turn of the century, and for several years thereafter, Pauly began to import glassware by Tiffany, Gallé, Daum, Loetz and other Bohemian and French firms for sale throughout Italy. At the same time, Pauly began the production of glass of Art Nouveau design. Made of a variety of Muranese glass from transparent single colour to opaque polychrome or hardstone imitations, the shapes were often derived from Tiffany or Koepping. Unfortunately, Pauly found it difficult to leave well alone, and often added little glass feet or leafy applications in the traditional style. Occasionally, however, they produced some fine simple, unadorned shapes worthy of the design revolution that had so impressed them. The firm still exists.

JEAN PERZEL

Born in 1892, Jean Perzel studied glass painting and the art of leaded-glass in Munich before moving to Paris in 1910. In Paris he worked in a number of glass workshops, including the leaded-glass workshop of Jacques Grüber. In 1923 he opened his own workshop and retail shop at 1 rue Henri Becque. Advertising himself as 'Verrier d'Art' (Art Glassmaker) he specialised in lighting.

Light fittings had, until then, rarely been thought of in terms of comfort. They were either an extension of the gas fitting, in which a naked bulb, sometimes shaded with cloth, provided electric light; or else they were frequently highly elaborate confections of bronze, glass, metal, leading, designed as an art object which, incidentally, also provided some light, generally ill-directed. While possibly marvellous objects in themselves, they did not solve the problems of actually illuminating an area in a restful and not tiring manner. Ceiling light fittings were equally unsuitable for modern life. These, too, were often artistic creations giving either insufficient or naked light, while the traditional solution of using crystal drop chandeliers to diffuse the light was much too grand for the simplicities of modern life in the 1920s. Jean Perzel set himself to solving these problems.

Working in conjunction with architects and interior decorators, Perzel introduced luminous panels and indirect lighting, softening the rigours of direct light without diminishing it. He devised ceiling and wall fittings, as well as table lamps and standard lamps. He devised abstract and geometric shapes, executed in enamelled or mat glass panels held together by lead strips. From 1927 onwards he frequently used copper or brass instead of lead. He increasingly used panels of opal glass, acid-finished or sand-blasted glass, and white enamelled glass together, providing contrasting surfaces. He only occasionally used tinted glass, usually pink. Mounts, pedestals and bases were metal, chromed, brass or copper. Metal reflectors or panels were also sometimes used.

Perzel's designs are always rigidly geometric, linear or circular. Shapes repeat and join together, cut into each other, build up into pyramidal, parallel or global constructions, sometimes involving a vast multiplicity of sections, sometimes being simple and planar.

As Perzel's reputation grew, he received a number of important commissions. He devised light fittings for the new French Line transatlantic liner, the Normandie, as well as for the Detroit home of Henry Ford. One of his more unusual commissions was for the Manik Bagh Palace in India. Built for the young Maharajah of Indore in 1930, this Art Deco palace was designed by Eckart Muthesius, the son of Hermann Muthesius (the architect who had established the German Crafts Alliance 'Deutsche Werkbund' in 1907 and introduced the works of Charles Rennie Mackintosh to Germany, as well as appointing Walter Gropius to head the school at Desau). The interior of the air-conditioned palace had some curious contrasts: specially designed fabrics from Rodier and Hélène Henry, carpets from Da Silva, furniture by Sognot & Alix, Ruhlmann, Le Corbusier and Charlotte Perriand, a glass panel by André Hunebelle, glassware by Lalique, silver by Jean Puiforcat and Charles Boyton, paintings by Jean Lurçat and Boutet de Monvel; as well as a huge stuffed tiger shot by the Maharajah. Jean Perzel provided light fittings for walls and ceilings, as well as a variety of standard and table lamps. He also received commissions to execute light fittings for the palace at Dalat of the Emperor of Annam and the palace at Bangkok of the King of Siam.

Jean Perzel's firm still exists, dealing in contemporary light fittings.

JAMES POWELL & SONS

Glasshouses were first established in London during the Roman occupation. At the end of the seventeenth century there were twenty-four glasshouses in London, while there were only seventeen in the Stourbridge area. But by 1833 there were barely three glasshouses left in London, Apsley Pellatt's Falcon Works, William Christie's Stangate Works and William Holmes' glasshouse at Whitefriars. Built in 1680 on the site of a former Carmelite Monastery, the Whitefriars glasshouse was taken over by James Powell in 1834, and remained in his family until 1919, when it was given its present corporate identity. Flint glass for table-ware and ornamental use was produced, but the firm remained surprisingly untouched by both the Victorian passion for elaborately decorated coloured glass and the cameo glass movement.

Ever since the discovery and development of lead glass in London in the seventeenth century all British glasshouses had vied with each other in their attempts at producing a

purer metal, and shape and decoration had evolved solely in order to bring out its qualities. The eighteenth century had developed a style of cutting the crystal which brought out its refractory qualities, and the popularity of cut crystal brought about a constant search for new and increasingly elaborate cutting patterns. The cut crystal vase or bowl acted as a 'bowl of fire', refracting light in continuously changing patterns as one walked around it. Cut glass patterns by the middle of the nineteenth century had become traditional and stereotyped. At the Great Exhibition of 1851, held at the Crystal Palace in London, glasshouses competed with each other to produce vast extravagances in cut glass, which included a 27 foot high cut glass fountain.

John Ruskin (1819-1900), writing in *The Stones of Venice* in 1851, attacked with violence. All cut glass, he wrote, was barbarous: all work in glass should be expressive of its two great properties, ductility and transparency. Cutting concealed its ductility and confused it with crystal. W. A. Thorpe, in his *A History of English and Irish Glass*, pointed out that Ruskin had entirely misunderstood the character of glass which has not one, but two characters. In the molten state it is soft, and may be blown or drawn. In its second, solid state, it may be cut or engraved: neither is more 'real' or 'natural' than the other. In attacking all ornamental glass, he did not distinguish between bad ornament which interrupted the design and good ornament which supported it.

William Morris (1834-1896) attempted a constructive reply to Ruskin's criticisms by commissioning his friend Philip Webb (1831-1915) to design some suitable glasses for him. On leaving Oxford University in 1856, Morris had become articled to G. E. Street, an architect working in the Gothic Revivalist style. Webb was Street's senior clerk, and the two young men became firm friends, working together for over forty years. Webb later designed and built the Red House for Morris, and became a member of his firm, Morris & Co. Webb designed a set of plain table glasses with bulging bowls, some with short stubby stems, which were made by James Powell & Sons in 1859. Webb designed a further set in 1860, the designs for which are in the Victoria and Albert Museum, but they do not appear to have been made.

In 1874 Powell commissioned a similar set of table glass from another architect, T. G. Jackson (later Sir Thomas Graham Jackson, Bart.), but these were more graceful and delicate than Webb's, with tall stems and finely carved bowls.

From the 1850s onwards Powells produced glass in the Venetian style, lightly tinted wares with decoration produced in the furnace, as well as opalescent glass. One of their leading craftsmen, Joseph Leicester, who had attended the Paris International Exhibitions in 1867 and 1878 was awarded the Society of Arts prize in 1869, and later became a Member of Parliament.

Charles Winston joined Powells in about 1840, and

Powell – Opalescent yellow vase with curled stem, freely formed, 24 cm *c*1890. (Private Collection, Jersey)

spent several years researching the history and techniques involved in the production of stained glass, which had by then degenerated into mere painting of design on increasingly larger pieces of the stained glass. Winston wished to return to the purer ancient style in which the design was built up as a mosaic, using smaller pieces of coloured glass within the leading. The cluster of small pieces of coloured glass would inevitably produce the richer, jewelled effects, and their combinations of different coloured glass pieces would be the proper medium for the stained glass designers. He also believed in only the most sparing use of enamelling on the glass for fine detail, as this clearly made the glass more opaque to the light. In 1847 he published a two-volume work on stained glass called *Hints on Glass Painting*. Winston was now prepared to commission some stained glass panels using the techniques he advocated, and he asked Benjamin Woodward, the architect (a member of the Dublin firm Deane, Woodward and Deane, and designer of the Union and the University Museum at Oxford), to approach Dante Gabriel Rossetti, a founding member of the Pre-Raphaelite

Brotherhood. Rossetti suggested a young disciple of his, Edward Jones (1833-1898). Jones was a close friend of William Morris, with whom he had been at Exeter College, Oxford, where their early intention of taking Orders had given way to more artistic ambitions.

Between 1857 and 1859 Jones produced six cartoons for leaded-glass windows for Powells. *The Good Shepherd* was made for the King Street Congregational Church in Maidstone, Kent in 1857. *The Call of St. Peter* was also made in 1857, and was retained by James Powell & Co. This may well have been the first one made by Powells, since it uses several techniques, including that of fusing one piece of glass to another (the angel's blue eye onto the pink face). Three windows were executed in 1858 for St. Andrews College, Bradfield, Berkshire, *Adam and Eve, The Building of the Tower of Babel* and *King Solomon Meeting the Queen of Sheba*. The *St. Paul* is lost. And in 1859 Powells produced the finest of Jones' designs, the St. Frideswide window in Christ Church Cathedral, Oxford, divided into sixteen compartments. Woodward, the architect of the window, gave Jones the wrong measurements, and all the cartoons had to be scaled down to the correct size, but the result as executed by Powells was spectacular. After 1861 all Jones' cartoons for stained glass windows were executed by Morris, Marshall, Faulkner & Co. In 1874 Jones himself became Sir Edward Burne-Jones.

In 1861 Henry Holiday (1839-1927) became the chief designer of stained glass at Whitefriars, working in a style very similar to that of Burne-Jones, and continuing a tradition of superb craftsmanship. The Arts and Crafts stained glass, which so impressed the young Louis Comfort Tiffany and persuaded him to execute work in this technique, owed everything to the ideas of Charles Winston and their elaboration at Powell's Whitefriars glassworks. And it was at Whitefriars that the mosaics designed by Sir William Richmond, R.A. for St. Paul's Cathedral in London and St. Thomas' Church in New York were made.

The Whitefriars glassworks were directed from 1880 to 1920 by Harry J. Powell (1835-1922), who led the firm away from the styles then current in glassmaking and towards the study of early, plain glass. Soda-lime glass was used in addition to lead crystal, and the shapes of glasses seen in Old Master paintings were the inspiration of much of his production.

In his book *Glassmaking in England*, published in 1923, Powell expressed his feelings about glass cutting. 'A study of old cut-glass proves that the object has been to give expression to one of the essential qualities of glass, namely its inherent brilliancy. That this quality should always be coyly hidden under an unbroken surface seems to be a wanton waste of decorative effect. Cutting applied in such a way as to proclaim the brilliancy of glass, without obscuring or cloaking the form given by the glass-blower's breath, helps to illustrate an essential quality of the material, and should no longer be regarded as barbarous. The cutting which most closely corresponds with the spirit of the new law is that of the Romans. Their system of lightly breaking the surface to dispel monotony and obtain flecks of brilliancy is the system from which the cutters of modern table glass should draw their inspiration'.

Nevertheless Powell and his successors at Whitefriars consistently produced simple, truly functional designs with none of the angularity thought essential on the Continent. Variations in thickness of the glass walls were used to produce optical patterns. When excesses of colour were the norm in English glass Powells produced sober, plain vessels. At the 'British Art in Industry' Exhibition held by the Royal Society of Arts in Burlington House in 1935, none of the exhibitors used colour in glass, except Whitefriars.

In the 1890s Powells produced some attractive Art Nouveau shapes in glass, frequently using an opalescent glass which shaded from yellow to cream with bluish highlights, as well as slim, elegant tinted glasses with combed and trailed decoration.

In 1919 the firm became James Powell & Sons (Whitefriars) Ltd., and was moved from Whitefriars to Wealdstone, Middlesex in 1922. James Hogan (1883-1948), who had joined the firm at the age of fifteen, became director. After a thorough apprenticeship and years of experience in the department of stained glass, he had attended classes at the Central School of Art in London. Although he continued to design leaded-glass windows, Hogan held Powells firmly to the path of plain, functional, well-proportioned glass, with only occasional furnace-worked decoration, and the firm's wares soon attracted admiration and acclaim. The other principal designer in the inter-war period was Barnaby Powell (1891-1935), the last of the Powells. W. A. Thorpe, in his *English Glass* (1935) has defined their different styles thus: 'Mr. Hogan piquant and experimental, Mr. Barnaby Powell grave and glassy'.

At the 'British Art in Industry' Exhibition held in London in 1935 Powells exhibited a wide range of glass, including vessels with threaded decoration, with glass tears, squared shapes, the curious 'Serpent' range, in which a glass snake was entwined around the lower part of tall, slightly convex glasses, and the 'Cloudy' and 'Streaky' range, somewhat similar to James Couper's 'Clutha' range, as well as some attractive amber vessels by Hogan.

William J. Wilson was for some years a co-director with Hogan before managing the firm, and he revived diamond-point engraving on glass in about 1935, specialising in elegant commemorative lettering with calligraphic decoration, as well as designing several ranges of table glass. Powells have also executed vessels for Laurence Whistler, a superb technician in complex diamond-point stipple engraving, who has specialised in the landscape on glass.

The firm still exists, and is a major producer of table and decorative glass in Great Britain.

QUEZAL

Martin Bach (1865-1924) was born in Rabling, a small village near Sarreguemines (Moselle). As a young man he worked at the St. Louis glassworks before emigrating to the United States. When Tiffany and Nash opened their glassworks at Corona, Long Island, in 1894 Bach was employed as their first mixer, working in Thomas Manderson's team. He worked through the early experimental period, and learned all the mixing techniques and proportions required for the manufacture of Tiffany's decorated glass. He eventually quarrelled with Arthur J. Nash and left Corona, intent on producing a rival glass. He was not, however, a glass-blower, and was forced to wait some years until he heard that a glass-blower called Thomas Johnson had been discharged as gaffer from Corona. Bach quickly contacted Johnson, and they rented a section in a small glassworks in Brooklyn in which to begin the production of glass.

Bach and Johnson's first glass, produced in 1901, was an exact imitation of Tiffany glass, and was unsigned. As production increased, they hired two more former Tiffany employees, Percy Britton and William Wiedebine. They called their company the Quezal Art Glass and Decorating Company, apparently choosing the name as a variant of 'quetzal', a bird with brilliantly coloured feathers. The company was incorporated in April 1902 with Bach as president. He and Johnson held an equal number of shares, while other shareholders included a watch-glass manufacturer called Nicholas Bach and two members of the Demuth Glass Manufacturing Company, a commercial enterprise of Brooklyn. It is probable that these people were brought in to help finance the setting up of the glassworks. Later that same year the trade-mark 'Quezal' was registered, and they began to sign their glass.

Quezal glass was soon doing sufficiently well to infuriate Tiffany, who encouraged his designers to produce new designs to differentiate his wares from their copies. He was even tempted to abandon the manufacture of iridescent glass altogether, but was dissuaded from taking this drastic step.

Although Quezal shapes and decorations are based on Tiffany's, they have more definition, less spontaneity and freedom. The decorations are more regular, more visible,

Quezal – Group of decorated iridescent vases, *c*1910. (Collection Minna Rosenblatt Ltd, New York)

Quezal – Free-formed decorated iridescent glass basket, *c*1910. (Collection Minna Rosenblatt Ltd., New York)

more brightly coloured. They are almost invariably opaque, and the interior of the open-mouthed vessels are often of a brilliant gold iridescence. No new technique or design was ever initiated at Quezal. Nevertheless their glass is very decorative and technically superb.

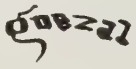
The years after 1905 proved economically difficult for Quezal. Bach bought out his partners, and Johnson left Quezal for the Union Glass Company. Bach's son, Martin Bach Jr., joined the company as did Bach's son-in-law, T. Conrad Vahlsing, who had become vice-president by 1918. Vahlsing was a gaffer as was Paul Frank, another former Tiffany employee.

In 1920 Vahlsing left Quezal, taking Paul Frank with him, and set up a rival glassworks, the Lustre Art Glass Company, manufacturing identical copies of Quezal wares. This action was to cause a split within the two factions of the family that was to last a very long time.

Quezal produced a large quantity of plain and decorated glass lamp-shades which could be adapted to a variety of bases, stands and electroliers. No metal work was ever carried out by them, though wall, ceiling, table and floor fixtures were bought and adapted to take their shades.

Martin Bach died in 1924, and was succeeded by his son, Martin Bach Jr., who found the company in grave economic difficulties. The order books were full, but the firm had enormous debts, its equipment was old and inefficient, and it was having difficulty in producing its wares cheaply enough to sell. Most of its output of decorated glass consisted of lamp-shades, with special orders of tubing, towel-bars and some table-ware. Dr. John Ferguson, a family friend, who was at the time New York City's Commissioner of Education, came to Bach's rescue. He formed a small consortium which took over the firm's assets, including its stock, paid off its debts, and gave Bach a small working capital, with a promise of more if the company showed a profit.

Quezal's last gaffer was Emil Larsen, hired in 1923. He tried to produce some art glass vases as well as shades, but experienced great difficulties with the equipment. The final year was disastrous, and after abandoning the production of iridescent glass, they attempted to introduce some inexpensive coloured glass items without success. The firm was wound up in 1925. Martin Bach Jr. went to work for the Vineland Flint Glass Works in New Jersey. Britton and Wiedebine, who had remained with Quezal for nearly the whole of its quarter century of production, went to the Corning Glass Works, then rejoined Bach once he had become established. Emil Larsen, who had gone to Ohio, later also joined Bach.



Quezal art glass wares are normally signed 'Quezal' on the base of vases and bowls or on the rim of shades. Narrow Lily light shades and miniature shades are signed on the outside of the collet. The letters vary in size, and are usually acid-etched or engraved and may be black, amber or gold. For a brief period during 1907 they used printed labels depicting a quetzal bird.

S. REICH & CO

Salomon Reich (1818-1900), having taken over the small glassworks of Koritzchan founded by his father in 1813, built the business up over the years into one of the largest producers of machine-made industrial glass. He opened glassworks in Franziska in 1842, Hansbrünn in 1849, Krasna vad Becvon in 1855, Gaya in 1858, the Marienhütte in 1861, the Charlottenhütte in 1862, Wsetin in 1871, Voitsberg in 1876 and Zawiercie in Russia, with refineries in Haida and Jablunka (1862). By the end of his life he was producing a vast range of glassware in

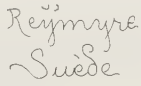
addition to industrial glass.

Around the turn of the century the Krasna glassworks produced a limited range of cameo vases with floral designs in two-layer glass using acid. They are similar in style and quality to those produced by other Austrian firms at this time, and are comparable to late industrial Gallé. These are normally signed in cameo 'R. Krasna' (i.e. Reich, Krasna). The direction of the firm was taken over in 1900 by Salomon Reich's adopted sons, Ignaz and Julius Reich.

REIJMYRE GLASBRUK

Founded in 1810 by Johan Jacob Graver for the production of table glass, ownership passed in 1813 to Count Mathias Alexander von Ungern-Sternberg and his son-in-law Ernst Gustav von Post. In 1868 the glassworks was turned into a limited company, and Josua Kjellgren (d. 1901) became Director. In the 1870s Reijmyre began the production of some art glass, including overlay and enamelled glass. They exhibited in Copenhagen in 1888, at the Chicago World's Fair in 1893, and in Stockholm in 1897. Between 1893 and 1895 Kjellgren presented the National Museum in Stockholm with a large collection of Reijmyre glass. Kjellgren's youngest son Sten, who had studied in Wiesbaden and in England, joined the technical side of the firm in 1885. In 1900 he succeeded his father as commercial and works director. That same year, A. E. Boman and the glass-blower Fredrik Kessmeier joined the firm.

Reijmyre began the production of cameo glass inspired by Gallé. Using designs by Boman, Ferdinand Boberg, Anna Boberg, Alf Wallander (1862-1914) and later Edvin Ollers (1888-1960) they produced some superb vases using floral, undersea and insect (dragonflies) motifs in striking colours, padded and cameo-carved, with decoration between the layers, and usually fire-polished to a bright, glowing surface. Coloured streaks, bubbles and spirals were also used in internal decoration. These now very rare vases are usually signed with a gilt engraved script signature 'Reijmyre Suède', sometimes with a number, the designer's name or the word 'unic' (meaning, of course, 'unique'). They exhibited at the First International Exhibition of Modern Decorative Arts at Turin in 1902; at the St. Louis World's Fair in 1904, where they were awarded a bronze medal; and at Stockholm in 1905, where they won two first prizes. By 1914 Reijmyre was employing some 500 workers, but the artistic impetus had slowed down. Several of the creative designers were deserting to the rival Kosta glassworks. In 1921 Sten Kjellgren resigned, and was succeeded by Gunnar Håkansson. Carl Keijser joined as manager in 1923. The worsening world economic conditions made it increasingly difficult for the firm to find sufficient outlets for its glass. In 1926 they were forced to halt further production, and most of the glassworkers moved on to other firms.



Reijmyre resumed production in 1936 with Carl Lagerkrantz as director. The building of new furnaces and facilities, however, brought more financial difficulties, and in 1937 the company was reorganised as the Reijmyre Glasbruk AB with a capital of 60,000 Kroners. The new owners were Professor Rolf Sievert, R. Sjöberg and Harold Almquist, with Knut Garstedt as manager. Monica Blott joined as designer. A year later Emer Rosengren became manager. They produced a range of clearly designed but not overly original table glass, as well as glass articles in the style of the time. In 1950 the firm was purchased by Lennart Rosen, who later became a Director of the Kosta glassworks. Since then they have employed a number of young designers, and produced lively designs for table glass, ornaments and figurines.

A.G. REYEN

Alphonse-Georges Reyen, an experienced glass engraver, joined François-Eugène Rousseau in 1877 after some years spent in executing leaded-glass windows and panels. He remained with Rousseau and his successor Ernest Léviellé until the early 1890s, when he left to open his own workshop at Rueil. During his years with Rousseau he rivalled Eugène Michel as a master engraver, frequently wheel-carving enamelled as well as cased-glass vases. He exhibited engraved vases under his own name at the 1889 Paris International Exhibition in addition to

Reyen – Brown overlay vase wheel-carved in cameo with a continuous landscape with clouds and a waning sun, 34.2 cm *c*1890. (Author's Collection, London)

Richard – Fish-mouth soli-fleur vase in red glass overlaid with navy blue cameo-etched with floral design, 21.7 cm *c*1922. (Private Collection, London)

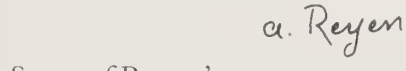
those executed to Rousseau's designs.

Reyen's designs were inspired by Japanese models and greatly influenced by Rousseau's style and techniques. Nevertheless, while executing a number of vases decorated with flora and fauna in the style of Rousseau, he also essayed other styles, including langorous Art Nouveau nymphs and stylised plant forms. He also continued designing and executing stained glass panels.

In his own workshop at 17 boulevard de Solférino at Rueil, he developed his engraving techniques to their fullest extent. Vase shapes were plain and simple, designed to provide the maximum surface on which to develop his designs, and he produced a variety of thin-walled cased-glass vases cameo-carved with floral or scenic subjects.

Pastoral landscapes, seemingly inspired by the Barbizon painters, inspired a small group of brown cameo vases with extremely subtle effects. In those subdued vases he exploited the possibilities of monochromaticism by a virtuoso thinning of the already thin outer layer to emphasise highlights and shadows. In another small group of vases Reyen used intercalary decoration, painting flowers and insects on the inner layer, then casing it with a clear outer layer which he then sometimes carved. These vases are very similar to a group produced by Desiré Christian.

Reyen exhibited his vases at the Salons of the Societé Nationale des Beaux-Arts from 1893 as well as at the Paris Universal Exhibiton of 1900, when he was awarded a medal.

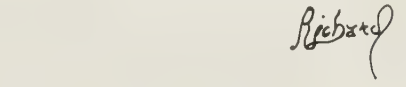


Some of Reyen's vases are mounted in bronze or silver. All are extremely rare. They are normally signed 'A. Reyen' in incised script, sometimes with the addition of 'Paris', and are occasionally dated.

RICHARD

The Richard signature in cameo script is found on a wide variety of two-layer acid-etched cameo vases, bowls, lamps and night-lights produced mostly in the 1920s by this Lorraine firm. Much of this production has floral designs, some of it with some degree of stylisation in the treatment of flowers and plants, but some landscape patterns were produced, and three-layer cameo occasionally essayed. The general standard is on a par with late industrial Gallé.

Richard also produced one original range of cameo glass using an opaque red glass overlaid with dark blue. The patterns are, again, usually floral, but strong colours, frequently allied to unusual and attractive shapes, make vases from this range an interesting addition to any collection.



BENJAMIN RICHARDSON

Benjamin Richardson inspired the renaissance of glass experimentation in Victorian Stourbridge, earning in his later years the title of 'Father of the Glass Trade'. The son of a Wordsley, Staffordshire, builder, he spent his youth working in several glassworks, eventually becoming manager of Hawkes & Co., a Dudley glassworks owned by Thomas Hawkes, the local Member of Parliament. He became a fine etcher on glass at Dudley where, however, it was only executed on flat surfaces. He eventually left Hawkes and joined the Wainwright Brothers at Wordsley Flint Glass Works. Benjamin and his brother William Haden Richardson were joined by Thomas Webb in taking over the firm from the Wainwrights, changing the name to Webb & Richardson. The partnership was dissolved in 1836, Thomas Webb eventually founding his own glassworks, while the Wordsley works became W. H., B. & J. Richardson.

Benjamin Richardson was the first man to introduce fancy colours in glass at Stourbridge, where the pursuit of clear crystal had hitherto been paramount. He also experimented in every technique of glass manufacture and decoration, adopting such new techniques as pressed glass as soon as developed in America and elsewhere. The prohibitive and inhibiting Excise Tax on glass was removed in 1845. Later that same year Richardson exhibited transparent coloured glass, opaline, layered, enamelled and painted vessels at the Manchester Exhibition. From 1845 Richardson produced clear, opaline

and frosted vases overpainted in enamel colours, mostly with classical scenes, a technique he named 'Vitrified Enamel'. In 1847 the firm was awarded the Royal Society of Art's Gold Medal, presented by the Prince Consort. Richardson exhibited at Birmingham in 1849, while at the Great Exhibition of 1851, held at the Crystal Palace, it was said that 'the purity of Richardson's flint had no equal in the Exhibition', and the firm was awarded a Prize Medal.

W. H., B. & J. Richardson closed down in 1852. A year or so later Benjamin Richardson succeeded in reopening the works, and took back many of the previous firm's craftsmen and apprentices, including John Northwood (1836-1902), Edwin Grice (1839-1913), Thomas Bott (1829-1925), W. J. Muckley, Joseph Muckley and his own nephew, Philip Pargeter (1826-1906). Richardson began experimenting with deep etching on glass table-ware and other vessels, taking out a patent in 1857. Two of his craftsmen who specialised in this work, John Northwood and T. Guest, later headed their own firms which became renowned for etched decoration. Richardson took out a patent for manufacturing pearl satin-glass in 1857. This was made by blowing the glass into a mould which produced hollows in the surface. On coating this with an outer layer of transparent glass the air traps between the layers formed a patterned decoration. Stevens & Williams produced a similar glass called 'verre de soie', as did the Mount Washington Glass Company in the United States, which licensed Thomas Webb & Sons to use its patent.

In 1836 Benjamin Richardson joined with his nephew Philip Pargeter and William J. Hodgetts to form Hodgetts, Richardson & Pargeter. The partnership was dissolved in 1869. Pargeter went on to take over the Red House Glassworks, while the other two partners formed themselves as Hodgetts, Richardson & Sons in 1871, retaining that name until 1882.

In 1887 William J. Hodgetts patented the first machine to apply glass threads to glass vessels. Two years later he took out a similar patent in the United States.

Benjamin Richardson had long been fascinated by the idea of recreating cameo glass. From about the middle of the 1840s onwards he would frequently bring a Wedgwood jasper copy of the *Portland Vase* into his works, display it to the men, and offer a thousand pounds to the first man capable of producing a replica in cameo-carved glass. The challenge was eventually met in 1877, when John Northwood completed his replica after three years of concentrated work, having been commissioned by his cousin, Philip Pargeter, who also made the blank. Richardson promptly decided to bring in someone to train his men to carve glass.

In 1877 Richardson invited Alphonse-Eugène Lechevrel to come to Wordsley. Born in Paris in 1850, Lechevrel had been a pupil of Henri François and Sacristain. A noted medallist and carver of gem stones and hardstones, he had successfully exhibited at various Salons from 1873 onwards. Although he had, in fact, no experience of glass carving, his fine control of the technique of carving gems served him in good stead. During his two years stay at Wordsley he carved several vases with cameo designs, of which six have been listed in a pamphlet issued by Richardson's firm in 1899. Two of these, *Raising the Altar to Bacchus* and *Hercules Restoring Alcestis to her Husband, Admetus* are in the Brierley Hill Public Library. Two others, *The Birth of Venus* and *Venus Arising from the Sea* remained in the possession of the Richardson family for many years until, in about 1923, George Woodall removed the handles of both, executed a little more carving to the neck and foot, removed Lechevrel's initials and the date '1878' from the former and obliterated it on the latter and added the signature 'Geo. Woodall'. The first was sold, the second presented to the Brierley Hill Public Library. The other two vases, *Cupid on Panther* and *Bacchanalian Musician*, have disappeared, although photographs exist. All were executed in a strictly neo-classical style, the carving in the white layer over a cobalt blue body. Lechevrel does not

Opposite
Above left
Rousseau – Cameo vase carved a felucca, the reverse with a bedouin riding a camel and palm trees, all in the red outer layer, the thick transparent inner layers crackled, with trapped red, white, yellow and blue patches and metal foil, itself carved with the outline of a medina, 12.4 cm *c*1880. (Author's Collection)
Above right
Sabino – Moulded fish in translucent blue and yellow glass, 10.5 cm *c*1930. (Editions Graphiques, London)
Below left
Schneider – Polished vase with internal bubbles and colour streaks, applied nub handles, 42.5 cm *c*1925. (Editions Graphiques, London)
Below right
Schneider – Mottled orange pitcher overlaid in maroon, cameo-etched with stylised mushrooms, applied handle, signed *'Le Verre Français'*, 31.2 cm *c*1927. (Private Collection, London)

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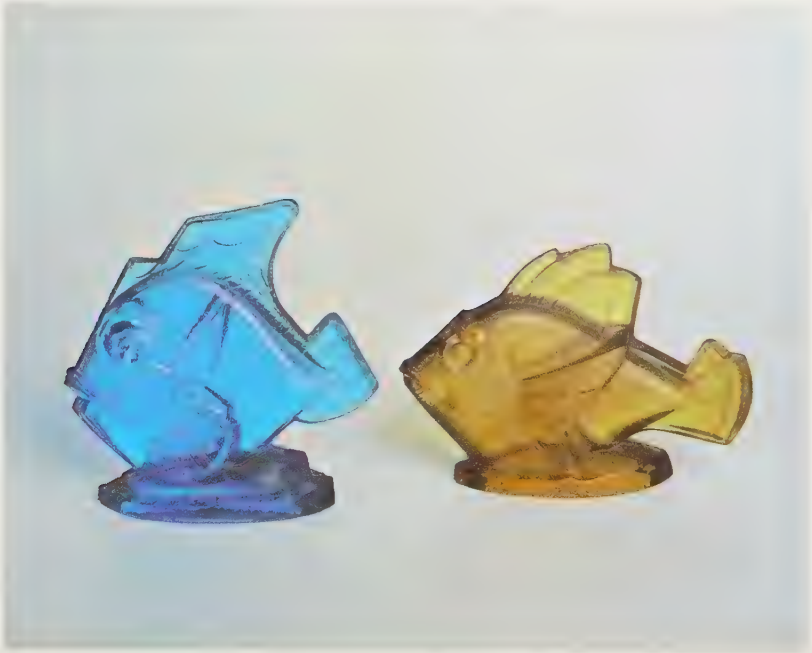
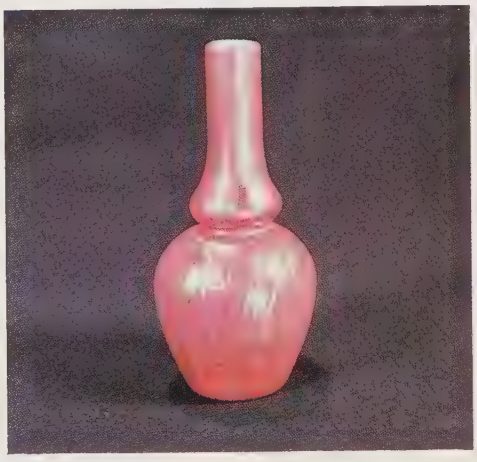
Top row
Quezal – Iridescent decorated vase, *c*1905; Quezal – Iridescent vase with peacock feather decoration, *c*1905; Steuben – Blue aurene fan vase with hearts and vine decoration, *c*1910.
Second row
Steuben – Decorated green aurene vase; Steuben – Decorated red aurene vase; Steuben – Decorated green aurene vase, all *c*1910.
Third row
Steuben – Gold aurene fan vase with a four footed aurene champagne glass; Steuben – Decorated aurene vase with millefiore, *c*1910; Union – *Kew Blas* vase with King Tut decoration, *c*1910.
Fourth row
Vineland – Durand acid cut-back vase, *c*1926; Durand Moorish crackle vase, *c*1928; Durand decorated blue vase, 29 cm *c*1927.
(All Minna Rosenblatt Ltd., New York)














appear to have executed any more cameo work on glass after his return to France, where he exhibited cameo carved black onyx at the 1900 Paris International Exhibition, and continued to work as sculptor and gem carver throughout the first third of the twentieth century. He had a teaching workshop at the Academy of Fine Arts in Paris, where his pupils included the brothers Ernest and Charles Schneider, who were to found an important glassworks at Epinay-sur-Seine in 1913.

Lechevrel's most famous pupil at the Richardson works was Joseph Locke (1846-1936). Born in Worcester, the son of a potter, he was orphaned when very young, and was brought up by his half-brother, Edward, a decorator at the Royal Worcester Porcelain Factory, to which Joseph Locke was apprenticed when twelve years old. At the age of nineteen Locke won a prize competition for a fireplace design held by Guest Brothers of Brettell Lane. Locke promptly violated the terms of his apprenticeship at Royal Worcester and went to work for Guest Brothers, where he became a supreme craftsman in etching and engraving on glass, and eventually married a relative of the Guests. This, however, did not prevent him from leaving their employ at the behest of W. J. Hodgetts to join Hodgetts, Richardson & Sons.

Locke's new employers planned an impressive exhibiton for the Paris International Exhibition of 1878. Lechevrel's vases were to be on display, as was a cameo vase called *Cupid Sailing on a Cockle Shell*, carved by Locke. It was then suggested that Locke should carve a replica of the *Portland Vase,* one version of which had just been executed by John Northwood. Some forty blanks were made at the Wordsley glassworks but, after annealing, all but two or three cracked. One of these was picked but it, too, cracked after three weeks of working on it. With only six months to go before the exhibition opening, Locke immediately set to work on another blank, working on it enthusiastically during the time remaining. It was finally exhibited in its not quite finished state in Paris, yet still managed to win Hodgetts, Richardson & Sons a Gold Medal.

Locke never finished the vase. A dispute led to his leaving the Wordsley works for Philip Pargeter's Red House Glassworks then, after a short while, he went to work for Webb & Corbetts. His reputation as a glass craftsman had by then reached the United States, and he received an invitation from the Boston and Sandwich Company of Sandwich, Cape Cod, to join the firm. He left for the United States in 1882, and the Company which had invited him sent an agent to meet him in New York. As it happened, Locke's ship docked in Boston. The New England Glass Company of Cambridge, Massachusetts, hearing of this, promptly sent its own representative to sign him up. While working in the United States Locke developed a whole range of coloured glass in the late Victorian taste, including Pomona, Amberina and Agata, and took out some twenty patents on various aspects of glass production. He also executed vessels decorated with etching, engraving, carving and enamelling, sometimes using several techniques on a single vessel. He also painted, drew and etched on copper and steel plate. He also carved a few more cameo vases and plaques, including a miniature head of Shakespeare. He died in 1936 in his ninetieth year.

Benjamin Richardson himself had died in 1887 in his eighty-sixth year, and the name of the Wordsley Flint Glass Works was changed to Henry G. Richardson & Sons by his son and two grandsons, who took over the business. The firm later became a subsidiary of Thomas Webb & Sons.

RINGEL D'ILLZACH

Born at Illzach, in Alsace, on September 29th, 1847, Jean-Désiré Ringel d'Illzach studied with the sculptors Jouffry and Falguière in Paris and with Häbuel in Dresden. Although he worked mostly as a sculptor, with an atelier in Paris, he also designed medals for Saint-Gobain, drew and etched, and worked with ceramics and glass. As a sculptor, he created works in bronze, silver and gold, building his moulds with a composition of his own which enabled him to bring out the finest details. He designed, executed and decorated ceramics at Charles Haviland's workshop in the rue Blomet at Vaugirard in Paris, working with Muller, Albert and Edouard Dammouse and Ernest Chaplet. Although he worked there principally as a painter of ceramics, one of the items he

Ringel d'Illzach – Group of polychrome pâte-de-verre mask medallions exhibited at the Paris Salon in 1899. (Contemporary photograph)

designed and executed in 1884 is a relief plaque portraying himself in profile surrounded by his co-workers at the time. He appears rather benign, with a moustache, wearing spectacles and smoking a pipe.

In the 1890s he began to experiment with pâte-de-verre, using the moulds he had developed for his metal casts. At the 1899 Paris Salon he exhibited a group of grotesque masks in translucent pâte-de-verre, and exhibited others at the 1900 Paris International Exhibition, both times to critical acclaim. The General Report of the 1909 International Exhibition of Eastern France, held at Nancy, states that Ringel d'Illzach exhibited 'curious original pieces, made of crystal moulded by a process invented by him'. He was greatly admired for three busts he had sculpted on the subjects of War, Victory and Defeat. Unfortunately, virtually all his works have disappeared. The only known signed pâte-de-verre item is a polychrome plaque with a bust in low relief of a fashionable lady in purple, wearing a necklace over a plunging decolleté. This plaque was first exhibited at the Galliéra Museum in Paris in 1910. Ringel d'Illzach later worked in Brussels and Strasbourg, and died in Strasbourg on July 28th, 1916.

F. E. ROUSSEAU

Born in Paris on March 17th, 1827, Eugène Rousseau worked in his father's shop at 41 rue Coquillère in Paris, selling porcelain and ceramics as well as designing at the Manufacture de Sèvres, where he worked with such original artists as Marc Louis Solon, who was later to set up the pâte-sur-pâte workshop at Minton's in England. In 1850 Rousseau inherited his father's shop, but continued his work at Sèvres. The introduction of Japanese art in France, later popularised by such publications as Bing's *Le Japon Artistique* fired his enthusiasm for the Far East. In 1867 he made a complete table service in the Japanese manner, designed by the painter-etcher Félix Bracquemond (1833-1914). He also set up a small workshop in which he began to experiment with glass decoration and was joined there by Eugène Michel.

Rousseau's first vases were simple designs in colourless or lightly tinted transparent glass which were executed at the Clichy Glassworks of Appert Frères. The vessel was then either engraved or enamelled to his design in his workshop. Completely untrained in the chemistry and techniques of glass working, Rousseau found the Appert brothers totally responsive to his ideas and desires, and he continued to make use of both their technical expertise and their facilities throughout his career.

An eclectic individual and inventive designer, Rousseau created some free-form as well as rigidly designed vases, plain surfaces and others with applied decoration which included wrought glass feet, handles and relief masks, animal heads, etc. Some vases were made in imitation of hardstones, others were made of clear smoky glass and carved in intaglio.

Rousseau was one of the first French glass designers to make use of cased glass. Using a glass vessel cased with one or two outer layers of different coloured glass he would then have the surface carved in cameo or intaglio to his designs. Some of the most striking of these are vases cased in solid opaque colours simulating the look of lacquer. The vases are then carved in intaglio with motifs of Japanese inspiration. Two vases in the Paris Museum of Decorative Arts are perfect examples of this. One vase is cased in opaque amber over a pink body, and intaglio-carved with a stylised view of Mount Fuji, with silhouetted trees in the foreground. The upper slopes of Fujiyama

Rousseau – Vase with a platform base in clear glass enamelled and carved with insects and plants, 16.5 cm *c*1880. (Collection Dépôt 15, Paris)

are wreathed in a band of relief clouds carved in the thinned outer layer, so that its colour is a paler shade of amber. The second vase is even more dramatic. A tall-necked vessel, the vase is cased in opaque, sealing-wax red glass. This is intaglio-carved with flowering prunus, the body enriched by a band containing a repeating pattern of concentric circles.

The *Bamboo Vase* was another example of Japanese influence. Designed in 1878, this tallish two-layered vase of square section was engraved with bamboo shoots and leaves. The vase was waisted with a central thickly bulging glass collar which was enamelled all over with stylised leaves and arabesques.

Rousseau exhibited his vases at the 1878 Paris International Exhibition, of which he was also a member of the Jury. Alphonse-Georges Reyen had joined his firm in 1877 as a glass carver, while a pupil of Rousseau's, Ernest-Baptiste Léveillé, joined as a decorator.

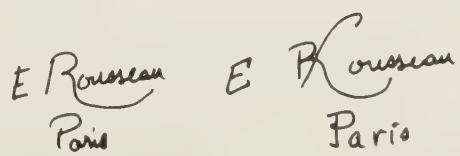
Rousseau's continued experiments with the Appert brothers led him to produce striking new effects in glass. The blown vessel would be crackled all over by immersion in cold water. He would run coloured glass crystals, metallic oxides and bits of gold leaf over the crackled glass, then blow an outer layer of clear, often coloured, glass over this, trapping the inclusions. The outer surface was also sometimes carved in intaglio in the shape of animals, leaves, etc. The vessel was often finished with appliquéd handles, or put into a metal mount in bronze or silver. These mounts were often designed to simulate bamboo. Glass appliqués modelled as elephant or other animal's heads, chimeras, or grotesquely shaped blobs, were frequently placed on two of the vessel's sides, acting as nub handles.

Rousseau – Bamboo shaped vase, the shoots and leaves carved in the red outer layer, 22 cm *c*1880. (Collection Félix Marcilhac, Paris)

A number of other internal effects were achieved. These included various coloured streaks and patches and patterns simulating moss, lichen or autumnal branches. Colour patches were often used in conjunction with crackled glass. Rousseau exhibited the full range of his glass *Hors Concours* (Out of Competition), including uncoloured glass vessels intaglio-carved with floral or feather patterns with some occasional gilding, at the 'La Pierre, le Bois, la Terre, le Verre' (Stone, Wood, Earth, Glass) Exhibition, organised in Paris in 1884 by the Union Centrale des Arts Décoratifs. Although Gallé and Brocard were fellow exhibitors, it was Rousseau's wide range and originality which was most admired. That same year he was decorated with the French Legion of Honour.

Rousseau continued to produce vases of Chinese and Japanese inspiration, sometimes with cameo-cut designs of landscape or scenes of everyday oriental life, sometimes using enamelling. In 1885 he sold his workshop and retail store to his former pupil and assistant, Léveillé, who continued to produce Rousseau's original designs for several years, exhibiting these at the 1889 and 1910 Paris Exhibitions. Rousseau died on June 12th, 1891.

Rousseau's vases are often unsigned. When signed they are engraved 'E. Rousseau' or 'E. Rousseau Paris' in script. Those vases in stock at the time of Léveillé's take-over had the signature 'E. Léveille' or 'E. Léveillé à Paris' engraved beside or over Rousseau's signature. The practice of using both names was continued until about 1890.



Rousseau's vases are strikingly decorative and original, often quite large. They are extremely rare, and were never produced in quantity, or widely disseminated outside the major Paris Exhibitions. The models as produced by Léveillé were made in far greater quantity and were more widely displayed. They too are rare nowadays, as many were purchased by Museums for their permanent collections.

SABINO

Marius-Ernest Sabino was born in 1878 and studied at both the School of Decorative Arts and the School of Fine Arts in Paris. From the 1920s onwards he directed an important glassworks, with a retail showroom at 17 rue St. Gilles, Paris 3e. A full range of decorative glass was produced, including electroliers, wall appliqués, floor and table lamps, vases, bowls and figurines.

Sabino frequently used frosted as well as clear glass, but also developed a range of opalescent glass varying from creamy pale blues to translucent cornflower blues with brown reflections. The patterns were produced by blow-moulding and press-moulding.

A number of Sabino designs were exhibited at the 1925 Paris Exhibition of Modern Decorative and Industrial Arts, but more were displayed in the subsequent Salons d'Automne and Salons des Artistes Décorateurs. Sabino's stand at the 1925 Artistes Décorateurs was designed by Henri Rapin, a leading decorator and designer. Sabino also exhibited regularly at the Salon des Indépendents and the Salon des Artistes Français.

He designed several moulded frosted glass shades which were adaptable to table lamps and wall fittings, including globes with geometric floral and other designs and *Chute d'eau* (Waterfall), a shade moulded to resemble a three-layered fall of water. The *Jets d'eau* (Fountain) wall fitting simulated an elaborate waterfall with strung glass pebbles which glistened in the light. *Les Oiseaux* (The birds) were panels moulded with birds, flowers and branches. *Les Pins* was modelled with pine cones in relief. Brass, bronze, wrought iron and silvered-bronze fittings were also designed and executed at the Sabino works. Ceiling fittings ranged from metal frameworks into which moulded glass panels were inserted to elaborate models like the *Les Feuilles les Fleurs* (The Leaves The Flowers), a large six-armed star shape with moulded geometric patterns. Illuminated panels with various geometric designs were also produced.

Vases and bowls were produced in the full range of clear, opalescent and coloured glass, often moulded with geometric patterns. Among the most attractive of these are vases and bowls modelled with a continuous frieze of human figures (faces, busts or full-bodied) in which no figure is repeated throughout the frieze. Clear models sometimes had the background to the figures surface painted an even, shiny black for contrast.

A full range of glass models was produced, including nudes, with or without drapery, shepherds (with sheep), a mysterious cross-legged idol, and zebras, fish and other animals. They were made in opalescent, clear and coloured glass. Some of the opalescent figures had chromed metallic bases fitted with light-bulbs to illumine them. Larger illuminated models included a splendid nude female bather surrounded by glassy waves, and various groups of one to three fish. Another was a standing nude female bather from whose outstretched arms fell the curves of a cloak: a slightly more elaborate version of Lalique's figure *Suzanne au Bain*. These were usually fitted to bronze bases. All Sabino glass is clearly incised 'Sabino France' in script on the base. The 1931 *Studio Year Book of Decorative Art* illustrated a massive illuminated glass table by Sabino made up of chunky glass tiles held together by a chromed metal armature, set with a range of Sabino table glass. Other sizeable glass items made by Sabino included indoor fountains, wall-cladding and hall fittings.

After an apparent interruption of production lasting several years after the Second World War the Sabino

Sabino – Opalescent and black enamelled bowl moulded with a frieze, 9 cm *c*1925. (Editions Graphiques, London)

Sabino – Moulded frosted glass zebra, 13.9 cm *c*1927. (Editions Graphiques, London)

Sabino – *L'Idole*, opalescent glass figure, 17 cm *c*1925. (Editions Graphiques, London)

Sabino – Opalescent glass figure set within a shaped basin, 24 cm *c*1925. (Editions Graphiques, London)

glassworks began, in the late 1960s, producing an extensive range of small opalescent glass animals and one or two models of nudes, as well as some other glass. These are also signed 'Sabino France', but they have a more creamy opalescence than the inter-war models, and it is fairly easy to distinguish between them.

SAINT-LOUIS

Glassworks were established at Münzthal as early as 1586. This was destroyed during the Thirty Years War, but a new glassworks called Verreries Royales de Saint-Louis was opened in 1767 under the patronage of Louis XV. This was taken over in 1768 by François de Lasalle Ainé & Cie, but was sold in 1809 to Messrs. Seiler and Walter who turned it into a limited share holding company in 1829 under the name of Compagnie des Verreries et Cristalleries de Saint-Louis. In 1831 they opened a retail shop in Paris with the Cristallerie de Baccarat, selling a wide range of cut and blown glass for household use for over 25 years. In 1855 they exhibited glass made in imitation of malachite, agate and marble.

In 1870 the Franco-Prussian War took place, the French Second Empire was defeated, and most of Alsace-Lorraine was annexed by Germany. The Saint-Louis Company found itself in Germany.

As the end of the century approached Saint-Louis, greatly influenced by the success of Gallé and Daum art glass, launched a new line of cased cameo glass under the artistic direction of Jules Amiet, François Villain and M. Consigney. There were many floral subjects as well as a variety

of scenic designs, sometimes with animals. The scenic subjects are often confined to panels surrounded by abstract decoration, occasionally with gilding. All these are acid-etched, with only a very occasional and minimal use of carving to finish off the design. The colours tend to be muted. Several lamps were produced, with a metal base bearing a cast of an animal (deer, tiger, elephant) and a scenic cameo glass shade. These cameo products were signed 'St. Louis – Münzthal'; or 'D'Argental' (the French name for Münzthal) with the cross of Lorraine; or Arsall.

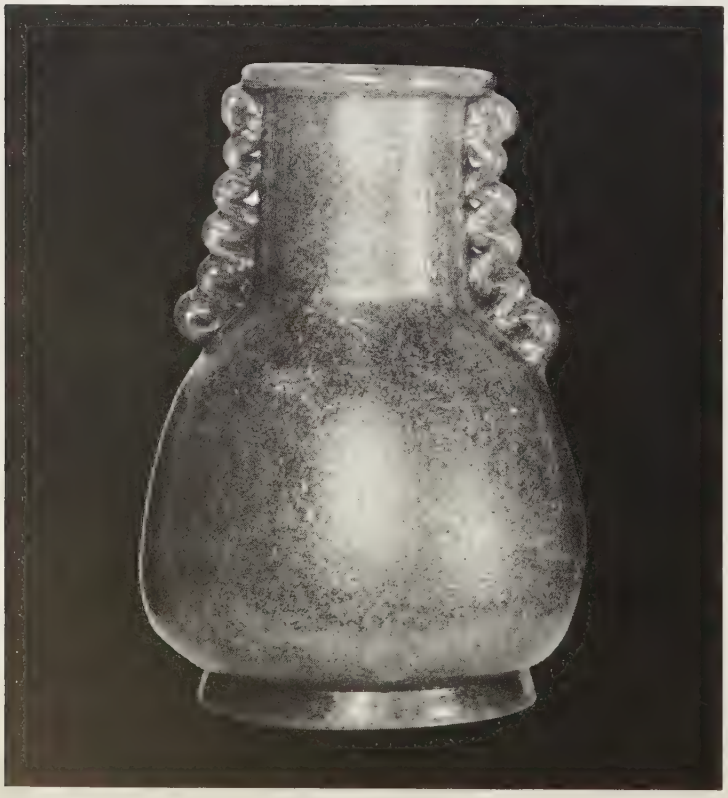
St. Louis exhibited at the 1895 Strasbourg Exhibition, and at the Leipzig Fair from 1900. They also exhibited at the 1908 Exhibition in St. Petersburg and the Nancy Eastern France Exhibition in 1909. The defeat of Germany in the First World War returned Alsace-Lorraine to France, and the St. Louis Company renewed its ties with the mainstream of French design. They began to produce quantities of enamelled glass, and commissioned several artists, including Maurice Dufrène and Marcel Goupy, to design for them. They, in turn, executed etched and enamelled glass designed by Dufrène and others commissioned by the La Maitrise Design Section of the Galeries Lafayette department store in Paris. They exhibited at the 1925 Paris International Exhibition of Decorative and Industrial Arts. The company still exists under the name of Compagnie des Cristalleries de Saint-Louis, S.A.

JEAN SALA

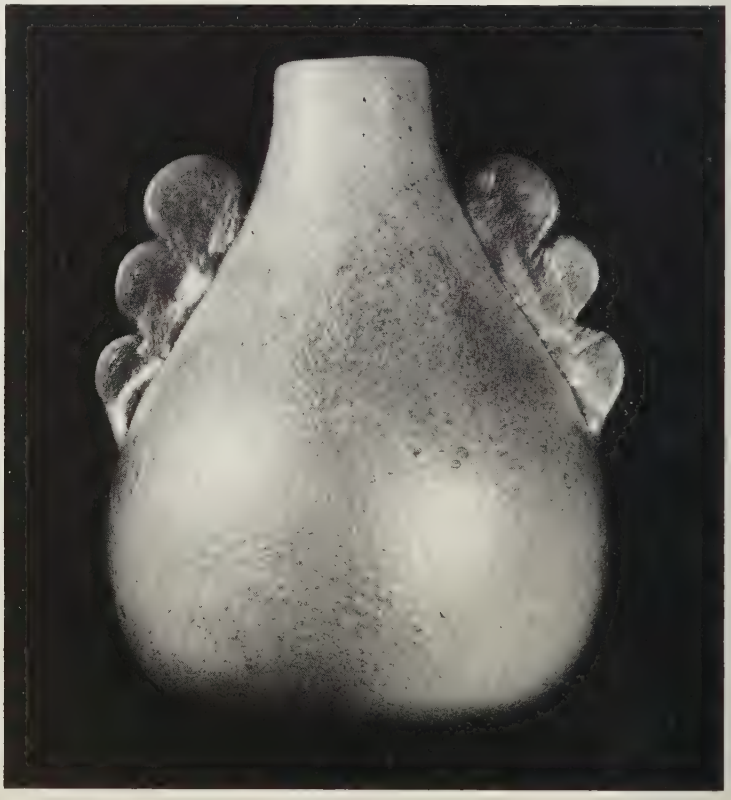
Jean Sala was born in Barcelona on January 7th, 1895, into a family of Catalonian glassworkers. His father, Domenico, settled in Paris in 1910 and, as Dominique Sala, soon established his reputation as an inventive and original glassmaker. Jean was taught his craft by his father, and often collaborated with him even after he had established himself as an independent designer.

Jean Sala set up a small workshop on the left bank in Paris, and worked entirely on his own, mixing, blowing, shaping and decorating the glass himself. He liked to work with **malfin** glass, that is coarse and impure glass which is incompletely refined so that the bubbles and imperfections themselves form the texture. True malfin glass tends to become porous fairly quickly. Sala therefore carefully mixed and tinted his batches of glass to obtain the desired textures, then trapped the textured glass between

Sala – Opaque bubbled brown glass vase with serpentine applications, 32 cm *c*1930. (Collection Dépôt 15, Paris)



Sala – Opaque white glass vase with slight iridescence, applied shoulder ornaments, 34.5 cm. (Collection Dépôt 15, Paris)



two layers of transparent glass, the whole forming a lightweight material which he could fashion into simple shapes at the kiln. External decoration in the form of leaves, fruit, et cetera, was applied at the furnace in the shape of semi-molten glass in contrasting colours.

Sala exhibited his glass at the Salon d'Automne, the Salon des Tuileries, the Salon des Artistes Décorateurs and at the Druet and Manuel Galleries in Paris, as well as in group exhibitions throughout Europe.

One of Sala's most unusual designs is a range of blown and decorated glass fish, often of fairly large size, both naturalistically modelled and yet stylised in execution. He produced a centrepiece of sixty glass fish for Baron Robert de Rothschild, no two of which were duplicated. The Oceanographic Museum in Monaco has on display a collection of Sala's fish. Seen in a group they are an obvious tour-de-force, but individually they have a curious charm.

J. Sala

Sala's glass always bears the sign of spontaneity and gaiety, they are never ponderous or over-designed. Although he always drew his intended models before blowing, he was quick to seize on the spontaneous accidents of the furnace and turn these to advantage, adapting and even completely changing his original design. A master of his craft, he was quick to seize the bounties of chance. Sala's glass is usually signed 'J. Sala' or 'Jean Sala' or 'Sala' in script on the base or side, engraved with a diamond point, but a few vessels and models are found unsigned.

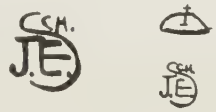
J.E.SCHNECKENDORF

Josef Emil Schneckendorf was born on December 29th, 1865 in Kronstadt, Rumania. After teaching sculpture in Bucharest, Budapest and Vienna he enrolled as a student at the Munich Academy of Applied Arts in 1890, then began experimenting with glass from 1898. At the first Art in Handicraft Exhibition held in Munich in 1901 by the United Workshops (Vereinigten Werkstätten) he exhibited glass with gold and mother of pearl iridescence. He had by then established his first workshop in Munich for glass and jewellery. A year later he exhibited glass surface-decorated with metal oxides at the First International Exhibition of Modern Decorative Arts in Turin, where he was awarded a Gold Medal.

In 1904 he exhibited jewellery made of oxidised silver and silver-gilt at the St. Louis Louisiana Purchase Exposition in the United States which was appropriately awarded with a Silver Medal. That same year he exhibited glass at the Xth Munich Secession Exhibition, displaying a curious range of flower and bottle shapes in the style of Koepping and Zitzmann, but with the glass treated with metallic oxides. He exhibited in 1905 at the Applied Arts Exhibition in Munich and in 1906 at the 3rd German Arts and Crafts Exhibition in Dresden, where he was awarded a Gold Medal. In 1907 he became Director of the Grand Ducal Fine Glass Company (Grossherzoglichen Hessischen Edelglasmanufaktur) in Darmstadt. Established in 1901 under the patronage of Ernst Ludwig, Grand Duke of Hesse, it was to remain in private hands until 1911. Under Schneckendorf's direction glass production was firmly led into the Jugendstil style, with fine iridescent ware, which successfully carried a small and hitherto unknown glasshouse into the arena of international exhibitions. Schneckendorf himself designed most of the production, as well as supervising the whole process of manufacture.

In 1908 the firm exhibited at the St. Petersburg International Exhibition of Arts and Crafts, where they were awarded a Gold Medal. Schneckendorf was awarded the King Ludwig Prize at the Nuremberg Exhibition in 1909, as well as a Gold Medal at the Brussels International Exhibition in 1910.

The Grand Ducal Company changed hands in 1911. That year Schneckendorf exhibited at the Darmstadt Art Exhibition and in 1912 at the Bavarian Crafts Exhibition in Munich, where he exhibited vases with figural decoration.



Schneckendorf's vases have a semi-opaque surface with a hard gold metallic iridescence. The designs tend to be floral or swirled patterns, and the decorative effect is somewhat reminiscent of glass by Duc A. de Caranza, though the colours are generally brighter. Most of his shapes are simple and straightforward, short and waisted or tall and plainly elegant. They are normally signed on the base with the capital letters 'J.E.', the 'E' enveloped by the lower curve of a large 'S' and the smaller capitals 'C.H.' emerging from the small top curve of the 'S' (i.e. J.E.Sch.). Those vases designed for the Grand Ducal Company have additionally a crown and the monogram 'EL' (Ernst Ludwig).

Schneckendorf continued to paint, sculpt and design. He lived in Würzburg from 1942 to 1945, and died in Munich on July 11th, 1949.

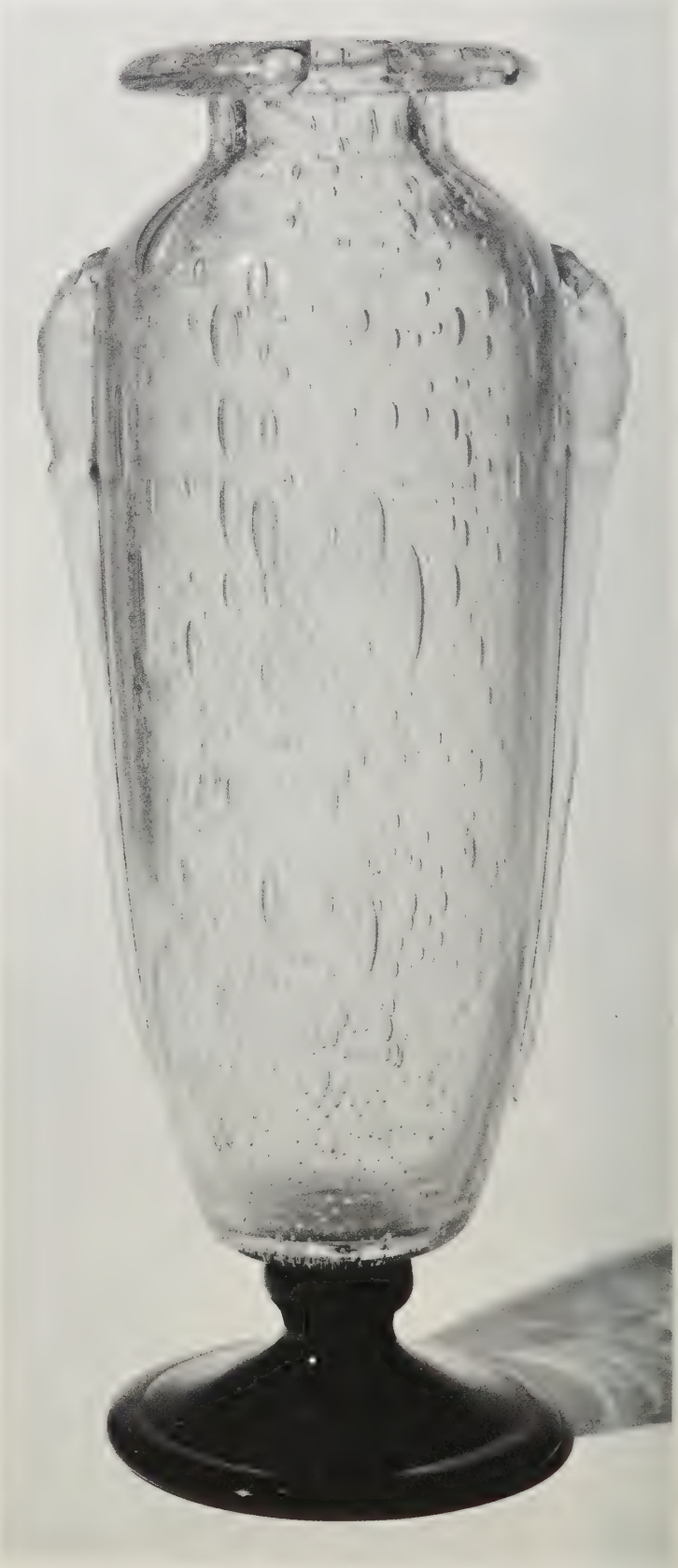
SCHNEIDER

The brothers Ernest and Charles Schneider (1881-1962) founded their glassworks at Epinay-sur-Seine in 1913. Ernest was the business manager while Charles was the artistic director. Born at Chateau-Thierry, Charles had studied at the School of Fine Arts in Nancy as well as at the Fine Arts Academy in Paris, studying under J. C. Chaplain, L. D. Bonnat and Alphonse Eugène Lechevrel. He had also worked as designer for both Gallé and Daum. He was a sculptor and medallist, designing and exhibiting medals throughout most of his working life. He was elected a member of the Société des Artistes Français, and exhibited both medals from 1906 and glass from 1927 onwards in their Salons.

As a Medallist Charles Schneider was awarded a Medal 3rd Class in 1906, a Silver Medal in 1926 and was later awarded a Gold Medal.

The Schneider glassworks produced a variety of table glass, light fittings and stained glass panels, but their production of Art Glass vases, bowls, comports and lamps was always promoted and directed by Charles Schneider. He developed simple, unfussy designs in rich greens, reds, blues and pinks, sometimes offset by handles, rims, feet or cabochons in a contrasting colour: maroon, violet, black. Bubbles and streaking in the glass was often used, particularly on larger items. Occasional vases were cased and cameo-cut as a decorative feature. Applied nub handles on others were wheel-carved as a contrast to the smooth body of the vase. Under the influence of Marinot's experiments, Schneider designed several vases in thick glass deeply etched with hydrofluoric acid, usually in two colours. These, though often very attractive, are treated in a far more mechanical and derivative style than Marinot's vases.

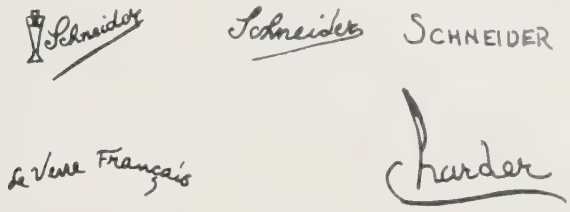
Schneider's vases are usually signed 'Schneider' in full in either a script signature or in block letters incised into the side or foot of the piece, occasionally with the outline of an urn, though items have been signed only with the urn. Some items are found signed additionally with the name of a specialised retail shop. Some Schneider vessels made for the English market were marked with the Schneider signature followed by 'Finnigans', the name of a leading Bond Street shop, now closed. A completely different line was a series of art glass vases, bowls, lamps, urns and ewers using the Trade Mark 'Le Verre Français'. These are in two- or three-layered opaque glass acid-etched in highly stylised geometric repeating patterns inspired by fruit, flowers, mushrooms, snails, swans, all treated in an extremely interesting abstract decorative technique. The innermost layer, used for background, is often mottled yellow or brown; the outer layer, in strong basic colours such as red, green, purple or orange, is polished to give a smooth bright finish. An additional



Schneider – Vase in bubbled clear glass on a purple glass foot, applied glass ribs wheel-carved and frosted, 35,3 cm *c*1925. (Editions Graphiques, London)

Schneider – Tall polished vase in brown glass shading down to yellow at the base, black collar, applied yellow handles, 45.6 cm *c*1930. (Private Collection, London)

acid bath was used to etch the final decorative touches to the outer layer. As with their other wares, handles, stems or feet are often in contrasting colours, and can be used decoratively using appliqué technique.



These items may be signed in full 'Le Verre Français' or 'Charder' (a pseudonym arrived at by contracting CHARles SchneiDER's name to its beginning and its end) or both, or may instead have a small piece of glass cane, usually striped, embedded in the side or base. Some vases have been seen decorated all over at random with these 'signature' canes. Very occasionally an item in this technique is found with the Schneider signature.

Charles Schneider exhibited a large group of art glass vessels *Hors Concours* at the 1925 International Exhibition of Decorative and Industrial Arts in Paris. A year later he developed a new orange-based colour for glass which he called 'Tango'. This became so popular a colour that it was copied in popular ceramics and plastics.

In 1948 Robert Schneider, Charles' son, took over the Art Direction of the firm, which moved in 1962 to Loris in the Loiret *département* of France.

Schneider – Frosted vase with polished intaglio-etched circles overlaid with polished brown glass etched with circular medallions, 21 cm *c*1930. (Editions Graphiques, London)

SÈVRES

The Verrerie de Sèvres was founded in the reign of Louis XV, and survived the years as a small glassworks. It was purchased in 1870 by Landier, who changed the name to Cristallerie de Sèvres, and directed the production towards the development of cut lead-crystal ware. In 1885 Landier took over the Maes et Clémandot glassworks at Clichy, which had developed a bright crystal produced with zinc oxide, as well as new techniques for engraving on thick-walled glass. It also specialised in coloured crystal.

The new joint company was now called the Cristalleries de Sèvres et Clichy Réunis (United Crystal Works of Sèvres and Clichy). Landier was joined by Houdaille, and in the 1890s the firm produced a wide range of decorative glass including **tortoise-shell** glass, in which brown patches of colour are suspended within a clear amber glass; **aventurine** glass, in which a vast number of copper crystals are spread throughout the coloured glass vessel to give it the right golden sparkle; and **marbled** glass, which is totally opaque with coloured swirls reproducing the appropriate marbled effect. Coloured glass applications in the shape of snakes, fish, dolphins, etc., were also used in a wide range of transparent coloured glass.

The shapes of the vessels of the 1890s were rarely as adventurous as the quality and colour of the glass. Indeed, they were frequently ungainly and stolid, though the colours are equally frequently very beautiful. They are normally signed on the base 'Sèvres' in capital letters within a large horizontal capital 'S'.

Around the turn of the century a new series of vessels of Art Nouveau inspiration was produced at Sèvres, with floral designs in cameo relief produced by the action of hydrofluoric acid on the transparent or opaque coloured glass. Vases, bottles, decanters, and bowls were produced in this range, decanters with floral designs having stoppers of floral shapes, frequently in a contrasting colour to that of the vessel. These Art Nouveau vessels are signed 'Sèvres 1900' in script in diamond point on the base.

A more attractive version of the opaque overlay cameo vases was made in a range with silver-plated metal mounts.

This range is signed with the Trade Mark in the shape of a flattened cigar band, the central circular section with the representation of a sailing boat on water, the letter 'V' on its left and the letter 'S' on its right (for Verrerie de Sèvres). This trademark is found etched on the base of the vessel and stamped on the metal mount. The central portion may have been derived from the arms of the City of Paris, which have a floating sail-boat with the motto: 'Fluctuat Nec Mergitur' ('it rocks, but does not sink').

Sèvres – Decanter in clear glass overlaid in transparent green glass etched with leaves, the ground etched with a pattern of dots, the green stopper topped with a purple glass leaf crown, 36.5 cm 1900. (Private Collection, London)

SIMONET FRÈRES

Simonet – Standard lamp in three-coloured bronze with floral pressed glass panels designed by Albert Simonet and Henri Dieupart, exhibited at the 1925 Paris Exhibition, 201 cm 1925. (Collection Elton John, Windsor)

Simonet Frères was established as an important bronze manufacturer in the nineteenth century, specialising in such traditional items as gilt light fittings, supports, furniture fitments and candelabra. In 1919 Albert Simonet took the decision to modernise his firm's production. It was clear to him that glass would have to be exploited considerably more fully in the manufacture of light fittings. The successful pre-war production of René Lalique, resumed after 1918, seemed to indicate that pressed glass was ideal for the transmission of light, while enabling a model to be reproduced identically without total dependence on a glass-blower's skill.

Albert Simonet took the even more difficult decision of restricting bronze to the essential minimum in such fittings as well as brackets and ceiling lights, though where standard lamps were concerned the search for spectacular effects was unrestricted. Simonet also hired Henri Dieupart who was to be co-designer with Simonet on all the new designs. Henri-Germain-Etienne Dieupart was born in Paris on July 29th, 1888, and had trained as a sculptor under Injalbert and Auban. He had been elected to full membership of the Société des Artistes Français, and exhibited regularly in their Salons, where he was to receive an Honourable Mention in 1929 and a Bronze Medal in 1924.

In 1924 the Union des Syndicats de l'Electricité (Joint Electricity Unions) and the Société d'Encouragement à l'Art et à l'Industrie (Society for the Promotion of Art and Industry) jointly sponsored a Grand Contest for Electric Light Fittings. Simonet Frères won four out of the ten First Prizes awarded.

The firm exhibited a fine range of light fittings at the 1925 Paris International Exhibition of Decorative and Industrial Arts, and later exhibited new designs regularly at the Salon des Artistes Décorateurs and at the exhibitions held at the Palais Galliéra.

Ceiling fittings were made in globe shapes or in sections joined together by a metal armature. The glass itself was moulded in various floral, bird or abstract patterns, with such designs as 'La Foudre' (Lightning), 'Les Roses' (Roses), 'Les Pistils' (Pistils), 'Les Marguerites' (Daisies), 'Le Vol d'Hirondelles' (Flight of Swallows), 'Les Orchidées' (Orchids), 'Les Roses Trémières' (the Hollyhocks), 'Les Fleurs des Champs' (Wild Flowers), 'Arabesques' (Arabesques), 'Les Diamants' (Diamonds), 'Feuilles de Liseron' (Convolvulus leaves). 'Les Chardons' (the Thistles) was a spectacular electrolier with multiple glass 'spikes' forming a hedgehog upper surface.

The glass was press-moulded to the various patterns, some having moulded depressions as deep as three inches, others being fairly shallow. The glass was frequently tinted or smoked, grey, pale blue or violet. Opalescent glass was

occasionally used, while acid was sometimes used to provide contrasting polished and mat surfaces. External colour washes were also occasionally used. Some of the patterns already mentioned, as well as others like 'Les Beliers' (The Rams) or 'Epine et Bananier' (Thorn and Banana-Tree) were also made as vases. Some of the luminous globes were set on small bronze bases for table-top use.

Albert Simonet and Henri Dieupart produced one of their most spectacular designs for the 1925 Exhibition. Illustrated here, it was a six-foot seven inches standard lamp, the three-coloured bronze and figured marble base with horned and bearded faun masks and set on goat hooves, and with floral moulded glass panels set all round a frosted glass urn. The top glass panel is signed 'SF'.

STEUBEN GLASSWORKS

Frederick Carder (1863-1963) was born in Brockmoor, near Kingswinford, Staffordshire. At the age of fourteen he was apprenticed to his father's pottery, while going to evening classes in chemistry and metallurgy at Dudley Mechanic's Institute as well as attending the Stourbridge School of Art, where he became a pupil of John Northwood. The latter encouraged him to apply for a job at Stevens & Williams at Brierley Hill, where he became a glass designer and decorator. In 1891 Carder began teaching at Wordsley Institute, while still working at Stevens & Williams as a leading member of John Northwood's team. When Northwood died in 1902 his son, John Northwood II, was chosen as his successor. Carder had hoped to be named manager, and was very disappointed. He was somewhat consoled when he was sent to tour German and Austrian glassworks and report back on their technical facilities, as their cheaper products were eroding the market for British glass. His report recommended modernisation of existing facilities and new designs for the kilns. He was then sent on a further tour of inspection, this time to the United States. His report indicated that American glassworks were as troubled and uncertain as the British ones, their one advantage being their relative protection from cheap imports by high tariffs.

Carder's tour of the United States brought him to Corning, New York, home of the Corning Glass Works, a very large firm manufacturing industrial and table glass. It was also the home of T. G. Hawkes & Co., a small glass cutting firm founded in 1880, which purchased its blanks from the Corning Glass Works. Hawkes' president, Thomas G. Hawkes, persuaded Carder to help him set up a new glassworks. Hawkes took over the S. W. Payne Foundry premises and equipped it with everything necessary for the production of crystal and coloured glass. The new company was incorporated on March 2nd, 1903, and was named the Steuben Glass Works after the county in which it operated. Carder's 'defection' was not appreciated in Stourbridge, and a bitter interview he gave a local newspaper in which he attacked both the apathy into which the English glass manufacturers had sunk and the obstructive and reactionary activities of the trade unions, effectively burned his bridges. Carder took over the artistic direction of Steuben and created over the years a large and continuous production of glassware in a variety of techniques.

Aurene was the trade name adopted by Carder for the iridescent glassware produced at Steuben from 1904 to 1930. It was produced in both gold and blue in an enormous variety of shapes, including table glass, vases, candlesticks, and lampshades. These were sometimes blown into moulds to give them a patterned optic surface. Some had lightly etched or engraved surface decoration.

Decorated Aurene was produced in a variety of combinations. A gold or blue Aurene vessel would have one of several patterns applied to the surface, then smoothed into it by rolling on the marver: leaf and vine, pulled feather or loop, chain or guilloché, applied threads, millefiori, etc. Another variation involved producing a vessel of two or more layers of opaque coloured glass, say opal with gold, blue, green, red or brown, then drawing the layers away from each other in the kiln and, by means of hooks pulling the colour edges into patterned swirls, feather or other designs until the finished piece appeared decorated in two, three or more bands of separate colour decoration. A third variation involved blue or gold iridescent patterns applied to brown, opal, green, red or other coloured glass vessel.

Tyrian ware is a very rare variation of a Decorated Aurene in which the vessel itself has a rich, changeable colour, being green at the top, gradually merging into a pale blue in the centre, which in turn becomes purplish at the bottom. The whole surface was then decorated in gold Aurene patterns, and the interior sometimes also lustred. These are usually engraved 'Tyrian' on the base.

Jade glass was Carder's name for the opalines produced at Steuben. It was produced in alabaster (white), blue, green, yellow, mandarin yellow (a rare and very deep shade), amethyst and rosaline (a pale pink). Differences in shades within each colour group occur frequently. Some jade glass was produced in a single colour, but some was also produced with alabaster stem and foot or handles in combination with a bowl of a different colour.

Rouge Flambé is a very striking red glass, produced by Carder in very small quantities. Selenium and Cad-

mium sulphate as well as chromium oxide were used to obtain the effect. Very difficult to produce, Rouge Flambé was made in both solid colour vessels and Aurene Decorated. Stevens and Williams were experimenting with this colour when Carder worked for them, and had experienced great difficulties in its production which Carder clearly was unable to solve satisfactorily at Steuben.

Transparent coloured glass was produced in an enormous variety of colours at Steuben, each of which was given a name. They include Gold Ruby; Selenium Red; Cerise Ruby; Rosa; Amber; Topaz; Bristol Yellow; Antique and Pomona Greens; Celeste; Marina; French and Flemish Blues; Amethyst; Orchid; Wisteria; and Gold Purple. They were made as table glass as well as vases, candlesticks and other shapes. Stems or feet were sometimes made in colourless crystal or in a contrasting colour, and they were occasionally decorated with applied glass threads.

Peach Blow glass was produced in small quantities, mostly to be used functionally as lamp bases. One type was an opal glass cased with a russet ruby glass similar to the Victorian peach-blow, but not shading in colour. Another was very similar to Victorian Burmese glass, shading from peach to yellow. Both were opaque.

Verre de Soie was a translucent effect obtained by spraying the surface of the crystal vessel with a solution of stannous chloride which gave it a silky iridescence – hence the name. It was very similar in aspect to verre de soie produced in European factories, but was often brightened at Steuben by the addition of coloured glass decorations, handles, stoppers, finials, etc. Some Verre de Soie was given etched or engraved decoration, usually in undistinguished traditional patterns. First introduced in about 1905, it was produced over a number of years.

Ivrene was an opaque white glass lustred to a soft pearly iridescence. It was used for a variety of decorative wares, but was particularly appropriate for lamp shades, globes and other light fixtures. Occasional items were decorated with engraving, which revealed the underlying mat white glass beneath the iridescent surface. Ivrene is sometimes referred to as white Aurene or white Jade.

Calcite wares were vessels made of Ivrene which was then plated on its inner surface with gold or blue Aurene. Introduced in 1910, the trade mark for this glass was registered in 1915. The contrast between the white exterior and the blue or gold iridescent interior is enormously dramatic. The contrast was sometimes increased by engraving a pattern on the Aurene surface, which revealed the underlying white glass.

Ivory was an opaque pale yellow glass otherwise very similar to Ivrene, the colour obtained by the addition of uranium salts to an opal glass base. Both Ivrene and Ivory wares have the look of polished alabaster, this appearance emphasised by Steuben's somewhat ponderous and classical designs.

Acid Cut-Back was the name used at Steuben for the acid-etched decoration used on cased glass. The technique is similar to that used on later industrial Gallé glass and would be completely uninteresting were it not for the fact that many of the decorative designs are amusing and intricate. Floral and animal designs were used as well as Chinese motifs, dragons and abstracted patterns. In the 1920s several striking Art Deco designs were used. Acid cut-back designs were made on several combinations of the different coloured glass produced by Steuben, but some of the most striking are those with an Aurene outer layer. The surface was sometimes given a frosted finish by the use of Philip J. Handel's patented 'glass-chipping' technique.

Enamelled Decoration is occasionally found on a variety of the glass produced at Steuben, including clear crystal and coloured glass as well as Verre de Soie. The more elaborate designs are based on Chinoiserie patterns, and are made in a variety of colours.

Carder found great difficulty in obtaining the raw materials needed to keep up production during the First World War, and after the United States entered the war many of Steuben's workers joined up. Carder's son was killed. In 1918 the Steuben Glass Works were closed down. That same year the Corning Glass Works purchased them from Hawkes and Carder, and reopened them as their Steuben Division after the war. Carder was named art director. Most of the earlier techniques were maintained in production throughout Carder's tenure of office, as well as a number of additional ones.

Cluthra was introduced in 1920 as a bubbled, cloudy glass very similar to the Scottish Clutha produced in the 1890s by James Couper & Sons of Glasgow. To achieve his effects, Carder rolled a gather of glass onto crushed particles of coloured opaline glass, then onto tapioca, which started an effervescent reaction in the hot glass which created the bubbles. When blown into the final shape with a crystal exterior, the bubbles often expanded or elongated in the direction of the blow. Coloured glass handles or feet were sometimes added.

Cintra was also made by rolling a gather of glass over crushed particles of coloured glass, but once completely covered, it was reheated only enough to keep it sufficiently plastic to blow it into its external crystal casing without disturbing the internal granulated effect which was generally combined with a multiplicity of tiny bubbles. A multi-coloured striped effect was achieved by first blowing the gather into a ribbed mould, after which only the raised ribs would pick up the particles of crushed coloured glass. Rolling the vessel on the marver would smooth the sides again, leaving coloured stripes embedded in the surface. If blown into another ribbed mould, the process could be repeated to obtain another set of stripes in another colour. The process could be repeated as often as required by the design (or the glassworker's ability). The final effect was very similar to A. Douglas Nash's Chintz glass, which it soon displaced in popularity. Made in a variety of

shapes and colours, some of the chunkier vases sometimes had acid cut-back designs etched on the surface. A very few were sculptured with geometric deep-etched patterns clearly derived from Maurice Marinot's designs. About ten Cintra vases were made with a decorative pattern in which Carder painted the design (birds, flowers, etc.) onto prepared paper using crushed coloured glass. The hot gather of glass was then rolled into this design. While the crushed glass design was transferred onto the surface of the gather, the paper burned away. The parison was then blown into a crystal glass outer layer in the normal fashion.

Quartz glass was either Cluthra or Cintra glass given a mat exterior by the use of either acid or sand-blasting. It was often used as a base for Acid Cut-Back designs.

Bubbly glass is similar to Cluthra except that the tapioca, which provoked the bubbles, was added to a gather of crystals or transparent coloured glass without the use of crushed glass. The finished vessel therefore had the clear bubbles suspended within the pure and transparent body.

Florentia glass was a vessel made of alabaster glass decorated with a recurrent pointed leaf all around, starting from the base made of rosaline or green jade. The alabaster glass was flecked with mica, and the whole vessel given a mat finish with acid.

Oriental, Poppy, Jade and **Orchid** were the terms used for pink, green or orchid coloured vessels with opalescent white stripes in which the finished glass was also given a light iridescent lustre inside and out. They are usually found unsigned.

Silverine glass was made from transparent pastel coloured glass or clear crystal flecked with mica, blown into a mould with a diamond pattern surface, then coated with a clear crystal outer layer. The final vessel had the internal diamond pattern all over its flecked surface. It was sometimes given a mat or iridescent finish.

Moss Agate glass produced at Steuben was similar to that produced by Stevens & Williams, but was usually made with brighter colours. The technique was identical, the gather of hot glass being rolled onto crushed glass of various colours, the whole then reheated and the adhering flecks of coloured glass being then pulled with hooks into random patterns simulating the look of moss-agate.

Millefiori patterns were used by Carder for a variety of effects. Patterns of millefiori rod sections were sometimes used in Decorated Aurenes. They were also used to form the flower centres of some relief-carved crystal vases. Finally, they were used in forming overall patterns on some plates, plaques, box lids and other flat surfaces in imitation of mosaics, which are sometimes referred to as *Tesserae* (i.e. glass mosaic tiles).

Matsu-No-Ke or **Cactus** or **Fircone** decoration very similar to that used by Stevens & Williams was applied in the 1920s. It consisted of cactus flower shapes in coloured glass applied to a clear crystal vessel.

Reeded decoration consisted of threads of coloured glass coiled by hand around the vessel, either in a tight band or all over. In contrast to the symmetry of machine applied threads, hand application gave Steuben's otherwise rigid shapes an appearance of freedom.

Grotesque was another attempt at simulating a free form. Made in several types of coloured glass, often shading through several hues, they were a variant of shaped Venetian glass. The twists and distortions are usually symmetrical, and they often have added stems and moulded feet.

Heavy Cologne Bottles, also sometimes referred to as 'paperweight' bottles, clearly owe a debt to Maurice Marinot. Made of very thick and heavy glass, the clear crystal vessel is usually cut and facetted, often with deep acid-cut grooves. 'Floating' inside is the decorated inner layer, which was made in one of several different glasses such as Cluthra or Cintra; or with applied millefiori or air-trap spiral patterns or any other elaborate decorative device. The pyramidal stopper was also facetted. They are now very rare.

Pressed Glass. Various decorative articles were made in pressed glass at Steuben, including ashtrays, plaques, animal and bird figurines, chess pieces and 'luminoirs' (i.e. plaques or figurines which could be illuminated by a light fixture concealed in its base). They were made in a variety of mostly opaque coloured glass.

Intarsia glass is very similar to 'Graal' glass produced at Orrefors in Sweden. To make it a clear crystal parison was flashed with a layer of coloured glass. After annealing the design was drawn on the vessel, and the superfluous sections of coloured glass etched away with hydrofluoric acid. The vessel was then very slowly reheated, then when malleable it was blown into an outer envelope of clear crystal and the whole vessel further blown to its final shape. Where appropriate a stem or foot or appliqué crystal decoration was added. The coloured glass decoration thus appeared floating in mid air between the clear crystal layers. Carder introduced the technique in 1916, and Intarsia vessels were made until 1923. All were designed by him, and the internal decorations were all drawn by him, while the physical manipulation was carried out by a Swedish glassworker called Johnny Jensen, who had been trained by Carder.

Cast Glass. Throughout the 1920s and 1930s Carder experimented with monumental cast glass for architectural use. Panels of different sizes, doors and decorative friezes were cast in glass. One of the most important commissions carried out at this time by Steuben under Carder's supervision was the relief murals for Rockefeller Center in New York City. Carder also experimented with huge casts made from Pyrex glass, which had been developed by the parent Corning Glass Works.

Steuben – Decorated aurene vase with millefiore fleurettes, gold floral-form vase and blue aurene cologne bottle. (Minna Rosenblatt Ltd., New York)

Steuben – Decorated aurene in leaf and vine pattern, *c*1910. (Minna Rosenblatt Ltd., New York)

The earliest of Steuben's wares were signed 'Hawkes', as were some items made by the Corning Glass Works but decorated by the Hawkes shop, or bore the Hawkes trademark of two hawks and a fleur-de-lys. Much of the later production was unsigned, or merely bore a number. Some were marked with the names of firms for whom they were especially made, such as 'Haviland' in France. Many, however, were marked with the fleur-de-lys that became the Steuben trademark, fired on the glass with powered aluminium, incorporating the name 'Steuben' in capital letters. Others were signed only with the name Steuben. Steuben's large production of lamp shades was marked similarly, although both the name and the fleur-de-lys have tended to vanish from the surface of many of the items signed. Acid cut-back ware was sometimes signed with the fleur-de-lys in cameo relief. A few items were signed by Carder with his name at the time they were produced, but in the years after his official retirement he identified and signed many unsigned items of his production.

The great variety of glass produced by Steuben did not, however, bring the Company financial success. The management and sales structure was reorganised several times during the 1920s, but with little impact on the Company's losses. The Depression which followed the 1929 Stock Market crash further severely curtailed the market for decorative Art Glass, and by 1933 the Directors of the Corning Glass Works had determined to liquidate their Steuben Division.

Arthur Amory Houghton, Jr., great grandson of Amory Houghton (who had founded the parent Company and brought his Union Glass Company from Somerville, Massachusetts to Brooklyn and thence to Corning in 1868), proposed a final salvage attempt for Steuben. A new company was formed, called Steuben Glass Incorporated, wholly owned by the Corning Glass Works, with the young Houghton as President. He brought in as Director of Design a childhood friend of his, John Monteith Gates, a rising young architect. Gates brought in Sidney Waugh, a sculptor, as principal designer. All the early techniques and types of glass were abandoned in favour of a pure and brilliant crystal whose chemical formula had been developed at Corning in 1932. Robert J. Leary, a glass worker with many years of experience at the Steuben Division, was named Production Manager. Frederick Carder retired, but retained the use of a studio at the Steuben works.

Every item of glass produced by Steuben between 1933 and 1936 was designed by Gates or Waugh individually or by the two of them together. A Design Department was set up in 1936 in the Company's New York headquarters, eventually employing ten or eleven designers at any given time. The Design Department, along with executive offices, reference library and retail shop was incorporated in a new building erected in 1937 on Fifth Avenue and 56th Street, for which Gates was supervisory architect as well as designer of its interior. Gates also designed a number of Steuben shops opened (mostly

Opposite
Above
Val St-Lambert – Three vases in fluogravure designed by Désiré and Henri Muller, 17.4 cm, 26.3 cm, 15.6 cm *c*1906. (Author's Collection)
Below
Val St-Lambert – Three vases in fluogravure designed by Désiré and Henri Muller, 13.7 cm, 23.5 cm, 20.7 cm *c*1906. (Author's Collection)

inside leading department stores) in various major cities in the United States. Steuben glass could only be purchased in Steuben shops.

The *Gazelle Bowl* designed by Waugh in 1935 was the first exhibition piece produced by Steuben. This was a chunky bowl resting on a geometrically facetted foot, the bowl wheel-cut with an intaglio frieze of running and leaping gazelles. Like all the important designs that were to follow, it was produced in only a limited quantity.

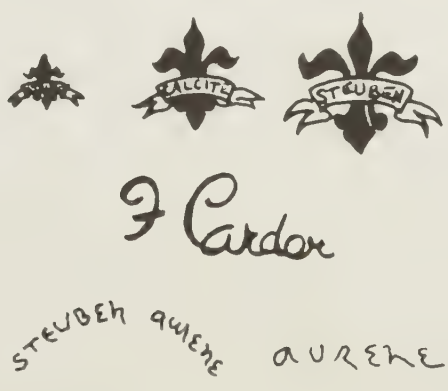
Steuben exhibited frequently. In 1935 an exhibition of their glass was held at the Knoedler Gallery in New York and at the Fine Arts Society Gallery in London, as well as at the Fogg Museum of Art at Harvard University and the Toledo (Ohio) Museum of Art. Other American Museums followed. At the 1937 International Exhibition held in Paris Steuben was awarded a Gold Medal. Gold Medals were also awarded Steuben at the 1939 San Francisco Golden Gate International Exhibition and the 1940 New York World's Fair.

Gates met Henri Matisse at the Paris International Exhibition in 1937. The French painter was sufficiently impressed by the Steuben glass exhibited to offer a drawing which could be engraved on a crystal vessel. Gates promptly commissioned drawings from various European and American artists. Most of the drawings were solely of the decorative motifs to be engraved, but some also indicated the shape of the vessel. Twenty-seven models were eventually executed by Steuben to designs by such artists as Matisse, Jean Cocteau, Christian Berard, Marie Laurencin, Aristide Maillol, Salvador Dali, Paul Manship, Thomas Benton, Grant Wood, Isamu Noguchi and Eric Gill, and these were first exhibited in 1940.

Steuben's activities were curtailed during the Second World War, but their position as America's leading art glass firm was emphasised after the war. Special crystal vessels were commissioned from Steuben for presentation to visiting Heads of State and other important personages by American Presidents, including the *United Nations Bowl* presented to the UN Secretary General Trygve Lie in 1950; the *Norway Cup* presented to King Haakon VII in 1955; the *Lafayette Cup* presented to French President René Coty in 1957; the *Queen's Cup* presented to Queen Elizabeth II in 1957; and the *US Presidential Seal Vase* presented to Nikita Kruschev of the Soviet Union in 1959. Cardinal Spellman offered the *Papal Cup* to Pope Pius XII in 1956.

Steuben was invited to organise an important exhibition of their crystal at the Museum of Decorative Arts in Paris in 1951. Shortly thereafter they commissioned twenty British painters and sculptors to design a collection for them, including Jacob Epstein, John Piper, John Nash, Graham Sutherland, Cecil Beaton and Oliver Messel. In 1955 Steuben produced a group of twelve abstract designs, while in 1956 they exhibited 36 crystal vessels designed by various Asian artists. A further group of 31 'Collector's pieces' was produced in 1959; while 31 poets were commissioned in 1963 to present poems to be interpreted in crystal by Steuben designers. Other groups of glass included a number of crystal animals introduced in 1949, including a snail, seagull, owl, hen and cat. From the 1960s onwards a number of crystal designs were mounted with silver, gold and precious stones. Sidney Waugh died in 1963. When John Gates retired in 1970, he was succeeded by Paul Schulze, who had joined the Company in 1961 and designed several geometric pieces.

While an increasingly important position has been given to the major display pieces, Steuben has continued to produce a wide range of utilitarian vessels, including glasses, decanters, ash trays, bowls, jars, bottles and, when fashionable, cocktail shakers. These are sturdily designed and made, usually in rather heavy crystal whose shape, however, tends to minimize the weight and emphasise its grace.



Carder's retirement at the age of seventy-one proved an active one. Alone in his workshop he experimented with glass casts, producing a variety of bowls, plaques and shallow plates with relief decoration, made from clear crystal. To achieve the clearest results he used the *cire-perdue* (or lost wax) process, which entailed producing a wax model of the desired object, then covering it with a plaster and clay paste which hardened to form a mould. The base was pierced and the whole then heated until the wax melted and was 'lost' down the holes. The hollow mould could then be filled with the molten glass. When the glass sculpture was formed and cooled, the mould could then be broken away to reveal

Opposite
Left
Vallérysthal – Etched and enamelled floral vase with butterflies, 30.4 cm *c*1900. (Editions Graphiques, London)
Above right
Walter – *Isadora Duncan* pâte-de-verre plaque designed by Jean Descomps, 41.5 cm × 26.7 cm *c*1922. (Editions Graphiques, London)
Below right
Walter – *Baigneuse* pâte-de-verre plaque designed by A. Finot, maximum width 23.2 cm *c*1920. (Editions Graphiques, London)

the finished object. Cast as a unique object, there were none of the mould marks left when a repeatable investment was used. Carder sometimes substituted a paste of ground coloured glass with a binding agent for the molten glass, and produced several items in *pâte-de-verre*. In the 1940s he began to work in the round, producing a number of clear glass busts, portraits, figures and animals, later using coloured glass.

At the age of 87, Carder began working on his most intricate and complex achievements, working in the *Diatreta* technique. Using the *cire-perdue* method of casting, he produced a number of vases in clear crystal and coloured glass encased in a sculptured wall made up of human figures, masks or ornamental lattice-work connected to the main body of the vase only at the top and bottom. Carder performed the entire operation himself, including the designing, modelling, casting, firing and breaking of the mould.

Carder finally closed down his workshop in 1959, and died in 1963 at the age of one hundred. He had lived and worked through the most fecund period of creativity in Victorian England, had worked with John Northwood and all the other great English cameo glass workmen, had worked with Eugène Fabergé, met Émile Gallé, René Lalique and Louis Comfort Tiffany, and as a member of the Hoover Commission at the 1925 Paris International Exhibition of Decorative and Industrial Arts had met Marinot, Décorchemont and all the other French creators of Art Deco glass. Thomas Beuchner, Director of the Corning Museum of Glass wrote of him: 'An academician by training, he produced in all the late Victorian styles, including Chinese; contributed to the ever more precious œuvre of the Art Nouveau and to the rhythmic revival of neo-classicism. The frivolous Venetian style was as at home on his drafting table as Bauhaus Functionalism. No man could better personify the kaleidoscope of glassmaking during the past hundred years.'

A large and representative collection of Steuben's and Carder's wares is to be found in the Rockwell Gallery in Corning, New York, as well as at the Corning Museum of Glass.

STOLTENBERG-LERCHE

Hans Stoltenberg-Lerche was born in Düsseldorf in 1867. His father was a Norwegian painter, his mother German. In 1886 he travelled to Florence and Naples, and made Italy his home base for the rest of his life. In the 1890s he began regular visits to Paris, attending the studio of Eugène Carrière, and modelling a number of small sculptures, some in the shape of vases, which were cast in bronze. He first exhibited these in 1895 at the Salon du Champ-de-Mars held by the Société des Beaux-Arts.

Stoltenberg-Lerche later exhibited his bronzes at the Paris 1900 Universal Exhibition and at St. Petersburg in 1901. At the first International Exhibition of Modern Decorative Arts held at Turin in 1902 he exhibited bronzes, ceramics and jewellery at the Norwegian pavilion, and was awarded a Diploma of Honour. He also exhibited in Milan in 1906 and several times at the Venice Biennales.

Although he retained a Paris studio, he settled in Rome in 1900. His small bronzes were very much in the French Art Nouveau style, but he also executed a number of busts of his friends, including Ibsen, Björnson and Alberto Martini. He designed silver and jewellery, the latter using snakes and Medusa heads and dragons with pearls, hardstones and mother of pearl. He also produced some original ceramics with fine glazes somewhat reminiscent of Jean Carriès.

In the last few years of his life he travelled often to Venice and Murano, and designed a number of glass vases which were made at the Barovier & Toso glassworks. Sometimes shaped in moulded glass, he designed vases and plates in simple shapes with polychrome decorations within the glass through the use of powdered coloured glass, as well as sculptural glass, such as plates shaped as undulating leaves with applied free-formed coloured glass snakes or fish. These vases are streaked with subtle colours, often bubbled with a surface in which the bubbles are allowed to burst. His glass designs are signed 'H. St. Lerche', etched or engraved in diamond point on the base. He used the same signature on his bronzes and ceramics. A number of his works were exhibited posthumously at the Venice Biennale in 1920, the year of his death in Rome.

STEVENS & WILLIAMS

The Moor Lane Glass House at 'Briar Lea Hill' was founded about 1776 by Robert Honeyborne, a landowner who also owned two glasshouses. Connected by marriage to the glass-making families of Hamond, Henzey and Pidcock, he joined with a man called Ensell in 1780 to run the Moor Lane works for the production of 'German sheet and crown glass'. Members of Honeyborne's family ran the works until about 1824, when Joseph Silvers and Joseph Stevens were granted a fourteen-year lease. This was later extended until, in 1847, William Stevens and Samuel Cox Williams took over, giving the glassworks its present name. In 1870 Stevens & Williams moved to their present works, modernised their equipment, and expanded the range of their products.

In 1881 Frederick C. Carder (1863-1963) joined Stevens & Williams as designer in charge of shapes and applied decorations. Born in Brockmoor, near Kingswinford, Staffordshire, he had been apprenticed to his father's pottery, but he had pursued his studies in chemistry and metallurgy at Dudley Mechanics' Institute as well as attending the Stourbridge School of Art, where he became a pupil and disciple of John Northwood, who encouraged him to apply for the job at Stevens & Williams. Carder returned the compliment by advising Northwood to join Stevens & Williams as Art Director, which he did in 1882.

Northwood soon assembled a superb team of workmen at Stevens & Williams. In addition to Carder the team included his son, John Northwood II (1870-1960), his nephew William Northwood (1857-1937) and Joshua Hodgetts (1857-1933). Also in Northwood's team were another nephew, Charles Northwood, who left after a short while, Frank Schreiber, Benjamin Fenn, James Hill (1850-1928), W. O. Bowen, and Percival Cartwright. Although Northwood himself had completed his last great cameo vase before joining Stevens & Williams, he designed a variety of new styles and techniques and trained his team to execute a great variety of cameo and other vessels.

At the Edinburgh International Exhibition of Industry, Science and Art in 1886 Stevens & Williams exhibited a 'choice collection of Table and Decorative art glass in cut, engraved, rock-crystal, cameo, etc.'. A cameo glass plaque by William Northwood, entitled *Venus and Cupid*, won the firm a gold medal. At a national competition held by the South Kensington Museum (now the Victoria and Albert Museum) for cameo carving William Northwood was awarded a bronze medal while Frederick Carder was awarded both gold and silver medals.

Joshua Hodgetts was born at Kingswinford and, after spending some time in Northumberland, went to work for J. & J. Northwood at Wordsley in their engraving shop, under the direction of John Orchard. He was given a characteristically thorough training, becoming a fine technician in carving and engraving, as well as studying drawing, sculpture and design at the Stourbridge School of Art. Northwood brought Hodgetts into Stevens & Williams, where he remained for over forty years.

Hodgetts spent some considerable time working on cameo glass, for which there seemed at the time to be an inexhaustible demand in Britain and the United States. The early sculptural experiments of John Northwood and Alphonse Lechevrel had given way to more commercialised productions, using thinner-walled glass blanks and more rapid techniques, including extensive use of hydrofluoric acid and the engraving wheel. Hodgetts achieved some splendid effects with the wheel, designing mostly floral patterns. As an amateur, but dedicated, botanist he would use actual specimens as models for his floral designs on cameo.

Intaglio Ware: Northwood and Hodgetts worked closely together to develop this. The vessels consisted of generally ivory-coloured glass blanks cased with one or more layers of transparent coloured glass. Intricate and subtle designs were then wheel-engraved in intaglio. Hodgetts spent a number of years on this, eventually becoming manager of the intaglio department until his retirement in 1929.

Peach Bloom: The sale in 1886 of Mrs. Pierrepont Morgan's estate (which included Northwood's *Pegasus* vase) achieved international notoriety when a Chinese Peach Blow porcelain vase was sold for eighteen thousand dollars. Glass versions of this type of porcelain were promptly made by several firms in the United States and Britain. Stevens & Williams produced Peach Bloom ware in glass that was shaded from yellow to red. Peach Bloom vessels were also sometimes used as blanks for cameo cuttings, or had applied glass decorations.

Moss Agate glass was developed by John Northwood in the late 1880s. Frederick Carder designed many of the vessel shapes for this glass, which he later recreated for the Steuben glassworks in the United States. It was made by first blowing a gather of light soda glass, then coating it with heavier lead glass. The parison was then rolled onto a layer of multicoloured powdered glass on the marver, the powdered glass thus picked up being pulled into random patterns with a hook, after which it was reheated and coated with a further layer of lead glass and given its final shape. Finally, water was poured into the hot vessel and very rapidly thrown out, this brief contact with the water crackling the soft soda glass. When reheated, the crackles took the characteristic moss agate shapes. After

Stevens & Williams – Lemon coloured cameo vase overlaid in white and carved with a leaf and floral spray by John Northwood, silver rim, 12 cm *c*1888. (Editions Graphiques, London)

annealing, the vessel was sometimes cut and then polished. A somewhat similar type of glass was produced by Eugène Rousseau and later by Léveillé.

Threaded Ware: The application of glass threads onto a glass vessel was an ancient and traditional method of decoration. In 1876 William J. Hodgetts of Hodgetts, Richardson & Sons, patented a machine capable of mechanically applying the threads. This both simplified the technique and enabled the threads to be applied in rigorously parallel lines. A year later William Stevens patented a very similar machine, while a much more flexible machine was patented in 1885 by John Northwood. This machine produced an almost perfectly uniform threading with a minimum of manipulation, after which the threaded parison could be placed into a further machine fitted with a set of graduated blades which combed the threads into feathered patterns. Reheated and rolled on the marver to smooth the surface, the annealed vessel was then usually given a satin finish with acid.

Glass trailings or applications were sometimes added for decoration. A wide range of patterns and colours were used, multicoloured ones being sometimes referred to as 'Rainbow' ware. They were normally marked 'Patent' in polished letters with the use of stencils on the base.

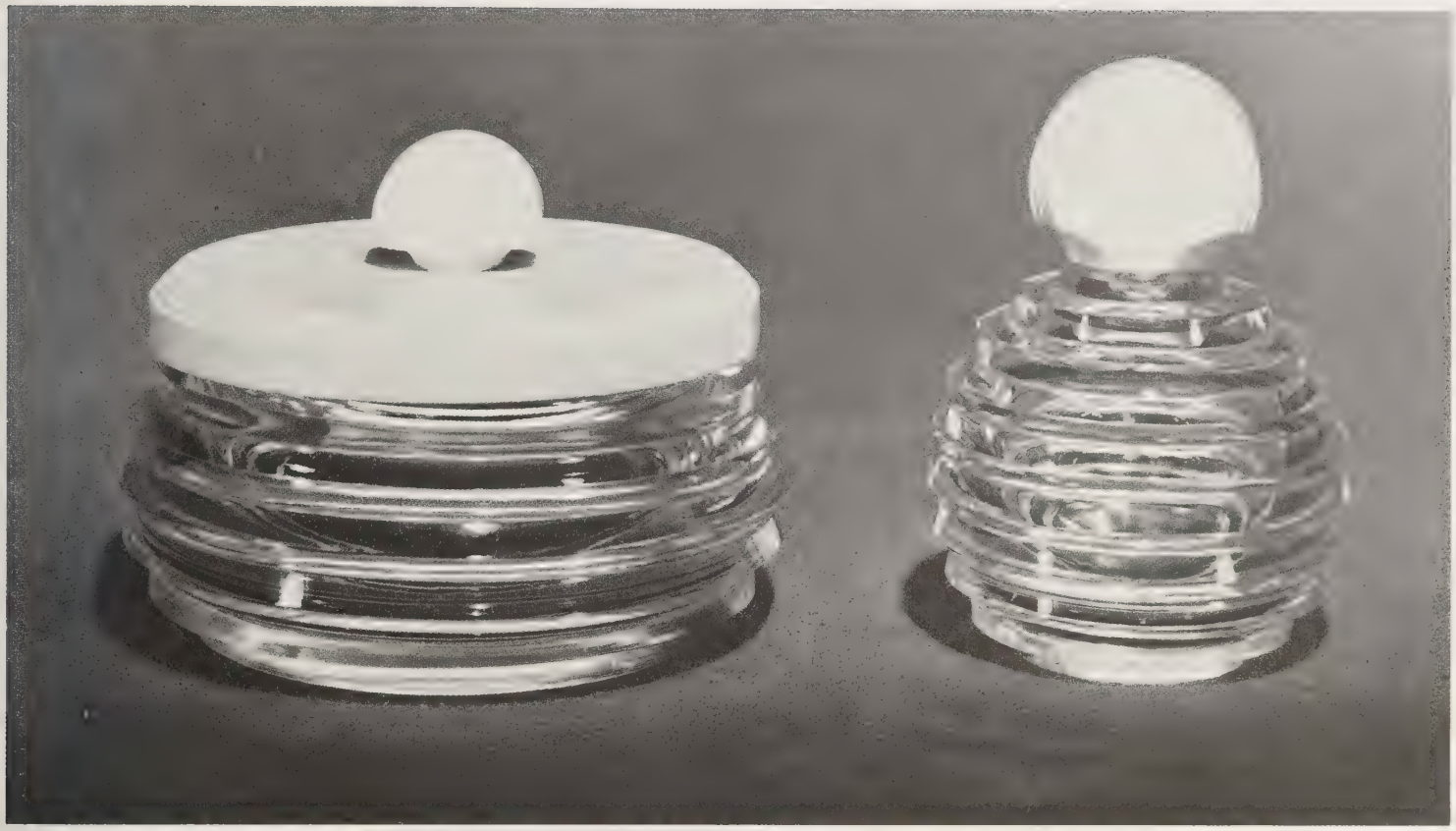
Jewell Ware was patented by Stevens & Williams in 1886. There a parison of clear coloured glass was threaded by machine, then blown into a glass casing. The whole was then blown into a ribbed mould, which forced the air-traps between the threads on the inner layer and the outer glass layer into vertical patterns. They could be varied considerably by combing the applied glass threads with Northwood's machine.

Tapestry Ware was introduced in the 1890s. The tightly threaded vessel was painted with enamels in floral or other patterns. The regular interruption of the enamel design by successive threads simulated the look of tapestry. Much of this ware was decorated by Oscar Pierre Erard.

Silveria was first devised by John Northwood II in about 1900 with the active encouragement of his father, who was then in failing health. It was made by blowing an inner vessel of transparent coloured or clear glass to virtually desired finished size, coating it overall with a layer of silver foil, then dipping this into a pot of molten transparent glass until a very thin protective outer coating was picked up. Coloured glass trailings were then dripped over the surface in generally random patterns. Small appliqué glass 'flowers' were sometimes added to the surface. Wherever the surface cracked, or bubbles exploded, air reached the inner layer of silver foil and oxidised it. Those vessels which remained totally airtight, of course, do not have any of the oxidation occurring in the foil. Some of the Silveria range, which was very popular though expensive to produce, is found signed with the 'S & W' mark, often with a fleur-de-lys, though much of it was unsigned.

Stevens & Williams produced the full range of every type of glass popular in the late Victorian period, including both opaque and transparent overlay vases which were cut, engraved or enamelled, or had every variety of applied glass decoration such as swags, fruit, flowers, branches, cactus (Matsu-no-ke). Venetian techniques, such as *latticino* or other *filigree* wares, in which the vessel was covered with a mesh network made by flattening glass canes containing spiral threads into the surface of the parison which was then blown and finished, were occasionally used from 1887. Cut lead-crystal vases and bowls in both traditional and new patterns of varying degrees of complexity continued in production and popularity, the multiple facets creating the 'bowl-of-fire' that seemed a requisite of every fashionable sideboard. Although pressed glass in imitation of cut glass temporarily displaced the real thing, the popularity of true facetting soon reasserted itself.

The production of cameo glass must, however, be accounted the greatest glory of Stevens & Williams, as indeed it was of Stourbridge in general. Innumerable variations were attempted, including cameo on filigree and on a variety of other blanks, *dolce relievo* (soft relief, i.e. very shallow relief), mixtures of cameo and intaglio, cameo and enamelling, cameo and applications. Shortcuts were frequently used, including thinner outer coloured glass layers, liberal use of hydrofluoric acid to rough out the basic design, use of the engraving wheel to facilitate intricate carving. Yet it all depended on the skill and sensi-



Stevens & Williams – Moulded clear glass powder box and scent bottle with ivory lids, designed by Keith Murray, 9.75 and 11.5 cm *c*1935. (Author's Collection)

tivity of the man who actually executed the work, for the great virtues of English cameo glass are superb craftsmanship, intricate shading and perspective. The vessels had two-, three-, four-, even five-colour layers on occasion. The subjects were frequently floral in a distinctive naturalistic style, but also commemorative, scenic, or otherwise pictorial. Rims, shoulders and feet were invariably decorated with patterns, and the central subjects were sometimes enclosed within borders or cartouches. They are not often signed, so definite attributions to particular artists or to such firms as Stevens & Williams or Thomas Webb & Sons are often very difficult or even impossible. It must not be forgotten that craftsmen often worked for several firms at various times in their lives, and also that the more complex cameo vessels were often worked on by several different men.

When John Northwood died in 1902 he was succeeded as director and technical manager at Stevens & Williams by his son, John Northwood II. Frederick Carder had expected to be appointed to the position, and clearly expressed his disappointment. As a partial consolation prize he was sent to tour European and then American glasshouses in order to report on their facilities, difficulties and production. During his American visit, however, he met Thomas G. Hawkes, the President of a small glass decorating firm in Corning, New York, who persuaded him to settle in the United States and join him in founding a new glasshouse, which was named the Steuben Glass Works. In the years that followed Carder recreated many of the techniques and patterns executed earlier at Stevens & Williams, as well as essaying several new ones.

Fine cameo glass continued to be made for many years at Stevens & Williams. Although the great demand for it had been partly diverted by cheap imported imitations, including *Mary Gregory* glass (in which enamel was applied to the surface of the vessel in imitation of cameo relief); *Florentine Art Cameo* and *Lace-de-Bohème Cameo* (both using enamel paint to simulate cameo relief) all from Bohemia; as well as very thinly-cased glass with merely acid-etched decoration produced in England and on the Continent, there always remained some demand for the fine, hand carved and engraved ware.

Stevens & Williams exhibited a wide range of cameo glass at the 1902 Wolverhampton Exhibition, and the catalogue indicates that specific floral patterns could be had in a choice of coloured body. John Northwood II was himself a superb glass carver, though he did not produce a great deal. His first major work was a plaque, *Aphrodite*, begun when he was seventeen years old. Trained and encouraged by his father, he abandoned it after a couple of years, but returned to it in 1902 after his father's death and completed it within four years, though it fell and broke in two shortly thereafter. It is now repaired and in the Stevens & Williams collection at Brierley Hill. John Northwood II also carved brooches, less elaborate plaques and vases, as well as designing a variety of models. He retired in 1947.

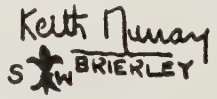
True Art Nouveau decorative patterns were never used

at Stourbridge in the production of cameo glass. Nevertheless the early neo-classical designs and those inspired by Flaxman soon gave way to a strong Pre-Raphaelite and Symbolist inspiration which combined with a naive naturalism in depicting nature. The very nature of the medium, the contrast of colours brought out by the painstaking thinning of the layers to emphasise texture, perspective and shading, created a stylisation of its own. Cameo went on being produced for many years. Superb designs were still being made in some quantity in the 1920s and 1930s, and the now traditional art was revived in the late 1940s by J. Millward and R. G. Rowley, using some blanks that were found in their stores. Some of these were exhibited at Stourbridge at the 1951 Festival of Britain Exhibition of Glass, organised and catalogued by John Northwood II. Stevens & Williams are also known to sometimes buy back unfinished cameo vases which are occasionally found, and having them completed by a craftsman. These vessels then enter their permanent collection.

In the years following the First World War research carried out at Stevens & Williams was directed mainly towards achieving greater purity of the lead-crystal and in developing rare and delicate colours, such as ranunculus yellow. The firm produced large quantities of table glass and general cut glass patterns, while other lead-crystal vases and bowls were engraved with a variety of mostly traditional designs. The firm exhibited at the 1925 Paris International Exhibition of Decorative and Industrial Arts, in which most British designers exhibiting there exposed themselves to the disbelieving derision and contempt of both critics and public. Stevens & Williams glass, though in no way modern or unusual, showed solid craftsmanship and purity of tradition: qualities which were admired and given their due. In fact, British glasshouses which exhibited, including in particular James Powell & Sons and Walsh Walsh Ltd. of Birmingham, were almost the only exhibitors not to disgrace their country of origin.

In 1932 Keith Murray began to design for Stevens & Williams. Born in 1892 in Auckland, New Zealand, his parents brought him to England in 1906. After serving in the Air Force from 1915 to 1918 he trained as an architect at the Architectural Association School, then set up in practice. In 1933 he wrote in the magazine *Design For Today*: 'Old glass has been for many years one of my hobbies, and it was after the Paris exhibition of 1925 that I began to analyse in my own mind why it was that modern English glass (by which I mean ordinary cut glass produced since 1850 or thereabouts) was so unsatisfactory to me. I came to the conclusion that old English glass was satisfactory either when it was left plain, thereby revealing the good form of the object and the pure brilliance of the crystal, or if cut I found that I liked the well-organised decoration and in particular that type of flat-cutting characteristic of Waterford which did not destroy the clarity of the glass. But in the usual glass of the present day the convention seemed to be to obscure the clarity of the glass by as much deep-flashing cutting as possible, such decoration being too frequently poorly designed and applied to indifferent shapes. The contemporary glass, Swedish, Viennese, Czech and Finnish, that I saw in Paris, convinced me that there was no reason why the qualities of the old English glass should not be given modern expression.'

Murray's first experimental glass designs were executed by Arthur Marriott Powell of James Powell & Sons (Whitefriars) at Wealdstone, Middlesex, but revealed his own lack of technical knowledge. In 1932 he approached Hubert Williams-Thomas at Stevens & Williams and was hired as a designer. He quickly immersed himself in the technical side of glass manufacture, spending some considerable time with the craftsmen before returning to actual design. His glass ranges from plain table-ware and vases in transparent coloured and colourless glass to cut, engraved and moulded designs. A small group of glass jars and flacons with characteristic parallel geometric grooves was made with lathe cut ivory covers and stoppers. Engraved designs were fresh and sometimes humorous, while his cut designs were usually sober and restrained. He also used black glass threaded decoration on clear glass. The glass is acid-etched on the base in script 'Keith Murray' with the letters 'S' and 'W' surrounding a fleur-de-lys and the word 'Brierley' in capitals, while some table-ware is simply engraved 'S & W KM' on the base. In the case of sets, such as decanters and glasses or a toilet range, only the principal item or items was signed.



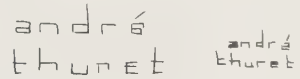
Murray also designed some very attractive ceramic vases, mugs and table-ware in mat and shiny glazes for Wedgwood from 1933, as well as silver and plated ware for Mappin & Webb from 1934. He also began an architectural partnership with C. S. White in 1936, the two men designing the new Wedgwood factory which was opened in 1940. Murray designed for Stevens & Williams for part of each of the seven years until the outbreak of war in 1939, exhibiting his designs at the British Industrial Art in Relation to the Home Exhibition at Dorland Hall in 1933, at the Victoria & Albert Museum and the Royal Academy in 1935, at his one-man exhibition of glass, pottery and silver held at the Medici Galleries, London, in 1935 and at the Paris International Exhibition in 1937. He was awarded a Gold Medal at the 1933 Milan Triennale. After the Second World War he devoted himself to architecture, specialising in office and industrial buildings.

ANDRÉ THURET

Born in 1898, André Thuret became an engineer at the Bagneux glassworks. Although a professional glass technician dealing with the large scale problems of industrial glass, he was fascinated by the glass of Maurice Marinot. In about 1924 he joined his friend the sculptor Henri Navarre in making their first attempts at producing glass.

Like Marinot, Thuret worked alone, with the occasional help of a boy. Working in his spare time at the Alfortville works, near Paris, he produced a variety of vases in transparent tinted glass. While some were wholly free-blown, he favoured a method of constructing moulds with bulging, twisted hollows into which he blew the glass, producing a basically flower-pot-shape with a sculptural, undulating outer surface. He also began to experiment with internal swirls and patterns of colour by rolling the mould-blown parison onto metallic oxides on the marver. Still others, in both transparent tints and with internal decoration, have been fashioned at the furnace, using tools to pinch the malleable glass into graceful folded wings framing the central vessel.

Thuret exhibited at the 1925 Paris International Exhibition of Decorative and Industrial Arts, where he was awarded a Diploma of Honour. He also exhibited in Florence, London, Madrid, Munich and Hilversum. He continued his engineering career, leaving the Bagneux glassworks for those at Bezons, and eventually becoming Director of the Conservatoir des Arts et Métiers in Paris, which maintains a fine Arts and Crafts Museum as well as a full range of educational activities.



After the Second World War Thuret continued to produce his vessels, each of which is unique. He now varied their decorative effect by producing a clear, transparent tinted or colourless central vase partially encased in swirling-shaped bubbled or textured glass. Unlike other art glass workers, however, Thuret was not solely interested in the aesthetic considerations of his work: the scientific aspects interested him equally. His experiments in both the constitution and the treatment of glass led to the presentation of several papers and lectures at the French Academy of Sciences. He died in 1965.

Thuret – Grooved clear glass scent bottle internally decorated with reddish flecks and metallic inclusions, grooved stopper, 21.5 cm *c*1930. (Sotheby's Belgravia)

Thuret – Dimpled clear glass scent bottle internally decorated with lilac and pink flecks, shaped stopper, 21.5 cm *c*1930. (Sotheby's Belgravia)

LOUIS C. TIFFANY

Louis Comfort Tiffany was descended from several generations of New Englanders of English descent who had settled in Massachussets. His grandfather, Comfort Tiffany, moved to Connecticut where he built a cotton mill, and later opened a general store. When Comfort's son Charles Lewis Tiffany (1812-1902) was fifteen years old, he was put in charge of the store, and a year later was made his father's full partner in Tiffany & Son. Charles felt, however, that the future lay not in country stores but in the rapidly expanding town of New York, which he visited several times. When he reached the age of twenty-five, Charles borrowed one thousand dollars from his father and opened his first shop in New York in partnership with his school friend John B. Young, whose sister he was later to marry. From its very small beginnings as a stationery and fancy goods shop opened in the midst of a financial panic in 1837, when New York had a population of two hundred thousand, Tiffany and Young moved several times, expanding all the time. It became Tiffany, Young and Ellis in 1847, J. C. Ellis introducing new lines of jewellery imported from Italy, France and Great Britain. In 1850 the firm began to produce its own silverware to a high intrinsic and artistic standard. For the first time in the United States silver of Sterling Standard was used. In 1853 the firm's name was changed to Tiffany & Company, the name which it retains today. The character of the store had by then undergone a complete transformation. Bronzes, watches and clocks were imported in large quantities and silver flatware as well as other functional and decorative silverware was manufactured. But jewellery, imported in increasing quantities and then designed and manufactured in Tiffany's own workshops, was becoming the principal line.

Charles Lewis Tiffany was clearly fascinated by gems, and he began accumulating for the firm one of the world's greatest collections. In 1850 he purchased diamonds which had belonged to Queen Marie Antoinette. He later purchased much of Prince Esterhazy's collection and, by 1887, was able to buy a third of the French Crown Jewels put on sale by the French Government, spending over two and a quarter million francs. Later still Tiffany & Co., purchased the world's largest yellow diamond, cut to 128.51 carats.

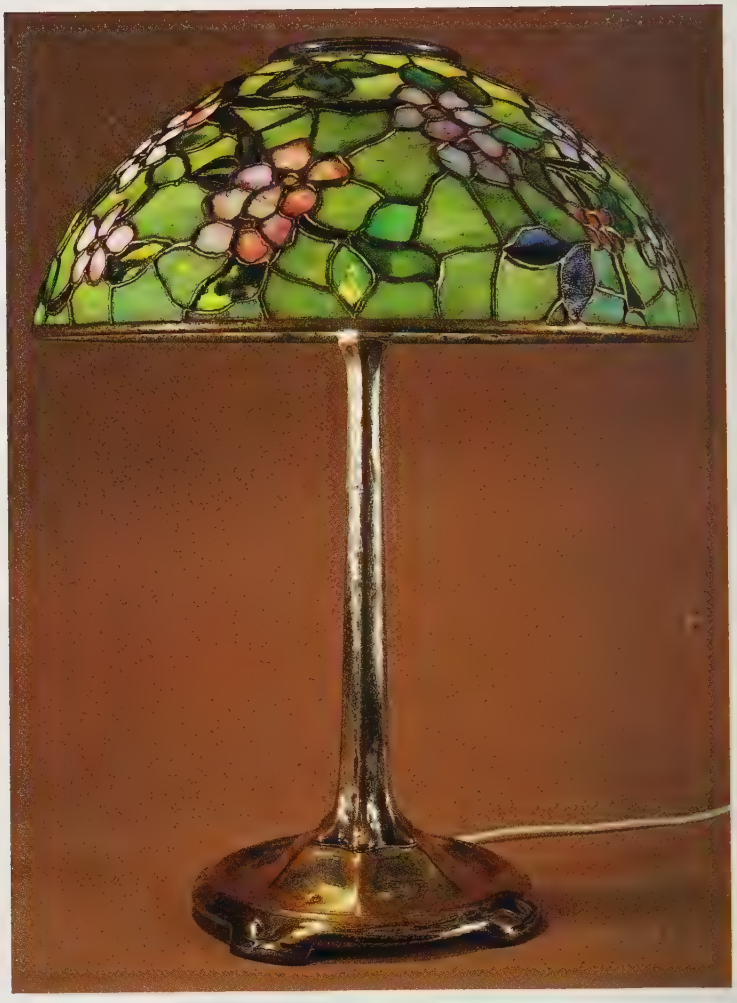
Louis Comfort Tiffany was born on February 18th, 1848. His father's great success enabled him to indulge all his interests throughout his life with no financial worries. Graduating from the Flushing Academy, Long Island at the age of eighteen, he chose not to go to university, but rather to become an artist, and spent some two years at the studio of Georges Innes, a landscape artist. His first watercolours were exhibited in 1867 at the Academy of Design. In 1868 he went to Paris, where he studied under Léon Bailly, whose involvement with landscape and genre painting of Near Eastern subjects led to L. C. Tiffany's travels in North Africa and Spain in the company of Samuel Colman, a fellow American artist. He also visited London, where Tiffany & Co. had just opened a branch at 221 Regent Street. They opened their Paris branch shortly afterwards. Tiffany's travels took him to Egypt, and Italy as well, and he returned to New York in 1870 laden with pictures which he exhibited in his studio. A year later he was elected an associate of the National Academy of Design becoming a full Academician in 1880. In 1877 he became one of the founders of the Society of American Artists.

Tiffany & Co. had begun entering international exhibitions with a bang in 1878 in Paris, where they received the first awards ever given in Europe to an American for silverware. At the 1878 Paris International Exhibition they were awarded a Gold Medal as well as six other medals, and Charles Lewis Tiffany became a Chevalier of the French Legion of Honour. At the 1878 Philadelphia Centennial Exposition they received seven awards, including a Gold Medal. Louis Comfort Tiffany exhibited paintings there, and was clearly impressed by the examples of handicrafts sent from England. The New York Society of Decorative Arts began classes for women in the crafts, and Tiffany was persuaded to teach there. He very quickly saw the potential, and that same year he founded Louis C. Tiffany and Associated Artists with Samuel Colman and Candace Wheeler, and with the aid of Lockwood de Forest.

Huge fortunes had been made in the United States. The new millionaires spent vast sums of money at Tiffany & Co., buying gems and jewellery. Louis Comfort Tiffany had met many of them, and he now set about decorating

Opposite
Tiffany – Poppy leaded glass shade, 42 cm diameter on a bronze base, overall height 51 cm *c*1905. (Sotheby's Belgravia)

Page 214
Above
Tiffany – Two miniature vases, one with pulled iridescent green and gold decoration, 6.1 cm 1906; the other of decorated iridescent aventurine glass, 6.2 cm 1902. (Author's Collection)
Below left
Tiffany – Very tall blue favrile vase with iridescent silver and gold leaf and vine decoration, 51 cm 1896; and a miniature favrile gold vase, 8 cm 1915. (Private Collection, London)
Below right
Tiffany – Blue favrile vase with iridescent green leaf and vine decoration, 23.4 cm 1920. (Editions Graphiques, London)



their new homes in the style to which he felt they should become accustomed. Gathering an army of craftsmen (and women) around him, every detail was looked after. Furniture, wallpaper, tapestries, carpets, light fittings, were made in a co-ordinated decorative style. Embroidered and appliquéd tapestries, wall-hangings and bed-covers made under Mrs. Candace Wheeler's supervision went to Cornelius Vanderbilt in New York, Potter Palmer in Chicago and Lily Langtry (the Jersey Lily) in London. Louis C. Tiffany turned the homes of Cornelius Vanderbilt, Ogden Goelet and Charles W. Gould into showplaces; redecorated Mark Twain's home in 1881 and several rooms in the White House in Washington in 1883 (the great opalescent Tiffany glass screen was smashed in 1904 on President Theodore Roosevelt's instructions); did the interior of James Gordon Bennett jr's yacht Namouna, then the largest private craft in the world, in 1881; decorated the Union League Club, the Lyceum and Belasco theatres, the Madison Square Theatre (whose curtain was much admired by Oscar Wilde), the Veteran's Room in the Seventh Regiment Armory, all in New York, as well as a host of other ensembles. In addition to what was made by Associated Artists Tiffany supplied the rarest (and costliest) *objets d'art* and antiques from every country in the world, becoming in the process a great collector himself.

In the course of decorating homes Tiffany became interested in the decorative possibilities inherent in leaded-glass windows. He studied the best and most elaborate models available, and began to experiment with his ideas. He rejected the use of both etched and painted glass to illustrate facial and other features in the composition, as these interfered with the full play of light coming through to enable the window to glow like a jewel. He felt that the design, however intricate, should be carried out purely by the judicial choice of coloured glass and its positioning within the leading. The coloured glass panes were purchased from various New York glasshouses and assembled

Tiffany – Tel El Amarna blue vase with 'Egyptian' chain pattern lustre decoration, 21.6 cm *c*1910. (Sotheby's Belgravia)

in his workshops after designs either by himself or by one of his many designers. He increasingly used the Louis Heidt glasshouse in Brooklyn to experiment with new effects. The coloured glass normally available was too dull and restricted in range for his tastes. He therefore engaged chemists to research ways to produce voluntarily the effects obtained accidentally in the manufacture of claret bottles and preserve jars whose glass, he wrote 'was richer, finer and had a more beautiful quality in colour than any glass I could buy'. This beauty was the result of impurities in the sand when fused to produce the raw material of glass, and Tiffany spent many years researching the various methods of treating glass with metallic oxides and acid fumes to obtain different finishes. In addition, glass panes for the windows were made in various finishes for diverse purposes, such as panes waved with folds produced by a roller over the molten glass for use in drapery effects, and other textured glass for background, flower, or sky effect. Other effects were obtained by sandwiching two or more pieces of coloured glass or by forming a double pane of glass with a space between the panes. Thus the light coming through the leaded-glass window was filtered and refracted by the various panes to model the

Page 215
Tiffany – Iridescent gold Jack-in-the-Pulpit vase, 45.5 cm 1907. (Author's Collection)

Opposite
Above left
Tiffany – Wisteria leaded glass shade designed by Mrs. Curtis Freschel, 47 cm diameter on a tree trunk shaped bronze base, overall height 68.5 cm. (Sotheby's Belgravia)
Above right
Tiffany – Apple blossom leaded glass shade, 40.5 cm diameter on a bronze base, overall height 55 cm. (Editions Graphiques, London)
Below left
Tiffany – Gooseneck Rosewater flask with iridescent decoration, 35.3 cm 1925. (Author's Collection)
Below centre
Tiffany – Stemmed flower-form decorated vase, 44.2 cm 1905. (Editions Graphiques, London)
Below right
Tiffany – Decorated favrile double-gourd vase, 27.2 cm 1895. (Private Collection, London)

Tiffany – Lava vase with pitted surface and lustred trailings, 14 cm *c*1910. (Private Collection, London)

design. These windows were made for public buildings (including many churches) as well as for private houses.

Tiffany also had a vast number of glass mosaic tesserae and tiles made to his instructions. The tiles, moulded to a variety of patterns, shapes, colours and degrees of opacity or opalescence, were used for mantels, fireplaces, wall-claddings and other decorative use. The mosaics were used to highlight decorative schemes, and as mural panels.

In 1882 Associated Artists became a separate company, headed by Mrs. Wheeler, mostly designing and executing artistic needlework and wallpaper. Tiffany retained the decorating firm under the name Louis C. Tiffany & Co. In December 1885 he founded the Tiffany Glass Company, but he continued to order most of the glass he needed from other glasshouses, as his own was inadequate to fulfil his orders. Tiffany had obtained a patent in 1881 for the production of 'lustred glass', to be used in conjunction with other types of glass in the manufacture of leaded-glass windows. He stated in that patent that this was a 'process well known to glass manufacturers'. He was, nevertheless, fascinated by iridescence in glass, and experimented for many years with his friend and chief chemist Dr. Parker McIlhiney to obtain new iridescent effects.

Tiffany was devoted to his wife, the former Mary Woodbridge Goddard, whom he had married in 1872, and they had three children. She died in 1884, leaving him disconsolate. He could not even immerse himself in his business, which was going through a bad patch, as the failure of the productions at the Madison Square Theatre made it impossible for the theatre owners to pay him for all the work he had put into it. He sued the Theatre, forcing its public sale and buying it himself, remaining its owner until its new manager was able to buy it from him. Tiffany became involved in the febrile theatrical night life of New York. In 1885 his father had a large family mansion built in Madison Avenue and 72nd Street, and commissioned him to decorate it throughout. Although Charles Tiffany never lived in it, Louis Comfort Tiffany used the top floor studio and adjoining flat as his town residence until his death. In 1886 he married Louise Wakeman Knox, who proved a devoted wife and a loving mother to her children and stepchildren. Tiffany expanded his business, working mostly on commissions from architects.

In 1889 Tiffany accompanied his father's colleague and chief designer, Edward C. Moore, to the Paris International Exhibition. Tiffany & Co. was to be awarded a Grand Prix, five Gold Medals, and ten other medals, while Moore was created a Chevalier of the French Legion of Honour. Moore was a great collector of Oriental *objets d'art*, and introduced Tiffany to Samuel Bing, the great Paris dealer much admired by the Goncourt Brothers. Bing, who had introduced a wide variety of Japanese and Chinese works of art through his shop as well as his publications was becoming interested in the work of some artists in a new decorative style inspired by the Far East. Bing and Tiffany were to become friends and collaborators.

While touring the Exhibition Tiffany was particularly struck by the glass vases exhibited by Émile Gallé, which were already beginning to show the freedom and originality which were to characterise his best work over the next fifteen years. Tiffany undoubtedly also saw the somewhat formal cameo glass exhibited by the Stourbridge firms as well as the Loetz vases made to look like hard-stones and the early iridescent glass made by Lobmeyr, Pantin and Webb.

In February 1892 Tiffany formed the Tiffany Glass & Decorating Company for the 'manufacture and sale of glass, decorative objects and materials of all descriptions, and the applying of these materials to buildings and other structures; also the manufacture and sale of furniture, house and church fittings of all kinds, and the conducting of a general decorating business'. Bing had in the meantime arrived in New York to carry out a survey of American art and industry on behalf of the French government, and he spent much time with Tiffany, who introduced him to the architectural work of Louis A. Sullivan. Much of this was in Chicago which was preparing to

hold its Columbian Worlds Fair. Tiffany intended to show some of his paintings there, but Bing, ever the great showman, persuaded him to go for something dazzling. Tiffany then began the preparation of a complete chapel, designed and manufactured entirely in his own works. Although it was not ready in time for the opening of the Fair in October 1892, once installed it became the sensation of the Exhibition. Tiffany was awarded fifty-four medals at the show, an incredible total exceeded only by the fifty-six medals awarded to the displays of Tiffany & Co.

The direction of Tiffany's major interest was destined to change radically when he met Arthur J. Nash (1849-1934), an Englishman, who had been the manager of the White House Glassworks, a Webb subsidiary, in Stourbridge. Tiffany financed the incorporation of the Stourbridge Glass Company in April 1893, with a factory at Corona, Long Island. Charles L. Tiffany pumped some considerable funds into the new firm, and Louis Comfort Tiffany became president of the company in September, with Nash as vice-president. The new factory was destroyed by arson almost as soon as it had been erected. Undaunted, Tiffany had it rebuilt.

The factory was run by Arthur J. Nash, later assisted by two of his sons, A. Douglas Nash and Leslie H. Nash. Several chemists were employed to carry out research into the formulae for obtaining different effects and colours, headed by Dr. Parker McIlhiney. Two glass shops were opened, one for the production of cathedral glass for use in leaded glass windows, the other a blowing shop headed by Tom Manderson, an expert glass-blower. As the works expanded, more glass shops were opened, each headed by a gaffer, with a blower who acted as server, a decorator, a mixer, a gatherer and two or three boys to assist. Nash brought over several workers from England and employed others from the Boston & Sandwich Glass Company of Sandwich, Massachussetts, which had gone out of business as a result of a prolonged strike. Tiffany himself acted as artistic director. He would explain to Nash and the chemists the effects he wanted and drew sketches on odd scraps of paper of the models he wished to see.

The chemists worked on one requirement, the glass blowers on the other until he was satisfied with the results. The Manderson shop remained as the experimental shop which worked on new models, and Manderson himself undoubtedly contributed much by his expertise. Tiffany sometimes turned up with old Islamic or Roman glass from his collection which he would ask Manderson to copy, and leave it up to him to accomplish what had taken centuries of decay to achieve. Manderson's first mixer (who prepared the glass to be blown) was Martin Bach, who left after a dispute and later set up the Quezal factory for the production of glass in imitation of Tiffany's.

In 1895 Bing transformed his shop from an Oriental Emporium into La Maison de l'Art Nouveau, in which the most advanced and original applied art of the day was to be found in furniture, fabrics, wallpapers, glass and

Tiffany – Cypriote vase, the leaves in iridescent blue glass on a honey-coloured ground. 41 cm *c*1893. (Christies, London)

objets d'art. The shop itself was decorated throughout as a showcase for its designers and artists. Tiffany was commissioned by Bing to carry out a series of leaded-glass windows designed by various members of the Nabis group and others. Pierre Bonnard, Eugène Grasset, Henri-Georges Ibels, Ker-Xavier Roussel, Paul Sérusier, Henri de Toulouse-Lautrec, Félix Vallotton and Edouard Vuillard each designed one, while Paul-Elie Ranson designed two. In 1899 Bing commissioned Tiffany to make several more windows designed by Frank Brangwyn which were exhibited at the Grafton Galleries in London.

The first items of art glass produced at the Corona glassworks included laminated glass in imitation of agate (of the type made by Loetz which Tiffany had seen at the 1889 Paris Exhibition) and various decorated pieces with some lustre. A quantity of the first year's production was sent to Bing for the opening of his new shop, while much of the balance was presented to various museums. Henry O. Havemeyer, whose residence he had decorated between 1890 and 1892 became the first collector of Tiffany glass, and he presented the New York Metropolitan Museum of art with fifty-six items. As production increased and the glass became commercially available, it

Tiffany – Three goose-neck Persian Rosewater flasks with pulled threads decoration, internally lustred. (Minna Rosenblatt Ltd., New York)

became clear that the public preferred glass with iridescence. These early pieces were often unsigned, but bore a circular paper label with the initials 'TGD Co' (Tiffany Glass & Decorating Company). Tiffany wanted a trade name for his wares, and Nash had suggested 'Fabrile', an Old English word meaning 'handmade'. The first labels bore this word, but Tiffany soon changed it to 'Favrile'. This was registered at the U.S. Patent Office in November 1894.

By 1896 the production of glass was in full swing. Bing became sole concessionaire in Paris, Tiffany & Co. in New York and London (from which the present Victoria and Albert Museum in London bought several vases as early as 1896), while several luxury retail stores in the United States took quantities of the glass on consignment. Any that remained unsold for three months were returned to the factory and sent to another consignee. Many of the pieces returned unsold after being sent to three consecutive consignees were smashed at the factory. Tiffany glass was exhibited in 1897 at the VIIth International Art Exhibition in Munich and in 1898 at the Libre Esthétique in Brussels and at the Art Nouveau Exhibition in Budapest.

The Corona factory continued to expand with the opening in 1887 of a foundry and metal shop which began the production of a variety of objects in bronze and copper, including desk sets in various patterns, candelabra, inkstands, boxes, and lamp bases. Tiffany had long been fascinated by the problems of light diffusion. He had designed leaded-glass windows to make the fullest use of natural light. While working on the interior of the Lyceum Theatre in 1885 he had collaborated with Thomas Alva Edison, the inventor of the incandescent lamp, and he had designed electric light sconces for this and other theatres, as well as designing electroliers for the chapel at the Chicago World's Fair. Glass globes and shades in various decorative patterns were blown at the Corona glassworks; then lamps with blown glass bases and shades, mostly for use with oil or kerosene. Metal was used for the fittings, then as decorative motifs or supports. Student lamps were made in bronze with glass shades. In 1899 the first lamps with proper bronze bases supporting designed leaded-glass shades appeared. At the London exhibition held that year at the Grafton Galleries of Tiffany products, two new lamps were displayed, one with a dragonfly shade in leaded-glass (designed by Clara Driscoll), the other the *Nautilus* lamp with a bronze mermaid base, after a sculpture by Louis A. Gudebrod (1872–1961), holding up a shade made from a nautilus shell (invented by Tiffany). Variations of the lamp were made using simpler bronze bases and with nautilus-shaped shades made of leaded-glass.

Another department was the mosaics shop, headed by Joseph Briggs. Multicoloured tesserae, some iridescent, were used on trays, inkwells and elaborate lamp bases for some of the more spectacular leaded-glass shades. In the years to follow they were used to make large spectacular murals, including an enormous one from a design by Maxfield Parrish called *The Dream Garden* for the Curtis Publishing Company in Philadelphia; and a glass mosaic curtain for the National Theatre in Mexico City, on which twenty men worked for over fifteen months to produce the two hundred panels, each three-foot square, which were later assembled on site to a remarkable hydraulic mechanism for raising and lowering it.

The Paris 1900 Universal Exhibition was a great triumph for the Tiffanys. Their large section in the United States Pavilion was devoted half to the products of Tiffany & Co., half to those of Louis Tiffany. The ailing Charles Tiffany had been succeeded in the presidency by Charles T. Cook. Tiffany & Co. were awarded three Grand Prix, ten gold medals, ten silver medals and two bronze medals; Louis Comfort Tiffany was awarded a gold medal and both he and Cook were created knights (chevalier) of the French Legion of Honour. In 1901 Tiffany exhibited at St. Petersburg, Dresden, and Buffalo, N.Y., in all of which he received gold medals.

He was awarded a Grand Prix and a Special Diploma at the 1902 First International Exhibition of Modern Decorative Arts in Turin and a gold medal at the 1904 Louisiana Purchase Exposition in St. Louis; a Medal of Honour at the 1907 Jamestown Exposition; a Grand Prix at the 1909 Seattle Exposition; an Honourable Mention at the 1914 Paris Salon des Artistes Français; a gold medal at the 1915 Panama Pacific Exposition at San Francisco; and a gold medal at the 1926 Philadelphia Sesquicentennial Exposition.

Tiffany – Millefiore vase, the iridescent blue glass decorated with silvery lily pads and tendrils set with green and white cane millefiore flowerheads, 9 cm *c*1910. (Sotheby's Belgravia)

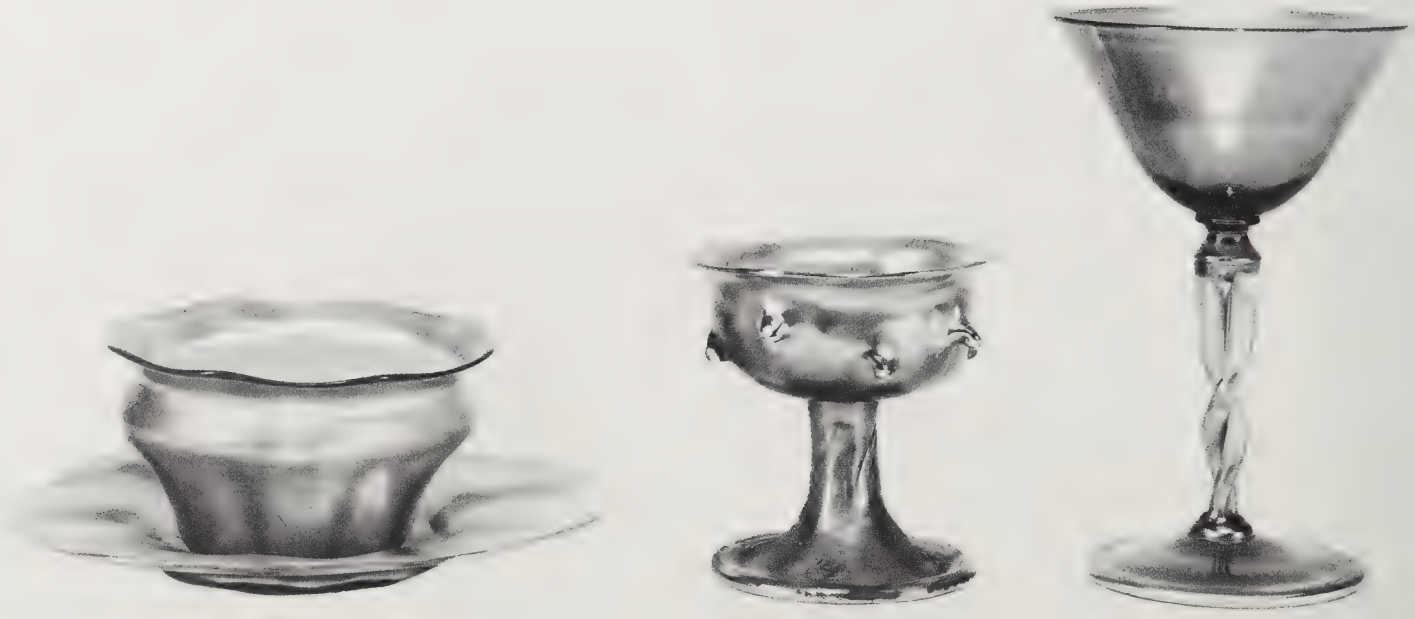
Tiffany – Internally lustred vase decorated with red poppies and green leaves on an amber ground, the flowers with millefiore stamens, 15.25 cm *c*1920. (Sotheby's Belgravia)

In 1902 the name of the Stourbridge Glass Company was changed to Tiffany Furnaces and Tiffany's enterprises called Tiffany Studios. The next few years were to prove the most productive, with new designs and techniques evolved and produced at an extraordinary rate. At its peak there were some five glass-blowing shops working at full stretch, with special presses to produce large iridescent turtle-back tiles for use in lamps, patterned glass tiles in a variety of shapes, glass scarab beetles varying in size from tiny ones to some large enough to be used as lamp shades, as well as polished cabochon glass 'jewels' used in the leaded-glass shades.

Charles Lewis Tiffany died in 1902, and Louis Comfort Tiffany became vice-president and artistic director of Tiffany & Co. He was now promoting three more departments at Tiffany Studios. A small enamelling on metal section had been set up in 1898, but production had been very limited. This was expanded with a team of women under the direction of Julia Munson to produce enamel on copper vases, boxes, lamp bases and knick-knacks, often in plant designs. A second line was Favrile pottery, often designed by Tiffany himself, in moulded plant forms or with a plain or textured surface, sometimes with moulded decorations. Colours included green, brown, white and blue, while a bronze glaze was used after 1910. The pottery was introduced at the 1904 Louisiana Purchase Exposition in St. Louis. Both enamelware and pottery are very rare.

The third line was jewellery. A small group of craftsmen began the preparation of a collection of jewellery in gold, silver and other metals set with precious and semi-precious stones as well as Favrile glass, some pieces with enamelling. These were successfully exhibited in Paris, and Tiffany opened a separate department for the sale of his jewellery on the sixth floor of Tiffany & Co. on Fifth Avenue. Twenty-five items of his jewellery were displayed at the 1904 St. Louis World's Fair. Julia Munson had been put in charge of this department in 1903, and Alice Gouvey became the new head of the enamelling section. Tiffany Studios jewellery was made until 1919 and the department at Tiffany & Co. remained open until 1933 when it was closed. It had been a financial failure, as it had cost too much to run, and too much time and money was lavished on each item produced.

Tiffany's glass production falls into the two broad categories of domestic table-ware and display items. Both are considered 'art glass'. The table-ware was produced in either gold or deep blue iridescent glass, with blue much rarer and therefore more sought after. It included liqueur, claret, sherry, champagne, hock, punch and water glasses, decanters, finger bowls, ice cream plates, footed comports, epergnes, pin trays and salt cellars. Various decorative patterns were used. The 'Flemish' design was slightly waisted with an applied band of horizontal parallel glass threads; the 'Royal' pattern had an elegant double-twist



Tiffany – Gold lustre table-ware, Ascot pattern finger bowl, Victoria pattern sherbet cup and Royal pattern champagne glass, all *c*1905. (Private Collection, London)

stem; 'Dominion' had a continuously twisted stem; 'Earl' was glass stretched into frills; 'Prime' and 'Queen' were fairly plain patterns with straight stems, and were produced in the greatest quantity; 'Moravignian' had a continuous set of applied lily-pads; 'Victoria' had a series of little twisted knops at regular intervals. Other patterns included 'Princess', 'Manhattan', 'Savoy', 'Iris', and 'Ascot'. It is not unusual to find items of table-ware decorated with an engraved grapevine frieze, sometimes just inside the rim of flaring pieces.

Display items were made in an enormous variety of patterns, styles and techniques.

Lustre Decorated Wares were made by applying threads or blobs of coloured glass to the surface of an opaque glass object while it was still plastic, pulling or combing it with metal hooks to form leaf or feather designs or abstract patterns, then rolling the completed object on the marver until the applied decoration was completely embedded into the surface, after which it was annealed. If the object was then lustred, the applied decoration acquired a high iridescence which contrasted with the rest of the vessel. One of Tiffany's first gaffers, George G. Cook, is credited with developing Peacock decorated glass, in which the combed decoration simulated peacock feathers, including the 'eye'.

Agate or **Laminated** glass was made by mixing a variety of molten glass of several opaque colours until it acquired a striated look, at a temperature sufficiently low to prevent the fusion of colours into one. A blob of this melt was then blown as usual into the desired shape. Once annealed, the object was then polished or carved to reveal the laminated patterns and colours within.

Cypriote glass was made in imitation of the natural decay and corrosion of the surface of ancient Greek, Roman and Hebraic glass, buried in the sand for centuries. A booklet on Tiffany Favrile glass published by the firm in 1896 quoted Sir David Brewster's words: 'There is perhaps no material body (glass) that ceases to exist with so much grace and beauty, when it surrenders itself to time and not to disease.' Cypriote glass has an iridescent surface pitted all over, and with exploded bubbles. This was made by rolling the blown vessel over a crushed layer of the same glass on a marver, then lustring it. The shapes are always beautifully simple, often small and rotund, in keeping with the look of ancient glass. Slender-bottomed amphora shapes were sometimes made to fit into simple bronze stands.

Lava glass was made to simulate the effects of volcanic eruption. The surface is roughly textured, often with black or other dark colours flecked with gold, while wide globs of highly polished gold iridescent glass with ragged edges sweep their relentless way across the vessel, lava touched by Midas. The shapes are free, accidental, often grotesque, as though an original symmetrical shape had been twisted by the action of lava. These lava pieces are among the most creative and exciting glass designs from the Tiffany Studios. They were made by putting bits of basalt or talc into the molten glass, then lustring the resultant 'lumps' produced.

Diatreta glass was made in the shape of a lattice-work enclosing, but not applied to, the main body of the vessel.

Flower-form vases were first made by Thomas Manderson, first gaffer at the Corona glassworks. They consist of a flower, bud or onion bowl on a slender stem resting on a shaped circular base. The bowl may be a symmetrical wine-glass shape, or have a wide flaring rim,

or may be curled or pinched in continuous shapes. It may be plain iridescent or decorated with combs or striations, in paper-weight technique, be carved in cameo or intaglio. The stem may be straight or gently bulged along its length, in a solid colour or decorated. The mound-shaped base is sometimes plain, but usually decorated with a combed star shape radiating from the stem. Some flower-form vases end in a short stem which is inserted into a bronze stemmed base.

Jack-in-the-pulpit vases are made in iridescent gold or blue glass. A tall stem on a heavy circular base opens out into a vertical open flower of undulating glass, its edges pinched, to make the spectacular shape.

Goose-neck vases are made in imitation of Persian rose-water flasks. The large and heavy glass bowl rises to a slender and curved neck, ending in a slightly flared pointed-top opening. The surface is normally decorated in feather shapes in gold, silver or platinum iridescence over an opaque coloured base. The open mouth is either in opal or gold. The beauty of individual vases is greatly dependent on the grace of curvature of the neck and the smoothness of the transition from bulbous body to slender neck.

Millefiore vases were made by taking thin canes of coloured glass, placing them into a pattern (e.g. a yellow cane in the centre surrounded by five white canes to form a flower) which was then sliced very thinly across (rather like salami) and the pattern inserted into the surface of the vessel, which was then rolled on a marver until fully integrated, giving a smooth finish. These 'flower' patterns, looking rather like schematic gears, are often combined with pulled thread patterns.

Paperweight vases are among the rarest produced by Tiffany. They consisted of a thick layer of decorated glass encased in a further smooth outer layer, trapping the decoration (intercalary decoration). Both layers were of transparent coloured glass, the inside surface sometimes lustred, the outer sometimes carved. 'Reactive glass' was sometimes used in the decoration of the inner layer, that is glass which changed colour when reheated at the kiln. *Morning-glory* vases were made by decorating the transparent inner vessel with 'flowers' made of opalescent reactive gold-ruby glass. When reheated, they became transformed into a variety of red, blue and purple shaded blossoms. An iridescent coating of transparent glass was then blown over this vessel. The first of those vases was produced in about 1905 after much experimentation, and some fifty vases were made in 1913 for exhibition at the 1914 Paris Salon des Artistes Français, which gained Tiffany his Honourable Mention. Other floral paper-weight vases were made with gladiola, narcissus, crocus and daffodil designs using millefiore canes to form the blossoms.

Tiffany – Flower-form vase in pale gold lustre with green and white pulled decoration, 43.75 cm *c*1903. (Sotheby's Belgravia)

Tiffany – Rambling rose leaded glass shade, 41.5 cm diam. on bronze base, overall 58.5 cm *c*1910. (Sotheby's Belgravia)

Aquamarine glass is a marine version of the paperweight technique. Although some were produced in the late 1890s, it was not until 1913 that they were made in some quantity as a result of a trip to Bermuda by Arthur E. Saunders (Tiffany gaffer from 1900 to 1918), on which he had been sent by Tiffany for inspiration. Vases, bowls, doorstops and paperweights were among the objects made in aquamarine glass. The inner layer was decorated with water plants or undersea life, fish, sea-urchins, seaweed. Coloured glass fish shapes were made on the press for insertion into the decoration. The outer layer was a very thick layer of pale green glass which gave the illusion of sea water. The thickness of the vessel is such that the open part of the bowl was sometimes little more than a slight depression. Pond lily designs are known in which the lily pads appear to float on the surface while the root tendrils snake down the foot of the vase. The outer surface was occasionally carved with waves, fish or insect designs. They are exceedingly rare.

Carved glass was produced in both cameo and intaglio, frequently in combination with other decorative techniques. At its simplest, a frieze of grapevines was lightly engraved for some table-ware. Finished items with surface blemishes were often sent to the engraving shop and the imperfections masked with designs of flower or insects engraved on the wheel. Padded vases were cameo carved in mostly floral patterns, while iridescent blue or gold decorated vases sometimes had part of the decoration (particularly leaves) carved naturalistically. *Rock Crystal* in the style of Webb was made, but it was varied by sometimes using coloured glass and occasionally lustring the inside to give an opalescent glow.

Tel El Amarna vases were named after the site of the excavations in Egypt of Amenhotep IV's capital, built to the glory of the monotheistic god Aten (personified as the sun's disc) as an artistically free and creative centre. Destroyed at the instigation of the priests of Ammon-Ra after the Pharaoh's death, much of the city was excavated in the late nineteenth century, and Tiffany had visited the site during his visit to Egypt. The vases have simple symmetrical shapes, and have a mat lustre. They are either completely undecorated or have a simple linear frieze of coloured glass over an iridescent band.

Pastel glass, also known as *Flashed* glass, was made by blowing a thin sandwich of transparent reactive glass coated with an equally transparent coloured glass into a patterned mould, then reheating it to make it opalescent. Made into a variety of table and decorative ware in translucent blue, lavender, pink, yellow or brown in an equally great variety of moulded optic decorative patterns which included radiating ribs, laurel leaves, dots and diamonds, they were sometimes given a faint iridescence known as 'phantom lustre'. They were produced in quantity after the First World War, which irritated Tiffany who felt they were 'too commercial', because too successful. He preferred his glass to be exclusive, and preferably purchased by a museum.

Reticulated glass was made by casting or otherwise making a metal frame with regular openings. This was heated and a gather of coloured glass blown into it with sufficient strength to force it to bulge through the openings. The frame was sometimes made of thick wire twisted into the required shapes. Different colours of glass were used, but the most usual one was an opaque dark green. Reticulated items were mostly made as lamp bases and candlesticks.

Tiffany glass is normally signed on the base either with the initials 'L.C.T.' or in full 'Louis Comfort Tiffany', 'Louis C. Tiffany' or 'Louis C. Tiffany Furnaces Inc.,' often with the addition of the word 'Favrile'. An inventory number is also usually found. Tiffany never personally signed a piece of glass. The signatures were added by Tiffany workers, and may be found in a variety of scripts and handwritings. A stock of several thousand finished glass items was stored at the Tiffany Studios. As items were sent out on consignment they were marked with the inventory number. The first year's production went unsigned and unnumbered. Then the system of numbering from 1 onwards was begun until the figure 9999 was reached during 1893-1894 when a similar range of numbers with the prefix A was begun; followed by the rest of the alphabet. The X prefix was retained for experimental pieces, the lower case 'o' was used for items

Tiffany – Hanging head dragonfly leaded glass shade set with amber glass cabochons, 58.5 cm diam. on gilt bronze base, overall 79 cm *c*1900. (Sotheby's Belgravia)

Tiffany – Eighteen-light lily lamp, gold lustre favrile shades clustered on a pond-lily bronze base, *c*1900. (Minna Rosenblatt Ltd., New York)

made to special order. Z does not appear to have been used. Having run through the alphabet by 1905, the numbering system was switched to the letters used as a suffix, reaching the letter W by 1928. It should be stressed that the numbering is no real indication of the year of production of a particular item, as it could have been in storage for a number of years before being numbered and sent out for sale. Matched sets of table-ware were often given the same number throughout. Items chosen by Tiffany for his own collection or as personal gifts were usually marked 'A-Coll'. Circular paper labels are also occasionally found gummed to the base. The first label, bearing a monogram of the letters 'TGDCo' (Tiffany Glass and Decorating Company) within a circular band with the words 'Tiffany Favrile Glass Trademark Registered' was used between 1892 and 1904, after which they used a label bearing a circular design made up of the initials 'LCT' and with the word 'Favrile' in black or white or gold on green. Paper labels are in themselves no guarantee of age, as it is easy enough to transpose them.

The early lamps were soon followed by a wide range of new designs of both shades and bases. There were eventually some five hundred different models of each, many of them interchangeable to produce an enormous number of possible combinations. The bases were made of bronze or glass or pottery or glass mosaic, or a combination of two or more of these. The shades were of blown or leaded-glass. Leaded-glass shades could be of plain green or amber glass tiles, sometimes with an attractive 'raindrop' effect. They could have a border frieze of acorns, fleur-de-lys, abstract patterns, turtle-back tiles or iridescent glass balls. They could have a floral decoration, including the poppy, daffodil, rose, tulip, dandelion, magnolia, peony, dogwood, nasturtium and woodbine. The *Wisteria lamp*, with a shade devised by Mrs. Curtis Freshel in 1901 set over a tree-trunk bronze base designed by Tiffany started a line of floral shades covered with a continuous leaded-glass pattern with an unjustified lower rim which included the laburnum, grape and apple blossom. Clara Driscoll, who had designed the original dragonfly shade, supervised the design department. Other shades included Mandarin, Geometric, Spider-Web and Wave.

A completely original design was the *Pond Lily lamp*, which consisted of a cluster of eighteen bronze stems curving up from a lily-pad bronze base and terminating in slender decorated shades. Exhibited at the 1902 First International Exhibition of Modern Decorative Arts in Turin, it won Tiffany his Grand Prix. The model was then adapted to a variety of table lamps having between three and twenty shades, as well as tall standard lamps.

Some of the leaded-glass shades were made to be suspended from the ceiling. Wall light-fittings were made of bronze with blown-glass shades. The leaded-glass shades normally have a small metal plaque soldered to the top or bottom inside rim with the words 'Tiffany Studios, N.Y.'. The bases are normally also marked 'Tiffany Studio, New York' on the base with an inventory number, although a few early ones have the 'TGDC' monogram instead.

A curious design for pressed glass panels simulating folded silk was patented by Henry O. Schmidt in 1913 and assigned to Tiffany Studios. Made in a variety of mat colours, they were held in a metal frame, the overall effect being of a fabric shade. A few months later Leslie H. Nash took out a patent for a similar design, but moulded in a single piece as in a complete shade. In 1914 the trade name of 'Favrile Fabrique' was registered for this.

Shortly after his father's death in 1902 Tiffany bought a large estate at Oyster Bay, Long Island, and began to build himself a house there. The new house was 185 feet long and contained eighty-four rooms and twenty-five bathrooms. Landscaping of the five hundred and eighty acres surrounding the house, called Laurelton Hall, cost over a million dollars. The house itself was the most lavish showplace he could devise. The finest glass and metal objects, carpets and furniture were made in his workshops to decorate the rooms, which also housed his priceless collections of ancient glass and jewellery; Japanese *tsuba*, *inro* and *netsuke*, woodcuts, *Kakemonos*, carvings, laquer-

ware, porcelain, ivory, enamelware, textiles and embroideries; Chinese works of art, and rugs of the seventeenth and eighteenth centuries; Tibetan prayer rugs and carvings; Persian carpets of the sixteenth century; hardstones, bronzes and precious stones; paintings; and later a collection of American Indian basketry. His second wife died in 1904, a few months before the house was completed.

The next few years were to be among his busiest. As artistic director of both Tiffany Studios and Tiffany & Co., he controlled the production of a vast range of goods. His artistic credo was the supreme importance of the beautiful. He firmly believed that the best way to acquire an artistic education was to see and touch beautiful things, and his collection was always open to his designers, whom he also sent or took with him on various travels.

In 1913 Tiffany gave the first of his three spectacular pageants, inviting several hundred people to an Egyptian fête held at the studio of his Madison Avenue house. The costumed guests found themselves in the midst of a recreated setting by the Nile, with a complete show which included Ruth St. Denis as Cleopatra and Paul Swann as Anthony (two of the most noted dancers of their day) dancing to specially commissioned music from Theodore Steinway played by a concealed Philharmonic Orchestra. A year later he invited 150 male friends to Laurelton Hall to 'inspect the spring flowers'. A special train from New York and a fleet of cars at the station brought them to the estate. The flowers were indeed in bloom, the fairest of them being in Grecian costumes in a procession round the table, leading peacocks. They dined on roast peacock and sucking pig, turtle and duckling and frogs's legs surrounded by banked flowers to continuous music played on the organ, while togaed children held lighted torches which illuminated the great Favrile glass dome. His last pageant was a birthday breakfast for over 200 people in 1916, for which he presented a masque called 'The Quest for Beauty', a mimed history of art interpreted by forty-five performers in full costume and with elaborate decor.

The United States entered the war in 1916. Many of Tiffany's workers left to join the army or to take up war work, and production at Tiffany Studios was greatly cut down. When the war ended in 1918, Tiffany was seventy years old. The same year he founded the Louis Comfort Tiffany Foundation to aid promising young artists. He gave the foundation eighty acres of his Oyster Bay estate, including Laurelton Hall and its attached art gallery, as well as his art collection, with a maintenance fund. Candidates for admission were first recommended by their art schools or certain artists, then they had to submit their work to a committee. They had to be United States citizens between the ages of twenty-five and thirty-five. Once admitted, they lived on the estate, the stables and carriage houses having been adapted as living quarters and studios equipped with every facility for carrying out every craft, while the tennis courts and bowling alleys were available for recreation. Tiffany retained the use of Laurelton Hall during his lifetime, but it was open to the students at all times, including his extensive library. No formal training was given. The students were expected to be sufficiently advanced to carry on their own work, inspired if they wished, by their surroundings. Visiting artists were available to give advice and guidance if asked.

Tiffany – Oil lamp with leaf and vine decoration and millefiore flowerheads on the lustred body fitted to a green-patinated base, decorated favrile shade, 35 cm 1902. (Editions Graphiques, London)

In January 1920 Tiffany Furnaces was changed in name to Louis C. Tiffany Furnaces Inc. Tiffany kept only one share of the stock, giving 110 shares to the Foundation. The Nashes, father and son, held some fifty-five shares. Tiffany's son Charles, now at Tiffany & Co., held five

Tiffany – Three-light lily piano lamp, decorated lustre favrile shades on a bronze base, 30 cm *c*1905. (Private Collection, London)

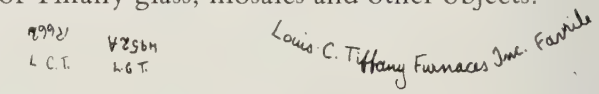
shares, Joseph Briggs held eight shares, and one share was held by George F. Heidt, of Tiffany & Co., who was also on the Board of Trustees of the Foundation. Tiffany and Arthur J. Nash retired, though they retained their titles of president and vice-president respectively, and put A. Douglas Nash in charge of Louis C. Tiffany Furnaces Inc. Tiffany Studios became a completely separate organisation, run by Joseph Briggs.

Tiffany Studios maintained its various departments for some years. It had enormous stocks of glass and metal, and leaded-glass shades went on being assembled from stock glass to fit stock bases. Leaded-glass windows were also still assembled. It did not, however, produce anything new, acting basically as a retail organisation.

The Louis C. Tiffany Furnaces Inc., on the other hand, went on producing with new and old designs, though on a very reduced scale. As it no longer had access to the stocks of coloured glass held by Tiffany Studios, and it was not economic to produce more of it at Corona, leaded-glass shades were no longer made there. Instead, lamps with blown-glass shades were made, as well as a curious innovation involving shades made of copper wire mesh covered with floral or other decoration in translucent and transparent enamels. Simple metal shades were also perforated in various designs. A. Douglas Nash also revived the enamelling department, which he put in the charge of Patricia Gay, a former enameller at Corona. Enamelling was used extensively on lamp bases and other metalware. Nash went on producing a wide range of glass, including various iridescent finishes, but concentrated increasingly on the popular pastels, which proved to be commercially successful, with wide distribution and no exclusivity.

Tiffany had become a somewhat lonely man. Shy, and never gregarious, he occasionally made his views known in interviews. His constant companion was a young Irish girl, a former nurse, who became his protegée. The changing tastes of the 1920s rejected his creations, and he could not understand what he considered the ugliness of modern art. Although he was prepared to accord respect to the creations of the students at his Foundation, he was out of sympathy with them, unable to understand or appreciate. Few, indeed, were the students who appreciated his own creations, though there were some notable exceptions, including Hugh McKean, who was to become President of Rollins College in Winter Park, Florida, and assemble there a superb collection of Tiffany's works. He also increasingly objected to the 'Commercialism' at Corona, and withdrew his financial support in 1928. The factory was closed down, and the available stocks of glass and other objects given to Tiffany Studios. A. Douglas Nash then purchased the Corona glassworks from Tiffany and reopened them, but a condition of the sale was that Tiffany's name and trade marks were in no way to be used. The new firm became the A. Douglas Nash Corporation.

Louis Comfort Tiffany died on 17th January, 1933, a month short of reaching the age of eighty-five. Tiffany lamps, glass and other creations had become objects of public indifference and critical derision. Joseph Briggs managed to keep Tiffany Studios in operation until his own death in 1938, although the firm had had to go into bankruptcy. In 1938 much of the remaining stock was put up for auction, and sold for very little. A sizeable proportion of this glass was unsigned and unnumbered because it had not gone out on consignment, though it might have been produced twenty or more years earlier. Unsold stocks were stored for many years to come. Briggs had been born in Accrington, Lancashire, and his family left the Haworth Art Gallery there a substantial collection of Tiffany glass, mosaics and other objects.



Tiffany's Madison Avenue mansion was demolished in 1938 and replaced with an apartment building. Many of the churches which he had supplied with leaded-glass windows were also demolished. The Louis Comfort Tiffany Foundation maintained the Oyster Bay estate until 1942, when it was occupied by the National Defense Research Committee which carried out marine research there throughout the rest of the war years. At the end of the war, the Foundation trustees went to court to break the provisions of Tiffany's Trust to enable them to sell off the estate and use the funds to provide additional scholarships. As a result of the 1946 decision, Laurelton Hall was immediately stripped of all that was removable, and the entire contents sold at auction. Tiffany's collections and creations brought a fraction of their value. Laurelton Hall, with sixty acres of land including a bay frontage, was sold for $10,000 in 1950, the rest of the property was sold in small lots. In 1957 Laurelton Hall was destroyed by fire.

UNION GLASS CO

Established in 1851 by Amory and Francis Houghton in Somerville, Massachusetts, the Union Glass Company was fairly successful until the financial crisis in 1857 brought it to bankruptcy three years later. It was, however, very quickly reorganised under the presidency of Charles S. Chaffin. The Houghtons left the company in about 1864 after purchasing a major share of the Brooklyn Flint Glass Company. Union was run by its new owner, called Dana, and prospered in the years between 1870 and 1885, manufacturing quantities of pressed glass and blanks for cut glass. Dana died towards the end of the century, and was succeeded by his son-in-law, Julian de Cordova.

The glassworks were modernised and re-equipped by de Cordova, who appointed William S. Blake as factory superintendent. In about 1893 they began the production of art glass. Since most of Union's output consisted of crystal blanks supplied to cutting shops to feed the public's voracious appetite for cut glass, very little art glass was produced over the years, though what there is is of good quality and sought after by collectors. It falls broadly into two main types, the first of the Venetian style, consisting of graceful shapes in coloured glass, usually flecked with gold; the other being iridescent plain and decorated glass very similar to that produced by Quezal. The shapes are symmetrical and well designed, the decoration invariably sharp and clear, the colours strong and brilliant. There is none of the Tiffany subtlety of effects or freedom of expression, but the result is spectacular and effective.

Union's iridescent glass productions were given the name **Kew Blas**, an anagram of W. S. Blake. The iridescent glassware produced by Union is usually engraved 'Kew Blas' on the base of the vessel.

In February 1905 Julian de Cordova presented the Smithsonian Institute in Washington, D.C. with a gift of a number of items of Union art glass in the Venetian style, which might seem to indicate that the iridescent wares were produced after that date. The Union Glass Company closed down in 1924.

VAL SAINT-LAMBERT

Val Saint-Lambert was the site of a twelfth century Cistercian abbey built within the dominions of the Prince-Bishop of Liège. It had a chequered history through the centuries, partly destroyed several times only to be rebuilt; occupied at various times by French, German, Croat and Lorraine troops; coming under the protection of John Churchill, Earl (later Duke) of Marlborough in 1702. It remained a religious house until the French Revolution of 1789 forced the Abbott, Gregory Falla (1739-1813) to flee, taking with him the monastery gold, silver, furniture and archives. The future French Kings Charles X and Louis XVIII both rested at the abbey on their way out of France. In 1797 the French Republic which had, two years earlier, annexed the Principality of Liège, suppressed all religious orders and confiscated their properties. The last of the Val's monks left and the abbey was auctioned to Jean-François Deneef, last Burgomaster (Mayor) of Seraing under Dutch administration. He demolished the church and some of the buildings, and set up a linen spinning and weaving works which proved unsuccessful.

In 1802 Aimé-Gabriel d'Artigues (1778-1848), a Parisian master glassmaker and manager of the Saint-Louis glassworks in Alsace, purchased the inactive glassworks of Vonêche, founded in the province of Namur in the Ardennes in 1778. D'Artigues brought in François Kemlin (1784-1855) as his assistant, and set him to study the chemistry of glass production. Kemlin married a relative of d'Artigues and, in 1816, became manager of the Vonêche glassworks. Within a few years Vonêche had become the most important glassworks in the French Empire, employing over five hundred workmen and exporting large quantities of table glass and decorative crystal. The fall of Napoleon and the break-up of part of the French Empire after the Congress of Vienna in 1814/1815 brought about the creation of a new Kingdom of the Netherlands, in which Vonêche found itself. Vonêche was soon separated from France, its principal sales outlet, by crippling tariff barriers, and its staff and output had to be reduced by one fifth. In 1816, after considerable negotiation, d'Artigues signed an agreement with King Louis XVIII enabling him to export to France uncut crystal to the value of 700,000 Francs per year, free of duty for two years. In exchange for this concession he undertook to open a glassworks in France. D'Artigues purchased the small glassworks of Sainte-Anne, founded in 1764 at Baccarat, which then employed some 60 workers, and reopened it in 1817 as the Verrerie de Vonêche à Baccarat. He continued to run his French

subsidiary until 1823, when ill-health and the increasing pressure of his debts forced him to sell it. Baccarat was to become the largest glassworks in France, but it retained Vonêche as part of its name until 1843.

D'Artigues and Kemlin were joined at Vonêche in 1820 by Auguste Lelièvre (1796-1879), a graduate of the École Polytechnique in Paris. That same year d'Artigues opened a factory to produce plate glass, which obtained a Royal Warrant in 1826. D'Artigues's ill-health, however, combined with his growing financial troubles, not only forced him to sell his Baccarat glassworks, but also to mortgage his Vonêche glassworks and other properties. In 1822 he had given Kemlin his power of attorney. Three years later, at the age of 47, d'Artigues was married in Paris. Kemlin now decided to become independent and, with Lelièvre as his partner, left Vonêche to found a new glassworks. Funds were provided by a financial group which included d'Artigues's financial and legal advisers. In December 1825 they purchased the former abbey of Val Saint-Lambert from Deneef. Six months later the Société Anonyme des Verreries et Etablissements du Val Saint-Lambert was set up, employing a nucleus of workers from Vonêche as well as half-a-dozen English glassworkers. The King of the Netherlands, William I (1772-1843), was one of the new company's shareholders.

Conflict between the Belgians and the Dutch led to the partition of the Netherlands in 1830 and the formation of a new Kingdom of Belgium in which both Vonêche and Val Saint-Lambert were located. Now severed from its Dutch outlets, and crippled by the competition from its new and energetic rival, Vonêche closed down in 1830. Val Saint-Lambert prospered.

In April 1836 the Société Anonyme des Manufactures de Glaces, Verres à Vitre, Cristaux et Gobeleteries (Mirror, Plate-Glass, Crystal and Table Glass Manufacturers Ltd.) was formed in Brussels. Financed by the Société Générale de Belgique, the most prestigious banking organisation in Belgium, it incorporated four glassworks, those of Jumet, Mariemont, Heigne and Château de Lodelinsart. Six months later, after ten years of independence, the Val Saint-Lambert merged with the new company, of which Leopold I, King of the Belgians, was a shareholder. In a further series of takeovers, the new company absorbed a glassworks at Laeken, the French mirror factory at Recquignies and the Belgian one of Sainte-Marie d'Oignies of which Kemlin became the manager in 1838, while Auguste Lelièvre took over the running of Val Saint-Lambert, remaining as manager until 1863. The Val remained in the forefront of technical progress, being the first major glassworks to change over in 1828 from wood to coke ovens, importing every new machine and technique to improve, streamline or standardise production, quality and decoration, while its incorporation within the Société des Manufactures meant that it was part of a complex which covered every aspect of glass manufacture while it had access to all necessary funds and contacts with other industries through the Société Générale. The Val was soon producing enormous quantities of table-ware, opalines, and cut crystal as well as optical glass and lenses, glass for laboratory use, chimneys for oil lamps and paperweights, exporting to North, Central and South America, and as far afield as India.

Auguste Lelièvre was succeeded by Jules Deprez, manager from 1863 to 1889. In 1879 the Société des Manufactures took over the Cristalleries et Verreries Namuroises, formerly an important competitor of the Val's, but now in liquidation, although employing over a thousand workers. Deprez seized the opportunity to persuade the backers that the Val could better operate as a separate entity. That same year the Société Anonyme des Cristalleries du Val Saint-Lambert was incorporated, the Société des Manufactures being a leading shareholder. Jules Deprez was appointed managing director. Two out of the three glassworks of the former Cristalleries et Verreries Namuroises were taken over by the Val, Herbatte concentrating on the production of blown demi-crystal goods, while Jambes manufactured lamp chimneys; the third works, at Namur, were closed down.

All other glass production was concentrated at the Val itself. In 1883 the Val took over the newly formed glassworks at Jemeppe-sur-Meuse. That same year they exhibited at the Amsterdam International Exhibition, where they were awarded a Diploma of Honour.

Jules Deprez proved an energetic and successful director, vastly increasing production and turnover during his tenure of office. On his death in 1889, he was succeeded by Henri Lepersonne, who had entered the Val in 1876 and became Assistant Manager in 1879. Jules Deprez's son, Georges Deprez, became General Secretary. The Val was then employing over four thousand workers. Lepersonne continued the policy of expansion, and Georges Deprez travelled through Europe and in the United States, bringing back new ideas, techniques and machinery. The Val exhibited its wares at Barcelona in 1888 and at Antwerp in 1894, where it received a Diploma of Honour and two Grand Prix. In 1894 Georges Deprez became General Manager, retaining that position until December 1908, after which he became Inspector General. The Val's major shareholder, the Société des Manufactures, went into liquidation in 1902, and its shareholdings were distributed among its shareholders. In 1904 as a result the financial control of the Val came at last directly into the hands of the Société Générale de Belgique, whose Governor was henceforth to be Chairman of the Val's Board of Directors.

Val Saint-Lambert's huge output of table glass, cut, engraved, etched and moulded decorative glass, chandeliers and electroliers encompassed all popular styles, and export production was geared to its markets. Thus hubble-bubble pipe bowls were made for the Middle East; clean-cut decanters for the United States; crystal with lead oxide content of between 18% and 23% for South

America in order to minimise customs duties designed to keep out foreign competition; decanters and bottles to which silver or electro-plate mounts were to be fitted locally in the United States and Russia. Val Saint-Lambert exhibited successfully at the Brussels International Exhibition in 1897 and at the Paris International Exhibition of 1900, where it was awarded a Grand Prix. But in both cases it was the traditional output of glass that was both exhibited and admired.

Art Nouveau had an extraordinary flowering in Belgium. Philippe Wolfers in jewellery, Victor Horta, Henry Van de Velde and Paul Hankar in architecture and design, Gustave Serrurier-Bovy in furniture, the painters and poster designers Émile Berchmans, Gisbert Combaz, Victor Creten, Privat Livemont, Henri Meunier, Armand Rassenfosse, Fernand Toussaint and Théo Van Rysselberghe all helped create the new movement. Though attacked and derided by the traditionalists, they were championed by the lawyer Octave Maus, who launched a review called *L'Art Moderne* in 1881, in which the first printed reference to 'Art Nouveau' is found (in 1884). He was also the Secretary of the Cercle des XX (Group of Twenty), formed in 1884 in Brussels to exhibit work outside the official Salons. Maus changed the name of this group to La Libre Esthétique (The Free Esthetic) in 1894, under which name it survived until the outbreak of war in 1914, exhibiting the work of creative pure and applied artists from all over the world. Under the circumstances, it would have been difficult for the Val to stand completely aloof from the new movement.

One of the first contacts between the Val and Art Nouveau occurred about 1895, when Philippe Wolfers, the great Brussels jeweller, designed a series of vases which he made up in plaster, then cast in bronze. Under his direction and control, cased glass vases to his plaster or bronze maquettes were blown at the Val, after which the vessel was cameo-carved by him with the help of his personal lapidary. He created some twenty individual vessels between 1895 and 1903, then returned to the Val in 1925 and 1935.

A friendly relationship also existed between the Val and Victor Horta. In 1896 Georges Deprez commissioned the architect to design his private house in Brussels in the avenue Palmerston, where it still stands. The following year he again commissioned Horta to design the Val Saint-Lambert pavilion at the Brussels International Exhibition, for which Horta was awarded a Diploma of Honour. When Horta designed the extraordinary Solvay home, which took from 1894 to 1900 to build, he returned the compliment by commissioning the Val in 1903 to execute the crystal reflectors for the great electroliers in the dining-room.

From about 1895, and for about fifteen years, the Val turned out a small number of transparent cased coloured glass vases deeply cut with patterns in the style of Van de Velde. From palmetto leaves to abstract curves and variations of the whiplash, these abstracted Art Nouveau patterns were a successful and uncompromising attempt to come to terms with the new style. Van de Velde himself supplied the Val with drawn models of vases and leaded-glass panels, but it is not known if they were ever executed.

Another range of vases, designed by Léon Ledru (1855-1926), had Art Nouveau abstract designs and repeating patterns acid-etched and engraved on a coloured base. Exhibited at the 1897 Exhibition in Brussels, they were greatly admired by Van de Velde, who modestly ascribed their 'excess' to his influence. Ledru also designed a range of transparent Nile green glass vases etched and shallow engraved with floral patterns in a timid Art Nouveauish style with strong overtones of Victorian sentimentality, executed against a satin-finished ground. Léon Ledru remained at the Val for 38 years, becoming manager of the Design Section. His Art Nouveau designs formed only a small fraction of his output, and he designed a wide variety of traditional glass as well as some *avant garde* pieces at every stage of stylistic development. He was soon designing in the Art Deco style.

Val Saint-Lambert also supplied some vases and bowls which were cased in pewter mounts by the Orivit company of Cologne Ehrenfeld, exhibited in Paris and Düsseldorf in 1902. Also in 1902 the Val executed vases which were set in pewter mounts designed and made by Gustave Serrurier-Bovy (1858-1910), only one of which is definitely known to have survived.

Georges Deprez clearly wished to produce vessels in the Art Nouveau style capable of competing on the international markets with the products of Gallé and, more particularly, Daum. Joseph Simon (1874-1960), a future head of design at the Val, was sent to the Paris 1900 Universal Exhibition. He reported his admiration for the Art Nouveau creations as well as the feasibility of their production at the Val. Over the next few years several attempts were made at producing cased glass vases, covered boxes and bowls cameo-etched with floral designs. These are normally signed 'Val Saint Lambert' incised on the base, and are reminiscent of industrial Gallé productions. In 1906 Deprez summoned the brothers Desiré and Henri Muller to Belgium, and commissioned them to design vases for the Val.

The Muller brothers remained at the Val during 1906 and 1907. During that short space of time they designed an astonishingly beautiful series of vessels which are outstanding both in their own *œuvre* and as Art Nouveau objects. An original album of photographs cataloguing 411 models still exists at the Val. Shapes vary from the bulbous to the elongated neck with considerable freedom. The designs are almost invariably floral, sometimes with the addition of an insect. A very few landscapes were designed, but these are not as successful.

The Val vessels designed by the Muller brothers are extremely colourful. The vessel was first blown using a clear crystal or at most two layers of glass. This was

then enamelled in patches of colour to form the basic outline of the design, which was then etched through, the surplus enamel removed with acid. The result is a polychrome vase with a hint of iridescence in the patches where the enamel has been thinned with acid. The colours are often very strong, the designs vigorous and clear. They are found in a variety of sizes, one in the Glass Museum at Liège being over five feet tall (1.61 m). All the vases designed by the Muller brothers are signed with the initials 'VSL' in cursive script on the side of the vessel, and within the design. They are now quite rare.

After the departure of the Mullers, the Val continued to produce a number of acid-etched cameo vases with floral and scenic designs, some of which were designed by Lucien Petignot (1874-1936). Although some of these are signed with the cursive script 'VSL', it is impossible to confuse them with the Muller designs. These later designs are not enamelled, and are acid-etched in a style and technique very similar to that of late industrial Gallé, though the Petignot designs are often very attractive.

A strange and original series of designs began to emerge from 1909 at the Jemeppe-sur-Meuse division of the Val. These glassworks had been assigned to the production of opal lamp shades and globes and chimneys for gas and oil-lamps. Romain Gevaert (1875-1931), who had worked at the Val from 1897, was named Manager of the Jemeppe works in December 1900. Within seven months of his arrival he had cancelled night shifts. (They continued at the main works of the Val until 1923). While maintaining normal production of commercial glass, he initiated a range of original vases, most of which were designed by himself and his wife, born Jeanne Tisehon (1875-1955). She taught decorative arts, specialising in painting on ceramics. She designed the monogram enamelled on all Jemeppe art-glass: a thick, sweeping 'V' and 'L' side by side, looking identical except that the 'L's' upswung foot is shorter than that of the 'V', the two central stalks of the letters joined with a smaller 'S'.

The most characteristic vase produced at Jemeppe was the onion form, with elongated neck. Made of opaque coloured glass, it often has patterned colours rolled onto the surface, on the onion base alone or thinning into slender lines that reach up the stem to the lip. Jeanne Gevaert designed glass vases entirely cased in a thin layer of pewter moulded with simple floral decorations and inset with glass cabochon peacock eyes. Several opaque vases were made with textured surfaces using powdered coloured glass rolled onto the parison then fired at the kiln. Production was interrupted by the German occupation of Belgium in the First World War, but resumed in 1919. The elegant onion shapes had prefigured the simplifications of Art Deco. After the war, Jemeppe produced opaque vases with drips of glass in a contrasting colour trailing down the sides of the vessel from the rim. Simple designs were produced in cased glass in strongly contrasting colours such as blue and white, some cut with simple repeating patterns to reveal the inner layer. Portions of these vases were often wheel-carved to produce a hammered effect.

The war years had taken their toll of the Val. Skilled workers had been killed, or fled the country. Its international markets were in ruins, while Belgium's economy had been badly affected by the war and German occupation. Fortunately for the Val Marcel Fraipont, who had succeeded Georges Deprez as Director in 1908, had very carefully preserved and maintained the idle glassworks. The very night the Armistice was signed, the first kiln was lit. Normal production was soon resumed, and exports quickly achieved enormous proportions. Designs remained, on the whole, traditional, until the spur of the coming 1925 Exhibition of Decorative and Industrial Arts in Paris produced a series of Art Deco designs. Crystal vases cased with a transparent coloured glass were intaglio-cut in repeating geometric patterns, others had clusters of applied glass cabochons, or alternate polished and satin-finished panels, designed by Léon Ledru or Joseph Simon. Others were acid-etched to similar designs.

At the 1925 Paris Exhibition the Val had on display a new range of vases labelled 'A.D.P.', which stood for 'Arts Décoratifs de Paris' (Decorative Arts of Paris). All in the new style, some were unique models. Philippe Wolfers had returned to the Val to design a massive geometrically cut crystal wine set of decanter and glasses, which was exhibited in the Belgian pavilion in the dining-room setting designed by Victor Horta. The Val display was enormously successful, and was awarded a Grand Prix. Joseph Simon was awarded an individual Gold Medal. Edgar Brandt was sufficiently impressed to arrange for a permanent exhibit of the Val's new glass at his recently opened shop.

The Val's celebration of its centenary was delayed to 1926 by the death of Georges Deprez. Ledru also died just before the delayed celebration and his former pupil Simon succeeded him as head of the design division. The Val exhibited at the Liège International Exhibition in 1930, where it was awarded a Grand Prix; the 1931 Colonial Exhibition in Paris; an exhibition held at Elizabethville in the Belgian Congo, where it was awarded a Grand Prix; the Cercle Artistique at Antwerp in 1932 and the Brussels International Exhibition in 1935. Joseph Simon's design for cased transparent coloured glass vases intaglio-cut with contemporary slashes and patterns are usually signed 'Val Saint-Lambert' with the addition of the letter 'S' for his name. Some have the additional letters 'A.D.P.' for 'Arts Décoratifs de Paris' or 'EL' if they were exhibited at Liège in 1930 or 'B' if exhibited at Brussels in 1935. A number of vases in cased coloured glass deeply cut with geometric patterns using sand-blasting methods, and alternating polished and mat sections, were designed and executed by Modeste Denoël, who worked at the Val from 1891 to 1936; and Felix Matagne (b. 1910) who worked at the Val from 1926 to 1938, returning there

briefly from 1969 to 1972.

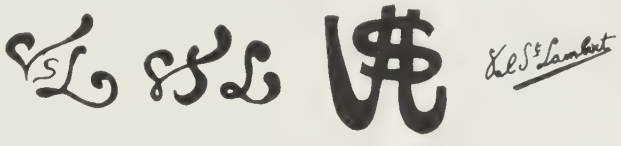
The most interesting artist working at the Val in the interwar years was Charles Graffart (1893-1967). He first joined the Val in 1906 as a boy, shortly before his thirteenth birthday, then as an apprentice. He studied drawing at the Val school, then at the Fine Arts Academy in Liège, while spending some eighteen years studying wheel-engraving and glass carving. His first known independent works are two stunning cased coloured glass vases dating from 1924, each carved naturalistically with the portrait of a woman. One is now at the Liège Glass Museum, the other is in the Val Collection. In 1926 Graffart was given the rank of master engraver, and was thus given the freedom to design whatever he chose. Between 1926 and 1929 he designed and engraved some three hundred unique vases, each with one or more panels engraved with nudes, classical and biblical scenes (Salomé's Dance, Suzannah and the Elders, etc.), and animal and bird subjects. Many of the subjects he chose have great movement and dynamic tension. The vessels are often of clear crystal, but he sometimes used cased coloured glass. The engraved subject is often placed within a decorative cartouche, often with an Art Deco motif, and the nudes often have an Art Deco stylisation. Engraving and carving are often found in a single subject. His vases are normally signed 'Val Saint-Lambert' and 'Graffart'.

Graffart essayed a variety of techniques. He greatly admired the carved glass of Aristide Colotte, and himself carved a small figure of a falcon from a block of steel-blue crystal in 1925. This was later issued in a moulded opal glass version by the Val. He later 'carved' a portrait head of Beethoven by reducing the glass with acid. He also designed large moulded glass panels in the style of Lalique, with varying subjects. At the 1930 International Exhibition at Liège Graffart designed a tall fountain with moulded glass panels depicting a mother and child and seated and kneeling nudes, the whole in an elegant Art Deco bronze and glass setting. He also designed panels with religious subjects for use in modern churches. Graffart held several one-man shows and exhibited in a number of group exhibitions, not only as a glass designer and engraver, but also as a sculptor and etcher. In 1929 he was given the task of designing vases for commercial production at the Val.

The economic depression of the 1930s, coupled with increased competition from Japanese, Bohemian and Dutch firms, forced the Val to reduce its output and concentrate on table-ware and cheaper goods. They therefore launched a line of moulded vases, ornaments and dressing-table sets often in geometrical designs, frequently reminiscent of the designs of Lalique and Sabino. The glass was often opalescent, sometimes pastel coloured or black, while a few were metalised or silvered. Most of these were designed by Charles Graffart or René Delvenne (1902-1972). They were catalogued in a Val brochure issued in 1934, which applied the trade name *Luxval* to these moulded wares. A further Luxval catal[illegible] issued in 1938.

By 1939 the Val had been reduced to a three-day working week for its workmen, and there was talk of winding up the Company. Its majority shareholder, the Société Générale, came to the rescue with funds which enabled the Val to limp through the Second World War. Production was back to normal by 1948.

Charles Graffart had succeeded Joseph Simon as head of the design division in 1942, retaining that position until 1958. In addition to his commercial designs he continued to design a number of unique vessels which were, however, executed by other craftsmen under his direction. These bear the letter 'V'; while his vessels which were executed at the Val glass school bear the letters 'EV'; and those which were engraved bear the letters 'CG' and a reference number. Graffart exhibited designs at the Metropolitan Museum of Art in New York in 1950 and at the Decorative Arts Museum in Paris in 1951.



Val Saint-Lambert exhibited its current wares at the Xth Milan Triennale in 1954; at the XIth Triennale in 1957, when Graffart was awarded a Gold Medal; and at the Brussels International Exhibition in 1958.

René Delvenne succeeded Graffart as head of design from 1958 to 1967. He introduced vases of twisted shapes in clear crystal overlaid with shaded coloured glass, as well as geometrically stylised figures in clear crystal. In 1971 the Société Générale de Belgique sold its shares in the Val to the Belgian Government.

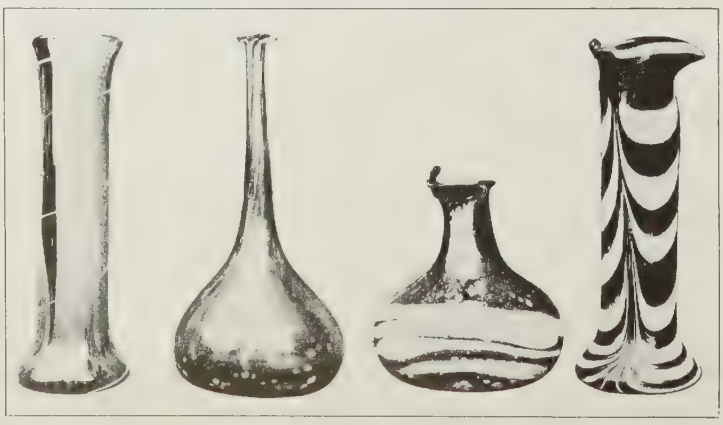
Some interesting and original designs have been executed at the Val by outside artists. Nanny Still, from Finland, designed vases, table-ware and chandeliers between 1966 and 1968. Sam Herman, born in Mexico in 1936 of an English father and a Mexican mother, educated in the United States and Scotland, and currently teaching at the Royal College of Art in London, designed a group of 120 unique vessels in 1970 as well as designing models for a range of vessels for commercial production. The American Harvey K. Littleton executed a number of elegant crystal sculptures at the Val in 1972. Georges Collignon, born at Flémelle in Belgium in 1923, worked briefly in the design department of the Val during the Second World War before becoming a painter. He rejoined the Val in 1972 to design a series of curious coloured glass objects of strictly geometric shapes except for a delightful pair of rotund feminine breasts in mat crystal named *Marilyn*.

The Val Saint-Lambert glassworks are still flourishing, celebrating their 150th anniversary in 1975.

VALLÉRYSTHAL

The Vallérysthal glassworks were founded in 1836 by the Baron de Klenglin in the Meurthe *département* of Lorraine on a site used as glassworks for several centuries, and named after his daughter. It had, however, been set up as a subsidiary of the Plaine de Walsch glassworks, founded in 1707, and the two glassworks were united under the single name of Societé des Verreries Réunies de Plaine de Walsch et Vallérysthal (United Glassworks of Plaine de Walsch and Vallérysthal) which was turned into a company with limited liability in 1854. A year later the joint venture was dissolved, and Vallérysthal became Klenglin et Cie, employing some 500 workers, and producing both table and decorative glass. At the first International Exhibition held in Paris in 1855 Vallérysthal was awarded a Medal 1st Class.

Under the direction of Adrien Thouvenin, Vallérysthal imported some fine craftsmen from North Bohemia, and they trained the French glassworkers in the subtleties of their craft. Opaline and coloured fancy glass was produced in some quantity, and the firm's success seemed assured, with established outlets for its products throughout France. The Franco-Prussian War of 1870 and the defeat of France on the field at Sédan led to the annexation of much of Alsace-Lorraine by the new German State. Vallérysthal found itself in German-held territory, cut off from its sales outlets. In 1872 they therefore purchased the neighbouring glassworks of Portieux, founded in 1705, and located in the French-held Vosges. This gave them ready access to all their French outlets, and gave them time to build up new sales outlets throughout Germany. The United Glassworks of Vallérysthal and Portieux officially announced their name in both French (Verreries Réunies de Vallérysthal et Portieux, S.A.) and German (Vereinigte Glashütten von Vallérysthal und Portieux), with its head office at Vallérysthal. The firm exhibited at the Paris International Exhibition in 1878 and was again awarded a Medal 1st Class.



Vallerysthal – Free-blown vases with pulled decoration designed by F. A. O. Kruger and Bruno Paul, 1899. (Contemporary photograph)

The expansion of the railway system produced rapid improvements in Vallérysthal's sales, and this general improvement led to greater freedom in experimentation in the production of art glass. Vallérysthal exhibited in 1898 at the 8th International Art Exhibition in Munich, but its sights were set on the coming Universal Exhibition which was to be held in Paris to commemorate the arrival of the Twentieth Century. Vallérysthal engaged the services of Charles Spindler (1865-1938), a painter from St. Léonard, a town close to Strasbourg; and F. A. Otto Krüger (b. 1868) and Bruno Paul (1874-1968), both members of the United Workshops in Munich. Krüger and Paul designed a series of free-blown vessels decorated with pulled threads and internal bubbles in broad, random patterns using rich opaque colours on translucent glass.

The three designers soon developed an original and characteristic Vallérysthal style for its art glass line. Using elegant, symmetrical shapes, an elaborate floral or scenic design is cameo-cut, normally using a bluish-grey glass overlaid with a single coloured glass (most frequently a dark red). Background sections are then treated in continuous overall decorative patterns etched with hydrofluoric acid on the very innermost surface of the coloured glass layer, so that the etched ground only just picks up the colour. The basic decoration is then applied using polychrome enamels, frequently with gilding. Certain sections of the shallow-etched ground are polished to provide a contrast. The glass itself has metallic ores added to it so that it has a basic metallic iridescence, which is emphasised wherever it is at its most pronounced by adding butterflies or flowerheads. Metallic foil was occasionally inserted within the glass, while coloured glass threads were sometimes wound around the vessel.

Vallérysthal vases are invariably signed on the base. 'Vallérysthal' in engraved script is found within the outline of an etched leaf (a large variety of leaf design was used) within the central ground pontil. The signature within the leaf was usually also gilt, but the gilding is often found wholly or partly gone with the years.

These elaborate vases were only executed for a short while, and in small quantities, so that they are fairly rare. Vallérysthal's main output was table glass, usually etched with decoration, and their Art Nouveau glass was only a brief, though attractive, exercise. The firm exhibited regularly at the Leipzig fairs from 1900.

After the First World War Alsace-Lorraine was returned to France, and Vallérysthal once again became a French firm. It still exists, and has its main sales depot in Strasbourg.

PAOLO VENINI

Born at Varenna, near Milan, in 1895, Paolo Venini was a member of a glass-blower's family from Como. He had, however, chosen the law for his career and studied at Milan University, afterwards setting up his law practice in Milan. He soon met a young Venetian business man, Giacomo Cappellin (b 1887), who owned a gift shop in Milan. Disgusted by the imitative, over-decorated glass for tourists that was being turned out in Murano, Cappellin had commissioned the glassworks of Andrea Rioda to make simple transparent glass vessels for his shop modelled on the vessels depicted in eighteenth century Venetian paintings.

The lawyer and the gift shop owner discovered a mutual love for fine glass and, believing there was a sound future in its manufacture, decided to take over Rioda's glassworks in Murano. In 1924 they purchased the glassworks, and incorporated the firm of Vetri Soffiati Muranesi Cappellin-Venini & C. They had intended to retain Rioda as technical director, but he died just at the time of the takeover. Vittorio Zecchin (1878-1947), a distinguished painter, decorator and glass designer was appointed technical and artistic director.

Cappellin-Venini turned out a number of purist vessels which were either exact copies or variations of those depicted in eighteenth century Venetian paintings. Made of transparent colourless or pastel coloured glass, they were a startling contrast to the over-ornate confections identified as 'Venetian' glass. They were successfully exhibited at the first Biennale of Decorative Art held at Monza in 1923 (later to become the Milan Triennale from 1933 onwards) and in Paris in 1925 at the International Exhibition of Decorative and Industrial Arts. Several French critics wrote of their disappointment at the traditionalism and lack of originality of the Venetian glass displayed. Nevertheless the *Rapport General* issued by the Ministry of Commerce & Industry stated: 'Impelled by Venini & Co a very ancient industry with a glorious tradition has just been reborn in Italy . . . The art of Venice consisted of a juggling act; on the fragile and precious shape the glassmaker never failed to add a thousand ornaments, garlands, festoons, chimeras and knops, modelled and built up in space with his pliers. But Venini and his associates have judged such a formula no longer in touch with modern taste. They have stripped designs and shapes, sought simple compositions, open and logical solutions. The great purity of logically studied lines is seen in their table glass, in the shape of their vases, in the curve of the handles, in the aerial branches of a candelabra or chandelier. Venini's chandeliers, plain stalks branching out from a central bowl and bending to lift up a light bulb, are graceful marvels, clearly modern in design and truly Venetian in taste: their pale shades, grey or steel blue, are particularly ravishing.'

Venini was determined to experiment with more freedom, and separated from Cappellin in 1925 to set up his own glassworks, the Vetri Soffiati Muranesi Venini & C. Venini himself began to design and control the production of his glassworks, as well as employing several designers to design more adventurous glass for him. These included Vittorio Zecchin, the sculptor Napoleone Martinuzzi from 1928, the architect Tommaso Buzzi in 1933, and the Swedish potter Tyra Lundgren between 1934 and 1940.

Venini continued the production of simple and unadorned vessels in colourless or pale coloured transparent glass, but also began to use more colour and techniques, using old ones such as *millefiori* and *latticino*, and inventing new textures.

Vetro pulegoso was developed in 1928 as an opaque glass, produced in several colours. Its curious surface texture was produced by having an enormous quantity of tiny air-bubbles in bunched groups throughout the glass and up to the surface where some inevitably burst.

Vetro Corroso (corroded glass) first appeared in 1933. The vessels produced in this glass were often given a free, somewhat lopsided shape. The surface was then treated with chemicals to corrode it, giving the whole vessel an 'antique' look, as though it had just been dug up by an enterprising archaeologist.

Vetro sommerso (underwater glass) appeared in 1934 as a coloured glass with a large number of air-bubbles, the shaped parison being encased in an outer layer of clear glass.

Zecchin and Martinuzzi designed a large variety of elegant and simple glass shapes for Venini, including vases, bowls, decanters and chandeliers. Martinuzzi's feel for sculpture first manifested itself in the design of a number

Cappellin and Venini – Group of vases in blown Muranese glass, 1924. (Contemporary photograph)

of free-form bottles, the bulbous bodies either surface decorated with vertical lines or pinched to form vertical bulges, the necks placed at an acute angle to the body so that the whole vessel appears to be leaning forward. In 1928 he designed a series of tall plants made of green *vetro pulegoso* in which the leaves and stalk are positioned by the use of a thin metal skeleton. He also designed a figure of the Russian dancer Anna Pavlova for the Excelsior Hotel in Venice in 1929. Some of his most complex designs, however, were for glass fountains in which elaborate cups were placed at various heights to emphasise the continuous play of water on glass as the flow spilled over from cup to cup.

Venini first exhibited a more free-formed, less sober group of vessels at the 1933 Milan Triennale, designed by himself and Tommaso Buzzi. Shapes and colours were henceforth to be more adventurous and quirky. Venini's glass was a great success at this and subsequent triennales, and his fame was further helped by the magazine *Domus*, launched by Gio Ponti in 1928, and which attempted to popularize new industrial designs in Italy and set them within the context of European modernism.

From 1934 to 1940 Tyra Lundgren designed a number of decorative glass objects for Venini, often in basic shapes of leaves or fish. Venini himself continued to design and supervise an increasing range of vessels and decorative objects, colours and patterns increasing in number and variety. They were always, however, executed with taste and gracefulness as well as great technical accomplishment. Venini died in 1959, but his firm continues to produce fine decorative and utilitarian glass under the direction of his son-in-law.

VÉRONÈSE

This was a French firm producing and marketing Venetian glass in the 1930s. Although they produced a variety of bowls, vases and other items in bubbled and furnace-worked glass, their main output consisted of elaborate chandeliers in which the light was diffused and broken up by silvered, hammered, twisted and curlicued glass branches, leaves and other shapes ringing and crowning the bowls. Jean-Gabriel Domergue, then at the height of his fame as a painter of chic and elegant beauties, designed some chandeliers for Véronèse.

VILLEROY & BOCH

Villeroy & Boch was formed in 1836 by the merging of two great German pottery manufacturers, Villeroy, founded in 1789 at Wallerfangen (or Vaudrevanges in French) in the Saar; and Jean-François Boch, who had factories at Septfontaines in Luxembourg and Mettlach in the Rhineland. Faience, earthenware and stoneware were produced, and the joint firm expanded and prospered. A subsidiary, Boch Frères, was opened as the Keramis works in 1841 at La Louvière in Hainault in Belgium, while a glassworks at Wadgassen in the Saar was opened in 1842, and factories opened in Dresden and Schramberg in Germany and at Maubeuge (Nord) in France in 1861. Much of its production of art pottery was exported, particularly Mettlach ware, while they produced a wide range of glassware, mostly for table use, but also some art glass in imitation of early styles. M. Scheid became manager in 1900. The firm had exhibited at the Vienna International Exhibition in 1873, and exhibited regularly at the Leipzig fairs from 1900.

In 1902 the firm introduced a line of cameo glass at its stand at the Industrial and Trade Exhibition in Düsseldorf. These were two-layered vases with acid-etched decoration in fruit, flower and plant designs, very similar to late industrial Gallé, and their production was continued until 1934. The principal designer of these cameo vases between 1929 and 1931 was Edmond Rigot (b. 1885). His designs are signed 'E. Rigot' in cameo relief script on the side of the vessel, frequently with the addition of the 'V & B' monogram (for Villeroy and Boch). The firm still exists, and continues to produce both ceramics and glass.

VINELAND FLINT

Victor Durand (1870-1931) was born in Baccarat in France. Several generations of his family had worked in the Baccarat glassworks, and he proved no exception, joining as an apprentice at the age of 12. His father, however, Victor Durand *père*, emigrated to the United States in 1882 and worked there at the Wheaton Glass Works then at Whitall-Tatum & Company. In 1884 he sent for his family, and Victor Durand *fils* briefly joined his father at Whitall-Tatum before moving to several other glassworks to acquire experience in various glass techniques. In 1897 Victor Durand and his father took over the lease of the Vineland Glass Manufacturing Company in Vineland, New Jersey. Formed in 1892, the firm was engaged in the production of cheap bottles and jars in a very small way. The Durands built a new kiln and diversified with the production of glass tubes and rods, including some for medical and scientific use. Young Victor's brothers Henri, Charles and Paul also worked at Vineland for a while. When Durand *père* retired, his son Victor took over the firm. By 1920 it had expanded into four separate companies, the Vineland Flint Glass Works, the Vineland Scientific Glass Company, the Newfield Glass Company and the New Jersey Clay Pot Company, employing over 700 workers in one of the most commercially successful glassworks in the United States. Victor Durand was now in a position to indulge his long-felt wish to produce art glass. The collapse of the Quezal Art Glass and Decorating Company gave him his opportunity. He traced Martin Bach Jr. to Toledo, Ohio, where the latter had gone looking for work, and invited him to Vineland.

Martin Bach Jr. set up an art glass shop at Vineland in December 1924, surrounding himself with former Quezal men. Emil J. Larsen was gaffer, William Wiedebine decorator, Henry Britton server and Percy Britton gatherer. The earliest vases produced at the Durand works were Quezal shapes with Quezal decorations. The Bach team, however, soon settled in and new designs, colour combinations and patterns began to emerge.

Iridescent glass was produced in variations of designs used at the Quezal works. The basic golden amber glass was called 'ambergris' at Vineland, and decorative patterns including 'Spider Webbing' (very fine threads of gold glass trailed at random all over the surface of the vessel); 'Heart' designs, usually in combination with 'Clinging Vine' (similar to Tiffany's leaf with vine pattern); 'King Tut' swirls; and 'Peacock Feather' decorations were used. Innovations included cameo and intaglio designs cut into the surface of the iridescent vessel; geometric Art Deco shapes; vases with the iridescent pattern allowed to drip freely down the surface from the rim to look like the decoration on oriental pottery; subtle optic patterns; and

Durand – Lustre vase with gold lustre King Tut decoration. (Minna Rosenblatt Ltd., New York)

'Venetian Lace' glass, in which a pattern of white glass threads was laid over a coloured glass vessel. In 1928 they began the production of crackled glass, in which a blown glass vessel was wrapped in coils of coloured glass, then dipped in water, which immediately crackled the surface glass. Still on the blowpipe, this was reheated at the kiln

between the cracks, then lustred to give it an iridescent finish. These were called **Moorish Crackle** vases. A variant of these, called **Egyptian Crackle**, had the basic vessel with its coloured glass coils further cased in opal glass. Here the crackling affected both outer layers. Quantities of cut crystal were also produced, as were cut crystal vases cased with transparent coloured glass. A cut cased glass vase won Durand a First Prize at the 1926 Sesquicentennial International Exposition in Philadelphia.

Martin Bach Jr. joined privately with Ernest Donell to form a small company called the L & S Lamp and Shade Company in Alloway, N.J. They purchased imperfect vases from Vineland, and adapted them into lamp-bases. They purchased or made the necessary metalwork, often cutting the vase base to fit it to the metal, then adapted fabric or parchment shades. They were soon successful enough to open a showroom in the Imperial Hotel in New York. Their success, however, proved their undoing. Durand, having seen the increasing quantity of imperfect vases purchased by Bach, decided to go into lamp manufacture himself. The L & S Company was dissolved, but Donell went on manufacturing parchment shades and metalwork for Durand, whose venture proved very successful. In addition to the parchment shades, Durand also manufactured a number of Crackle glass shades adapted mostly to wrought iron fittings made for them, as well as a variety of iridescent and coloured glass shades and globes, some with etched or engraved designs.

The early art glass produced at Vineland was unmarked. Later glass is generally signed 'Durand' or 'Durand' within and across a large letter 'V', all in script. Figures are also often inscribed, those to the left of a hyphen being the shape numbers, those to the right of a hyphen being the height in inches.

Victor Durand was killed in a car crash in 1931. He had been in the process of merging his Vineland Flint Glass Works with the Kimble Glass Company with which he had been associated between 1911 and 1918. The merger was completed shortly after his death, the enlarged company being called the Kimble Glass Company. The new director, Colonel Evan E. Kimble, did not wish to continue the production of art glass. Bach, Larsen and their team were dismissed, the remaining stocks were offered to their clients at about 10 cents per item. Any art glass which still remained unsold was then smashed. Col. Kimble was briefly persuaded to produce a bubbled, cloudy type of glass, known as **Kimble's Cluthra**. The very first ones were marked 'Durand', but the rest were marked with the letter 'K' (for Kimble) and a series of numbers which indicated the shape, hyphenated with another number giving the height in inches, then the letters 'Dec' (for Decoration) with a number representing the colour.

Emil J. Larsen, who was born in Sweden in 1887, the son of a glass-blower, had emigrated to the United States in 1897. Trained at the Dorflinger Factory in White Mills, Pennsylvania, he joined the Pairpoint Glassworks in New Bedford, Mass., in 1918 where he acquired experience in many glass techniques. His brief stay at the Quezal Art Glass and Decorating Company in 1923/1924 was followed by eight years as gaffer at the Durand glassworks, from 1925 to 1933. An inventive glassmaker, he also designed several shapes and decorations. After the Second World War, he opened his own small glassworks at Vineland, N.J.

OTTO VITTALI

Born at Offenburg in Germany on August 11th, 1872, Otto Vittali studied at the Art Schools of both Karlsruhe and Munich before joining the studio of Professor Linnemann in Frankfurt-am-Main. He later visited the United States on a sketching tour before moving to Berlin in 1900, where he designed the glass mosaic frieze for the garden front of the Adlon Hotel. He also designed a glass mosaic frieze for the Church of the Redeemer in Jerusalem, and received a number of commissions to design and paint leaded-glass windows and frescoes for several German churches. In 1905 he won the Gold Artist's Medal awarded by the German Empress for a stained glass window he designed for the Glaubenskirche (Church of the Faith) in Lichtenberg.

In 1905 Vittali began to design and decorate ceramics and glass. His shapes are strong, forceful and symmetrical, with large solid bases and undulating necks, made of coloured glass. These were then almost totally covered with opaque enamel designs in lustrous colours, with frequent use of gold and silver. He used abstract designs in continuous friezes, with repeating motifs all around the main body, usually inspired by Moslem mosque decorations. His vessels thus have a strongly Moorish feel to them, though his shapes generally do not suggest the Middle East. They are normally signed in enamels on the base with his signature, the 'V' having a tall left arm and a shorter right arm which then extends horizontally to divide his Christian name from the rest of his name. 'Otto' is above the horizontal line, the rest below it, the 'A' and 'L' of Vittali being in capitals while the 't's' and 'i's' are in lower case. The crossed 't's' of Otto above and Vittali below are joined to form parallel lines cutting the hori-

zontal line. Vittali was awarded the City of Berlin prize after his first exhibition of glass.

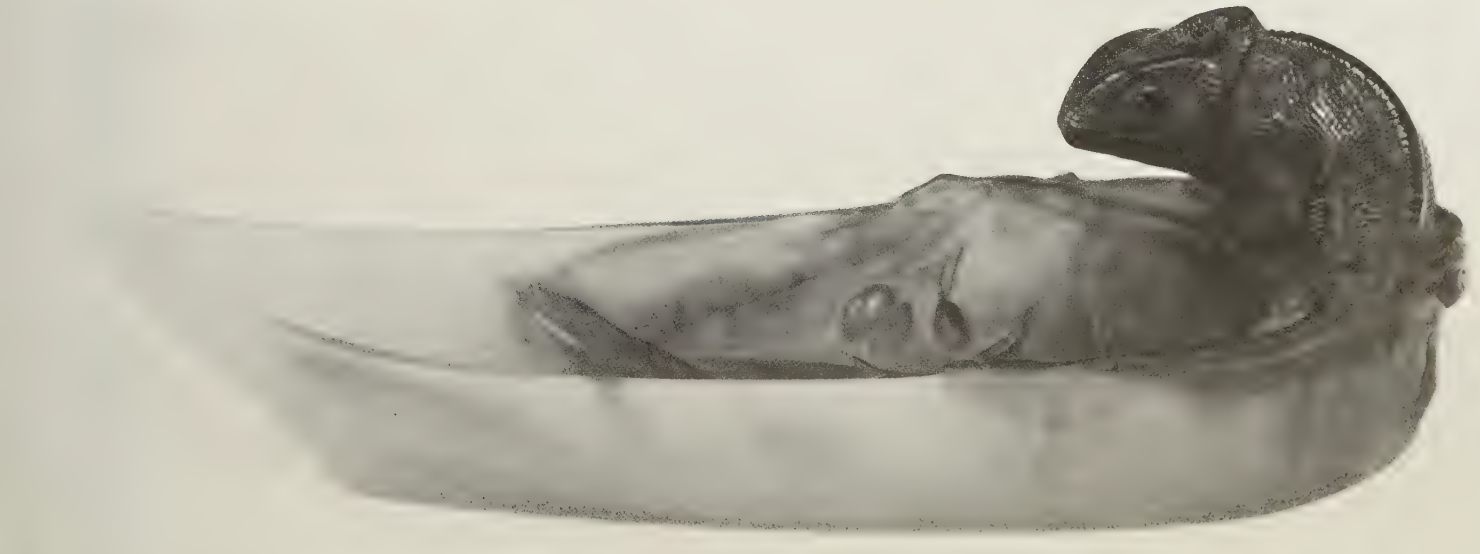
After the First World War Vittali abandoned glass to concentrate on porcelain decoration, to which he brought increasing variety of techniques and styles. Towards the end of his life he abandoned the applied arts and concentrated exclusively on painting, executing still lifes, landscapes and portraits.

LOUIS VUITTON

Designer and decorator of luxury articles, Gaston Louis Vuitton owned a large shop in Paris at 70 Champs Elysées, as well as branches at Nice (12 avenue de Verdun), Lille (34 rue Faidherbe), Cannes (10 rue des Belges) and London (149 New Bond Street). Matched luggage decorated with a monogram of his initials became, and has remained, eagerly sought after and plagiarised. Sets of brushes, travelling fitted vanity cases, toilet articles, hand-bags and wallets were designed and made for Vuitton, and he or one of his staff of designers would make up any special pattern or model to a customer's taste. Extraordinary and opulent travelling cases were produced by Vuitton, including wardrobe-cases; shoe-cases with 30 compartments; hat boxes with individual niches for the hats placed one above the other; and a case 'indispensable for the businessman', which opened into a fully fitted office desk. Vuitton designs were exhibited regularly at the Salons des Independants throughout the 1920s and 1930s, and he also exhibited at the 1925 Paris Exhibition of Decorative and Applied Arts.

Vuitton produced a variety of original crystal scent bottles of linear and cubic shapes moulded or cut on the sides with circles, ovals, parallel ribs, curved patterns. Many were based on the stylisation of African art married to geometric decoration, and often bore designs based on those formed on African shields, house decorations or tribal marks. Others had stylised enamel designs. They were usually stoppered with a silver or cube-shaped carved wood or ivory stoppers. Sets of bottles in various sizes matched with boxes and jars with similar designs were made for fitted cases. Suzanne Auzanneau and André Ballet were among Vuitton's leading designers, while Mme. Cless-Brothier designed some fine engraved bottles as well as a superb range with enamelled representations of dancers from Diaghilev's Ballets Russes in many of their roles, including Nijinsky in *L'Aprés Midi d'un Faune*.

ALMARIC V. WALTER



Walter – Pâte-de-verre dish modelled with a black and green chameleon in relief by Henri Bergé, length 25.5 cm (1920 (Sotheby's Belgravia)

Born in Sèvres, Walter spent his early life there, gravitating naturally towards ceramics. He studied at the École Nationale de la Manufacture de Sèvres, and there began his first experiments with pâte-de-verre under the direction of his teacher Gabriel Lévy.

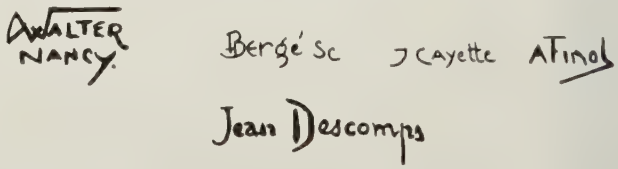
Walter exhibited at the Salon des Artistes Français as early as 1895, but began to show his pâte-de-verre vases, sculpture and medallions only in the 1903 Salon. Five years later he had moved to Nancy and the Daum glassworks. His contract with Daum appears to have been very generous, giving him considerable independence. He had his own workshop, and could call on the services of any of the Daum designers. This was the start of a large and varied production of pâte-de-verre items, vases, ashtrays, bowls and statuettes. He worked mostly to the models of Henri Bergé, a Daum designer, though other artists, such as Victor Prouvé and Jean-Bernard Descomps, also designed models for him.

At the start of the First World War in 1914, all artistic production ceased at the Daum glassworks. In 1919, after the war had ended, Walter set up on his own at Nancy, employing up to a dozen glassworkers. He had retained the copyright to his Daum models, which continued in steady production for a number of years. Henri Bergé designed several new models for him, as did a variety of other artists including Descomps, Jules Chéret, Marcel Corrette, Alfred Finot, I. Cayette, P. Dubery and Henri Mercier. Statuettes represent birds (fledglings, parrots, owls), animals (mice, lizards, crabs, lobsters, chameleons, frogs, newts) and insects (bees, butterflies, beetles) as well as human or humanoid figures (dancers, mermaids, naiads, satyrs). They are often part of a bowl, or tray. Walter modelled a number of figures inspired by the Tanagra statuettes in the Louvre Museum, and commissioned several models based on the American dancer Loïe Fuller, including one from Victor Prouvé and one from Henri Bergé. Jean Descomps designed a large plaque representing Isadora Duncan dancing . Stylised floral motifs were normally applied to vases, bowls, jars, trays, book-ends and candlesticks, though many of the animal and humanoid motifs were also used. Several religious plaques designed by Descomps and Bergé were produced.

Walter also had a range of ornamental pâte-de-verre, designed to be worn as pendants or used as a substitute for a large central precious stone in jewellery. They were also sometimes used ornamentally on furniture and lamps. Large pâte-de-verre tiles were made as wall-coverings, and Walter also used pâte-de-verre in the design of some stained glass windows.

Walter's pâte-de-verre is opaque, fully modelled, often with several colours. Except for single-colour items or those requiring sublety in, say, skin tones, the most sought after example of any given model are those with the most dramatic colours used for the central subject, particularly greens and reds. All items made prior to 1914 are simply signed 'Daum Nancy' with the Cross of Lorraine. Those made after 1919 are signed 'A. Walter, Nancy', and usually also the signature or initials of the designer. Items too small may only carry the initials. Thus 'A.W.N.H.B.' on, say, a pendant, stands for 'A. Walter, Nancy, Henri Bergé'. It should be pointed out that the signature (or initials) is generally moulded in the design, and is sometimes difficult and occasionally impossible to find.

Walter – Pâte-de-verre figure of Loïe Fuller modelled by Henri Bergé after the Tanagra figure in the Louvre which inspired the dancer, 20 cm *c*1910. (Editions Graphiques, London)



Some controversy has arisen over Walter's first name, which various writers have rendered as 'Almaric', 'Alméric' and 'Amalric'. The first version appears to be the original version of his Gallic name, the second a 'Frenchified' version, the third a 'Germanised' version. In an Alsace-Lorraine divided and largely annexed by German conquest, such nationalistic variations were common.

THOMAS WEBB & SONS

Thomas Webb (d. 1869), the firm's founder, first went into partnership with the brothers William Haden Richardson and Benjamin Richardson to take over the Wordsley Flint Glassworks from Wainwright Brothers. The Webb & Richardson partnership was dissolved in December 1836, the Wordsley Works becoming W. H., B. & J. Richardson, while Webb went into the White House Glassworks in Wordsley, which then traded as Shepherd & Webb. A year later, however, he began his own glassworks at The Platts, Amblecote, near Stourbridge. When business began to prosper he built another glassworks, the Dennis Works, which became the principal place of business in 1856.

On Thomas Webb's death in 1869 the business was left to his three sons, Thomas Wilkes Webb, Charles Webb and Walter Wilkes Webb. It was, however, Thomas Wilkes Webb who became the leading spirit of the firm, and guided it into becoming perhaps the most successful glassworks in the country.

In 1876 Thomas Wilkes Webb commissioned John Northwood to carve for him a great cameo vase. The blank was made at the Dennis Works, which gave the vase one of its names, the other being the Pegasus Vase, after the carved finial on the lid. It was to be Northwood's last great cameo undertaking, and took him six years to complete. The *Dennis* or *Pegasus Vase* was exhibited unfinished at the Webb stand at the 1878 International Exhibition in Paris, a spectacular stand with much fine cut lead-crystal and shimmering chandeliers which had been made under the direction of Webb's art director, J. M. O'Fallon. Included in the display was the $14\frac{1}{2}$-inch high *Elgin Claret Jug*, skilfully engraved in clear glass by Frederick Kny. Webb's display was awarded the only Grand Prix for glass, and Webb himself was decorated with the French Legion of Honour.

Webb's most famous craftsmen were to be the Woodall brothers. Thomas (1849-1926) and George Woodall (1850-1925) were born at Kingswinford, the sons of a nailer. After attending school at Wordsley, they both went to work for J. & J. Northwood, first as errand boys at the age of twelve, then as apprentices. Their maternal uncle, Thomas Bott (1829-1870), kept a watchful eye on their artistic education. He had worked for Benjamin Richardson as an enamel painter on glass until 1852, when he moved first to Birmingham, then to the Royal Porcelain Works at Worcester. In 1866 he saw to it that the Woodalls attended the Stourbridge School of Art three evenings a week to study model, perspective and free-hand drawing as well as practical geometry. Both passed Government examinations. This, of course, was after a normal working day which went from 7 a.m. to 6 p.m. Thomas eventually became a part-time assistant master at the School. At work they acquired a thorough training in various aspects of glass decoration, specialising in etching and engraving. In about 1874 Thomas went to work for Thomas Webb & Sons as a draughtsman and was soon joined by his brother.

Within a short time the Woodalls were engraving a clear flint crystal. Webb sent them to the South Kensington Museum (now the Victoria and Albert Museum) to study the reserves of old glass, and they spent some years reproducing individual pieces as closely as possible for the curio market. In the 1880s Webb, William Fritsche and the Woodalls together developed rock crystal glass, engraved and carved with elaborate designs. The transparent glass was then polished to give it the look of true rock crystal.

The production of cameo glass at Webb's had begun shortly after the 1878 Paris Exhibition. The Woodalls worked together on a number of vessels, gradually developing a team of workers each of whom had to be a consummate craftsman. Webb cameo appears to have first been introduced in England at the 1882 Worcestershire Exhibition. At the 1884 International Health Exhibition in London Webb exhibited a variety of cameo glass, and Thomas Woodall was awarded a Bronze Medal for Glass Vases and Bowls.

In 1887 Thomas Wilkes Webb took out a patent for the manufacture of ivory cameo. Here a vase or other vessel was made in the normal way of opaque ivory or white glass, then had a pattern drawn over its outer surface with an acid-resisting substance. When plunged into hydrofluoric acid, the exposed surface was eaten away by the acid, leaving the protected design in relief. The acid-resist was then removed, the vessel polished and then tinted selectively in various shades of brown to simulate the look of old ivory. The Woodalls were set to work using this new technique, and they promptly made copies of Chinese, Indian, Persian and European designs and styles as well as developing original designs. This technique was greatly admired and the first twenty pieces produced were purchased by Queen Victoria. Soon there was a great demand for it, and other Webb craftsmen were engaged in designing and executing ivory cameo, which was sometimes elaborately gilded and enamelled by Jules Barbe.

The production of cameo glass was now becoming considerably more streamlined. Hydrofluoric acid was normally used to rough out the design on the glass surface, while the engraving wheel was used to skilfully obtain an enormous range of effects in carving the shadows and highlights. The early cameo which had consisted of an opaque white glass overlaid on a deep cobalt blue body gave way to a variety of colour. The body was now made in any of several colours, and the overlay was no longer a

Webb – Cameo vase in pale blue glass overlaid in opaque white, carved with leaves and flowers, a butterfly on the reverse, 24 cm *c*1890. (Private Collection, London)

solid white but a white surface which toned inwards into a pale blue. Thus as the outer layer was carved down, the inside gave a pale bluish tint which greatly increased the possible variations of shading. Two, three and even four overlay colours were occasionally used, though normally fairly discreetly. Some vases were 'padded', that is blobs of coloured glass were applied to the parison wherever the design required a portion in relief, then after annealing this new coloured section was carved into a bird, a fish, an animal, a flower, a plant or whatever the overall pattern required. This technique was particularly effective when used with a transparent body, which increased the contrast.

In 1888 Webb exhibited at the Melbourne Exhibition in Australia, Woodall cameo glass being awarded a Gold Medal. The Woodall team, which had originally comprised William Hill, Tom Farmer, Harry Davies (1862-1937) J. T. Fereday, William Mullitt, G. Round, J. Reynolds and Mr. Beddard had grown to include some seventy craftsmen. By the mid 1890s they had over 150 craftsmen employed on cameo glass. Thomas Woodall was head of the deparment. Webb exhibited at the 1889 Paris International Exhibition with the Woodall brothers in attendance, and they there met the Prince of Wales (later King Edward VII), who spoke to them several times of his interest in their craft.

The range of both shape and decoration in cameo glass was enormous. Vases, bowls, decanters, inkwells, candlesticks, oil lamps, scent-bottles, paper-weights, menu holders, brush holders, finger plates and door panels were decorated with floral, scenic and geometric designs. In the late 1880s the Woodall brothers and their team began to produce more elaborate compositions, with much work of fine quality which was mostly wheel-carved, with the use of some hand tools for fine details. Important vases, plaques, bowls and plates were executed, many with mythological or classical scenes as well as portraits. Hellenic figures, the sculptures of Antonio Canova, the works of Flaxman and Guido Reni were used as models, though their rather cold classicism was tempered by the influence of the Pre-Raphaelites and their followers. Decorative ornaments were often used in conjunction with floral or scenic designs, as well as on their own, and these were often inspired by Greek, Roman and Egyptian architectural ornaments as well as Indian, Chinese and Persian motifs. A number of individual cameo items have been found signed 'T. &. G. Woodall', others signed 'G. Woodall' or 'Geo Woodall'. 'T. Woodall' is a rarer signature. Nevertheless, even these signed vessels were generally the product of a team effort, other members of the team frequently roughing out the design or carving decorative motifs on the rim or foot, or even carving part of the finished designs. The Woodalls themselves designed and executed many vessels never signed by them, just as such vessels were designed and executed by other members of the team. A number of the Woodall team vessels are signed 'Webb's Gem Cameo' or just with the Webb mark, but a vast number are totally unsigned. This makes it impossible to identify an unsigned Stourbridge cameo vessel as being the product of Webb, Stevens & Williams or any other individual or group effort, but such identification is unimportant where the quality of carving and the aesthetic appeal of the item are the criteria of value. Indeed, most such vessels were produced by several craftsmen working together who, in the course of their career, were probably employed by several firms in the Stourbridge area, and may well have produced additional cameo work on their own.

Webb exhibited Woodall cameo (as well as other glass) at the Chicago Columbian Worlds Fair in 1893, and its success was such that for several years following much of their better cameo was automatically sent to the United States for sale. In 1899 a six-week exhibition of Woodall glass was held at the Phillips gallery in Mount Street,

London. More was exhibited at the 1908 Franco-British Exhibition, held in London. In 1910 Webb had important displays with much cameo glass at both the Brussels and Turin International Exhibition. Unfortunately, a fire gutted the Webb stand at Brussels, and two of Woodall's major cameo pieces, *The Dance*, and *Diana and Endymion*, were destroyed.

George Woodall retired in 1911, but continued to work in his home in Kingswinford producing some of his finest individual cameo pieces, several of which he sold to Webbs. He died on February 27th, 1925, while his brother Thomas died on June 2nd, 1926.

John Thomas Fereday (1854-1942) was also a fine cameo carver during the forty or so years he worked at Webbs. A member of the Woodall team, he did much of the border and detail work on the Woodall composition plaques, and himself designed as well as executed a considerable number of vases and other pieces, tending to specialise in decorative geometric patterns. He later produced engraved glass, and designed Webb's 'Dynasty' crystal pattern using Egyptian motifs. A set of this was presented to the Princess Royal on her wedding in 1922. He was named by George Woodall to act as executor of his will, along with Woodall's widow.

Daniel and Lionel Pearce joined Webbs in 1884. Daniel (1817-1907) and his son Lionel (1852-1926) had been in business on their own in London until then, Daniel being a partner in the early 1860s in Dobson and Pearce in St. James' Street, then W. P. & G. Phillips and Pearce in Bond Street, and finally at North End, Hammersmith. During those years Pearce had specialised in engraving on glass, and had exhibited successfully at the 1862 International Exhibition. Dobson and Pearce had registered a number of designs for epergnes, elaborate centrepieces in glass which were fitted either with candelabra or flower holders, or fruit or bonbon stands in multiples. The flower holders were usually a variation of the trumpet shape. Other epergnes had twisted arms from which loose glass baskets hung. The London firm of W. P. &. G. Phillips had also worked on such models and when Daniel Pearce joined the firm as junior partner he designed not only a variety of epergnes but also an elaborate chandelier fitted with hanging glass baskets which was shown along with other of his designs at the Phillips and Pearce stand at the 1867 Paris International Exhibition. The critic of the *Art Journal* was so impressed that he wrote: 'Mr Pearce is unrivalled in England as a designer of works in glass'. Daniel Pearce became head of the design department at Thomas Webb & Sons in 1884. His son Lionel also worked at Webbs, and father and son together frequently worked on individual decorations, as well as working with the rest of the Woodall team. They designed a wide range of items in glass, and executed much cameo work. Lionel Pearce designed the *Polar Bear* vase, commemorating Sir Ernest Shackleton's expedition to the Antarctic in 1901-1904, and which was carved by George Woodall.

Webb – Opaque green glass vase overlaid in white and a further layer of green, cameo-carved with a mermaid teasing a fish in a marine setting, 18 cm *c*1890. (Christies, London)

Robert Falcon Scott's ill-fated expedition later inspired George Woodall to carve the magnificent three-colour cameo *Antarctic* vase in 1912.

Frederick Englebert Kny was a Bohemian engraver who had come to England. After a brief period working at James Powell's glassworks at Whitefriars in London, he had gone to Stourbridge and was there in charge of one of the shops at Thomas Webb & Sons. His superb skill as an engraver had been demonstrated by his *Elgin Claret Jug*, exhibited at Webb's prize-winning stand at the Paris International Exhibition in 1878. He executed a wide variety of engravings on glass, including rock crystal engraving in the style of Chinese ware, and carried out a small amount of cameo-carving. His engraved glass is usually signed with the initials 'F.E.K.' He also had a small glass decorating business of his own at Amblecote, called Kny Brothers. He died around the turn of the century.

Frederick E. Kny's three sons were also very skilled

engravers. Harry first studied as a chemist, then deserted this career in favour of glass engraving, in which he showed great talent and ability. His brother Ludwig inherited Kny Brothers, and continued to design and execute work for Thomas Webb & Sons. Ludwig spent three years training in Paris then went to art classes in South Kensington and also travelled extensively in Italy and Greece. Although he executed some cameo work he, like his father, specialised in engraving. He designed a series of Art Nouveau cameo designs for Webbs with floral designs acid-etched on transparent pastel coloured glass, carried out in vases, bowls and lamps. These are all signed 'Webb' in cameo within the design. None of his engraved or cameo work was signed by him.

Harry Kny was killed at Salonica at the age of twenty-six. Ludwig was so upset that he closed down his business, and eventually went to work for Stuart's, a major commercial glassworks in Stourbridge, as a designer, also designing the firm's advertisements for many years. The other brother, William Kny, was also a skilled engraver, and executed a small amount of cameo glass. He worked for several years for Webb and Corbett's.

William Fritsche (*c.* 1853-1924) was also a noted Bohemian engraver, and he came to England in about 1868. He spent some fifty years at Thomas Webb & Sons, working mostly as a phenomenally skilful engraver, though he also executed some cameo work. By 1879 he had become the head of an engraving shop at Webbs, and specialised in decorating rock crystal glass.

Cameo and engraved glass were, of course, only part of Webb's production. Large quantities of coloured fancy glass was successfully produced throughout the latter part of the nineteenth century and into the early twentieth century.

Bronze glass. This was one of the earliest commercial productions of iridescent glass. The Austrian firm Lobmeyr had exhibited iridescent glass at the 1873 Vienna Exhibition. Webb developed its Bronze glass shortly thereafter, and exhibited it at their prize-winning stand at the Paris International Exhibition in 1878. Made in a variety of shapes frequently inspired by the old glass found on the sites of Troy and Mycenae by Heinrich Schliemann, Bronze glass had a slick, mirror-like gold sheen with purple, blue and copper highlights, produced by metallic chloride fumes on the glass.

Peach Bloom glass was introduced in 1885. Inspired by the sale that year in New York of a Chinese porcelain 'Peach Bloom' vase from Mrs. Pierrepont Morgan's collection for $18,000, various American and British manufacturers hastened to produce glass imitations. Webb's contribution was a two-layer glass product shading from pink at the base to a deep red at the rim, lined with creamy coloured glass. Given either a polished or mat surface, it was frequently elaborately gilded in Jules Barbe's workshop.

Queen's Burmese was produced from 1886 under licence from the Mount Washington Glass Company of New Bedford, Massachusetts, which had patented 'Burmese' glass in 1885. This was a single-layered glass shaded from yellow to pink, made by fusing the glass with uranium oxide, fluorspar and feldspar. An early set of Mount Washington glasses decorated with a floral pattern by Albert Steffin was presented to Queen Victoria and Prince Albert, and this particular design soon became known as 'Queen's Design'. Normally not finished with acid, Queen's Burmese was frequently decorated on the surface with enamelling, painting and gilding.

A large variety of other coloured fancy glass was produced by Webbs, including **Old Roman** (1888), which was very similar to James Couper & Sons 'Clutha' glass, **Tricolour** (1889) and **Satin** glass. But Webb's main preoccupation was with the production of cut lead-crystal glass for use as bowls, vases and fine table-ware, a preoccupation which has enabled them to produce a vast range of cutting patterns over the years, and which they continue to expand today.

EMIL RUDOLF WEISS

Born at Lahr (Germany) on October 12th, 1875 Emil Rudolf Weiss studied at Karlsruhe from 1893 to 1899, then in Stuttgart in 1901, training as a painter and graphic artist. He wrote poetry, and designed for several crafts. He lived in Hagan from 1903 to 1906, where he executed several works for Karl Ernst Osthaus. Weiss moved to Berlin in 1907, and lived there until 1933, teaching first at the school attached to the Arts and Crafts Museum, then at the United State School for Pure and Applied Art.

Weiss designed acid-etched overlay glass in the style of late industrial Gallé. The motifs are floral or plant forms, usually in two colours. Though most of Weiss's production is uninteresting, he produced some fairly attractive miniature cameo vases. His glass is signed 'Weis' in cameo script.

WIENER WERKSTÄTTE

In April 1897 the Vienna Secession was founded as an association of progressive young artists (painters, sculptors and architects) in opposition to official, academic art. They were fired with zeal for an artistic renewal in all areas of arts and crafts, impressed by the success of the Art Nouveau movement throughout Europe. One of their members, Josef Maria Olbrich (1867-1908), designed for their headquarters a spacious building with a cupola. Their motto was inscribed over the door: 'To each century its art, to art its freedom'. Several thematic exhibitions were held every year. In 1900, their VIIIth exhibition was devoted to the applied arts, to which Charles Rennie Mackintosh and his wife Margaret Macdonald and Charles Robert Ashbee and his Guild of Handicrafts had been invited to exhibit. The exhibition had been arranged by Josef Hoffmann (1870-1956) and Kolo Moser (1868-1918), who went over to Britain in 1902 for the First International *Studio* Exhibition. They spent some time in Scotland with the Mackintoshs, and visited Ashbee's Guild of Handicrafts in Poplar, in the poorer East End of London, and were enormously impressed by its 'Workshop' system which trained and employed local craftsmen in a wide variety of crafts to produce original material. In May 1903 they persuaded Fritz Wärndorfer, a young banker and art collector who had just returned from England equally impressed, to finance a similar system. A month later the Wiener Werkstätte was founded with Wärndorfer as financial director and Hoffmann and Moser as artistic directors. It consisted of an association of workshops in which craftsmen worked with precious and base metals, leatherware and bookbinding, furniture and other crafts, co-ordinating all production in style to harmonise with itself and the architecture and interior design in which it was to be housed. From its foundation to 1906, when Moser severed all connections with the Wiener Werkstätte after leaving the Secession movement with the Klimt group following a split among its members, the design style under his influence was largely angular and geometric. Moser's departure left the Wiener Werkstätte in some disarray, but many creative designers continued to join, and its style became more fanciful and even somewhat rococo in its decorative exuberance.

Moser's designs for glass are discussed in his entry. Many other members of the Wiener Werkstätte designed and decorated glass. Their more elaborate designs were executed by Meyr's Neffe in Adolf, Johann Oertel & Co. in Haida, Johann Loetz Witwe in Klostermühle, Ludwig Moser & Söhne in Karlsbad, J. & L. Lobmeyr in Vienna and Carl Goldberg in Haida. Simpler designs and the decoration carried out by the artists themselves were executed in the workshops in Vienna. A popular design, such as the vase made up of two inverted beakers joined at the base, with an open end top and bottom designed by Josef Hoffmann, would then have its surface painted in a variety of designs by different WW artists, with the possibility of infinite variations on the basic model.

WW

Josef Hoffmann was undoubtedly the most adventurous and original of the designers. Appointed professor at the Vienna School of Arts and Crafts in 1899, he founded the Wiener Werkbundes (a crafts association) in 1912. He designed art and table glass for all the leading Bohemian glass houses, exhibiting at the Austrian Museum Exhibition in Vienna from 1911 to 1914. He designed cut, enamelled, etched, painted and overlaid glass, usually clear, geometric shapes decorated in a mixture of abstract and stylised plant patterns. Michael Powolny (1871-1954), co-founded with Berthold Löffler of the Wiener Keramik (Ceramic Workshop) and professor at the Vienna School of Arts and Crafts from 1909 to 1941, designed plain forms in mat-finish glass decorated with naïve patterns of animals, signs of the zodiac, etc., as well as very sober geometric decorations. Dagobert Peche (1887-1923), a member of the WW from 1915 to 1923, and director of its Zurich branch in 1917 and 1918, used very simple floral motifs. Otto Prutscher (1880-1949), a student of Hoffmann's and professor from 1909 at the Vienna School of Arts and Crafts designed cut, patterned and iridescent glass. Other WW members to design or decorate glass include Hilda Jesser (b. 1894), Reni Schaschl, Mathilde Flögl, Vally Wieselthier (1895-1945), Fritzi Löw-Lazar (b. 1892), Julius Zimpel (1896-1925) and Eduard Josef Wimmer (1882-1961). Their vases are sometimes unsigned, sometimes signed with the 'WW' monogram, sometimes signed by the manufacturing glassworks, sometimes signed with the monogram or full name and title (e.g. 'Prof. Hoffmann' or 'Prof. Powolny') of the designer or decorator, and sometimes with two or more of these.

T. WOLF FERRARI

Teodoro Wolf Ferrari was born in Venice on June 20th, 1878. His father, August Wolf, was a German painter from Munich, noted for his painstaking copies of Old Masters. His mother, Emilia Ferrari, was a Venetian. Teodoro and his eldest brother assumed both their parents' surnames. He received a strict academic training at the Venice Fine Arts Academy, where he studied from 1892 to 1895. In 1896 he went to Munich, where he exhibited a picture at the Oldenburg gallery. His style was severely classical, his draughtsmanship impeccable. The impact of Arnold Boecklin's paintings proved radical: he was soon painting sombre landscapes. Two members of the Die Scholle group, Fritz Erler and Leo Putz, were to become close friends.

The young Wolf Ferrari threw himself excitedly into the ferment that was Munich. He absorbed influences as diverse as Franz von Stuck, the new Secessionists (founded in Munich in 1892), Gauguin, the Nabis, Kandinsky, later the Blaue Reiter (founded in 1911, also in Munich). Landscape and subject pictures soon reflected his eclectic tastes. He exhibited in Munich in 1901 and 1904. At the First International Exhibition of Modern Decorative Arts in Turin in 1902 he exhibited not only a picture, but also three cartoons for leaded-glass panels (*Dawn, Noon* and *Evening*). That same year Teodoro's brother, Ermanno Wolf Ferrari, who was two years older, and had already been making a name for himself as a composer of chamber music, was named director of the School of Music in Venice after composing a cantata based on Dante's *La Vita Nova*.

Teodoro exhibited in Munich and Venice in 1904, in Wiesbaden, Nuremberg, Berlin and Kiel in 1905. In 1908 he was commissioned to decorate the 'Santa Margherita' Café and the Hall of the Bathing Establishment on the Lido, both in Venice. His first major exhibition was, however, in 1910 at the Ca' Pesaro Palace on the Grand Canal in Venice. He exhibited 52 works in two rooms, which he had himself decorated, and was given the signal honour of having electric light installed for his exhibiton, which later transferred to Stockholm. The other one-man exhibition held at the same time at Ca' Pesaro was that of Umberto Boccioni, who with his friends was to proclaim their Futurist Manifesto that same year in the Piazza San Marco in Venice.

In 1911 Wolf Ferrari organised a number of artists into a loose group called Aratro, and they exhibited paintings, graphics, architectural designs, sculpture, jewellery and leaded-glass panels at Ca' Pesaro in 1912. He himself designed the jewellery (executed by Antonio Passoni) and the four leaded-glass panels (executed by Guiseppe Maffioli) as well as designing the catalogue in the style of the Vienna Secession magazine *Ver Sacrum*. The panels were landscapes treated in an abstract technique, broken up into areas of intense colour in the glass: deep blues and purples, shades of brown, yellow and green, red and white. Some of the glass was given a textured surface to refract the light coming through the panels, each of which was framed with rectangular panels above and below (and in one case all around) the leaded-glass image, painted with decorative Art Nouveau patterns.

Wolf Ferrari exhibited five paintings at Ca' Pesaro in June 1913. Also exhibited at Ca' Pesaro were a number of paintings by Vittorio Zecchin. The two artists struck up a close friendship, and discovered a mutual interest in glass. Within a short time they approached the Artisti Barovier glassworks in Murano, and began to design simple, well-proportioned vessels which were executed in richly coloured glass, some of it bubbled and streaky, which they then decorated with enamels in rich, fiery colours, abstract patterns and ornamental swirls from Wolf Ferrari, mostly figurative from Zecchin. They exhibited their glass together in December 1913 at the Winahager gallery in Munich to critical admiration, then again in April 1914 at the Venice Biennale.

Zecchin was to devote the rest of his life to glass. Wolf Ferrari returned to painting and decoration, exhibiting at the Rome Secession in 1913 and 1915, at Ca' Pesaro in 1919 and 1920 and the 1920 Biennale as well as a major one-man show at the Geri-Boralevi gallery, all in Venice. He continued to paint until his death in 1945.

WMF

Founded in 1853 at Geislingen, some thirty miles from Stuttgart, the WMF (Württemberg Metal Goods Factory) specialised in the production of utilitarian and decorative articles in a variety of metals, particularly a form of pewter and silver-plate, including tea and coffee sets, smokers' accessories, cutlery, mirror frames, vases, bowls and centrepieces. A workshop for the cutting and painting of glass for use with metal mounts was set up in 1881. In

1883 they set up a proper glassworks at Göppingen. Hugo Debach (d. 1939) entered the firm in 1903, becoming manager in 1904 and Managing Director in 1927. The first attempts at production of art glass were executed under his technical instruction in the WMF works.

In 1921 WMF began the production of their first successful line in art glass, **Ikora-Kristall**. These were rather chunky vases and bowls in a wide range of colours, frequently with patterned air-bubbles and inset patches of different colours. Strongly reminiscent of the 'Graal' glass produced by Orrefors, each Ikora-Kristall vase or bowl is individual, the inset patches of colour being either random or firmly placed in spirals, lines, twists or regular patterns. The air bubbles when used either in tightly controlled groups on their own or in conjunction with colour patches give a three dimensional look to the thick-walled glass. Ikora-Kristall was only produced until 1930.

In 1921 Karl Wiedmann joined WMF as an apprentice glass technician. Born in Kuchen, Kreis Göppingen on June 19th, 1905, Wiedmann had had some basic training in glass techniques before joining a machine factory where he acquired a wide experience in all aspects of metal work, including casting and the use of lathes and other tools. In his three-year apprenticeship at the WMF teaching workshop he studied all aspects of glassmaking, including blowing, moulding, polishing and engraving while attending the department of mechanical engineering at the Applied Arts School and going to night classes in arts and crafts. He then spent a year at the Staatlichen Fachschule Für Glasindustrie Zwiesel (State School for the Glass Industry at Zwiesel, Bavaria) studying under Ludwig Springer and Bruno Mauder (1877-1948).

Having served out his apprenticeship and become a fully fledged glass technician, Wiedmann began to research into iridescent glass. In 1925 he developed **Myra-Kristall**, a translucent amber glass with gold iridescence having blue and purple highlights, which was to become the major art glass production of WMF. Obviously inspired by Tiffany glass, Myra-Kristall is normally thin-walled, with simple, well designed shapes, unfussy, uncluttered, never decorated on the surface. Stems are frequently used, and the shapes are invariably symmetrical. When the vase or bowl rim is flared, the edges are usually very lightly pinched.

A second group of Myra-Kristall shapes was produced under Wiedmann's direction, with rather heavier-walled vessels mould-blown into regular vertical bulges of lesser or greater size (and therefore of greater or lesser quantity). These tend to have a greenish cast to the iridescence, and have frequently been confused with Loetz glass. WMF glass is never signed.

Approximately 150 different models of vases, bowls, and lamp-bases were produced between 1926 and 1939 for which WMF obtained a number of protective patents in Germany and abroad. A number of architects were commissioned to design the shapes, including Fritz August Breuhaus (b. 1883), Richard Riemerschmid (1868-1957), Prof. Behrmann and Paul Haustein (1880-1944). Wilhelm von Eiff (1890-1943), himself the son of a WMF craftsman at Göppingen, also designed some glass for them while teaching at the Stuttgart Art School, while Wilhelm Wagenfeld (b. 1900), the Functionalist architect and member of the Bauhaus, designed some clear glass vessels for them. Karl Wiedmann himself became Works Manager in 1927. After World War II, he joined Daum at Nancy in 1947-1948 before returning to WMF as manager of the glass department from 1949 to 1951. From 1952 to 1953 he managed the crystal glass department of the Vereinigten Farbglaswerken (United Coloured Glassworks) in Zwiesel before joining the Gral-Glashütte in Durnau (near Göppingen) in 1954 as glass technician, developing a number of designs in the style of old Roman glass, including some Diatreta glass.

The WMF firm is still in existence.

WMF – 'Myra-Kristall' vase with gold lustre on the surface and flared rim, 19.8 cm *c*1927. (Editions Graphiques, London)

VITTORIO ZECCHIN

Vittorio Zecchin was born in Murano (Italy), the son of a master glass-blower. He studied at the Academy of Fine Arts in Venice, but found its academic training so confining and irrelevant that he left and, after a short interval, started working at his father's glassworks.

At the 1905 Venice Biennale, several works by Jan Toorop were exhibited, including *The Three Brides* of 1893. They were, wrote Zecchin's biographer, Vittorio Pica, 'an exultant revelation'. Zecchin was stunned by their mystery, their exoticism, the richness of texture and complexity of line. He was soon painting religious pictures imbued with mysticism, which he exhibited at the Ca' Pesaro Palace in Venice in 1909. At the 1910 Venice Biennale, an exhibition of works by Gustav Klimt confirmed his love for the more decorative aspects of art. The Symbolist and decadent aspects meant little or nothing to him. It was the treatment of form and colour that fascinated and attracted him.

At the 1913 Summer Exhibition at Ca' Pesaro Zecchin was given a whole room. He decorated it, and exhibited several tempera paintings, whose titles include *The Fire Virgin, The Oriental Pearl* and *Spring*. The overall title for the pictures was *The Garden of the Fairies*. He was still painting in oils, but increasingly preferred tempera, which gave him the textures and smoothness he preferred. He was also occasionally painting on glass, which gave him a remarkable surface for the jewelled effects he was striving for. One of these paintings on glass of 1913, *La Dogaressa* ('the Doge's wife') has the haughty lady's face emerging strikingly from a whirl of pattern in which her dress and the background merge, blue, green, turquoise, white and yellow motifs forming an abstract design over the bright red of dress and background, while a decorative peahen struts in the foreground.

Teodoro Wolf Ferrari also exhibited at Ca' Pesaro that summer. The two artists discovered a mutual interest in glass, and they soon went to the Murano glassworks of Artisti Barovier to try out their ideas. Within a few months they had designed a number of simple glass shapes, rich in colour, and decorated with enamels, abstract designs by Wolf Ferrari, decorative patterns in the style of his paintings by Zecchin. They exhibited their glass together in December 1913 at the Winahager gallery in Munich, then again at the Venice Biennale in April 1914.

In 1914 Zecchin was occupied in painting a series of decorative panels on scenes from the *Arabian Night's Tales* (The Thousand and one Nights) which together formed an enormous exhibition piece sixty square metres in size, which was placed in the new Terminus Hotel at the Venice Lido. During the four years of war that followed, Zecchin rejected the bellicose fervour that inflamed so many Italian

Zecchin – Two footed cups in optic patterned glass designed in association with Napoleone Martinuzzi and executed at the Venini Glassworks, 1927. (Contemporary photograph)

artists inspired by Gabriele d'Annunzio (1863-1938) the poet, playwright and novelist, and he retired to an abandoned convent in Murano, which he gradually furnished and supplied with doors and windows. This he turned into a workshop for the manufacture of wall hangings, executed under his direction using a stitch he had himself invented. The First World War over, he exhibited at Ca' Pesaro in 1919, showing in one room ten wall hangings, four embroideries and ten enamelled glass vases. A year later he held an exhibition of glass mosaic pictures in Milan. At the 1922 Venice Biennale he exhibited silk and wool wall hangings, a leaded-glass panel and several vases in coloured glass. At the first Biennale of Decorative Arts of Monza (which later became the Milan Triennale) held in 1923 he was awarded a prize. That same year he had a major one-man exhibition in Milan.

In 1921 Paolo Venini and Giacomo Cappellin had founded what was to become the most original glassworks in Italy, the Vetri Soffiati Muranesi Coppellin-Venini & C. Zecchin was appointed artistic director.

Zecchin was already designing clear, simple shapes executed in transparent glass which he then enamelled with panthers, jelly fish, birds and other motifs in rich colours, but discreetly placed, and not over-ornate. Under his direction Cappellin-Venini produced a number of functional vases, bowls, plates, glasses and decanters in clear, smoky and transparent coloured glass. Some were ribbed and stemmed, globular or with simple wavy moulded lines. Cappellin-Venini exhibited at the 1925 Paris International Exhibition of Decorative and Industrial Arts, in which Zecchin's designs were prominent. Later

that same year Capellin and Venini dissolved their partnership, and Venini formed the Vetri Soffiati Muranesi Venini & C. Zecchin continued to design glass for Venini, but also designed glass for other Murano glassmakers, including Salir and Arte Vetraia Muranese. His later glass included several ranges of elegant and unadorned tableware, as well as glass vessels wheel engraved with highly decorative animal, plant and mythological subjects. He exhibited at the Venice Biennales in 1926, 1928, and 1934.

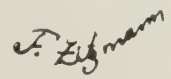
While devoting most of his time to glass, Zecchin continued to design fabrics, wall hangings, mosaics and other aspects of decorative art, as well as writing some elegant poetry in Italian and Venetian dialect and two books, one on glass, the other on mosaics. He died in Venice in 1947.

FRIEDRICH ZITZMANN

Born in Steinach, Thüringia on September 19th, 1840, Friedrich Zitzmann was an expert glass-blower, thoroughly conversant with Venetian techniques he had acquired at Murano. In the 1890s he began to execute display pieces in imitation of ancient glass, which he exhibited throughout Germany. He exhibited with some success at the Bavarian Arts and Crafts Society in Munich (of which he was a member), and at the Columbian World's Fair at Chicago in 1893. Based at Wiesbaden, he also taught glass-blowing.

In 1895 Karl Koepping brought Zitzmann to Berlin, where the two men worked closely together for a few months. Koepping designed floral forms which Zitzmann executed under the designer's close and critical control. Koepping's designs demanded great skill and fluidity to execute, and Zitzmann's skill sharpened and improved under his mentor's relentless quest for the perfect expression of his ideas. Zitzmann eventually became so versed in Koepping's style and ideas that during Koepping's absences he would himself design and make floriform glass vases. Koepping was furious when he found out that Zitzmann had broken their agreement, in which the functions of designer and executant had been strictly allocated between the two men. Zitzmann was dismissed, and he returned to Wiesbaden.

The dismissal suited him admirably. He very soon began to produce stemmed glass in Koepping's style, which he exhibited in 1896 at the Berlin Industrial Exhibition and in 1897 and 1898 at the International Arts Exhibitions in Munich. In 1899 he was invited to exhibit at the Libre Esthétique in Brussels. Zitzmann's floral designs are frequently cruder than Koepping's, and his stems more convoluted. His stemmed glasses are admirable, the foot usually given some shaping, the bowls well proportioned.



Like Koepping he uses a variety of colours with some iridescence. The vessels are usually unsigned, though some

Zitzmann – Flower-form vases with lamp-wrought glass leaves, 1898. (Contemporary photograph)

are found with the name 'F. Zitzmann' in script on the base, usually lustred.

In 1897 Zitzmann began to produce iridescent glass in imitation of ancient Roman glass which had lain buried for some centuries. He not only reproduced the ancient lustre, but also reproduced the shapes, with no 'updating' or 'improvement'. Zitzmann died in Wiesbaden on February 20th, 1906. Examples of his glass are rare.

BIBLIOGRAPHY

BOOKS in alphabetical order by author

Amaya, Mario *Tiffany Glass*, London 1967.
Angus-Butterworth, L.M. *British Table and Ornamental Glass*, London 1956.
Appert, Léon and Jules Henrivaux *La Verrerie depuis Vingt Ans*, Paris 1894.
Appert, Léon and Jules Henrivaux *Verre et Verrerie*, Paris 1894.

Barrelet, James *La Verrerie en France de l'Epoque Gallo-Romaine à nos Jours*, Paris 1953.
Barret, Richard Carter *Identification of American Glass*, Bennington, Vt. 1962.
Battersby, Martin *Art Nouveau*, London 1965.
Battersby, Martin *The Decorative Twenties*, London 1969.
Battersby, Martin *The Decorative Thirties*, London 1971.
Bayard, Emile *Le Style Moderne*, Paris 1919.
Beard, Geoffrey W. *Modern Glass*, London 1968.
Beard, Geoffrey W. *Nineteenth Century Cameo Glass*, Newport, Mon. 1956.
Bénédite, Léonce et al. *Les Beaux-Arts et les Arts Décoratifs*, Paris 1900.
Bénézit, E. *Dictionnaire Critique et Documentaire des Peintres, Sculpteurs, Dessinateurs et Graveurs*, Paris 1948.
Bing, Samuel *La Culture Artistique en Amerique*, Paris 1896.
Blau, Joseph *Die Glasmacher im Böhmer- und Bayerwald in Volskunde und Kulturgeschichte*, Regensburg 1954.
Blau, Joseph *Die Glasmacher im Böhmer- und Bayerwald. Familienkunde*, Regensburg 1956.
Bloch-Dermant, Janine *L'Art du Verre en France 1860-1914*, Lausanne 1974.
Blount, Berniece and Henry *French Cameo Glass*, Des Moines, Iowa 1968.
Bossaglia, Rossana *Art Nouveau, Revolution in Interior Design*, London 1973 and Novara 1971.
Bröhan, Karl H. *Kunsthandwerk I. Jugendstil, Werkbund – Art Deco*, Berlin 1976.
Brunhammer, Yvonne *1925*, Paris 1976.
Brunhammer, Yvonne *Le Style 1925*, Paris.
Buckley, W. *European Glass*, London 1926.
Buffet-Challié, Laurence *Le Modern Style*, Paris 1975.

Chambord, Raymond *L'Histoire de la Verrerie en Belgique*, Brussels 1955.
Champier, Victor *Les Industries d'Art à l'Exposition Universelle de 1889*, Paris 1903.
Champigneulles, Bernard *L'Art Nouveau*, Paris 1972.
Chavance, René *L'Art Français depuis Vingt Ans: La Céramique et la Verrerie*, Paris 1928.
Classens, Henri *Habert-Dys Maître-Décorateur*, Paris 1924.
Comte, Jules (Ed.) *L'Art à l'Exposition Universelle de 1900*, Paris 1900.

Davis, Derek C. and Keith Middlemas *Coloured Glass*, London 1968.
Didron and Clémendot *Exposition Universelle Internationale de 1878: Rapport sur les Cristaux, la Verrerie et les Vitraux*, Paris 1880.

Edouard-Joseph *Dictionnaire Biographique des Artistes Contemporains*, Paris 1930-37.
Elville, E. M. *English and Irish Cut Glass*, London 1953.
Elville, E. M. *English Table Glass*, London 1960.

Fenz, Werner *Kolo Moser*, Salzburg 1976.
Fourcaud, Louis de *Emile Gallé*, Paris 1903.
Freeman, Larry *Iridescent Glass*, Watkins Glen, N.Y. 1956.

Gallé, Emile *Ecrits pour l'Art*, Paris 1908.
Gardner, Paul V. *The Glass of Frederick Carder*, New York 1971.
Garner, Philippe *Emile Gallé*, London 1976.
Gasparetto, Astone *Il Vetro di Murano*, Venice 1958.
Geffroy, Gustave *Les Industries Artisques Françaises et Etrangères à l'Exposition Universelle de 1900*, Paris 1901.
Geffroy, Gustave *René Lalique*, Paris 1922.
Gerspach, Edouard *L'Art de la Verrerie*, Paris 1885.
Goncourt, Edmond and Jules de *Journal, Memoires de la Vie Littéraire*, Paris 1891-96.
Gonse, Louise (Ed.) *L'Art Moderne à L'Exposition de 1878*, Paris 1879.
Gonse, Louis (Ed.) *L'Art Moderne à l'Exposition Universelle de 1889*, Paris 1903.
Grover, Ray and Lee *Art Glass Nouveau*, Rutland, Vermont 1968.
Grover, Ray and Lee *Carved and Decorated European Art Glass*, Rutland, Vermont 1971.
Guerrand, Roger H. *L'Art Nouveau en Europe*, Paris 1965.

Hald, Arthur and Erik Wettergren *Simon Gate – Edward Hald*, Stockholm 1948.
Havard, Henri *La Verrerie*, Paris 1894.
Henrivaux, Jules *Le Verre et le Cristal*, Paris 1897.
Henrivaux, Jules *La Verrerie au XXe Siècle*, Paris 1903 and 1911.
Hilschenz, Helga *Das Glas des Jugendstils*, Düsseldorf 1973.

Jaeger, Carl and Georg Fraunberger *Kunstgläser*, Munich 1922.
Janneau, Guillaume *Le Verre et l'Art de Marinot*, Paris 1925.
Janneau, Guillaume *Le Luminaire et les Moyens d'Eclairage Nouveaux à l'Exposition des Arts Décoratifs*, Paris 1926.
Janneau, Guillaume *Modern Glass*, London 1931.
Janneau, Guillaume and Luc Benoist *L'Exposition Internationale des Arts Décoratifs et Industriels Modernes*, Paris 1925.
Jean, René *Les Arts de la Terre, Céramique, Verrerie, Emaillerie, Mosaïque, Vitrail*, Paris 1911 and 1914.

Klein, Dan *All Colour Book of Art Deco*, London 1974.
Koch, Robert *Louis C. Tiffany, Rebel in Glass*, New York 1964.
Koch, Robert (Ed.): S. Bing *Artistic America, Tiffany Glass and Art Nouveau*, Cambridge, Mass. 1970.
Koch, Robert *Louis C. Tiffany's Glass – Bronzes – Lamps*, New York 1971.

Le Chevallier-Chevignard, G. *Verriers et Céramistes*, Paris 1932.
Lenning, H. F. *The Art Nouveau*, The Hague 1951.
Lesieutre, Alain *The Spirit and Splendour of Art Deco*, New York and London 1974.

Madsen, Stephan Tschudi *Sources of Art Nouveau*, Oslo 1956.
Madsen, Stephan Tschudi *Art Nouveau*, London 1967.
Mariacher, G. *L'Arte del Vetro di Murano*, Florence 1964.
Marx, Roger *La Décoration et les Industries d'Art à l'Exposition Universelle de 1900*, Paris 1901.
Massobrio, Giovanna and Paolo Portoghesi *Album del Liberty*, Rome 1975.
McClinton, Katharine Morrison *Art Deco: A Guide for Collectors*, New York 1972.
McClinton, Katharine Morrison *Lalique for Collectors*, Guildford 1975.
Middlemas, Keith *Continental Coloured Glass*, London 1971.
Morava, Claude *L'Art Moderne dans la Verrerie*, Paris 1930.

Neustadt, Egon *The Lamps of Tiffany*, New York 1970.
Neuwirth, Waltraud *Das Glas des Jugendstils*, Munich 1973.
Nisbeth-Fogelberg *Reijmyre Glasbruk*, Linköping 1960.

Papini, Roberto *Le Arti d'Oggi*, Milan and Rome 1930.
Paris Exhibition 1900, an illustrated record of its art, architecture and industries, Vol. II London 1901.
Paulsson, Gregor (Ed.) *Modernt Svenskt Glas*, Stockholm 1943.
Pazaurek, Gustav *Moderne Gläser*, Leipzig c. 1901.
Pazaurek, Gustav *Kunstgläser der Gegenwart*, Leipzig 1925.
Peroco, Guido *Origini dell'Arte Moderna a Venezia (1908–20)*, Treviso 1972.
Perrot, Paul, N., Paul V. Gardner and James S. Plaut *Steuben*, New York 1974.
Philippe, Joseph *Le Val Saint-Lambert: Ses Cristalleries et l'Art du Verre en Belgique*, Liège 1974.
Pica, Vittorio *L'Arte Decorativa all'Esposizione di Torino*, Bergamo 1903.
Pica, Vittorio *Vittorio Zecchin*, Milan 1923.
Plaut, James S. *Steuben Glass*, New York 1972.
Polak, Ada *Modern Glass*, London 1962.
Powell, Harry J. *Glass-Making in England*, Cambridge 1923.
Prouvé, Madeleine *Victor Prouvé*, Paris and Nancy 1958.

Quénioux, Gaston *Les Arts Décoratifs Modernes*, Paris 1925.

Revi, Albert Christian *Nineteenth Century Glass, its Genesis and Development*, New York 1967.
Revi, Albert Christian *American Art Nouveau Glass*, Nashville, Tenn. 1968.
Rheims, Maurice *The Age of Art Nouveau*, London 1960.
Rheims, Maurice *L'Objet 1900*, Paris 1964.
Roberts, Darrah L. *Art Glass Shades*, Des Moines, Iowa 1968.
Rockwell, Robert F. and Jack Lanahan *Frederick Carder and his Steuben Glass*, 1903–33 West Nyack, New York 1968.
Rosenthal, Léon *La Verrerie Française depuis Cinquante Ans*, [illegible] 1927.

Saunier, Charles *Les Industries d'Art à l'Exposition Universelle de 1900*, Paris 1902.
Scarlett, Frank and Majorie Townley *Arts Décoratifs 1925*, London 1975.
Schmutzler, Robert *Art Nouveau*, New York 1962.
Schrijver, Elka *Glass and Crystal II, from 1850 to the Present*, London 1964.
Schmidt, Robert *100 Jahre Österreichische Glaskünst Lobmeyr 1823–1923*, Vienna 1925.
Seder, Anton *Künstgewerbliches Skizzenbuch für Metall-Glasindustrie und Keramik*, Stuttgart 1900.
Speenburgh, Gertrude *The Arts of the Tiffany's*, Chicago, Ill. 1956.
Strehblow, Heinrich *Der Schmuck des Glases*, Leipzig 1920.

Thieme, Ulrich and Felix Becker *Allgemeines Lexikon des Bildenden Künstler*, Leipzig 1907–47.
Thorpe, W. A. *English and Irish Glass*, London 1927.
Thorpe, W. A. *A History of English and Irish Glass*, London 1929.
Thorpe, W. A. *English Glass*, London 1935.

D'Uckerman, P. *L'Art dans la Vie Moderne*, Paris 1937.

Wakefield, Hugh *19th Century British Glass*, London 1961.
Warren, Geoffrey *All Colour Book of Art Nouveau*, London 1972.
Weiss, Gustav *The Book of Glass*, London 1971.
Wettergren, Erik *The Modern Decorative Arts of Sweden*, Malmö and London 1926, 1927.
Wolfers, Marcel *Phillipe Wolfers, Précurseur de l'Art Nouveau*, Brussels 1965.

PERIODICALS

Art et Décoration.
Art et Industrie.
Dekorative Kunst.
Deutsche Kunst und Dekoration.
Die Kunst.
Journal of Glass Studies.
Kunst und Handwerk.
L'Art Décoratif.
Les Arts.
L'Illustration.
Mobilier et Décoration.
Revue des Arts Décoratifs.
The Magazine of Art.
The Studio.
The Studio Yearbooks.

ARTICLES from sources other than the listed periodicals.

Arwas, Victor 'British Glass' *The Encyclopaedia of Victoriana*, London 1975.
Avery, C. L. 'The International Exhibition of Contemporary Glass and Rugs' *Bulletin of the Metropolitan Museum of Art*, Vol. 24, New York 1929.

Bedel, Jean 'Emile Gallé cet Inconnu' *Guide des Antiquités*, No. 40, 1968.
Belfort, Anne-Marie 'Pâtes de Verres d'Henri Cros' *Cahiers de la Céramique*, No. 39, 1967.
Bloch-Dermant, Janine and Félix Marcilhac 'Un Emailleur sur Verre: Auguste Heiligenstein' *Encyclopédie Connaissance des Arts*, September 1976.
Boyer, Jacques 'La Pâte de Verre, Hier et Aujourd'hui' *La Nature*, No. 2777, 1928.
Brozová, Jarmila 'Bohemian Glass at Important Exhibitions in the 19th and 20th Centuries' *Czechoslovak Glass Review*, XXII No. 5, 1967.
Brunhammer, Yvonne 'Gallé ou le Renouveau de la Verrerie' *Plaisir de France* No. 405, 1972.
Brunhammer, Yvonne 'Une Révolution dans l'art du Verre: Cinquante Ans de Création' *Plaisir de France* No. 418, April 1974.

Charleston, R. J. 'The Glass of Maurice Marinot' *Victoria and Albert Museum Bulletin*, Vol. I, No. 3, July 1965.
Charpentier, Françoise-Thérèse 'L'Ecole de Nancy et le Renouveau de l'Art Décoratif en France' *Medecine de France*, No. 154, July
Charpentier, Françoise-Thérèse 'Quelques Sources de Décor des Verriers Lorrains entre 1867 et 1900' *VIIe Congrès International du Verre, Bruxelles 1965 Comptes Rendus II*, No. 210, Charleroi 1966.
Chavance, René 'Maurice Marinot' *L'Art et les Artistes*, No. 30 and 34, October 1922–February 1923.
Chavance, René 'Le Décor de la Table' *Les Echos des Industries d'Art*, April 1926.
Chavance, René 'L'Eclairage Moderne (Simonet, Schenck, Kiss, Prov, Perzel, Perriand, Chareau, Ruhlmann)' *Les Echos des Industries d'Art*, September 1927.
Chavance, René 'L'Eclairage Moderne (Simonet, Schenck, Kiss, Prou, Perzel, Perriand, Chareau, Ruhlmann)' *Les Echos des Industries d'Art*, September 1929.
Classens, Henri 'Henri Navarre' *L'Art et les Artistes*, No. 150–154, October 1934–February 1935.
Clouzot, Henri 'Lalique' *La Renaissance de l'Art Français*, June 1923.
Coppen-Gardner, Sylvia 'English Cameo Glass' *Discovering Antiques*, Part 71, 1971.
Cros, Guy Charles 'Les Verreries de René Lalique Depuis 1925' *La Demeure Française*, No. 4 1928.

Damerini, Gino 'La Mostra d'Estate a Palazzo Pesaro' *Gazzetta di Venezia*, 16 July 1910.
Damerini, Gino 'La Mostra di Palazzo Pesaro' *Gazzetta di Venezia*, 29th July 1910.
David, André 'Un Grand Artiste du Verre, André Hunebelle' *La Renaissance de l'Art Français*, 1928.
Dayot, Magdeleine A. 'Le Maître Verrier René Lalique' *L'Art et les Artistes*, No. 135-139, March-July 1933.
Delluc, J. E. 'L'Evolution de la Verrerie en Lorraine' *Le Pays Lorrain 1*, 1904.
Demoriane, Hélène 'Le Cas Etrange de Monsieur Gallé' *Connaissance des Arts*, August 1960.
Demoriane, Hélène 'Marinot le Maître Verrier des Années 1920' *Connaissance des Arts*, No. 187 September 1967.
Dennis, Richard 'The Glass of Emile Gallé' *Antiques International*, Ed. by Peter Wilson, London 1966.
Duret-Robert, François 'Ecole de Nancy 2. Verres Gallé' *Encyclopédie Connaissance des Arts*, June and August 1971.
Duret-Robert, François 'Ecole de Nancy 3. Verres Daum' *Encyclopédie Connaissance des Arts*, October and November 1971, November 1972.
Duret-Robert, François 'François Décorchemont' *Encyclopédie Connaissance des Arts*, June 1973.
Duret-Robert, François 'Verre: Henri Cros' *Encyclopédie Connaissance des Arts*, December 1974.
Duret-Robert, François 'Les Pâtes de Vere d'Argy-Rousseau' *Encyclopédie Connaissance des Arts*, January 1976.

Eiselt, Kurt 'Vom Lüstern und Irisieren, Alte Techniken in Neuer Sicht' *Glaswelt 17*, 1964.

Ferrera, Maria Teresa Gomes 'René Lalique at the Calouste Gulbenkian Museum, Lisbon' *The Connoisseur*, August 1971.
François Décorchemont 'Créateur de Modèles de Vases, Coupes' *Connaissance des Arts*, No. 256, June 1973.
'François Décorchemont,1880-1971',*Nouvelles de l'Eure*, August 1971.
Fuchs, L. F. 'Der Glaskünstler E. Gallé' *Weltkunst No. 21*, 1961.

Gasser, Manuel 'Glück Mit Glas in Nancy' *Du-Atlantis*, Vol. 26 No. 304, 1966.
Gauthier, Maximilian 'Le Maître Verrier René Lalique à l'Exposition des Arts Décoratifs' *La Renaissance de l'Art Français*, September 1925.
Gelder, H. E. van 'Modern European Glass' *Encyclopaedia Britannica*, London and New York 1929.
Grady, James 'Nature and the Art Nouveau' *The Art Bulletin*, Vol. 37 No. 3, 1955.
Grand, Paul Marie 'L'Epaisseur Naturelle du Verre chez Maurice Marinot' *Art de France*, No. 1, 1960.
Grand, Paul Marie 'Daum et la Cristallerie Française' *Jardin des Arts*, December 1962.
Grandville, Léone de la 'Daum: Evolution Technique et Tradition' *Plaisir de France*, No. 428 April 1975.
Graves, John W. 'Schneider Art Glass' *Spinning Wheel*, No. 23 1967.
Gros, Gabriella 'Poetry in Glass: The Art of Emile Gallé 1846-1905' *Apollo*, November 1955.

Hakenjos, Bernd 'Arbeiten von Emile Gallé im Kunstgewerbemuseum Köln' *Wallraf-Richartz- Jahrbuch*, 31 1969.
Hannover, Emile 'Emile Gallé' *Tidsskrift för Kunstindustri*, 1889.
Hettes, Karel 'Influences Orientales sur le Verre de Bohème du XVIIIe au XIXe Siècle' *Annales du 3e Congrès des 'Journées Internationales du Verre' à Damas 1964*, Liège 1965.
Hettes, Karel 'L'Influence de l'Art Nouveau sur la Verrerie de Bohème aux environs de 1900' *VIIe Congrès International du Verre Bruxelles 1965, Comptes Rendus II*, No. 211, Charleroi 1966.
H. F. 'Antonin Daum, A French Glassworker of the 19th Century' *The Artist*, January-April 1898.
Hinzelin, Emile 'L'Art en Lorraine' *Lorraine – Artiste Vol. 17*, 1899.

Jacob, Alain 'Maîtres Verriers de l'Art Nouveau et de l'Art Deco' *ABC Décor*, No. 15 May 1974.

Kahn, Gustave 'Les Verreries de Lalique' *L'Art et les Artistes No. 20, 24*, October 1921-February 1922.

Ladaique, Gabriel 'L'Industrie du Verre et du Cristal dans les Départements de Meurthe-et-Moselle et des Vosges' *Annales de l'Est*, Vol. 8 No. 2 1957.
Ladoue, Pierre 'Les Verreries Colorés de Jean Sala' *L'Art et les Artistes*, No. 95-99 March-July 1929.
'Lalique' *Connaissances des Arts*, No. 218 April 1970.
'L'Art du Verre par Marinot, Décorchemont, Daum, Navarre, Goupy' *Les Echos des Industries d'Art*, May 1927.
Le Monnier G. 'Auguste Daum' *Bulletin des Amis de l'Industrie de Nancy*, 1904.
'Les Verreries Daum' *L'Illustration Economique*, Meurthe-et-Moselle 1925.
Luzzato G. L. 'L'Arte Decorativa Italiana e la Prima Exposizione Biennale di Monza' *Rassegna Nazionale*, December 1923.

Marinot, Maurice 'Le Métier du Verre Soufflé' *L'Amour de l'Art*, September 1920.
Martineau, Marie-Madeleine 'L'Exposition René Lalique' *L'Art Vivant*, April 1933.
Massoul, Félix 'La Verrerie d'Art' *Les Arts Françaises*, Paris 1919.
McKinley, Gawain 'Lötz and Austrian Glass' *Discovering Antiques*, Part 78 1971.
Montesquiou, Robert de 'Les Verres Forgés' *Les Arts*, No. 106 1910.
Mourey, Gabriel 'Maurice Marinot Verrier' *L'Amour de l'Art*, 1923.
Mourey, Gabriel 'Pavillon Christofle et Baccarat' *L'Art Vivant*, No. 10 15 May 1925.
Murray, Keith 'The Design of Table Glass' *Design for Today*, June 1933.

Nicolas, Emile 'Emile Gallé à l'Exposition' *La Lorraine*, 1900.
Nicolas, Emile 'L'Exposition d'Art Décoratif de Nancy' *Le Pays Lorrain 1*, 1904.
Nouvelles de l'Eure, 'François Décorchemont' 1880-1971 August 1971.

O'Neal, William B. 'Three Art Nouveau Glass Makers' *Journal of Glass Studies Vol. 2*, 1960.
dell'Oro, G. 'Vetrai Muranesi Scomparsi: V. Zechin' *Giornale Economico*, Venezia, November 1952.

Pazaurek, Gustav E. 'Metallreflexe in der Keramik und Glasindustrie' *Elsass-Lothringen*, Vol. 2 1901-1902.
Pierhal, Armand 'Un Maître Verrier André Hunebelle' *L' Art Vivant*, November 1931.
Polak, Ada 'Maurice Marinot's Glass' *The Connoisseur*, No. 639 May 1965.
Pourchet, Maurice 'Céramique et Verrerie d'Art' *Les Echos des Industries d'Art*, July 1928.

René-Jean 'L'Art du Verrier et la Famille Sala' *La Demeure Française*, No. 3 1928.
Romand, Didier 'Les Vases d'Emile Galle' *Le Spectacle du Monde*, No. 170 May 1976.
Rosenblatt, Sidney 'The "Lost" Art of Pâte de Verre' *Hobbies*, Chicago, Illinois, October 1968.
Rudder, Jean-Luc de 'Les Poèmes Vitrifiés d'Emile Galle' *L'Estampille*, No. 13 1970.
Rudder, Jean-Luc de 'Marinot, le Fauve du Verre', *L'Estampille*, No 19, 1970.

Saureux, Maurice 'Henri Cros (1840-1907)' *L'Amour de l'Art*, 1922.

Schaefer, Herwin 'Tiffany's Fame in Europe' *The Art Bulletin*, Vol. 44 No. 4 1962.
Schrijver, Elka 'Glass in the Netherlands from 1900 up to date' *Annales du 2e Congrès des 'Journées Internationales du Verre' à Leiden 1962*, Liège.
Scott, Juliet 'Clutha Glass' *Discovering Antiques*, Part 80 1971.
Shelkovnikov, B. A. 'Russian Glass in the Second Half of the Nineteenth Century' *Journal of Glass Studies*, Vol. 9 1967.
Sollar, Fabien 'Céramique et Verrerie d'Art' *Les Echos des Industries d'Art*, July 1929.
Sollar, Fabien 'Céramique et Verrerie d'Art' *Les Echos des Industries d'Art*, August 1930.
Sollar, Fabien 'Les Sculptures sur Verre de Colotte' *Les Echos des Industries d'Art*, April 1930.
Sollar, Fabien 'Les Appareils d'Eclairage' *Les Echos d'Art*, September 1931.
Spark 'L'Eclairage Moderne (Perzel, Adnet, Simonet)' *Les Echos d'Art*, September 1930.
Stockbauer, J. 'Moderne Gläser' *Die Kunst für Alle*, Vol. 9 1893-94.

Tisserand, Ernest 'L'Exposition des Artisans Français Contemporains' *L'Art et Les Artistes*, Nos. 90-94 October 1928-February 1929.
Tisserand, Ernest 'Le Poème en Verre d'Emile Gallé à René Lalique' *L'Art Vivant*, No. 5 1929.
Tisserand, Ernest 'La Céramique et le Verre au XIXe Salon des Artistes Décorateurs' *L'Art et les Artistes*, No. 95-99 March-July 1929.
Tisserand, Ernest 'La Pâte de Verre' *L'Art Vivant*, June 1929.
Tisserand, Ernest 'Le Verre et les Verriers' *L'Art Vivant*, September 1929.
Tisserand, Ernest 'L'Art du Cristal' *L'Art Vivant*, September 1929
Tisserand, Ernest 'Les Verreries d'André Hunebelle' *L'Art Vivant*, May 1930.
Tisserand, Ernest 'La Verrerie de Table en 1931' *L'Art Vivant*, November 1930.
Tisserand, Ernest 'Esthétique du Luminaire' *L'Art Vivant*, December 1930.
Tisserand, Ernest 'La Verrerie d'Art' *Les Echos d'Art*, November 1931.
Thornton, Lynne 'Pâte de Verre' *Collector's Guide*, August 1970.
Thornton, Lynne 'French Art Glass' *Discovering Antiques*, Part 74 1971.

Vaillat, Leandre 'La Pâte de Verre: Henri Cros' *L'Art et les Artistes*, No. 7 1908.
Varenne, Gaston 'La Pensée et l'Art d'Emile Gallé' *Mercure de France*, No. 21 1910.
'Verres Signés Lalique' *Connaissance des Arts*, No. 218 April 1970.

Wakefield, Hugh 'Modern Glass from 1850' *Encyclopaedia Britannica*, London 1957.
Ward, Susan 'Glass for Art's Sake' *Art and Antiques Weekly*, Vol. 8 No. 5 November 18th 1972.
Wilson, Kenneth M. 'American Glass' *The Encyclopaedia of Victoriana*, London 1975.

CATALOGUES

D'Albis, Jean et al *Céramique Impressioniste: L'Atelier Haviland de Paris – Auteuil 1873-1882*, Paris 1974.
Amtlicher Katalog der Ausstellung, Munich 1908.
Amtlicher Katalog der Bayerischen Gewerbeschau, Munich 1912.
Applegate, Judith *Art Deco*, Finch College, Museum of Art, New York 1971.
Arts Chimiques, Matières Colorantes et Teinture, Céramique et Verrerie – Catalogue des Collections, Conservatoire National des Arts et Métiers, Paris 1908.
Arts Décoratifs de Grande Bretagne et d'Irlande, Paris 1914.
Ausstellung des Sonderbundes Westdeutscher Kunstfreunde und Künstler, Düsseldorf 1910.

Bardi, P. M. *Tempo dos Modernistas*, Museo de Arte de São Paulo, São Paulo 1974.
Beeyer, Anne-Marie *Trois Millénaires d'Art Verrier à travers les Collections Publiques et Privées de Belgique*, Musée Curtius Liège 1958.
Bellonzi, Fortunato et al. *Mostra del Liberty Italiano*, Palazzo della Permanente, Milan 1973.
Berckenhagen, Ekhart *Art Nouveau und Jugendstil*, Kunsthalle, Kiel 1970 and Staatlichen Museen Preussischer Kulturbesitz, Berlin 1971.
Billeter, Erika *Glas-Sammlungskatalog 4*, Museum Bellerive, Zürich 1969.
(Bing, Samuel) *Salon de l'Art Nouveau*, Catalogue No. 1, Paris 1896.
Blaauwen, A. L. den et al. *Art Nouveau, Jugendstil, Nieuwe Kunst*, Rijksmuseum, Amsterdam 1972.
Bott, Gerhard *Jugendstil, Art Nouveau, Modern Style, Nieuwe Kunst*, Hessischen Landesmuseum, Darmstadt 1973.
Brinckmann, J. *Die Ankäufe auf der Weltausstellung Paris 1900*, Hamburgisches Museum für Kunst und Gewerbe, Hamburg 1901.
Brunhammer, Yvonne *Les Années '25'*, Musée des Arts Décoratifs, Paris 1966.
Brunhammer, Yvonne et al. *Art Deco 1925*, Société Générale de Banque, Brussels 1975.
Brunhammer, Yvonne et al *Art Nouveau Belgium/France*, The Institute for the Arts, Rice University and the Art Institute of Chicago 1976.

Cassou, Jean et al. *Les Sources du XXe Siècle*, Musée Nationale d'Art Moderne, Paris 1960.
Catalogue de l'Exposition de l'Ecole de Nancy, Nancy 1903.
Catalogue Officiel de la Section Belge, Exposition Internationale des Arts Décoratifs et Industriels Modernes de Paris 1925, Brussels 1925.
Charpentier, Françoise-Thérèse *Art Décoratif*, Le Musée de l'Ecole de Nancy, Nancy.
Citroen, K. A. *Jugendstil- Sammlung K. A. Citroen Amsterdam*, Hessisches Landesmuseum, Darmstadt 1962.
Clark, R. J. *Art and Design in Vienna 1900-1930*, La Boetie and Robert K. Brown, New York 1972.
Cruger, George (Ed.) *Art Nouveau*, Virginia Museum, Richmond Va. 1971.

Daverio, Paul-J. *Louis Comfort Tiffany*, Galerie des Arts Décoratifs, Lausanne 1974.
Devos, Jacques and Bob and Cheska Vallois *De Gallé à Marinot*, Dépôt 15, Paris 1972.
Durch die Hessische Landesausstellung Darmstadt 1908, Darmstadt 1908.

Europa 1900, Ostende 1967.
Europäisches Kunstgewerbe 1927, Leipzig 1927.
Exposition d'Art Décoratif Moderne, Galerie Georges Petit, Paris 1894.
Exposition de la Verrerie et de la Cristallerie Artistique: Catalogue, Paris 1910.
Exposition de l'Est de la France, Nancy 1909.
Exposition Ecole de Nancy, Union Centrale des Arts Décoratifs, Paris 1903.
Exposition Franco-Britannique, Catalogue Officiel de la Section Française, London 1908.
Exposition Franco-Britannique de Londres 1908 Rapport Général, Paris 1908.
Exposition Internationale des Arts Décoratifs et Industriels Modernes: Rapport Général, Section Artistique et Technique, Paris 1925.
Exposition Internationale Universelle de Saint-Louis 1904, Catalogue

Général Officiel de la Section Française, Paris 1904.
Exposition Universelle de 1900 à Paris: Actes Organiques, Paris 1896.
Exposition Universelle Internationale de 1889, Catalogue Général Officiel, Lille 1889.

Fettweis, Henri *Marinot*, Musées Royaux d'Art et d'Histoire, Brussels.
Fettweis, Henri *Art Verrier 1865-1925*, Musées Royaux d'Art et d'Histoire, Brussels 1965.

Gasparetto, Astone *Vetri di Murano 1860-1960*, Palazzo della Gran Guardia, Verona 1960.
Glück, Franz and Fritz Novotny *Wien um 1900*, Kulturamt der Stadt Wien, Vienna 1964.
Gysling-Billeter, Erika *Objekte des Jugendstils*, Kunstgewerbemuseums, Zürich 1975.

Heinemeyer, Elfriede *Glas Kataloge des Kunstmuseums*, Vol. 1, Kunstmuseum, Dusseldorf 1966.
Hillier, Bevis *The World of Art Deco*, The Minneapolis Institute of Arts 1971.

International Exhibition of Contemporary Glass and Rugs, The American Federation of Arts, Portland, Maine 1929.
Industrie und Gewerbe-Ausstellung, Amtlicher Katalog, Dusseldorf 1902.

Jugendstil-20er Jahre, Künstlerhaus-Galerie, Vienna 1969.

Kahn, Gustave *Works of R. Lalique*, Thos. Agnew and Sons, London 1905.
Klesse, Brigitte *Glas: Katalog*, Vol. 1, Kunstgewerbemuseums, Cologne 1963.
Klesse, Brigitte and Brigitte Tietzel *Sammlung Giorgio Silver*, Kunstgewerbemuseum, Cologne 1976.

Lafitte, Louis *Rapport Général sur l'Exposition de Nancy 1909*, Paris and Nancy 1912.
La Libre Esthétique, Salons Catalogues, Brussels 1894-1914.
La Pierre, Le Bois (de Construction), La Terre et le Verre, Union Centrale des Arts Décoratifs, Huitième Exposition, Catalogue des Oeuvres et Produits Modernes, Paris 1884.
L'Art du Verre, Musée des Arts Décoratifs, Paris 1951.
L'Art Verrier à l'Aube du XX^e Siècle, Galerie des Arts Décoratifs, Lausanne 1973.
Le Décor de la Vie 1900 à 1925, Pavillon de Marsan, Palais du Louvre, Paris 1937.
Le Décor de la Vie sous la IIIe République de 1870 à 1900, Pavillon de Marsan, Palais du Louvre, Paris 1933.
Léon, Paul et al *Exposition Internationale des Arts Décoratifs et Industriels Modernes*, Paris 1925.
Lindhagen, Nils *Emile Gallé en Glaskonstens Mästare*, Malmö Museum, Malmö 1966.

Marschalk, Hanz and Meta Patas *Glassamlung Hentrich-Antike-Jugendstil*, Kunstmuseum, Dusseldorf 1963.
Mathey, François et al. *Cinquantenaire de l'Exposition de 1925*, Musée des Arts Décoratifs, Paris 1976.
McKean, Hugh F. et al. *The Arts of Louis Comfort Tiffany and His Times*, John and Mable Ringling Museum of Art, Sarasota, Fla. 1975.
Meurrens, H. *Eclairage de 1900 à Nos Jours*, L'Ecuyer, Brussels.
Meurrens, H. *Philippe Wolfers*, L'Ecuyer, Brussels 1972.
Mosel, Christel *Die Glas-Sammlung; Bildkataloge Vol. 2*, Kestner-Museums, Hanover 1957.
Mosel, Christel *Kunsthandwerk im Umbruch, Jugendstil und Zwanziger Jahre*, Kestner-Museums, Hanover 1971.
Mrazek, Wilhelm *Die Wiener Werkstätte*, Österreichisches Museum für Angewandte Kunst, Vienna 1967.
Mundt, Barbara *20er Jahre Neuerwerbungen*, Kunstgewerbemuseum, Berlin 1972.
Murray, Alden *Art Nouveau*, Finch College Museum of Art, New York 1969.

Offizieller Katalog der Deutschen Werkbundausstellung Cöln 1914, Cologne and Berlin 1914.
Offizieller Katalog der Grossen Kunstausstellung Dresden 1904, Dresden 1904.
Offizieller Katalog der Internationalen Kunstausstellung Dresden 1897, Dresden 1897.
Offizieller Katalog der Internationalen Kunstausstellung Dresden 1901, Dresden 1901.
Offizieller Katalog der Internationalen Kunst-Ausstellung des Vereins Bildender Künstler 'Secession', Munich 1899.
Offizieller Katalog der 3, Deutschen Kunstgewerbe-Ausstellung, Dresden 1906.
Offizieller Katalog der VII Internationalen Kunstausstellung im Glaspalast, Munich 1897.
O'Looney, Betty *Victorian Glass*, Victoria and Albert Museum, London 1972.

Perocco, Guido *Mostra delle Opere Giovanili di Teodoro Wolf Ferrari*, Sala Napoleonica, Venice 1968.
Perrot, Paul N. and Paul C. Revi *English Nineteenth Century Cameo Glass, Collection of Mr. and Mrs. Albert Revi*, The Corning Museum of Glass, Corning, N.Y. 1963.
Philippe, Joseph *Initiation à l'Histoire du Verre*, Musée Curtius, Liège 1964.
Picard, Alfred *Exposition Universelle Internationale de 1889 à Paris, Rapport Général*, Paris 1891.
Rapport Général de l'Exposition Universelle de Liège 1905, Liège.
Rheims, Maurice *L'Art Nouveau*, Seibu, Tokyo 1968.

Saldern, Axel von and Helga Hilschenz *Meisterwerke der Glaskunst aus Internationalen Privatbesitz*, Kunsthalle, Dusseldorf 1968.
Scheffler, Wolfgang *Werke um 1900*, Kunstgewerbe Museum, Berlin 1966.
Selz, Peter and Mildred Constantine *Art Nouveau: Art and Design at the Turn of the Century*, The Museum of Modern Art, New York 1959.
Sembach, Klaus-Jürgen *Loetz Austria*, Museum Stuck-Villa, Munich 1972.
Sembach, Klaus-Jürgen *Objekte der Zwanziger Jahre*, Museum Stuck-Villa, Munich 1974.
Société des Artistes Français, Salons Catalogues, Paris 1893 onwards.
Société Nationale des Beaux-Arts, Salons Catalogues, Paris 1891 onwards.
Sterner, Gabriele *Jugendstil aus Münchener Privatbesitz*, Museum Stuck-Villa, Munich 1973.

The Jazz Age, Brighton Art Gallery and Museum 1969.

Vauthier, E. *Exposition Universelle d'Anvers, Rapport Classe XIV: Verrerie, Cristallerie, Glacerie, Gobeleterie et Vitraux*, Brussels 1896.
Venzmer, Wolfgang *Jugendstilglas: Sammlung H. R. Gruber*, Mainz 1976.

Weisberg, Gabriele P. et al *Japonisme: Japanese Influence on French Art 1854-1910*, The Cleveland Art Museum, The Rutgers University Art Gallery and The Walters Art Gallery 1975.
Wichmann, Siegfried *Internationales Jugendstilglas*, Museum Stuck-Villa, Munich 1969.
Wichmann, Siegfried *Internationale Jugendstilobjekte*, Museum Stuck-Villa, Munich 1969.
Wichmann, Siegfried *Secession, Europäische Kunst um die Jahrhundertwende*, Haus der Kunst, Munich 1964.
Woeckel, Gerhard P. *Jugendstilsammlung*, Staatliche Kunstsammlungen, Kassel 1968.

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