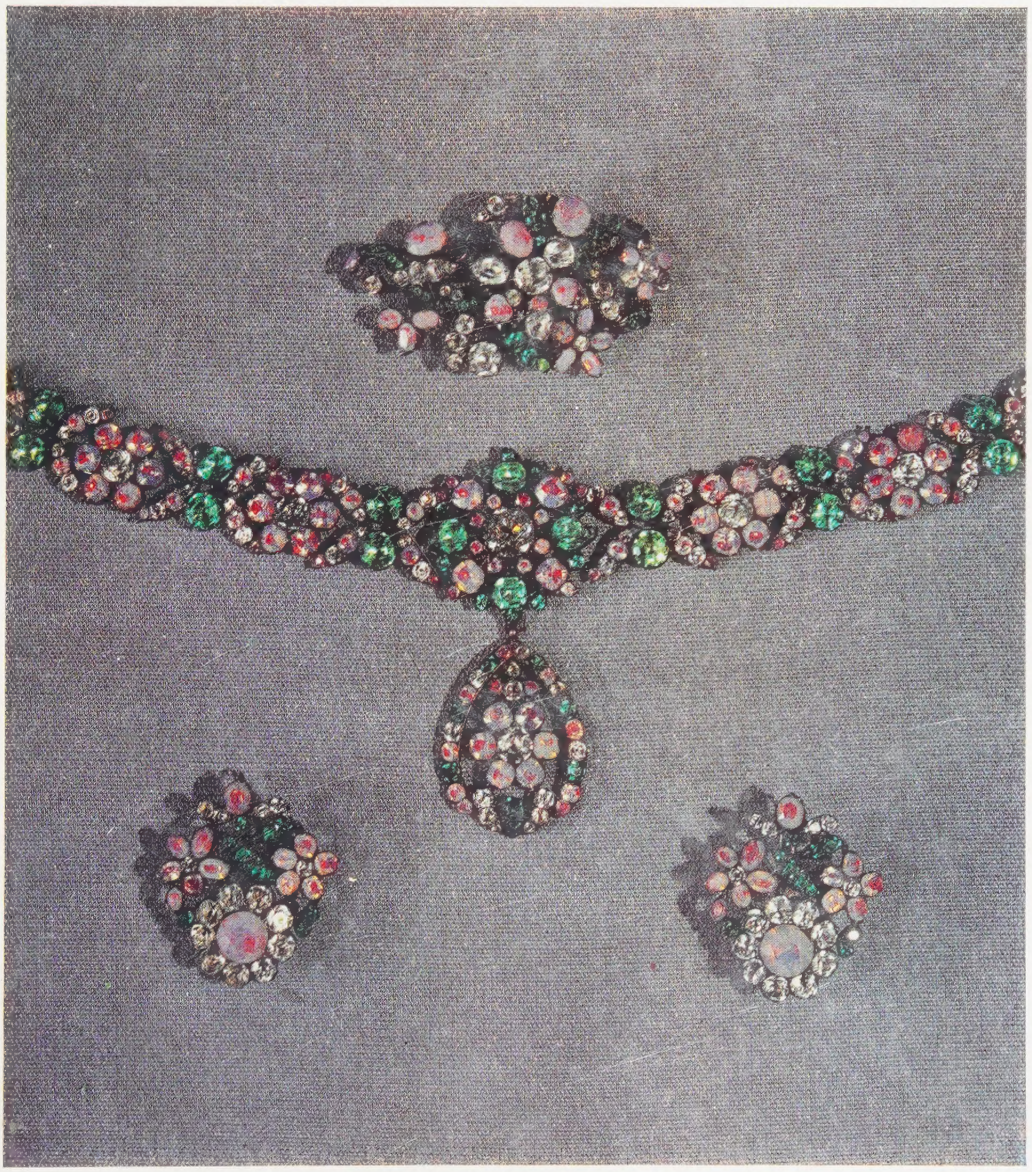
M.D.S. LEWIS

ANTIQUE PASTE JEWELLERY



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Antique Paste Jewellery

M. D. S. LEWIS

edited by Kate Foster

It is surprising that antique paste jewellery has been so much neglected as an art form in its own right. If not positively counterfeit, it is still regarded by some as little more than mere imitation of a real-stone jewellery. How mistaken such a view is will be made clear in this book, which is probably the first one dealing with all aspects of the subject to appear. At its best, antique paste is to be compared only with the finest jewellery for sheer artistry and craftsmanship.

Mr. Lewis, a well-known expert in the field, was the first recipient of the Research Diploma of the Gemmological Association, and has written numerous articles on antique jewellery. Here he gives us a succinct account of the early evolution of antique paste, its great flowering in the eighteenth century, and its gradual decline in the nineteenth century. He is careful to relate it closely to the history of real-stone jewellery, and diamond jewellery in particular. Two sections of special value for the collector and connoisseur are those on methods of distinguishing between antique and reproduction paste, and between paste stones and real stones.

Antique Paste Jewellery is the first volume in the Faber Collectors Library, edited by Kate Foster.

Antique Paste Jewellery

A. Necklace, spray brooch and earrings set with multi-coloured pastes. Probably French, 18th century.

Antique Paste Jewellery

M.D.S. LEWIS, A.R.C.S., B.Sc., F.G.A., G.G.

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TO MY WIFE

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Probably Spanish, 18th century.

Introduction

COLLECTORS of antique paste jewellery are a favoured class of people. With the necessary knowledge it should be possible for them to acquire, at reasonable cost, a good range of beautiful pieces that can be worn either singly or *en suite*. At its best, it cannot be regarded simply as a mere simulation of something more valuable. It was not counterfeit jewellery; it was made to achieve certain decorative effects which for technical reasons are rarely realized with diamonds and other precious stones. The techniques used required degrees of specialized skill in some respects unsurpassed in the whole history of jewellery. They were techniques similar to those of diamond workers, but in the absence of the problem of the high cost of materials, they were developed and extended much further. Antique paste jewellery should be regarded as an art form in its own right. What is more, it is usually soundly constructed, and can be worn frequently with safety, unlike some other ornaments (e.g. delicate enamel work), which are so fragile that they are destined to lie unworn in a collector's cabinet.

These many virtues have their own dangers. Antique paste jewellery has been reproduced on a vast scale and with great skill during the last hundred years; and so it is desirable that the collector should be familiar with at least some of the criteria by which the true age of a piece may be determined. At first, it might be thought that a list of these would be enough, but that would tell only part of the story. We must also understand the circumstances of history and, above all, the philosophy of the different ages that produced antique paste, and judge it against this background.

It must not be assumed that the history of paste can be isolated from that of antique jewellery generally. Both evolved under much the same influences and consequently have many common characteristics. No apology therefore is made for what may appear to be irrelevant digressions into fields not exclusively connected with antique paste.

For wider surveys of the history of jewellery the reader is referred to the following classic text-books:

Joan Evans, *English Jewellery from the Fifth Century to 1800*, Methuen, London, 1921
Joan Evans, *A History of Jewellery, 1100–1870*, Faber, London, 1953
H. Clifford-Smith, *Jewellery*, Methuen, London, 1908
Henri Vever, *La Bijouterie Française au XIX Siècle*, H. Floury, Paris, 1908

Scholarly and authoritative, they are the prime sources of information on most aspects of Western European antique jewellery. Another interesting book, H. R. d'Allemagne's

Les Accessoires du Costume et du Mobilier Depuis le XIII Jusqu'au Milieu du XIX siècle, Schemit, Paris, 1928, is useful for its profuse illustrations.

Jewellery has been worn for many reasons, not always decorative ones. Until the late Middle Ages superstition played an important part, gemstones being credited with magical virtues and the ability to give protection against certain illnesses and misfortunes.[1] Emeralds were believed to be beneficial to human eyes but fatal to the eyesight of serpents.[2] The sapphire would prevent poverty, betrayal, wrongful conviction and preserve chastity.[3] Jewellery has often been regarded as an emblem of rank or social status, and been used as a form of portable wealth. It has also acquired religious, sentimental and commemorative associations. But its principal purpose has been decorative, and it is with that aspect of jewellery alone that this book is concerned.

Our knowledge of antique jewellery comes from several sources. First of all, there are of course the museums and private collections. In normal circumstances, however, the pieces there cannot be handled or closely inspected. Then historians of jewellery owe an immense debt to the portrait painters of the fifteenth, sixteenth and seventeenth centuries who so often depicted their subjects wearing jewellery: if not based on actual pieces, this jewellery represented current fashion, and sometimes it was rendered with extraordinary accuracy. This might be expected since many Renaissance painters were also masters of the jeweller's craft. The Virgin Mary and her attendant angels, European aristocracy and Italian courtesans were all portrayed wearing opulent and sophisticated jewelled ornaments. Perhaps the most noteworthy of all such pictures is the 'Leven and Melville' portrait of Mary, Queen of Scots (called after the Earl to whom it belonged), that brilliant frontispiece of Mr Andrew Lang's *Portraits and Jewels of Mary Stuart*.[4] Mr Clifford-Smith has pointed out that the Queen is seen wearing a complete parure of contemporary jewellery, every item of which is entered and described (and thereby confirmed) in her personal inventories.[5] Another portrait, that of Margaret of Austria, Duchess of Savoy (1483), is remarkable for its precision of detail (see plate 28, Joan Evans, *History of Jewellery, 1100–1870*). She wears a pendant painted with such accuracy that the actual setting of the stones is plainly visible. The tiny silver wire pegs securing the pearl drops are realistically shown and the two minute connecting rings, at right angles to each other, are represented with complete accuracy. Unfortunately, though, eighteenth-century English portraits—for example—generally show little jewellery. Which is surprising, for jewellery had by then reached a peak of magnificence and a great deal of it must have been worn.

Another source of information is the books of engraved designs which circulated among sixteenth- and seventeenth-century jewellers. These show the prevailing styles

[1] Joan Evans, *Magical Jewels of the Middle Ages and the Renaissance*, Oxford, 1922.

[2] G. F. Herbert-Smith, *Gemstones*, Methuen, London, 10th ed. 1949, p. 238.

[3] C. C. Oman, *Catalogue of Rings*, Victoria and Albert Museum, 1930, p. 27.

[4] James MacLehose, Glasgow, 1906.

[5] H. Clifford-Smith, *Jewellery*, p. 221.

plainly, but they cannot always be relied on for detail. The patterns sometimes seem structurally unsound, and pieces made from them would be unsuitable for actual wear.

Inventories of royal and other collections are also helpful. Our knowledge of Elizabethan jewellery has been much increased by numerous punctiliously kept inventories and by Queen Elizabeth's many jewelled portraits. One inventory even specifies 'the jewels lost from Her Majesty's back'.[1]

Guides to style can sometimes be obtained from 'fashion-plates', too. They first appeared towards the end of the eighteenth century but their emphasis is naturally on costume rather than on jewellery, details of which usually lack precision. Mrs Doris Langley Moore, who has made an intensive study of this evidence, has given the warning that many fashion-plates of any particular period must be studied before conclusions can be drawn, as an individual plate may be the eccentric work of a single fashion-propagandist.[2]

Although all these sources of information are available to the serious historian, they are only of limited use to the collector. Every jewellery fashion reoccurs periodically, and, as a result, reproductions usually far outnumber originals. Nearly always the collector's problem is how to distinguish between them.

In the final analysis, the main object of jewellery is to draw attention to parts of the human body, and to do this it must possess optical properties different from, or superior to, those of its surroundings. A diamond attracts attention through the intensity and variety of its responses to light: brilliant flashes from the table alternate with fleeting, changing coloured gleams from the side-facets. A good emerald is outstanding because its green colour is deeper and more saturated than any green in its usual surroundings. In 'star-stones' and 'cats-eyes', bands or patterns of light appear to move over the surface. The play of colour in a good opal is unique and some gems such as moonstones have a characteristic unfamiliar sheen.

The appearance of a gem depends ultimately on the illumination it receives, and the nature and intensity of the light it gives back. The eye is sensitive not only to quality but also to quantity of light. In a darkened room the most lustrous diamond becomes dull and uninteresting, and vividly coloured stones may assume 'sad' and quite unnatural tints. The history of jewellery in general and of paste in particular has therefore been greatly influenced by the state of domestic lighting at various points in time.

Most gems begin their existence as imperfect crystals with no special visual qualities and bear little resemblance to fully-cut stones. The lapidary develops the inherent visual properties of the jewel by shaping it into a many-sided object, often of precise geometrical proportions, and then polishing each facet until it reflects light like a mirror.

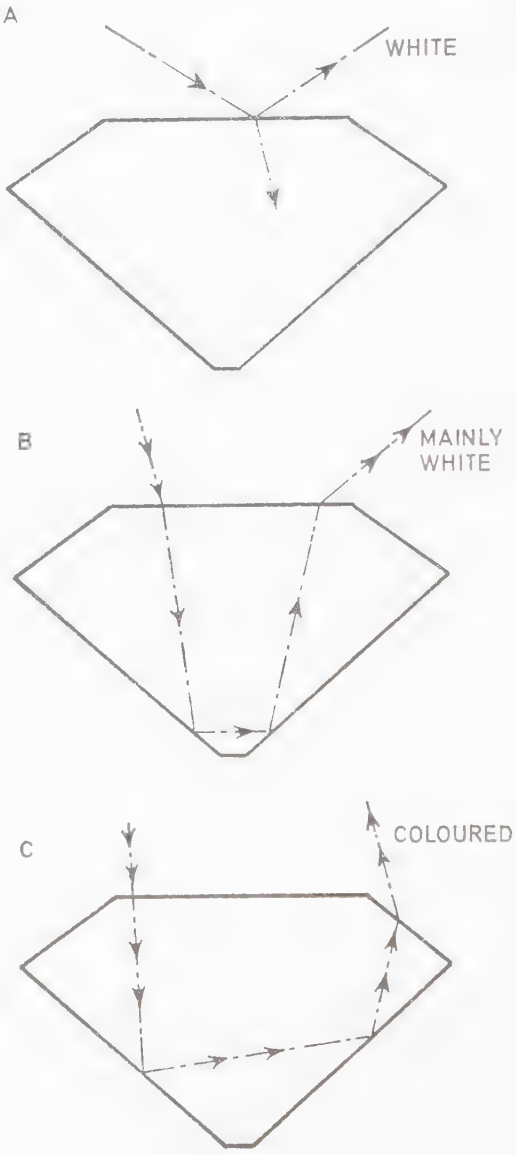
The three gemmological properties involved are refractive-index, 'dispersion' ('fire'), and hardness. Refractive-index is a measure of the extent to which light is bent, or

[1] Joan Evans, *English Jewellery from the Fifth Century to 1800*, p. 103.

[2] In private communication.

refracted, when it enters the stone. It also determines the proportion of light reflected at the surface. 'Dispersion' is a measure of the extent to which refracted white light is separated into its component spectral colours of blue, green, yellow, red, etc., creating the appearance of 'fire'. Hardness is important because only hard stones can take and retain a really good polish.

When light falls on a colourless stone, part of it is reflected at the surface producing the effect of brilliance (fig. 1). The high refractive-index of diamond gives it a reflectivity



FIGS. 1a, b, c: Passage of light through a colourless stone

(*a*) Some of the light which strikes a well-polished surface is strongly reflected in certain directions and gives the impression of 'brilliance'. If the polish is bad, the light is diffusely scattered from all points, there are no directions of strong reflection, and brilliance is poor.

(*b*) The light not reflected at the table enters the stone, which should be cut in such a way that it is internally reflected at the back facets and returned. Some rays of light emerge through the table creating extra brilliance. If they were allowed to escape through the back, even the finest stone would appear dull and lifeless. These rays, together with those of (*a*), determine the 'lustre' of the stone.

(*c*) Other rays emerge through the side facets undergoing dispersion and creating the impression of 'fire'. The colour varies with the angle of emergence. If the polish is poor, the rays will be diluted with scattered white light at the surface and the fiery effect will suffer.

greater than that of most other substances and its extreme hardness enables it to take a superfine polish. These two properties combine to give it a distinctive, adamantine lustre. The light not reflected at the surface enters the stone and is internally reflected and dispersed. Here again, in its fiery appearance the diamond is exceptional.

Although a very few lesser-known gems and some recently-manufactured synthetic stones may surpass the diamond in refractive-index and dispersion, none can approach it in hardness. This unique combination of superlative optical properties and incomparable hardness have given the diamond a supremacy that is complete and unassailable. This point has been stressed at some length because the diamond has had a paramount influence in the history of jewellery.

All these attractive optical effects would be lost if light entering the stone were allowed to escape through the back. It is essential that light should be thrown back, and this is achieved in colourless stones by working the back facets in such a way that the rays emerge again through the upper facets after undergoing internal reflection. Precise and difficult lapidary work is involved.

With deeply-coloured stones the requirements are fewer. It is essential that as much light as possible should enter the stone for it to acquire colour. Refractive-index therefore need not be high: facets can be few and simple. The return of the coloured rays from the stone can be easily and effectively achieved by placing a highly reflective metallic foil at the back. Refractive-index and brilliance are of minor importance, and dispersion is of little consequence because its effects are masked by the body-colour of the stone. Coloured stones thus do not require the extremely advanced lapidary work which is essential for the diamond and all colourless gems. This fact is of great importance in the study of antique jewellery.

A high degree of polish is necessary for all stones. When it is lacking, there is little brilliance, and the desirable effects of colour and dispersion are diluted by unwanted white light which is diffusely scattered from all points on the surface.

1. Early History

THE origin of the word 'paste' is obscure. Somewhat improbably, it has been held to derive from the Italian *pasta*—an allusion, no doubt, to its potential soft, plastic nature—but paste is in fact harder and more rigid than many metals and other substances. The best definition would probably be, 'glass which has been cut into gem-like forms', and the early history of paste is really that of the glass industry itself.

The simplest form of glass can be made by melting pure sand (silica) and allowing it to cool quickly. But three main difficulties arise. The intense and sustained heat required cannot be obtained from wood—the only source of fuel that was available to early glass-makers—and the glass is difficult to mould and almost impossible to colour.

Sand mixed with an alkali—e.g., soda or potash—fuses at a much lower temperature. However, the resultant glass is soft and soluble in water, and therefore useless. A third component such as lime, magnesia or alumina, must be added to make the glass stable and hard. Thus the simplest commercial glass could be regarded as a soda-lime-silicate.

The first glass was made thousands of years ago, probably on the shores of the Eastern Mediterranean, where suitable sand was available. The alkali may have been obtained from the ashes of plants and the lime from seashells. The chief difficulty was always the scarcity of fuel, and early glass-makers were probably itinerant, setting up their glass-works in thickly wooded areas and moving on when fuel supplies became exhausted.

Glass produced by these means would rarely be colourless. The unavoidable traces of iron in it would impart a yellow or green tint. But this did not matter, for colour, and especially the deeper colours, was sought after, and such colours were obtained by adding various metallic oxides to the glass-melt. The early European jeweller, like the artist, scribe or craftsman, thought mainly in terms of colour where ornament was concerned. Nearly every artistic impulse had flowed from the East and, there, love of colour had been proverbial; Byzantine art, for instance, had found its highest expression in brilliantly-coloured mosaics; and much Byzantine statuary and architecture was to some extent gilded and coloured.

The art of glass-making spread through Europe in the wake of the advancing Roman armies and, from the beginning, glass-makers were vitally concerned with the creation of imitation gemstones—just as the medieval alchemist was for ever seeking ways of transmuting base metals into gold. Mr W. B. Honey writes thus of early Mediterranean glass: 'In this phase (from the fifteenth to the first century B.C., and later), glass-making was still more or less tied to the imitation of precious stones and in tutelage to

the art of the lapidary.'[1] He also speaks of the medieval fondness for the imitation of precious stones, and of the dependence of glass-makers on their success in ministering to those fashions.

There can be no doubt of the veneration for glass in general in the Middle Ages, and for glass gemstones in particular. Glass preserved in cathedrals was frequently mounted in silver and gold, and it was obviously regarded as precious. And during the Middle Ages it was glass that set the standard for excellence in colour. In the thirteenth century, when Louis IX of France (Saint Louis) acquired from the Emperor of Constantinople the most prized emblems of Christianity—the few remaining relics of the Crucifixion—he built around them his superb reliquary-church of Sainte-Chapelle, and installed in it glass windows of such magnificence that men spoke of 'wine, the colour of the windows in the Sainte-Chapelle'.

Even as late as the sixteenth century, an Elizabethan testified to the preference given to glass over silver and gold when he wrote, 'our gentilitie as lothing these mettals (because of the plentie) do now generallie choose rather the Venice glasses—Such is the nature of man that it most coveteth things difficult to be atteigned.' Although from time to time the trade guilds made various regulations forbidding the mounting of imitation stones in silver or gold, paste gemstones have been found in the most exalted places.

The 'emerald' lens which Nero is said to have used to shade his eyes from the glare of the sun while watching gladiators was most probably glass. An emerald of this size would rarely be free from flaws and inclusions impeding the transmission of light, and it would have the property of 'double-refraction', which might give blurred outlines and produce two overlapping images. Several 'emeralds' or 'emerald' objects reputed to have religious or historical associations are probably glass, too. The most noteworthy of these treasured objects is described by Mr W. B. Honey.[2] It is the emerald-green bowl, known as the 'Sacro-Catino', preserved at the Cathedral of San Lorenzo in Genoa, and captured by a crusader in 1101. It was long believed to be an emerald, and at different times was claimed to be the Holy Grail, a gift from Solomon to the Queen of Sheba, and the dish that bore the head of St John the Baptist. It is probably Egyptian medieval glass.

When the body of Edward I was exhumed in 1774, pastes were found in several of the ornaments discovered. Among the jewels of Henry IV were 'diamantz contrifaitz'. Furthermore, many of the so-called 'garnets' in medieval jewellery are probably paste. Mary, Queen of Scots owned several ornaments of *verre-vert*.[3] And Queen Elizabeth I wore a profusion of paste gemstones. One of the sharp-eyed foreigners who visited her Court mentions that her dress was covered in 'false jewels', and another—the Sieur de Maisse—commented that she was wearing 'jewels and pearls' of no great value.

It is difficult to say whether these gems were known to be glass, or whether the wearer

[1] *Glass*, Victoria and Albert Museum Handbook, London, 1946, p. 13.

[2] *Glass*, p. 38.

[3] Joan Evans, *English Jewellery*, p. 99.

was deceived or simply indifferent. As Mr Honey says, 'Throughout the Middle Ages, glass, whether it was surviving ancient Roman or contemporary Byzantine or Islamic work, was commonly accepted as precious and treated accordingly.'[1] So long as vivid colour was provided it seemed to matter little whether the stone was natural or imitation. Glass might even have been preferred because it was less restricted in size, and because it had a more intense colour and was free from imperfections. In any event, the supply of natural gemstones was probably far too small to satisfy requirements.

Around the ninth century, Venice had become the centre of European glass-making, and its glass-makers were to dominate the art for several centuries, exporting coloured glass gemstones in large quantities to all parts of Europe and most of the civilized world. Marco Polo's journeys in the late thirteenth century may have been instrumental in spreading the fame of Venetian glass and stones.

Venetian supremacy remained unchallenged for about five hundred years, but little if any success seems to have attended attempts to produce colourless glass. This presented many difficulties as all the materials used had to be absolutely pure. Pure white sand is a rarity, and the slightest impurity in any of the other ingredients or contamination from the pot in which the glass was melted would inevitably result in a coloured product. So sensitive is glass to the minutest traces of iron, that even a modern sheet of 'colourless' glass often appears green when it is looked at from the edge. The necessary purification of materials could only have been achieved by sophisticated methods of chemical refinement unknown to medieval glass-makers.

Around the fourteenth century the Venetians rediscovered the technique of decolorizing glass with manganese dioxide, a secret known to the Romans that had been lost since the collapse of their empire. The new material—*cristallo*—at once became popular throughout Europe. Johann Mathesius, the sixteenth-century biographer of Luther, spoke in wonderment of it, saying that Venetians could actually make panes of glass 'thro' which from one's room one can see all that is passing in the street'.[2]

Cristallo was still essentially a soda-lime (or alumina) silicate, easily worked, but poor in optical properties and with low refractive-index and dispersion. The use of manganese dioxide probably imparted a certain greyness to the glass and reduced the transmission of light. There is little evidence that Venice made colourless gemstones on any scale from the new material, which had a low density and was deficient in lustre—disadvantages which countered the ease with which it could be blown into exotic and exuberant shapes. And indeed, there was very little incentive for this. The diamond itself was rarely used for decorative purposes at the time, and so colourless gemstones were not required either. Moreover, without suitable domestic lighting they too would not have seemed attractive as ornaments.

So ends the first chapter in the history of paste, which has taken us from several hundred years before Christ up to the fifteenth century. Throughout the entire period,

[1] *Glass*, p. 37.

[2] *Sarepta oder Bergpostill*, Nuremberg, 1562, 'Die XV. Predig: Vom Glassmachen'.

jewellers thought wholly in terms of colour, and achieved their aims mainly by brilliant enamel work. Gemstones—real or imitation—were greatly valued but sparingly used in jewellery, playing little part in designs; they were chiefly treasured for superstitious and other non-decorative reasons. By later standards they were crudely cut, often *en cabochon* (i.e. with a flat base and rounded top) or with few rudimentary facets, and poorly polished (fig. 2). With coloured stones, these shortcomings were not obvious but they were insuperable obstacles to the development of attractive colourless gems.

FIG. 2: The *cabochon* shape

The simplest form of gem-cutting, giving a flat base and rounded top. It is only suitable for coloured stones or stones with unusual optical properties.

Surviving medieval paste jewellery is small in quantity and poor in quality for several technical reasons, quite apart from the inherent liability of glass to fracture. Unlike most natural gems, which are crystalline and extremely stable, pastes have a glassy structure which is unstable. All simple glasses have a tendency to 'devitrify', that is to say, to break up into tiny crystallites which cause opacity and brittleness. Normal glass is very slowly soluble in water, and over a long period of time exposure to atmospheric moisture may cause the surface layer to dissolve, ruining its polish. As will be seen later, paste gemstones depend heavily for their appearance on the condition of the underlying foil, and this corrodes unless the setting is completely airtight. It was not until the Renaissance that the techniques of setting had developed sufficiently to provide such protection.

Most pastes are slightly softer than the minute particles of sand (quartz) present in ordinary dust, and they may suffer some abrasion after long exposure to this, too.

Defects like these may be of little consequence in glass vessels, for their attractiveness does not depend wholly on optical properties; but the appearance of most pastes is ruined when their lustre is impaired. This deterioration is seen in some of the paste *intaglio* rings surviving from Roman times—which were nearly always mounted in base metal. The glass is sometimes in such a poor state that they would only survive removal from a museum showcase for a short time. Scarcity, poor condition and fragility combine, then, to place medieval and earlier paste jewellery beyond the scope of the ordinary collector, to say nothing of sixteenth- and seventeenth-century paste jewellery, little of which has survived, either. The few pieces remaining of this are mostly in museums. Some (e.g. Papal rings) have mainly survived because of their religious associations and might therefore be unsuitable for collecting.

2. Transitional Period

In the fifteenth and sixteenth centuries, European jewellery was dominated by the Renaissance goldsmiths of Italy, Germany and, later, Spain, who improved greatly the essential techniques of foiling and securing stones in airtight settings. Carved human and animal figures in high relief were prominent in their patterns, since many Renaissance jewellers were also sculptors. As Benvenuto Cellini said: 'Sculpture is the Mother of all arts that employ design.' Stones now began to play a more positive rôle in design, and a piece of jewellery might be built around some exceptional gemstone. In the 'Canning' jewel (Victoria and Albert Museum), for example, a large baroque pearl forms the torso of a merman, and in the 'Leda and Swan' jewel (Kunsthistorisches Museum, Vienna), a fragment of an antique cameo is made to represent a female body. However, the designer here was still thinking mainly in terms of metalwork, enriched by coloured enamel.

Developments in other fields became significant. The 'discovery' by artists of perspective necessitated the skilful use of black, grey and white, and the monochrome products of the printing press were displacing the brilliantly illuminated manuscripts of the medieval scribe. Interiors were influenced by Diane de Poitiers, the powerful mistress of Henry II of France, who specially favoured the decorative combination of black and white.

Meanwhile, in jewellery, a new factor was emerging which in the course of two centuries was to achieve overwhelming importance, completely dominating jewellery design and technique. This was the use of the diamond.

Writers on antique jewellery who approach the subject historically can divide their story into several epochs, Barbarian, early Christian, Medieval (Gothic and Romanesque), Renaissance, seventeenth century, eighteenth century, and so on; but technically speaking there are only two: before the diamond, and after, with perhaps a confused transitional period between.

The diamond had been known and treasured in Europe since the early Middle Ages, but not in connection with decorative jewellery. Its origin in remote India and its crystalline symmetry, transparency, extreme hardness and brilliant lustre gave it romantic qualities no other gemstone could challenge. Lapidaries had found that there are two special directions of softness along which the stone can be ground and polished.[1] By grinding away the tip of the natural octahedral diamond crystal, a square table facet was

[1] S. Tolansky, *The History and Use of Diamond*, Methuen, London, 1962, p. 71.

formed and the truncated octahedron which remained was a crude approximation to the brilliant-cut stones of later years. It so happened that this square table facet contained the directions of easiest polishing and was therefore able to take a very high finish (fig. 3).

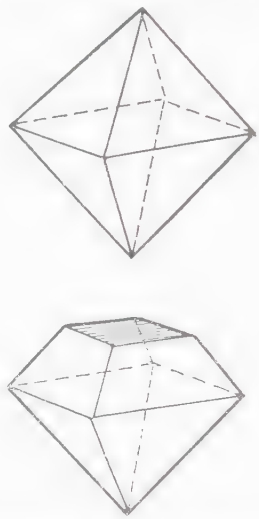


FIG. 3: The natural diamond octahedron

Most diamond crystals are found in shapes similar to this. When a tip is ground away the square table appears. If these four corners are ground away, the usual eight-sided table is formed and the stone begins to resemble the 'brilliant-cut' of Fig. 6.

The diamonds so produced were poor in optical properties and their ungainly shape made them difficult to incorporate in jewellery designs. The uncut octahedron was regarded as a fashionable plaything and was frequently set in rings used for writing on glass. Elizabeth I is supposed to have exchanged messages in this way with Sir Walter Raleigh, who wrote on a pane of glass: 'Fain would I climb but that I fear a fall'; to which she replied: 'If thy heart fail then why climb at all?'[1] The fifteenth-century pope Boniface VIII is said to have worn an iron ring set with a single diamond. It is frequently stated that Agnes Sorel, fifteenth-century mistress of Charles VII of France, was the first woman to wear diamonds, but there is evidence of their use by royalty at least a century before her time.[2,3] Professor S. Tolansky suggests that Agnes Sorel may have been the first woman not of royal blood to wear diamonds. The diamond octahedron formed the device of the Medici family.

By the early sixteenth century, lapidaries were polishing diamonds on rotating iron wheels charged with diamond powder and had evolved the technique of 'rose-cutting', giving the stone a flat round base and numerous triangular facets (usually 16 or 24) on top (fig. 4). Credit for this must go to the lapidary school of Paris, where since 1477 the diamond-cutters had lived in a special area—La Courarie.[4] They had come to realize the

[1] P. Grodzinski, *The Diamond through the Ages*, N.A.G. Press, n.d.

[2] S. Tolansky, *The History and Use of Diamond*, p. 86.

[3] H. Tillander, 'Six Centuries of Diamond Design,' *Journal of Gemmology*, July 1965, vol. IX, no. 11.

[4] S. Tolansky, *The History and Use of Diamond*, p. 73.

necessity for precise geometrical proportions if the unique optical properties of the stone were to be realized.

This is probably the most significant period in the long story of jewellery. Diamonds could now be cut into more easily mounted circular, oval and oblong stones, displaying some of those properties which set them in a class apart from other gems. Jewellers were slow to realize the potentialities of the new technique, however. Fifteenth- and sixteenth-century portraits show many large black stones in jewellery, which were probably diamonds deliberately painted black at the back to minimize the optical effects so much sought after in later years. Evidence of this appears in a design for a diamond pendant of *circa* 1610 by Arnold Lulls, a Dutch jeweller, where the stones are obviously intended to be darkened with black foil or paint (see plate 102, Joan Evans, *History of Jewellery, 1100–1870*).

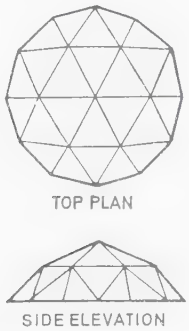


FIG. 4: Rose-cutting

The base is flat and the top has triangular facets, usually 16 or 24.

As the sixteenth century progressed, diamonds had an increasing impact on jewellery. At first, we see, they were sparingly used and played no integral part in the design: they were incorporated sporadically on account of their desirability and value, or perhaps to provide an artistic contrast to the riot of colour which was so consistent a feature of the period. Later, many small oblong table-cut stones appeared in initials, monograms and crosses.[1] The pendant of Duchess Anna of Saxony (*circa* 1550, Grünes Gewölbe, Dresden) shows how aptly they fit in the double 'A', but in general an oblong-cut stone is not a suitable unit for use in decorative jewellery.

With the beginning of the seventeenth century, colour began to fade from jewellery more rapidly. Diamonds were entering Europe in increasing numbers as a result of the opening of the mines around Golconda in India. According to Tavernier, the great French merchant traveller and jewellery adviser to Louis XIV, over sixty thousand workers were employed there in 1665.

In the seventeenth century, the artistic leadership of Europe passed to France, and special quarters in the Louvre were granted to a new school of jewellery designers, among whom Gilles Légaré was the most famous. Their engraved patterns show clearly how stones (mainly rose-cut diamonds) were becoming the dominant feature in jewellery

[1] Yvonne Hackenbroch, *Connoisseur*, June 1967.

FIG. 5: 17th-century rose-diamond jewellery

Stones have now become the main feature in design and completely cover the front. Rose-cut diamonds are almost exclusively used, but one crudely cut square is seen at the top of the central ornament. Note the early appearance of the *girandole* design in French jewellery and the very long connecting loops supporting the drops. In the top left-hand ornament, the borders are set with oval rose-diamonds—not very suitable, because they cannot fit closely together. Unsightly gaps are bound to remain between adjacent stones. (Joan Evans, *A History of Jewellery* (p. 159).)

design, spreading right over the surface (fig. 5). The metal, formerly the most prominent feature, was now used only to secure the stones, and the brilliant enamels which had provided most of the colour in earlier jewellery faded from the front, though they still retained a place on the back. Eventually they gave way to black and white decorations (a characteristic feature of late seventeenth-century jewellery generally), and by the end of the period had vanished completely, leaving the backs of jewels unadorned.

As the diamond extended its rule to all branches of jewellery-making, designers realized that gold settings, so suitable for coloured gems, were not generally desirable for colourless stones. The fleeting, ever-changing optical effects of a diamond usually require the less challenging background of silver, which gradually displaced gold as the principal metal. The change took place more rapidly in France and England than in Spain, where table-cut diamonds continued to be set in gold. Much of this typical seventeenth-century Spanish jewellery, characteristic of the Spanish preference for gold, has survived, and it is magnificent to look at.

With the growing popularity of diamonds, attempts at simulation were inevitable, but no suitable colourless glass existed. At this stage, crystal must be mentioned for the first time. In jewellery, this is the name given to the colourless variety of the natural gemstone quartz which is widely distributed throughout Europe. In the fifteenth and sixteenth centuries it was highly treasured and used for the choicest and most valuable objects. Dr G. C. Williamson has pointed out that no incomplete object of rock crystal and no collections of odd pieces have been found, indicating it was so precious that the broken pieces were used again in other ornaments.[1] Here, then, was a colourless gem-material of great value, with potentialities which at that time were second only to those of the diamond. In the eighteenth century the Portuguese used it to make jewellery of unsurpassed beauty, but this required improved methods in lapidary work. Not until complete mastery in diamond-cutting and polishing had been achieved was crystal processed into optically attractive gemstones. (Gemmologically, the stone should be referred to not as 'crystal' but as 'colourless quartz'. The use of the word 'crystal', however, is so widespread in antique trade circles that it is retained in spite of its inaccuracy.)

It would be difficult to exclude crystal from a history of antique paste jewellery because it appears extensively in many of the usual paste designs. They have always been considered together because of their similarity in appearance and desirability, and because the same techniques have been employed for both. A comparison of the properties of paste and crystal will be made in Chapter VI.

In the seventeenth century a large number of crystals were cut, mainly in rose-form, and became known in England as 'Bristows' because they originated in deposits near Bristol. In France, similar stones were known as *pierres d'Alençon* and *cailloux du Rhin*. Clifford-Smith quotes the following from the *Satires* (1597) of Bishop Hall:[2]

[1] *Catalogue of Jewels and Works of Art of Pierpont Morgan Collection*, London, 1910.
[2] *Jewellery*.

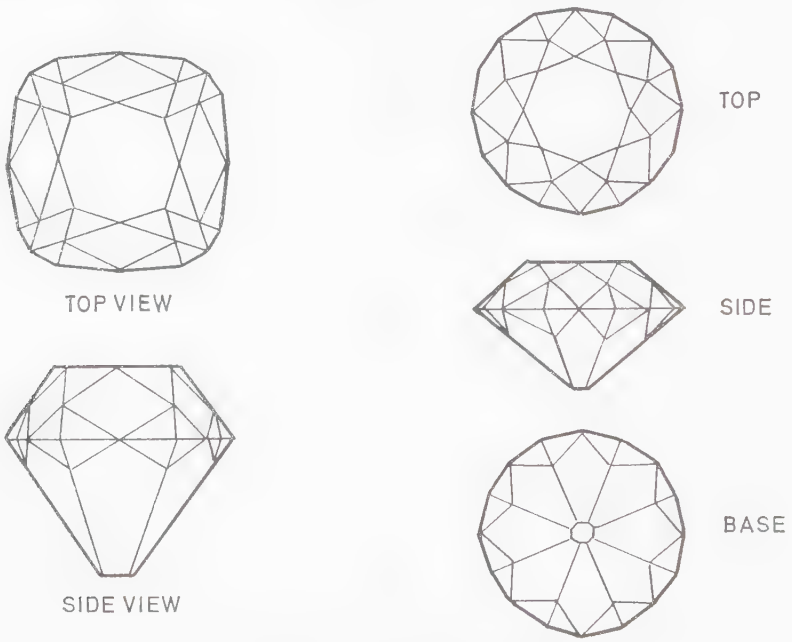
'Nor can good Myson wear on his left hond
A signet ring of Bristol diamond
But he must cut his glove to show his pride
That his trim jewel might be better spy'd.'

and in Lenton's *Young Gallant's Whirligig* (1629) a fop is described as having:

'Haires curl'd ears pearl'd with Bristows brave and bright
Bought for true diamonds in his false sight.'

The sarcastic tone of the verses indicates a measure of contempt. It was probably justified because these crystals, very few of which survive, were worn to deceive and could not have been particularly beautiful. Gem-cutting and polishing, though just adequate for coloured stones, had not reached maturity, and no gemstone could be less attractive than a poorly-finished crystal. Though rose-cutting is most appropriate for diamonds, it does not often give pleasing effects with pastes or crystals.

At the end of the seventeenth century, Vincenzo (or Vincenti) Peruzzi, a Venetian lapidary, perfected the 'brilliant-cut' and in its new shape the diamond immediately attained a popularity which has never waned. The brilliant-cut diamond in its typical form has fifty-eight facets. Above the girdle are thirty-two small side facets and a large



FIGS. 6a, b: Brilliant-cutting

(*a*) *Left.* The first 'brilliant-cut' developed by Vincenzo Peruzzi.

(*b*) *Right.* A later 'brilliant-cut'.

C. Spray brooch set with white and opaline pastes
with butterfly 'en-tremblant'.
French, 18th century.

D. Necklet set with blue and white pastes.
French, late 18th century.

octagonal table. Below are twenty-four side facets and a tiny base facet, known as the culet, which is provided to avoid splintering of an otherwise pointed end (fig. 6).[1]

The brilliant-cut was the culmination of a struggle lasting two centuries which the lapidaries had waged against their strange and stubborn material. An uncut diamond crystal, although perhaps of interest to a crystallographer, has little visual appeal. To reveal its unique optical properties, the stone had to be shaped into a complex structure of many faces, each having a precise geometrical relationship with the others. Furthermore, each facet had to be polished to a degree never achieved before. With medieval techniques this would have been difficult whatever the material, but the diamond was incomparably harder and less tractable than any other substance.

Our long familiarity with cut diamonds has tended to obscure the achievements of the lapidaries. Most materials are shaped or formed by tools of superior hardness, but here the only tool available was other diamonds. To suggest that a geometrical, many-sided structure, say, of wood, could be precisely fashioned using only wooden tools, would be to invite ridicule, a measure of the problem that had to be solved.

So successful is the brilliant-cut that the stone appears quite dark when viewed with the table facet towards a source of light, except for a very small area around the basal facet (culet). This shows that virtually all the light entering the stone is reflected internally at the back facets and returned to the front: a remarkable achievement with a normally transparent substance, unaided by mirrors or foils. This is the reason for the diamond's unique brilliance; no other natural stone has this property. With the 'diamond technique' fully developed, lapidaries had no difficulty in effectively shaping and polishing all other gems, including pastes and crystals.

In the seventeenth century an apparently unrelated chain of events occurred in England, with far-reaching consequences for paste jewellery. In spite of efforts by Venice to retain her profitable monopoly in glass-making, Italian craftsmen had travelled (or perhaps escaped) to many parts of Europe, including England, to found or assist in maintaining glass workshops. In 1615, the English government, fearing a shortage of timber for building warships, issued an order prohibiting the use of wood in glasshouse furnaces. Turning to coal as the only substitute fuel, glass-makers were faced with a new problem. While wood burned cleanly, coal emitted sulphurous fumes which caused an adverse reaction in the glass melt—which had been kept hitherto in open pots. Enclosing the pots to protect the melt necessitated still higher temperatures for fusion. Lead oxide was therefore added as a flux to reduce the melting-point. But fuel was not the only difficulty confronting glass-makers, because the entire technique used was still the Venetian one, and it was often dependent on imported Italian labour.

Around 1675, George Ravenscroft, a technologist of the Glass-Sellers Company was at work on those problems, searching for a new method which would be independent of temperamental and troublesome foreign workers. He substituted English flints for

[1] H. Tillander, *Journal of Gemmology*, July 1965, claims that the culet plays a positive part in improving internal reflections and reducing leakage of light.

Venetian pebbles, changed the alkali from soda to potash and introduced still larger quantities of lead oxide (upwards of 30%) into the melt. Thus was born the magnificent English flint glass—'glass of lead'—which was immediately acclaimed throughout Europe, dealing a mortal blow to the Venetian supremacy. Here at last was the ideal colourless glass suitable for making paste gemstones: heavy, lustrous, of high refractive-index and dispersion, and amenable to a brilliant polish.

Ravenscroft was certainly not the first glass-maker to use lead oxide. The three great medieval writers on glass, Heraclius, a tenth-century monk, the twelfth-century pseudo-Heraclius, and the eleventh-century Westphalian monk, Theophilus, had all advocated the use of lead oxide for improving the appearance of glass. In the seventeenth century, Neri, an Italian authority on glass-making, and also Dr Christopher Merrett, his English translator, had extolled the value of lead oxide. Neri and a contemporary German glass-technologist, Johann Kunckel, both experimented with a lead-rich glass (Mainzerfluss) to make gemstones, known as *Amausen*, but they ran into difficulties and abandoned their efforts because their products were too soft to be polished satisfactorily.[1] Kunckel then tried making harder paste gemstones by adding borax. However, there remains little or no evidence of their quality. They had no success while soda was used as the alkali, and Ravenscroft must be given the credit of being the first to manufacture, on a commercial scale, colourless glass with 'gem-like' optical properties.

The function of lead in glass is, of course, to raise the refractive-index and dispersion, but the great disadvantage of lead-rich glass lies in its softness and the ease with which it can be scratched. This defect may be compensated for by other properties discovered quite recently, though. Above all, lead oxide gives a good degree of chemical inertness to the surface. A drop of water spreads easily on clean glass, tending to dissolve some of its constituents, but on a lead-rich surface there is little tendency to spreading, and consequently less chemical corrosion and impairment of polish. Furthermore, the presence of lead gives greater resistance to devitrification. For gemmological use, this type of glass (essentially a potash-lead silicate) is improved by slight additions of arsenious and boric oxides, together with other oxides when colour is required.

Ravenscroft's failure to produce Venetian glass and his chance success in evolving a superior type underlines Mr W. A. Thorpe's comment: 'English achievement in industrial art has largely resulted from a desire to imitate things seen or made on the mainland and *from inability to do so*. Try to copy and you produce an English invention but if you do not copy you do nothing.'[2]

The close of the seventeenth century ushered in the most splendid era in the history of paste jewellery. Several main paths of progress suddenly converged. Ravenscroft had shown how to produce colourless glass of superb optical properties, and after two centuries of struggling with the intractable diamond, lapidaries had learned to impart

[1] Dr R. Schmidt, 'Ueber Srassgläser', *Keramische Rundschau*, Berlin, 22 January, 1925.
[2] W. A. Thorpe, *English Glass*, London, 1935, p. 189.

ideal proportions and finish to all gemstones. The essential techniques of setting and foiling had been thoroughly mastered, and prejudice against colourless gems had vanished. But perhaps one of the most important events had been the improvement in domestic illumination resulting from increased efficiency in the wax candle. Candlelight, because of its flickering nature, was an ideal illumination for diamond and similar jewellery. Continual changes in the angle of the incidence of light as it falls on the stone produce corresponding variations in the dispersive effect with the maximum display of 'fire'.

The simultaneous existence of all these conditions made possible the production of fine paste jewellery. The absence of one of them might have resulted in complete failure.

3. Eighteenth Century 1: General

THE collector of antique paste jewellery is fortunate in having only to consider the period *c.* 1700–*c.* 1865. Very little paste has survived from earlier times, as we know, and later pieces can hardly be classified as antique. His field is limited geographically, too, for the only countries to make fine paste jewellery on any scale in this period, or even to appreciate it, were France, England and Spain, though Portugal achieved at least equal distinction with crystal and white topaz jewellery of the same type.

Early in the eighteenth century, Madame Prévost, a widow, owned a small jewellery establishment on the Quai des Orfèvres in Paris. She was joined in 1724 by a young jeweller from Strasbourg and almost immediately the business became famous. The young man was Georges Frédéric Stras. Within about ten years not only had he been appointed Jeweller to the King, but he had also given his name to a range of paste jewellery of a style and quality hitherto unknown. Even to this day fine paste is frequently described on the Continent as 'Stras' or 'Strass'.

Earlier accounts refer to a certain Joseph Strasser, a Viennese jeweller who came to Paris, but the careful researches of Dr Hans Haug, the late Directeur des Musées de Strasbourg, have established that he never existed.[1] A search among parish registers has shown that Georges Frédéric Stras (or Strass) was born in 1701 in the little village of Wolfisheim near Strasbourg where his father Jean Frédéric Stras was a pastor. From 1714 to 1719 he trained as an apprentice with Abraham Spach, the well-known goldsmith in Strasbourg. Little is known of his activities between 1719 and 1724, except that he probably worked as an assistant. Between 1730 and 1734 he became famous for his paste jewellery, and he was appointed Jeweller to the King of France in 1734. In 1752 he ceded his business to his niece's husband, G. M. Bapst, who also received the Royal Warrant and became one of Europe's leading jewellers. Stras died in 1773 leaving a great fortune.

Stras's activities were astonishingly varied, as his advertisement shows (fig. 7). Not only did he make and sell fine diamond and paste jewellery but he also dealt in such jewellers' accessories as foils and gold powders. His paste jewellery was an immediate success and before long he had many imitators and competitors. By 1767 a corporation of *bijoutiers-faussetiers* was in existence in France with more than three hundred members. Pouget, a Parisian jeweller, lamented that 'nowadays women wear little else but

[1] 'Les pierres de Strass et leur inventeur', *Cahiers de la céramique du verre et des arts du feu*, no. 23, 1961, Société des amis du Musée Nationale de Céramique, Sèvres (Seine et Oise).

Adresse de Strass.

Bibliothèque de l'Union centrale des arts décoratifs.

FIG. 7: Trade card of G. F. Stras, designed in 1735
Venus accompanied by Tritons on the sea-shore holding jewels and corals.

Stras'. F. de Lasteyrie wrote: 'that industry [*bijoutiers-faussetiers*] fell at once into the hands of workers so clever that it had a period of real fashion'.[1]

There had always existed a latent Parisian expertise in these matters. A French writer, Monsieur de Villers, describing his visit to Paris in the years 1657 to 1658, spoke of the marvellous achievements of 'le Sr. d'Arce' in counterfeiting diamonds and coloured gems. He was so successful that before long he could afford a carriage and had built two houses; he lived in one and let the other.[2] De Villers, it should be noted, though, mentions only loose stones. No reference is made to 'jewellery'.

Chéron, a Parisian jeweller, is reputed to have made a range of pastes that were harder and therefore more durable. They may have been colourless crystal or coloured pastes in which some of the lead oxide was replaced by boric oxide. But little evidence remains of them.

With few exceptions, Stras's competitors left little mark on the history of paste; they were completely overshadowed by his colourful personality. It is not surprising, therefore, that he is sometimes presented as a constellation of all the talents, someone who could start with raw chemicals and finish with sumptuous, elegant jewels which made an immediate appeal to fashionable Paris. This would in fact have demanded mastery in four quite different fields and the ability of a Renaissance genius.

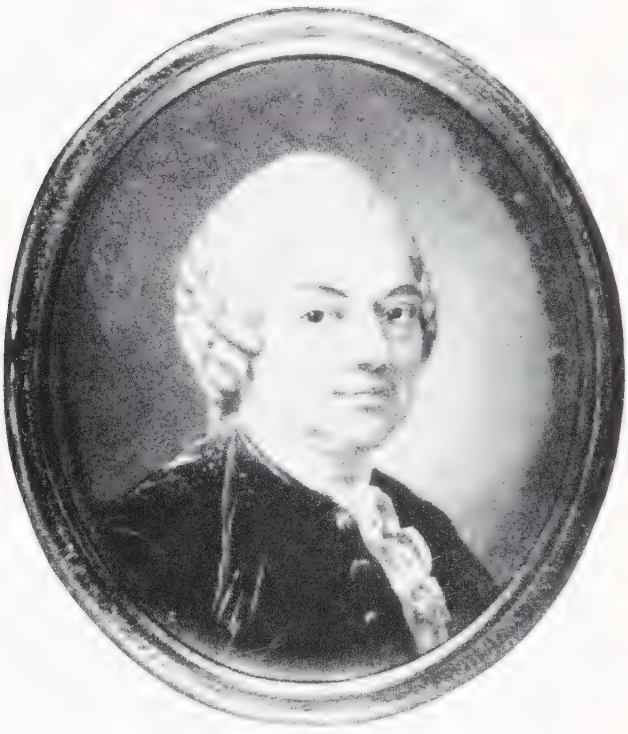
First, there was the manufacture of the glass, a difficult enough technique requiring long scientific and technical training, unlikely to be acquired in the course of a five-year jewellery apprenticeship. It is even doubtful whether the glass used by Stras originated in France, where at this time little glass was being manufactured. It could have come from England, the birthplace of commercial 'glass of lead', or perhaps from Bohemia where a large glass-gem industry flourished later on. Second, the glass had to be cut into suitable shapes and polished by lapidaries. It is just possible, but unlikely, that Stras possessed the ability to do this. Probably, the work was executed in Paris or the Jura, a traditional centre of stone-cutting. Third, there was the designing, mounting and setting of the jewels, skills which Stras undoubtedly did acquire in Strasbourg. And fourth, there was the business of selling the finished article.

It is possible that Stras may have co-ordinated the first and second industries but it is more likely that he was primarily concerned with the last two. His fashionable establishment on the Quai des Orfèvres must have kept him well occupied.

Both Stras's establishment and his interest in jewellery lasted well beyond his retirement. A Madamoiselle Barbuty, fiancée of Greuze, is recorded as having visited the shop

[1] *Histoire de L'Orfèvrerie*, Paris, 1875, p. 284.

[2] 'Le 10 janvier 1657, nous fûmes voir le Temple, qui est une espèce de ville enceinte de murailles—. Il est renommé par ce merveilleux artisan, le Sr d'Arce, qui a trouvé l'invention de contrefaire les diamants, émeraudes, topases et rubis, dans la quelle il a si bien réussi qu'en peu de temps il a gagné une si grande somme d'argent qu'il tient carosse, et a fait bâtir deux corps de logis dans ledit enclos, en l'un il demeure, et l'autre il le loue.' Hans Haug*a*, *Cahiers de la Céramique*, no. 23, 1961.



Georges-Frédéric STRASS, joaillier du Roi (1701-1773).
Miniature anonyme sur émail, agrandie.
COLLECTION PARTICULIERE

Portrait of G. F. Stras, with French caption

materials available. Because of its cost, a design in diamonds tends to conform to the stones provided. Unusual sizes and shapes are not easily produced, but specially shaped pastes can always be cut, imposing no restrictions on the designer.

The presence of shaped stones in great variety in impeccable settings is almost a hallmark of the best eighteenth-century paste jewellery. Their absence does not necessarily disprove antiquity, but the piece will have less appeal for the knowledgeable collector.

The use of shaped stones brought about an important break with tradition. Hitherto, brilliance and dispersion had been regarded as the primary virtues in colourless stones, but these two properties depend on the 'brilliant-cut' which is based on a round shape and facets rigidly controlled in number and position. Differently shaped stones violate these conditions and hence suffer in both optical properties. These penalties were willingly accepted by eighteenth-century designers, but their end-product was less ostentatious and had a greater charm, born of a thorough understanding of materials, allied to an unsurpassable skill.

Eighteenth-century paste jewellery was therefore made with its own special techniques, it existed in its own right and it was not intended to simulate or counterfeit something more valuable. In France and England, at least, paste was accepted and worn in the highest circles. Madame du Barry, who could command the costliest and most desirable jewels in Europe, is said to have possessed a particularly beautiful pair of blue paste *girandole* (chandelier) earrings.[1] If she really did, it must have had a widespread effect on fashion because French jewellery was often influenced by the Royal favourite.

Agnes Sorel, who is said to have been an early popularizer of the wearing of diamonds, La Belle Ferronière, the blacksmith's wife whose portrait in the Louvre gave rise to the fashion for forehead ornaments, Madame de Sévigné, who gave her name to the series of bow brooches so popular in the eighteenth century, Madame de Pompadour, Madame du Barry, Marie-Antoinette, the Empress Josephine and finally the Empress Eugénie—they all join that elegant circle of queens, mistresses and notabilities, who captured the heart of a king and left an indelible mark on the history of jewellery.

In England paste was similarly appreciated.[2] In London, the fashionable firm of Wickes and Netherton, predecessors of the present Crown Jewellers, advertised on their trade cards in 1759 that they had a variety of 'False Stonework in Aigrettes, Earrings, Buckles etc'. In other countries, Flemish crosses have been found which have the fronts set with large pastes and the backs with small diamonds that remain invisible in their secondary position.

Though we know that a given piece of fine antique paste or crystal jewellery is almost certain to have originated in France, England, Spain or Portugal, it is not always easy to assign a precise provenance. French leadership in style and fashion influenced the designs of other countries and it is often difficult to distinguish between French and

[1] Clifford-Smith, *Jewellery*, p. 317.

[2] Joan Evans, *History of Jewellery, 1100–1870*, p. 166.

English pieces. This similarity is well illustrated in the eighteenth-century *New Book of Designs from Jewellers Work* published in London by Sebastian Henry Dinglinger.[1] Though described as being of 'the English School', the patterns have all the elegant characteristics of French jewellery. In the same way it is sometimes impossible to differentiate between Spanish and Portuguese jewellery. Nevertheless certain broad distinctions emerge.

French antique jewellery has the widest possible range, embracing everything from tiaras to shoe-buckles. Usually stones are small and patterns show graceful relief. Floral motifs, sprays, cornucopias, birds and bows frequently occur. The *girandole* design for brooches and earrings is typically French (plate B). The chandelier generally takes the form of a symmetrical horizontal spray or bow suspended from a cluster or stone and supporting three pear-shaped drops. Unlike some Iberian earrings of similar design, the French versions are never exaggerated in size. Bows became very popular through the influence of Madame de Sévigné, who wore them in graduated sets of three.

Blue enamel work reached the apogee of perfection in eighteenth-century France, but quite frequently blue glass replaced enamel even in the choicest articles. When it is cut in a flat *cabochon* shape and foiled, it is superior to enamel in depth of colour and liveliness. Among the most beautiful of these objects is the pair of bracelet clasps in the Victoria and Albert Museum which may have belonged to Marie-Antoinette (*circa* 1770). One of them bears her initials 'M.A.' and the other her device of doves in diamonds on an oval centre of luminous blue glass, bordered by tiny gold beads. An outer row of diamonds enclosed by another gold-bead rim completes these elegant and typically French pieces (plate 13).

The large *marquise* (lozenge-shaped) or octagon-shaped ring in a similar style was another favourite French jewel of the period. It consists essentially of a diamond or paste border enclosing a blue glass (or enamel) plate, bearing at its centre a small ornament of stones, often in the form of a flower basket (plate 24).

'Simplicity and sentiment', says Dr Joan Evans, 'were the characteristic English trends'.[2] The range of English paste jewellery is narrower than that of French, and it is marked by fine proportions and the absence of fussy detail, finding typical expression in buckles and buttons. Usually the stones are larger and the mounts consequently thicker and flatter. In spite of a certain naïveté, the quality of work is often magnificent and some English paste buckles display a technical excellence and refined appearance never excelled by the jewellery of any other country or age. Another jewel well suited to the English style was the collet necklace or *rivière*, a succession of single collets set with white or coloured stones, elegant in its simplicity and faultless in workmanship. The Maltese cross was also a favourite English pattern.

In its rather limited field, eighteenth-century English paste and crystal jewellery achieved a supremacy that was recognized even in Paris. In 1782, the Académie Royale

[1] *Oeuvres de Bijouterie et Joaillerie des XVII et XVIII siècles*, Armand Guérinet, Paris, 1911.

[2] *History of Jewellery, 1100–1870*, p. 198.

des Sciences instructed a firm of glass-makers (Verreries Royales de Saint-Louis) to examine French 'imitations' of English glass. Accordingly, the proprietors paid a visit to that most delightful of all eighteenth-century Parisian shops, 'Au Petit Dunkerque', then on Quai de Conti at the corner of Rue Dauphine, where a good assortment of English jewellery was to be found, especially the best of English crystal.[1]

H. R. d'Allemagne gives fascinating details of this luxury store which 'throughout the whole reign of Louis XVI was the rendezvous of the world of elegance'.[2] A contemporary journal, *Le Mercure de France*, refers to the proprietor, le Sieur Granchez, as Marie-Antoinette's jeweller and lists a wide range of luxury articles, including the finest diamond jewellery as well as its counterpart in paste.

Some Spanish paste jewellery is inferior to French and English (plate 32). There is an absence of relief; stones are uniform and consequently dull-looking; and the backs may be in poor condition with heavy indentations. Occasionally, earrings are extremely large, some almost the size of a hand. The favourite Spanish gemstones have always been emeralds and diamonds and much of their paste jewellery is in green and white, a preference probably stemming from their conquests in South America and early access to rich gem deposits. Religious motifs, particularly crosses, figure largely in their designs. The best Spanish paste or crystal pieces, however, compare well with those of any other country and particularly noteworthy are the magnificent crosses known as 'Orders of Saint James of the Sword', set in crystals and garnets, or in white and red pastes (plate 18).

Eighteenth-century Portuguese jewellery reached a zenith of excellence and attraction. The same patterns persist, some set with coloured stones like chrysoberyls, topazes and amethysts and others with colourless crystals known in Portugal as *minas-novas*, but rarely if ever with paste. The stones are magnificently varied in size and shape, and this type of jewellery is greatly prized by knowledgeable collectors. The Spanish Order of Saint James of the Sword has its counterpart in the equally resplendent Portuguese 'Order of Chrst', executed in similar stones and style (plate 21). A pendant and pair of earrings of Portuguese *minas-novas* in the Victoria and Albert Museum are outstanding in both quality of work and state of preservation. The stones are as brilliant now as they must have been on the day they were made, that is, about two centuries ago: a tribute to the perfection of their setting and foiling (plate 9).

Many jewels of the period are described as being of 'white topaz'. Colourless topazes do exist and they are harder and more brilliant than crystals, but in the author's experience they are seldom found in antique jewellery. After testing some hundreds of possible ones I have found that only a few are in fact white topazes. The remainder are crystals.

One of the most intriguing features of antique paste jewellery is the persistence of a certain pattern, which must have been reproduced in large quantities. In essence, it is two unequal pieces of coloured paste placed side by side, with the resultant corners filled

[1] Yolande Amic, *L'Opaline Française au XIX Siècle*, Librairie Gründ, Paris, 1952, p. 58.

[2] *Les Accessoires du Costume et du Mobilier Depuis le XIII Jusqu'au Milieu du XIX Siècle*, p. 134.

by either a single white paste or a trefoil of contrasting coloured stones (plate 36). This asymmetrical ornament is matched by its mirror-image and together they form a pair of large stud-earrings. Originally, they were always made as pairs of earrings, and in most of them vestiges of the ear-fittings remain, but because of their size many were converted to brooches. They are extremely attractive and much sought-after, particularly when of a pale aquamarine colour. They exist in two types: one in silver with fine workmanship and typical eighteenth-century 'cut-down' setting (see the section on settings in Chapter IV); and the other in imitation gold and of poorer quality, probably originating from the nineteenth century.

Extravagant assertions of the age of these pieces have been made; in the trade they are frequently sold as 'Queen Anne' paste. The precision of the dating shows its absurdity, because it implies that they were made before the 'Stras' era. All the available evidence suggests that fine paste jewellery of this type took Paris by surprise and storm around 1730 to 1740. It is virtually certain that no such pieces existed before either in France or in England. The fine quality paste and sophisticated mounting and setting all point to a later manufacture.

The simplicity of the design and fine effect achieved might well suggest an English origin, and the very persistence of such a distinctive pattern over many years perhaps implies that the pattern had a sentimental significance, which again would point to an English provenance. A portrait by Sir Joshua Reynolds dated 1757 of Priscilla, wife of Thomas Panton (in the possession of the Earl of Ancaster at Grimsthorpe Castle, Lincolnshire) seems to show this actual pattern being worn.[1] It would therefore be reasonable to assume that these earrings are of mid-eighteenth-century English origin, but French provenance cannot be ruled out. (See also Chapter 4.)

No description of antique paste is complete without special mention being made of 'opaline'. During manufacture, when certain glasses—principally those containing the oxides of tin, arsenic or phosphorus—are carefully cooled, minute particles separate out, giving the glass an overall milky appearance. When they are of a certain critical size they scatter the blue component of white light leaving a residual pink. The opalescent effect of stones cut from this material is greatly enhanced by setting them over rose-coloured foil. A magnificent and probably unique collection of this lovely jewellery can be seen in the Victoria and Albert Museum.

It is difficult to assign a precise date and provenance to this style. Opaline glass is usually associated with early nineteenth-century France, but both Neri and Kunckel, the seventeenth-century experts on glass, knew how to make it. The French glass-maker Loysel in his *Essai de l'Art de la Verrerie*, 1800, speaks of *opale* and its use in imitation of precious stones.[2] Many of these pieces are in the French *girandole* and floral styles (plate C); others, like the buttons in plate 31 seem uncompromisingly English. The best opaline paste jewellery was probably made between 1780 and 1820 in both France and England.

[1] See plate 41 of *Reynolds* by Ellis K. Waterhouse, Routledge and Kegan Paul, London, 1941.

[2] Yolande Amic, *L'Opaline Française au XIX Siècle*, p. 57.

4. Eighteenth Century II: Technical

THEORETICALLY, there is no reason why jewellery of eighteenth-century excellence should not have been made at any time in the last hundred and fifty years, but the fact remains that, with few exceptions, it has not. The early nineteenth century saw the introduction and development of mechanization and standardization, resulting in the decline and eventual disappearance of several manual skills. It is doubtful whether any craftsmen today could handle successfully some of the techniques used in the eighteenth century. Even if such people could be found, it would probably cost more to buy present-day products than comparable antique pieces.

This seems to be borne out by a silver and paste tiara commissioned for the Coronation ceremony in 1953. It was not a specially complex design, although it had to conform in general to the client's specification. Admittedly the price was arbitrarily inflated by purchase tax, but the tiara cost more than three hundred pounds, that is, probably more than a comparable antique.

Labour costs even in the nineteenth century could be remarkably low. The cost to the Parisian jewellers Ouizille et Lemoine in 1834 for making a suite of diamond, sapphire, ruby, emerald and opal jewellery that was finally sold for seventeen thousand, six hundred francs (about £730), was only three hundred francs (£12–£13).[1]

However, it is no simple matter distinguishing between an antique and a reproduction. Occasionally the expert, as a result of long experience, can make the distinction at a glance. But more often careful scrutiny is necessary, and several factors must be considered. Unlike an old painting, which may reveal its age in an X-ray examination of the pigment, the age of a piece of antique jewellery can rarely be assessed through any single observation. In the past, several workshops specialized in the reproduction of antique paste jewellery and some acquired great skill in particular techniques, but there nearly always remain some characteristics which give away the date of a piece.

The tests which follow are sometimes applicable not only to old paste but also to other classes of antique jewellery. In applying them it must be remembered that although the eighteenth century in general produced the finest paste jewellery, some of it was substandard and not every piece responds positively to every test. Often a verdict can only be based on an accumulation of probabilities.

It must be admitted that some of the tests exist mainly for commercial reasons; the two tests under the headings of 'settings' and 'shaped stones', though, are somewhat

[1] Vever, *Bijouterie Française au XIX Siècle.*

different and often crucial. They take into account not only commercial factors, but also the availability of materials and skill. As I have said, although it would be possible (if very expensive) to cut from modern glass stones of eighteenth-century size and shape, they would lack the intangible 'patina' of antique paste, which it is impossible to describe in words. The setting of such stones requires a degree of skill no longer available, and the wide range of foils used in the eighteenth century has ceased to exist.

Metals

Most of the best eighteenth-century paste was mounted in silver. Gold backs and gold collets are more typical of very late eighteenth- or early nineteenth-century jewellery. Sometimes, gold was used as a minor decorative element, as will be seen, but silver remained the dominant metal, except in the case of rings, many of which had gold shanks and a gold-backed head, and also of snap-tongue fastenings, which were often made of gold for extra strength.

English paste jewellery of this period was rarely assayed. The presence of figures or words denoting fineness of silver (such as 800, 900, 925, 930, STERLING) or an English hall-mark, usually points to a later dating. French, Spanish and Portuguese pieces may bear the assay-mark of Paris or other towns, but the impression is often obscure and difficult to decipher.

Casts

There is a widely held misconception that all antique jewellery was made entirely by hand and that casting is a recent technique of mass-production. In fact, many pieces were cast in the eighteenth century, and some still bear the typical 'sand-marks' of the casting process. These are tiny spherical depressions in the metal which were once occupied by the grains of sand forming the mould. The reverse of a 'sand-mark' (in the shape of a tiny raised sphere of metal) would certainly indicate a modern origin, for it arises from the new method of investment casting (derived from the lost-wax process); but the front of such a jewel would probably indicate its newness also. Casting by the investment process imparts a spongy porous texture to the surface of the metal, which for economy's sake is seldom polished smooth.

Some people also believe that in the eighteenth century only one of a pattern was made and that duplication is found solely in modern mass-production; yet there are often a great many antique pieces all of which are so similar that it is likely they originated in the same mould.

Fittings

This is the term applied to the mechanical parts of a piece of jewellery that enable it to

be worn: pins, catches and joints of brooches, screws and wires of earrings, tongues of snaps, etc. Not too much attention should be paid to these accessories. The presence of a modern fitting does not necessarily invalidate the antiquity of a piece and it would be a fairly easy matter to make a fitting of an eighteenth-century type.

Jewellery is made to be worn and in the wearing it is inevitable that the moving parts of fittings, which are usually of soft metal, should rub against one another causing friction and deterioration. It is unreasonable to expect original fittings on a piece of antique jewellery which has been worn for many years; they may well have been renewed not once but many times, and it is sensible to use the most efficient and secure type. There is, however, one significant feature to look for. When a new catch is put on an antique paste brooch it cannot be 'hard-soldered' as the heat would ruin the stones. To avoid damage, the catch is hard-soldered to a small metal plate which is then 'soft-soldered' to the brooch. This involves a smaller risk as a high temperature is not needed. The presence of a small plate under a modern safety-catch therefore does not indicate anything, but its absence proves that the brooch is not antique.

Although this warning may sound superfluous, there is a reason for making it. In the past fifty years, at least one workshop has made paste jewellery in the eighteenth-century style, not as a counterfeit product, but as a frankly-declared attempt at recapturing some of the period's most pleasing effects. Since no claim to antiquity was made, there was no point in supplying anything other than the most efficient type of modern safety-catch; it was almost a gesture of denial of fraudulent intent. Many of these objects approximating quite closely to eighteenth-century pieces, are circulating widely in the trade as 'antique'. The presence of a modern safety-catch directly soldered on to one of these brooches is a sure sign of its modernity.

An old type of catch usually takes the form of a letter 'C' and has no moving parts. A modern safety-catch contains a rotating sleeve which closes the gap and secures the pin. Pins on antique brooches often seem unduly long, protruding about a quarter of an inch beyond the limits of the brooch. This was to provide an elementary but efficient safety device because an extra fold of material on the protruding tip of the pin prevented it coming out of the catch.

Screws were never used on antique earrings; the usual fitting was an elaborate wire, hinged at the lower end, with a slightly upturned free end. Sometimes, a piece in the form of a figure of eight was attached to the hinged wire so that it could be handled more easily.

Antique snap-tongues are of very thin gold and in one piece. Reproductions are usually thicker and wedge-shaped, but here again no inference should be drawn from the presence or absence of these fittings, as they are easy to change or simulate.

A characteristic feature of seventeenth- and early eighteenth-century necklaces is the presence of two parallel tubes on the back through which cords could be threaded, joining the sections together. Sometimes there are no connections at all, each section being sewn into place on a velvet ribbon.

Weight

Antique jewellery was often made by piercing one thin silver plate to receive the stones and then closing the back with another thin piece of metal. Such a structure is hollow and consequently light in weight. For economy in labour a reproduction is usually cast in one piece, which is solid and therefore heavy. The difference in weight is striking and it is a valuable aid in the assessment of age. Often this tendency to lightness was carried to excess, and the backs of many antique pieces are so thin that they have suffered considerable indentation. This is particularly true of some Spanish jewellery. Assiduous counterfeiters have sometimes also made one or more spherical indentations on the backs, but their regularity and symmetry proclaim their artificiality. The dents in the backs of antique pieces are haphazard and irregular.

Connections

The metal wires or loops connecting the sections of antique necklaces, pendants and drop-earrings are often of a distinctive shape. Where a drop or pendant is of a considerable weight, the upper part from which it hangs may be provided with a large square-shaped connection carved out of the solid silver mount. The swinging drop will be suspended from it by means of a long oblong-sectioned 'tab' with a pointed end. It is quite customary for the drop on a pendant or large earring to be detachable, and the long connecting loops then give added security (plate 20).

In antique collet necklaces or bracelets, which are of no great weight, the connecting rings may be small, or even almost invisible. This greatly improves their appearance, as the sections are drawn close together and unsightly gaps are avoided (plate 4).

A good antique necklace has rarely more than two connecting rings between each section. These may be in the form of a letter C (or a half-ring) occupying less space than circular rings. The connections of reproductions are usually large, crude, circular rings, cheaply produced by coiling wire into a spiral and making a 'saw-cut' along the length of the coil. They are then soldered to the structure. The individual sections of a reproduction may be deliberately spaced far apart, so that fewer are needed and consequently the cost is lower. Any artifice which achieves this separation, e.g. three or more connecting rings placed between adjacent sections, is evidence of reproduction.

A good eighteenth-century necklace was almost always designed to provide complete and continuous decoration along its entire length, and required no additions of simple chain. The presence of simple chain for the obvious purpose of economizing in ornament usually indicates a later date or denotes that only fragments of an original antique necklace are present. Ornamental gold chain which is an essential part in the design is a different matter, and is seen in some necklaces of the period, but rarely in paste jewellery.

Many antique necklaces were intended as frontal ornaments only; the backs were simply lengths of ribbon. Such pieces have large loops at each end to which the ribbon is sewn. This arrangement and fitting are frequently seen in reproductions (plate D).

The 'knife-wire' connection, prominent in nineteenth-century jewellery, is never seen in jewellery of the eighteenth century. It is difficult to describe in words and can be more easily understood from the illustration shown in fig. 16 on page 66.

Backs

Anyone who is used to handling antique jewellery instinctively looks at the back even before making a careful scrutiny of the front. When an antique design is pierced, as in a floral pattern, every detail is usually carefully carved and well-finished at the back (plate 20). Solid unbroken designs such as clusters and buttons have mainly smooth, convex, unornamented backs. Reproductions tend to have flat or concave backs, often engraved and ornamented. Engraving, embossed patterns, fluting and other decorations are rarely seen on the backs of eighteenth-century jewellery. Some antique paste rings of the 'half-hoop' type are exceptions, showing fluting on the back of the centre collet.

Sometimes the back of a reproduction will reveal pin-pricks of damage where the setter's drill has penetrated too deeply. These blemishes, taking the form of tiny raised cones of metal or even small holes, are never found on true antique paste jewellery.

Collets

A collet is a cup-shaped receptacle in which a stone is set. There is often a marked difference between the collets of a good eighteenth-century necklace and those of a reproduction. Antique collets are usually deep, straight-sided and flat-based, so that the necklace rests easily on the neck without tending to overturn. Sometimes they have slightly rounded backs and curved walls marked with an encircling groove, which obscures the ugly join where the top and bottom parts are soldered together.

Later collets are thin-walled, curved and shallow, which makes them easy to mass-produce by stamping them in one piece from a thin metal sheet. This holds true not only for paste but also for some real-stone necklaces, particularly garnet ones. Many of these, falsely claimed to be antique, have most of the features of nineteenth-century production.

Graduation

Necklaces are mainly of two types: uniform in size all the way round, and graduated. When an antique necklace is graduated, it is normally made to form a smooth unbroken line from the smallest ornament at the back to the largest in front, each section differing slightly from its neighbour. This is a significant point to look for as a reproduction is usually composed of sections made only in a few standardized sizes. Perhaps five or so identical units may occupy the front and central position, flanked on either side by, say, five of uniform smaller size, and so on.

Delicate graduation is a problem not of technique but of cost, and it may therefore

É. Bow brooch set with white and opaline pastes.
English or French, probably late 18th or early 19th century.

F. Parure of necklace, two bracelets, earrings and brooch in gold
set with aquamarine colour pastes.
English, early 19th century.

appear in an expensively-made reproduction as well as antique necklace. Abrupt changes usually suggest reproductions.

Ornamental Gold

Although typical eighteenth-century paste jewellery was made mainly in silver, small pieces of gold may be used for decoration on the front; these often take the form of narrow engraved strips or tiny beads. Frequently the finest paste buckles and buttons are attractively bordered by these bands (plates 16 and 17). Gold beads were sometimes used in the same way, particularly in Spanish and Portuguese jewellery. Such beads should be scrutinized closely. If they are uniform in size and shape, they may have originated from modern gold-bead wire and the article could be a reproduction. In an antique they tend to show slight variations, suggesting that they were individually made (plates 10 and 13).

Settings

There are several methods of setting stones in jewellery. The setting most characteristic of the eighteenth century is known as the 'cut-down' setting, which involves working up the metal round the edge of the stone to provide a smooth retaining wall and airtight enclosure. At intervals the wall is reinforced by narrow vertical ridges of metal to give greater security, and for ornamental effect.

Air-tightness was of paramount importance. All stones in antique paste jewellery had a thin piece of bright metal sheet placed at the back as a foil. If this foil corrodes through exposure to the atmosphere, the appearance of the stone is ruined. Cut-down setting is a constant feature of nearly all eighteenth-century jewellery. Although it has been extensively used in reproductions, later workmanship rarely reaches eighteenth-century standards.

In the best pieces the metal is worked up to give a wall of mirror-like smoothness which seems to merge almost imperceptibly into the stone. The effect can be appreciated if the edge of the stone is rubbed with a finger. This refinement of finish has one disadvantage, for if a setting is once disturbed by the removal of a stone, there may not be enough metal left to give a secure hold for a replacement. It may therefore be hazardous to try to substitute or restore a stone in this type of antique setting.

Unlike most real stones, paste is so soft that setting it is a risky process. Metal tools are used which are slightly softer than most gems, but harder than glass. When the setter is working up the silver wall around a stone, the soft glass may well suffer abrasion that a harder gem would escape. It is difficult to see how the eighteenth-century setter of paste avoided this damage. He probably used metal tools in the early stages and then laboriously completed his task of imparting a perfect finish with soft non-metallic implements which would not damage the glass stone. Makers of reproductions could not possibly adopt

this highly-skilled, time-consuming and expensive technique with any prospect of commercial success.

The perfect cut-down setting of paste doing no damage to the stone calls for an even higher degree of skill than it does in diamond-setting. Undue pressure is bound to injure the soft glass, but the hardness of diamond protects it from abrasions from any tool used in setting. An example of cut-down setting in its most refined form is seen in plate 5. A coarser and later type is shown in plate 38.

Careful examination of the setting edge is therefore a vital guide to the age of a piece. As we have seen, the antique is characterized by mirror-like smoothness of metal and the closest contact between stone and metal with minimal abrasion of the paste, the edge of which is completely covered by the setting. The paste reproduction will tend to show roughnesses in the metallic setting (which can be felt as well as seen), and gaps between stone and metal, with varying degrees of abrasion on the paste and partial failure to cover the edge of the stone. White topaz and crystal, both harder than steel, are unlikely to show this abrasion however poorly set, but reproductions with these stones can probably still be detected by roughness and crudity in the metallic setting (plate 42).

In later years, stones were secured in open 'claw type' settings known as 'coronets'. These never appear in good antique jewellery. The presence of only one of them is enough to disprove an eighteenth-century origin (fig. 8).

Shaped Stones

The presence of 'shaped stones' is one of the hall-marks of antique paste. We have already referred to the eighteenth-century jeweller's ideal of making his ornament seem an unbroken expanse of gems. This is one field in which perhaps paste has advantages over the diamond, for it can be cut to fill any required space completely. As we have seen, diamonds are normally cut only in round, cushion or oblong shapes which cannot fit precisely against each other. Though it would be technically possible to cut diamonds in unconventional shapes, the cost would be prohibitive.

As if to emphasize this 'superiority' of paste over diamonds, the best antique paste pieces may contain no round stones, their place being taken by the variety of shapes—triangles, squares, cushions, hexagons, octagons, etc.—all fitting closely together. The greater the variety of these sizes and shapes the more desirable the article, and the most prized is the one where each stone has been cut individually to fit the mount (plates 5 and 11). The Spanish and, more particularly, the Portuguese adopted this style and process for much of their coloured real-stone jewellery (topaz, amethyst and chrysoberyl) with superb effects best seen in the chrysoberyl work of the eighteenth century (plate 13). So difficult is this close-setting to copy that it can be legitimately described as a lost art.

Naturally attempts have been made to simulate this coveted jewellery, but usually reproductions are easy to detect. The eighteenth-century piece contains a large number of stones of different sizes and shapes with few gaps between stone and setting because

most of the pastes were specially cut to fill their allotted space. For the same reason, there are slight variations in facetting from stone to stone. In reproductions there will only be a few different sizes and shapes, gaps will show between one stone and another and the intervening metal will be thicker and more obvious. Facetting will be completely uniform.

Sometimes the maker of reproductions crudely attempted to 'shape' a conventional stone by filing a round or square paste; however, this can be detected by the rough thickened edge which gives a 'ground glass' effect and protrudes above the setting. Extensive filing means that the table facet may no longer be symmetrically placed in relation to the other facets.

This 'shaped-stone' type of antique paste jewellery remains the most prized and sought after, but it was not the only style made. Many pieces such as miniature-pendants, eternity rings, cluster rings, narrow flexible earrings and necklaces, demanded uniformly small, round pastes. The choice of a shape of stone was dictated by its suitability for the design.

Foiling

Before the early eighteenth century all stones used in jewellery, including diamonds, were closed in at the back and foiled. This means that the cavity in which a stone was set was lined with a thin piece of highly-polished metal sheet, either silver or coloured, which acted as a reflector. The appearance of all pastes, coloured or uncoloured, crystals (quartzes), topazes and many other gems, is greatly improved by foiling. Colourless stones are made more brilliant, pale ones are deepened in colour, and dull ones become lustrous.

The importance of foil in antique jewellery is seldom realized. Some jewels owe their attraction as much to the foil as to the stone. Eighteenth-century silver and flat garnet jewellery is valued for its beautiful brilliant red colour, but if a stone is removed it is seen to be a dull uninteresting purple. It is only the underlying light-rose coloured foil that transforms this unattractive tint into the vivid red characteristic of the style. As might be expected, the Portuguese were experts in this technique. Using colourless or pale coloured topaz, they produced a whole range of beautiful colours from a brilliant sherry to an attractive deep red.

Eighteenth-century paste was always foiled and its fine appearance is vitally dependent on the condition of the underlying foil. As I have mentioned, perfection of setting usually ensured an airtight enclosure which excluded contamination from the atmosphere. Foil is made of silver or copper, both of which are easily tarnished or corroded. When this happens the stone appears dull and cloudy, and pastes which were originally colourless become unpleasantly yellowed. It is often said that after two hundred years this deterioration is only to be expected. Even so, this excuse must be rejected. Paste jewellery should be as brilliant now as it was on the day it was made. The most casual examination of the magnificent specimens in the Victoria and Albert Museum will confirm this claim.

Deterioration is evidence of either faulty setting or unskilful repairs (or alterations) in the process of which too much heat has been applied. Occasionally the foil will tarnish very slightly imparting an attractive bronze glint, but it should be no more than a transient gleam, leaving the transparency and colour of the stone unimpaired.

Unobtrusiveness is the most characteristic feature of eighteenth-century foil. It is rarely visible under the stone. One is aware of its effect but not of its presence. Clearly obvious foil that is crumpled or creased is an indication that the piece is a reproduction.

Black Spot

If a fine piece of eighteenth-century paste is examined closely, a black spot will be seen at the base of nearly every stone. It was the invariable custom for the setter to apply a pitch-like paint to the culet (the tiny base facet). The spot also appears in many early diamond jewels and pale semi-precious ones for reasons which are not obvious. Antique pastes were always provided with a culet but later stones were left with pointed ends and therefore do not show a black spot. As is usual with these tests, the presence or absence of a black spot does not prove or disprove antiquity, but it provides strong evidence. The spot might have disintegrated and vanished with age or it could be made to appear on a modern stone if the tip were filed away to create a tiny base facet and black paint were applied to this. The culet and table facet are of course parallel, giving the transparent effect of a plain glass slab through which the interior of the collet might be visible. Possibly the black spot was applied to avoid this. Most of the illustrations of eighteenth-century pieces show the black spot.

Compatibility

Finally, there is a test of limited use, which requires some experience of antique jewellery. Certain patterns were always set with stones of a definite type or colour. For example, in late eighteenth- and early nineteenth-century Flemish jewellery, rose-diamonds were invariably used. If this style of jewellery were set with pastes it would obviously be a reproduction (plate 44). Similarly, some Iberian patterns were always set with certain semi-precious gems, and if a piece is seen with unusual stones (e.g. blue pastes), its antiquity should be in doubt.

Occasionally, even after all these tests have been applied, some uncertainty as to date and provenance may remain. The remarkable opaline paste brooch in plate E may not have the outline or the 'impact' of the normal eighteenth-century bow, but most of the technical details are of that period. The shaped white pastes are magnificently graduated and set, and most of them display the black spot at the back. There are no round stones

and gold beads are used as decoration. The opalines show an extraordinary variation in size and shape. Nearly every stone in this brooch differs from its neighbour and must have been specially cut into the mount. It would be very unusual to find all these features in a post eighteenth-century jewel.

Before leaving the eighteenth century, reference should be made to plate A. Here, there is no pretence of 'genuineness'. The white stones are obviously no substitute for diamonds; the colours of the green stones and opalines are not those of normal emeralds and opals. These pastes are cut into shapes and used in a way that is rarely, if ever, seen in precious-stone jewellery. The designer was completely free to treat every detail as he wished, a paste could be specially cut into any form required. The shapes are informal and there is no place for the conventional, glittering, round 'brilliant-cut' diamond. Admittedly, the gemmological properties of brilliance, fire and normal coloration have been deliberately sacrificed; but still the effects obtained are unique to paste. The entrancing design and colour-arrangement confer on this rare suite an exceptional beauty.

5. Nineteenth Century

NINETEENTH-CENTURY paste jewellery can be divided into two periods: before 1830 and after 1830. During the first period, eighteenth-century influences gradually diminished. After 1830, the history of paste jewellery becomes identical with that of diamonds.

The nineteenth century saw a decline in standards of jewellery manufacture. There seem to have been three main reasons for this. First, the French revolution deprived Europe of the artistic leadership of France, where for a time the only ornaments worn were emblems of Equality and Republicanism, such as miniature guillotines and medallions fashioned from the stones of the Bastille. Second, the age of specialization had arrived. The beauty of eighteenth-century jewellery was partly due to its being made by one pair of hands. In the nineteenth century, jewellery-making was usually separated into the two main (and often unconsciously opposed) processes of mounting and setting. The mounter would fashion the metal, frequently to the pattern of an independent designer, and his interest in it would then cease. The setter would receive a mount which he had neither designed nor made, into which he had simply to fix the stones provided. Third, mechanical methods replaced the laborious individual work of the craftsman. More generalized use of casting, stamping and other mechanical aids provided the manufacturer with standardized units requiring the minimum of hand-work.

The essential difference between the best eighteenth- and nineteenth-century paste was one of attitude. In the eighteenth century, paste was simply regarded as a distinctive type of jewellery with a technique and an effect peculiarly its own. In the nineteenth century this view was gradually abandoned and paste was made primarily to simulate the diamond and other valuable stones.

It is often difficult to speak precisely of nineteenth-century paste jewellery; for much of it could have been made at any time between 1830 and 1900. National characteristics tended to die out in the second quarter of the century; and techniques and fashions became uniform, often making it impossible to ascribe a provenance to a piece. Certainly, the distinctive features of eighteenth-century Iberian jewellery disappeared early in the nineteenth century; while English and French work approached a general sameness which makes it difficult to differentiate between them.

In the first half of the nineteenth century leadership in the world of jewellery fluctuated between France and England. Several French jewellers came to London to study the English style and new methods of production in quantity. But around 1850, Paris firmly

FIG. 8: Design for a spray brooch.
Second half of 19th century.

The leaves and flowers are naturalistic. The stems of silver wire are narrow and not set with stones so as to appear more lifelike. Note the claw-set single stones representing buds. This type of coronet setting is never seen in 18th-century jewellery.

FIG. 9: Design for a 'bouquet' of flowers of the field.
Second half of 19th century.

It forms two brooches.

regained artistic leadership, strengthened by the emergence of a brilliant new school of designers, among whom Massin was pre-eminent. At the Great Exhibition of 1851 French jewellers gained sixty per cent of the prizes; England won only twenty-seven per cent.

Oscar Massin (born 1829) was perhaps the most gifted designer and craftsman in the whole history of French jewellery. His influence on mid-nineteenth-century style and technique was profound and lasting. Exceptionally, he was expert in designing, mounting, polishing, setting, engraving and 'finishing'; with equal facility he could employ every process required to bring a jewel to the showcase. His chief claim to fame rests on his elegant and above all naturalistic sprays and other objects with a similar grace that characterize mid-nineteenth-century French jewellery. Massin's innovations and methods will be referred to again when sprays are discussed.

It is interesting that in 1856, at the height of his international fame, he came to London to study English jewellery manufacture, which at that time had a great reputation. Vever notes sardonically that it was elegant but heavy, perfectly finished but still in the 'style of Queen Elizabeth'.[1] His comments are given below in the original so that the typical French satirical flavour is not lost:

'Massin se rendit à Londres pour étudier le travail des joailliers Anglais, dont la fabrication était réputée pour être très soignée, mais très lourde. Ils executaient alors des pièces de joaillerie parfaitement finies, dans le style de la reine Elizabeth. Leur succès était tel que le snobisme, ou, pour parler le langage de l'époque le "dandysme" aidant, un grand nombre de clients Parisiens faisaient fabriquer leurs bijoux de l'autre côté du détroit. Massin resta un an et demi à Londres . . .'

One of the first major changes in the nineteenth century was the adoption of 'open-setting'. Since the late eighteenth century, jewellers had realized the optical efficiency of the 'brilliant-cut' diamond; it alone could by itself return virtually all the light which fell on it. Unlike all other colourless stones, it required no underlying reflecting foil with its accompanying airtight setting. It was not long before all brilliant-cut diamonds were set *à jour* (with open backs) and were given the minimum amount of setting consistent with security. Paste manufacturers, now completely dominated by the diamond technique, followed suit, but only with partial success.

Theoretically, unfoiled colourless paste could be made to present a brilliant fiery appearance because, by adding certain rare oxides to it, the refractive-index and dispersion could be elevated to exceed those of many gemstones, but the result was nearly always disappointing. This probably is due to the softness of the glass and the difficulty of obtaining a fine polish. With coloured paste things were different, because brilliance was not a prime requirement. An unfoiled coloured paste may pass, but it will be greatly improved by foiling, especially if it is of a pale colour.

No special date is associated with nineteenth-century open-set paste. It was made on a varying scale throughout the period. Some of the most attractive examples are those of

[1] *Bijouterie Française au XIX Siècle.*

FIG. 10: Designs for a spray brooch and necklace.
Second half of 19th century.

Note the exclusive use of round stones and visible areas of metal around them.

FIG. 11: Design for a tiara. Second half of 19th century.

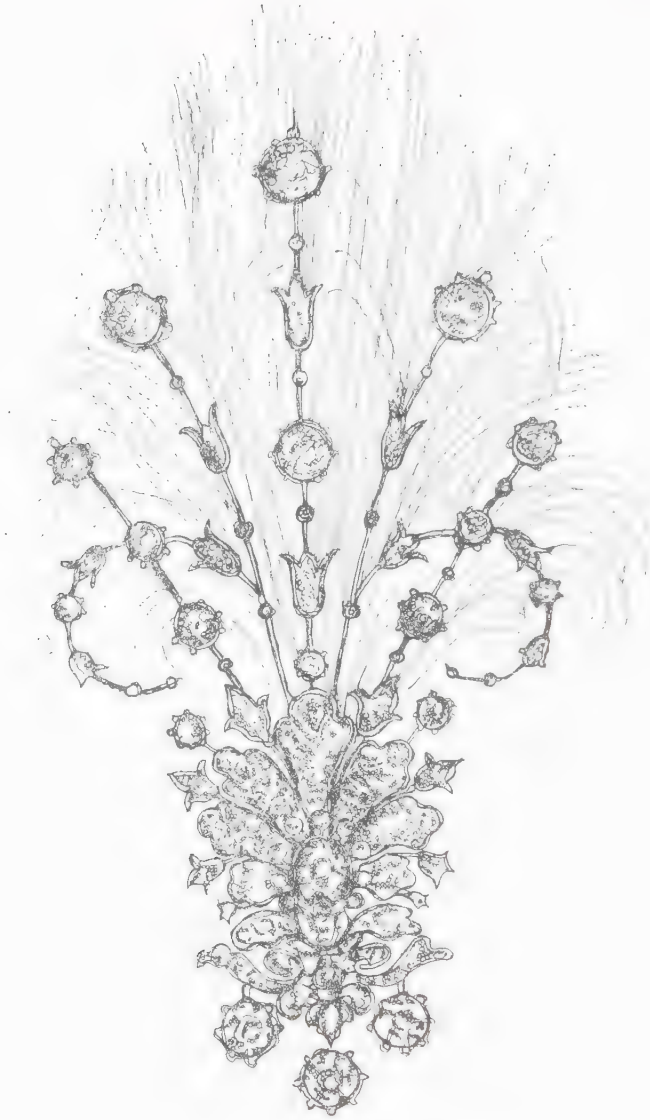


FIG. 12: Design for an aigrette.
Second half of 19th century.

The wires supporting the stones and leaves in the upper part are mobile, so that they tremble with every movement.

French origin in the *pampille* style (*circa* 1850). They are often in the form of brooch-pendants and consist of a floral top from which descend cascades of slender, tapering drops of unequal length. Sometimes they are embellished with leaves of green enamel. They are very graceful, very characteristic of the period and always open-set with cushion-shaped pastes. This particular shape of stone is often seen in designs of the period and its appearance seems to suffer less from lack of foil than that of the more usual round pastes (plates 38, 39).

Open-setting tends to impair the strength and rigidity of a piece of jewellery. To rectify this structural weakness, late eighteenth- and early nineteenth-century jewellery was sometimes backed with a thin sheet of gold. Paste-makers, ever anxious to adopt diamond techniques, were not slow to follow, and many silver and paste pieces were backed with gold even if they were not open-set. Structurally, this was unnecessary, but it did impart a rich effect and many of these pieces were magnificently made and impeccably finished. This gold-backed paste work is more characteristic of the nineteenth century than the eighteenth.

By the early nineteenth century, shaped stones had vanished from paste jewellery, their place being taken by the formal rounds, ovals, and so on, that were usually small in size. One effect of using smaller stones was to reduce the thickness of metal required and, on the whole, nineteenth-century jewellery is thinner than eighteenth. The cut-down setting, an unchanging feature in the best antique work, gave way to the much easier 'coronet' claw and *mille-grain* settings, neither of which is seen in eighteenth-century paste. *Mille-grain* setting merely involves placing the stone in a thin rim of silver which is indented at a number of places to secure it. Both these newer types of setting only demand a small amount of skill.

The nineteenth century was essentially the period of the 'parure', or suite consisting of necklace, two bracelets, drop earrings, and a brooch or pendant that was often composed of coloured stones set in single gold collets joined flexibly together (plate F).

Until about 1830, these suites might exhibit the eighteenth-century characteristic of massive, deep, straight-sided, flat-based collets with beautiful cut-down settings. As the century progressed, however, the collets became thin-walled and curved, they could easily be stamped, and they required the minimum skill in setting. Often they were cast already decorated with an imitation cut-down setting which was there for ornament only. The stone was secured by pressing the thin metal lightly over the edge, and part of this sometimes remained exposed: clear evidence of poor workmanship.

Delicate and consistent graduation gave way to abrupt breaks of line and attempts were made to reduce costs by using fewer collets. As we have seen, this was sometimes done be enlarging the connecting rings and introducing lengths of simple chain between collets. It is impossible to date this work with accuracy; all that can be said is that standards deteriorated progressively throughout the century.

One feature of Victorian jewellery is *cannetille* work, consisting of gold units of coiled-wire pyramids, rosettes, beads, etc., all produced in quantities and assembled in

FIG. 13: Designs for a narcissus brooch and necklace.
Second half of 19th century.
The front part of the necklace can be detached and worn as a diadem.

FIG. 14: Design for a tiara. Second half of 19th century.
It can be separated into several brooches. This 'wild rose' design, typical of French jewellery of the period, was introduced by Massin. It was the prototype of countless later sprays.

conjunction with coloured stones. A peculiarity of this work is the poverty of the setting in relation to the mounting. Most Victorian *cannetille* real-stone jewellery is intricately and expensively mounted, but the settings are so elementary that the stones—perhaps valuable emeralds—can easily be removed from their settings with a pen-knife or even a fingernail. The eighteenth-century cut-down setting was so efficient that it is usually impossible to remove a stone safely except by sawing through the metal.

The gold and red paste suite illustrated in plate G is outstanding, even for the collection in the Victoria and Albert Museum where the rare and the beautiful lie together in profusion. It is part of the Cory Bequest, that astonishing display in which diamond sprays over nine inches long seem just commonplace items. The suite is elaborately mounted in gold Victorian *cannetille* in a way usually associated with the most valuable

gems, but here the stones are only red paste and of no special quality. As is common with this work, the setting is poor in comparison with the costly mounting. It is fascinating to speculate on the origins of this humble, unexpected intruder into a collection of such opulence and splendour.

Much coloured paste was mounted in a coarser *cannetille* style in imitation gold, and the work was sometimes of the crudest type and often stamped. Such pieces are often erroneously called 'Pinchbeck'. It has become the custom in the trade to describe all imitation gold as Pinchbeck automatically. Christopher Pinchbeck, born in the seventeenth century, was a watchmaker who gave his name to a special alloy of copper and zinc resembling 'two-colour' gold, but it was mainly used in early eighteenth-century watch-cases and chatelaines, and very few authentic Pinchbeck pieces survive. The French used imitation gold extensively, calling it *similor*, *tombac*, *l'or de Mannheim*, *métal Leblanc*, *Pinchbec* and more particularly *Pomponne*. This is the name given to the alloy of copper coated with an extremely thin layer of gold that was first made around 1785 at the Hôtel Pomponne, Rue la Verrerie, Paris.[1]

Another feature of Victorian jewellery is the use of standardized clusters, collets and leaves, all cheaply produced by stamping or casting. With a few units combined in various ways, an infinite number of designs could be made. These patterns are characteristic of the last half of the century, and it is impossible to assign a precise date to all such pieces; they could have been made any time between 1850 and 1900.

Around 1840, mirror-makers discovered that glass could be 'silvered' by immersion in suitable solutions, and from then on most colourless pastes were permanently foiled with an adherent film of silver at the back. If, therefore, an article contains permanently foiled pastes it must have been made after 1840, or else it has been re-set with new pastes.

There are some exceptions to the almost universal nineteenth-century practice of making paste jewellery as much like diamonds as possible. In the first quarter of the century Normandy developed a strongly characteristic style of peasant jewellery; it was usually in the shape of crosses and the 'Saint Esprit' ornament, which has a floral or bow-shaped upper part from which hangs a dove, often bearing a small spray in its beak (plate 35). The floral and spray parts were sometimes set with coloured pastes and the bird with white pastes or crystals. Some are in gold, others in silver. They are often very large and bear a Paris mark of the period. Sometimes the mark is a provincial one, though. They have been very extensively copied, and detecting a reproduction is largely a matter of experience. Pieces in gold are almost certainly old. Reproductions are normally smaller and set with uniformly round pastes. The originals often have rose-cut or cushion-shaped pastes, large ones may show the 'black spot', and if the stones are crystal, they are almost certainly antique. The stylized dove common to all Saint Esprit pendants also appears in gold in the local jewellery of South-West France and Catalonia. Other typical Normandy pieces are the cross-like gold-paste ornament shown in plate 34 and the Normandy Cross, an elaborate and very flat pendant of intricately carved silver with large round

[1] Henri Bouilhét, *L'Orfèvrerie Française au XVIII et XIX Siècles*, H. Laurens, Paris, 1908.

G. Gold and red paste suite. Length of necklace about 30 ins.
English, mid-19th century.

FIG. 15: Design for a bow brooch.
Second half of 19th century.
It is modelled on a piece which was once among the French Crown Jewels.

pastes set in raised collets (plate 33). They are very fragile and do not wear well, and so the collector should look out for damaged pieces.

We have already considered the large asymmetrical paste stud-earrings shown in plate 36. This same pattern appears in larger quantities in an inferior type of French paste made in imitation gold, usually *Pomponne* (copper gilt), the dog-toothed settings being poor and primitive. It has an early nineteenth-century origin, and it may be assumed that such pieces were made as cheap copies of the highly favoured silver pieces of the previous century. To match these pieces, necklaces were made in the same imitation gold in a similar style, the large, thin, curved-back, single-stone collets being often joined by a double length of simple metal chain, all very typical of nineteenth-century work.

Apart from these and possibly a few other exceptions, nineteenth-century paste closely follows the diamond jewellery of the period in style and technique, though it is on

FIG. 16: Designs for a spray (Japanese flowers) and necklace. Second half of 19th century.

The central part of the necklace in the front can be detached and worn as a brooch. The silver 'knife-wires' connecting the stones at the back are never seen in 18th-century jewellery.

a less elaborate scale. The diamond designs are too numerous to specify; they can best be studied in Vever's monumental *Bijouterie Française au XIX Siècle*, and with little doubt they were widely copied in paste.

The second quarter of the nineteenth century produced little of elegance in France, but by the middle of the century the dreary régimes of Louis XVIII and Louis Philippe had been replaced by the brilliant court of the Second Empire under Napoleon III and his beautiful Empress Eugénie, who dominated Parisian fashion. Portraits of L'Impératrice, aristocratic and elegant, appear on page after page of Vever. A description of her wedding dress 'starred with gems and scintillating with diamonds' occupies a whole page.

The Empress lived up to the demands of the hour from the time she captivated the Paris crowds as she emerged on to the steps of Notre-Dame after her wedding, 'fairer and more dazzling than the sun', right up to her dramatic appearance in Winterhalter's graceful portrait in 1855.[1] Here, the Empress is seated among the ladies of her court; and the great names of the French aristocracy crowd into the picture, everyone wearing jewellery—except Eugénie. She wears none, resplendent in her unadorned beauty. This picture is a splendid guide to the fashion of the time, and shows the veritable passion for bangles (sometimes several were worn on each arm) and the complete absence of earrings. Of Eugénie's many jewels that have passed into history, perhaps the best-known (and no doubt the prototype of countless reproductions) is the diamond and emerald trefoil, the first jewel offered by the new Emperor to his fiancée. It is said that during a hunt in the forest of Compiègne she remained for a long time entranced before a clover-leaf, glistening in the dew. This formed the pattern of the brooch, and she is seen wearing it in her miniature by de Pommeyrac. Perhaps because she was Spanish, the Empress was very fond of emeralds, and they became the most fashionable gem-stones of the Second Empire.

Both the French and the English jewellery of the nineteenth century shows periodic departures from conventional design. The Romantic period (1837–1860) produced, among other things, F. D. Froment-Meurice in France and Augustus Pugin in England, both of whom designed jewellery in a Gothic architectural style. In the Aesthetic period (1885–1901), R. Lalique in France fostered the untraditional designs now known as 'art-nouveau'. Reversion to Renaissance and Gothic styles, with their emphasis on the carved figure, elevated 'metal-work' to its former position of primary importance in design. Stones became fewer and less significant. Paste is unsuited to this type of jewellery and is rarely seen in any of these 'break-away' movements.

Froment-Meurice's most famous work was his Gothic bracelet of 1842, representing episodes in the life of Saint Louis, a technical masterpiece, but hardly an article of feminine adornment. Besides, as Mr Clifford-Smith has remarked, 'Ladies have seldom a taste for archaeology'. Rightly or wrongly, they prefer the pseudo-diamond to the pseudo-Gothic.

[1] Vever, *Bijouterie Française au XIX Siècle*, vol. II, p. 97.

FIG. 17: Design for a feather brooch. Second half of 19th century. The three plumes can be worn separately as aigrettes and the knot as a brooch.

The lizards, snakes, tortoises, birds, bees, frogs and other petty banalities of the mid-Victorian era, however, were all produced in paste in large quantities but they tend to be more typical of the post-1860 period.

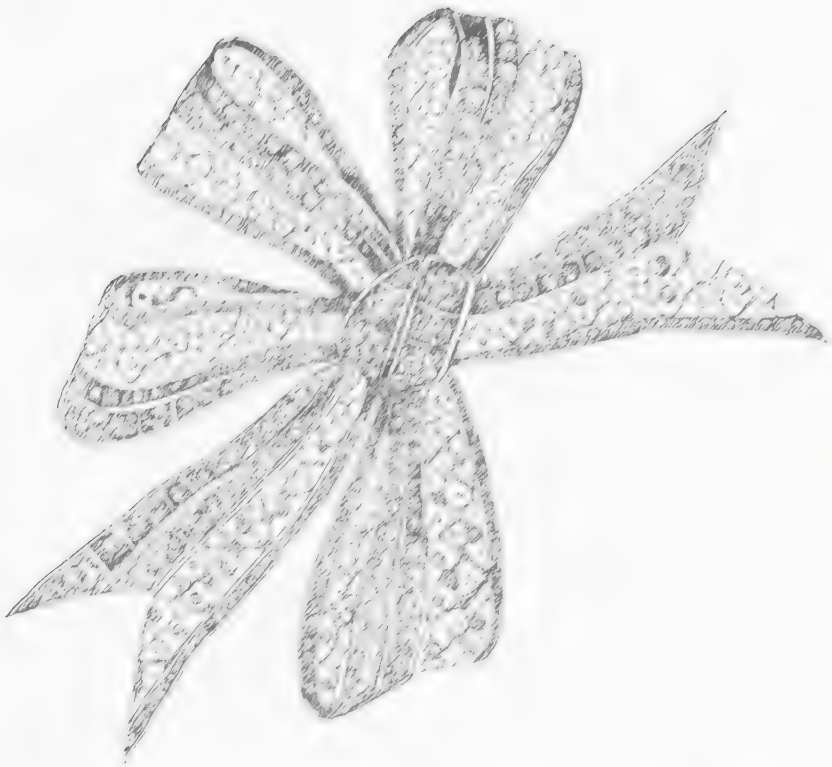


FIG. 18: Design for a 'ribbon of lace' brooch. Second half of 19th century. Separate fittings enable it to be worn as a brooch or hair-ornament.

Much mid-nineteenth-century jewellery shows considerable mechanical ingenuity. Sprays and tiaras can often be divided into several smaller items which can be worn separately. Flower-heads and wire stems may be mobile, giving a naturalistic 'trembling' effect at the slightest movement.

The green and white paste necklace, illustrated in plate H, shows most of the attractive features of nineteenth-century paste jewellery. Its technical mastery compels admiration. The setting is in the best 'diamond' tradition; white stones in silver, and green stones in gold. The graduation is impeccable, each cluster gaining slightly in size as the centre is approached. Connections are minimal, leaving no significant gaps between adjacent sections. It differs from eighteenth-century jewels in that it was probably designed to simulate its valuable counterpart in emeralds and diamonds. It thus became a contender in a contest it could not win, for the optical properties of the diamond are always superior to those of paste. The refractive-index of a diamond is 2·42 and its hardness is reckoned as 10; the approximate values for paste of this type would be 1·60 and 6 respectively, a handicap no amount of artistry or technical ingenuity could overcome.

Apart from the cost—prodigious in the case of this necklace—there is no reason why others of similar appearance and excellence should not have been made at any time during the last half of the nineteenth century. The techniques of 1850 and 1900 were similar; it was only in the cost of their application that differences arose.

Finally, a word about sprays. It is probably true to say that the ultimate aim of most collectors is the acquisition of a fine antique-paste spray (that is, one dating before about 1870). There are essentially two types: the eighteenth-century spray and the nineteenth-century spray.

The eighteenth-century paste spray is characterized by its 'stylization'. The brooch is obviously floral in character, but not in detail. The flowers, buds and leaves are flat, the stems are broad and set with stones, the curves in the leaves are not naturalistic, the clusters represent no known flower (plates 7, 13, 23, etc.). Nevertheless, it has a naïve charm, allied to immense technical skill.

The 'cornucopia', a favourite eighteenth-century French design, is invariably stylized. Essentially a basket of fruit ('horn of plenty'), it appears in flattened form and is quite lacking in natural relief. The same tendency is seen even in the diamond spray made by Duval at St Petersburg for Catherine the Great (circa 1760), and in the chrysoberyl spray shown in plate 136 of Joan Evan's *History of Jewellery, 1100–1870*.

'Photographic' accuracy of detail seemed to be neither appreciated nor desired. A brief glance at one of those miracles of achievement, an eighteenth-century French gold and diamond snuff-box, shows us that the jeweller of that period had attained the highest possible degree of skill. No jewellery process could have been beyond his powers. Had he wished to produce 'naturalistic' sprays, the ability would have been his, and he would have wrought them to perfection. His renunciation of exact naturalism must have been a matter of choice, not necessity.

Few sprays seem to have been made in the nineteenth century until about 1850, when the brilliant Massin started to design the historic pieces that became the prototypes of most that followed. His most famous of all, the briar rose, appeared in 1863 (fig. 14). Vever, speaking of Massin, says that he actually studied the forms and attachments of flowers and leaves, their structure and their 'Physionomie', and in this, above all, he was

an innovator. The sprays of Massin and those of later artists are marvels of naturalism and exactitude. Flowers and petals stand up in relief, leaves have natural convolutions, stems are rounded in thin metal to give them a more realistic appearance. These diamond sprays of the period are supreme examples of a refined technique (not necessarily the technique of great art) and they were copied on a less ambitious scale in paste. Unfortunately, there is nothing in these later sprays to indicate their years of origin. They might have been made any time during the second half of the century (fig. 8).

6. Gemmological Aspects

'It's only paste!' A cry of anguish and disillusionment that has echoed down the years, but not one of course that is likely to be uttered by the collector of old paste. What may be of interest to him is the possibility of the *reverse* situation: for sometimes a piece purchased as paste is unexpectedly revealed to be of real stones. For the sake of completeness, then, a few simple tests will be given here for help in differentiating between paste and real stones. For detailed information the reader is referred to three excellent textbooks on the subject:

(1) B. W. Anderson, *Gem Testing*, Heywood Books, London, 7th ed. 1964. A masterpiece of information and lucidity by the leading English expert.
(2) G. F. Herbert-Smith, *Gemstones*, Methuen, 10th ed. 1949. For those interested in the more theoretical aspects.
(3) Robert Webster, *Gems*, Butterworth, London, 1962. The most comprehensive book on the subject in the English language.

Gemstones can be classified as real, synthetic, composite and paste. Real gems (natural minerals) and pastes (a special form of glass) were the stones mainly used in antique jewellery. Synthetic stones are man-made, and exactly the same chemicals are used for them as constitute natural stones. Composite stones are stones in which two or more gem materials are joined together to give a better appearance or greater hardness. The 'doublets' used extensively in jewellery around 1900 were composed of a paste with a thin layer of garnet added to the table to make it harder. Synthetic and composite stones are mainly a product of the twentieth century and were not used in antique ornaments. Our tests will be confined to distinguishing between real stones and pastes in articles of antique jewellery. The definite identification of most gemstones usually requires the use of special instruments, but much helpful information can be obtained by using a simple lens with a magnification of around X8 (not exceeding X10).

First, the stone should be examined in a good light so that the reflections from a window or electric light are seen in the table facet. A diamond usually gives an entirely undistorted image because of the superlative polish it can take. Other gemstones generally give a fair image, but some distortion may occur with paste due to its softness and the difficulty of giving it a perfectly polished flat surface.

Next, the stone should be moved so that light plays on its side facets. Again, the adamantine lustre and high dispersion of the diamond are unmistakable. The other real

H. Necklace set with green and white pastes.
English, mid-19th century.

stones show a certain amount of hard glitter while most pastes display a typical 'vitreous' lustre. It is difficult to describe this phenomenon but a little practice with known specimens will illustrate the point quite well. The edges of paste are not as sharp as those of real stones and sometimes the facets have a slightly concave appearance (always absent from real stones) which can be quickly noticed.

One of the most easily applied and useful tests is that of 'conductivity'. If a stone is placed on the lips or tongue it will feel either very cold or warm, depending on whether it is real or paste. Care should be taken to make sure that the stone does not receive any artificial warmth through being handled, being placed near an electric light or being carried in a pocket. To make certain, the stone should remain away from any source of heat for a few minutes. It is also useful to have at hand known specimens of real stones and pastes for comparison. The 'icy' coldness of a real stone is usually unmistakable and, sensibly applied, this test is a very revealing one. Of course, the lips or tongue should not touch the metal setting round the stone as this would produce a misleading coldness.

The stone may now be examined systematically under a lens. Since it is so soft, paste will show signs of wear before the harder real stones. Abnormal abrasion will therefore suggest paste, though obviously a much-used real stone may show more wear than an unused paste one. To help one assess the evidence, other parts of the article should be examined for wear such as the connecting rings of necklaces, or the settings of rings, for their condition will also indicate how much a piece has been worn.

The setting edge of a paste nearly always shows abrasion where the steel tools of the setter have inadvertently marked the glass. Unless extreme care has been exercised, this damage is almost invariably present (perhaps only to a slight extent, however) because steel is slightly harder than glass. Usually it is only in the finest eighteenth-century pieces that such defects are absent. Most real stones, including crystal, are immune because they are harder than steel.

Paste sometimes exhibits conchoidal (shell-like) fracture, where it has been under stress. If fracture occurs in real stones, it tends to be angular, though some, notably amethysts, occasionally show conchoidal fracture like paste. Both real stones and antique pastes are generally provided with a culet to avoid fracture of a fragile pointed end. Later pastes were left pointed, as in the event of breakage they were easily and cheaply replaced.

The internal features furnish the best evidence, although considerable experience is required here. The lens should be held close to the eye and the stone should be viewed against a strong light with the table facet nearest the eye. Many real gems, with the notable exceptions of diamond, garnet, spinel and opal, are 'doubly refractive', the rear edges or some internal inclusions appearing doubled when viewed in this way. This is a difficult test and only produces definite results in certain conditions, but if double refraction is seen, the stone is certainly not paste. A similar effect can, however, be produced by the reflection from a foil. This is not in fact true double refraction but a kind of optical distortion.

Air bubbles are a certain indication that the stone is not real. In paste they take the form of tiny dark spheres or larger transparent circular cavities, or sometimes characteristic torpedo and ellipsoidal shapes (plate 45). Distribution is always random. The interior of a paste often reveals swirl marks and curved striae caused by the rapid cooling of the glass during manufacture. Air bubbles are not found in real stones, and inclusions, when visible, are usually angular, crystalline, or in the form of straight lines crossing one another at certain constant angles (plate 46). When inclusions are all in one place, it is very likely that the stone is real. Many stones have their own characteristic inclusions: e.g., amethysts often contain an unmistakable 'thumb-print' arrangement of curved lines; and aquamarines may show long parallel tube-like cavities.

The colour in a paste is uniformly distributed, but a real stone often exhibits 'zones' of darker and lighter tints. If these zones have straight-sided boundaries it is usually a sign of a real stone. This zoning of colour may be more obvious when the stone is viewed against a white surface like a piece of paper, or, better still, if it can be safely immersed in water in a white-walled porcelain dish. Immersion, of course, may only be attempted if the stone is 'open-set'; in no circumstances should a 'closed-in' stone be brought into contact with a liquid of any kind, as the underlying foil may be irretrievably damaged.

Most of the tests so far are only applicable to open-set stones; it is usually impossible to see far into one which is closed at the back. In such cases, the 'conductivity' test may provide the best evidence.

The 'hardness' test which follows has been left until last on purpose, because its use is to be deprecated except when every other method fails. In no circumstances should a file be used for this, as it inflicts too much damage. If essential, a steel needle or some other small, pointed steel implement may be used gently to explore the surface in the least conspicuous part, such as the back or side, mild pressure being applied. If the needle 'bites' on the surface, leaving a tiny area of 'ground glass' damage, the stone is probably paste. If it merely slides off the surface, the stone is probably real. Except in unusual cases, it is better to *avoid* this test, and submit the stone to expert examination by non-destructive instrumental methods.

The colourless stones most likely to be found in antique jewellery are diamonds, white topazes, crystals (quartz) and pastes. Less frequently, jargoons and white sapphires may be encountered. For comparison, I will summarize some of the properties of each.

A diamond is usually recognized by its exceptional brilliance and dispersion. So much light is reflected at the table that it is difficult to see into the stone, but images seen by reflection in the table facet are undistorted. The facet edges are sharp and there is usually no abrasion.

White topaz (aluminium fluo-hydroxy silicate) is quite brilliant but has poor dispersion. It is a hard stone and capable of taking a brilliant polish. The facet edges are likely to be sharp and reasonably free from abrasion.

Crystal (silicon-dioxide) has poor brilliance and dispersion. Low refractive-index results in high transparency, so that the culet can be seen with ease. This gives it a

characteristic vacant and lifeless appearance. It is softer than topaz but generally fairly free from abrasion.

Considerable confusion has existed in the past over white topaz and crystal because they are difficult to distinguish in antique jewellery except with the use of instruments, but they differ in crystal habit, chemical composition and physical properties. Some experienced gemmologists claim to be able to identify well-polished topazes by their characteristically 'slippery' feel.

Paste has (or should have) considerable brilliance and dispersion, though not approaching that of the diamond. The facet edges are rarely sharp and abrasion is usually present. Reflections in the table facet are likely to show distortion. Unlike diamond, topaz and crystal, all of which feel ice-cold to the lips, paste feels warm. It will thus be seen that though crystal has the advantage of being a real stone, slightly harder and more durable than paste, with the ability to take a sharper polish, paste has a livelier appearance resulting from its superior optical properties. The value of a good piece of antique jewellery tends to be the same whether it is set with crystal or paste.

White sapphires are rarely seen in antique Western European jewellery but they sometimes appear in Eastern jewellery. They are unattractive stones, rarely quite colourless and usually poorly cut by local lapidaries.

Jargoons are 'off-colour' white zircons and were extensively used in Eastern jewellery in a few constant and well-defined patterns. They are always rose-cut and usually have a greyish tint. The brilliant fiery-white zircons in modern jewellery have been 'heat-treated'. Theoretically, jargoons are promising stones to use as substitutes for diamonds as they have high refractive-index and dispersion but results have mostly been disappointing. Occasionally they appear in Western European antique jewellery, always rose-cut in small sizes; sometimes in combination with coloured pastes. Their appearance varies; at their best they fall between paste and diamonds, but often they are grey, cloudy and unlustrous. Normally the value of an antique jargoon piece is no greater, and perhaps less, than that of a comparable paste article.

If a stone is very slightly tinted it is likely to be real. Occasionally, for instance, eighteenth-century jewellery was set with aquamarines so slightly coloured that they could almost qualify for the description of 'colourless'.

The colours of antique pastes can range over the entire spectrum, but one important aspect should be borne in mind. In the finest period, the eighteenth century, they were made not as a substitute for valuable stones, but as something attractive in themselves. Thus, the magnificent deep 'green' colour of some fine antique pastes bears little relation to that of the normal emerald. It is extremely doubtful whether emeralds of comparable range, hue, lustre and clarity exist anywhere. If they did, their value would be beyond computation. Real emeralds of similar size are usually of a lighter tint, and less clear. And so modern paste reproductions of emeralds may be purposely 'clouded' by artificial inclusions of whitish powder to make them appear more natural.

The 'blue' often seen in antique jewellery bears little similarity to that of any

gemstone, and no red paste of any age is quite like the ruby in hue. The blue pastes in plate D, for example, are quite unlike sapphires.

Of all coloured antique pastes, aquamarine and light topaz-coloured pastes most resemble their natural counterparts. Special mention must be made here, too, of a rare type of antique paste which sometimes transcends all others for brilliance and lustre. It resembles very closely, and perhaps even outshines, the finest so-called Brazilian topazes. Its magnificent appearance probably depends on its having a high proportion of lead, and it has the softness associated with this. Such a piece is therefore liable to damage by abrasion, and suitable precautions should be taken.

The best advice that can be given to collectors not interested in gemmology is to obtain an indication whether a stone is paste or real from the foregoing tests. If the stone seems to be genuine, expert advice should be sought because most positive identifications require the use of instruments.

The colour of stones (paste and real) when set in antique jewellery is not always the same as their 'natural' colour, which in the eighteenth century especially was often much improved by the skilful use of foil. This matter was touched on in Chapter 4, but I will expand on it a little.

Some antique pieces may be set with colourless pastes or crystals which are so effectively foiled that they closely resemble amethysts or pink stones in appearance. Their true colour can frequently be ascertained by viewing them in a direction parallel to, and just below, the table, so that rays reflected from the foil are avoided.

Local jewellery of about 1800 from the Perpignan area in South-West France sometimes displays an attractive blend of orange and yellow. The stones used, which are known as 'oil and vinegar' stones, are yellow citrines (i.e. quartz) placed over a small central patch of orange-coloured foil.

Surprisingly, foil may be used not only to increase brilliancy and intensify colour but also to suppress light. Water-opals and moonstones owe their attractive appearance to the effect of light reflected from countless layers or particles within them. Not all the light entering the stones reacts in this way, though, and some rays pass unchanged to the back facets where they may be reflected and thus impair the delicate sheen. To avoid this undesirable dilution, a layer of black foil can be placed underneath which will absorb the unwanted rays.

A brief mention should be made here of imitation pearls. From the seventeenth century on, Paris had specialized in their production; and Jacquin, a French rosary-maker, eventually perfected a process for making them which remained in use until the early years of this century.[1] A hollow sphere of glass was lined with a preparation made from fish-scales which gave it a pearly lustre; the interior was then filled with wax to provide weight and strength. The imitation pearl can usually be distinguished from the natural one by inspecting the drill-hole, where the wax interior may be visible, and by gently 'biting' the surface with the teeth: the grained surface of the natural pearl feels 'gritty'

[1] G. F. Herbert-Smith, *Gemstones*.

while the glass surface of the imitation gives a perfectly smooth feeling. Pearls are in fact very rarely found in eighteenth-century paste jewellery but figure largely in Victorian and Edwardian pieces.

Finally, a word on repairs and restorations. The finer the piece, the more difficult it becomes to achieve a satisfactory result. If a stone has to be removed from a really good setting, irreparable damage to it may occur and sufficient metal may not be left to provide security for a replacement. If a connection has to be renewed or a 'fitting' changed, extreme care should be taken to avoid too much heat. Many antique brooches show damage to the pastes directly over the catch and joint. They probably started life as pendants and suffered during the process of conversion. If deterioration has affected any of the stones in a piece of antique coloured paste it may be very difficult to rectify. Their complete dependence for their appearance on foil has been stressed repeatedly. Many of the coloured foils formerly used no longer exist, and without them complete restoration may be impossible. If a 'shaped' paste has been lost from its setting it is most unlikely that one will be found to replace it. Theoretically, of course, one could be specially cut and re-set, but the new glass would probably have quite a different 'lustre', and very few setters exist with sufficient skill and experience to re-foil and re-set these stones correctly.

The collector is therefore advised to reject a piece of antique paste requiring extensive repairs or restoration unless he is fully prepared for disappointment. It might be better for him to wait hopefully for the opportunity to acquire a piece in good condition, or at least in a state requiring only minor repairs or restoration.

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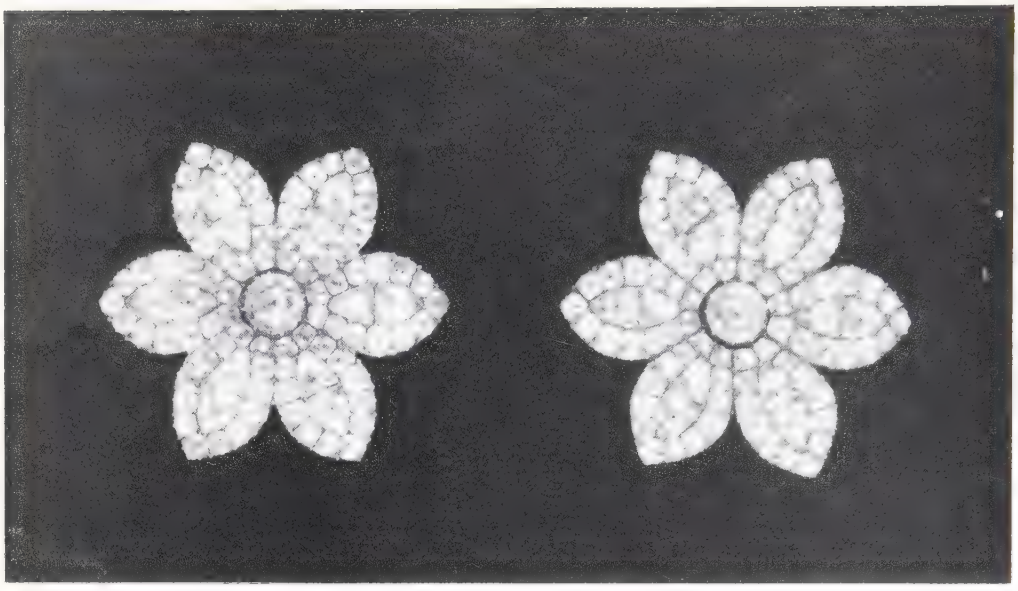
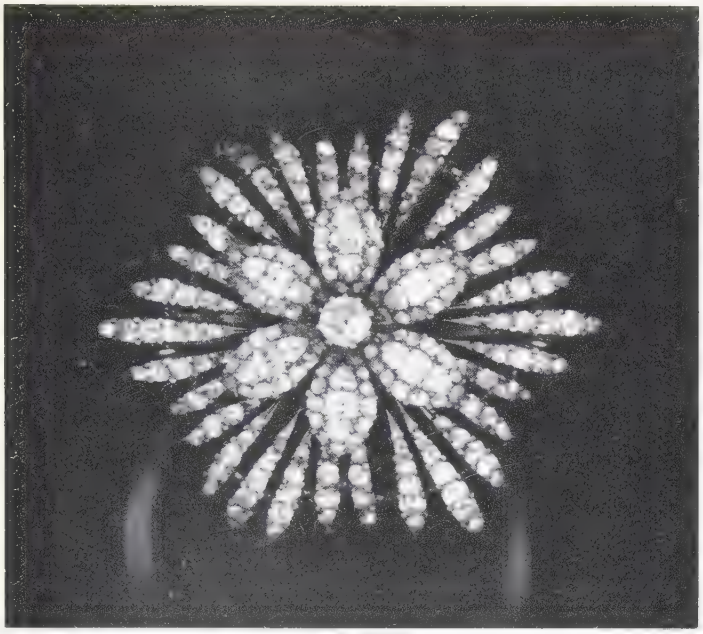


2. Pair of silver brooches set with pastes. English, 18th century.

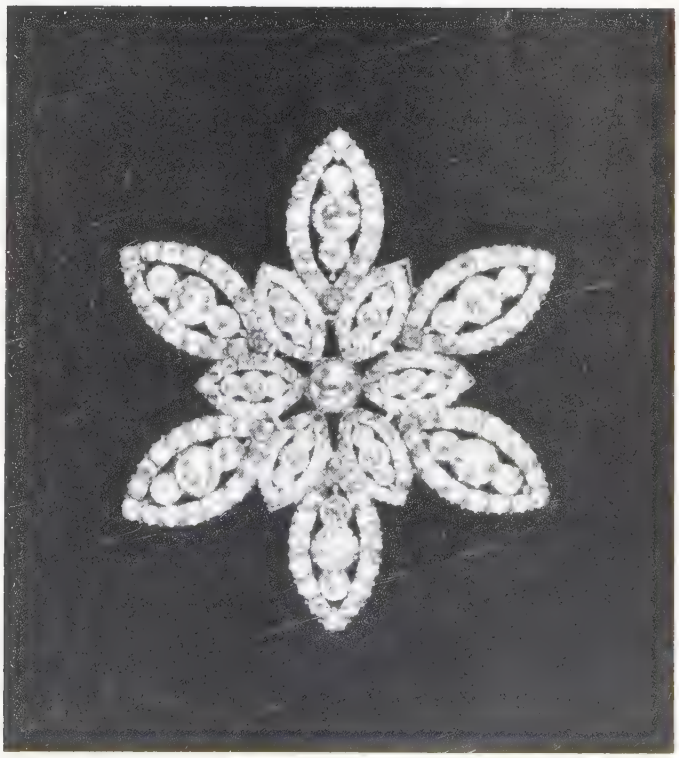
Stones now dominate the design and visible metalwork is reduced to a minimum. Simplicity, magnificent workmanship and shaped stones are characteristic of English paste of this period.

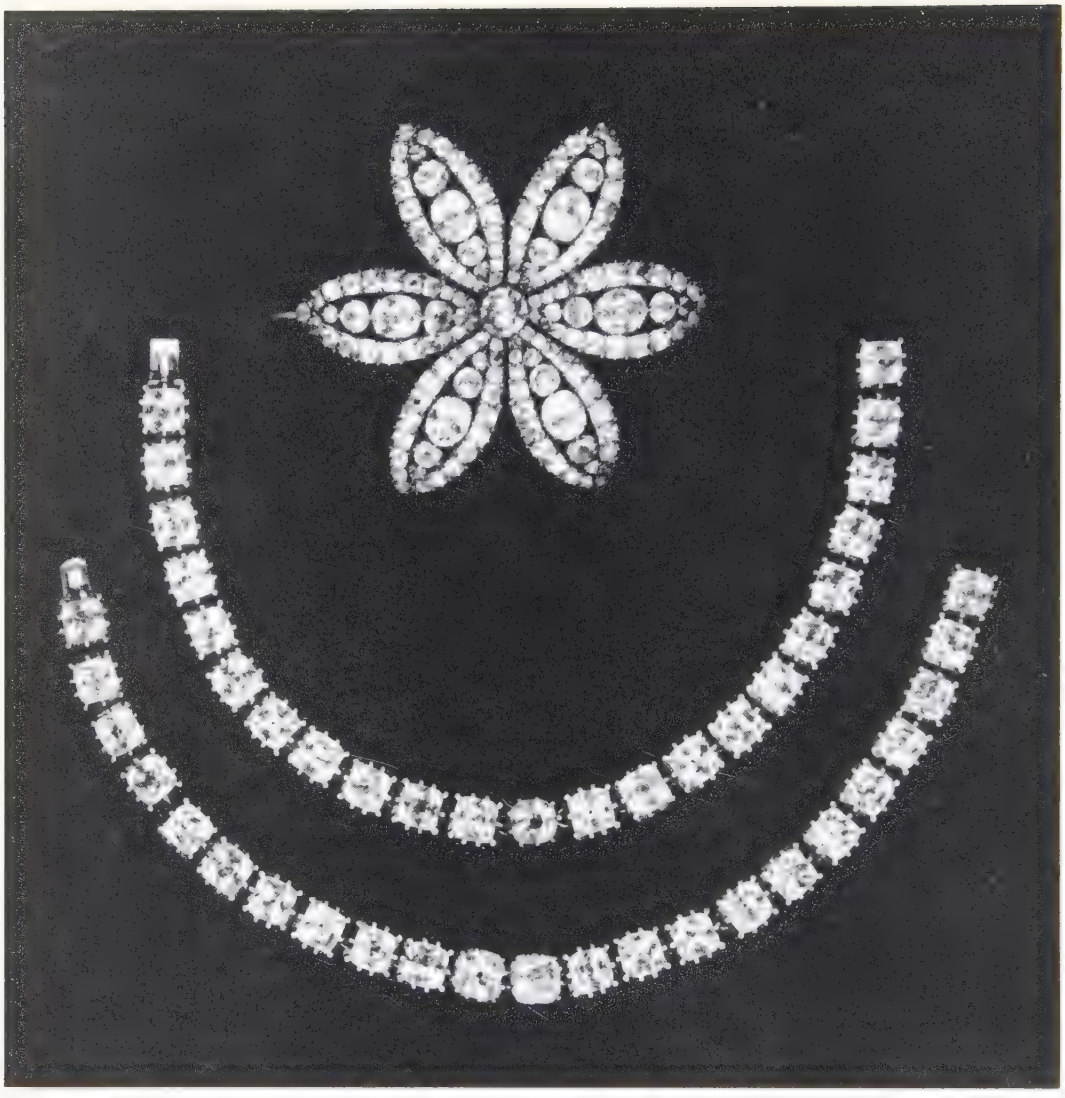


3. *Left*: Silver brooch set with crystals. English, 18th century.

Right: Silver brooch set with pastes. English, 18th century.

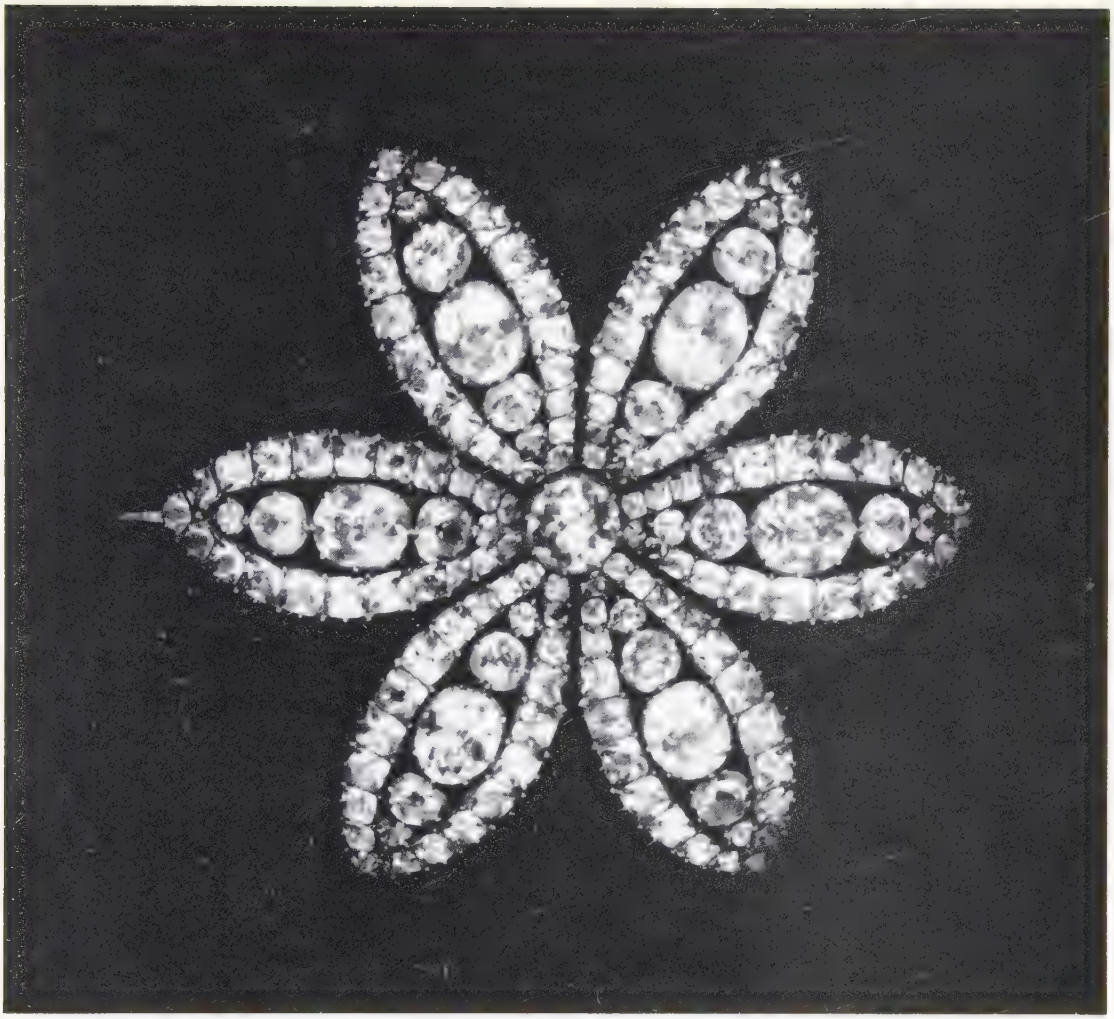
Note the greater transparency of the crystals. The paste brooch is the more brilliant and reflects so much light that the plate is slightly fogged.





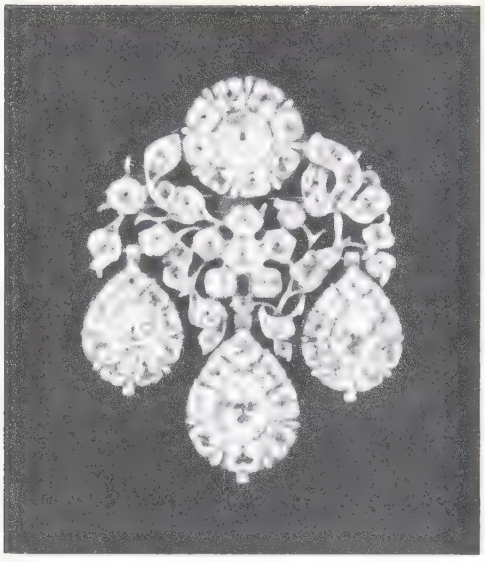
4. *Top*: Silver brooch set with pastes. English, 18th century.
Bottom: Pair of silver bracelets (forming a necklace) set with pastes. English, 18th century.

For a description of the brooch, see plate 5. Note the closeness of the collets to one another in the bracelets, resulting from small connecting rings, placed almost invisibly.



5. Enlargement of the brooch in plate 4.

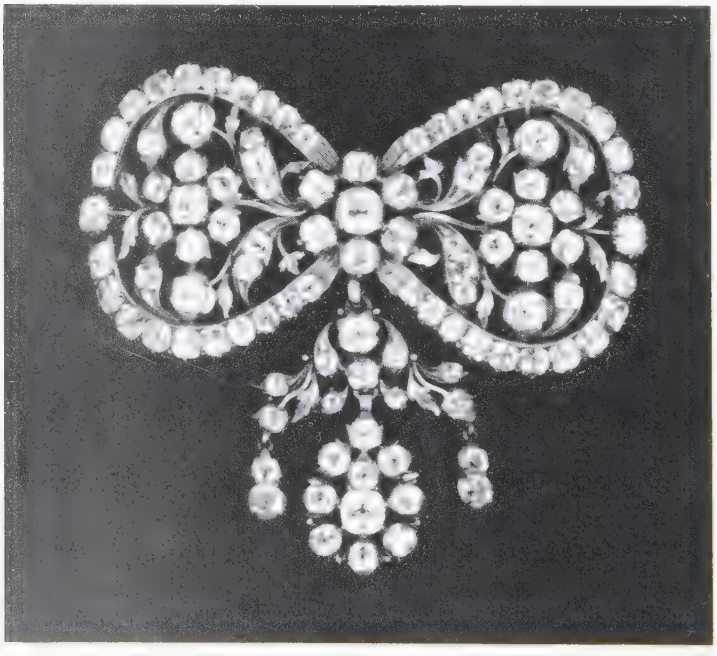
The 'cut-down' setting round the ovals is of mirror-like smoothness. Every stone in the borders differs slightly from its neighbours and has been specially cut into the mount. The setting is of superlative quality, leaving the minimum of visible metal. This effect could not have been achieved with normal round diamonds. After nearly two centuries there is no sign of deterioration. Very few pieces of jewellery could survive such enlargement without displaying a single blemish.

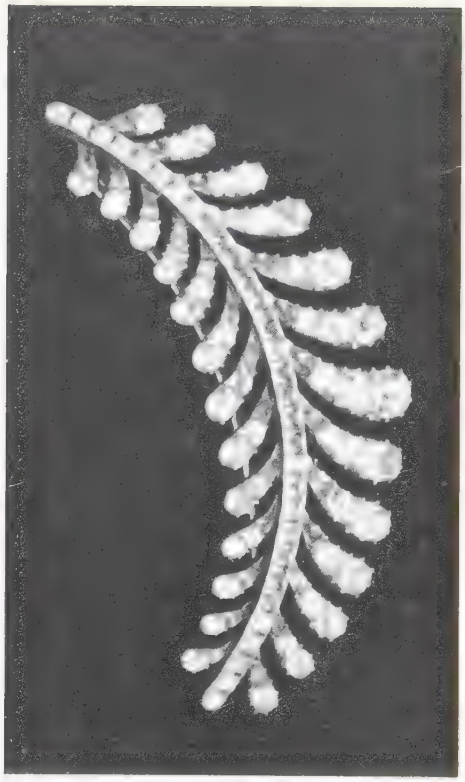


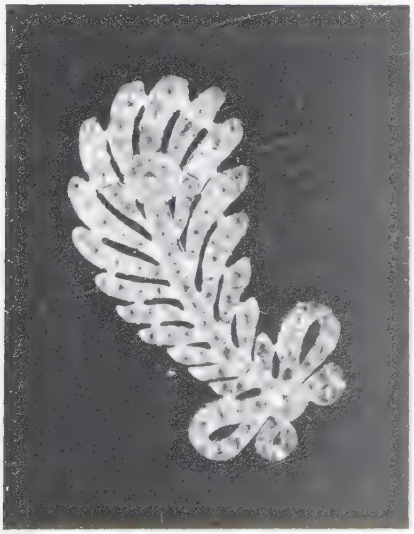
6. *Top*: Silver pendant set with pastes (perhaps half a pair of earrings). French, 18th century.

Bottom: Silver and gold brooch, set with crystals. French, late 18th century.

The *girandole* design of the pendant is typically French. Note the greater transparency of the crystals and the black spot at the back of nearly every stone. The crystal brooch is mainly silver but the wire stems are gold.

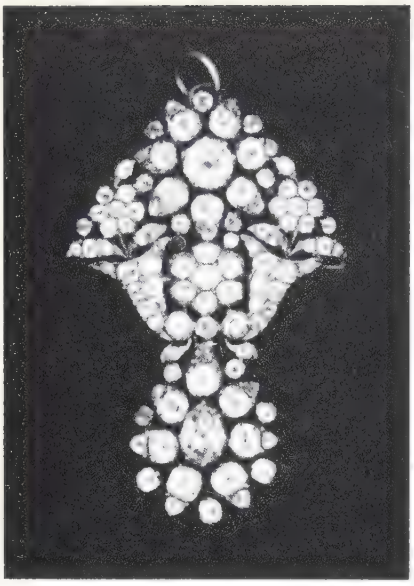




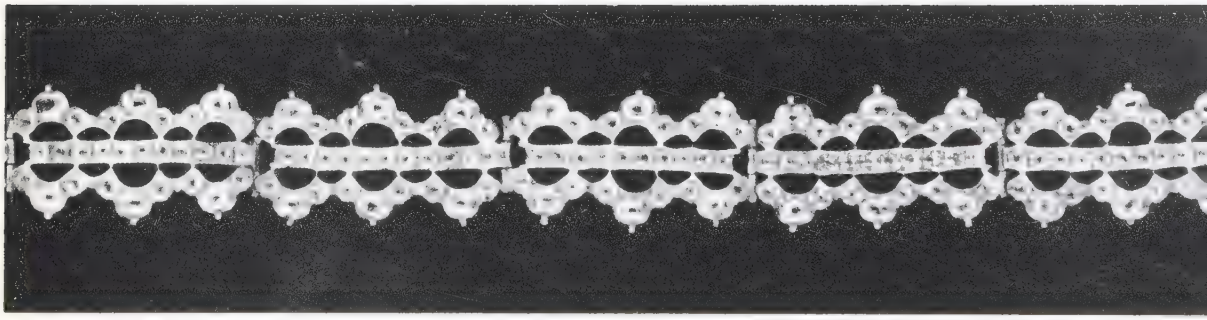


7. *Left*: Silver spray, set with pastes. French or English, 18th century.
Centre: Silver spray, set with pastes. French or English, 18th century.
Right: Silver spray, set with pastes. French or English, 18th century.

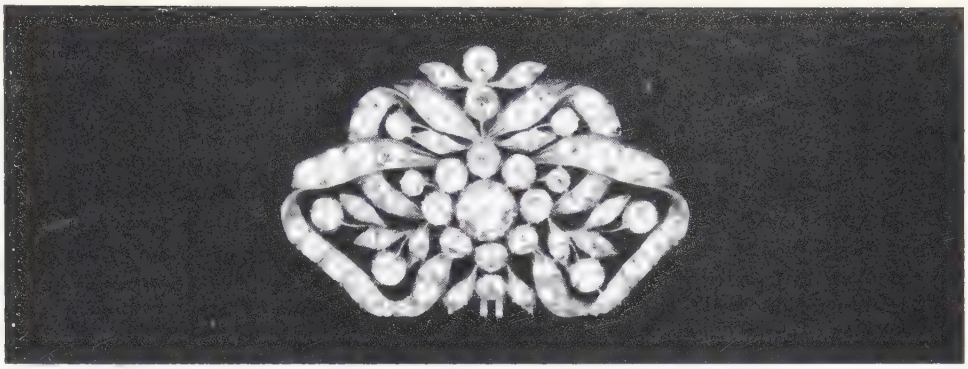
Note the flat, non-naturalistic designs typical of 18th century sprays.



8. *Top*: Silver double-cornucopia brooch set with pastes. French, 18th century.
Centre: Silver necklace set with pastes. French, 18th century.
Bottom: Silver Maltese cross set with pastes. English, 18th century.

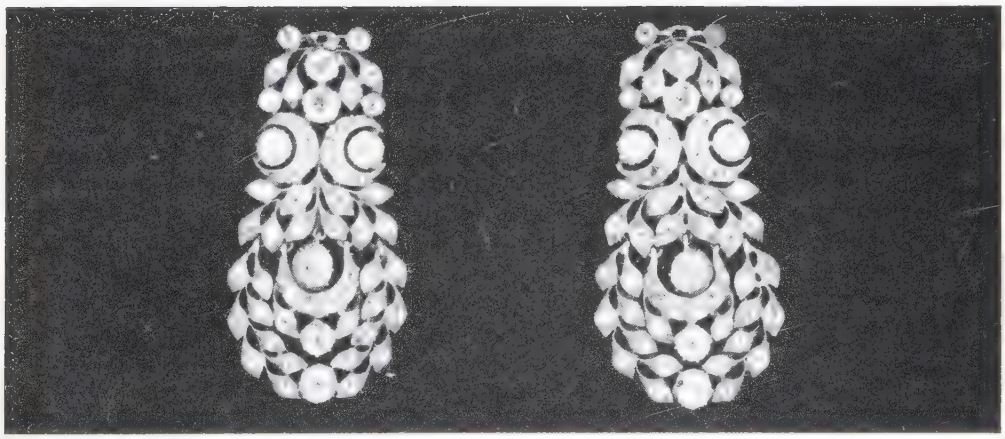


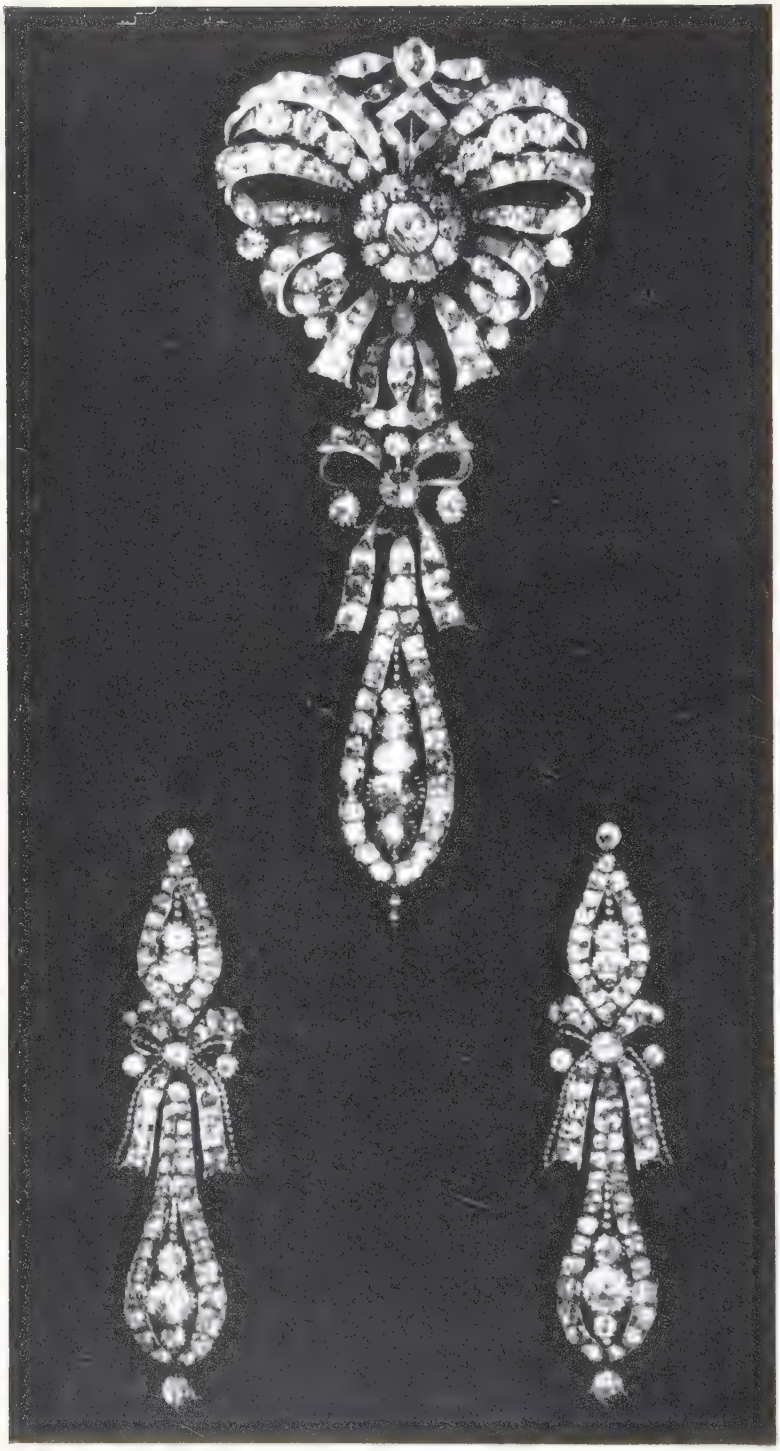
The cornucopia is a favourite French design. The Maltese cross is typically English. Note the black spot at the back of almost every paste.



9. Silver pendant and earrings (*bottom*) (both incomplete) set with *minas-novas* (colourless crystals). Portuguese, 18th century.

Superlative work in the best Portuguese tradition. The air-tight setting has ensured perfect preservation.



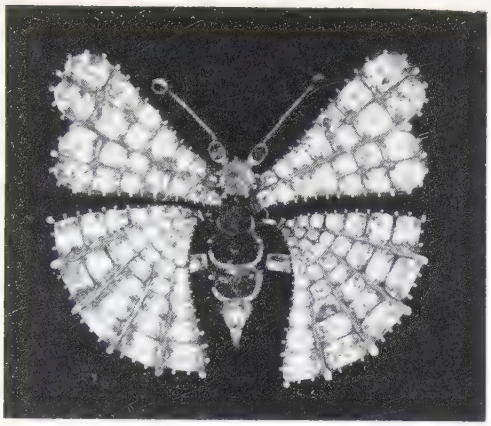


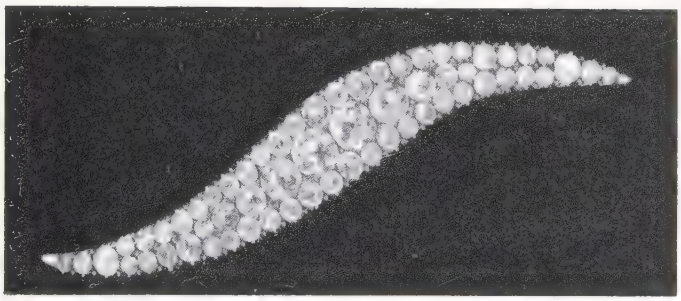
10. Brooch-pendant and earrings set with crystals. Portuguese, 18th century.

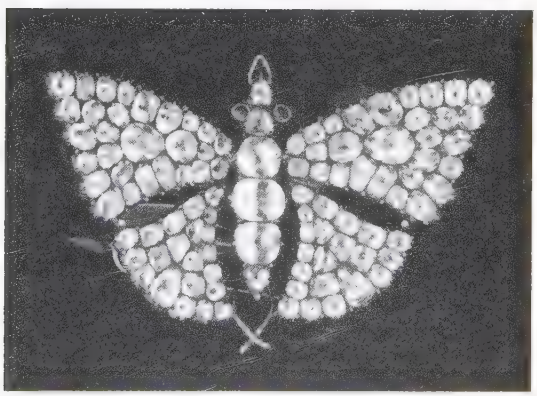
Note the use of gold beads for ornament.

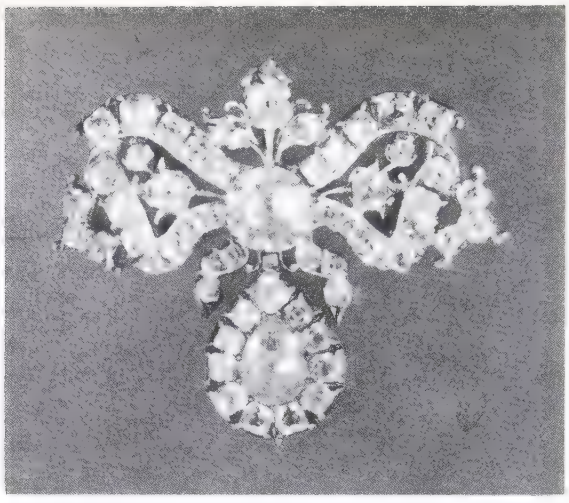
(*Opposite*)
11. *Top*: Silver butterfly brooch, the wings set with white pastes, the body with coloured pastes. French, 18th century.
Centre: Silver leaf brooch, set wi pastes. French or English, 18th century.
Bottom: Silver butterfly brooch, set with pastes. French, 18th century.

Note the absence of round stone in butterfly brooches. The variet of shapes and sizes required grea lapidary and setting skill.



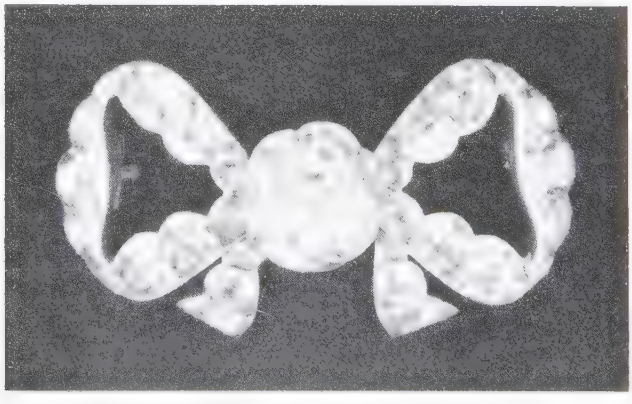


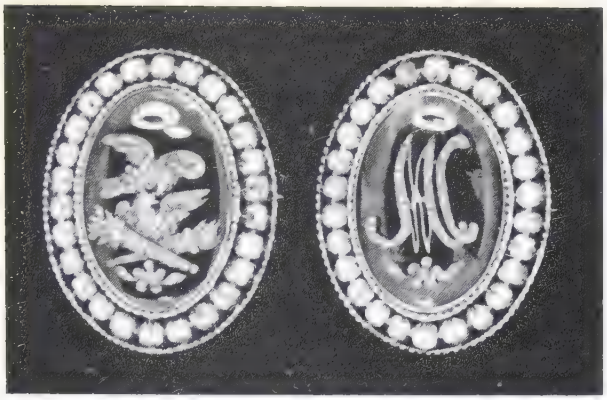




12. *Top*: Silver brooch-pendant set with pastes. French, 18th century. *Bottom*: Silver bow brooch set with pastes. English, 18th century.

Smaller stones and a decorative setting indicate a French origin. Larger stones and a plain setting indicate an English one.

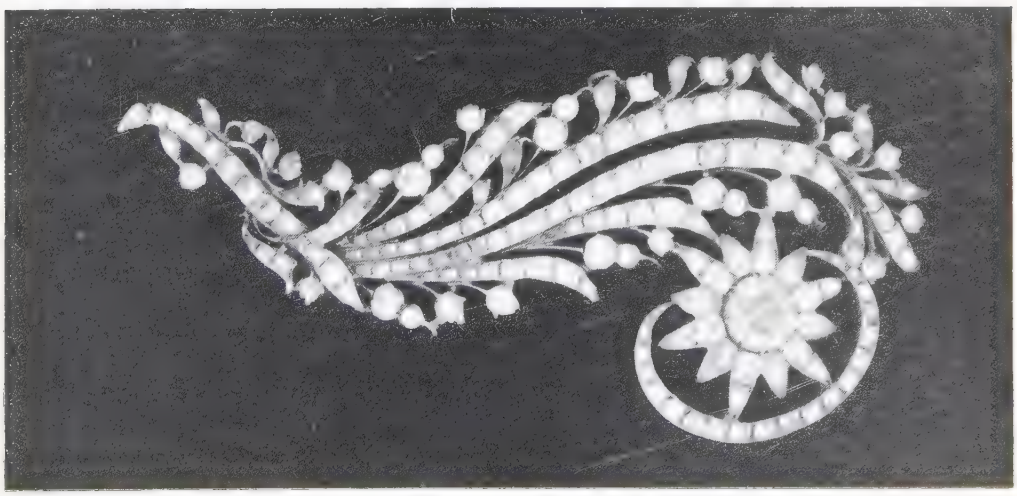




13. *Top:* Pair of bracelets clasps set with diamonds. French, circa 1770. *Bottom*: Silver spray set with yellow chrysoberyls. Portuguese, 18th century.

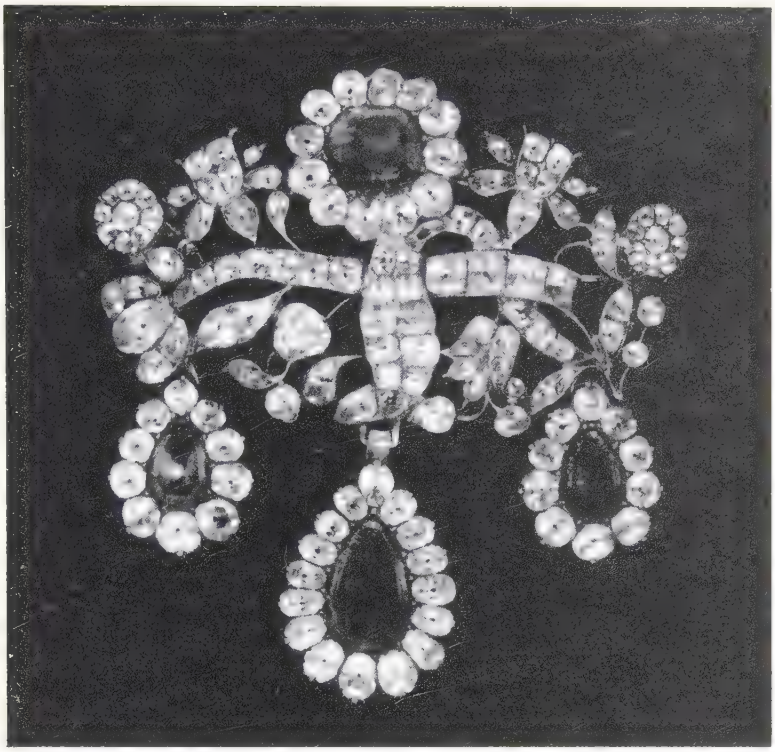
The clasps may have belonged to Marie Antoinette. One bears her device of doves and the other her initials. The centre ovals are of luminous blue glass. Note the gold bead borders.

In spite of its attractiveness, the spray has not quite the perfection of setting seen in the best English work. Observe the oblong stones in the leaves and stems. They do not fit precisely against one another and the gaps are obvious. (Cf. plate 5). Like other sprays of the period it is magnificent in outline and non-naturalistic in detail.



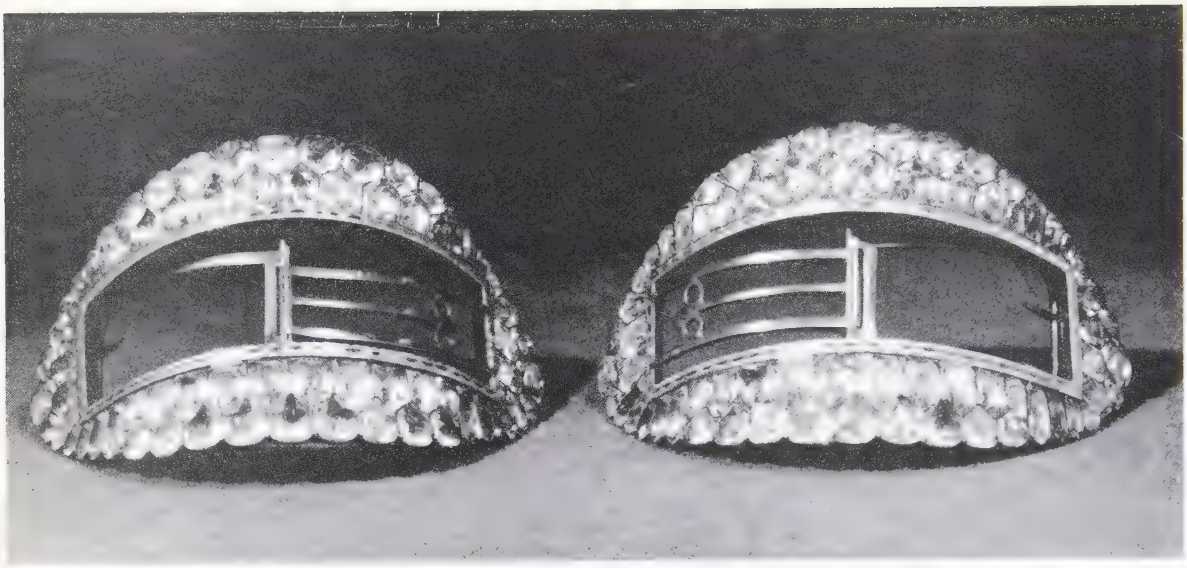
14. Silver pendant set with crystals. French, 18th century.

Note the stylized bird—a frequent motif in French antique jewellery.



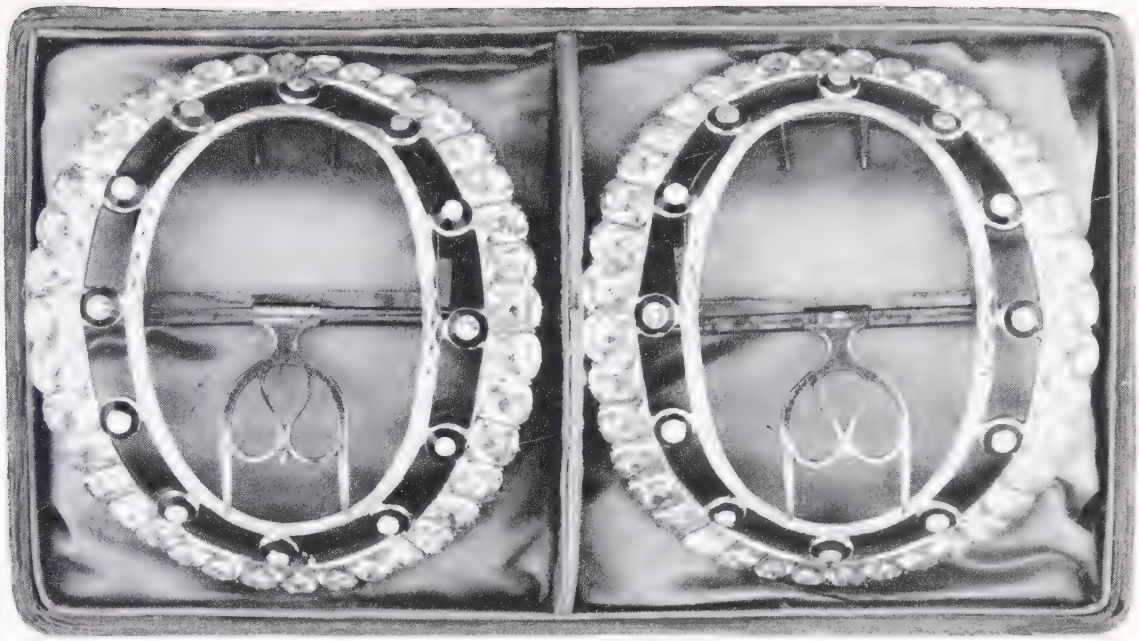
15. Silver brooch-pendant set with colourless crystals and green pastes. Spanish, 18th century.

This displays several features typical of the period: an almost complete absence of round stones, the presence of shaped stones in great variety, square connections, and a black spot at the back of every colourless paste.



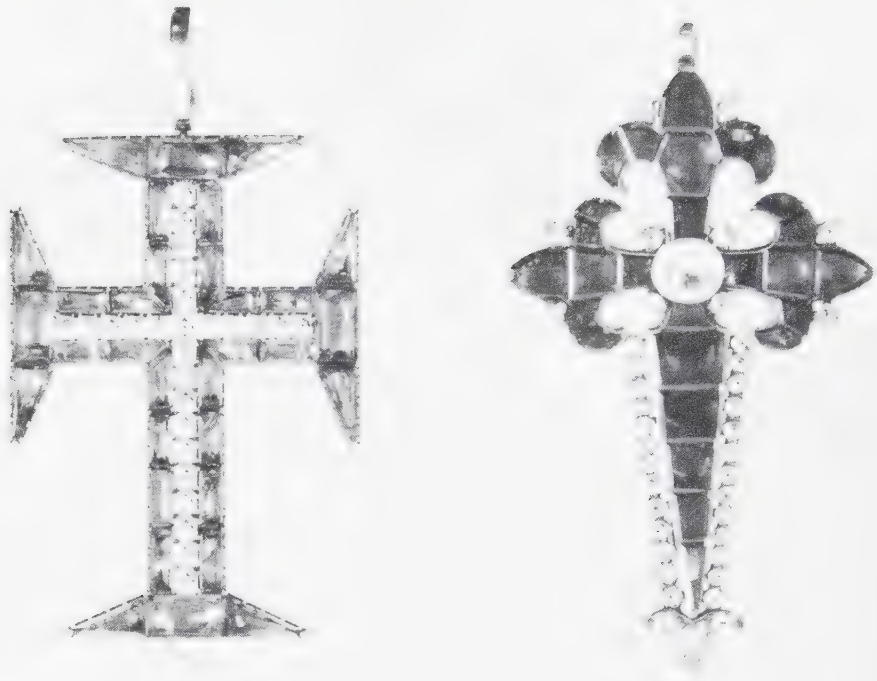
16. Pair of silver buckles set with pastes. English, 18th century.

The simple design, large stones and faultless workmanship indicate an English origin. The inner border is of engraved gold. Note the zigzag boundary between the outer and inner rows of pastes. Setting these stones so closely together and leaving virtually no trace of the metal required an unsurpassable skill.



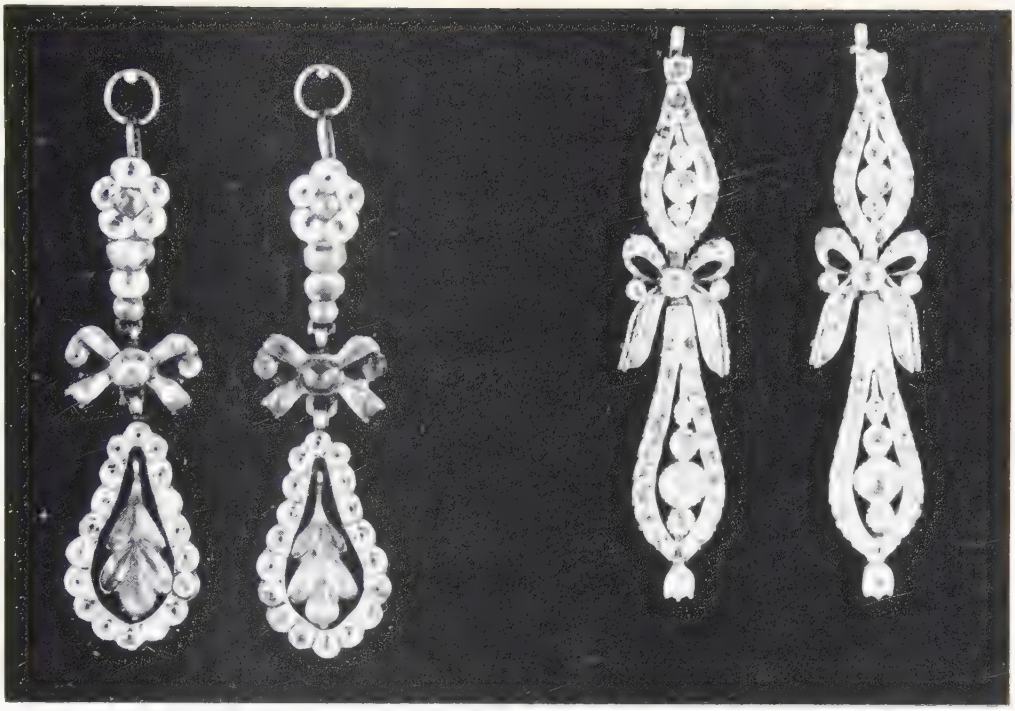
17. Pair of silver buckles set with pastes. English, 18th century.

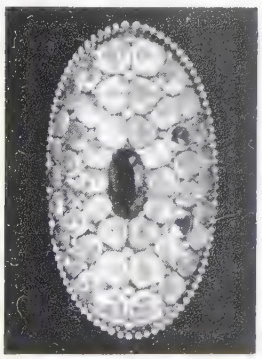
The inner border is of engraved gold: the small gold discs rest on plaques of blue glass. Note the individuality of each paste. Another specimen of English work at its finest.



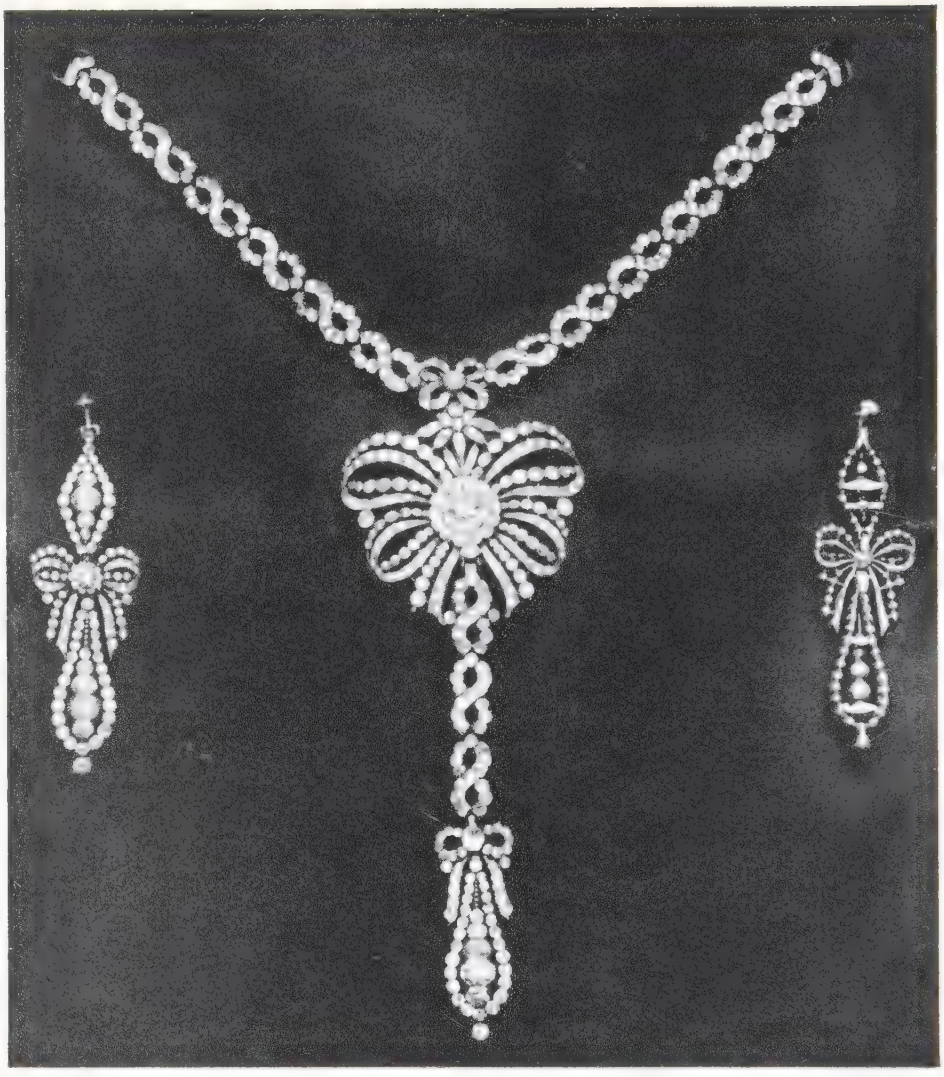
18. *Left*: Cross of the Portuguese Order of Christ.
Right: Cross of the Spanish Order of 'St. James of the Sword'. Silver set with garnets and crystals. 18th century.

Each, in its complete form, would be suspended from a large, round cluster floral design set with crystals.





19. *Top left:* Silver earrings set with colourless crystals and yellow citrines. Spanish, 18th century.
Top right: Silver earrings set with crystals. Portuguese, 18th century.
Bottom left: Ring in silver and gold, set with crystals and foiled green-paste centre. Spanish, 18th century.
Bottom right: Silver brooch-pendant, set with pastes. French, 18th century.



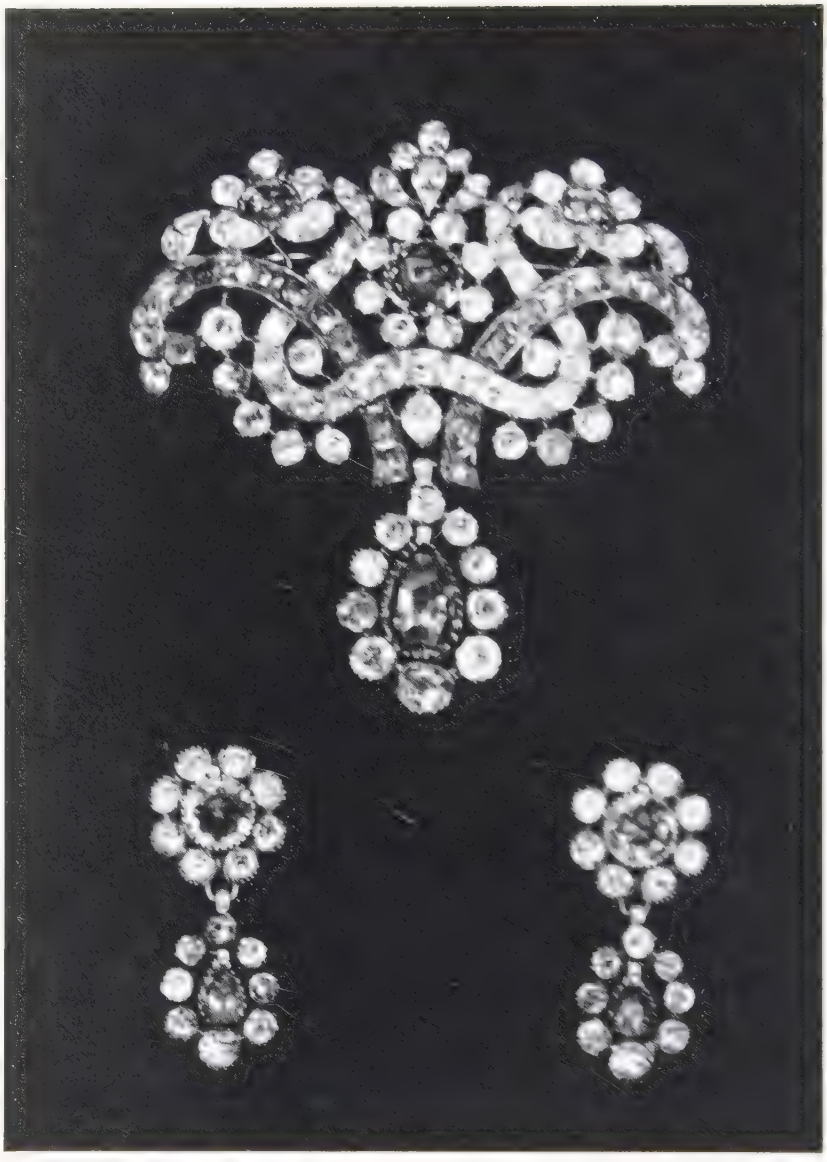
20. Silver necklace and earrings set with pastes. French, 18th century.

The right-hand earring is reversed to show the typical 'rounded' finish of good 18th century paste jewellery. Note the long flat 'tab' connecting the bottom drop. The horizontal bars at the back of the earring secure the centre pieces which had been made separately before they were attached. This allowed a better finish than would have been possible if the earring had been made less expensively in one piece. Length of earrings $3\frac{1}{2}$ ins.

21. *Left*: Silver spray brooch set with crystals. Portuguese, 18th century.

Right: Silver 'Order of Christ' pendant set with garnets and crystals. Portuguese, 18th century.

The spray is unusual in its 'naturalism' and also its 18th century technique. The cross shows the 'Order' in its complete form. Both are splendid, and perhaps unique, examples of the finest Portuguese work.

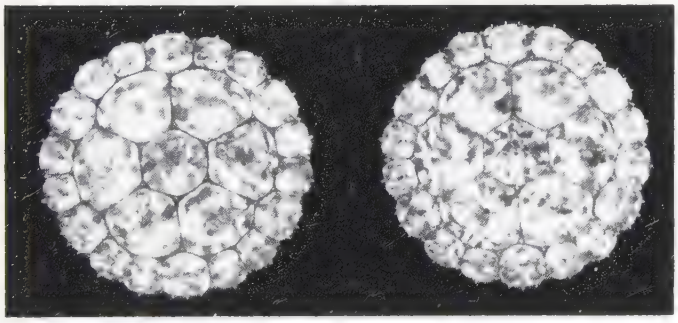


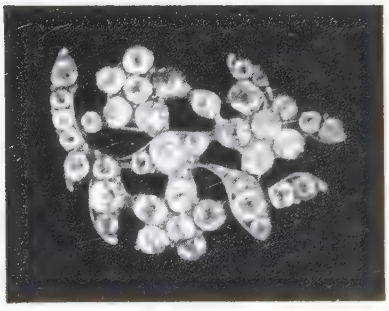
22. Silver brooch and earrings [illegible] and yellow citrines. Spanish, 18th century.

Note the 'dog toothed' setting [illegible] is characteristic of some Spanish jewellery.

23. *Top*: Silver cross set with pastes. Spanish, 18th century.
Centre: Pair of silver and paste buttons. English, 18th century.
Bottom: Silver sprays set with pastes. English 18th century.

The pair of buttons illustrates the simplicity, fine proportions and magnificent workmanship of English antique paste jewellery.





24. Rings, gold shanks and silver heads set with pastes. French, 18th century.

The centres are either of blue enamel or of blue glass.

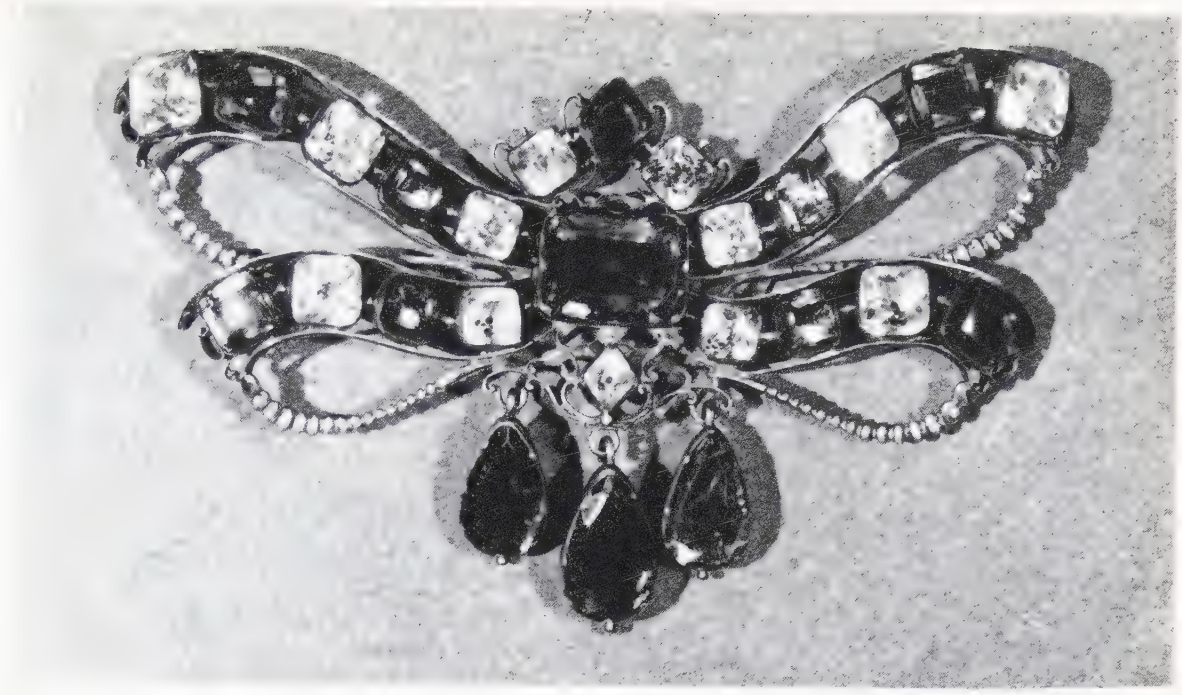
(*Opposite*)
25a. Silver bow brooch set with white and green pastes. Spanish, 18th century.

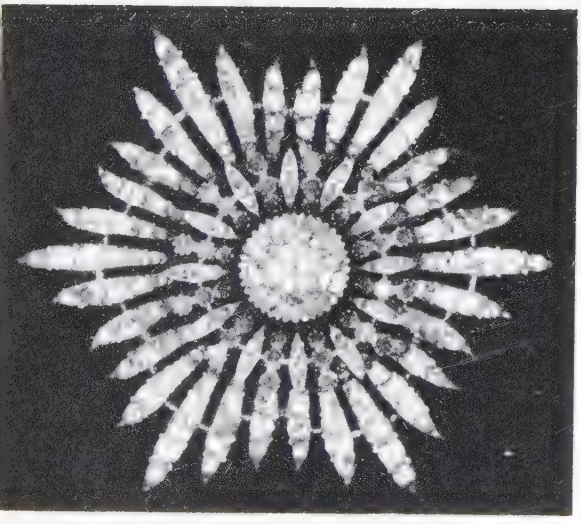
This shows the enormous size of some Spanish jewels.

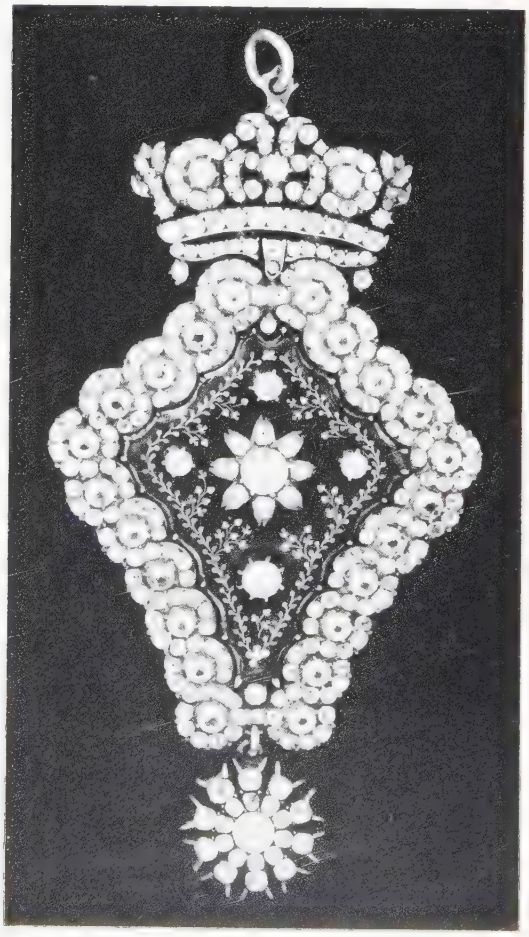
25b. Silver brooch set with white pastes and rubies with *tremblant* centre. French, 18th century.

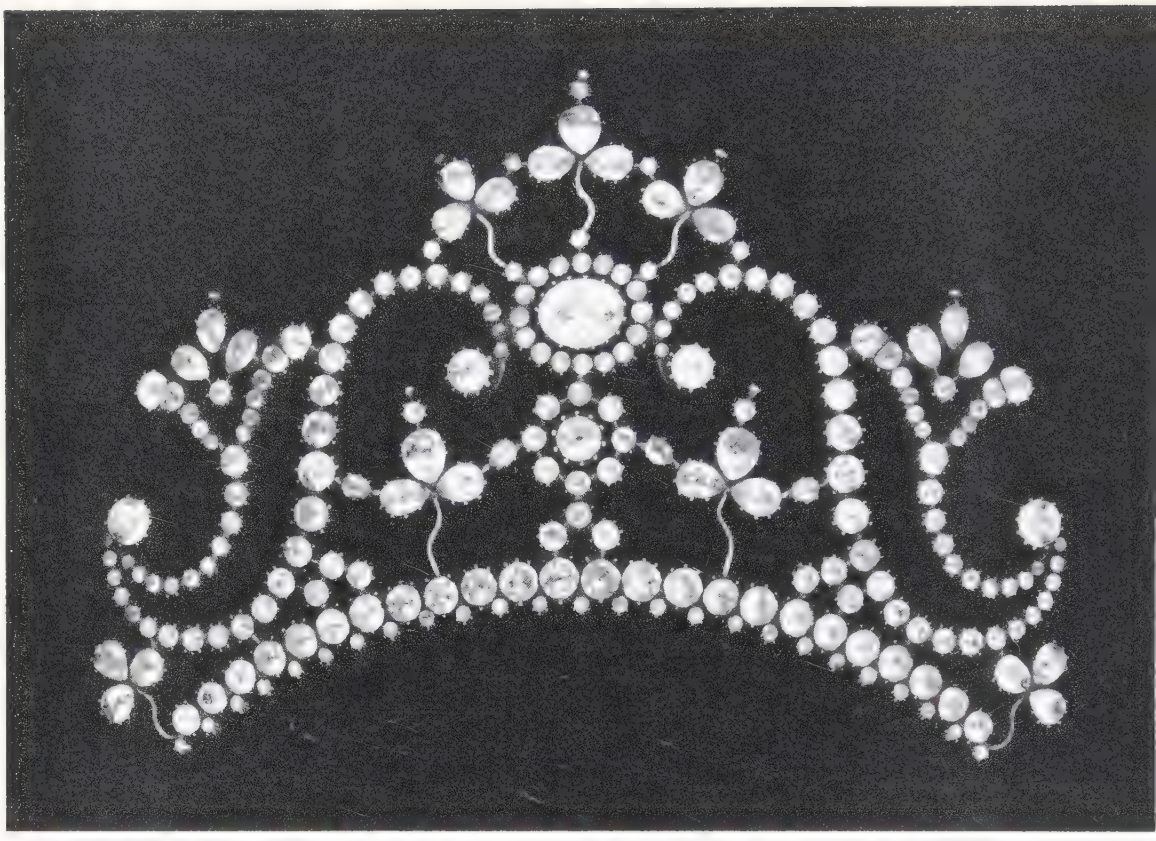
25c. Silver pendant set with pastes, its blue enamel centre enriched by gold tracery, bearing the 'discharge mark' of Aix, 1781. French, 18th century.

Typical delicate French enamel work. The bottom cluster-drop is not contemporary.









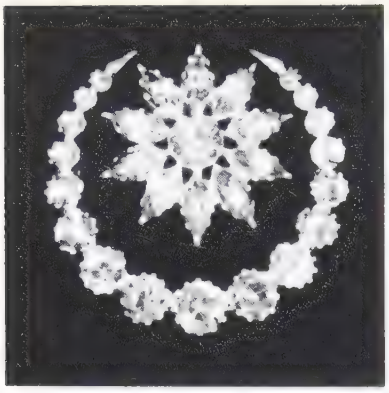
26. Silver tiara set with pastes. Probably French, late 18th or early 19th century.

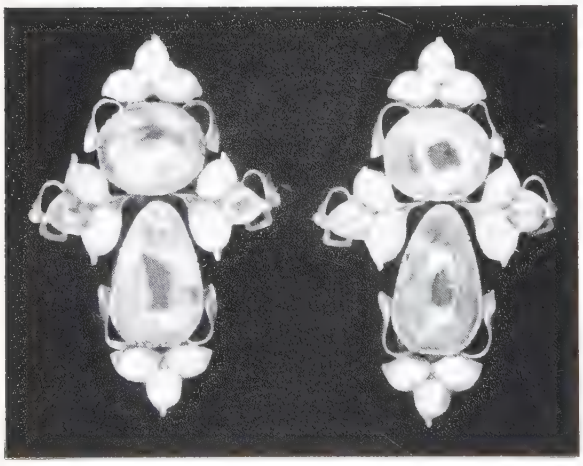
With the passing of the 18th century, shaped stones are being replaced by round stones of greater uniformity.

27. *Top*: Silver spray brooch set with pastes. English, 18th century.
Bottom left: Silver earrings set with crystals. French or English, early 19th century.
Bottom right: Silver earrings set with crystals. French or English, early 19th century.

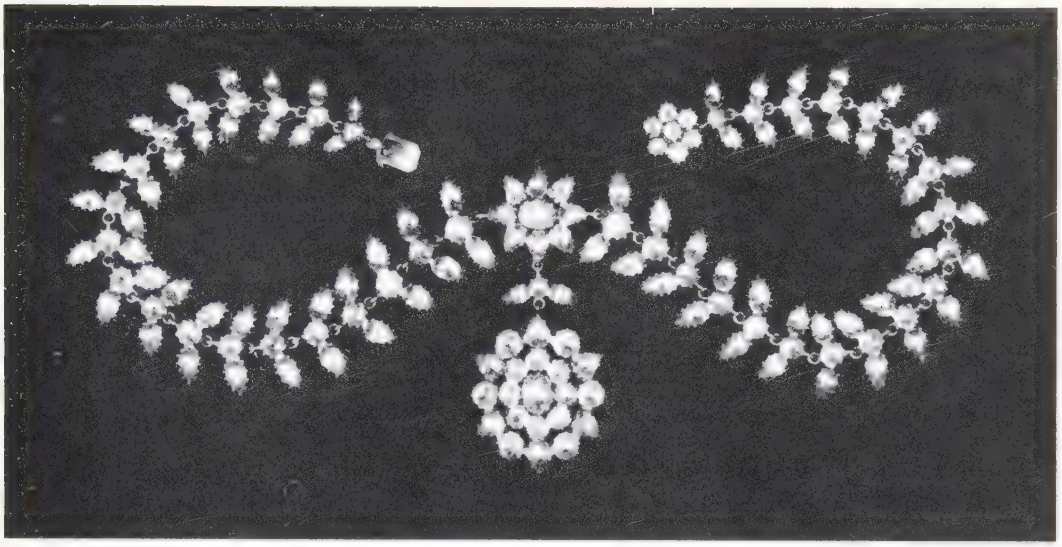
Note the stylized details of the brooch, the general flatness, the non-naturalistic form of the flowers, leaves and stems. These are characteristic of the 18th century spray.

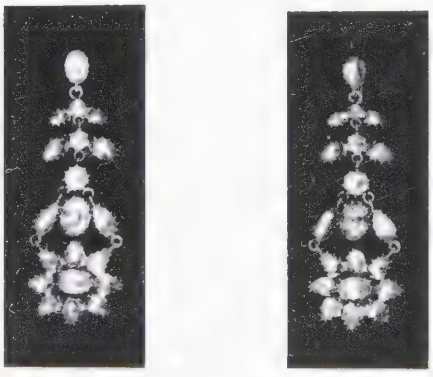
The round uniformity of the stones in the earrings indicates their early 19th century origin.





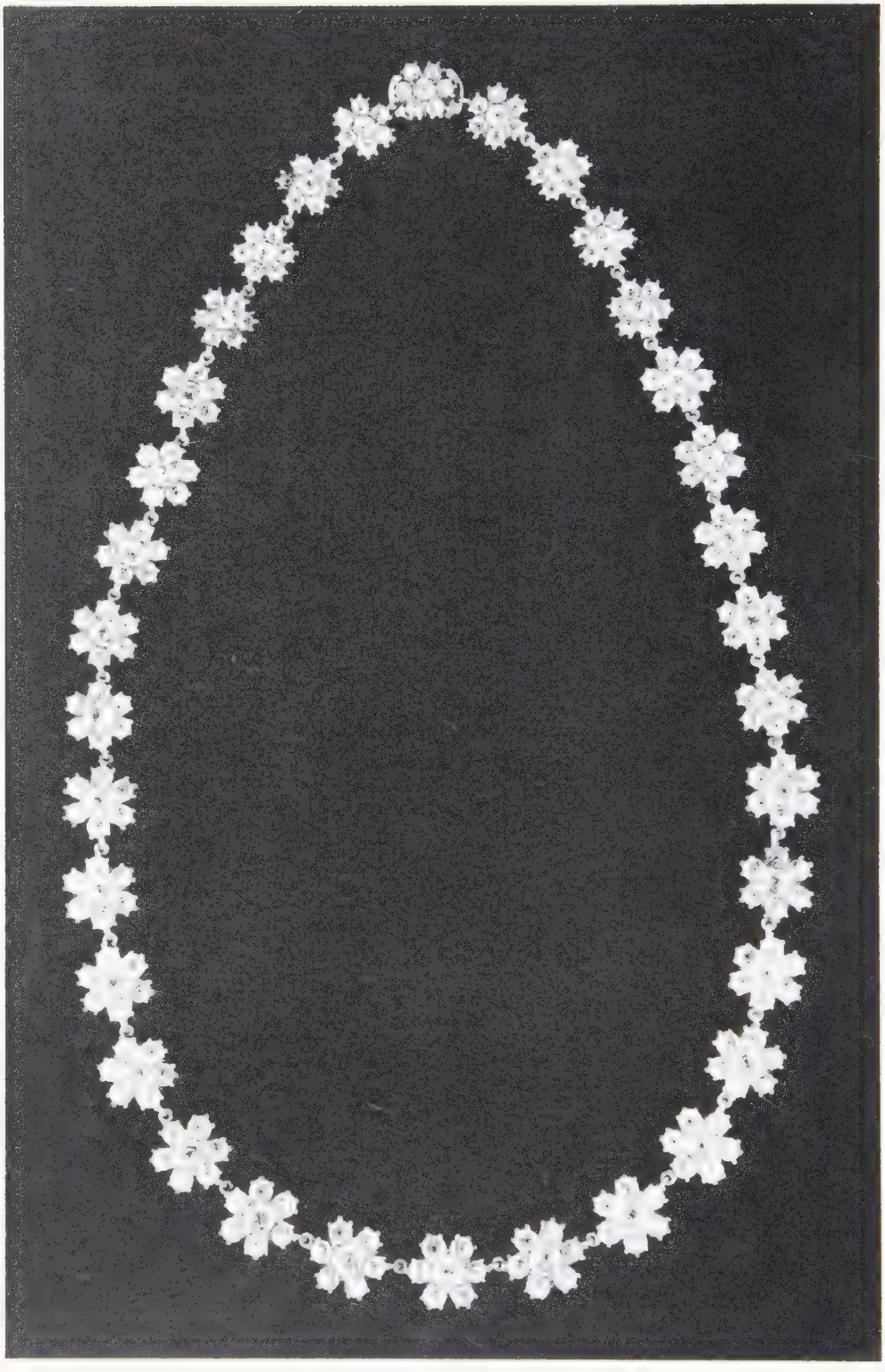
28. *Top left:* Silver crescent brooch, with cluster *en-tremblant* set with crystals. English, late 18th or early 19th century.
Top right: Silver and gold brooch set with pastes. English, late 18th or early 19th century.
Bottom left: Silver earrings set with pink and white pastes. Spanish, early 19th century.
Bottom right: Silver earrings, gold backed, set with opaline and white pastes. French or English, early 19th century.

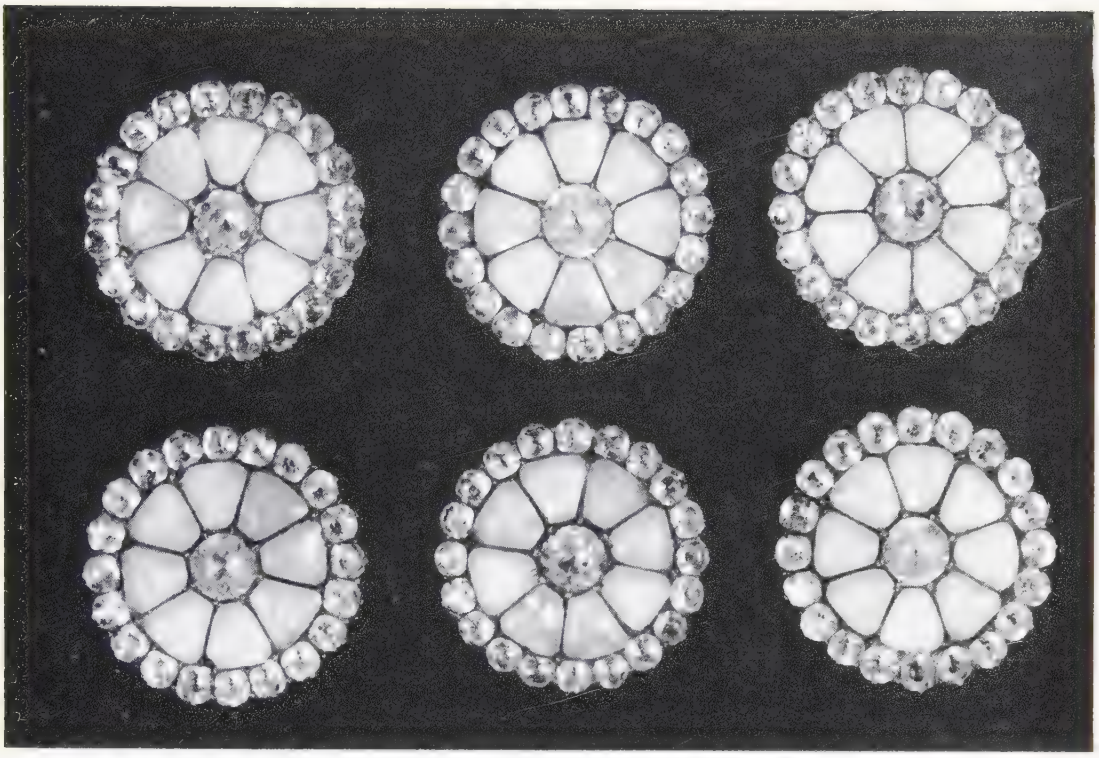




29. Silver (gold backed) necklace and earrings set with pastes. English, early 19th century.

Note how 19th century influences are becoming apparent. The stones are of a standard size and shape, and the connections are coarser.



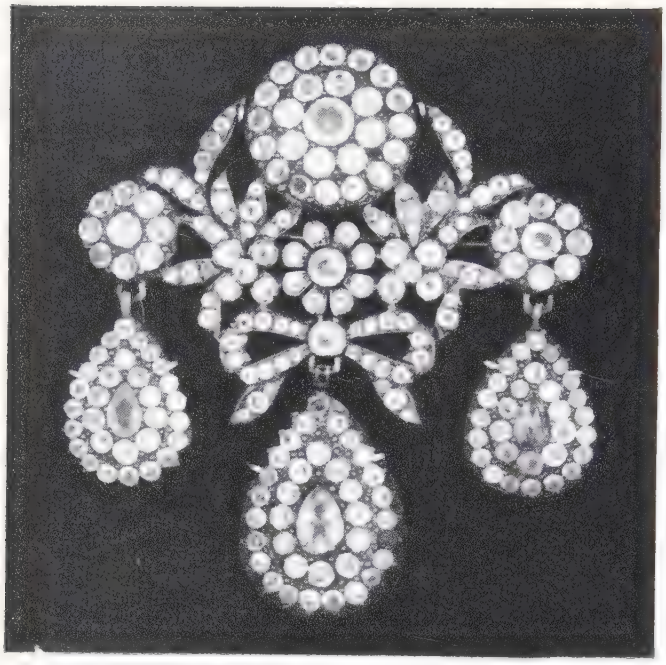


31. Set of six silver buttons, set with white and opaline pastes. English, late 18th or early 19th century.

These are typically English—flat, simple, finely proportioned and faultlessly set.

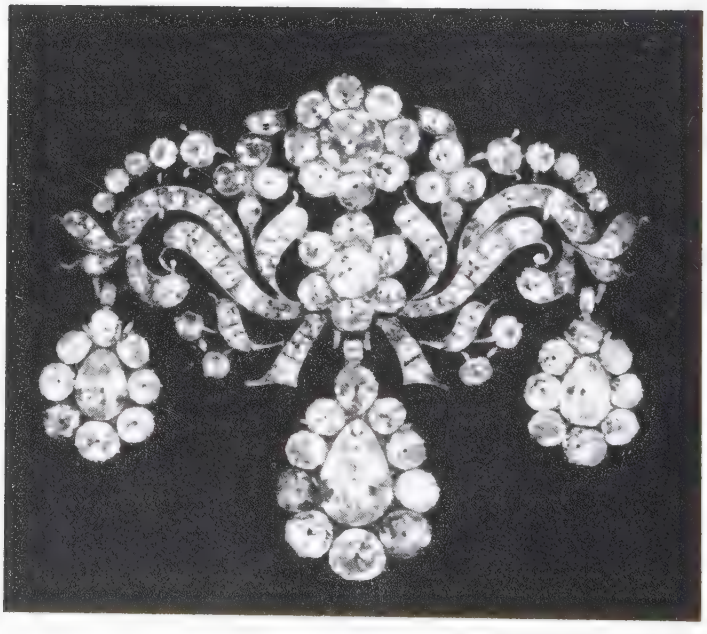
30. (*Opposite*) Silver cluster necklace, gold backed, et with pastes. English, early 19th century.

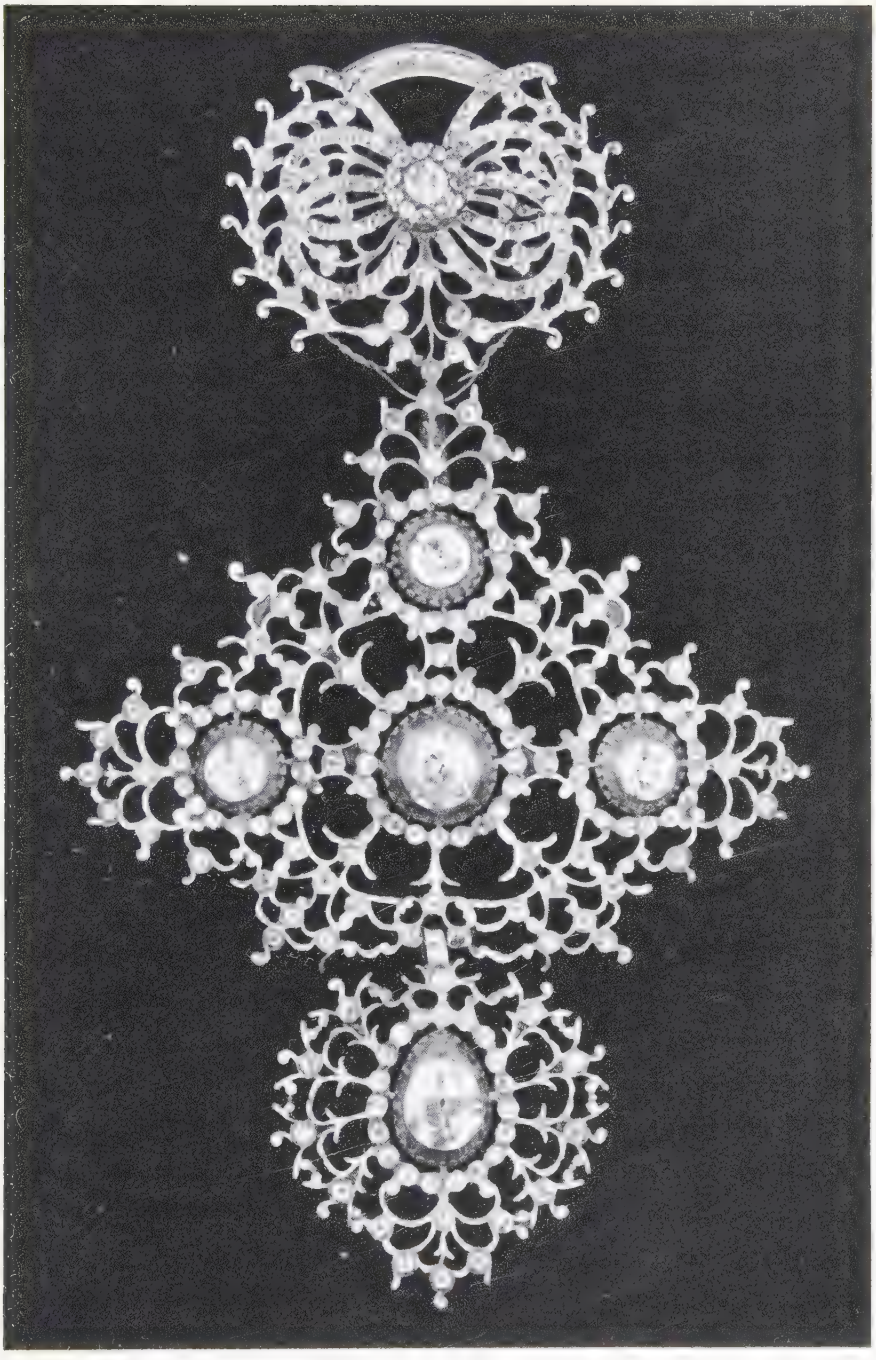
Note the black spot at the back of every paste and the pleasing graduation. Each cluster is joined to the next by two (only two) connecting rings at right angles to one another. Only in reproductions would there be three or more.



32. *Top*: Silver pendant set with pastes. Spanish, early 19th century. *Bottom*: A similar design set with crystals, mid-18th century.

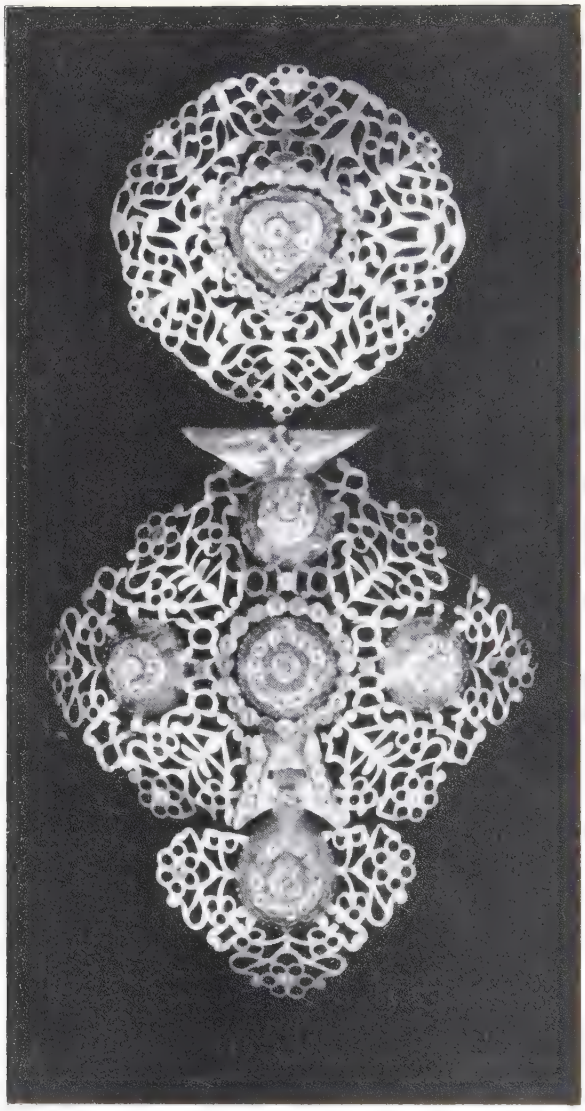
Note the poorer quality of the later paste piece. The design is flat and monotonous; the stones show little variation; and metal gaps appear between most stones and their neighbours. These defects are common in some Spanish paste of this period. The earlier piece, shown for comparison, has none of these faults



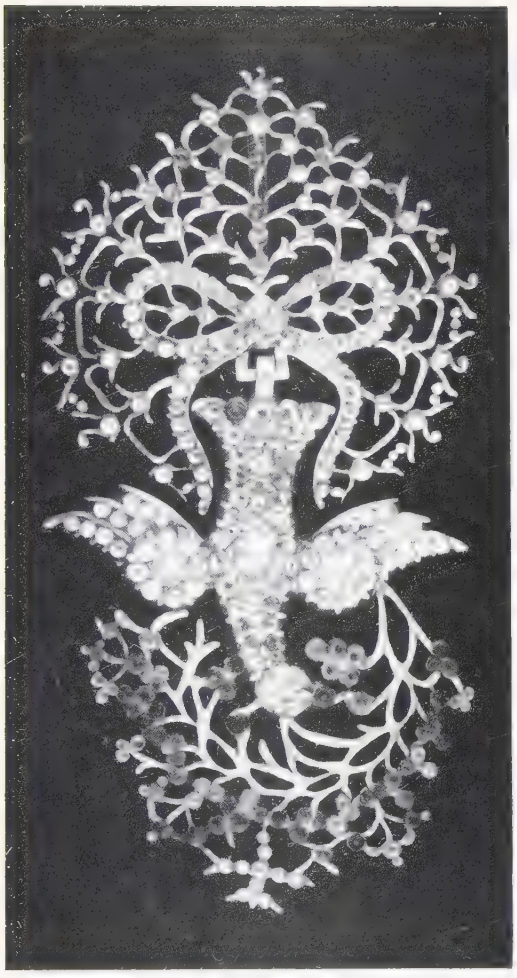


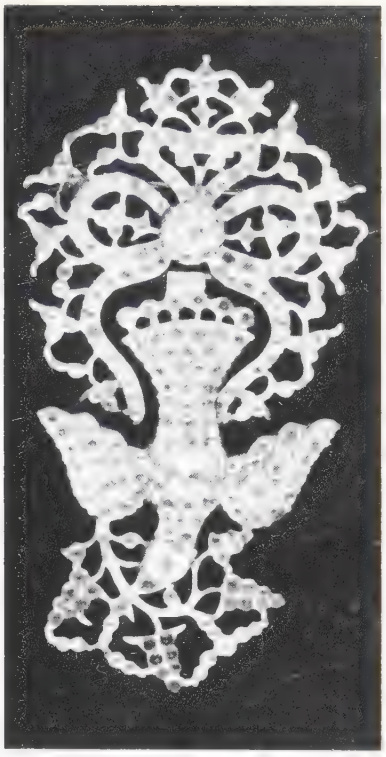
33. Silver cross set with crystals. French, early 19th century.

This pattern is known as the 'Normandy' cross and is typical of northern French peasant work.



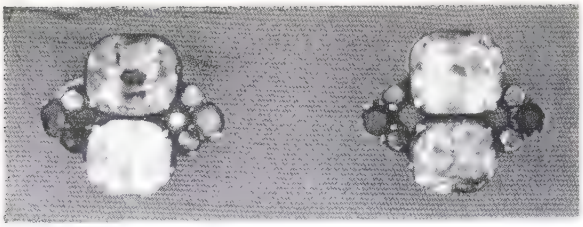
34. Gold cross set with crystals. French, early 19th century. Another typical 'Normandy' design.

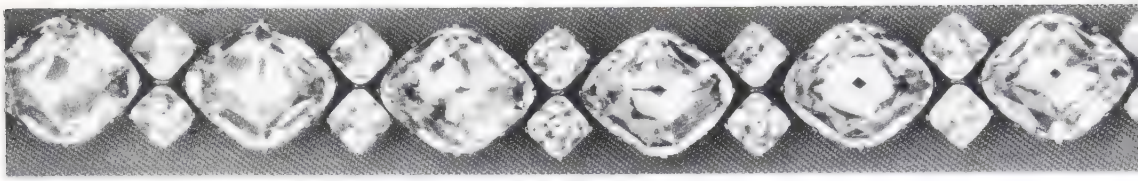


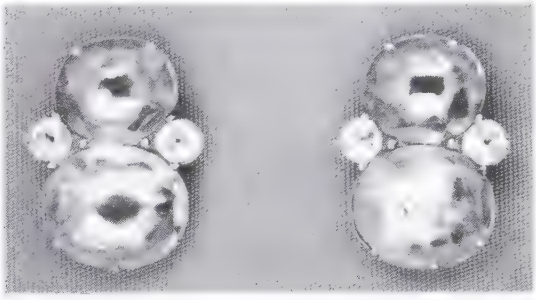


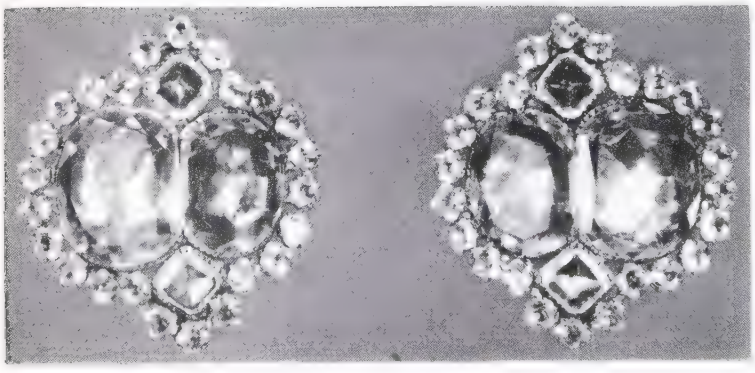
35. *Left*: Silver 'Saint Esprit' pendant set with pastes.
Right: Gold 'Saint Esprit' pendant set with pastes. Both French, early 19th century.

Typical northern French design. The dove, always flat and stylized, bears a coloured spray in its beak.



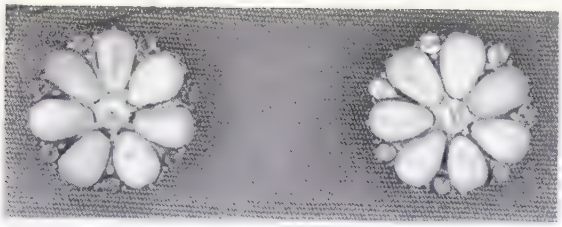


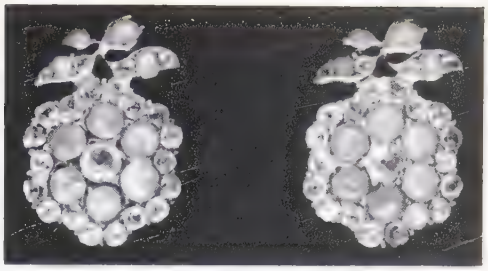


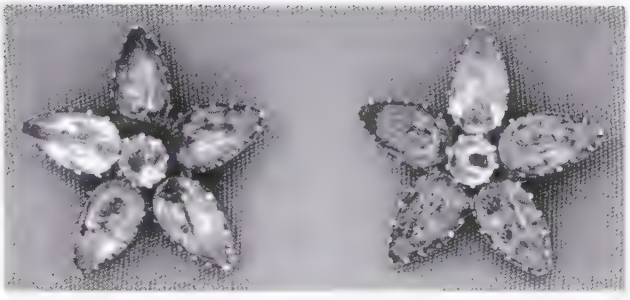


36. *Top*: Pair of silver earrings set with aquamarine colour pastes. English, 18th century.
Centre: Necklace set with aquamarine colour pastes and a pair of earrings set with pink and white pastes. English, late 18th or early 19th century.
Bottom: Pair of metal brooches set with large blue and small white pastes. French, early 19th century.

These asymmetrical patterns were always made as pairs of earrings, though many of the larger specimens have been converted to brooches. Silver mounts indicate an 18th century origin. The mounts of imitation gold and crude setting in the brooches suggest a 19th century one.



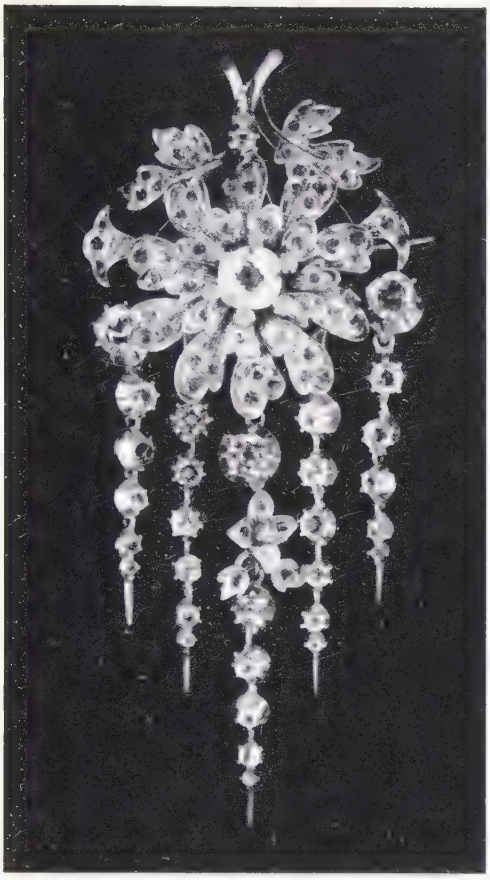


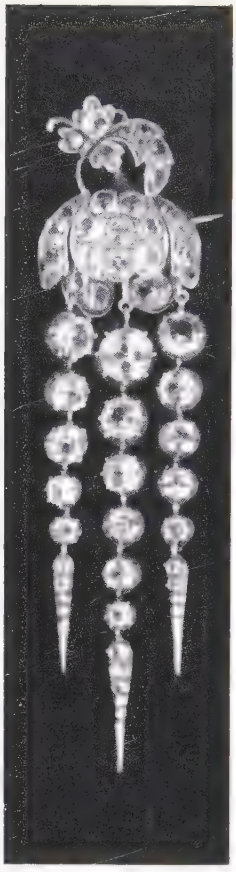


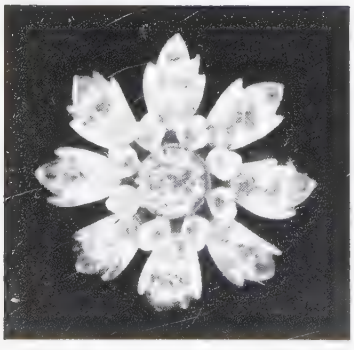
37. *Top*: Two pairs of silver earrings set with opaline and white pastes. French, early 19th century.
Centre: Cluster brooch set with foiled pink crystals. French, early 19th century.
Bottom: Pair of brooches set with pink and yellow pastes. French, early 19th century.

38. Silver brooch-pendant set with pastes. French, circa 1840–1850.

This is known as the 'pampille' style and is characteristic of French work of this period. The larger pastes are cushion-shaped and open at the back. Note that cut-down setting is still used, though it has become coarser and heavier.

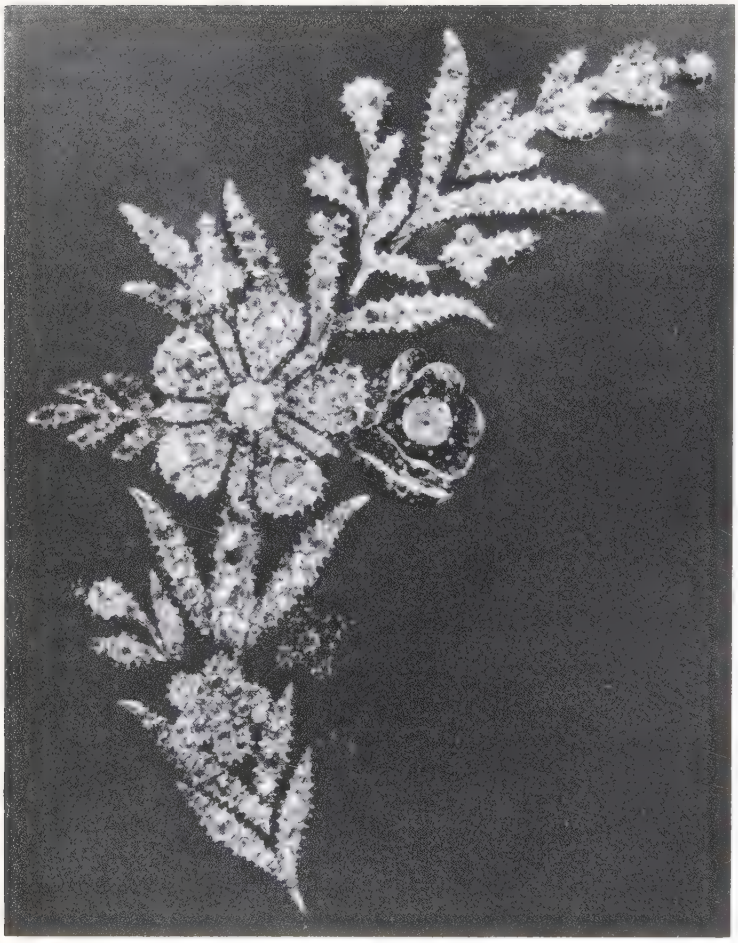






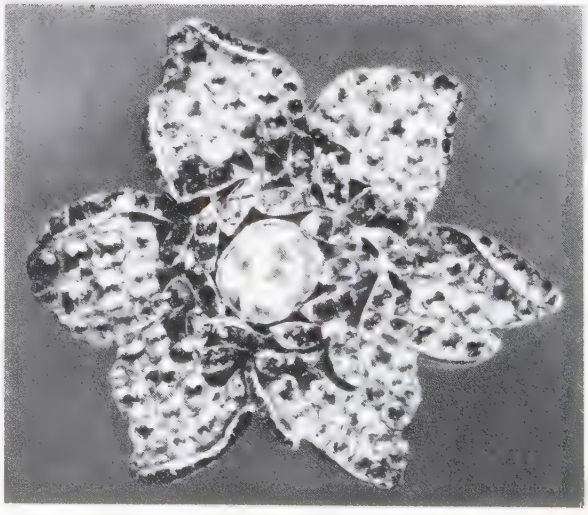
39. *Top*: 'Pampille' style brooch-pendants (see also plate 38).
Bottom: Silver brooch set with pastes. English, 19th century.

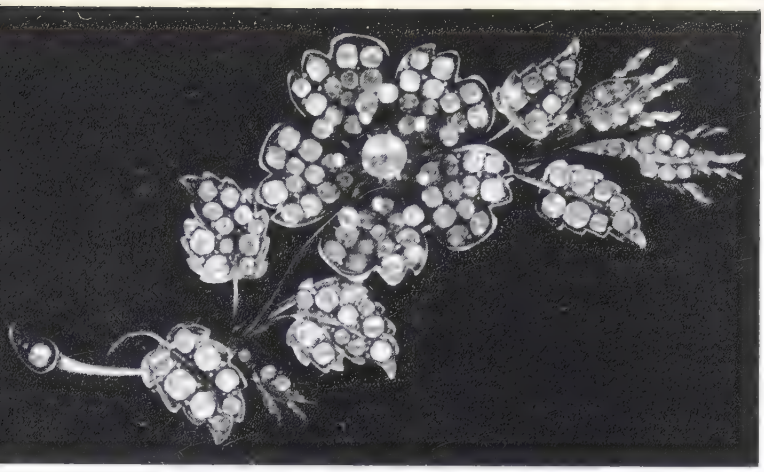
The cushion-shaped stones seen in all three pieces were frequently used around 1850. They are much more brilliant when closed at the back (as in the brooch).



40. Silver spray brooch and flower brooch set with pastes. French, early 19th century.

These are interesting pieces as they show the emergence of the 'naturalistic' spray. Relief is used in some flowers and petals and the design is more obviously floral than those in plate C and plates 7, 13, 23, and 27.





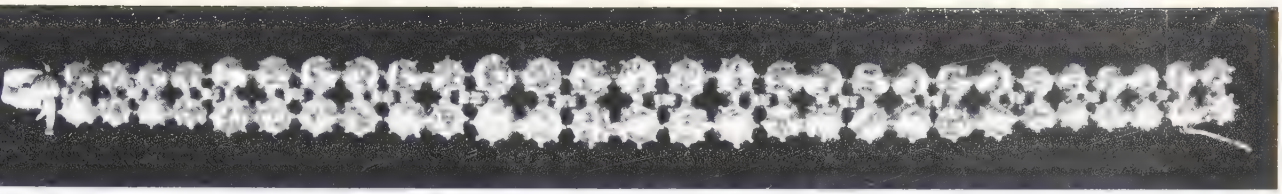
41a. Silver sprays set with pastes, flowers *en-tremblant*. French, mid-19th century.

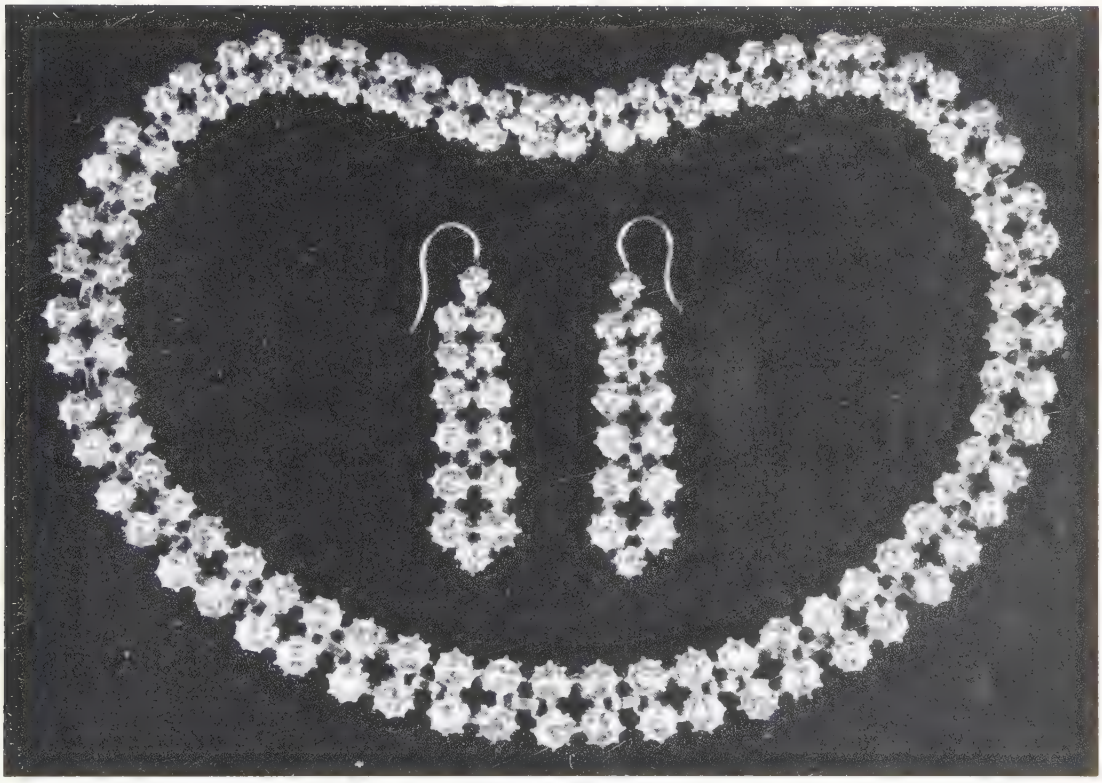
Note the greater naturalism. The stems are no longer set with pastes but are of rounded wire to make them more lifelike. Leaves, buds and flowers have all become more naturalistic.

41b. Silver tiara set with white pastes, open at the back. French or English, circa 1860.

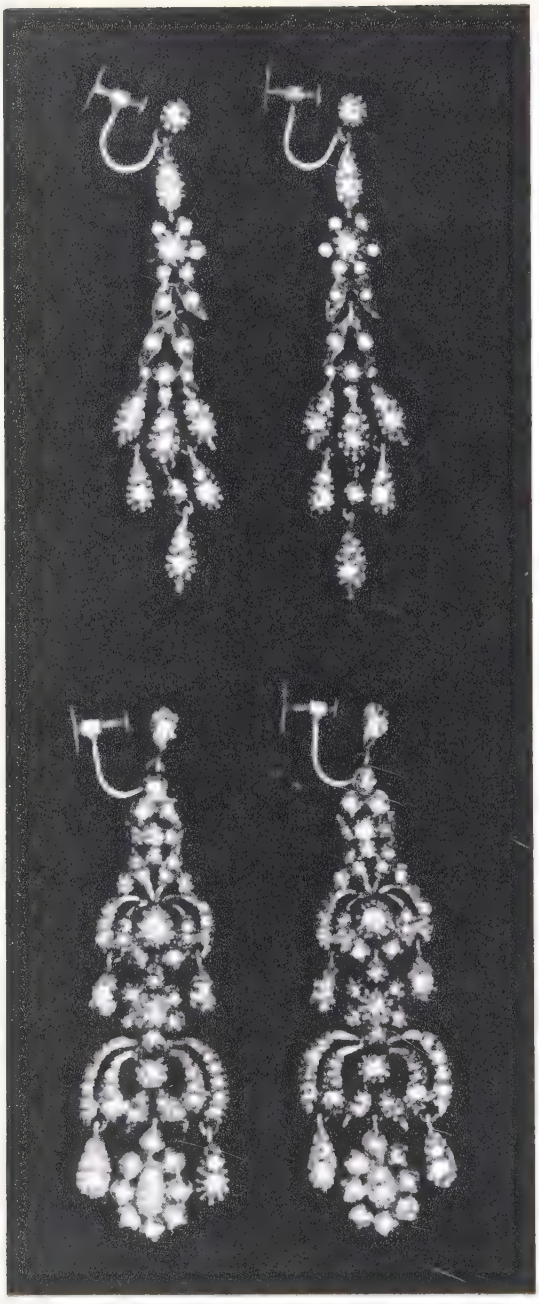
42. Reproduction suite in silver set with blue and white pastes.

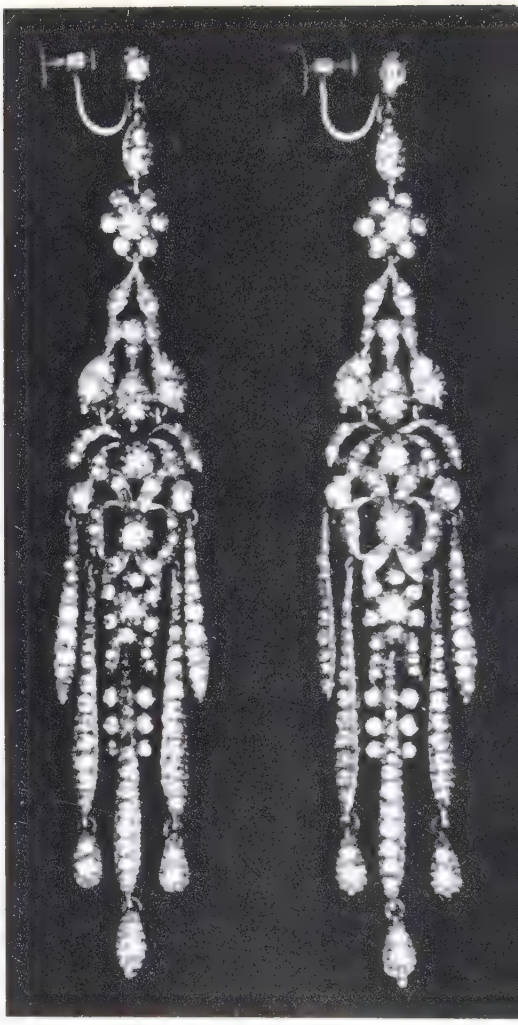
Note the very crude 'cut-down' setting round the blue ovals. The surface of the silver is rough and the edges of the pastes show abrasion marks. The metal is not closely in contact with the stones and the 'grains' (or vertical ridges) are not sharply defined (Cf. plate 5). The stones are identical in facetting and are open at the back, with pointed base (no culet). All these defects point to reproduction.





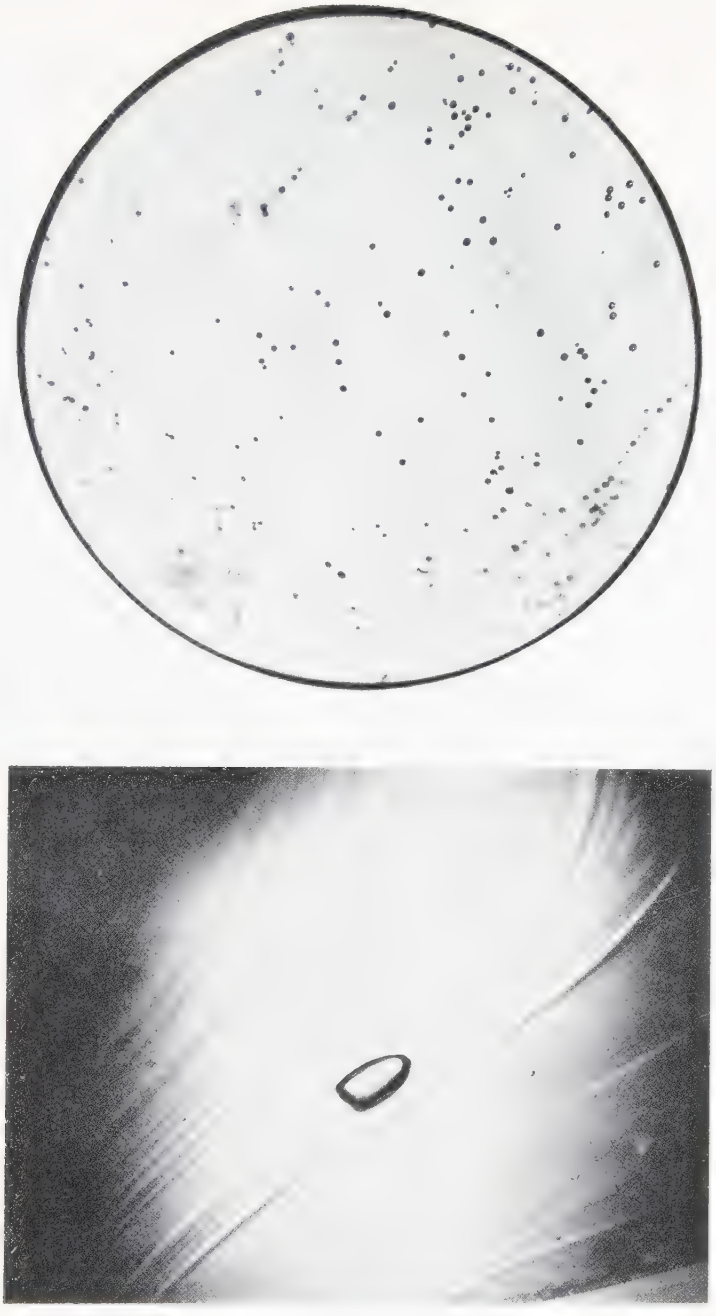
43. Reproduction suite of necklace, bracelet and earrings in silver and paste. The graduation is very skilful but there are only three sizes of collet. They have been cast in groups of four (large, medium, and small), an ingenious arrangement, but unusual in antique necklaces. Note that all the collets are round. Probably square or cushion-shapes would have been used in an antique necklace, which would have been light in weight. The reproduction is very heavy by comparison.





44. Three pairs of reproduction earrings in silver and paste.

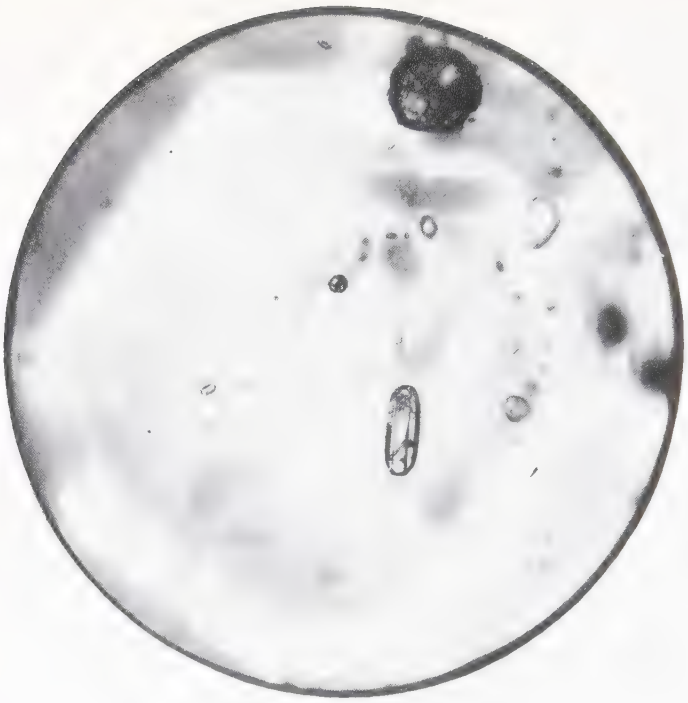
There are no black spots at the backs of the stones, which are uniformly round. Pastes are 'foreign' to the style, which is Flemish. Antique jewellery of this type was always set with rose-diamonds. The great length of one pair may suggest a Spanish origin, but the design and work are not typically Spanish. These details point to reproduction.



45. *Top*: Interior of a paste stone showing numerous air bubbles (absent in real stones). Much enlarged.

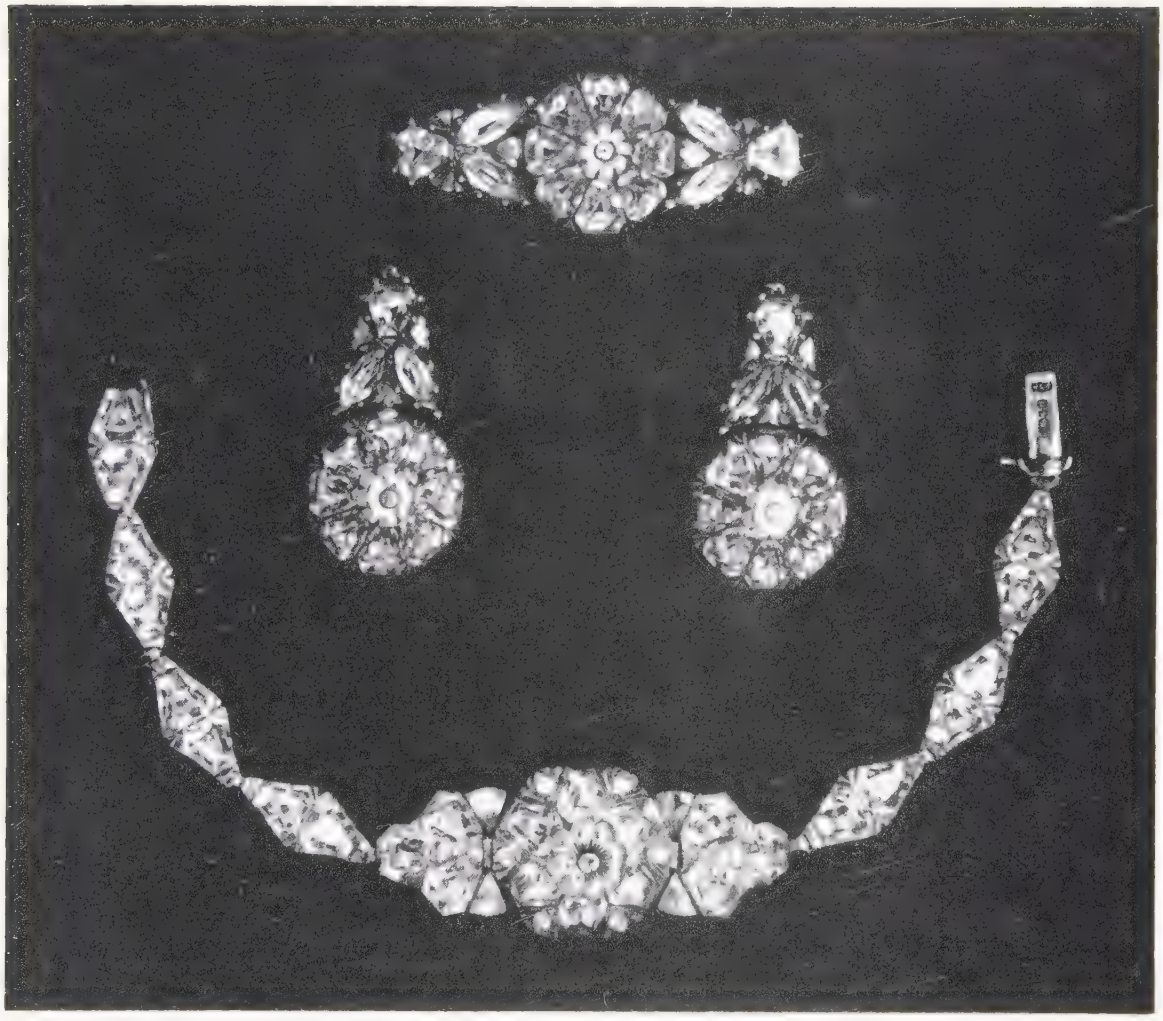
Note the spherical shape and random distribution. Sometimes these bubbles are large and transparent.

Bottom: Interior of a paste stone showing swirl marks and a torpedo shaped air bubble. Much enlarged.



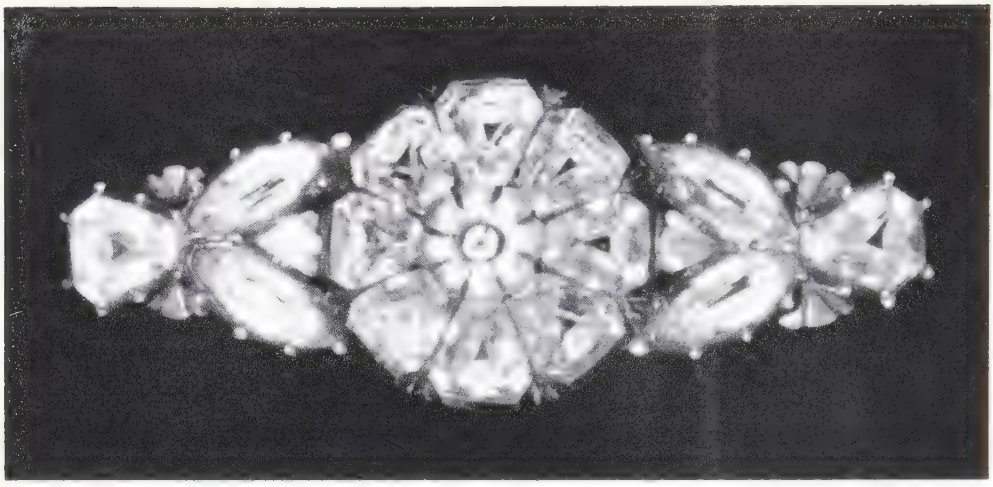
46. Interior of a real stone. Much enlarged.

Note the angularity and crystal form of the inclusions and the zoning of the colour. The network of 'criss-cross' lines towards the lower left is characteristic of this particular stone. (Burmah ruby).



47. A skilful reproduction of an antique paste suite, mounted in silver and gold.

These approximate closely to 18th century pieces in some respects. But some of the contra-indications are described on the next plate.



48. Enlargement of paste brooch in previous plate.

The four navette-shaped stones at the sides of the cluster are unusual in antique paste jewellery and the setting around them is imperfect. The gold rosette in the centre of the cluster is also unusual and is used to avoid the difficult and expensive process of cutting and setting an octagon-shaped paste to fit precisely. Substantial areas of silver appear between the pastes.

The bracelet, which obviously comes from the same workshop, has similar defects, and it should be noted that only one size and shape of paste is used, whereas a genuine 18th century piece would probably use many different ones.

The brooch has a modern safety catch (not visible from the front), directly soldered to the back, which shows that the catch and the remainder of the brooch are co-terminous.

The bracelet is hall-marked with a modern mark. The initials H.A.L. seen on the tongue refer to Harold A. Lazarus, a manufacturer of paste jewellery in London, who specialized in this type of work from about 1900 to 1960.

The crudeness of detail should be compared with the perfection of plate 5.

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Joan Evans

The new edition of Dr. Joan Evans's well-known history of jewellery in Europe from medieval times to the mid-nineteenth century, long since recognized as a standard work, has been eagerly awaited. It includes two extra colour plates and sixteen extra pages of black-and-white plates, which among them give a better representation of nineteenth-century jewellery and of jewellery worn by people in portraits, a special feature of the book. The text has been corrected, new locations of pieces have been indicated, and the bibliography has been radically revised, about 150 titles having been added.

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A. KENNETH SNOWMAN

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and an appendix by F. J. B Watson, M.V.O., F.S.A.

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The numerous photographs accompanying the text, approximately a hundred of which are in colour, are arranged in chronological sequence so that the fascinating history of these superb small objects, many of which were enamelled or set with precious or semi-precious stones, unfolds naturally as the pages are turned.

The author has sought and obtained the co-operation of the most important public, private and royal collections all over the world; as a result of a specially undertaken visit he is able to reproduce, for the first time, photographs of the finest boxes from the sensational Gold Room collection in the Leningrad Hermitage, as well as hundreds of examples selected from the national museums of Europe and America.

Mr. Sitwell discusses the colour plates in great detail in the course of his important introduction.

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