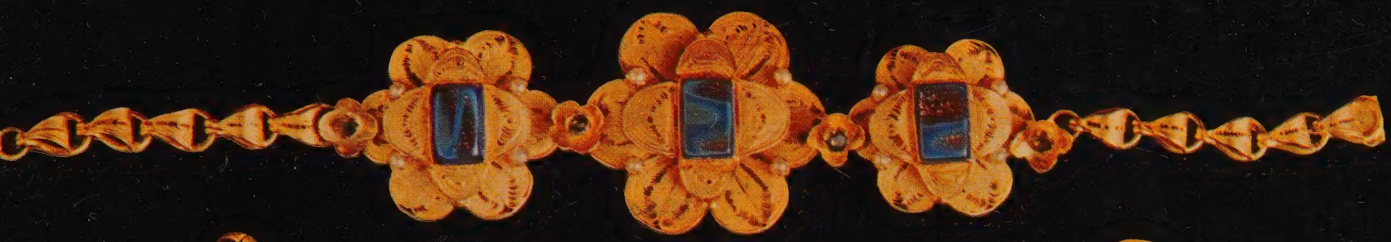
CORGI BOOKS

Investing in Antique Jewellery

Richard Falkiner



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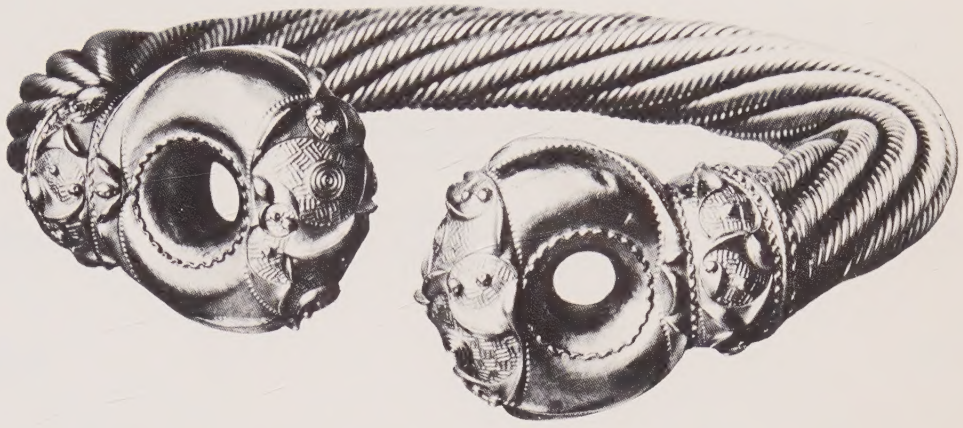

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INTRODUCTION

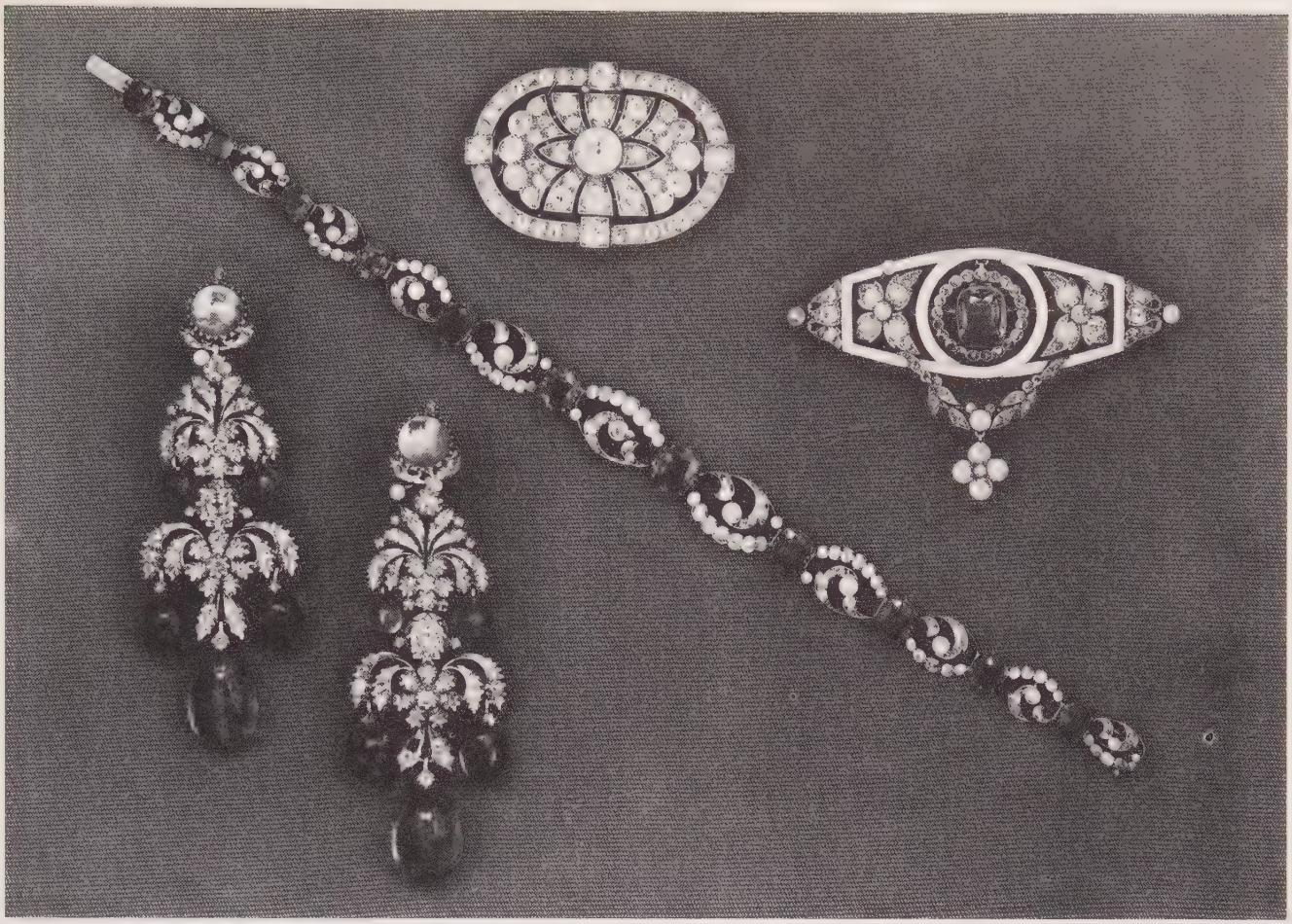
It is some time since a new book on the whole subject of jewellery has been published and although the commercial angle has been frequently treated in the financial columns of various periodicals, this is the first time that a whole book has been written with the investor in mind. It may be that the very sensitive will not take kindly to the idea at first, but their feelings may to some extent be overcome when they remind themselves that jewellery has been very close to commerce since prehistoric times. In an environment where banks are non-existent and there is no system of keeping one's wealth in a non-material form such as equities and the like, the safest way is to keep it in a portable form. A display of wealth became important very early in history, more for prestige, at least to begin with, than credit, which is a much later and more sophisticated invention. The use of jewellery today is much the same as it always has been, although the designs have changed as fashions and increasing technology have added to the jewellers' repertoire of techniques.

This book has been planned in two parts. An Historical section treats the subject chronologically from the very earliest times, and a shorter technical section covers the main characteristics of the basic materials, including gold and silver, and includes a simple explanation of some of the means used for identifying stones, together with some information on the history of the weight standards and other relevant details. This technical information is normally neglected in books on jewellery, most of which are historical throughout, but if one is to tie up one's money in jewellery it is easy to argue that a knowledge of some of the commercial considerations is prudent.

It is not easy to treat the subject of prices in a form that will give a book a useful life as they are changing, invariably upwards, so quickly. It is for this reason that the actual figures are in the main confined to the illustrations, except in a few historical instances in the main text. Dollar equivalents have been given at the average present (April 1968) rate of $2.40 to the £1. Each chapter has a postscript in which some attempt has been made to forecast the various trends for the investor. Even the captions to the illustrations should be used with care, as not only can prices change very rapidly, but it is not easy to compare any two pieces. Many of the illustrations have been drawn from examples which have changed hands in the fairly recent past.

The point can hardly be made too strongly that, when looking at jewellery from a commercial angle, quality is the overriding factor which makes a piece worth the money paid for it.

It only remains to acknowledge the enthusiastic help which has been



French jewellery from the late 18th to early 19th centuries.

received both from the trade and the owners of the objects illustrated. My thanks are also due to Hermione Waterfield who was a great help over the later chapters, and the staff of Design Yearbook who have shown great patience with an author who, try as he would, was nothing other than absolutely maddening.

The Ancient World

Gold and Lapis Lazuli bracelets made for Nemaretj, a son of King Shishak who is mentioned in I Kings xiv, 25. *Circa* 930 B.C.

British Museum.

Jewellery comprises some of the first non-functional artefacts made by man as soon as he had the leisure to turn his developing mind to subjects other than survival. The most rudimentary jewellery, for such it must be called, is found in palaeolithic tombs dating back some hundreds of thousands of years. These personal ornaments consisted of natural objects such as perforated mollusc shells, as for example those found in association with two child skeletons in the Grotte des Enfants, beads of stone, ivory and fired clay, teeth, usually deer canines, and less frequently mother-of-pearl discs and even fish vertebrae. Imitation was not unknown even at this very early period as ivory beads reproducing the form of deer teeth have been recorded. The jewellery of this time was for the most part extremely unsophisticated although the complicated chevron design incised on a mammoth ivory bracelet from Mezine, on the Desna in South Russia, is of sufficient complexity to tax the draughtsmanship of an artist of today. Normally local materials were used in slightly modified form. Nevertheless excavations at Grimaldi on the Riviera

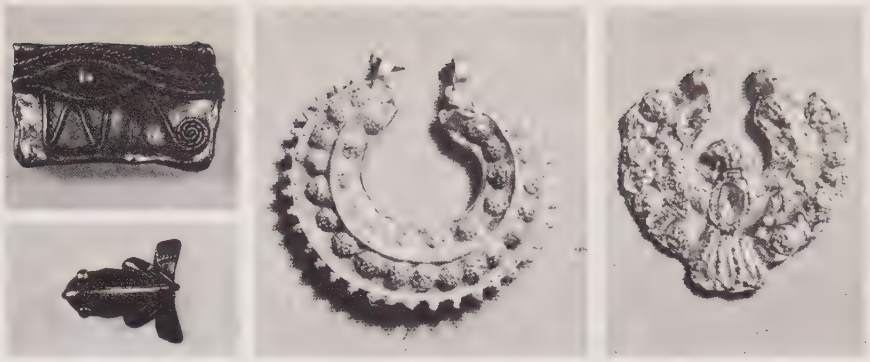
Egyptian gold jewellery from early in the 1st millennium B.C. Egyptian gold is very scarce and there is always a strong possibility of forgery.

A prehistoric 3rd millennium B.C. or earlier pendant jewel from Kayseri in Central Turkey, like so many similar objects comparatively valueless but illustrative of the very early history of jewellery.

Left
Amulets were popular in the ancient world. The 'Eye of Horus' is the most common type in Egypt. This one dates from the later centuries B.C. The frog is a very rare Babylonian type from the late 2nd millennium B.C. and was found at Tel Omar on the river Tigris. Most examples are made from hardstone.

Right
A gold Canaanite earring from Tell el Azzul 15th—14th century B.C.
Another similar piece from the same source. Canaanite, 15th—14th centuries B.C.

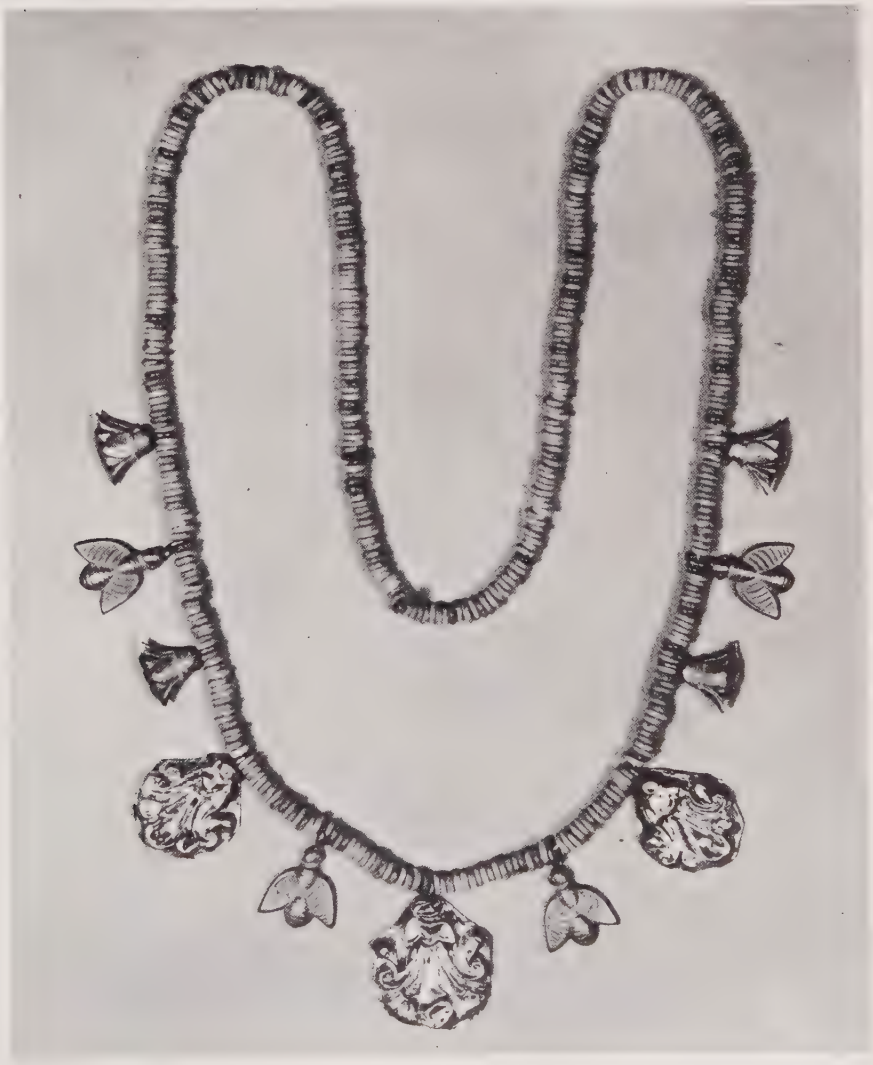
Fitzwilliam Museum, Cambridge.
Small pieces such as this are typical of the type of ancient jewellery available to collectors.



have yielded salmon vertebrae which must have been obtained from a river flowing into the Atlantic. Whether this was through trade or seasonal migration is not clear. Beads and pendants were threaded together to make necklaces, sometimes of quite complex designs. Change was very slow indeed over these many millennia but slowly other styles developed. From Catal Huyuk, a site in Southern Turkey, comes a necklace of blue beads carved as highly schematized steatopygous goddesses which was found in a grave, probably that of a woman, in a building dated to about 7,000 B.C. This piece has stylistic links with similar objects from Peterfels in Baden and representations of women from the upper palaeolithic layers of caves in France. From the same site came stone beads pierced longitudinally.

Up to this point there is a certain homogeneity in the jewellery of the whole world. It is only with the advent of the Neolithic period that it becomes possible to discern individual styles. Ornaments were still made from unprocessed natural materials but comparison of examples known to have come

An Egyptian necklace of faience beads with gold pendants. The lotus design indicates a date in the late dynastic period (1,000 B.C. or later).



from certain sites shows some localisation of design. It is however dangerous to make firm attributions of pieces taken out of context and it is well to remember that there are still in the world today numerous people leading a prehistoric existence and producing artefacts which are easily confused with those made elsewhere at a different point in time. For instance, to take a comparatively late example, the plain gold rings with copper cores made in the Irish Bronze age (*circa* 1,200 B.C.) are similar enough to the same type of thing manufactured in Japan during the Dolmen period (2,000–1,000 B.C.), that short of a laboratory analysis it is not possible to attribute such a ring to one place or the other. Even then the laboratory may not be conclusive. It would not be hard to cite similar instances. Neolithic sites from time to time yield talismans which it seems had ritual or magical, rather than decorative significance. There is a series from Portugal whose design is obviously based on an axe-head. Such objects are normally decorated with bands of hatched triangles, a pattern which was common at this time in Western Europe. It goes without saying that the ultimate source of all jewellery of the ancient world is the tombs of those who wore it. We can learn much of the way in which it was worn by studying photographs in archaeological reports of the relevant finds *in situ*. Such reports often give the sex and age of the skeleton on which the jewellery is found and thus indicate the fashion and practice of the day.

There is and always has been a great deal of ritual and etiquette connected with the wearing of jewellery. Not all of it is for decorative purposes only. The practice varies in different countries, a wedding ring is invariably worn on a specified finger and the Christian wedding ceremonial contains the words: ' With this ring I thee wed '. It does not stop there, the young men of England's smart regiments are today expected to wear their ring on the smallest finger

An Etruscan gold funerary diadem. 4th–3rd century B.C.

A group of Etruscan fibulae, made of bronze. They work on the same principle as a safety-pin and fall into an interesting variety of types. Most can be bought for about £10, $24.

of the left hand and even then the ring may only have certain prescribed insignia intaglio cut upon it. This brief historical introduction deals with pieces which hardly fall into the category of jewellery in the collector's context. Only rarely can they be considered beautiful and from the scientific point of view they are only important if they have a known find-spot. Those examples which come from a controlled excavation do not often reach the hands of the private collector. In any case their monetary value is small and depends on the rules of supply and demand. While personal adornments of these very early periods are on the whole exceedingly rare, so are the collectors who covet them. It is only the use of gold that brings jewellery within the province of this book.

Classical jewellery is made almost entirely of gold, silver and electrum. The last is a natural alloy of gold and silver. It is surprising how much jewellery from the ancient world has survived, particularly in view of the easily convertible nature of most of the materials. It is probable that silver was used much more than the material evidence suggests as it is much more likely to perish by crystallisation. It is said that the Greeks preferred silver to gold as they felt it had an affinity with the moon.

The basic problem in the authentication of ancient jewellery is that gold almost totally resists corrosion and develops no patina to act as a guide, nor does it revert to a crystalline state like silver and copper. Spectrographic analysis would rule out certain forgeries as, obviously, classical jewellery could not be made from gold mined in Australia or the Americas. The same need not be true of gold from Africa as there are ancient Egyptian records, the earliest of which date from the fifth dynasty (*circa* 2,494–2,345 B.C.) which mention expeditions to Punt, a region whose precise location has never been established, but was probably part of the Somaliland coast. As gold has always been a precious material there is no reason why metal from anywhere in Africa or Asia could not have been used even if it had reached the Mediterranean or the Middle East over a very great period of time. It is extremely unlikely but nevertheless theoretically possible and analysis showing the gold to have come from a very great distance should not be used on its own for damning a piece. However, spectrographic analysis is a complicated process and it is not practical except in the case of very valuable pieces.

On those examples where there is pictorial decoration, usually in the form of embossing, style is a very important criterion and it is this which very often betrays a forgery even after it has passed the most rigorous scientific tests. The draughtsmanship on forgeries almost invariably differs from the original. Work executed in a given period has a look about it that is not definable in scientific terms but is very clear to the practised eye. That a forgery was often not noticed soon after it was made is not altogether surprising as the connoisseur of the period was seeing the object with the same artistic attitude as he who made it. This does not apply to jewellery alone: for instance,

Opposite page
The Alfred Jewel. Its purpose has never been clearly defined. It was found in Athelney Marsh in 1693 and left to the University of Oxford in 1717.

Ashmolean Museum

Anglo Saxon disc brooch and cross of gold set with garnets. It is thought that the main workshop for this type of object was at Faversham in Kent. The brooch was found at Sarre in Kent, the cross at Stanton, Suffolk. Both date from the 7th century A.D.

Ashmolean Museum

Maenads executed at the end of the 19th century have an indefinable *fin de siècle* air, and again today we wonder how renaissance work could have been mistaken for that produced in the Roman period at the time it was made. Frequently elements of a subject represented are copied from a known work of art in another medium. The well-known forgery, the tiara of Saitapharnes which caused such a furore in its day, contained groups which were copied from an illustrated atlas of cultural history published in 1882. Certain elements in a design may be anachronistic, for example inscriptions may contain a form of lettering or grammar not compatible with the style of the object on which it is inscribed. One should reflect whether the goldsmith concerned really understood what was behind the work he was carrying out. Elaborate pieces with figures pose the question whether the clothes are correct for the period and whether the artist was familiar with them himself or copied them without first-hand experience. The methods used in making a piece of jewellery very often give some indication of the date of manufacture. It is not always known precisely how certain processes were carried out but there is a body of information on the subject and an investigation of these factors will very often distinguish the genuine from the false.

To add to the difficulties which have to be overcome in deciding the question of forgery is that pieces of jewellery, particularly necklaces, are sometimes made up from genuine parts and are sometimes even wholly composed of authentic elements. It is thus advisable to apply the tests available to several parts of the object and in the case of the latter type to decide whether all the pieces are compatible. Forgery looms very large in the study of ancient jewellery. The very inexperienced may be deceived by 19th century pieces made with honest intent to reproduce an antique style. On the whole these are very easy to detect with only a little experience but there is a much wider class which only the most experienced can be sure about. There is also a great body of material about which no decision can ever be reached. The inexperienced collector would be foolhardy in the extreme to pay large sums of money without taking good advice and even then he would do well to remember that experts frequently fail to agree. He should not then blame those he has consulted but regret the uncertainty which surrounds the subject.

After the fashion of more recent times, jewellery in the ancient world was not for decoration or status alone but was frequently part of the daily dress

Good fibula decorated with granulation work. Etrusco-Campanian work. Mid-5th century B.C.

Fitzwilliam Museum, Cambridge.

Opposite page

The Phoenix jewel of gold and enamel, the design is taken from a medal of 1574, and has been part of the British Museum Collection since its foundation in 1754.

Cameo portrait ring of Queen Elizabeth 1, *circa* 1585. Each different flower had a significance at the time—pansies were a symbol of virginity.

A German 16th century pendant.

The Townley brooch. French or German work of the 10th–11th centuries. The enamel is probably Italian. It is said to have been found in Scotland.

British Museum

of the time. Hence we get buckles, clasps and the like which take the form of jewellery. By far the largest amount of surviving ancient jewellery is of a funerary nature and was almost certainly made as such. We may be sure however that it was roughly of the same design as that used on high days and holidays in real life although for obvious reasons was of a less robust nature. Virtually all the extant examples of ancient jewellery have been found in the tombs of their owners. The only exceptions are occasional small pieces such as a ring or fibula which may be classed as a special find lost by its owner during his lifetime.

Ancient jewellery should always be handled with great care. The metals particularly silver, are frequently very brittle, through the reversion to the crystalline state. It is quite easy to see the crystals in a broken section of silver. This may be taken as an almost sure sign of age, although certain very recent forgeries, which are thought to come from Iran, have been vibrated to simulate this. Once a piece of crystallised metal has been fractured it is virtually impossible to repair it, hence great care is necessary not to cause damage by careless handling. The processes used by jewellers in the ancient world for working metal were few. Precious metals were hammered into sheets on an anvil, and to prevent fractures, were annealed at red heat several times during this process. The sheets were hammered thin enough to remove problems in working but nevertheless thick enough to stand up to some wear when in use. They could then be embossed in various designs. This was done in the finest and most individual pieces by hammering the metal on both sides in turn with various different punches over a soft yielding ground such as wood, lead or probably most frequently, bitumen. For more mass produced work, including most of the surviving examples, metal dies were used. These were cut intaglio into bronze and the sheet of gold hammered from one side into it, thus

An elaborate Hellenistic gold necklace and the clasp of another. *Circa* 2nd century B.C.

Detail of above.

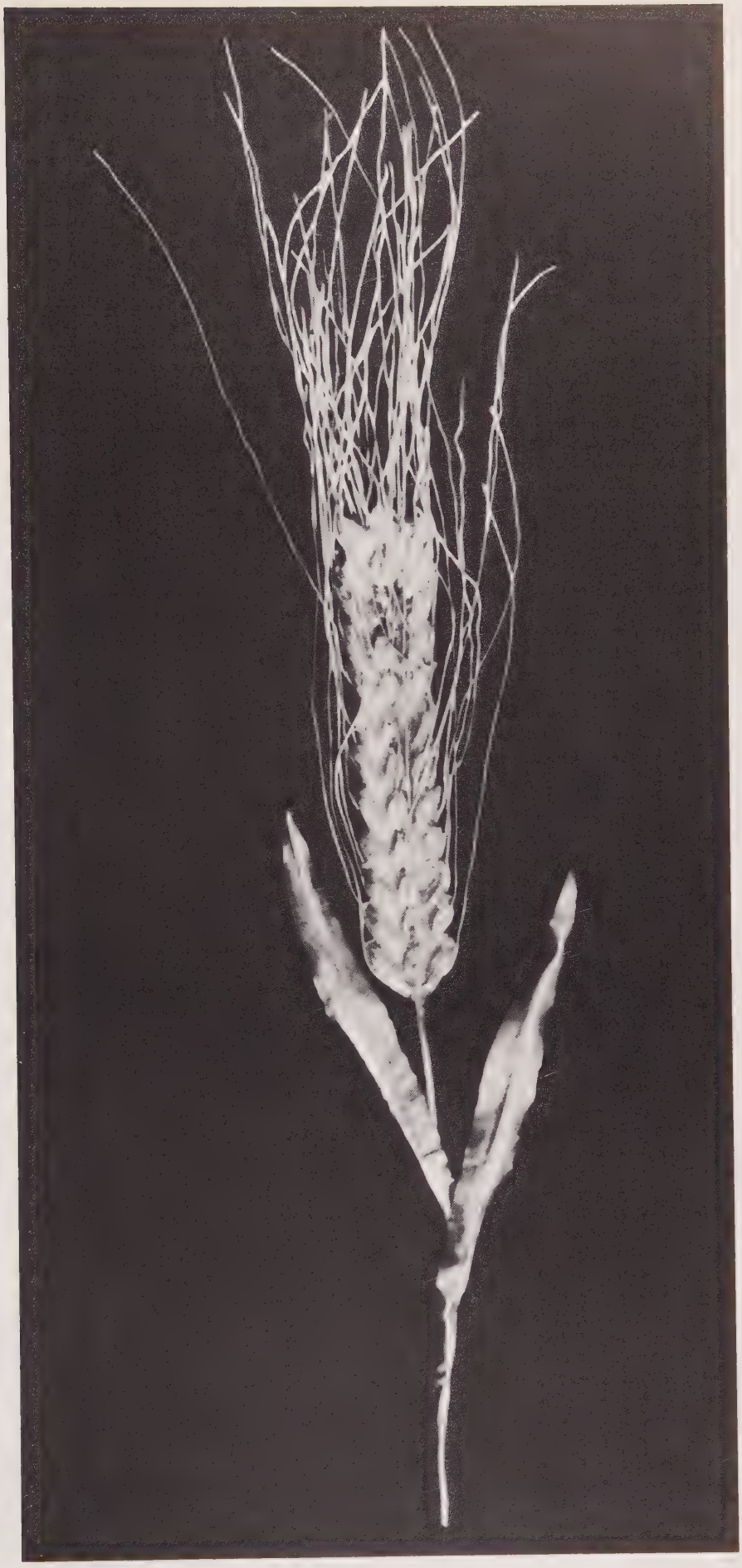
producing the design in relief on the finished object. There is a particularly fine Peloponnesian bronze jeweller's die in the Ashmolean Museum at Oxford which dates from between the 9th and 7th centuries B.C., this is oblong, the four sides intaglio cut with various animals and designs. It is one of the most interesting ancient jeweller's tools which has survived. A more sophisticated method which was not used very often was to model the parts of the jewellery in wood or lead and then to beat the sheet gold over it. This was comparatively simple for pieces in relief but pieces in the round had to be made in two halves and soldered together after the core had been removed. After the sheet gold had been stamped or hammered into the moulds, the blemishes could be removed by adding further detail in repoussé and on very rare occasions, particularly in the Mycenaean Period, further details were added by the engraver. Gold wire, almost always of circular section, was used extensively in jewellery made in classical times and chain work, sometimes of the utmost complexity, was also used over a long period. Wire was made from thinnish strips of sheet metal, rolled between plates of either stone or bronze till they were round in section and reduced by stretching. The drawplate was not introduced until the Roman period and was never used extensively until the Middle Ages. The use of a drawplate can always be detected by longitudinal striations and by the uniform thickness of the wire. Wire made by more primitive methods is less consistent in size and it is reasonable to suppose that virtually all modern forgeries which have wire in them are made from wire which has been pulled through a drawplate. Chains were worked into the most complicated designs and the so-called loop-in-loop chain was used from an early period of the classical world, from about 2,200 B.C. onwards. Its first use was observed in early Minoan jewellery from Mochlos. Further East it is found in jewellery at Ur dating from about 2,500 B.C. and it is probable that chains of this complex nature were probably first made in that part of the world. These linkages were made more and more complicated as time went on, to such an extent that many authorities have said that these chains were in fact plaited. Careful observation has shown this not to be so and indeed if they were such chains would not be as flexible as they are. A later development of about the 7th century B.C. was the gold strap which again appears to be plaited but is in fact made from complicated loop-in-loop chains. On rare occasions one comes across pieces of jewellery which have been cast. This is a process which was seldom used, probably for reasons of economy as it was much cheaper to manufacture jewellery out of sheet gold than to cast it in the round. Casting was, however perfectly possible as the melting points of both gold and silver are well within the range of a charcoal fire. A number of moulds, mostly

Left
A group of typical ancient Greek gold earrings dating from the late centuries B.C. Lions' and bulls' heads are the most common. These are found all over the Greek world, and one could still expect to buy a pair for £50–100, $120–240.

Above right
Three gold 'bracteates', typical of the objects which the Asiatic nomads sewed to their clothing. The one on the right shows a strong resemblance to the 5th century B.C. coinage of Panticapaeum in southern Russia and helps to date the group.

Below right
A pair of Greek gold earrings from Southern Russia.
4th—3rd centuries B.C.
Fitzwilliam Museum, Cambridge.

An Attic-gold votive stalk of barley from the late 5th century B.C.
£2,600, $7,300 in 1964.
5½ in. high.

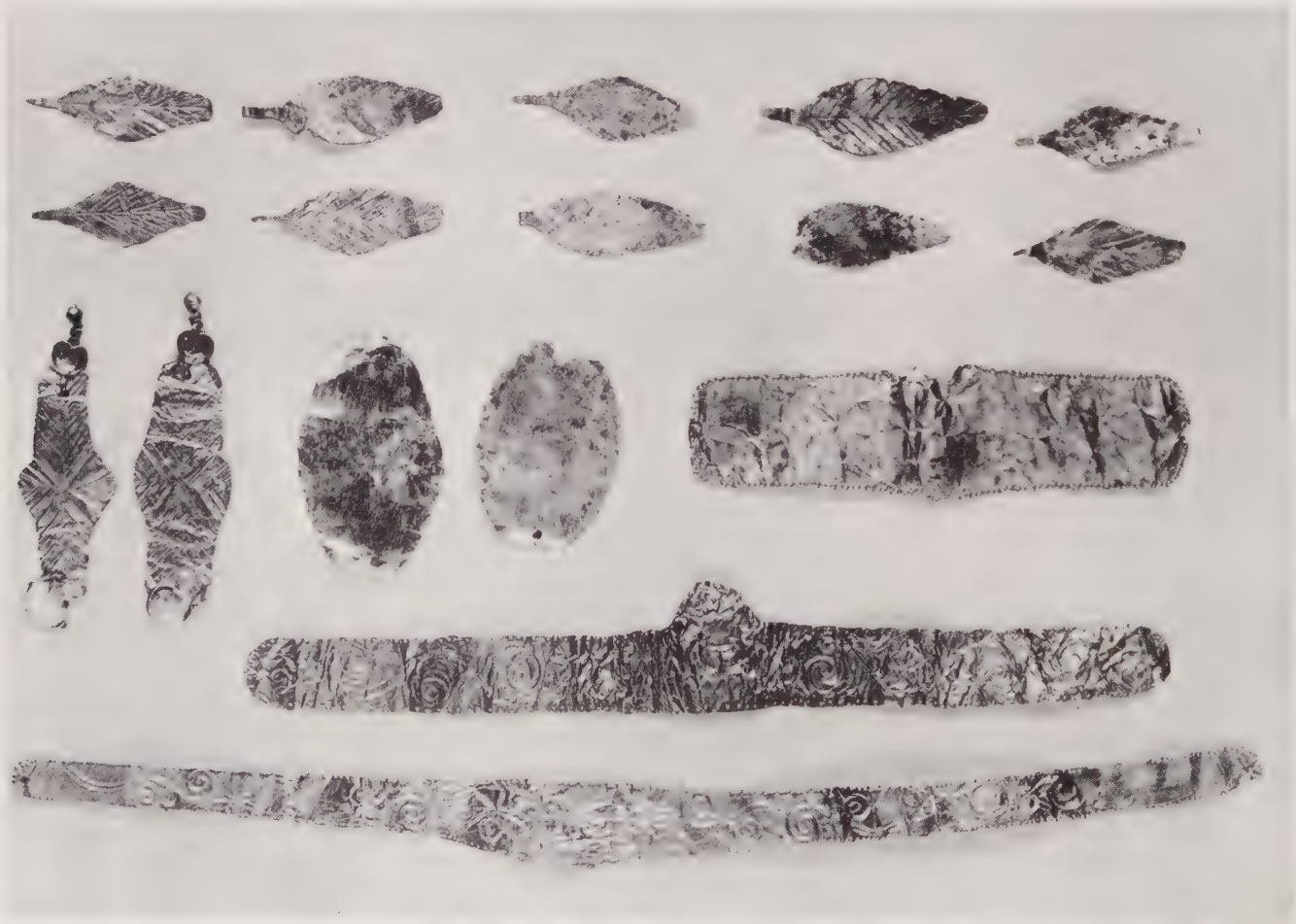


made of steatite, a material very resistant to heat, have survived but it seems likely that they were normally used for making wax models as the first stage in the lost-wax process. A much larger number of moulds of this type have survived than would be expected, judging by the amount of cast jewellery. It must be that they were either used for wax or for less precious metals such as glass, lead or bronze. Casting was normally used for pieces of jewellery which had to withstand hard wear such as rings or bracelets. Diadems and the like were made by embossing.

The *cire-perdue* or lost-wax process is one that has been used from remote antiquity. A wax model is made of the object which it is desired to cast in metal, and surrounded with clay, first by dipping in muddy water, and gradually by building up layers to give a final thick coating. By then baking the clay and leaving an opening through which the melted wax can run off, a mould is produced into which the molten metal can be poured. On cooling, the clay mould can be broken away. It is for this reason that no two pieces made by this method are identical and that none of them have a seam round the edge as if they had been made from a two-part mould, which is very often an important factor in determining whether a piece is a forgery. Moulds made up of parts were not used until the Renaissance.

The break-up of the Mycenaean empire caused a general decline in all the arts, and jewellery was not alone in suffering. The lifelike animal styles which had lasted for so long now disappeared. The so-called Dorian dark ages of the early first millennium B.C. saw an almost complete cessation of jewellery production. It seems that times were hard and luxury had no place. The examples of jewellery dating from *circa* 500 B.C., in orthodox opinion the high-water mark of Greek art, are also very scarce and the majority of those that are known betray a certain oriental influence. It was not until the political and military genius of Philip II, King of Macedon (assassinated in 336 B.C.) had made the mines of northern Greece available to the Greek world that precious metals again became available, at first in small quantities. The conquests of his son, Alexander the Great, led to a further and far greater

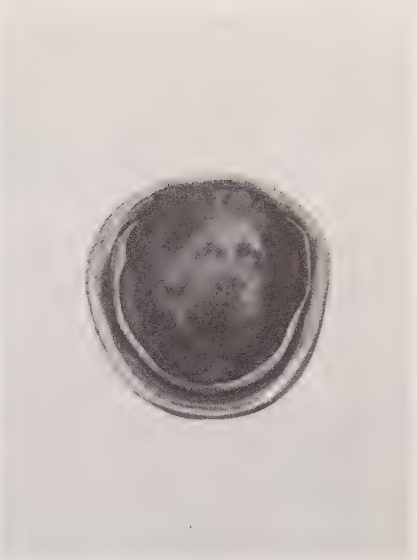
A typical group of gold leaves and diadems from Hellenistic tombs of the late centuries B.C.
This group realised £80, $192 at auction in 1968.



Roman cameo portrait of lapis lazuli. 1st century B.C./A.D. Cameos can occasionally be acquired quite cheaply, as they are less fully understood today than in the 18th and 19th centuries.

Ashmolean Museum.

A cameo cut with the head of Medusa. This was the most common subject in the late Roman Empire. Cameos such as this one can be bought very cheaply. Large examples (about 2 inches in diameter) were worn as medals by Roman soldiers.



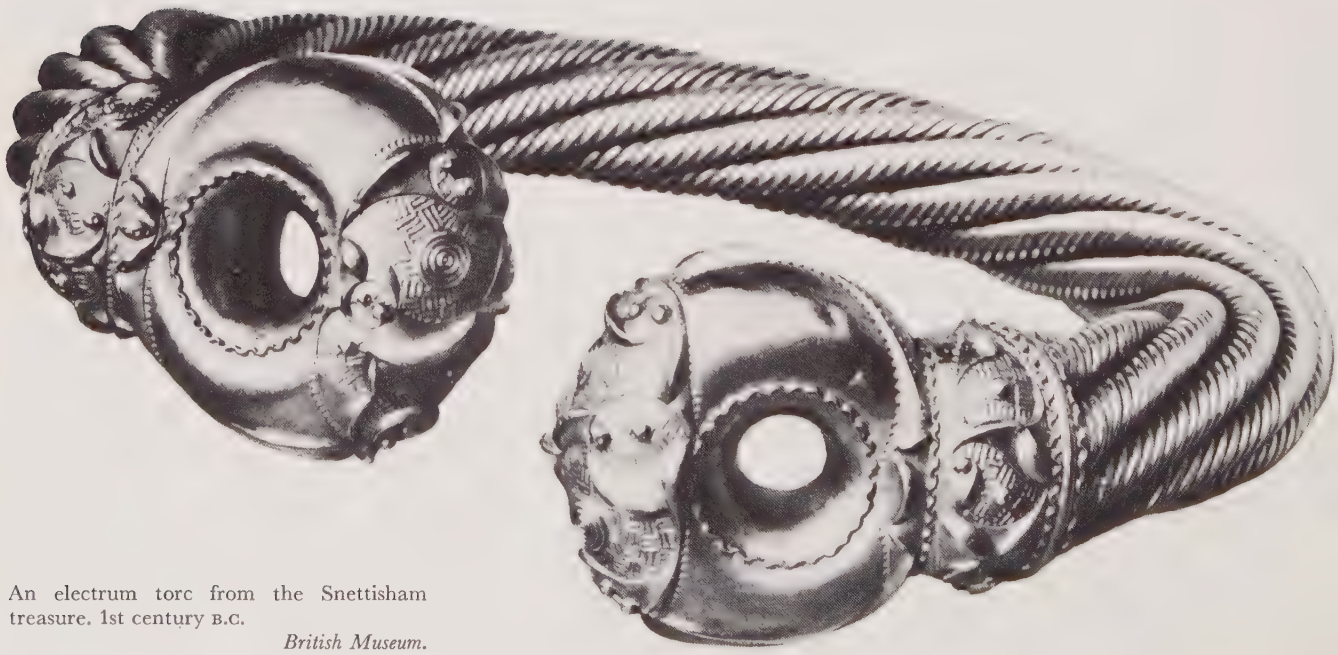
Both ancient and Renaissance cameos were frequently remounted in 18th century gold mounts. The example on the left shows how ancient damage was 'restored'.

quantity of precious metals being available to the goldsmiths of the day, due to the capture of the Persian treasuries. The most common forms to have survived are rings and earrings, but this need not mean that it was only such pieces that were made. It may well be that the larger pieces were considered too costly to be placed in tombs and consequently have not survived. More elaborate examples have been excavated from Etruscan tombs. Wreaths of gold, usually designed as myrtle, were popular. From the 16th century B.C., granulated jewellery was produced. Collectors should beware of tempting offers of elaborate pieces of Etruscan jewellery—a very short inspection of the Villa Giulia Museum in Rome, which is devoted to the Etruscans, will show how rare Etruscan jewellery really is. There is a great quantity on the market which the prospective buyer is informed has been clandestinely excavated but which has been manufactured very recently. Some experience will help the collector to distinguish the true from the false, but considerable care should be exercised.

The styles of jewellery developed much as the mainstream of Hellenistic and Roman art and, although in a piece of jewellery there are usually few criteria on which to make an attribution, the signs are there to be interpreted by those with the will and perseverance to do so, although firm dating is always hazardous. The Roman conquests in the East meant a continuing supply of gold and at the same time precious stones begin to make their appearance, until by the beginning of the 4th century A.D. the great movements, both ethnic and religious, were contributing towards further developments in design which caused jewellery to take on an early mediaeval air which, although the shortage of gold in the West was to cause a virtual cessation of production there, was to continue under the Byzantine Emperors. There was also activity on the fringes of the civilised world during this long period. We owe to Peter the Great of Russia the survival of a great part of the goldwork of the Asian nomads of the first millennium B.C., as it was he who gave orders that the finds of the barrows on the Russian steppes should be preserved at St. Petersburg (Leningrad). There is a blend of Oriental with Hellenistic

A late Bronze Age gold collar from Cintra, Portugal. Note the fine craftsmanship even at this early date.

British Museum.



An electrum torc from the Snettisham treasure. 1st century B.C.

British Museum.

A gold neck ornament from the Iberian peninsula. The engraving is skilfully executed. Such an object is hardly wearable, but must make a good investment due to its rarity.

A copy of ancient Greek jewellery found in the Crimea, by Carl Fabergé. He is not so well known for this work. It can easily be distinguished from the original by the more massive construction and superior craftsmanship.

civilisation in the finds made in the area of the Crimea. At what was, during the period, the other end of the world, the jewellery of the Bronze Age in remote Ireland gave rise to many curious forms, the use of which is not fully explained today, and their traditions lasted for many centuries. The Celts wore a torque round the neck, which among the great chieftains assumed vast proportions and intricacy of design. Such an example is the one found at Snettisham in Norfolk, which amply shows the high degree of skill possessed by prehistoric workmen. Other than Hellenistic jewellery from the Near East very little is available and the student is best advised to satisfy his curiosity in the great museums.

The best general collection of ancient jewellery in the world is that housed in the British Museum, a great part of it is admirably displayed in chronological order in the Greek and Roman life room and the catalogue which is now unfortunately out of print, is very fully illustrated. The Hermitage in Leningrad has some of the finest examples of Greek jewellery in existence, these come for the most part from sites in South Russia. A well produced book on the subject has recently been published (1966) and although the text is in Russian there is a sufficient number of illustrations to give an idea of the scope of the collections there. The Metropolitan Museum in New York has a large collection, the greater part of it being the Cesnola collection from Cyprus. The jewellery from this section is published in catalogue form, the rest, with few exceptions, is not. The collection in the Louvre is very extensive, but it is inadequately catalogued while the illustrations are far from

good. The Staatliche Museum in Berlin had a fine collection but it has not been available for study since the beginning of World War II. The various regional and national museums in most cases own a more comprehensive specialised collection of their own area. The National Museum in Cairo holds a very large collection of Egyptian jewellery which has been catalogued in a large volume with good plates. The text is in French. The jewellery from the Royal tombs at Ur is divided between the National Museum in Bagdad, the University Museum in Philadelphia and the British Museum. It is all published in C. L. Woolley's excavation reports with numerous photographs and watercolours. The Mycenaean jewellery at the National Museum in Athens is well displayed but again inadequately published. Athens is also fortunate in possessing the Stathatou and Benaki collections which consist mainly of classical examples and are excellently catalogued. The museum at Heraclion in Crete houses most of the Minoan jewellery in existence; it is admirably displayed and is published in the various excavation reports of the island. The jewellery of the Etruscans is seen to good advantage in the Villa Giulia Museum in Rome and to a lesser extent in the Vatican and the archaeological museum in Florence, while the National Museum in Taranto has much material made by the Greek Colonists in the South of Italy.

A Celtic pin, *circa* 6th century A.D. Note the traces of enamel on the ring.

Prehistoric 'Sunflower' pin of bronze. This is a type which spread over Western Europe from Scandinavia.

The Ancient World: Investment

Opportunities for investment in ancient jewellery are relatively frequent but fraught with difficulties. The greatest of these is the matter of forgery. Great care has to be taken when buying ancient pieces and in general it is wise to acquire them from reliable sources only. There are few criteria for judging the age of such objects, particularly as they are almost invariably made of gold, and there is much disagreement even among the most experienced as to which examples are indeed ancient. A second disadvantage is that the jewellery described above, with the exception of rings, is fragile and cannot be recommended for wearing: in addition it tends to be incomplete, with missing or broken clasps or pins. Restored pieces are naturally less sought after.

Modern taste is such that comparatively few people hold classical jewellery in high esteem; thus the market is rather restricted. Important articles are hard to come by, and to acquire these one must simply wait until they happen to become available. The best pieces are relatively easily negotiable, but the question of possible forgery must always be borne in mind. Forgeries may be either complete fabrications or assemblages of various genuine fragments. The supply of the less spectacular ancient pieces is reasonably good. Most of them are excavated in the Middle East, and although the design owes much to the cultures of Greece and Rome the work must surely have been carried out by local craftsmen under Hellenistic and Roman rule. The laws governing the export of antiques in Middle Eastern countries are becoming fairly strict, so it seems that the supply must decrease. Consequently a well chosen collection of classical jewellery, even of the relatively inexpensive type, should prove a worthwhile investment if the many pitfalls are avoided.

A group of cornelian and gold beads. These were excavated in Iran and date from the early centuries A.D. Necklaces of this type can usually be bought for under £250, $600.

The Middle Ages

The fall of the Roman Empire coincided with the shifting of power from Rome to Constantinople, the new capital of Constantine the Great (reigned as Emperor A.D. 306–337). The inclusion of precious stones in jewellery, as opposed to the simple display of gold, had been a feature only of very late Roman pieces. Surviving jewellery of the Byzantine period consists almost entirely of articles in which gold was used as a vehicle to display a variety of coloured stones. These had their origins along the trade routes of Asia or were occasionally taken from the small number of earlier gemset pieces; with their polished surfaces they resemble waterworn pebbles and were set in plain unbroken collets or pierced longitudinally and sewn to the setting with gold wire. Hand driven bow drills were used for piercing, and the bits were dipped in the dust of a material at least as hard as the stone being worked. Pearls were among the stones most frequently used, probably because they were relatively common in the Mediterranean area and because they were fairly easy to drill.

The basic shapes of the stones remained unchanged until the introduction of facetting in the 16th century, and either followed their natural form or were cut as hemispheres and domed squares. The treatment of the gold itself began to change at the beginning of the Byzantine period: previously it had been chased, often deeply with more or less formal designs, but now filigree work was introduced, together with simulated granulation. This was achieved by soldering together small pieces which were probably made by the *cire perdue* or lost wax process. The secret of true granulation as practised by the Etruscans had been lost and was not rediscovered until the present century. By the time of the Emperor Justinian (527–565) piercing and engraving techniques had become popular and sheet gold was often decorated with vegetable motifs and inscriptions in the Greek alphabet. A general idea of the way in which jewellery was worn can be gained from the Coptic tomb portraits recovered from the Fayum area in Egypt; many of these can be closely dated, and show women wearing earrings and necklaces.

In late Roman times a vogue developed for jewellery set with coins: this type is most useful to the historian as the exactly dateable coins give a time before which the article could not have been made. At the same time it is well to remember that Roman aurei struck in high relief remained in favour for this purpose for perhaps hundreds of years after they were minted. Coins from the late Roman Empire and the early part of the Byzantine era, together with barbarous imitations, continued to be used for almost a thousand years.

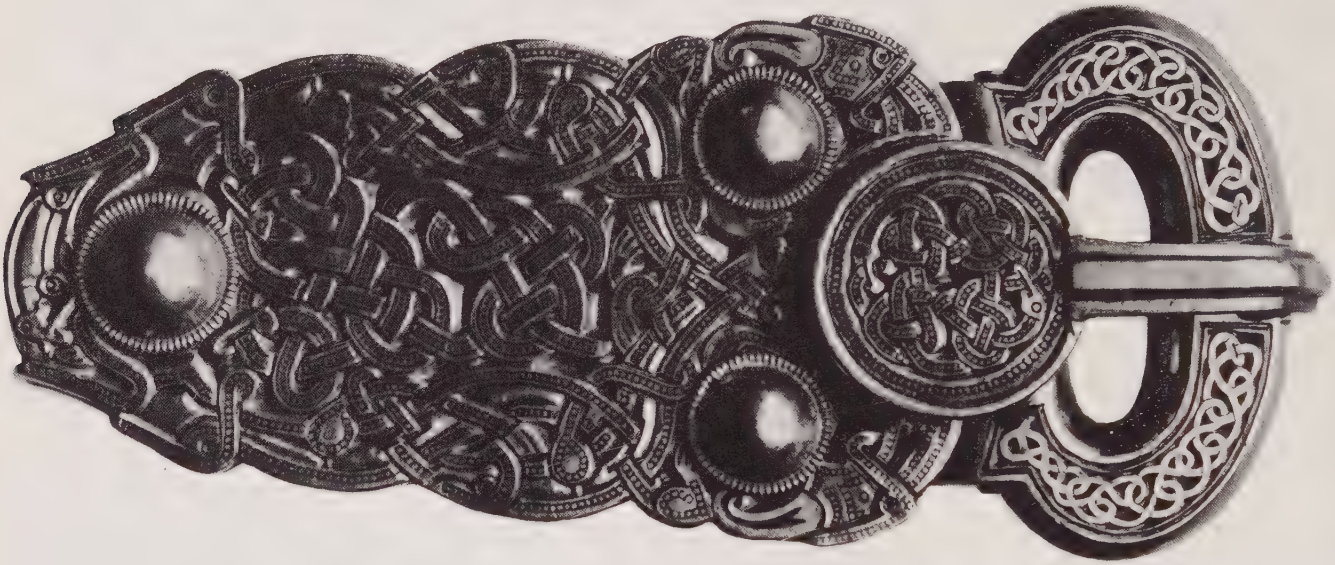
The total of surviving Byzantine jewellery is small and most is in the form of earrings which can sometimes be acquired by the collector. These are frequently crescent-shaped and pierced engraved, many with a design of peacocks *vis-à-vis*. It is often possible to obtain these in pairs since they come from tombs and have never been separated; however, both should be examined carefully as, where only one of the original pieces has survived, its pair may have been forged to find a better sale. We need not conclude from the rarity of this jewellery that it was not worn by most of the richer people: Christians buried little with their dead and thus the metal and the stones tended to be broken down and re-used many times. This does not apply to the heathen tribes who were advancing westwards across Europe during the first millennium. Practically every local archaeological museum in Europe contains quantities of jewellery which had been buried with the dead of various tribes. Towards the end of the millennium, precious stones and metals became increasingly scarce, and such jewellery as was made was mainly bronze gilt, set with cabochon stones, usually garnets. Predictably, most of this is utilitarian in nature in accord with the nomadic habits of its wearers and adorned their armour and equipment. Most Teutonic, Viking and Anglo-Saxon graves of this period yield fibulae, often in pairs, which scholars find useful in tracing the migrations of various tribes: although they are all of the same basic design, the small differences in ornamentation have been minutely codified and these, together with the few other grave goods, help to reconstruct the migration routes across Europe. It is difficult for the collector to obtain this jewellery since most of it was excavated from graves and cemeteries and went straight to local museums. Consequently collectors have to rely on chance finds and pieces from collections of 19th century or earlier landlords. On the rare occasions when they do come on the market prices

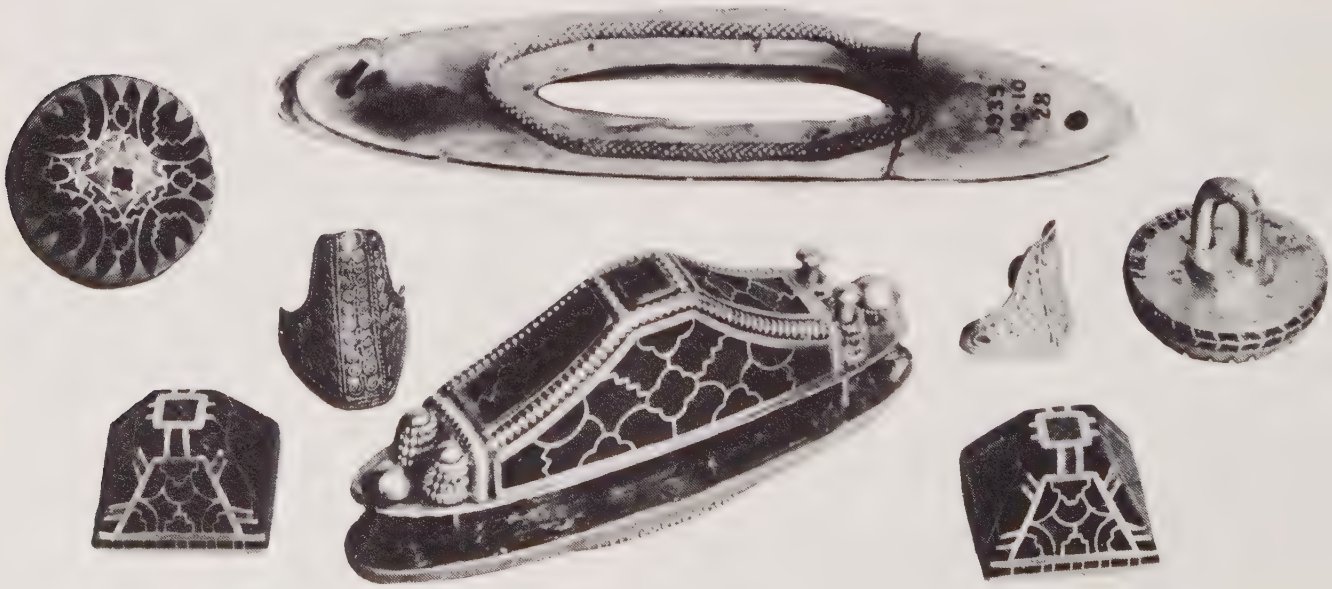
An elaborate bronze gilt fibula of the Migration period (mid-1st millennium A.D.). This would be hard to find and would cost today about £100, $240.

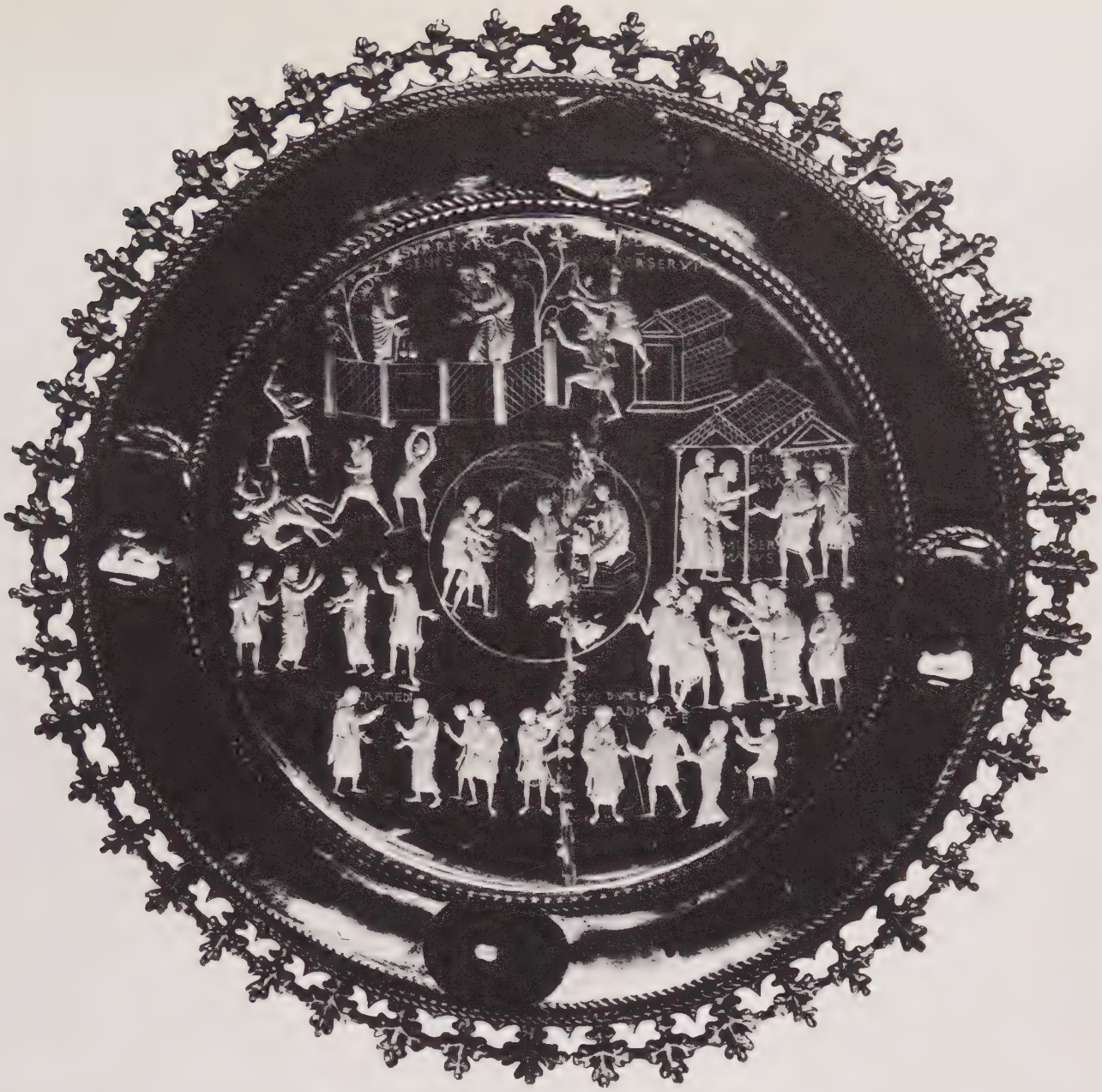
Avar gold harness mounts. Mid-1st millennium A.D. The Avars were among the many Asiatic invaders of Eastern Europe at this time. Both Byzantine and Oriental influences are apparent.

tend to be high. As time went on, jewellery seems to have fallen further and further out of favour. This may have been caused by the spread of Christianity and the resulting lack of tomb goods, or possibly by the increasing shortage of gold. Moreover, silver of this period is practically unknown.

During the Carolingian era, when Charlemagne was Holy Roman Emperor (crowned on Christmas Day 800) and King Alfred was reigning in England (871–900), the golden age of the classical Roman Empire was greatly admired and jewellery came back into fashion. The goldsmiths of the time—the distinction between goldsmith and jeweller did not become clear until the Renaissance was well under way—had a tendency to make only important pieces for great aristocrats. Jewels, which were usually large and ostentatious, were invested with magical significance. Most of those which have come down to us are well documented and some of them have been prized possessions of many an ecclesiastical treasury for the past 1,000 years. There are few, if any, pieces of this nature in private hands and collectors must content themselves with going to see them in great museums and in the sacristies of the cathedrals of Europe. Roman cameos took on great significance and many of these talismanic jewels are set with them. Typical of this group is the Frankish fibula in the Hessisches Landesmuseum in Darmstadt, the centre of which holds a cameo of reasonably common style cut with the head of Medusa. Another example is the jewel in the Bibliothèque Nationale in Paris, the centrepiece of which is an agate intaglio cut with the head of the Roman empress Julia. At this time the centre of the arts was northern Europe, where culture flourished in the courts and monasteries. England, formerly on the periphery of the continent, now became involved with this movement and it was here that perhaps the most exciting jewel in the world, the Alfred Jewel, was produced. A valued possession of the Ashmolean Museum in Oxford, this masterpiece of late Anglo-Saxon goldsmith's work is inscribed AELFRED MEC HEHT GEWYRCAN—'Alfred ordered me to be wrought'. It was found near Athelney Marsh in Somerset in 1693 and was left to the University by Colonel Nathaniel Palmer in 1717. The find-spot, the text of the inscription and the artistic style make it very probable that the original owner was Alfred the Great himself. The boar's head mount has parallels in Anglo-Saxon art and forms a socket in which presumably a wooden or ivory stem was originally fixed. A small gold rivet to hold this is still in its place. The







The 9th century Crystal of Lothar: the mount dates from the 15th century. This piece was lost at the time of the French Revolution and later found in the River Meuse. It was bought by the British Museum in 1855.

Gold sword fittings set with garnets from the ship burial at Sutton Hoo in Suffolk. 7th century A.D.

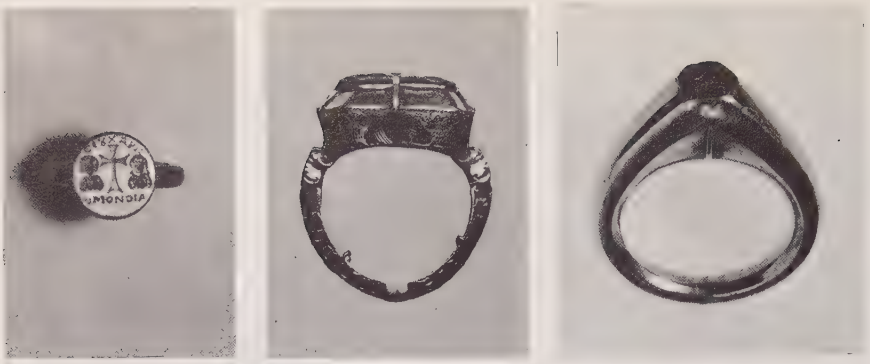
The elaborate gold belt buckle with *niello* inlay from the Sutton Hoo ship burial. A similar example is in the cathedral treasury at Tongres in Belgium.

Gilt bronze shield ornament from the Sutton Hoo ship burial.

British Museum.

only known piece like it is the Minster Lovell jewel, also in the Ashmolean Museum, which was excavated only some twelve miles from Oxford. Their use is uncertain, but it seems that they must have formed part of a ceremonial sceptre or staff of office. In the same museum there is an enamelled jewel of similar type from Risano in Dalmatia, but this is probably earlier work of about A.D. 500. Almost contemporary with the Alfred Jewel is the Great Crystal of Lothar, eldest son of Charlemagne's successor, Louis the Pious. This large circular rock crystal is intaglio engraved to represent the story of Susannah and the Elders, and is now exhibited in the Edward VII Gallery of the British Museum. In general jewellery of the last two centuries of the first millennium is exceedingly rare and it is difficult to draw firm conclusions about the pieces which survive. The main source of material has been the pagan burials of the Vikings who, until very late, continued to inter a man's favourite or valued possessions with him.

Before the 10th century jewellery designers had always looked to antiquity for their inspiration. The Carolingian goldsmiths were only continuing the Merovingian tradition and the frequent use of antique engraved gems helps to show how important the classical age was in the minds of the cultured men of Europe of the period. By 900 individual designs were beginning to evolve. Most of the surviving jewels are large and magnificent objects of statecraft,



Left
A Byzantine Gold Ring. *Circa* 6th century A.D. These normally had Christian symbols rather than designs of personal significance.
Centre
A gold ring, probably ecclesiastical, set with a sapphire and engraved with the Angelic Salutation. This was found at Cannington in Somerset.
British Museum.
Right
An English gold ecclesiastical ring set with a sapphire, which is probably from Bohemia. The shape is typically English.
British Museum.

obviously intended to increase the awesome presence of their owners. Also at this time jewellery designs began to take on a character of their own derived neither from antiquity nor from the nomadic cultures of Asia. When Otto I defeated the Hungarians at Lechfeld in 955 and established the Ottonian dynasty, Western Christendom became united under his undisputed leadership. From the technical point of view goldsmiths' work became more complicated, but stylistically the art of the Byzantine court was now the admired model. The settings, instead of being plain collets, were now decorated with filigree and beaded wirework, and cloisonné enamel after the Byzantine fashion began to make its appearance. In pieces of this period the stones are held in place by triple claws and on rare occasions crude granulations are employed.

One of the best documented treasures is the parure said to have been worn by the Empress Gisela at her wedding to Conrad II, celebrated in Rome at Easter 1027. This consisted of a ceremonial gold chain and necklace set with numerous antique gems in the Byzantine tradition, accompanied by two eagle fibulae, various earrings, tassels and nine rings. It was discovered in the cellar of an old building in Mainz in 1880, but the whole treasure, with the exception of an eagle brooch now still at Mainz, was lost in the destruction of the Schloss Museum in Berlin during the Second World War. Large circular brooches of this type, where an eagle seems to be almost invariably the central motif, were used to fasten the mantle at the breast. From the quantity of material excavated in the area of Mainz it seems reasonable to suppose that the workshops of the Imperial goldsmiths were located there. At this time earrings were becoming less used. The wearing of earrings was a Byzantine habit and did not become general in the West until the 16th century. The rings that survive, at least those made of precious metals, appear to be episcopal in nature and are almost invariably set with a sapphire (probably from Bohemia). This stone was a symbol of chastity and inner peace. During the gold shortage, copper and copper gilt began to be used even in royal jewels. Jewels became more compact, with enamel more prominent in the design, but there was little fundamental change until the 13th century, when settings became more complicated and stones played a slightly less significant role. From this time there is documentary evidence to help with attribution and dating. During the early Middle Ages it seems that most of the great jewels were made in monasteries, but the secular goldsmiths of London were numerous enough to have formed themselves into a Company by 1180. Jean de Garlande writing *circa* 1200 mentions the goldsmiths' shops in Paris in his description of the bridge over the Seine, and writes of them as making cups of gold and silver, rings and other jewellery. The distinction between the goldsmith and the jeweller had not yet become fully defined, as most of their techniques were the same. However, Etienne Boileau, writing about the Paris guilds between 1258 and 1269, has much to say of the goldsmiths and nothing of the jewellers. In the French provincial centres the Mercers' Guilds occasionally had jewellers affiliated to them and so it would seem that they dealt in what is known today as costume jewellery.

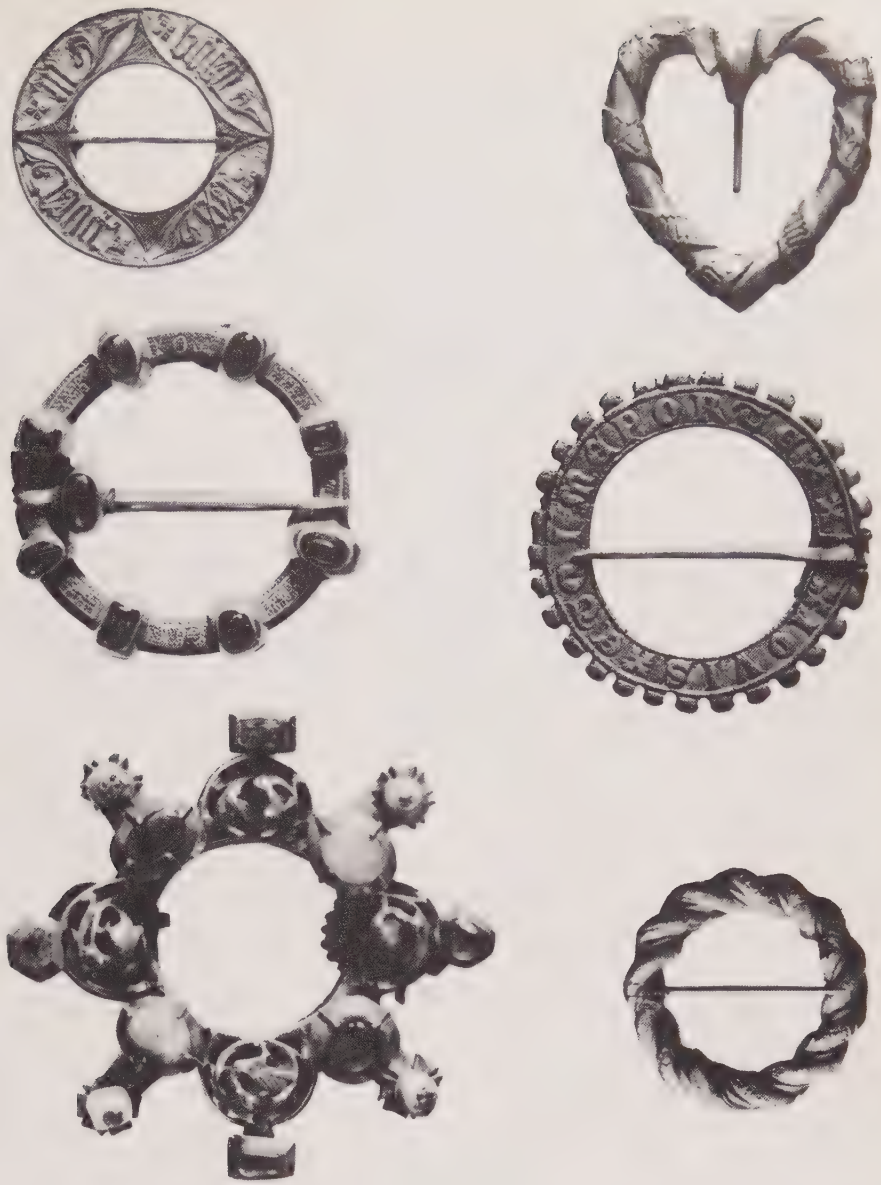
The crusades had the effect of bringing into Europe many new ideas, techniques and treasures from the East: one does not need to look far in a great mediaeval cathedral treasury to observe Islamic influence in many of the pieces. Indeed many of them are Islamic works of art with European mounts. The numerous relics of the Passion which were brought back,

An English gold and enamel swan jewel of the late 15th century. This was found on the site of a Dominican priory at Dunstable, Bedfordshire, and is now in the British Museum. The swan probably had a heraldic significance.

An English gold and enamel hat-medallion or *enseigne*. *Circa* 1530–40.

A group of 14th century brooches of a type which frequently bear amatory inscriptions and appear to have been exchanged as betrothal tokens.

British Museum.



particularly to France, as booty from Jerusalem, became the magical talismans of the day while antique cameos ceased to be so highly regarded. Interest in these waned and their popularity was only restored at the Renaissance when they were collected more as works of art than as jewellery. Some of the finest jewels of the 13th century were small reliquaries to be carried on the person. The histories of dress and of jewellery are closely intertwined and it is possible to consider each in terms of the other: unlike today's, contemporary fashions did not alter rapidly. The Carolingian and Ottonian aristocracy wore dress which was reminiscent of the Byzantine style but the political unrest in Europe during the 11th and 12th centuries brought most of this magnificence to an end. For a very long time both sexes wore similar garb and the design gave little scope for the wearing of jewellery. Shortly before 1100 a few changes took place. Men's tunics became longer and like those of married women were belted and fastened at the neck with a ring brooch. Within about a century belt buckles had become very elaborate. They were usually made of copper gilt and were sculpted rather than set with stones. In 1239 Margaret, Countess of Burgundy, is depicted on her seal wearing a belt with a jewelled end, but pieces of this nature are exceedingly rare: it seems likely that they were melted down and recast to suit the whim of each new owner. They were made in many different sizes, some of them an inch in diameter or less. They are usually set with small precious stones, frequently sapphires, have high quality mounts and bear an amuletic inscription such as the names of the Three Kings, which

Two Spanish gold and enamel medallions with *above:* a symbolic scene of the Christians overcoming the Moors and *below:* the Adoration of the Magi. Both 16th century.

Victoria and Albert Museum

was said to protect against morning sickness, or the first words of the Angelic Salutation. It seems that these brooches were very often given as love gifts and many of them have inscriptions to indicate this. Chaucer's Prioress, Madame Eglantine, had a brooch inscribed *Amor Vincit Omnia*: a number of examples bearing this inscription survive to this day.

From the 13th century jewellery ceased to be the prerogative of the great aristocrats. Increased trade produced a prosperous middle class who lost no time in creating a demand for jewellery; yet at that time jewels seem to have formed some sort of badge of rank, and social usage was to some extent enforced by law. French laws of 1283 forbade the bourgeois to wear jewelled belts or coronets of gold. The nobles wore their best jewels on state occasions only, but a flourishing wool trade caused clothes to be voluminous and worn in heavy drapes which were hardly suited to the wearing of jewellery; consequently coronets were worn by women. When Eleanor of Provence married Henry III of England in 1236 her inventory showed that she owned nine such coronets. There is evidence that she brought eleven more to England later on.

By the close of the 14th century the rosary had become a vehicle for the goldsmith's art and we have a record from 1381 of one Adam Ledyard who had a stock of Paternoster beads of various materials. The names of Paternoster Row and Ave Maria Lane are still borne by streets in the City of London where the manufacturers of rosaries lived and worked. Soon after this other devotional jewels came into favour. We find that the French royal accounts for 1393 mention talismans composed of wax roundels stamped with the Agnus Dei which were worn by pregnant women. These roundels were blessed by the Pope in the first year of his pontificate and every seven years thereafter. They are mentioned from time to time in various wills and accounts of the period and seem always to have been in silver mounts, occasionally with jewels as well. The roundels themselves were obviously highly prized, as the Victoria & Albert Museum possesses one blessed by Pope Urban VI (1378–89) which is mounted in a German case of the following century. These devotional pendants were not objects of display but were highly personal and worn under the garments. It was only later, when a lower neckline was in vogue, that the necklace came into its own.

The Early Renaissance

The greater supply of gemstones in the 15th century was soon complemented by considerably increased skill on the part of the lapidary. The optical properties of various stones began to be appreciated, if only in a rudimentary manner. For some time the natural octahedron of the diamond had been cut in two to give a stone of pyramid form with a flat base, but now the pointed end was also flattened and in 1412 we hear of the Duke of Burgundy owning a diamond cut in quite an elaborate manner. At a trial for fraud (in Bruges in 1465), when an amethyst had been sold as a ruby, four expert witnesses were called and expressly referred to as ' diamantsylers '. By 1477 we hear of diamond cutters in Paris and Lyons by 1497. Although it may be assumed that the diamond crystal selected for cutting closely approximated to the perfect octahedron, it was a prodigious feat to grind away about 1/16th of the total mass of the stone with the very primitive equipment which was then available. At this time diamonds were frequently merely ground into various grotesque shapes, more as a technical *tour de force* than an artistic endeavour. In the 14th century jewels were linked to architecture, embodying architectural proportions and frequently motifs—as, for instance, the two niches on the William of Wykeham Jewel. In the middle of the century the fashion for low necklines created a demand for the necklace and there is a record dating from 1455 of an English lady in the Shires writing to her husband and asking for ' sommthyng for my nekke '. Necklaces had been used at court for a long time before this; in 1319 the French Crown Jewels included a necklace which was set with diamonds and other stones, but most references to necklaces are taken to imply livery collars worn by men which date from the middle of the 15th century onwards. They did not come into general use until then. Similarly, looser sleeves created a demand for bracelets. One is mentioned as part of a trousseau in a Burgundian Inventory of 1415 and three more in 1420. Eight years later there is a record of an enamelled bracelet in the possession of Henry VI of England. The jeweller's repertoire was increased still further by the demand for pomanders which had spices of the East enclosed in silver and gold cage-mounts. Several mentions of such pieces occur in inventories dating from the end of the 14th century.

Fashions were now changing, not with today's rapidity, but nevertheless almost from one year to the next. At the end of the first quarter of the 15th century it was fashionable for belts to be composed of hinged plaques. In 1458 the girdle was made to look like a cord and at the marriage of Henry VIII to Catherine of Aragon in 1509 it was modish to wear a belt, not round the waist but over the shoulder and down to the waist. Belt buckles were decorated (like the architecture of the day) with Gothic tracery and scrolling foliage and sometimes carried a motto in niello. Collectors should beware of the forgeries made by one Marsey in Paris at the end of the last century of pieces of this nature. It is difficult to give any specific points to look out for but the most certain way, as in all cases, of avoiding buying a forgery is to have experience or else to seek good advice. Personal reliquaries which for hundreds of years had been among the treasured possessions of the rich now took on a circular form and these developed into the German religious medals of the beginning of the 16th century. These reliquaries were linked with circular mirrors, the reverse of which was decorated with a religious scene and were frequently in elaborate mounts. They seem to have had some amuletic significance. During the middle of the 15th century rosaries became more common and many were made out of precious materials. In 1467 Charles the Bold was known to have had 35 rosaries. These were not all designed like the modern rosary, with five decades and pater nosters between; this is a comparatively recent standardisation. In 1488 the King of Scotland inherited a rosary containing 122 beads and a knop, all of gold, and an English example which was discovered at Houghton Hall in Yorkshire (now in the Victoria & Albert Museum), consists of 50 small beads, with 6 pater nosters. At this time there was very little differentiation between a rosary and a necklace of beads and in the middle of the 15th century it was fashionable to wear a rosary as a necklace. It seems that by 1514 it had become so secularised that any large bead was referred to as a Pater Noster. The beads of the more expensive rosaries showed great virtuosity on the part of the craftsman, occasionally each bead was designed to open and disclose a little religious scene. The later Middle Ages were also a time of pilgrimages and numerous badges, many of

Portrait of Henry VIII (died 1547) showing a variety of jewels and the way in which they were worn.

British Museum.

which were relatively inexpensive when they were made, survive. Most of them are of lead or pewter and some show signs of having been gilt. Each place of pilgrimage had its own distinctive sign and they were sold to pilgrims who sewed them to their hats in much the same way as tourists of today sew little silk badges to their anoraks to show the places they have been. A considerable number of steatite moulds for casting such badges have survived and the remains of a forge for casting them has been found at Walsingham

Priory, one of the greatest centres of pilgrimage in Mediaeval England.

The beginning of the 14th century saw a slight thaw in the old ideas and the art of the period became less stiff and hieratic. The designs of works of art are more organic. It was the Gothic period, when troubadours wandered from court to court and the world became a larger place. Ideas were exchanged and jewellery became loved and designed for its own sake rather than as a symbol of power or an amulet for warding off evils. The Italian trading cities, particularly Venice, were opening up the East to trade and precious stones became more abundant. Enamel was now no longer opaque but translucent. After a long period of austerity under St. Louis (1226-70), luxury returned to the French Court and clothes were made of fine materials with silk no longer used exclusively for church vestments. As the supply and demand for precious stones increased so also did the laws concerning their use. In Paris false pearls had been forbidden as early as 1200: 1331 saw an edict passed in the same city against the use of paste and by 1355 there were penalties for putting foil under stones to improve their colour. However, not all the laws were repressive. The goldsmiths of London were given their Charter in 1337 and those in Paris who had long had an association, purchased a hall in 1405. Nevertheless, although jewellery was now used on less formal occasions, it was still a badge of rank and in 1363 Edward III of England decreed that yeomen and artisans, together with their wives and children, should be forbidden to wear jewellery of gold or silver. These laws were obviously taken to have great social significance as they were even more strict in Spain, where those promulgated in 1380 were reiterated in 1404. The wording of these various decrees is interesting, in that they specify some of the jewels which, apart from brooches and head-dresses, now include seals, chains and garters.

As time went on the jewels of the royal families and aristocracy of Europe became more and more magnificent and the occurrence of inventories of jewellery more frequent. We now, for the first time, have external evidence for dating and attributing jewels to various schools in the countries. The vocabulary of these inventories becomes more and more complicated and specialised and by the last decade of the 14th century the word 'jouel' or 'joyau' referred to a jewel that could be worn on the clothing. Hitherto it had been used for almost any elaborate piece of goldsmith's work such as a centrepiece of a banqueting table. The influence of France, and of Edward II of England's taste for luxury, contributed towards this development in England. In 1324 the King had ten crowns and his mistress is said to have had 22,000 pearls. From lists of wedding presents when Richard II married Isabella of France in 1396, we learn that it was the custom for the rich and powerful to make presents to each other of jewelled chaplets. The inventories of the period show that such people owned several and these, together with other jewellery, were worn as much at banquets and similar occasions as on the rarer coronations and other great state ceremonies. We must blame fashion for the fact that so few of these lovely things have survived to the present, for it seems that these jewels were continually being remade. We read in an inventory of 1360 of a jewel '*à la nouvelle guise*'. The metal of these pieces together with the stones was used over and over again. There was a tendency for episcopal jewellery, particularly bishops' rings, to survive, as they were usually buried with their owners. However, there is little on so small a thing as a ring on which to base firm attribution, and it is always well to remember that the Church has a tendency to remain conservative. Other aids to attribution are the reliquaries of anthropomorphic design, which required coronets and head-dresses; as they are from time to time inscribed they are useful as evidence for dating pieces of a similar nature made for human use.

The simple ring brooch had by this time become more complicated in design and the rising middle classes, who were in many cases forbidden by law to wear jewellery of gold, wore pieces made of latten and even of gilt lead. Many of these base metal pieces were made in the traditional form and it is therefore prudent to assume that they are not all of the date which their style would seem to indicate but perhaps half a century later. In provincial areas and among the less well off the ring brooch survived for many centuries. It survives in the form of the plaid brooch still used in Highland Scottish dress. These brooches are normally made of silver with a

Italian gold ring, 14th century, probably Venetian work. The form was still being used in Northern Europe in the 17th century.

British Museum.

A group of European rings, mainly of the 16th century. All these are particularly fine examples, and one would be unlikely to find such pieces today. They would cost between £100 and £500, $240—1,200.

very wide flat silver rim engraved with various designs and the centre very often set with a cairngorm. Even examples that look quite early are probably in reality only from the 18th century: a modified form of ring brooch, with the ring in the shape of a heart, was in vogue in Europe throughout the 17th and 18th centuries, although a few of them date from as early as the 14th century. As they bear amatory inscriptions it seems that they were given as betrothal presents. A development of the ring brooch of this period is a comparatively large group formed as letters of the alphabet. Mention of pieces of this nature occurs in inventories throughout the 14th century but one of the most elaborate ones is that in the shape of a letter M which was left to New College, Oxford, by its founder William of Wykeham in 1404. The letter, with a coronet above, is set with stones and within the arches formed by the M are the figures of the Virgin Mary and the Archangel Gabriel. The centre pillar has a vase of lilies. Similar to the letter brooches and of the same period are those which form a cluster of rosettes. The centre of each rosette was a cabochon stone with cast figures of heraldic animals and mythical beasts placed between. As time went on these rather messy designs were developed further and greater prominence was given to the centre which was usually set with an antique cameo, while the numerous stones and the cast and chased animals were relegated to the border.

The opinion is expressed by Joan Evans that the brooches in the form of letters may have been designed by Hans Mielich of Munich (born 1516). A manuscript illuminated by this artist contains an initial letter ' D ', which could well have formed a model for a jewel of this nature. As against this his other designs for jewellery do not have much in common with some of the other letter jewels which are still known. These jewels first came into favour during the last quarter of the 15th century and were popular for some 60 to

70 years. The fashion continued until later in Denmark. There is one in the National Museum in Copenhagen which bears the date 1574 and it seems that several others also there could well be later in date. In England heart-shaped jewels were more popular than elsewhere and Henry VIII is known to have owned thirty-nine such pieces. A fashion which started in Italy but soon went out, though it continued in North Europe, was the wearing of heavy gold chains. They are to be seen on Italian portraits of the end of the 15th century and they are mentioned in Hall's Chronicle of 1522 in England.

It seems that these chains were worn mainly by men, largely as an addition to their dress, although the wearing of official chains continued. Henry VIII of England paid his goldsmith £199 for a chain weighing 98 ounces in 1511. In the case of the unofficial chains, it seems that they were used as a delicate way of giving a present or award or bribe, in much the same way as elaborate snuff boxes were used some two or three centuries later. A late survival of the custom of using chains other than for official purposes is to be found in the portrait of Elias Ashmole, now in the Ashmolean Museum at Oxford. The paintings of Lucas Cranach the Elder show women wearing chains, but the element of fantasy is so strong in his pictures that they should not be taken as too strong evidence of their actual use. In addition to those chains which fulfilled the needs of almost daily routine the rulers of Europe frequently had one of far greater magnificence used on state occasions only. It is these, so few of which exist today, whose ghosts survive in the portraits which hung in their embassies and with which the rulers vied with one another in magnificence.

By the middle of the 16th century the scope for the use of stones was very much increased by the discovery of the New World.

An early 16th century English gold and enamel chain.

British Museum.

Towards the end of the 15th century, fashion as we know it today was born. Vogues came and went in decades rather than centuries. Increasingly luxurious materials occasioned by the enormous wealth brought by the wool trade, and the importing of silks from the East, were key factors which created fashion. The culmination of this was the splendour of the Burgundian Court at the end of the century. We now have a more plentiful supply of evidence for the changing modes, and as often as not we are capable of dating them to within a year or two. Burgundian brooches were in less robust styles than earlier types and they are characterised by a liberal use of white enamel and the inclusion of people and animals in their design. The most usual construction is of a twist of hollow gold tubing turned on itself to make a drop form with the ends joined above. This stalk was then threaded with pearls and set with precious stones in collets, and the space inside was decorated with figures or motifs of an almost heraldic nature. Authorities differ in the exact date of this type of brooch but the middle of the 15th century seems most likely. There was a large group of similar brooches in the Cathedral Treasury at Essen. Seven of them are identical in form and consequently it may be assumed that they once formed a necklace. One of them shows a camel, one of the earliest representations of this animal in Western art. That the jeweller of this period is very close to the goldsmith can be seen in the Burgundian Casket in the Walters Art Gallery in Baltimore. At this time the French and Burgundian courts were in close touch. Their styles owed much to one another, but both are distinctive. Compare for example the Parisian morse which is now in the National Gallery of Art in Washington. On the whole the Parisian goldwork is slightly better although

there is nothing to choose between the enamels of the two centres. It was also at about this time that various pendant jewels began to be used as badges, and some of the designs have political significance. These badges were made in comparatively large quantities for the retainers and servants of the great kings and noblemen. Interesting as they are, they were frequently indifferently made, even some of the best ones being merely cast and chased silver while some were made in base metals. Most of them were designed to be worn round the neck on a chain and even today we have a survival in the Silver Greyhound of Queen's Messengers. On the tomb effigies of the late 14th and 15th centuries, one sees numerous chains of office, the significance of which is lost today. However, one, with the longest history and which still survives is that used in this country, the Collar of S's. This had been used in England sporadically for a century or more but with the accession of Henry VII it was revived together with various pendants and has been in use with Orders of Chivalry ever since.

The High Renaissance

The impact of the Renaissance was felt as much in the field of jewellery design as in the general thought and life of Europe. The jeweller's art, like the other arts of the period, was based on classical Roman models. However, it was not until the 18th and 19th centuries that classical jewellery itself was widely known and imitated, and the Renaissance style drew its inspiration almost exclusively from sculpture. The influence of small classical gems and coins was indeed felt, but these in turn had strong sculptural affinities. This was not the first manifestation of interest in the Roman past, as we have seen: as early as the 9th century Charlemagne was depicted as a Roman emperor on some of his rarest coins, and at the end of the 12th century Frederick II was striking coins at Messina in Sicily which closely resemble both Roman aurei and later Renaissance medals. The connoisseurs of the new Europe did not content themselves with collecting ancient gems, and in France and Italy craftsmen were employed to cut cameos. At the outset their productions were on a large scale, but before long they were making smaller pieces to be set in jewellery; many of the examples from the last quarter of the 15th century are portrait cameos, though the names of the sitters are generally unknown.

A pendant jewel deriving from designs by Daniel Mignot; its rather naive style suggests that it was made in Germany rather than Italy. Such an example would cost several thousand pounds or dollars today.

The very sophisticated design of this necklace shows it to be mid-16th century Italian.

The new style developed first in Italy, where many artists well known as painters or sculptors began their careers as goldsmiths. The ateliers of the goldsmiths were recognised as among the finest places to learn the art of fine drawing. Ghiberti, born in 1378, was initially a goldsmith, as were Luca della Robbia, Botticelli and many others. So too, in the 16th century, Baccio Bandinelli and Andrea del Sarto served as apprentices in the craft. In Germany Albrecht Dürer had been the pupil of his goldsmith father. All these artists show jewellery in their work and one wonders how much of this is drawn from life. The Bolognese artist Francia, born in 1450, worked as a goldsmith until the age of forty; his pictures are occasionally signed *Opus Franciae Avrificis*, and one, now in the Uffizi in Florence, includes a representation of a jewel dedicated by one of his patrons at a shrine of the Virgin. Perhaps the greatest jeweller-goldsmith of the early Renaissance was Benvenuto Cellini (1500–1571): his autobiography gives a first hand description of many techniques of the time. He remained a goldsmith throughout his life, but attained the rank of artist through sheer virtuosity. Yet in spite of his detailed writings there is no jewel which can be positively ascribed to his hand.

By the beginning of the 16th century the pilgrim's badge which was sewn to the hat had developed into an expensive piece of jewellery and contemporary references to them call them *enseignes*. These were now far from being cheap cast base metal objects, but were of gold and enamel, the gold very often forming some sort of a bas-relief taken from a classical subject and enamelled within a jewelled border with loops for sewing to the garments. Cellini's memoirs (1524) describe how he created some of these works. These hat badges became very prized objects and it seems that there was a custom for the Pope to send a cap, probably with one of these enseignes, to those that he favoured. We read of such a gift in the 1539 inventory of the jewels in the possession of James V of Scotland. The custom survives today in the hats that the Pope gives to his Cardinals on their appointment. The medallion with a portrait in coloured enamels of Charles V at Vienna bears the date 1520 and on it we see him wearing just such a badge in his hat. It is hardly ever possible to attribute a jewel to a particular craftsman before the early Renaissance. Names of craftsmen survive from well back into the mediaeval period, but from the 16th century there are drawings which were obviously intended as designs and of these we know the artists. This does not necessarily give us the name of the craftsmen who actually made the jewel, but the identification of the designer is in itself important. By the middle of the 16th century it becomes very difficult to fix the nationality of practically any jewel. Craftsmen travelled from court to court and from one commercial centre to another. Such documentary evidence as is available about the place of working of a goldsmith very often shows that his name was foreign. For instance, many of Henry VIII of England's jewellers had foreign names and with the increased diplomatic and commercial traffic which was a feature of the Renaissance, it is easy to see how such portable objects as jewels travelled from one place to another. When the French Ambassadors came to London in 1518, great

A German hat-badge, 16th century. Such pieces are very rare and there are few in private hands. This example is lent anonymously to the British Museum.

An English gold and enamel hat-badge or *enseigne*, early 16th century. The subject is Christ and the woman of Samaria.
British Museum.

Two sides of a Renaissance style hat-medallion made at the end of the 19th century. Note the rather heavy treatment of the scroll-work and the technique generally.

offence was caused by many of their retainers who traded in jewellery under the cover of diplomatic privilege and without paying customs dues.

The difficulty of identifying the nationality of a jewel becomes greater in the case of pieces from the middle of the century when pattern books with engraved plates were published, particularly in France, Germany and the

A German pendant probably by Hans Mielich. It is characterised by the elements being rather large and crowded in the design.

An Italian 16th century devotional jewel. These normally have enamelled figures behind glass or crystal.

Italian gold and enamel baroque pearl pendant. White enamel specks in the gold are characteristic of the 16th century Florentine workshops.

Spanish pendant devotional jewel of typical design. Early 17th century.

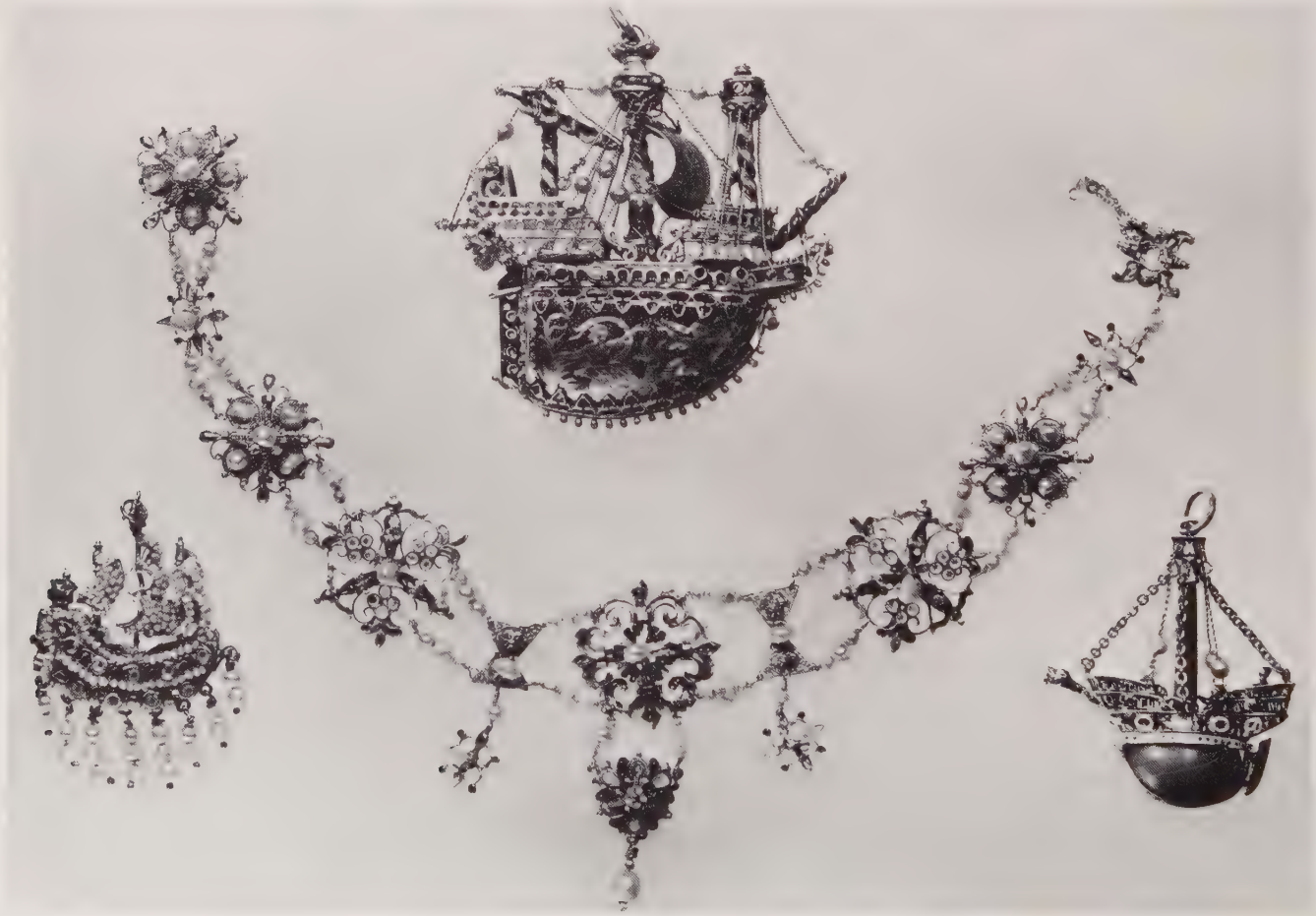
A German pendant in the form of a mermaid—early 17th century. The imaginative use of the pearl is characteristic.

South German or Italian large gold and enamel jewel. Late 16th century.

Low Countries. This applies less to Italy since it seems that the artists there, many of whom, as we have already seen, were goldsmiths, or at any rate trained as such in their youth, had no need of them. In Spain engravings were not executed until much later. In the jewellery gallery of the Victoria & Albert Museum in London, recently redesigned, the walls are hung with engravings of jewellery designs. One of the most prolific of these designers was Virgil Solis (1514–1562). His plates are signed with the monogram VS and he published his book of designs in 1548. This book is, incidentally, the first book of jewellery designs known to have been published in England. Included among the numerous designs for jewellery are arabesques and panels intended for armour and weapons. These designs were closely imitated by Thomas Geminus who published books of designs in England in 1548 but even he was not an Englishman, and appears to have come from the Low Countries. We learn from these designs that strapwork and 'inhabited' foliage now came into vogue and the settings, while remaining basically the same, were made to imitate claw settings: the plain collets were chased, usually with four claws, and appear to hold the stones at the corners. The stones themselves became square cut and facetted. At about the same time pendant pearls came into vogue and the jewels of the period were hung with pearls along the bottom edge, sometimes one and sometimes three. This fashion was to last for some time. The backs of jewels of this period were enamelled *en plein* with arabesque designs from the engraved pattern books of the period. The books were based on those that were made fashionable in Venice which in turn derive from the art of Islam. The portraits of the period are most revealing in the way they show how jewellery was worn. Elaborate rings were worn by men and women on all fingers and on the thumb. The great ladies of the day wore a pendant jewel attached to a heavily ornamented necklace hung tightly round their neck. Several chains of different designs were also worn around the shoulders and disappeared below the low horizontal neckline which was then fashionable. At the same time in the early 16th century men wore a much heavier chain about their shoulders, attached to a pendant. The custom survives today in the dress of civic dignitaries in

Opposite page
Portrait of a Young Lady, 1569. English School. This gives an excellent illustration of jewellery as worn in the 16th century.

The top pendant is a galleon from a late 16th century Venetian workshop which realised £2,400, $6,700 in 1960. The more fussy design of the other two ships shows them to be later examples from southern Italy. The rather flimsy necklace is also South Italian and fetched £250, $700 in 1960. Today it would change hands for twice that figure.




ÆTATIS SVÆ
21
ANo DOMINY
1569

A German gold and enamel signet ring dated 1568. The device here is three lilies: a monogram is more usual.

Spanish crucifix: late 16th century. The design of the cross is typical of the Spanish workshops. Pieces such as this cost £200—300, $500—700 at present.

A German pendant jewel consisting of a triumph of arms set with rubies. *Circa* 1600. This jewel is said to have been looted from the baggage of King Charles I after the battle of Naseby in 1641.

Sir John Soane's Museum

England in the form of the Mayor's chain of office. Both men and women wore personal relics and talismans on thin gold chains, both inside and outside their clothing and elaborate jewelled buttons were in favour for the men's tunics and as decorations on their hats. By about 1520 the ladies wore complicated head-dresses, sewn with jewels, and what would today be taken for a necklace was in reality a jewelled border for a head-dress, sewn in place and replaced from time to time as fashion demanded. At the same time buckles were used to secure the bows at the shoulders.

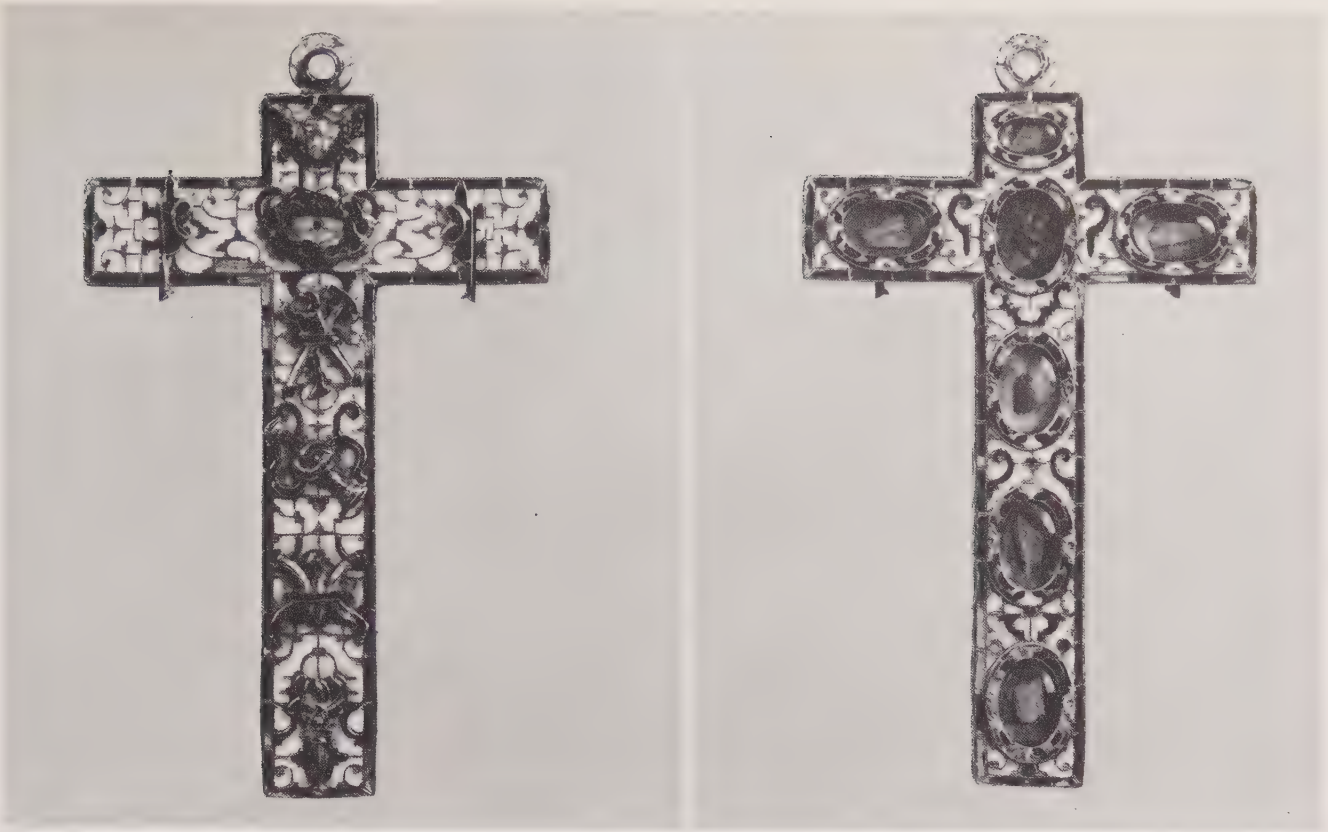
Earrings can be seen peeping from under the plaited hair in portraits of the period and huge spherical pearl necklaces were worn over the shoulders and secured with a brooch at the bodice. These were worn with another necklace higher up the neck and the head-dresses and hems of dresses were sewn with jewels whose designs, as the century wore on, became more cumbersome and heavy. The fat putti and impassive masks nestling in fruit and flowers show some resemblance to the heavy art of Europe at the end of the 19th century. Both styles were produced by much the same factors of increasing power and prosperity. It is only rarity that makes the art of the middle and end of the 16th century more desirable than that of the 19th. The two styles bear great similarities in concept and technical skill. Indeed at the end of the 19th century there were conscious imitations and unfortunately occasional forgeries of 16th century pendant jewels. They can usually be differentiated as the later copies are technically better made and the enamels used in them are rather clearer in colour. The middle of the 16th century saw a greater use of classical subjects but in England Old Testament subjects were to some extent preferred. The story of Susannah and the Elders, a favourite as long ago as the 9th century, occurs frequently.

By about 1560 the design of jewellery, as with most other works of art, had entered into a new phase. Previously a jewel had been designed more or less as a single entity, but now the elements in the designs seemed to separate out to some extent and the idea of a single concept in design was no longer accepted. The pendant jewel was greatly in vogue, and there are two basic types. The first, which if anything tends to be a shade the earlier, usually embodies an animal of a fabulous nature, a mermaid or a dragon, or frequently some composite beast. The main part of the body is often a huge baroque pearl and in this lies the key to the whole design. Designers showed amazing imagination in attached gold and jewelled mounts to these pearls so as to form some anthropomorphic figure and it is the purely random shape of the pearl which dictates the design of the whole jewel, but not of course the layout of the smaller jewels with which it is embellished. The limbs of the subject are usually enamelled gold, white being used for flesh and hair portrayed by chased gold. These parts are then set with stones, drop pearl pendants added below and the whole jewel suspended on two or sometimes three chains, the links of which in the more elaborate examples are composed of little gold coloured enamel cartouches. In Spain the laws of nature were more closely adhered to and jewels from this part of Europe usually represent some sort of bird; the most common examples, if any of them are common, resemble an eagle while some of their birds, for instance the parrot in the Victoria & Albert Museum, can be described as moderately realistic. The second basic form is usually architectural and instead of being hung from chains, there is just a plain loop at the top. The construction is of a flat, cut-out plate of architectural design which is engraved with scrolls and enamelled. The various elements were screwed to this and attached from behind with little nuts, usually cruciform. Near the bottom of the design there is usually a horizontal element set with square or oblong cut jewels and on this stand little enamelled figures, normally representing some biblical or mythological subject. Again these usually have several drop pearl pendants below. It is suggested that pendants of this architectural type usually emanate from South Germany, whereas the fabulous animals are associated with Italy, but this is not a rule which can safely be adhered to. At the same time comparatively numerous pendant jewels designed as ships have survived and it seems that many can reasonably be attributed to Venice although those of rather more flimsy workmanship, frequently with white, blue or green enamels are associated with Southern Italy. The anthropomorphic pendants have a certain rather bizarre attraction and certainly show considerable if

An Italian pendant jewel in the form of an eagle, late 16th century. Bird subjects are not exclusively Spanish: the origin of this one is indicated by the superior workmanship.

A number of rather crude eagle brooches exist. Some authorities attribute them to Poland. An example offered at Christies recently realised 500 guineas, $1,260.

A fleet of Venetian ship pendants. *Circa* 1600.



French gold and white enamel reliquary cross. Late 16th century.

rather deformed imagination in their design. But those of architectural form are often ill-designed and before long became rather degenerate. Certainly there are many very fine examples, but the great majority of those which have come down to us are rather mediocre as works of art although of course they are a mirror of their age and technically well executed.

Precious objects have always been used as a form of security. The Byzantine Emperor, Baldwin II (1228–61), pawned his son with Venetian bankers and had to redeem him with a crown of thorns and various other relics. The political unrest which gripped Europe for practically the whole of the 16th century produced the necessity for enormous sums of money to be raised to keep the armies and, particularly in the second half of the century, the work of a jeweller and goldsmith was used as security for loans. The credit of the French nation was practically non-existent at the beginning of the last quarter of the 16th century and jewels were hardly ever in their owner's possession. Because of this political situation, few jewels were made in France at this time. The continual movement of jewels as a form of currency is another factor which makes it difficult to say with any assurance where a particular piece was manufactured, although the designs may give some indication of the country of origin of their designers. The jewellers of Queen Elizabeth I were mostly Englishmen although her favourite, Spilman, was a German: Germans had great influence in England early in the century and this need cause us no surprise. At the same time many French jewellers, due to lack of patronage in their own country, were working in Italy. About three-quarters of the way through the 16th century, the custom of men wearing jewellery began to wane, but women now wore jewellery in great profusion. The pendant jewels, if contemporary pictures are reliable, were frequently hung round the neck by a ribbon and in addition elaborate chains were worn and very often pinned up at the bodice. Numerous rings were worn on almost all fingers. The portraits of the period provide us with much evidence on the manner in which jewels were worn and we may be sure that most of those depicted actually existed, as from time to time we find mention of them in inventories and other commercial documents. The miniatures of Nicholas Hilliard are particularly interesting as they show in considerable detail the jewels that his subjects wore. This is not surprising, since, apart from being an

A group of 16th and 17th century jewels: the example at the top is Florentine work, and the one with the monogram AM (Ave Maria) is Spanish.

artist, he was also a jeweller, as his father and grandfather had been before him and, like so many Renaissance artists, he seems to have received his early training as a goldsmith. The jewels which appear in his miniatures were obviously of considerable interest to him. In his book *Arte of Limning*, he is at great pains to give instruction on the painting of precious stones and jewellery. It was the custom in the 16th century for courtiers to give their sovereign a present on New Year's Day. This gift very often consisted of a piece of jewellery or plate. By the 1580's some of the Queen's great favourites were presenting sets of jewellery to her which were designed *en suite*. Slightly earlier portraits of the Hapsburgs portray such parures and it seems that we must look to the Court of Maximilian for the birth of the idea. In 1584 Sir Christopher Hatton gave his Queen just such a set of jewellery. It is he whose name lives on in Hatton Garden in London, still the centre of the jewellery trade in England.

Towards the end of the century a new vehicle for the jeweller's art came on the scene. This was the watch. Although far from accurate as timekeepers they were a novelty and quickly caught on as playthings for the extremely rich. At this time watches had not yet achieved a shape dictated by their function but were still designed in the form of a jewel. The clockwork was intended to

A German 16th century Phoenix pendant. This was a popular subject of the period.

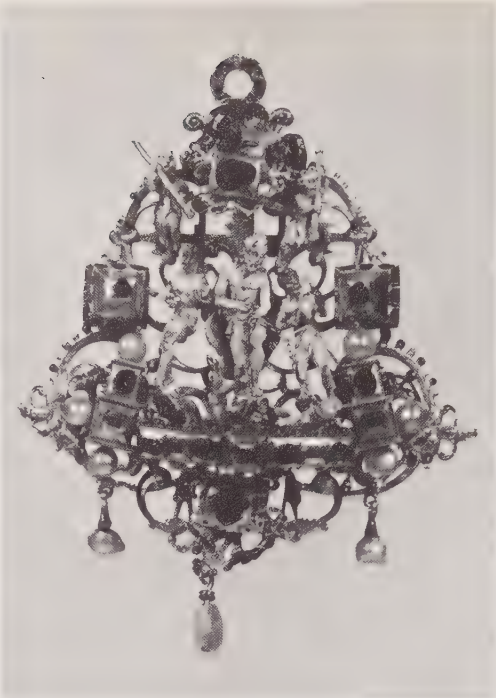
An Italian pendant of the Annunciation. Note the base line and the Caryatid figures on either side.

do little else but make some attempt at telling the time. These watches were merely sophisticated pendants and occasionally more than one was worn at a time. They were among the greatest status symbols of their day, as indeed they are at the present time for any fortunate collector who owns one; few have survived and those that have are almost all in institutions. As part of the adulation of the Queen in England, a fashion sprang up in the last years of her reign for cameos bearing her portrait. They were very popular, and comparatively numerous examples have survived to the present, not always, of course, in their original settings. This is not altogether surprising as by their nature it is not possible to melt them down or destroy them save by the most drastic means. These cameos are cut from sardonyx, or black and white agate

South German pendant and jewel with figure of charity. *Circa* 1600. A popular subject at the period.

A Spanish devotional pendant, *circa* 1600. This depicts the 'Virgin of the Pillar' at Saragossa. Spanish jewels tend to be less expensive than those from the rest of Europe, probably because of their religious nature.

A Hungarian cupid pendant of the 17th century. The treatment of the body is almost oriental.



A German pendant, late 16th century. Note the base line under the figures.

A jewel containing a portrait of Queen Elizabeth I by Nicholas Hilliard, painted at about the time of her death in 1602. It is interesting as it shows the jewellery worn by the Queen.

in layers: the subject is cut from one of the black layers with the background in white. The edges are then bevelled into the next black layer of the stone to give a black border. Some authorities have expressed the view that these were mourning jewels for the Queen; they may well have been used as such, but it is possible that some of them were made during the reign of James I. This cannot be said of all of them as there is documentary evidence of a few being made during the Queen's reign. These cameos, although following an official

The Lyte Jewel: a gold pendant, enamelled and set with diamonds, containing a portrait of King James I. English, 17th century.

British Museum.

portrait, were not cut by any one artist or school. One Thomas Papillon was paid for executing such a cameo in 1587. In 1596 Julien de Fontenay travelled to England to execute just such a commission. The most common examples are small enough to be set in a ring. Queen Elizabeth was not only a receiver of gifts; from time to time she presented jewels to her favourites. An example is the so-called ' Phoenix Jewel '. The design of these gifts was frequently based on one of her medals which although rare, are still comparatively easy to come by. The Phoenix Jewel is embellished with a bust of the Queen taken from a medal of 1574.

The 17th Century

At the beginning of the 17th century there developed a new excuse for owning jewels, the military reward. Rulers and generals took up the habit of presenting medals with portraits of themselves or their sovereigns to those whom they regarded highly. In England the custom first made its appearance under Queen Elizabeth at the end of the preceding century. The Phoenix Jewel (see illustration in colour) is probably such a piece, and there are a number of similar objects which are associated with the defeat of the Spanish Armada in 1588. The Royal collection in Copenhagen houses two gold medals decorated in coloured enamels which date from the beginning of the 17th century. By the end of the first quarter of the century the habit had spread to most of northern Europe, and at this time they were in transition between jewels and jewelled medals. The frame of the example carrying the portrait of Augustus of Brunswick-Luneburg owes much to the jeweller. The period of the Civil War in England saw the development of medals proper and they retained much the same form until the early 19th century when the familiar campaign medals came into being. It seems strange that collectors of Militaria should confine their attention to official issues of medals from the Napoleonic Wars onwards when such a wide field of study remains comparatively unexplored, and when such medals or jewels, as appropriate, remain moderately inexpensive when compared with other jewellery of the period. Though many are of less precious materials such as silver or gilt, they retain a jewel-like quality which places them within the scope of the collector of jewellery.

Closely connected with this field are the miniatures of the period, often mounted in jewelled frames which themselves have strong affinities with contemporary watch-cases. It is not easy to recommend prices for such objects as the most important factors are the quality of the miniature and the identity of the artist, none the less there are still some very fine examples available for little over £100, $240.

Upper left, centre

English enamel memento of King Charles I (1625–49). The flower motif is strong here also. The portrait is made up out of woven human hair.

Upper right

A gold and enamel portrait medallion of Augustus of Brunswick-Luneburg (1635–66). Such pieces were used as gifts by sovereigns or occasionally as military awards by generals. They thus form some of the earliest war medals. Few cost more than about £500, $1,200.

Lower left, centre

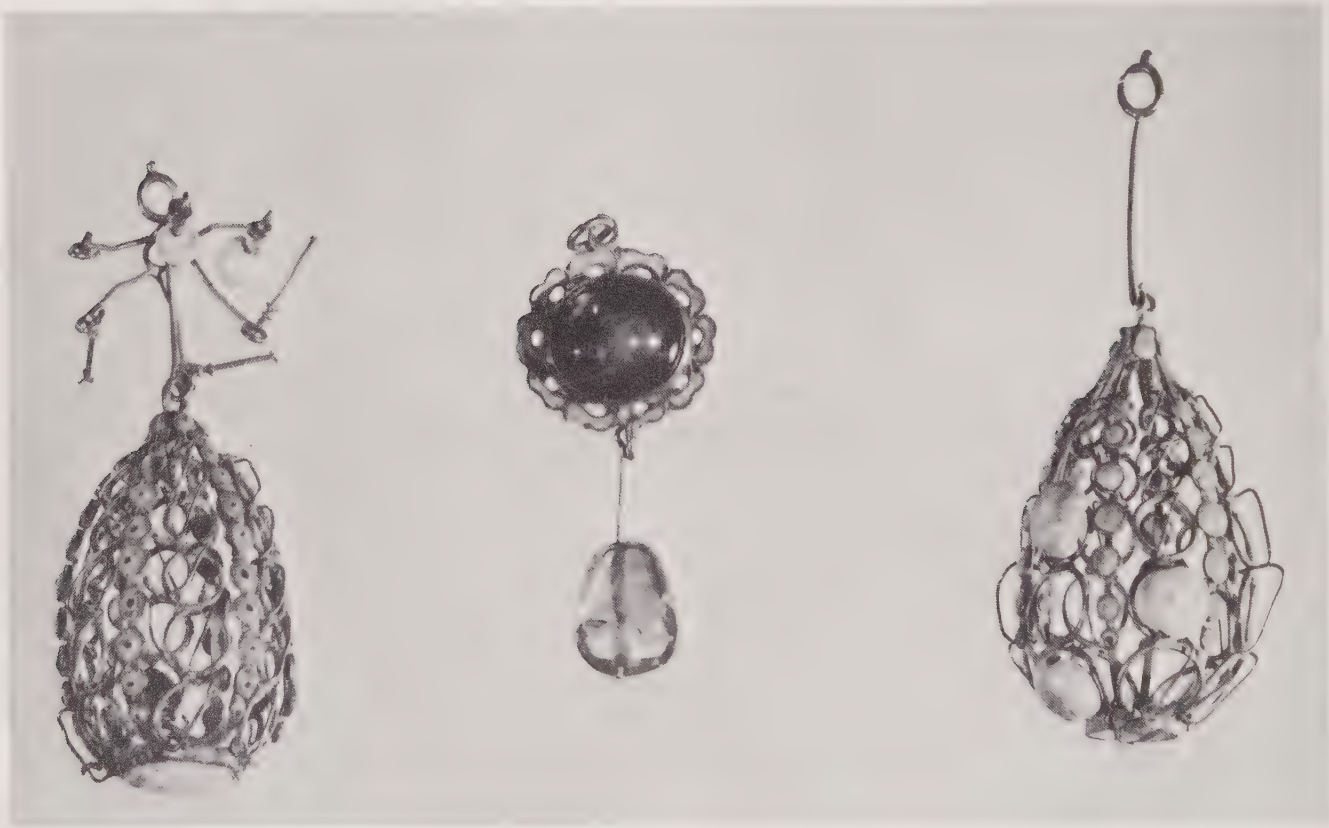
Both sides of a jewel with a miniature of Louis XIV by Petitot. *Circa* 1675. The stones are garnets. The floral element is very strong and features tulips, which were popular at the time.

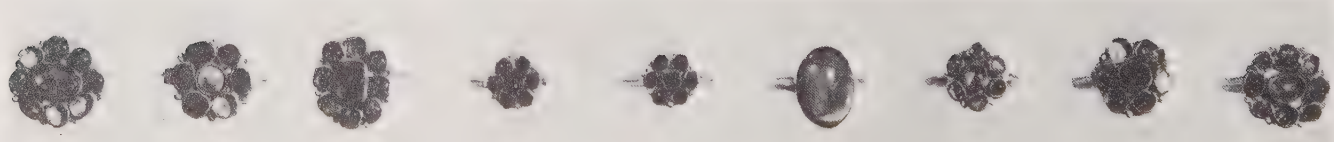
Lower right

Portrait brooch of Henry IV of France (1589–1610) in contemporary gold and enamel frame.

Two early 17th century English watches. They were normally worn on a chain at the waist. Today such examples cost from £200 to £600, $500—$1,500.

A group of early 17th century watches. These were far from accurate, but had come to be worn for prestige late in the previous century.





All these objects are from the Cheapside Hoard, the stock of a 17th century craftsman which was excavated in Cheapside in the City of London, then a centre of the jewellery trade. Some of the pieces are still in an unfinished state. Much of the material is insignificant in itself but is of interest in showing typical jewellers' work of the period.

British Museum.

It was perhaps the necessity to decorate flat surfaces, rather than pierced scroll work, that led to the painting of flowers and other designs in coloured enamels on a monochrome ground. Pale blue was the most common colour at this time, and the finest work was produced in France and the Low Countries. The enamel case containing a woven hair portrait of Charles I is an excellent example, and is incidentally one of the earliest surviving pieces of ' hair jewellery '. A rare form of enamel which seems to have been produced only during a short period around 1620 is *émail en résille*, enamel inlaid in glass. The designs executed in this medium are again usually floral. In a publication of 1616 Mathias Beitler describes himself as ' Inventor '. The technique was particularly suited to watch- and miniature-cases but it appears to have been so difficult to carry out that it soon went out of favour.

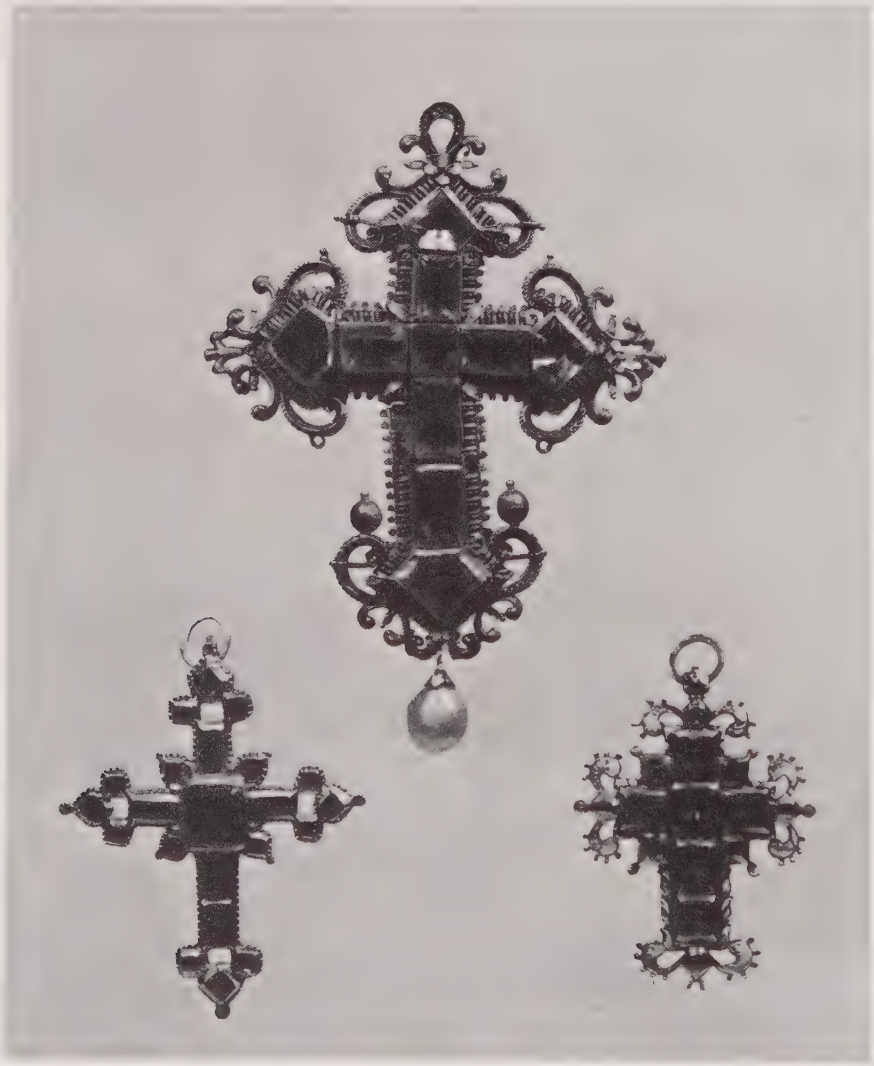
One of the most fundamental changes in jewellery design in the 17th century followed from the greater understanding of the geometry involved in gem cutting. While the use of enamel continued it declined significantly in importance with the realisation of the superior properties of a well cut stone. The designs of Gilles Légaré, published in 1663, show the extensive use of cut stones as an integral part of the conception, with enamel flower motifs relegated to the back.

17th century jewellery to a large extent carried on the existing traditions, particularly in the conservative atmosphere of Spain where jewellery was mainly of a devotional nature. It is worth remembering that many 16th and 17th century designs are still being used today in Eastern Europe, and that pieces from that area can almost invariably be considered at least a century later than their equivalents from the western centres. The same is true of Scandinavian jewellery. As the 17th century progressed the designs, while retaining many earlier characteristics, became lighter both in conception and

fabric. The floral element increased in importance: in Paris Jean Robin had opened a garden whose plants are known to have served as models for embroiderers, and the year 1634 saw tulipomania at its height. Such factors had a strong influence on European design, but in England the realistic tradition of flower painting had never died out since Mediaeval times, although sometimes rather loosely interpreted.

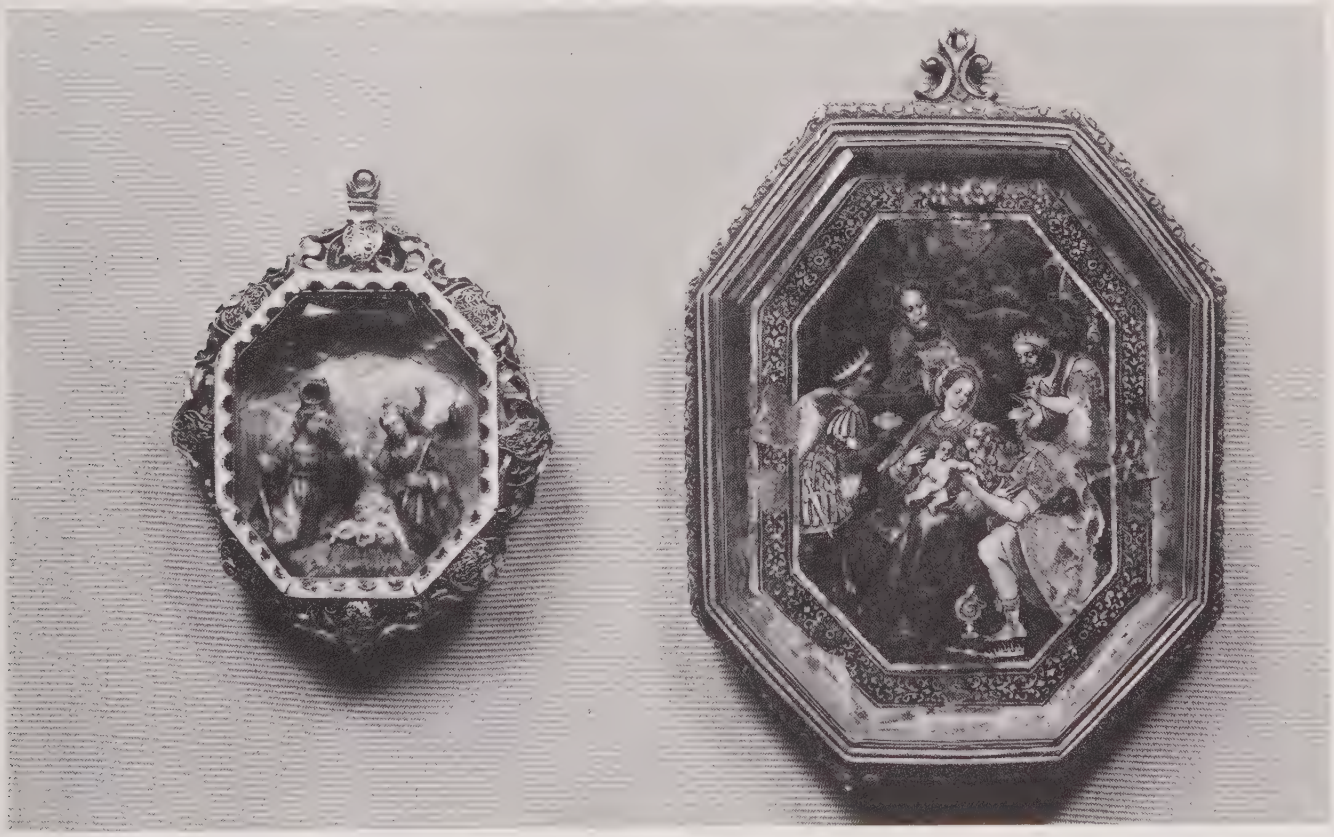
In Spain it was the habit to wear one large, even enormous jewel, supplemented on occasions by earrings. Puritanism in England had a depressing effect and under its influence little of originality emerged except the morbid talismans, almost sacred relics, of the Martyr-King and the considerable quantities of mourning jewellery. During the century, however, design was consciously studied for the first time. Although artists such as Holbein and Dürer had produced designs for jewels, this period saw the evolution of the pattern book. Gilles Légaré had been preceded by Hans Collaert in Antwerp as early as 1582, while Guillaume de la Quewellerie in 1611 and Etienne Carteron in 1615 published designs which were mainly arabesques to be applied to miniature cases. In her *A History of Jewellery* Joan Evans gives a list of some twenty designers working between 1590 and 1622, all of whom drew arabesques in silhouette. The designs gradually became more organic. Those of P. Symony (1621) show a transitional stage, while the drawings of Balthasar Lemersier (1626) have in some cases quite coincidental affinities with the *Art Nouveau* designs of nearly three centuries later, although the stiff geometric element is still present. By the end of the century design is almost completely integrated with the organic structure, and the factors which were to influence jewellery until well on into the 1700's are already apparent.

Until the end of the first quarter of the 17th century jewellery continued to reflect the 'Renaissance' style, but from then onwards it becomes possible



A group of three crosses probably made in the Low Countries in the 17th century. These normally cost £400–600, $960–1,450.

to observe certain national styles emerging. At the same time merchants began to travel to India and they returned to their homelands with precious stones far larger and more magnificent than had been known before. Consequently there was a shift in emphasis from gold and enamel to the stones themselves. Greater attention was now paid to the setting of the stones while the metal and enamel parts began to play a subsidiary role. At this time two advances were made in the method of cutting stones and craftsmen began to get some inkling of their optical properties. New and more complicated techniques of enamelling were devised and the whole jeweller's craft became more elaborate. In addition to this the jeweller was now completely remote from the goldsmith, although they had been growing apart for a century or more. In the late Middle Ages, what jewellery there was tended to be the prerogative of the aristocracy, but during the 15th and 16th centuries, the frequently far richer merchant classes began to create a demand for it. Now jewellery was much more plentiful and it was not confined to the few great pieces which were owned by the aristocracy. The 17th century was a period of change which left its mark on thought and science and consequently on the art of the day. The old beliefs in magic were receding and the foundations of modern science were laid. In ancient and mediaeval times, very little attempt, if any, was made to shape gemstones and they were usually put into their settings in their waterworn state: at the most their appearance was occasionally improved slightly by polishing the natural form. Gemstones were coveted purely for their colour and the optical properties which play such an important part in the stones used in jewellery in later times were completely unknown. Certainly one finds faceted stones in ancient jewellery but these are facets of the natural crystal. These are frequently blunted by the action of water, attrition from harder minerals or even etched by solvents. The natural octahedral form of



Two Spanish *verre eglomisé* panels of the 17th century. Objects such as these were devotional in character.

the crystals of diamond or spinel were set in this way but even they could have been considerably improved with comparatively little labour on the part of the lapidary. The oldest method of cutting gemstones is the so-called cabochon form. The softer stones were treated in this way as far back as the Roman Empire and they were at the time thought to be beneficial to those suffering from shortsightedness, presumably because it was thought that such a stone would act as a lens. No lenses from ancient or mediaeval times have come

down to us but it seems unlikely that they were not used, particularly when one considers the fine engraving on some ancient cameos and intaglios. One theory is that ancient lens cutters did some of their finest work by looking down a straw. Whilst this gives no magnification, it does concentrate the vision and experiment will show that one can get a better image in this way by concentrating a very small field on the retina. We learn from Pliny (Book 37, Chapter 5) that the Roman Emperor Nero (A.D. 54-68) was in the habit of viewing the games in the arena through an emerald but it is possible that he used it as a reflecting surface. Cabochon form has only frequently been used for garnets and it is of course essential for star stones. However it is only an extension of polishing the whole surface of the stone: in the East a stone so

Opposite page

A group of European Jewels, 17th–18th century. The piece in the centre is typically Spanish, the two crosses are of a universally European type, that on the right being the later of the two, the miniature case (bottom left) is probably French and the cameo probably English.

Spanish gold and enamel crucifix, the back with the emblems of the Passion. 17th century. These crosses were used on rosaries.

Spanish devotional jewel of gold and coloured enamels on a rock crystal ground. The rays are a sure indication of Spanish origin.

Opposite page
Top
Gold and garnet bracelet of a type in fashion in England about 1850.

Bottom
A garnet and green enamel suite of brooch, pendant and earrings. This represents the peak of French craftsmanship of the mid-19th century.

Harvey and Gore

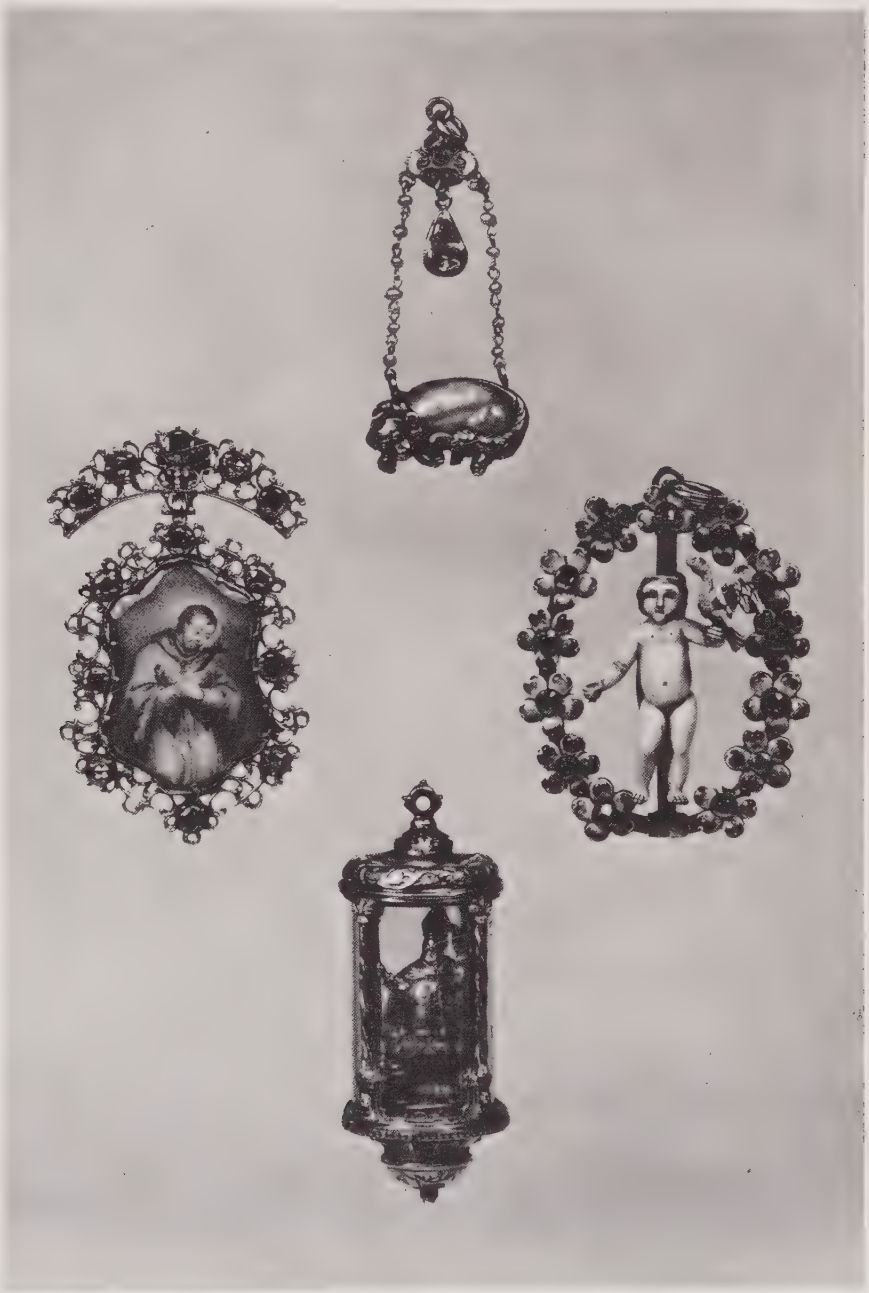
A typical Florentine jewel of the late 16th century.

A Spanish religious jewel with painting behind glass on parchment. Similar pieces were made in the Netherlands, then a Spanish colony.

A Spanish pendant jewel. 17th century. Its three dimensional nature indicates that it was probably used on a rosary.

treated is often drilled to form a bead and native lapidaries have been in the habit of improving the colours of their stones by lining the hole with the appropriate coloured foil.

The history of the cutting of all stones is closely linked to that of diamonds. Until the 15th century it was always assumed that the diamond because of its extreme hardness could not be cut, but it was finally discovered that this could be done by the use of metal discs charged with diamond dust. It seems that this practice originated in India although the discovery has been attributed to Louis de Berquem of Bruges. This theory is not altogether likely, although he was probably one of the first Europeans to practice the art. At first man celebrated his victory over this intractable material by cutting



diamonds into various grotesque forms but it was not long before he realised the extent to which stones could be made more beautiful by making use of their as yet unrealised optical properties. When the celebrated traveller and gem merchant, Jean Baptiste Tavernier, visited India in 1665, he recorded in his journals that he had seen numerous diamond cutters fully employed, but they appeared to know no more about their subject than their European equivalents. If the stones they were working on was clear they were content to

polish the natural facets, but if it contained flaws or specks of graphite, they were in the habit of covering it with numerous small facets. This, to some extent only, enabled the refractive properties of the diamond to be appreciated and it was this primitive haphazard cutting which led to the exact geometry which is invoked in the cutting of diamonds today. To such an extent was it a practice of the Indian lapidaries to cut refractive stones in this way that in Tavernier's time a defective stone was always exposed by its quantity of facets. At the same time, there were stone cutters in India with the ability and indeed patience to engrave an inscription on a diamond. The so-called Shah Diamond, now in the Kremlin, is engraved in Persian script with the names of Nizam Shah 1,000 (A.D. 1591) Jahan Shah 1,051 (A.D. 1641) and Fath Ali Shah 1,242 (A.D. 1826); it weighs 88.7 metric carats. Another, the so-called Akbar Shah Diamond, which was once the property of the Moghul Emperor Akbar, was engraved with arabic inscriptions by order of his successor Shah Jahan, and is inscribed ' Shah Akbar, the Shah of the World

The Shah Jahan diamond.

Spanish gold enamel and topaz badge, 17th century. This is probably the badge of one of the religious societies which flourished at this period.

Pendant jewel, probably South German, late 16th century.

An Italian devotional jewel, 17th century. As is so often the case with Italian jewels the figures have strong affinities with sculpture.

Spanish devotional jewel with a figure of the Virgin.

1028 ' and ' The Lord of Two Worlds, Shah Jahan 1039 '. These Hijra dates correspond to A.D. 1618 and 1629 respectively. This stone no longer exists as such as it was cut into drop form in 1866. Originally it weighed 120 arabic carats (about 119 metric carats).

The shape of the so-called ' brilliant ' cut diamond, the type most frequently used in jewellery today, is evolved from the natural octahedron of the diamond which is the crystalline form in which it occurs. To begin with, regularly shaped stones were selected and one of the two points was ground down until the square facet thus formed was half the diameter of the original crystal, thus producing the so-called ' table ' cut. This involved grinding away a sixteenth of the total volume of the stone, quite a prodigious feat, particularly when one considers the primitive nature of the equipment available. The great Cardinal Mazarin (1602–1661), is credited with inventing the so-called ' rose ' cut which was to form the classic cut for the next century and a half. It was developed from the old Indian technique of covering a stone with various facets but this was done in a regular manner: all the facets are triangular and in every case, the base is flat. The most straight-forward form consists of a hemisphere covered with twenty-four regularly placed facets on a flat base. There were several variants of the rose form of cutting but they are all characterised by their flat base and their hexagonal symmetry. Diamonds reached Europe from the East by way of Venice and it was a Venetian, one Vincenzio Peruzzi, who devised the brilliant cut. At first the geometry was not very exact, but from the middle of the 19th century onwards, with increasing knowledge of the optical properties involved, the various angles were very finely adjusted, not only to get the very greatest volume out of the available stone, but also to make full use of the high refractive index of the stone which gives it so much sparkle. This method of cutting was so obviously superior that the owners of rose cut stones had them brilliant cut, in spite of the great loss in weight that was involved. Brilliant form is derived from the old table cut which was used earlier in the century but with far more facets, thus making the plan of the stone approximate more to a circle than to a square on the table cut. The various facets

A late 18th century painting of an Indian stone cutter at work. This method of polishing stone has been used since prehistoric times.

A group of Flemish or Spanish jewels of the late 17th century. Such pieces are still available in small quantities, but will soon be very hard to find.

A pair of enamel brooches set with stones. Flemish *circa* 1700.

A pair of earrings. Probably French, late 17th century.

all had names which were originally suggested by their shape or their position on the stone, with the exception of the so-called skill facets, so termed because of the difficulty in placing them to the best advantage. The girdle, the edge of the stone, was made as thin as was possible, consistent with sufficient strength to keep the stone from being chipped in the process of mounting. If it was too thick the rough edges would show in the lower facets and seriously affect the quality of the stone. The purpose behind the design of this cut is to ensure that all the light that enters the stone is totally reflected from the underside and out again through the front, thus breaking up the white daylight and reflecting and refracting it into component parts of the colours of the rainbow. It is for this reason that a diamond sparkles with different colours. There were various factors which caused the cutter to depart from the ideal geometry of a brilliant cut stone. This might be done either because of malformation of the natural crystal itself or alternatively to give the stone a greater diameter for its weight and thus appear larger, although the greater the departure from the norm the less light the stone will have.

It need hardly be said that stones, particularly diamonds, should be kept scrupulously clean if they are to look their best, and it is well to remove rings from the fingers when washing the hands, although there is of course the attendant risk of hurry and forgetfulness causing their loss by their not being replaced. Each time a ring is immersed in soapy water, a thin film of soap adheres to the stone, particularly to the back, and the stone becomes more and more lifeless. If a ring has got dirty in this way, it may be cleaned in any grease solvent with the aid of a toothpick and in an emergency gin or any spirit will suffice. However, care should be taken not to loosen the claw settings and endanger the safety of the stone. The ideal qualities of a brilliant cut stone are large colour dispersion and a high refractive index. Both these qualities are possessed by a diamond and the only stone that approaches it is zircon which has the disadvantage of being softer and affected by wear after only a few years' use. The other colourless stones in common use, such as white sapphire, topaz and rock crystal (quartz) have little colour dispersion and a low refractive index.

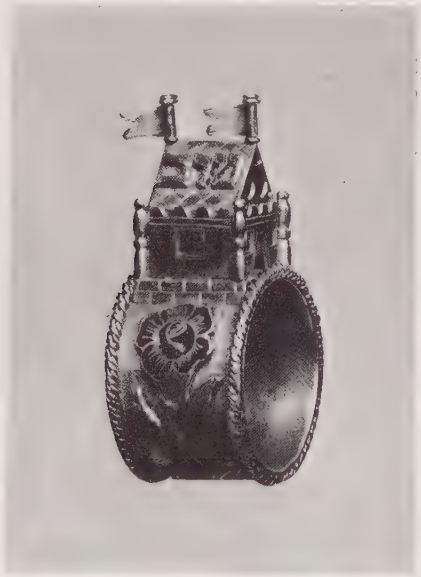
A typical 17th century design: the bow was popular, but is not often found in undamaged condition. This realised £420, $1,150 in 1960 but would show a marked increase in value today.

Left
A 17th century parure in diamond, emerald, gold and enamel. This is a very fine example of late 17th century jewellery.

Emerald necklace with gold and enamel links. Probably Italian of the early 17th century.

Jewish Marriage Rings

Jewish marriage rings form a class of their own and their overall design seems to have remained unchanged for many centuries. They have a wide band and the bezel, if such it may be called, is in the form of a building, which cannot be identified, but is probably Solomon's Temple. In the 17th and 18th centuries, their designs were elaborate and not practical for wearing. They were only used at the actual ceremony. The band is almost invariably inscribed in Hebrew characters *mazzal tob* (good luck). The examples that are normally seen are very elaborately designed and are usually ascribed to South Germany or Venice. Examples from earlier than the 17th century are excessively rare. Most of the earliest surviving specimens appear to date from the 13th century. However, there are a few rings which date from the end of the first millennium A.D., notably a gold example in the Louvre and another which was in the Guilhou Collection before it was dispersed in 1938 and is now in the Victoria & Albert Museum. A silver example illustrated here shows affinities with romanesque architecture. It is tempting to assume that these rings, too, were used in the Hebrew marriage ceremony and in these early times from the European point of view they may actually have been worn as wedding rings, as they are no more impractical to wear than other rings of the period. A word of caution is due to would-be collectors of these rings. Some thirty years ago a forger was at work in Jerusalem and he is known to have made quite a number of forgeries, so care should be exercised before purchasing one of these from a source which is not highly reputable and knowledgeable.



Jewish wedding ring of a type that was copied in Jerusalem between the two World Wars. Care should be taken when purchasing such things as there are few originals in private hands.

Silver ring, the bezel formed as a romanesque building. Perhaps a Jewish marriage ring of about A.D. 1000 and if so one of the earliest known. Of technical interest but worth a comparatively small sum.

The 17th Century: Investment

The finest jewellery of the 17th century is probably as hard to find as that of the 16th and in any case the division is purely arbitrary. The remarks with regard to investment made in the previous chapter still hold good, at least for those pieces made during the earlier part of the century. Towards the end of the period, the actual breakdown value of the stones involved becomes relevant for the first time, although the stones from broken down pieces would not be easily negotiable as their cut would be so outmoded by today's standards. In addition to this, fine as the precious stones look in the settings designed for them, they are on the whole poor specimens compared to the examples used by modern jewellers. Thus they are only an investment when in the original settings. In jewellery it is very hard to point to anything which will not surely increase in value, and it is therefore much more a case of deciding which examples will show the greatest increase. By the end of the century, numerous small pieces, such as buttons, slides to go on a riband and the like, were being made. Many of these are extremely well made and attractive and should form as good an investment as any, particularly for the smaller investor. At the same time, small religious badges and talismans began to be made in very considerable quantities. Whether or not they fall into the province of jewellery is debatable, but the fact remains that today they are sold in the same company. Because of the number of these objects available there are other fields which may be expected to give a higher yield. The jewellery of the later 17th century begins to approximate to designs which are considered wearable today, and it is for this reason that there will always be a strong demand for it. This is true of most jewellery from this period onwards. Enamel, which has been in use from the earliest times, was used during this century to great effect but unlike hitherto was frequently almost unsupported, which makes it very prone to damage. Not only should one take great care of it oneself but also one must be very careful to look for restorations. It is this which more or less replaces the forgery element from now on. To sum up, then, the scarcity and wearability of jewellery of this period should make it a very worthwhile investment and there seems to be no reason to assume that prices will do otherwise than show a sharp increase over the years.

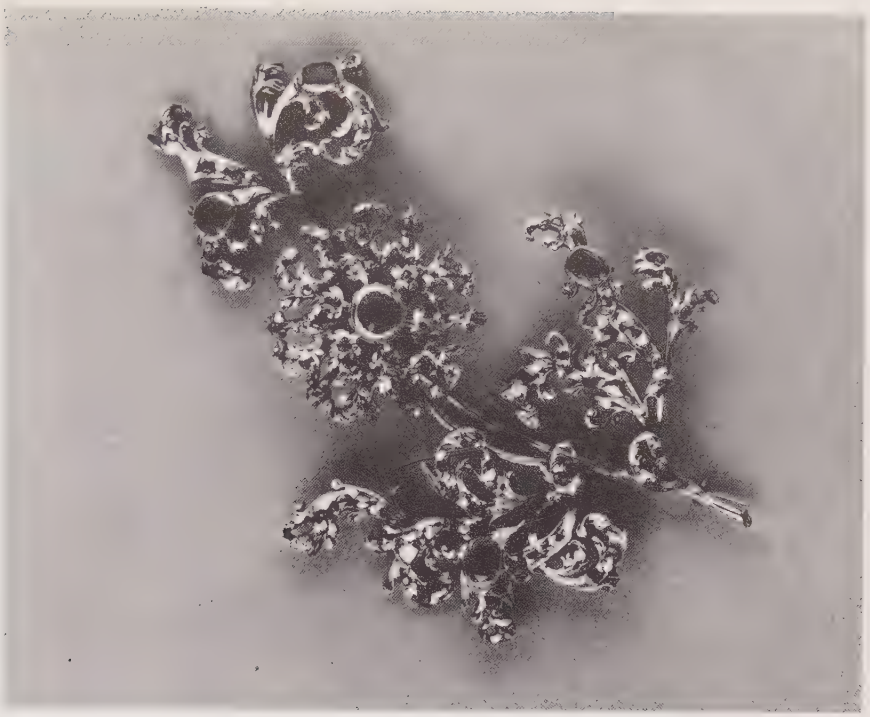
The 18th Century

In the 18th century the most striking development was the gradual divorce of stones from their enamelled settings and the divergence of designers from the craftsmen who made up the designs. The invention of the brilliant cut meant that precious stones were given more life and sparkle and could hold their own without the need for enamelled settings to lend them interest. This also emphasised the advantages of diamonds over other stones and led to their pre-eminent position in jewellery. In England and France during the first half of the century the diamond was admired almost to the complete exclusion of coloured stones, which, however, maintained their popularity in Spain. In that country and its colony, the Netherlands, a distinctive cruciform design evolved for purely fashionable use, as opposed to the jewels made with religious connotations. These cruciform pieces were set with rose cut stones in gold collets between foliate gold scrolls. The basic design was popular until the middle of the century, but for some reason reappeared shortly before 1800 in Normandy, where for a period of about twenty years large pendants of paste and diamonds in silver collets with rather stiff foliate scrolls were made.

From about 1720 men appeared to forsake their claim to all but a modest portion of the jewels that were made. The exceptions found expression in the magnificent orders such as that devised to represent the Golden Fleece—one made for Augustus III of Saxony is now in Dresden—and the numerous Great Georges which were the badge of the English Order of the Garter, and are to be seen on the portraits of many English noblemen. At the same time men still wore jewelled rings and seals, buttons and buckles. The most

French necklace of the 18th century. The flowers are set with coloured stones. This is a particularly fine example, and such a piece would be hard to come by.

An early 18th century flower brooch set with diamonds.



English jewel in the form of a plume set with garnets. *Circa* 1700.

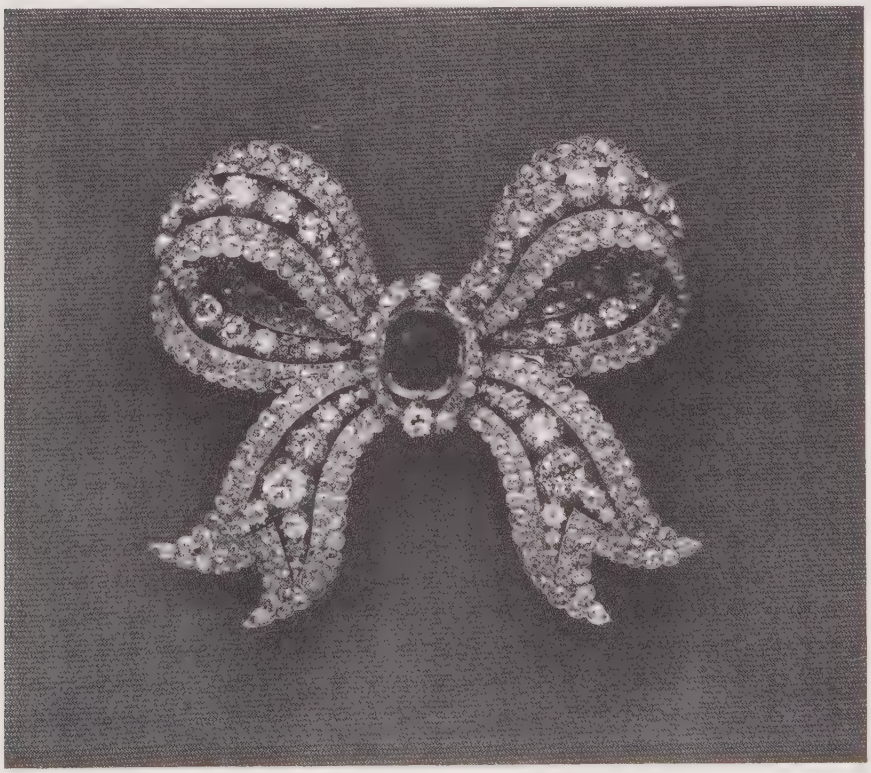
An 18th century jewel case probably Italian. It is made of Shagreen. It is rare to find an example with silver mounts such as this one. Jewels in their original early cases can always be expected to be more expensive.

popular jewels for women at court were parures and demi-parures consisting of earrings with stomachers and pendants *en suite*, usually of diamonds set in foliate collets, the form often being contained by ribbons in simple loops set with stones. Added to this was a passion for *rocaille* and the asymmetry of the Rococo which lasted from about 1730 for some thirty years. This produced an elegance and lightness of design that was to live on in the beautifully balanced jewels which persisted until shortly before the end of the century. The constant remounting of diamonds and the breaking down of the jewels of the previous decade to construct those to be worn *à la mode* leaves us few of those works to admire in themselves. We have to imagine them from such designs as were engraved by Albina, Flach, Venturi and Taute, and in addition to these we have contemporary portraits which frequently bear dates and are of known sitters. Diamonds were relatively accessible to the rich since the wealth of Brazil and Golconda was being brought into Europe, and was lavished on the court dresses of the time not only in the form of earrings and pendants, *sévignés* and bracelets which were mainly composed of the larger stones, but also in the profusion of small chips which could be sewn on a dress to sparkle in the silk and glint among the folds of lace. Aigrettes were also pinned in the hair. A letter from Horace Walpole to George Morland written in Paris in February 1766 gives an insight into the display of jewels brought out for an important occasion. In this case it was the Duchesse de Choiseul's choice of a dress to wear at a wedding:

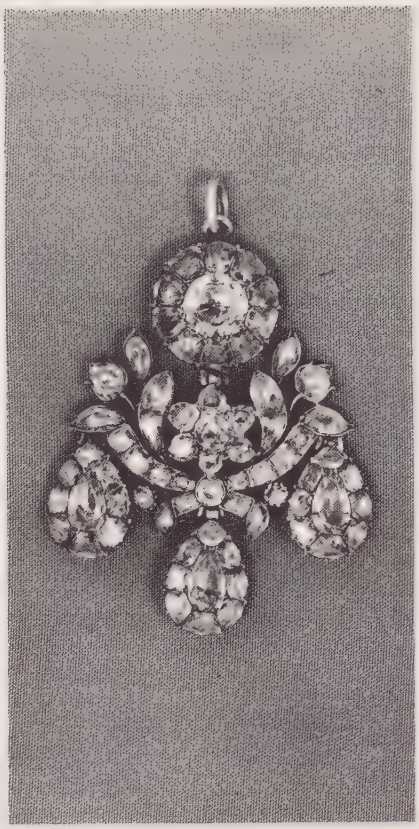
> ' I supped last night with the Duchesse de Choiseul and saw a magnificent robe she is to wear today for a great wedding between a Biron and Boufflers. It is of blue satin embroidered all over in a mosaic diamond-wise with gold, in every diamond is a silver star edged with gold and surrounded with spangles in the same way. It is trimmed with double sables, crossed with frogs and tassels of gold. Her head, neck, breast and arms covered with diamonds. She will be quite the Fairy Queen '.

A portrait from the studio of Allan Ramsay shows Queen Charlotte, wife of George III, also magnificently jewelled with a vast stomacher of diamonds in designs of flower sprays which cover her bodice, an aigrette of the same stones, and ropes of pearls knotted casually about the shoulders, waist,

elbows and wrist. Another portrait of her by Sir Joshua Reynolds, now in the Los Angeles Museum, shows her with diamond loops in diminishing sizes on the bodice of her richly embroidered dress and ropes of pearls round about the shoulders and waist. All this lavish display disappears into insignificance when compared with the blaze of jewels worn by Catherine the Great of Russia. The designs were perhaps rather heavier than those of Paris and London. The portraits of Catherine always show her elaborately arrayed. In the Victoria & Albert Museum in London there is a suite of bow brooches and a set of clips, all worked in diamonds that could well have originated in Russia. Diamonds were in such profusion that not long before the middle of the century they began to be used to adorn snuffboxes where they were cunningly integrated into the rocaille borders or flowers of the thumbpiece. At the same time they were used to form the thumbpieces of chatelaines and etuis and were included in the borders of miniature portraits. This fashion could well explain why miniatures are often found unframed and in poor condition, for once bereft of their magnificent settings they were no longer considered worthy of preservation until comparatively recently. The etuis and the watches taken from the chatelaines have had kinder treatment and reasonably large quantities survive. Those in good condition set with panels of bloodstone, agate or lapis lazuli with borders of crisply chased gold are highly prized, and the later ones with coloured enamels, if they are not chipped, are also much sought after. Although these may be described as domestic articles rather than jewellery, their decoration is such that they do fall within the jeweller's province. Although portraits of the period suggest that the aristocracy seldom wore such pieces, the wording of their wills makes it clear that they at least owned them. However, it was mainly the growing middle classes in England who patronised this branch of the jewelled arts. A typical chatelaine of about 1740 is of chased gold inset with stones and panels within rocaille borders. Designs lost most of their elegance as the century progressed and about 1770 there was a great demand for enamelled ware of this character in simple reeded or foliate gold borders. Although normally worn on the hip, chatelaines could be worn looped by the sash at one side of the bodice and hung across the waist or bosom. Needless to say there were those who could not afford such luxurious chatelaines, and examples were made in shaped pinchbeck, sometimes with a design picked out in silver. The etuis of even these would include a small spoon, folding knives, pincers, bodkins, scissors, poker and ivory tablets.



A Russian late 18th century brooch. Notice the rather coarse treatment compared with English and particularly French examples.



French pendant, *circa* 1740. The flower element in the design was to remain dominant for a very long time.

A pair of French diamond earrings. *Circa* 1770.

A pair of French diamond earrings late 18th century. The stones are unusually large.

As early as 1657 Sieur d'Arre was amassing a fortune in Paris by counterfeiting precious stones, and in 1676 George Ravenscroft found that oxide of lead added to flint glass produced a crystal which glittered if perfectly cut, and thus created a legitimate skill and trade. At first paste designs closely followed those using precious stones, but during the 18th century they evolved into a place of their own and great ladies did not disdain to possess parures of paste for wear during the day. The crystals could be foiled on the back to give an additional depth of colour, and the elegant and attractive appearance of paste jewels not only led them to be appreciated at the time but gave them a popularity which has lasted up to the present day and has made them increasingly scarce. Semi-precious stones such as marcasite, amber, garnet and turquoise were used in similar form. The buckles that were popular in the 18th century and that were worn in profusion at the elbow, wrist and waist and on shoes were also decorated in this way. As with other jewellery those set with diamonds and other precious stones have generally been broken up and

English and French diamond jewellery all *circa* 1760, except the sapphire brooch which is about 1800.

An 18th century diamond necklace and brooch formed as a crescent and arrow.

English diamond wheat-ear brooch, *circa* 1775. This is a particularly large example of the type.

Two French diamond flower sprays, the flower on the left is mounted with a spring giving it a 'tremblant' effect, both *circa* 1800.

the stones reset, and consequently surviving examples are very rare. But those of chased gold or silver with marcasites, paste or garnets can still be found and are to some extent available to the collector. They are normally oval or rectangular, slightly curved in form with well shaped steel crossbars and prongs. Those made with semi-precious stones, though fine examples of craftsmanship and relatively rare, are not necessarily expensive, as unlike virtually all other jewellery of the period they are not really suitable for modern wear. Even a single piece used as a belt buckle is not entirely satisfactory as the larger examples made for shoes have too great a curvature to fit easily on the waist. However, many have been successfully converted into brooches.

Towards the end of the century the jewels became more varied and a note of sentiment crept into the designs. Memorial jewellery will be discussed by itself, but in France a similar feeling found expression in small clips and pendants decorated with lovers' devices of hearts, bows and arrows and monograms, usually mounted in diamonds applied to a panel of glass-blue

enamel. Marie Antoinette possessed two such bracelet clasps. There were also small gold lockets and vinaigrettes enamelled with similar motifs or with flowers, one for each day of the month with the appropriate initial in the compartment. Another sentimental expression was the setting of coloured stones in a gold bracelet or ring so that the initials spelt a message; for example ruby, emerald, garnet, ruby, emerald, topaz and sapphire, spelling ' Regrets '. The word ' Regard ' was also commonly treated in this way. The idea was probably first launched by a gift from Napoleon to his sister, Eliza Bacciochi, on the birth of her daughter in 1806. It was a bracelet set with semi-precious stones, the initials forming a motto. The period of greatest interest in this custom was in England from about 1820 to about 1840.

In France the Paris company of goldsmiths had been suppressed by Tugot in 1776 but revived shortly after by the demand for trade, only to be finally abolished by the Constituent Assembly on 17th March 1791. Few jewels were produced under the Directoire: they seem to have been mainly long chains with complicated links of gold, sometimes set with pearls, mosaic or enamel plaques, and were soon supplanted by the more showy jewels of the Consulate after 1799. As a result of the campaigns of Napoleon in Italy and Egypt, new ideas and fresh enthusiasm for a more classical form of jewellery were brought to Paris. This gave rise to a fashion for cameos which at this period reached greater proportions than ever. Grand Tours of Europe by the aristocracy created so great a wave of interest that during the second half of the 18th century cameos became extremely costly. The Duke of Hamilton had been dissuaded by his friends from buying a set of cameos for his mother when in Rome because the price was considered exorbitant even then. However, this was a period when great collections of gems were being formed, and the collections at Chatsworth in Derbyshire show that the Duke of Devonshire and his family made a number of such purchases. Likewise, the collection formed by the Duke of Marlborough, which was finally dispersed at Christie's in 1899, showed a similar interest in this field. Portraits of the family of Napoleon I often show them wearing cameos set in diadems, clasps, pendants and bracelets, as in the portrait of Princess Borghese by Robert Lefèbre, painted in 1806. Again, a portrait of Marie Caroline, Queen of Naples, by Madame Vigée le Brun, has her wearing cameos set in her diadem and at her waist.

A late 18th century cameo of what was then called a Blackamoor in a diamond setting—probably English. This was a popular subject at the period.

A group of 19th century seals. Seals of this type were very popular from the end of the 18th century onwards. The second from the left is characteristically English. In gilt metal these cost about £20, $50, and in gold something over £100, $250.

In response to the overwhelming demand for this form of art various craftsmen sought to imitate cameos in other media. De Gault, Sauvage, Parent, de Janvry and Bourgeois were among the miniaturists who produced paintings *en grisaille* on blue grounds or in sepia on brown to give the cameo effect. Wedgwood responded with his jasper ware which he made in profusion in plaques decorated with white figures, devices and groups on blue grounds which were then mounted on pendants, clasps and links of chains, or used as earrings, buttons, brooches or as embellishment for snuffboxes and scent bottles. These imitations survived in greater number than the more exotic originals in their settings of modest gold and half pearl or cut steel. James Tassie produced imitations of intaglios in coloured paste, copying both famous collections of gems and portraits and paintings. These were more usually mounted as matrices for seals. These seals were affected by Prince of Wales' followers and were soon to find many imitators. Often portraits of the Regency period show two or three suspended from a chased gold fob on the waist of an elegant dandy. They had reeded or gadrooned mounts of gold, silver gilt or pinchbeck, but those of the period 1810 to 1830 were more usually chased in high relief with flowers and shells and acanthus leaves, or occasionally with a fox and hounds, partridges or other game.

Pearls have always been very highly prized but perhaps never more than in the second half of the 18th century. They were always popular for their particular lustre and their adaptability. Once strung they could be used in any number of ways. The fashion of weaving long ropes about the bodice, caught by a jewel at the shoulder, bosom or waist appeared at the end of the 17th century and continued until about 1800. They were elegantly entwined in the modest coiffures of the middle of the 18th century, the more elaborate ringlets of the Charles II period and the powdered creations of George III. On the continent of Europe aigrettes would be added for their sparkle, but seldom in England. During the last two decades of the 18th century they held their own almost entirely alone and much consideration was given to their size, weight and colour. Madame de Pompadour had a renowned string of pearls which she bequeathed to Marigny while Mme. Gofferin indulged in some malicious speculation as to whether he would present them to his wife or fob her off with an inferior strand.

Another mistress of Louis XV, Madame du Barry, is shown wearing a short

An English diamond and turquoise suite, *circa* 1800. This suite was presented by King George IV to the Marchioness Conyngham.

Right
A late 18th century diamond brooch formed as a spray of cornflowers.

Left
An English 18th century flower brooch.

A pair of 18th century English diamond ear pendants.

string of large beautifully matched pearls as her only jewel in her portrait by the Prince of Wales's favourite miniature painter, Richard Cosway, which was painted on her only visit to London. Pearls were also embroidered at the shoulder and neckline of the white muslin dresses and a portrait of Lady Chambers taken by John Smart in India shows her wearing a simple dress and surcoat, the borders of which were embroidered with a single row of pearls.

There was however one serious rival to pearls from about 1730 to 1780. That was the posy of flowers. These posies had of course no lasting value but reflected the spirit of an era which brought light and grace through the large windows of the Palladian houses on to the elegant furnishings of their interiors. A posy was considered a particularly fitting ornament for girls and young ladies, and in the portraits of the period they are often shown pinned in the hair or occasionally attached at the waist. During the 1780's they were in extravagant profusion in Paris and elsewhere in Europe, as Goya's portrait of the Marquesa de Pontezos, now in the Mellon Collection in Washington D.C., shows. The Marquesa is wearing not only festoons of flowers with ribands about the frilled neckline of her bodice, but also posies nestling in the ruches of her silk overskirt. An interest in the cultivation of flowers and herbs began early in the 1600's, and by the end of the century had become a Royal preoccupation. The Queen of Louis XIV of France, the ' Sun King ', preferred a posy of flowers to the diamonds favoured by her husband, and William of Orange's consort Queen Mary was an enthusiastic horticulturist. In 1715 Stephen Swibzer wrote of her in his *The Noblemen, Gentlemen and Gardners Recreation:* ' . . . but in gardening, especially exoticks she was particularly skill'd '. The Royal interest continued with Frederick, son of George II, and his wife Princess Augusta, who laid out Kew Gardens to the west of London.

Memorial Jewellery

Memorial jewellery was peculiar to England and seems never to have become popular on the continent of Europe. Widows were always expected to give evidence of their grief by wearing black, and the jewels considered suitable were jet, pearls or gold enamelled in sombre tones. Small skulls, often in white enamel with diamond eyes, were fashionable as pendants. By the second half of the 18th century the use of memorial jewellery became more general and at the same time it became simpler in character. The popularity of these jewels was stimulated by the quantity produced after the Restoration in memory of Charles I and later patriotic supporters of succeeding English monarchs. These jewels normally took the form of small miniature portraits painted on vellum or enamelled, and inset in a simple gold slide. Less famous individuals were commemorated by their initial or on rare occasions by a portrait wrought in fine gold wire which was placed on a background of hair beneath a thin crystal in a gold slide. The reverse would be engraved with the deceased's name or initials and the date of his death. The hair was usually taken from the body after death. The name or initials were often followed by a motto or encircled by a skull and crossbones or small enamelled emblem. The complete slide was worn on a black ribbon.

This fashion was most popular in the last quarter of the 17th century and persisted until about 1720. There then seems to have been a lull in morbid sentiment, but it reappeared a decade or two later in the form of rings. These are less common than the slides and are generally simple gold circles, plain or chased with a skeleton, the inside engraved with an appropriate inscription. By the 1740's the form had developed to include panels of hair, while the hoops were often waved and enamelled. This type of ring with the name of the deceased added came to be the most popular form, and by 1770 was reasonably common. There are many variations in size and shape, even in the shape of the bezel containing the hair, which was surrounded by engraved gold or pearl set borders. The hoop was chased on the outside with the name age and date of death on a black or white enamelled ground. The macabre associations had by now been rejected, leaving only the sentiment.

Left
Memorial ring of George Washington, his portrait is grey on a blue ground. It is rather more elaborate than most mourning rings of the period.

Centre
Gold and black memorial ring of the composer Weber who died in London 1826. This late example reflects the style of its time.

Right
Memorial Ring with silhouette portrait of 'Beau Brummel', with gold mounts.

In the closing years of the 18th century it was quite usual for a man to bequeath a sum of money to his friends for mourning rings to be made and worn in his memory. But the rings themselves were not enough to satisfy the demands of sentiment. About 1775 panels of ivory were being painted in sepia with scenes of tombs and long female mourners dressed in high waisted muslin gowns. The vignette would be encircled at the top by a weeping willow, or an angel would be shown among clouds to comfort a widow with her children clustered about her. The tombs were sometimes embellished with pearls or enamelled panels with initials. Often a simple tomb and accompanying willow was made up from hair laid down laboriously on the ivory. The practice was revived during the 1850's. These sober confections were made in sets with gold pendants, bracelets and brooches. Many were elliptical or shuttle-shaped; ovals are commonly found, and, less commonly, circles. Pendants were designed by such distinguished artists as Angelica Kauffmann: an elaborate example painted in sepia with the distinctive Mannerist lady at a tomb is meticulously painted and may be attributed

An English memorial clasp probably painted by Angelica Kauffmann, *circa* 1780.
Left
A typical late 18th century memorial pendant. Such pieces seem inexpensively priced at under £25, $60.

to her. Perhaps her friendship with Cosway, the Prince of Wales' miniaturist encouraged her to the use of ivory. The fashion died out soon after the turn of the century when taste reverted to coloured stones and more exotic jewels, but the vogue for rings continued. By 1820 they were usually chased with flowers and the engraved inscription was placed on the inside of the hoop: by 1830 panels of hair in oblong small borders were the most favoured form and were often surrounded by small coloured stones or pearls.

The 18th Century: Investment

The material treated in this last chapter probably provides some of the best opportunities for investment. The 18th century was a time of superb craftsmanship, and the problems of mass-production had not yet arisen. The designs are well established and are not at the mercy of changes in fashion. While the best examples, as with all periods, are very rare, there is a sufficient quantity available to enable one to arrive at some sort of price structure. One must, however, remember that the finest pieces command a price far in excess of the average. Bearing all these factors in mind, it seems that 18th century jewellery, expensive though it may seem, is still underpriced when compared to that of other periods, and indeed to other works of art. Mourning jewellery costs very little at present: a disadvantage is that it is frequently of a personal nature in that much of it is inscribed. The vogue for paste at the end of the century is reflected in the number of pieces which survive. In spite of this, the better quality examples are fast disappearing. Although paste obviously resembles precious stones, it is admired for itself. It is not sham jewellery and so no fears may be had on the score of it being second-rate.

The variety of different objects which can be interpreted as jewellery becomes very wide, and much of the 18th century material was designed to be worn and used by men: seals and chains were made in considerable quantities. Miniatures came to be set in bracelets, and watches are such that it becomes hard to draw the line between a timepiece and a jewel. All this adds up to a greater variety of designs, none of which will do anything but increase in value. Of all periods, this is surely the most underpriced and therefore provides the most obvious incentive for investment.

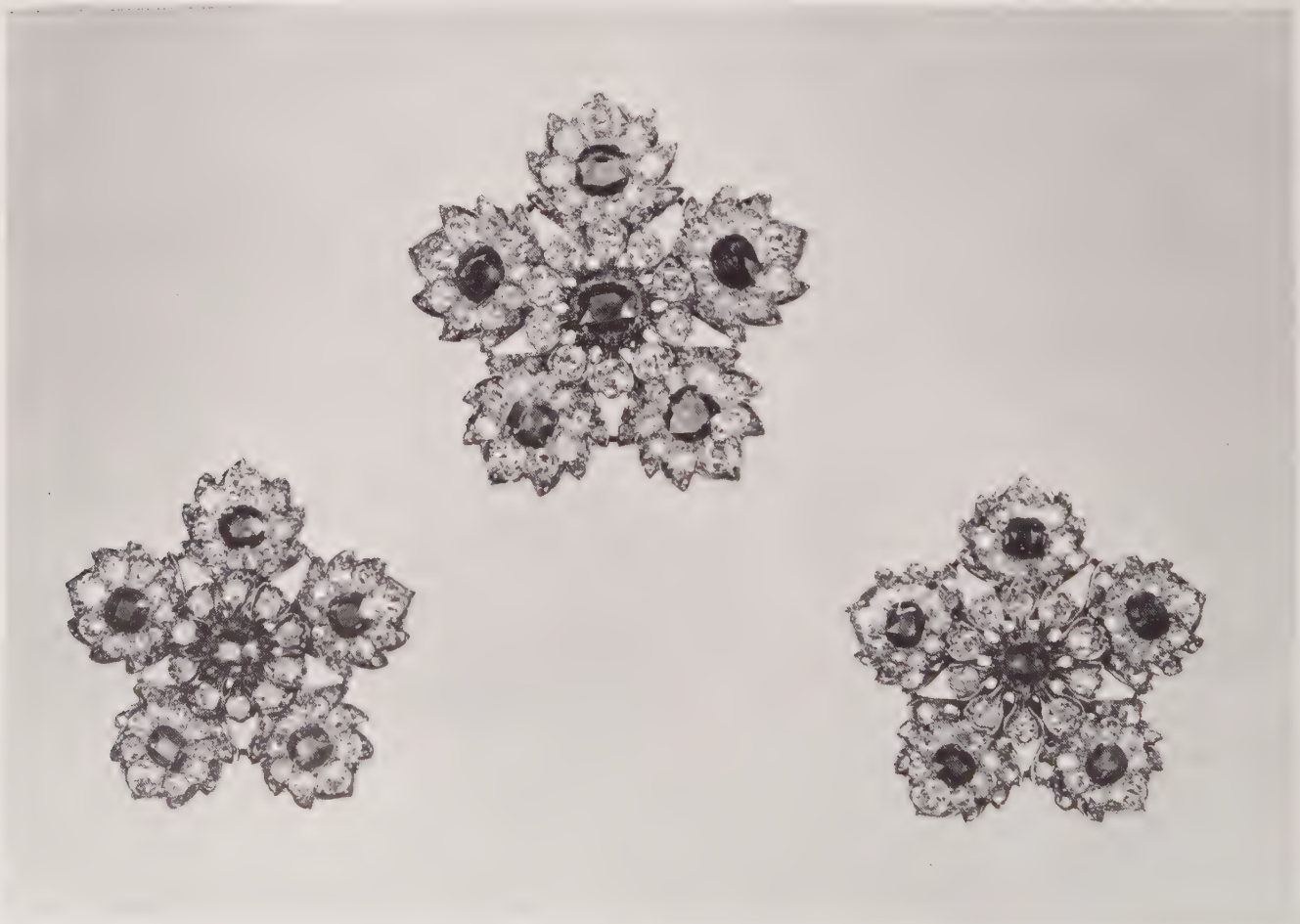
The 19th Century

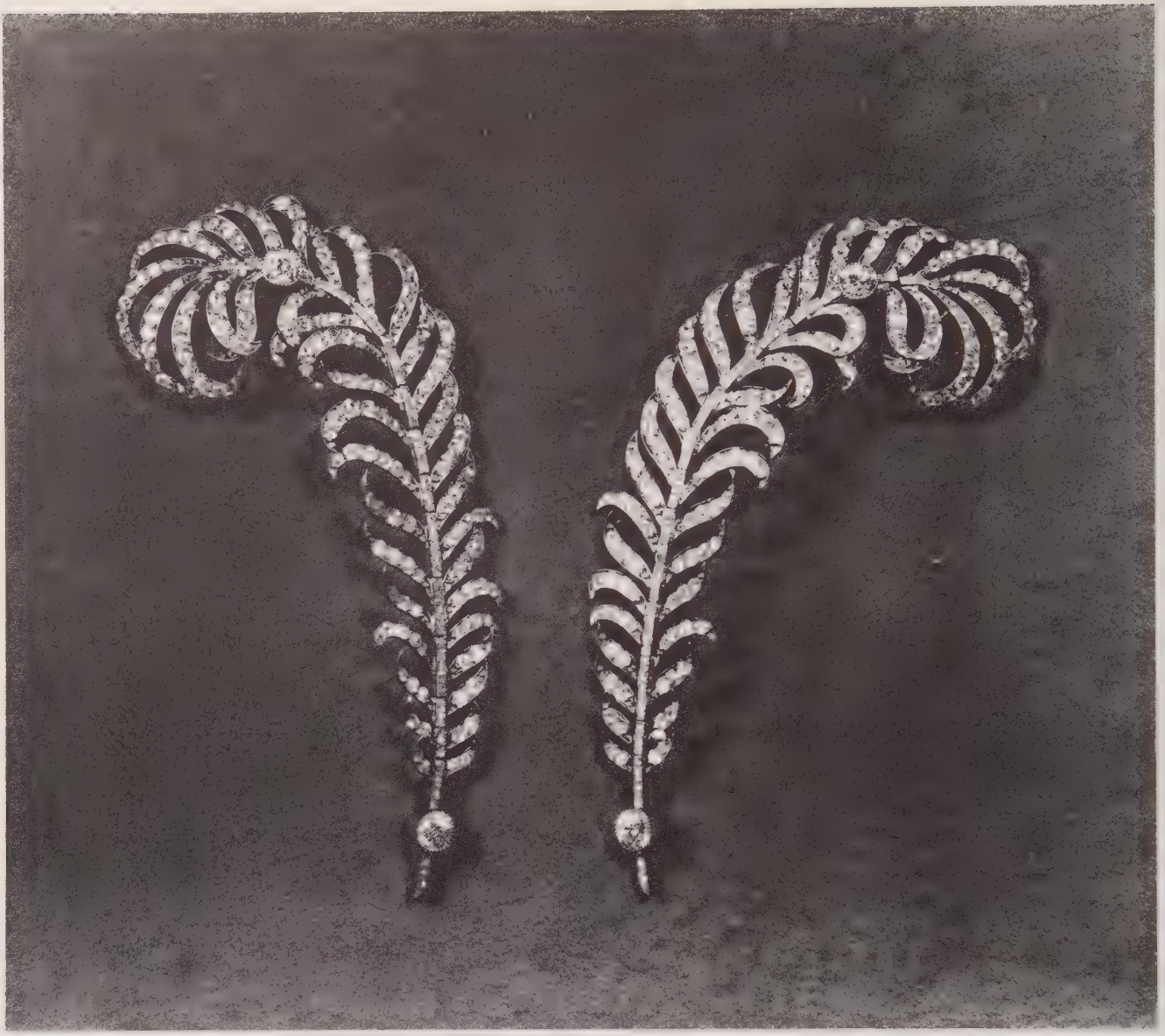
One of the notable characteristics of the 19th century is the actual quantity of jewellery that was produced. The growing middle classes and the wealth of the Industrial Revolution produced a greater demand over a wider range of tastes. The methods of mass production were also being developed. By 1835 gold settings were being stamped out and the process had been perfected whereby parures of leaves and berries in vari-coloured gold could be easily assembled and decorated, often in conjunction with filigree work. The name given to this type of jewellery is *cannetille*. Such pieces were used by themselves or as mounts for large semi-precious stones; one in the Joicy bequest in the Victoria & Albert Museum is set with pink crystals. Amethysts and topaz were in general the favourite stones. A parure of amethysts in gold flower settings was first made in 1820, but throughout the period coloured stones became increasingly popular, particularly for day-time wear.

This type of gold jewellery set with coloured stones seems to have been most favoured in England but is also found in France and Switzerland where it was usually enamelled with scrolls and flowers. The style should not be despised; it brought a new dimension to art, and the better made examples have survived extremely well in spite of their delicacy of form. More sturdy reeded and beaded gold mounts were also set with plaques of coloured mosaic from Italy, enamels from Switzerland and the products of the Wedgwood pottery. The late 18th century excavations at Herculaneum and Pompeii, the two towns overwhelmed by the eruption of Vesuvius in A.D.79 brought many Roman mosaics to light. It was these that caused the fashion for miniature mosaics which are still made today for tourists in the form of brooches and earrings. At about this time the habit of wearing combs and other large head ornaments swept through Europe. Following the normal Royal and Imperial habit of wearing crowns, many of the great women of the early 19th century took to wearing combs and diadems and fillets of gold over the brow. The diadem was most popular during the Napoleonic era, and, as mentioned previously, was usually worn by the Emperor's family. The most universally favoured head ornament was the comb. This developed

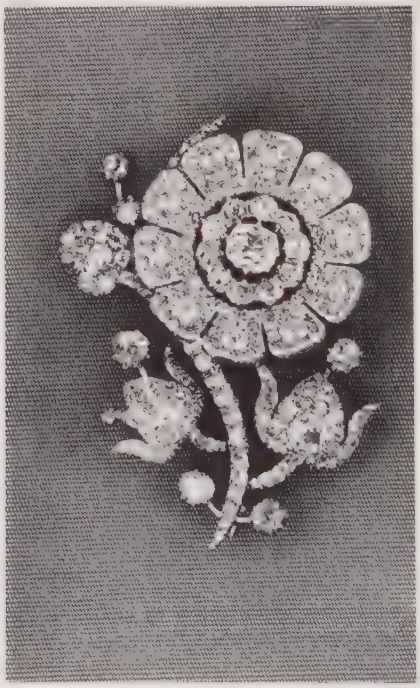
A parure of *Cannetille*. This is a particularly fine example, but such sets are still available at not much over £100, $240.

French or possibly Russian brooches of sapphires and diamonds, *circa* 1800. This form remained common for many years.



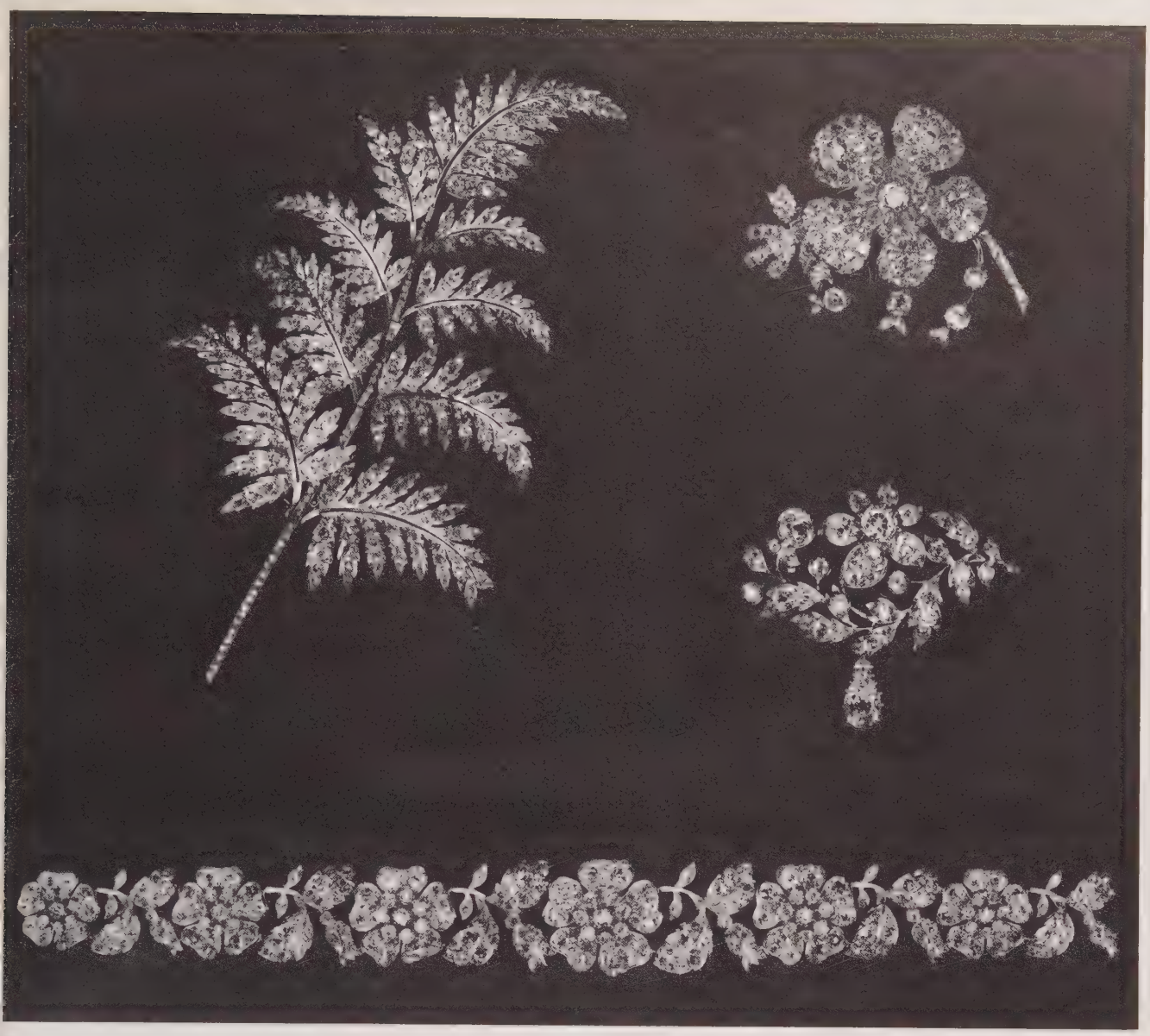


A pair of diamond plumes. French *circa* 1800.



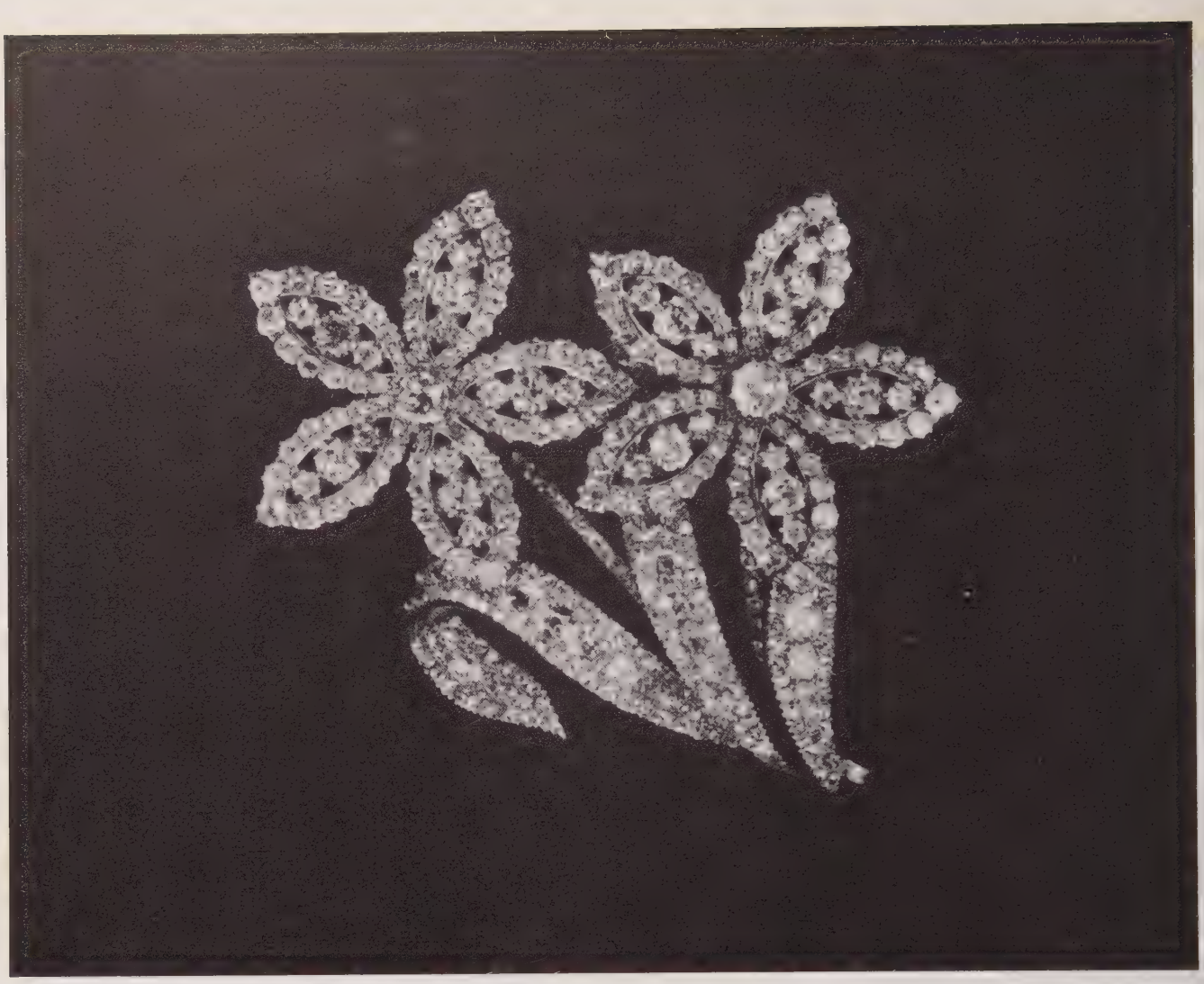
Left
A plume brooch. English *circa* 1860.

An English diamond brooch, *circa* 1880.



A group of French early 19th century jewellery. The elegant design is typical.

A flower spray in diamonds. Probably French *circa* 1860.



A rare large floral spray in diamonds *circa* 1800.

Left
A diamond flower spray, French *circa* 1800.

Opposite page
English diamond and emerald necklace and bracelets, *circa* 1760.

Opposite page

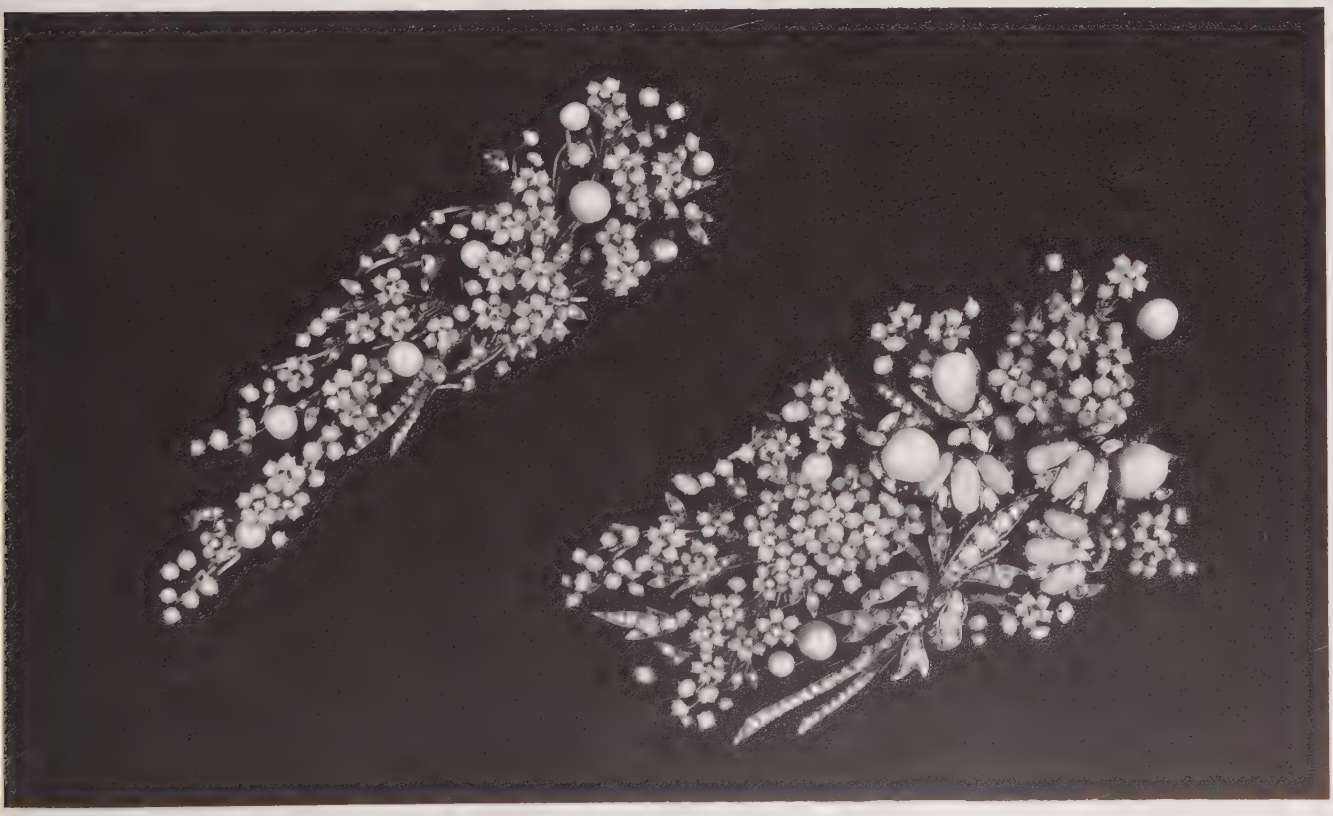
Above: English diamond and ruby necklace and bracelet, *circa* 1800.

Below: French diamond and amethyst bracelet and earrings, *circa* 1830.

Right

A posy of diamond flowers in enamel ties designed as a brooch. Late 19th century.

Two turquoise and diamond brooches. French *circa* 1800.



Four 19th century diamond flower brooches.

Diamond aigrette. English, late 18th century.

English diamond flower brooch. *Circa* 1800.

from the aigrette which had been used to hold the bunch of curls looped at the back of the head, and first appeared about 1810. The style lasted until after 1860. Most of the combs were of gold, and those set with pearls and coral were considered a suitable ornament for young girls, while their mothers wore more exotic varieties adorned with cameos, gemstones and *cannetille*. In the summer of 1851 fashion demanded dripping fringes. Long chains of gold were also considered suitable for both young and old. The decorative chains of the Directoire continued, but were partly supplanted by simple links which were either looped from the bodice or waist or were used to hold miniature portraits or lorgnettes. These chains were thinner and more elegant than the massive examples in favour during the Renaissance. The solid bangle also made its appearance during this era: originally worn at the top of the forearm it later moved to above the elbow. Later still it was worn at the wrist, and with the reappearance of sleeves some ten years after, it became a favoured item of jewellery for the remainder of the century. The portrait of Madame Moitessier by Ingres, now in the Kress Collection in Washington D.C., shows her wearing a string of pearls and two large bracelets, one of them enamelled with blue clasps set with pearls, the other of plain form with various small lockets and charms pendant from it.

Among the most interesting jewels of the 19th century are those inspired by the Middle Ages and the Renaissance. In 1834 a Tudor-Gothic style was chosen for the Houses of Parliament in London, and the fresh passion for Gothic and Mediaeval design was soon reflected in jewellery. The earlier Gothic craze that led to the construction of Horace Walpole's Strawberry Hill had made no impression on the jewelled arts, but in 1830 it swept through Paris and reached England again some ten years later. The originator of the Paris fashion seems to have been François Désirée Froment Meurice, whose bracelet in the Gothic taste with silver angels divided by panels of enamelled ivy leaf tracery was shown in London at the 1851 Great Exhibition. Also displayed was a similar brooch containing a silver music-making angel with a crocketed arch. His design for a bracelet with scenes from the life of St Louis is shown in the Art Journal of the Exhibition. The influence of several different styles can be seen in Meurice's work: a suite of two brooches and a pendant of carved coral in settings chased with elegant figures reflect the school of Fontainebleau and the epoch of Francis I, but two enamel and gold pendants with representations of St George and the Dragon and an Amazon attacking a panther, which were shown at the 1855 Paris Exhibition, have more of a teutonic appearance. By 1900, however, Meurice's firm had taken up that fluent style which came to be known as Art Nouveau.

Meurice's lead was followed by others, among them A. W. Pugin in his

An English parure of topazes in a gold setting. *Circa* 1840.

designs for J. Hardman & Company. Similar jewels with Renaissance inspiration were produced by John Brogden and Giuliano, both in London. Giuliano was an Italian who worked under the auspices of Hardman. At the time when designs were generally based on Mediaeval and Renaissance models, Castellani in Rome started to revive the styles of the ancient world. His early productions had been lockets and jewels in the Mediaeval fashion, but the contemporary Etruscan excavations and the renewed interest in Greek

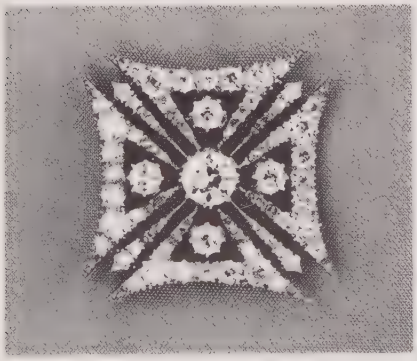
Opposite page
French diamond necklace, *circa* 1810. The swags are characteristic of French work.

This page
Diamond stars were very popular in England towards the end of the 19th century. This is more elaborate than usual.

Diamond cross, probably English *circa* 1800. The cross and other religious forms are rare for this period.

Right
Fob pendant of plaited hair and gold, *circa* 1800.

A Maltese cross in diamonds *circa* 1800.



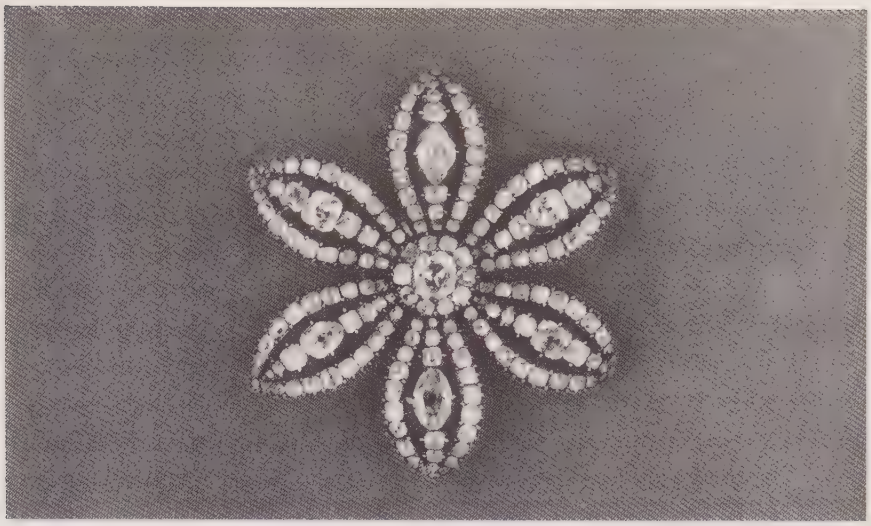
Another example of Russian jewellery of a popular design. *Circa* 1800.

French diamond earings. *Circa* 1800.

A particularly fine necklace in the antique style by Giuliano. Early 19th century.

antiquity encouraged him to take up the classical tradition. He himself was a perfectionist, and his workmen used much the same methods for goldworking as those of antiquity. Castellani jewellery reflects a genuine feeling for classical style and is a more accurate interpretation of the imagery of earlier periods than most contemporary work. It is remarkable both for the handling of the idiom and for the high quality of the craftsmanship, and many examples, particularly the less ambitious pieces, are still available to collectors. Giuliano also took advantage of this vogue but all his work has a strong individualistic character, the scrolls and leaves showing a delicacy of treatment that is his hallmark. Both of these makers often used genuine coins in their jewellery as their ready availability at the time removed the need to make copies of the required high standard. The greatest English exponent of this genre was John Brogden, whose attention to details of craftsmanship was again meticulous. At the 1851 Exhibition he showed a great bracelet chased with a scene of the Assyrian King Ashur-bani-pal sacrificing on his return from a lion

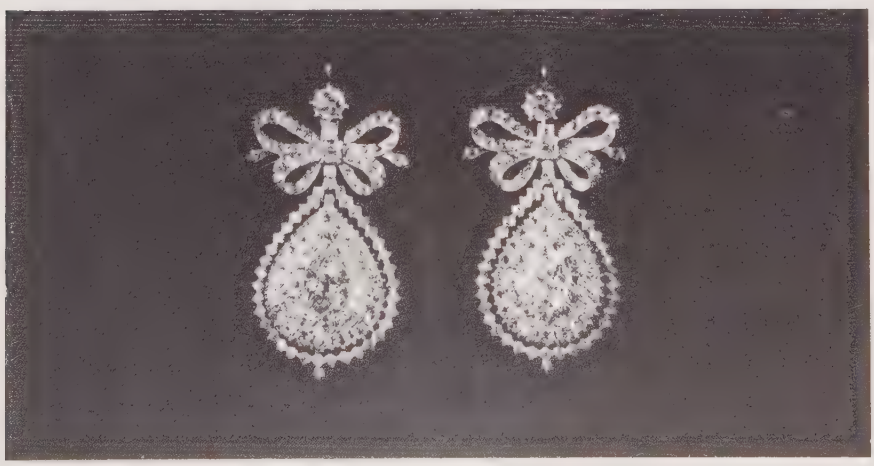
A diamond star or flower, probably French *circa* 1800.



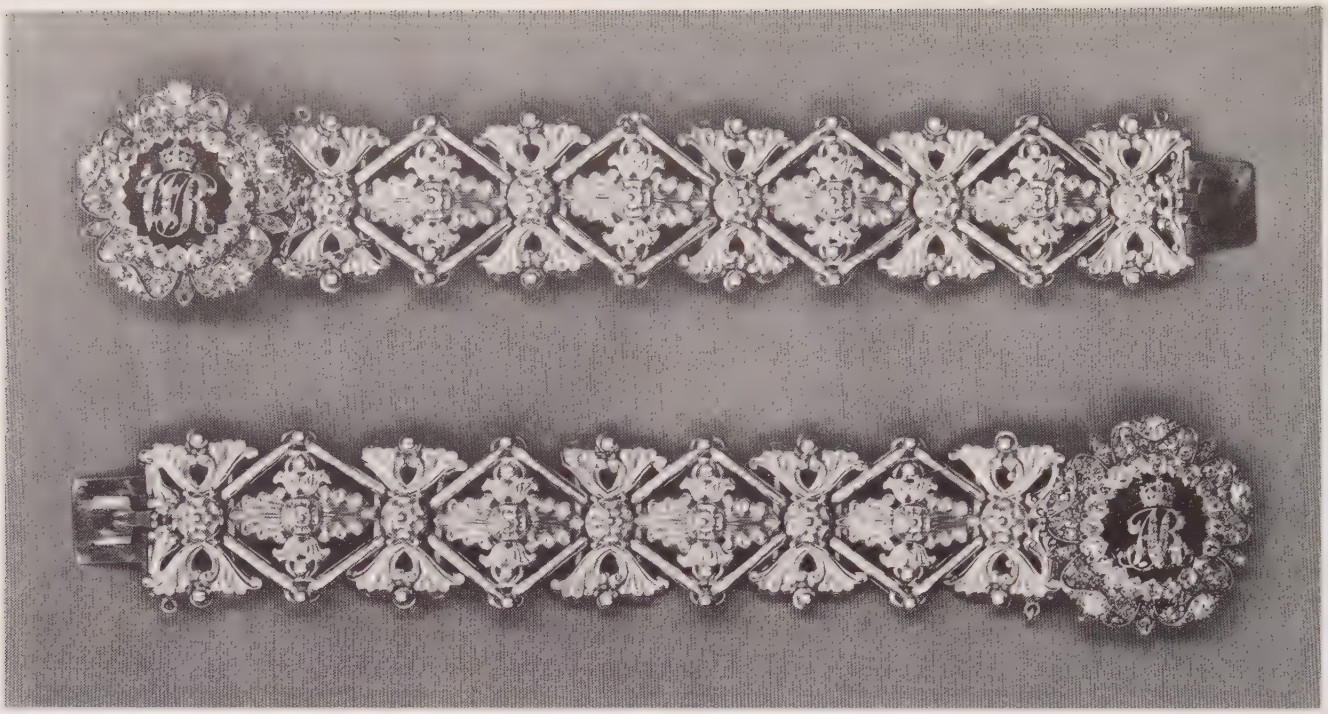
hunt, the clasp of which was set with a steatite Babylonian cylinder seal, while his contribution to the 1867 Exhibition in Paris was a necklace of cameos cast in delicately enamelled chased gold collets with small pendant trophies in gold. Other makers who exhibited both in 1851 and 1867 were Falise, Foutenay, Hancock, Morel and Robert Phillips of London. These makers were the leaders of the time, and their products were especially popular in France, where the restored aristocracy were again able to indulge their traditional taste for jewellery.

Another source of inspiration was the Celtic tradition: gold and silver jewellery and carved bog oak work in this style were popular after the middle of the 19th century, and Edinburgh firms did an extensive trade in brooches of traditional Scottish design set with cairngorms. Also favoured in the 1860's were the large necklaces, girdles and brooches of G. Cayley with chased palmettes and simply wrought stars and fishes, while the Algerian campaigns of twenty years earlier had given rise to a vogue for Moorish pendants and tassels. These designs tended to include a mixture of various styles, but are always pleasing and infinitely wearable. The period of the 1860's saw the peak of the romanticism and inventiveness which they embodied while the Paris makers particularly were no doubt influenced by the acquisition of the Campana collection of antique jewellery for the Louvre and the French excavations in Assyria in 1848. Other jewellers still followed the lead of the French designers, and towards the end of the century Fabergé was producing imitations of the Greek jewellery from southern Russia and the Crimea which was placed in the Hermitage museum in Leningrad.

The fashion for diamonds had by no means died: indeed one of the great attractions of the Jewellery Section in the 1851 Exhibition was the wild roses formed in diamonds by Massin. In England meanwhile expanding industries and continued prosperity still encouraged a demand for diamonds which were worn profusely at the court of Queen Victoria. The Queen herself was lavishly adorned, at least until the death of the Prince Consort. Because of the usual



A pair of French diamond earrings. *Circa* 1800.

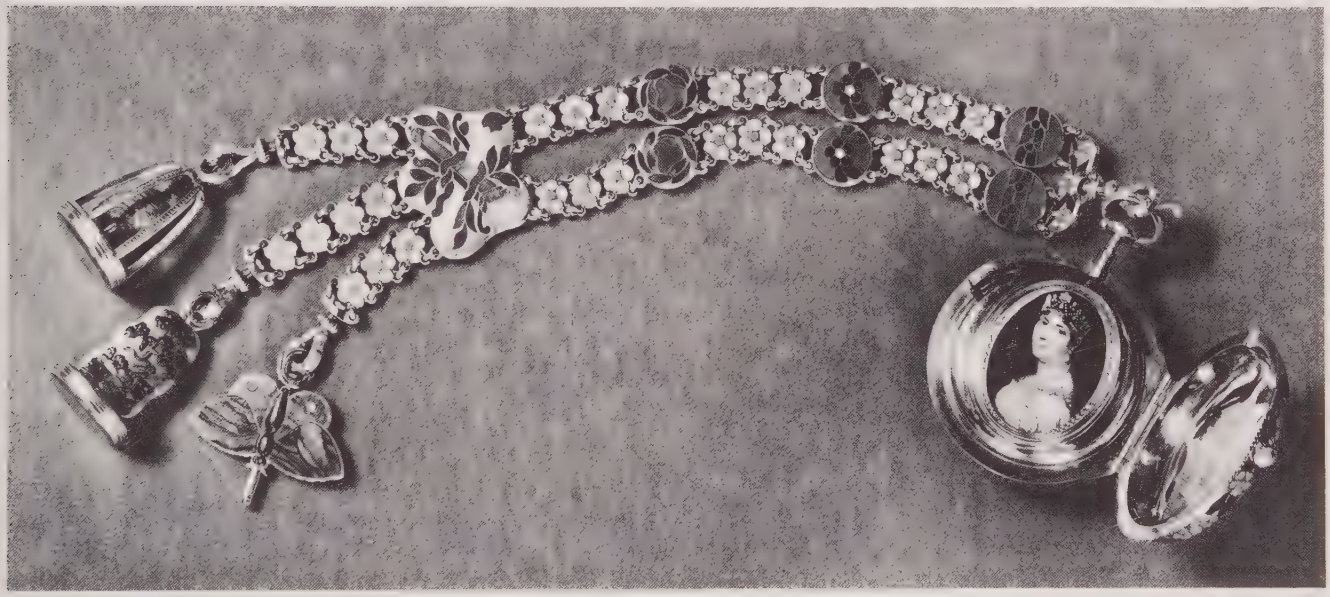


An English gold, enamel and diamond bracelet (two views) bearing the monogram of William IV (1830–37) and his queen Adelaide.

tendency to reset precious stones in new settings, portraits of the Queen are again the main evidence of what jewels she wore. At the time of her accession in 1837 it was fashionable to wear a pendant over the centre of the forehead: wide necklaces and bracelets on bare arms were almost universally worn, together with *girandole* or long pendant earrings above the exposed shoulder. In this period for the first time diamonds and pearls were integrated in the same jewel and both incorporated in the actual design: previously they had been merely juxtaposed in pendants. A characteristic example of this is the necklace given to Princess Alexandra of Denmark by her father on the occasion of her marriage to the Prince of Wales, later King Edward VII; it is composed of intertwining ropes of alternate pearls and diamonds. Pieces of this nature were designed to be worn during the evening, originally by candle-light, but for wear during the day there was a wide variety of less expensive jewellery which gives a clear reflection of the vitality of Victorian fashion. Cameos and small gems had never lost their appeal, and shell cameos carved in southern Italy from the beginning of the century were available to a wide public. As they are still being made today, they can generally be dated by their settings only—nor can these be more than a guide. The fact that cameos were second only to diamonds in esteem is shown by the distribution of gifts by Dr Grantly, the Archdeacon in Anthony Trollope's Barchester Towers, who ' bought a set

Miniatures mounted in *Cannetille*, French *circa* 1830. The portraits are by Sieurac.

of cameos for his wife, a sapphire bracelet for Miss Bowles [the sister-in-law of his sister-in-law] and showered pearls and workboxes on his daughters' Cameos formed ideal fastenings for the velvet ribbons which were worn at the throat from 1838 onwards, and were set in engraved or stamped hearts of gold or pearl rims. Classical heads were still popular subjects for the engraver, while mythological scenes and occasional contemporary portraits are also found. Shell was not the only medium for carving: during the 1840's it was executed on lava, almost invariably from Vesuvius, which was then mounted as a parure, on a bracelet or on a necklace in alternating tones of beige and green or grey and chocolate. Coral was another material which was put to effective decorative use and was the height of fashion for a time as a result of the gift of a set of coral jewellery to the Duchesse d'Aumale by the Prince of the Two Sicilies. Like the cameos, coral was worked in Italy but much was fashioned by Phillips in London. Dark red and pale pink seem to have been the most favoured colours. It was carved into flower sprays, foliage and birds and other complicated motifs, particularly during the 1850's, but the natural branches were also mounted in diadems, bracelets and necklaces or carved into beads, some plain, others engraved with trellis work and similar devices. In such cases the settings are usually sparing, and restricted to the small quantities of gold needed for clasps, pins or links. Coral was rarely set *pavé* as was often the case with pearls and turquoise. This method of setting jewels as a complete covering over the metal was commonly used at the beginning of the century and fine examples can be found in the form of flower sprays and plaques for watch cases.



A French watch and chain attached with fob, seal and key. Few such ensembles have remained complete until today. They were very popular in Napoleonic times.

Animal representations also became popular during the Victorian era: before 1860 these were normally restricted to birds and serpents. Serpents had been made in the late 18th century in the form of a single knot of blue enamel, but the 19th century examples are often of gold set with stones and engraved along the body. The serpent was perhaps favoured because of its reputation but more likely because of its form, naturally suited to bracelets and pendants. The serpent bracelets of about 1830 writhe in complicated patterns around the wrist, and one such immense specimen is depicted in a portrait of Queen Victoria. After 1860 the field broadened to include all kinds of animals and it became fashionable to wear heads of foxes, cats and more exotic beasts in silver and gold, enamelled or chased naturalistically. The more expensive pieces were embellished with pearls, diamonds and other precious stones. Perhaps the most successful of these conceits were bees with bodies made up from oval tigers'- or cats'-eyes, wings of small diamonds, enamel heads and ruby eyes. In the 1870's and 80's hunting motifs came into fashion, with all the paraphernalia of whips, horses, hounds, caps and foxes' masks and brushes, and much of this has survived. Towards the end of the century racing scenes with horses and jockeys were also introduced.

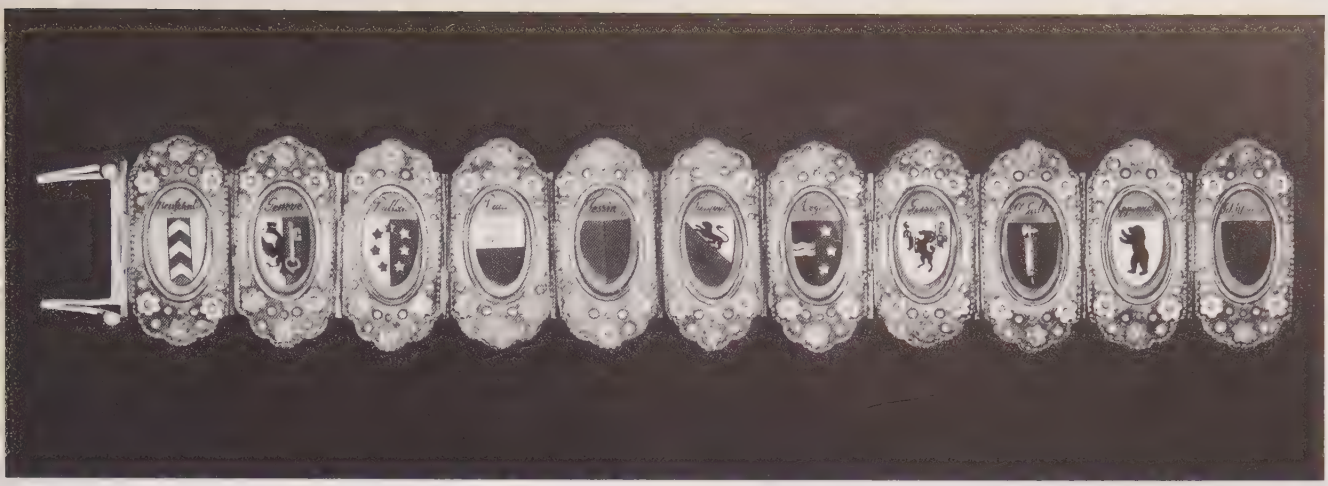
A 19th century diamond and pearl brooch. This piece shows the use of both diamonds and pearls integrated in the same design.

A 19th century diamond bracelet.

Left and right
Two pieces of 19th century jewellery with large opals set in a border of diamonds.
Far right
A 19th century diamond brooch designed as a flower spray and ear of barley.

Left
English gold and enamel bracelet with the portrait of the poet Robert Burns. *Circa* 1820.

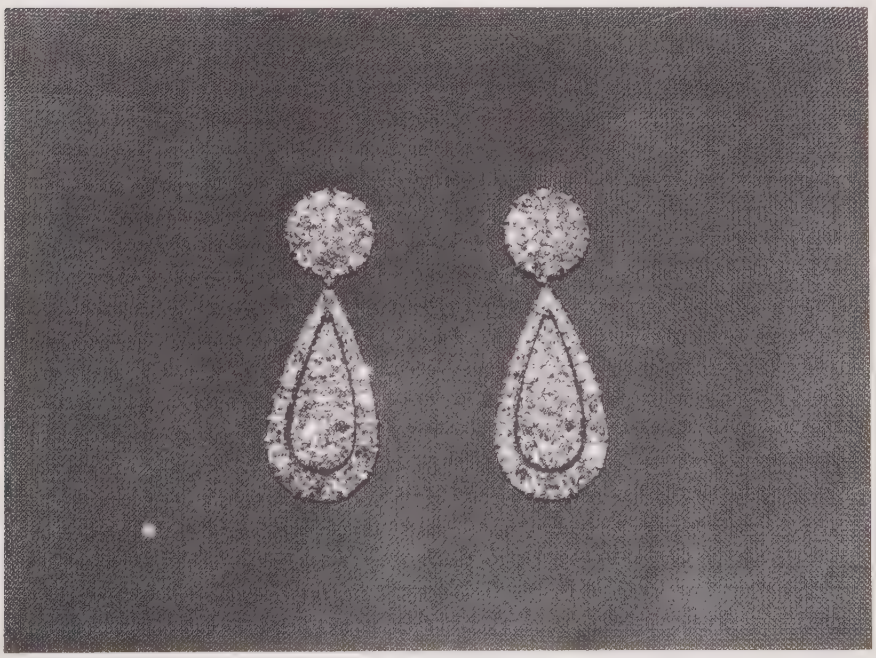
English gold and dark blue enamel bracelet with the portrait of an Officer. *Circa* 1840. The style has become more severe than in the earlier example.



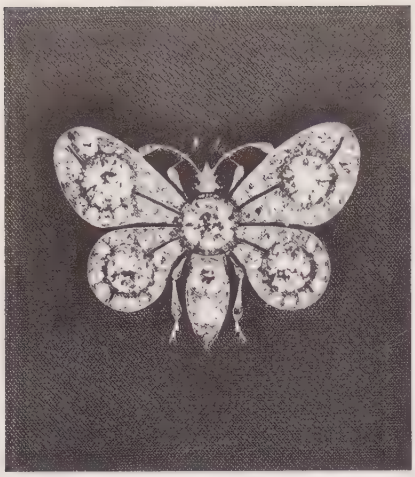
A Swiss gold and enamel bracelet, 19th century. One side shows girls in the costumes of their Cantons, the other the arms of the Cantons.

It is worth noting the stamped gold parures that were made in the middle of the 19th century, mostly in Switzerland: they are often set with enamelled plaques of peasant girls in the costumes of various Cantons, or of popular views of mountains and lakes. Others were the characteristic Swiss enamelled flowers or formal devices, and these had counterparts made in Paris and more especially in London. At about the same time the Viennese produced chains, necklaces and pendants with rosettes formed from garnets, emeralds and pearls in raised collets of gold and silver gilt which were decorated with black and white enamel. The Victoria & Albert Museum holds a particularly fine necklace by Schlichtegroll, but in general the workmanship is of a lower standard than that of the pieces from western European centres. This is true also of Hungarian work, which, however, is more varied in design and colour. The jewellery of central and eastern Europe always has a misleading appearance of antiquity, as even today many mediaeval designs survive in a crude form among peasant cultures. In Scandinavia 16th and 17th century designs are still being used, not only for the tourist market, but also for pieces still worn in the remoter parts of the area.

Typical of the third quarter of the century are the oval parures of matt gold with a star of pearls in the centre, or sometimes a single pearl with spiked pendant fringes. Broad hoop rings of gold were similarly decorated, and some have an additional coloured stone. Increasingly elaborate clothing encouraged further sophistication of jewellery, and often a large stone was itself set with small diamonds, pearls or enamelled panels. This method was most usually applied to garnets and agate and shell cameos. Tortoiseshell was inlaid with



A pair of French diamond earrings, late 19th century. These should be compared with examples about a century earlier.



Opposite page
Stone set and enamel jewellery of the late 18th and 19th centuries.

Insects set with diamonds and often sapphires were fashionable about 1880, mainly in England.

A group of Swiss toys of gold and coloured enamels. They were very popular about 1800. The enamel is rather cruder than on the Swiss bracelet illustrated.

An Art Nouveau jewel in the form of an orchid. French *circa* 1900. Great imagination is shown in the design of such pieces, and they are becoming very hard to find.

Opposite page
French 19th century jewellery. There is still a certain amount of jewellery of this nature available but good quality material, such as this, is becoming harder to find and is correspondingly expensive.

An English necklace of rose diamonds, *circa* 1800.

Right
A very elaborate 19th century diamond necklace. The design incorporates stylised floral motifs.

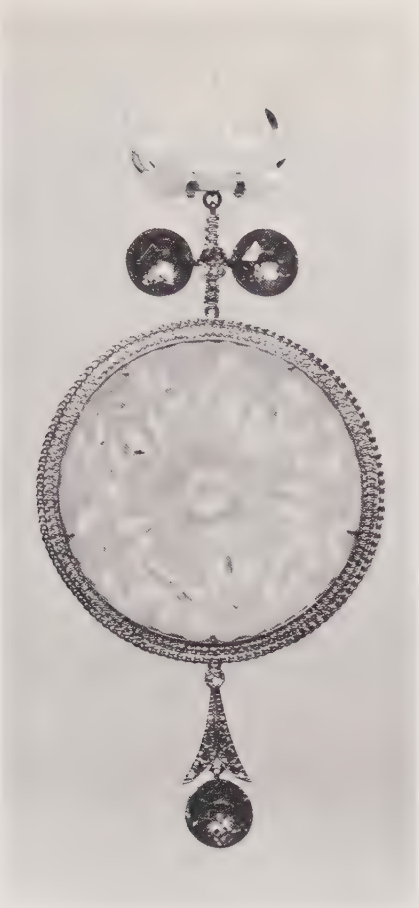
Two diamond anchor brooches. These were presented to the Empress Eugenie at the opening ceremony of the Suez canal in 1869.

A necklace in Art Nouveau style. *Circa* 1900.

gold piqué to echo the forms of conventional gold jewellery, and other unusual substances were incorporated such as the attractive whorls of fossil ammonites. Hair ornaments were another curiously durable form of art, and books were published setting out the painstaking methods of their production. The hair was woven into necklaces and bracelets, formed into sheaves and bouquets which were set behind glass panels, or even composed into small and detailed pictures. The most successful exponent of this style commercially was Limonnier. In England jewellery made from jet, which originated mainly near Whitby on the Yorkshire coast, became prolific after the death of Prince Albert. The industry has expanded from small beginnings in the early years of the century: in 1850 the annual turnover amounted to £20,000 and by 1870

Oriental jewellery, often set in Europe, was popular at the end of the 19th century and up to the beginning of the First World War.

Right
A brooch set with various stones reproducing the French Renaissance idiom.



A pair of earrings in gold and coloured enamels in the form of puppets. Imaginative pieces like this were made in France at the end of the 19th century.

Right
A French pendant jewel in the form of a letter 'A' reproducing the mediaeval 'Letter Brooches' in the Art Nouveau style.

this had risen to £84,000. The French meanwhile resorted to black glass imitations. With the realisation of the scarcity of jet pieces they are currently returning to fashion.

The gradual degeneration of design in the later years of the 19th century was partly countered by the work of René Lalique in Paris; by 1895 Lalique had introduced with great success his enamelled jewellery in the style now known as Art Nouveau. He was the greatest of the jewellers associated with this movement, which spread to include the design of buildings, furniture, wallpapers, silver and even the entrances to the Paris Metro, all of which show a sinuous quality of line together with unconventional motifs which often have a macabre undertone. Froment Meurice, Falise and Giuliano all

worked in the same style, but none could emulate the contortions of Lalique's productions, which included a gold gem-set pendant fashioned as a dragonfly swallowing an elegant nymph and a gold and enamel clasp of two scorpions locked in combat. Large orchids formed a favourite subject, and there is a particularly fine ethereal bracelet of wintry twigs set with small frosted sparklets of diamonds. Lalique's later work embraced various composite subjects and these in particular have been extensively imitated.

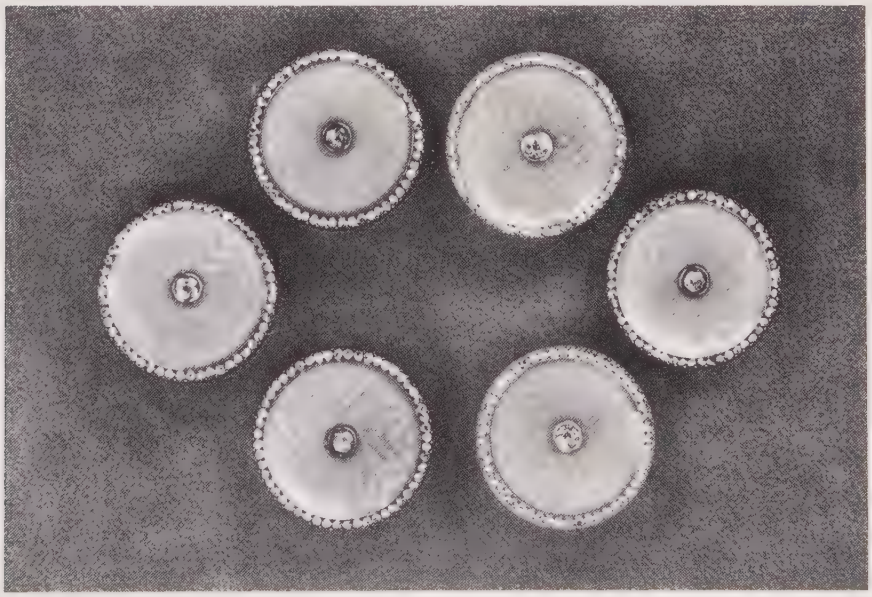
FABERGE

A fur clasp with cabochon stones and white enamel with gold borders by Carl Fabergé.

Right
A pendant jewel in moonstones and diamonds by Carl Fabergé, *circa* 1900.

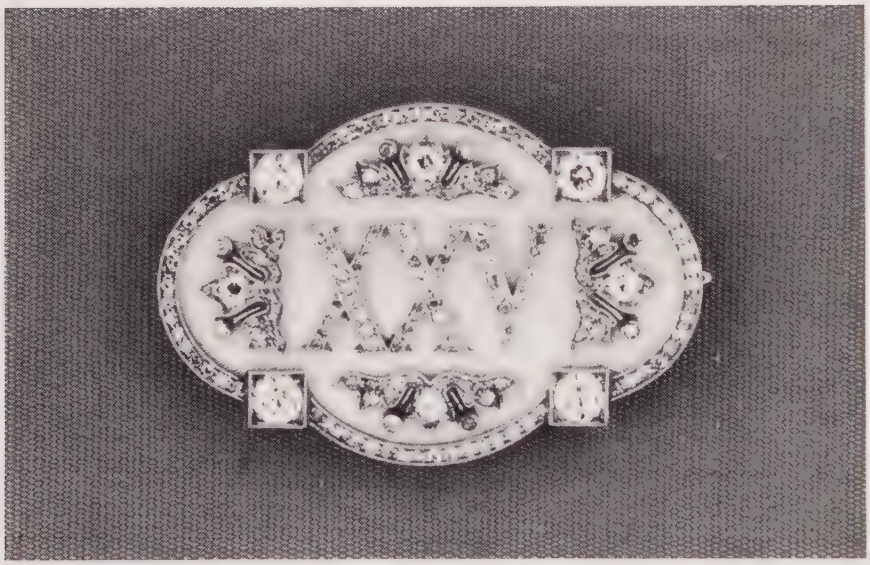
Today the name of Fabergé is generally associated with the famous Easter Eggs and other amusing novelties that were produced under the direction of Peter Carl Fabergé and his brother; but the firm was continuing to design and produce the jewellery that had been the mainstay of its trade during the preceding century. The house had been firmly established by Carl Fabergé's father Gustave and had built up a sound reputation for producing well made jewellery in Moscow and St Petersburg (Leningrad). From the design books of the latter half of the 19th century it seems that most of the pieces embodied symmetrical designs in gold with scrolls, swags and filigree pendants, in an Adamesque style and invariably set with diamonds and sometimes pearls and coloured stones also. The floral sprays and bouquets were probably made to satisfy the demand for sumptuous displays of diamonds in the manner of the court of Catherine the Great, moreover the naturalistic designs of the previous century had never really died out in Russia. The enthusiasm with which the wheat-ear tiara made for the Tsarina Elizabeth was greeted in 1801 continued to have repercussions in jewellery design right up to the Revolution in 1917, although the forms became heavier.

Carl Fabergé had been sent by his father to work in Dresden in Germany



A set of buttons in enamel and diamonds by Carl Fabergé.

A group of jewellery by Carl Fabergé.



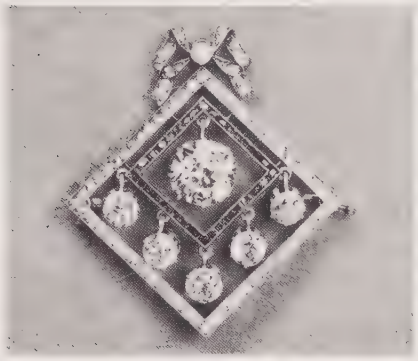
Diamond and enamel brooch made by Carl Fabergé for a 25th anniversary.

Left
An enamel and diamond brooch showing Japanese influence by Carl Fabergé. Such brooches cost from £150, $360, upwards.

A hat pin by Fabergé, enamelled with gold swags.

where he was greatly impressed by the metalwork of the 16th and 17th centuries to be found there. It was at that time that he gained the craftsmanship and soundness of method which formed the basis of his mastery of the art. He later went to London and then to Paris where he discovered and absorbed the elegance of conception and design which was typical of that city. By 1870 he was able to take over the management of his father's establishment in St Petersburg. He achieved great success at the Russian Fair of 1886 with his animals and *bibelots*, having been granted a Royal Warrant by Tsar Alexander III in 1884 after the delivery of either the first or the second of the Easter Eggs. Following this acclaim he turned his attention mainly to the more novel creations, but he did not entirely forsake his clients in their continuing demands for conventional jewellery. His designs ranged from the Crown Jewels of Russia to a small brooch made as an anniversary memento for a leading business man or St Petersburg dignatory. The piece illustrated was made for the silver wedding of the head of a Swedish business house in St Petersburg.

Fabergé did not come under the influence of Lalique and Art Nouveau, as did the rest of Europe, but evolved his own geometric form which was perfectly suited to display his talents. His success with the Easter Eggs led him to exploit this motif also, and he produced a wide range which included small egg charms. At this time in Russia Easter was a greater festival than Christmas and the presents exchanged were usually in the form of eggs.



A diamond and sapphire brooch by Carl Fabergé. *Circa* 1900. In 1961 this realised £1,000, $2,800.

A miniature enamel egg by Carl Fabergé. These in hardstone fetch about £25, $60, enamel examples up to ten times as much.

Berlin Iron Jewellery

Very finely cast iron jewellery was the speciality of the Prussian Royal Iron-foundry in Berlin. Production began in a very small way at the beginning of the 19th century but the style did not find real favour until the Prussian War of Liberation against Napoleon (1813–15). In order to raise funds for the army, patriotic Prussians handed in their gold jewellery, including their wedding rings, and received in exchange a reproduction of it inscribed *Gold gab ich für Eisen*—I gave gold for iron. At the same time medals of an iron-cross nature and necklaces inscribed with the various victories were also made. What had been a necessity during the war amounted to almost a mania for the ten years or so after the victory at Waterloo in 1815. This jewellery is relatively difficult to come by today as once it went out of favour its low intrinsic value caused it to be untreasured and its brittle nature made it easily broken. Nevertheless a large quantity was made and a thriving export trade resulted. The Berlin Foundry was established in 1804 and supplied a lot of the needs of the heavy industry of the day. But from the beginning it specialised as a sideline in making fine casts for boxes and furniture mounts and the like. Jewellery of this type was also produced at Gleiwitz in the Prussian colony of Silesia. A suite that appeared on the market found favour in France to such an extent that they removed the moulds from Berlin when they occupied it in 1806. This fine casting was made possible by the English invention of the ' cupola ' furnace. At the Great Exhibition in London in 1851 it was still sufficiently popular for a certain M. Devaranne to exhibit there. Designs for the most part reproduced the delicate tracerv of the gothic revival.

The 19th Century: Investment

It was only a comparatively short time ago that the word ' Victorian ' was almost a dirty word among collectors: jewellery of this period could be bought for little over the value of the gold and stones involved. This position is anything but true today. Quite apart from the fact that the less expensive pieces are in fashion at present, it is becoming increasingly hard to find good quality examples. For with the period in which we are dealing ' Quality ' must be the watchword. There is plenty of material available, with pieces displayed for sale in every small jeweller's, but only very little is of sufficiently high standard to require no apology when the time comes to dispose of it, and in investment terms this is the acid test. A specialised collection could well repay the extra trouble taken to form it. *Art Nouveau* in all its forms has shown a marked appreciation over the past few years. Another suggestion is examples in the classical manner, pieces which have the advantage of the beauty of the ancient world without the problem of their fragility. It is pointless to go on enumerating the various forms of specialisation which can be indulged in, but a little imagination produces a whole host of ideas. The sale of a specialised collection always seems to attract more interest than a mere accumulation. As in all periods, the very finest pieces are both expensive and very hard to find, consequently the same overall rule must apply, that they must show an increase as the value of money diminishes. Also it is worth bearing in mind that some of the best craftsmen made lesser pieces and quality should not be judged in terms of size or grandeur.

With regard to the very minor pieces, there is a sufficient quantity available to enable one to reject anything which is damaged or worn. The 19th century is a very good field for modest investment as at this time a greater imagination than ever before was used with regard to materials. Very fine pieces were made from the less costly materials such as ivory, jet and amber.

Technical Aspects

Units of Weight

The internationally accepted unit of weight for precious stones is the carat which is defined as 1/5th of a gram, a gram being the weight of one cubic centimetre of water at 4° Centigrade. It is still frequently known as the metric carat and became the legal standard in this country on 1st April 1914. Before this the unit of weight was not only different in various parts of the world but also tended to vary over a long period of time in the same place. Before the introduction of the metric carat in this country, a carat was assumed to weigh 3.1683 grains (0.20530 grams). However, this was not a legal weight and no universally recognised standard existed although in fact the use of the word carat for a weight had been general in this country since the Norman Conquest. Up to 1914 the legal weight for precious stones in this country was the same as for precious metals, the once troy. Before the carat was standardised it had varied from 0.19720 grams in Florence to 0.20735 grams in Madras. The decimal system was not used for carats and successive fractions or powers of a half down to a 64th were used, except in the case of diamonds when unreduced fractions to the base of 64 were used, e.g. a diamond weighing 1.25 carats was expressed as weighing $1^{16}/_{64}$ carats. This confusion was clarified on the introduction of the metric carat and weights are now normally expressed to a second place of decimals. The old practice has not entirely died out even today: on the Stock Exchange sub-multiples of the pound are quoted in reduced fractions ranging from $\frac{1}{2}$ to $^1/_{32}$.

It seems that most weight systems of the world for measuring small, light precious objects derive from the use of seeds as weights. In Northern Europe the smallest unit of weight is based on barley—a grain. The locust tree (*Ceratonia siliqua*) which is common around the Mediterranean reproduces itself by means of seeds that have a nearly constant weight. It has been given as $3^1/_6$ grains (0.205 grams) that is nearly equal to the carat and it may very well have formed the original unit. As further evidence the word carat is derived from the Greek name for the seed (κεράτιον) which means 'little horn' and refers to the shape of the pods of the seeds. It was not until comparatively late in the last century that it became recognised that a universal weight standard for gems was desirable and in 1871 the Parisian jewellers proposed that the carat should weigh exactly 0.205 grams but the proposal gained little support outside Paris. There the matter stood until 1907 when the so-called metric carat of 200 milligrams was proposed at an international conference on weights and measures in Paris. By October 1913 the Board of Trade with the support of the jewellery trade in this country arranged for an Order in Council to be made under the provisions of the Weights and Measures (metric System) Act of 1897 which legalised the metric carat. The order did not come into force until the following April to allow traders sufficient time to acquire new weights and to alter their books. The use of the metric carat is still not compulsory, merely permissive. There is nothing to stop a perverse trader from using any weights of his choosing. Spain was one of the first countries to legalise this weight in 1908 followed by Japan and Switzerland in the following year.

The other use of the word carat is in connection with metals, particularly gold. 24 carat gold is pure and in practice is never met with as it is so soft that it is practically useless in jewellery. 18 carat gold is therefore 18 parts pure gold with the remaining 6 in the form of alloy. A Roman silver coin, the *siliqua* was at the time of the Emperor Constantine at the beginning of the 4th century A.D. $^1/_{24}$th of the gold solidus, the main gold coin of the period. Thus there is a very long tradition indeed of dividing smaller weights into 24 parts.

In course of trade it is clearly not practical to take stones out of their mounts in order to weigh them and for this purpose jewellers today carry with them either a pocket stencil with holes the size of various weights of different

stones, or else a pair of callipers from which the weights can be read on a scale which automatically carries out the calculations involving the change from measurement to weight.

Specific Gravity

This is a comparative standard of the denseness of any substance and is denoted by the ratio of the weight of a given volume to the same volume of water at its greatest density, which occurs at a temperature of 4°C. In practice precious stones have a low co-efficient of expansion and measurements taken at room temperature are sufficient for normal purposes. It is well to remember that the definition of a *gram* is the weight of 1 cubic centimetre of water at 4°C and consequently the specific gravity of any substance is also the weight in grams of a cubic centimetre of it.

Refractive Index

Refractive index is the most important and conclusive method of identifying stones. It is always denoted by a number which indicates the degree of bending which a ray of light undergoes on passing from air into a transparent medium. All stones have a refractive index which is peculiar to them alone. Two types of stone may give a similar reading but they are never quite the same. The value is the ratio of the sines of the angle of incidence to the angle of refraction of a ray of light on entering the stone. This may sound complicated but in fact the reading is taken direct from the scale of a refractometer.

Hardness

It is well known that some minerals are harder than others, for instance a diamond will scratch glass and is not itself susceptible to scratching by anything. In more technical terms hardness is a measure of cohesion in the atomic structure of the substance. At the beginning of the 19th century Friedrich Mohs (1772-1839) devised an arbitrary scale which has been in general use ever since. It is as follows:

1. Talc
2. Gypsum
3. Calcite
4. Fluor
5. Apatite
6. Feldspar
7. Quartz
8. Topaz
9. Corundum
10. Diamond

This scale is of geometric rather than of an arithmetic progression. The difference between diamond and corundum is as great as that between corundum and talc. Ordinary window glass has a hardness of about $5\frac{1}{2}$—that is to say it can just be scratched by feldspar but not by apatite or anything softer. For practical purposes it is not wise to use stones which are softer than quartz (7) particularly in a ring or other piece of jewellery which is likely to

have hard wear. It is as well to have an even harder stone. Dust is very largely composed of minute grains of sand, basically quartz, and any stone which is softer than this will soon show minute scratches which will tend to dull the sparkle in the stone. It is for this reason that paste rings cannot be recommended as this material is only really successful in brooches. Testing for hardness is not generally practicable because of the risk of damage to the stone but it sometimes can be used in cases of opaque stones such as jade or agate on large pieces in an unobtrusive place, and it is as well to use the stone to scratch a control specimen of known hardness rather than the reverse, thus minimising the risk of damage.

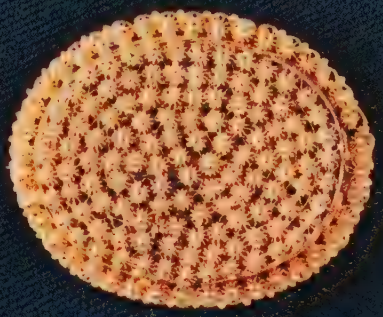
Typical late 18th century paste jewellery. Prices at present vary between £30–100, $70–250 or more.

Identification of Stones

The identification of stones is based on a number of factors which are largely of a technical nature and will only be discussed briefly. In early inventories stones were frequently confused, for example the so-called Black Prince's ruby in the State Crown is in fact a spinel and almost any red stone was at one time described as a ruby. Today there are a number of tests which can be made, most of them comparatively simple. These tests at least serve to distinguish between the more obvious confusions that can arise but some of the rarer stones require complicated investigation in a laboratory before a certain identification can be made. Such instances are uncommon as far as antique jewellery is concerned, in addition to this the value of the stone is hardly ever of great relevance before the beginning of the 18th century. From that time on a precise identification of the stones is important, together with some appreciation of their quality.

Gold & Silver

Gold has been known to man since very early times. It is widely distributed throughout the world, but not often in quantities sufficient to make its recovery a commercial proposition by today's standards. The metal has been sought after, and fought over, since time immemorial and references to it occur in the earliest literature of all cultures. The word itself seems to be dervied from *ghel*, a word common to the Teutonic group of languages meaning yellow. The interest in this metal seems to be shared by all the races of mankind save only the Maori. Alluvial gold is relatively abundant in the rivers of New Zealand but no authentic Maori gold artefacts are recorded and their language has no word for the metal. The metal occurs invariably in its elemental form, usually in association with silver. It is either extracted from the rock by crushing or recovered from the beds of rivers in the form of water-worn nodules or dust. This is because the gold tends to accumulate in the beds of rivers which have passed through and eroded gold-bearing rock: the water has washed the rock away leaving the denser gold to accumulate in the river bed. Where the gold is extracted from the rock, the metal is recovered by pulverising the rock and washing it out with water, thereby carrying out artificially the process which the river performs in nature. Needless to say alluvial gold is the less expensive to recover although a greater concentration of gold at some sites causes direct mining to be viable. The natural alloy of gold and silver is known as Electrum. The varying proportions of each metal to the other naturally affect its colour and the line between argentiferous gold and auriferous silver is purely arbitrary. Electrum was



English early 19th century jewellery. Note the use of aventurine glass in the two pieces above.

very popular for jewellery and coinage with the Greeks, almost to the displacement of gold, but has not been used to any great extent since. Gold is one of the most stable materials in existence, it reacts chemically with practically nothing, being resistent to hydrochloric, sulphuric and nitric acids. It is however soluble in so called Aqua Regia, a mixture of three parts hydrochloric acid and one part nitric acid by volume, in practice diluted with water. The two acids produce nitrosyl chloride (NOCl) setting free chlorine which attacks the metal. In normal use gold is not used in its pure form. Alloyed with copper the metal has a reddish look and with silver a whitish appearance. Other alloys have been used in more recent times but they do not affect antique jewellery. Other properties, at least in the present context, are peculiar to gold. Its density is high, and the specific gravity of 19.3 makes it almost half as heavy again as silver and over twice as heavy as copper. Extreme malleability and ductility enable the metal to be beaten into very thin sheets or drawn into very thin wire. The property which has to be taken most into consideration by the jeweller is its softness (about $2\frac{1}{2}$ on Mohs' scale) which causes some form of alloy to be virtually imperative. Those buying a ring would be well advised to ensure that the setting is 9 carat rather than even 18 carat gold if it is one which is to be worn frequently. Signet rings become almost illegible after about 20 years even if they are of a high quality gold and it is definitely unsafe for gem-set jewellery to be composed of anything other than a relatively low quality gold. It would be as well for the owners of cuff-links and watch chains composed of high quality gold to check the main areas of wear from time to time to avoid losing them. The colour of the metal is hardly altered when it is in a less pure form and the use of very pure gold in the present day must be put down to prestige only. As a material for working, gold has, apart from malleability and ductility, another advantage, that of a low melting point, 1063°C., hence it has been in use since the earliest times. In classical times it was mined in Egypt, Asia Minor, the Balkan States and Spain and was doubtless acquired from places much farther afield in course of trade. It is not inconceivable that a minute proportion may have originally been recovered from the ground from anywhere in the continents of Africa and Asia, in these cases taking millennia over its journey and perhaps having been melted down on several occasions. It is not necessary to postulate a connection between Siberia and South Africa for this to be so. It is supremely unlikely in any given example. Nevertheless the detection of trace elements peculiar to a source remote to the ancient world in a piece of classical jewellery need not of itself condemn it as a modern production, although it would be strong circumstantial evidence. In later times gold was produced from numerous localities from which its recovery is no longer economic. For instance the small quantity available around Dolgelly assisted King Charles I during the Civil War in England and these mines were active until the last century.

Much that is said of gold is also true of silver (they are frequently found in association), it has been in demand since very early times and is widely disseminated in the earth's crust. Not as stable as gold, it is seldom found in its pure state, but as an essential constituent of a number of mineral compounds. It is used less frequently in jewellery as it has the disadvantage of tarnishing very quickly, particularly in towns. This is because there is a greater quantity of sulphur in the urban atmosphere than elsewhere which unites with the silver to form silver sulphide (Ag_2S).

AMBER

Amber is the fossilized resin of a tree (*Pinus succanifer*) which flourished during the Oligocene period and is now extinct. The word is derived from the mediaeval Latin word 'ambar' which in its turn was taken from the arabic '*anbar*'. One of its characteristics is its ability to acquire an electric charge on rubbing, which was noted by Pliny in his book on Natural History (Book 37 Chapter 3) and it is from the Greek word for amber that our present word electricity is derived. Amber has been imitated by certain synthetic resins and even plastics. But it can be tested, though great care has to be exercised, by

making a minute scratch with a pin. Amber will splinter very slightly at the edges whereas the synthetic resins and celluloid merely take a groove. The care needed cannot be emphasised too much: it is a test which should be undertaken only by those who are fairly skilled. Large pieces of amber have also been reconstituted from small fragments. These two forms can usually be told apart by the fact that bubbles in genuine amber should be more or less spherical and undisturbed whereas those in recomposed material are elongated. Very often these bubbles are very small and need a powerful magnifying glass to make them visible. The main source of amber is the coast of the Baltic Sea. It has been used as a material for jewellery since the European Bronze Age and is particularly common in the Viking Graves of Scandinavia where it was not only used for jewellery but also in harness and the decoration of weapons.

DIAMOND

Diamond is the hardest of all the gemstones, so much so that the difference between it and the next contender, Corundum (Ruby and Sapphire) is greater by far than between the latter and, say, glass. The word diamond is derived from a Greek word (*adamantos*) meaning unconquerable, via the Latin *adamantum*. In classical times and later, it was erroneously believed that quite apart from its extreme hardness a diamond would resist a sharp blow from a hammer. In those days they had few to experiment with.

Its chemical composition is very simple: it is one of the two crystalline forms of the element carbon and owes its hardness to the tetrahedral arrangement of the component atoms. The other form is graphite. A diamond will burn (at a temperature of above 1500°C) to form graphite, but the reverse process has never been achieved, at least for the production of gem quality material. Diamond occurs in a variety of colours, although red is so rare that its existence is sometimes denied. Yellow, white and a very pale shade of blue are the only colours which concern us for practical purposes.

India supplied the world with diamonds until the discovery of further supplies in Brazil in 1725. The mines were centred on Golconda, now a deserted fortress near Hyderabad, but it seems that this was only the base where the results of mining operations were sold. In Brazil the source was Tejuco, now under the new name Diamantina, about 80 miles (130 km.) from Rio de Janeiro. So plentiful were the supplies that in 1727 something of a slump took place and to keep prices stable it is said that the Dutch, who virtually controlled the supply of diamonds from India, had it rumoured that they were inferior stones shipped to Brazil from Goa. It was not long in fact before Brazilian stones were shipped to Goa and exported to Europe as Indian stones. Subsequently, diamonds have been found elsewhere in Brazil. In 1772 diamond mining was proclaimed a Royal monopoly until Brazil became independent in 1822, when private mining was allowed again. Brazilian diamonds are on the whole comparatively small but of the best quality. The main source is now South Africa. In 1867 the children of a Boer farmer named Daniel Jacobs picked up a white pebble on the bank of the Orange River. A neighbour, Schalk van Nickerk was attracted by it and wanted to purchase it, but Mrs. Jacobs gave it to him. In turn it was shown to a travelling trader John O'Reilly who undertook to get what he could for the stone, but met with little success and indeed it was once thrown away. Eventually, Lorenzo Boyes, the acting Civil Commissioner at Colesburg, sent it to W. G. Atherstone of Grahamstown who pronounced it to be a diamond. It weighed 21.73 metric carats. The Governor of the Cape, Sir Philip Wodehouse acquired it for £500 and sent it to the Paris Exhibition where it attracted little attention. The world had grown weary of tales of huge diamond discoveries. All doubt was settled in March 1869 when a shepherd boy found what today is known as the Dudley Diamond or Star of South Africa (weight: 83.5 metric carats) on Zendfontein farm near the Orange River. Further searching yielded a rich find at Klipdrift and the Vaal River. From then on finds became more prolific. Today the centre of the diamond mining industry is Kimberley. Since then diamonds have been found else-

where in central and East Africa. Other sources include Borneo, New South Wales from as early as 1851 and California from 1850; they also occur in very limited quantities in Venezuela and the Ural Mountains in Russia.

Emerald

Emerald is the green variety of a whole range of stones to which mineralogists apply the name Beryl. Aquamarine is the bluish green variety, Morganite the pink and Heliodor the yellow. The last two are quite rare and were very seldom used in antique jewellery. Persian is the source of the word Emerald which has reached English through such altered forms as the Latin *Smaragdus* and the mediaeval *esmerande*, *emerande*, and *esmeralde*. The present form was not used in English until the 16th century.

The species beryl is essentially a beryllium—aluminium silicate corresponding to the formula $Be_3Al_2(SiO_3)_6$. The colour of emerald is due to small quantities of chromic oxide. The species crystalises in the hexagonal system and it is for this reason that so many stones in early pieces are hexagon shaped. The stone cutter could slice across a natural crystal and have much of his work done for him by nature, particularly as there is a natural cleavage near the basal face of the crystal. In any case, of all the species of beryl, emerald is the most brittle and so it is not hard to account for the design of much jewellery which is set with this stone. This brittleness accounts for the extreme rarity of stones which are not very flawed and to some extent explains the extremely high price of emeralds today.

The sole source of emeralds in the ancient world was the mines in Upper Egypt but for some reason these were abandoned and their whereabouts totally lost until they were re-discovered by Frédéric Cailliaud (1787–1867) in 1818 who had been instructed by the Viceroy of Egypt to find them. These mines were reworked for a short time but soon proved to be uneconomic. This is not entirely surprising as, judging by the few emeralds which are found in classical settings, their quality was rather poor compared to later standards. After classical times the emerald was practically never used until the discovery of the New World. The Spanish conquests and the wholesale looting which followed resulted in enormous numbers of emeralds finding their way to Spain. Unless there is strong evidence to the contrary almost any piece of 16th century jewellery set with emeralds may with some safety be attributed to a Spanish workshop. It was not only for jewellery that emeralds were used, as they were frequently set in ecclesiastical plate.

The supply of stones was further enhanced when, in 1558, emeralds were discovered at Muzo about 75 miles (120 km) north-north-west of what is today Bogota in Colombia. These mines have been worked intermittently to the present day. However, it is not improbable that the original mines used by the preconquest natives may well still remain hidden as they steadfastly refrained from giving their secret away to the Spaniards. The Europeans worked the mines by sinking shafts until they came upon gem-bearing rock. Today the open-cast method is used. Emeralds are particularly likely to contain inclusions which very often give some indication of the source of a stone.

Jet

Jet is a hard black variety of coal or lignite. The word has come to us via the mediaeval French *jaiet* from the Latin *gagates* which in its turn came from the Greek name of a place or river in that part of southern Asia Minor then known as Lycaea. Today jewellery composed of jet may be had very cheaply and is very little regarded indeed, but in the middle of the 19th century it was used extensively for the manufacture of mourning jewellery which has been used since time immemorial. Specimens are known which date from the Bronze Age. The main source of supply ever since Roman times is the workings on the Yorkshire coast near Whitby.

Lapis Lazuli

One of the most admired opaque stones of the classical period, lapis lazuli was at that time referred to by the name from which the word sapphire is derived. The first part of its present name is purely the Latin word for stone while lazuli is a mediaeval Latin form meaning blue, derived from the Arabic word *al-lazward*, used originally for the sky but later more generally. It passed into old French at the time of the Crusades in the form *azur* which has become the word azure today. Chaucer in the 14th century refers to ' a broche of golde and asure ' (Troilus III, 1321). This rock consists mainly of a blue mineral called Haüynite named after the Abbé Haüy (1743–1822), together with Iron Pyrites which give it the characteristic gold flecks, and the white mineral Calcite. In the east this stone has been used for carving all manner of objects but in the west pieces of better colour are normally only used for beads, sometimes for the bezels of rings, and for small settings in other pieces like earrings. Until it was replaced by ultramarine, ground up lapis lazuli was used for the blue in artists' colours. The main source of the material in the ancient world was Firgamu on the upper part of the Kokcha River, a tributary of the Oxus, in the Badakshan district of Afghanistan. Rubies and spinels have also been found there and consequently, despite the immense difficulty of getting there, it was well known in classical times and the mines have been worked at intervals for about 6,000 years. Other sources used in more recent times are in the area of Lake Baikal in Siberia, Chile, Upper Burma, Colorado and California.

Malachite

A dark green stone, malachite, was particularly prized in the 19th century on account of its bands of various shades of green and has been used cut in cameo form for jewellery. Its name is derived from the Greek word for mallow in allusion to its similarity in colour to the leaves of this plant. Malachite is a hydrated copper carbonate and is found in association with copper ores. Its main sources are the Urals, Mizhne-Tagilsk in Siberia, the Belgian Congo and Rhodesia. There are many other sources but not normally of large enough pieces to be used for jewellery. In England it can be found in small pieces on the Cornish coast.

Opal

Opal, unlike most of the other principal gemstones, is not a crystal but a solidified jelly. Its character is caused by the separating out of the jelly into very thin layers each with a slightly different refractive index. They cause light to disperse in much the same way as a soap film. The main constituent of opal is silica and it corresponds to the formula SiO_2 with a quantity of water which in gem material varies between six and ten per cent. It is for this reason, in addition to the softness of the material, that it cannot be recommended as suitable for setting in a ring or any piece of jewellery which is likely to be subjected to hard wear. Opal is very prone to damage: additional fissures may appear in the stone which alter the passage of light and thus affect its colour and iridescence. The water content may also change, to give the same effect.

Quartz

Quartz is one of the commonest minerals in the earth's crust and fine crystals are found all over the world. Varieties most usually used in jewellery are the yellow variety (citrine), the mauve variety (amethyst) and less frequently the colourless variety known as rock crystal which was used frequently in mediaeval jewellery, as for example the celebrated Lothar Gem in the British Museum. Quartz has been found in other colours, but they are seldom used in jewellery. The name ' quartz ' seems to have first been used by the miners in the Erzgebirge on the borders of Saxony and Bohemia and the modern German word, *quarz*, is obviously derived from the same source. The yellow variety, citrine, is clearly an adaptation of the French word for a lemon in obvious allusion to its colour. The word ' amethyst ' has a longer history and ultimately comes from a Greek word meaning ' not drunken ' because of the extraordinary idea that a reveller who wore an amethyst was immune from the after-effects of his indulgence. The ' cairngorm ', a yellow or brown quartz, is named after the mountains in Scotland and derives from the Gaelic word *carngorm*—a blue cairn. The chemical composition of quartz is one of the most simple of all gem stones. It is a silicone oxide with the formula SiO_2, the various colours being due, as in most gem stones, to different metallic oxides.

Most of the opaque stones used in jewellery are agate, a crypto-crystalline form of quartz, that is to say it is made up of a great number of very long thin microscopic crystals which break up the light passing through them in such a way that the stone is opaque but nevertheless translucent. Most stone cameos are made from agate and frequently skilful use is made of the difference in colour of various layers in the stone. Brown and white or black and white varieties are known as sardonyx and the orange red variety is known as cornelian.

Quartz has the advantage of being hard. It bears the symbol 7 on the Mohs' Scale and thus can be used for rings. It is also inexpensive although of recent years the best quality gem material, particularly amethysts, have shown a very steep rise in price. In the case of amethysts, the deeper the colour, the higher the price. It is advisable when buying jewellery not to confuse citrine, frequently called quartz-topaz, with the more valuable topaz. The colour of amethyst is so characteristic that with very little practice the stone can be readily identified by eye. It differs from glass in its greater limpidity and the fact that the mauve colouring will be seen to be in bands, when held up to the light. In mediaeval times rock crystals found in the Swiss Alps were mistaken for ice which had frozen so hard that nothing could ever unfreeze it. Madagascar, parts of the United States and the Ural Mountains in Russia provided some of the finest amethysts in the 18th and 19th centuries. It is not usually safe to suggest a source for any particular quartz jewel as the mineral is found virtually everywhere in the world. The exception to this is the yellow variety from the Cairngorms which play such an important part in the jewellery connected with Scottish Highland costume and although very few large crystals are now found in the Cairngorms, it is safe to assume that this was the source of the stones of the Scottish jewellers of the 18th and 19th centuries.

Ruby & Sapphire

It is best to take these two stones together as they are both varieties of the same mineral and they share all the characteristics save colour. The species corundum occurs in most colours but for present purposes we need only be concerned with rubies and sapphires, the former being the red and the latter

the blue varieties. Ruby means red and is derived from the Latin *ruber* through the late form *rubinus*. In the Middle Ages when very little was known about stones, ruby was used indiscriminately for all red stones and it is only during the last two centuries that it has been used in its limited sense. Sapphire is a word meaning blue which has passed into our language through the Latin form *Sapphirus*, which in ancient times was used for any blue stone including lapis lazuli. Although similar words are found in both Persian and Hebrew it seems that it does not have a Semitic origin. It is probable that its original source, like so many of the names of precious stones, comes from Sanskrit. Corundum comes to us from the French *corindon* which itself is derived from an old Hindi word *korund* the significance of which has been lost.

The chemical composition of corundum is aluminium oxide (with the formula Al_2O_3) which in practice contains small quantities of chromic and other metallic oxides. It was for long suspected that ruby owed its colour to chromic oxide but it was not finally proved until this was successfully used as a colouring agent for the production of synthetic stones. With the exception of diamond, corundum is the hardest of the gem-stones and it has been allotted the symbol 9 on the Mohs' Scale or Hardness. As the scale is logarithmic the difference in hardness between diamond and corundum is as great as the difference between corundum and substances bearing the symbol 1. Ruby can be very quickly and easily distinguished from other red stones by the fact that it is strongly dichroic while spinel and garnet are not so. Dichroism also serves to distinguish sapphire from other blue stones which are normally met with in antique jewellery. One of the advantages of sapphires is that they retain their colour in artificial light better than any other stones.

Until comparatively recently almost the sole supply of rubies was from the mines at Mogok which is about 90 miles (145 km.) North East of Mandalay in Upper Burma at an elevation of about 4,000 ft. (1,200 m.) above sea level. It is from this mine that the coveted so-called ' pigeon's blood ' stones are obtained. Until 1885 when the British annexed the country the mines were the monopoly of the Burmese sovereigns and were worked under royal licence. These mines are known to have been worked for very many centuries but their early history remains obscure. It would seem that the king exchanged the territory with the neighbouring Chinese in 1597 for an unimportant town on the Irrawaddy. The mines also produce sapphires, which are apparently not of such good quality as the rubies. Another source of rubies, rather darker than the Burmese ones, is near Bangkok in Siam, and Siam has provided the finest sapphires used in antique jewellery. The most prolific source was Bopierin in Battambang. Sapphires also occur in various parts of India but an especially good source is the Zanskar Range in the North West of the Himalayas. Rubies are also found in association with spinel and garnet near the lapis-lazuli mines of Jagdalak to the east of Kabul in Afghanistan and both sapphires and rubies of less good quality have been reported from the Yunnan Province of China, and also from Manchuria. In mediaeval times sapphires of sufficient size and quality to be used for jewellery were found in Bohemia and it seems likely that this was the source of the large number of sapphires set in rings and jewellery of this period.

SPINEL

Spinel, of which only the common red variety need concern us here, has always suffered through its similarity to the more highly prized ruby. Numerous early mentions of ruby in reality refer to this stone. The etymology of the name is obscure and no very satisfactory explanations have been offered. Spinels are frequently referred to as ' Ballas Rubies ', a phrase derived from *Badakshan*, the name of the district in Afghanistan which is said to have produced the finest stones in the mediaeval period.

Spinel is magnesium aluminate corresponding to the formula $Mg\ Al_2O_4$ and is therefore chemically similar to corundum (ruby and sapphire). The lovely red colour is in most cases due to minute quantities of chromium as in the case of ruby. It is however readily distinguishable from ruby by its absence of dichroism, which in the latter case is pronounced and thus forms

the most convenient test for telling the two apart. Alternative sources for the stone were Mogok in Upper Burma, Ceylon and Chantabun in Siam, although it seems likely that Afghanistan was the source of all early pieces.

It has been noted elsewhere that the celebrated Black Prince's ruby is really a spinel, the same is true of the Timur ruby and the enormous red stone set in the apex of the crown made for the Tsarina Catherine in 1762.

Topaz

Topaz occurs in most colours but is normally dark brown. It was used extensively in jewellery of the 18th and 19th centuries. It is less expensive than most gemstones but should nevertheless not be confused with brown quartz. The word Topaz like most names of gemstones comes from a Sanskrit word meaning heat or fire. This stone is a fluosilicate of aluminium, corresponding to the formula $Al_2(F,OH)_2SiO_4$ which occurs in a very large number of places more or less evenly distributed throughout the world. Some of the finest crystals come from two extensive mining districts in Russia, one on the eastern side of the Ural Mountains and the other near Merchinsk in Trans-Baikalia. Also green and blue stones have been found at Alabashka near Sverdlovsk (Ekaterinberg). The finest pale brown crystals come from the Urulga River on the northern side of the Borshchovochoi Mountains and good crystals have also been mined in the Nerchinsk district of Siberia. Other than this the main sources are in Brazil, the principal locality being Ouropreto, south of Minas Geraes where crystals of all shades of brown occur. In the 18th century the principal source of yellow topaz was Schneckenstein in eastern Vogtland, Saxony, where greenish stones have also been found.

Considerable care should be taken of topazes, as they have a characteristic of fading after very long exposure in bright sunlight. This does not mean that it is unwise to wear topaz jewellery out of doors but merely that it is imprudent to have topaz jewellery on view in showcases which are subjected to strong sunlight. Another reason for care is that they are rather brittle and if they are knocked, quite apart from chipping or cracking, they can develop feather-like flaws. Consequently they are not suitable for use in rings which are likely to be subjected to very hard wear.

Tourmaline

Of all gemstones, tourmaline displays the greatest range of colour and it has a number of properties which make it of great interest to the mineralogist and crystallographer. Its name comes from the Sinhalese word ' turmali ' which was used for the first time when a parcel of these stones was brought from Ceylon to Amsterdam in 1703. Green tourmalines from Brazil were also introduced into Europe in the 17th century. Its chemical composition is extremely complex. One of its constituents is either aluminium, titanium, iron, manganese, magnesium or lithium and perhaps with the knowledge of this complex structure one is less surprised at the number of colours it displays. One of the most extraordinary features of this stone is that its crystals are frequently not uniform in colour and the borders between various areas of colour are very pronounced. From time to time one comes across stones which are red or pink at one end and green at another, with a colourless area between. Another of its features is that its transparency to ordinary white light depends on the direction from which it is viewed and consequently it is important that the stone be cut in the right direction to take the greatest advantage of the deepness of its hue. The neighbourhood of Sverdlovsk (Ekaterinberg) and Mursinsk in the Urals have produced extraordinarily fine crystals of pink, blue, and green tourmaline while pink crystals have been found in the Urulga River. Ceylon has produced small yellow stones, while other sources are Brazil, San Diego County, South California and Kleinspitzkopje in South West Africa.

TURQUOISE

A beautiful opaque stone which gives its name to the colour. It was used extensively in jewellery at the end of the 18th and during the 19th century, and derives its name from its supposed country of origin, Turkey. Its chemistry is fairly complicated, the stone being hydrous copper aluminium phosphate; when associated with iron it tends to be more green in colour than blue. It is to some extent porous and, like opal, the colour can be impaired by immersion in dirty water. The wearer of a turquoise ring would be well advised to remove it while doing the washing-up. It is soft by gemstone standards, its hardness slightly less than 6 on the Mohs Scale. It takes a good polish which, due to its opacity, lasts very well and minute scratches do not show as easily as they do on a transparent stone. Purchasers of turquoise jewellery should take care to ascertain that the stone has not been artificially stained (a comparatively simple process due to the porosity of the material) and also that the surface has not been waxed to improve its appearance. The best material comes from the mountains near Nishapur in the province of Khorasan in Persia as it has done for thousands of years. Serabit el Khadem and the Wadi Moghara in the Sinai Peninsular were the source of supply for the classical world but in modern times this source has not been worked. Other material, but it seems of less high quality, has come from the United States, principally from Nevada, Texas and Arizona, while crystalline specimens, of interest more to the mineralogist than to the collector of jewellery, have recently been discovered in Virginia, U.S.A.

BIBLIOGRAPHY

The following bibliography makes no attempt to be in any way exhaustive, but lists those titles which would be useful to readers who require a general knowledge of the subject. Much information, both historical and scientific, is hidden in learned journals, and references to these will be found in the works listed. Even some of the most basic works as listed below are now very hard to come by.

SMITH, G. F. Herbert, *Gemstones*. London, 1952.
This is a mine of information on the technical side, with very complete references and much that is of interest from the historical point of view. There is little about jewellery as such, but much of the material has a strong bearing on the subject. Its quality is well attested by the fact that it is now in its 13th edition.

Gemmologist's Compendium
A purely technical work of tables relating to precious materials.

ANDERSON, B. W., *Gem Testing*. London, 1958.
A useful work of similar nature to the preceding one, but with fuller explanations of the various tests and instructions on the use of the various instruments involved.

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A very readable account of the jewellery of the Ancient world; it begins with the Early Helladic and Cycladic periods at the end of the third millennium B.C. and finishes with the Roman Empire, *c.* A.D. 400. There is a good section on the techniques employed and numerous illustrations.

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Based mainly on the collection of the Walters Art Gallery, Baltimore, it forms a useful bridge between Higgins' treatment of the classical period and the mediaeval and later periods treated by Evans and Steingräber. In addition, it contains a useful short history of the so-called ' Dark Ages '.

EVANS, Joan, *A History of Jewellery*, 1100–1870. London.
This well known illustrated history is particularly useful for the earlier periods. At present it is out of print, but a new edition is in preparation.

STEINGRABER, E. *Antique Jewellery*. London, 1959.
This covers the same ground as Joan Evans's history and in fact, like the present work, owes much to it. It has a good, brief technical section.

FLOWER, Margaret, *Victorian Jewellery*. London, 1967.
Very fully illustrated with, in addition to the obvious, material drawn from fashion plates and contemporary catalogues. The list of jewellers, albeit incomplete, is useful.

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