



JEWELLERY

OF THE ANCIENT WORLD



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PUBLICATIONS AND PHOTOGRAPHS

Publications of the Museum may be ordered at the Sales Desk, and prints of photographs of Museum objects from the Main Office. Orders by post should be sent to the Secretary of the Museum.

MUSEUM PUBLICATIONS

The following Museum publications are in print, and may be obtained from the Museum:

Outline Guide to the Royal Ontario Museum (Section III deals with the Museum of Archaeology), price 50 cents.

Outline Guide to the East Asiatic Section, price 15 cents.

Excavating Ontario History, by Margaret M. Thomson, published by the Division of Education, price 30 cents.

Chinese Court Costumes, by Helen E. Fernald, price \$1.00.

Books of the Middle Ages, price 35 cents.

Palestine, Ancient and Modern. A Guide to the Palestinian Collections, 1949, price \$1.50 (by post \$2.00).

Fibres, Spindles and Spinning Wheels, by Dorothy K. Macdonald, price 50 cents.

Picture Books: *Chinese Figurines*; *Egyptian Mummies*; *Greek Pottery*. 50 cents each.

Chinese Frescoes from the Royal Ontario Museum (a new edition of *Museum Bulletin No. 12*, bound together with Nos. 13 and 14), price 75 cents.

The following past numbers of the *Bulletin of the Royal Ontario Museum of Archaeology*: 7, 10, 11, 15, 16, 17, and 18.

The Chair in China, by Louise Hawley Stone, 1952, price \$2.00.

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FOREWORD

THE Royal Ontario Museum of Archaeology has an extensive collection of ancient jewellery, with many fine individual pieces. Normally it is divided between the two Museum Departments concerned, the Near Eastern Department and the Greek and Roman; the best pieces are now exhibited together for the first time.

Our aim in this exhibition is to show how the types of jewellery worn, and the technical processes of making them, developed in the ancient world from the date of the earliest piece shown, about 3000 B.C., down to perhaps A.D. 600. Barbarian and the earliest Merovingian types are included.

We have here a further purpose, in line with that of the Museum as a whole. This is to exhibit the best ancient pieces in such a way as to bring out the relevance of the ancient designs to the modern. In this case we are able to give a demonstration of how they have been used for this purpose, and the point is brought out on Plate 16 of this Bulletin, a group of pieces of modern jewellery by Henry Birks & Sons.

The Museum is glad to take this opportunity of thanking Henry Birks & Sons for a gift of money which has made the exhibition possible in this form; for the use of this photograph; and for continuing support and advice.

The planning and arrangement of the exhibition and of this number of the Bulletin are the work of Miss Winifred Needler, Curator of the Near Eastern Department; J. W. Graham, Curator of the Greek and Roman Department, is responsible for the writing of the sections on Greek and Roman jewellery.

GERARD BRETT

Director

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Introduction

The gold and silver jewellery illustrated in the accompanying plates ^{was} ~~has been~~ assembled for a special exhibition of ancient jewellery, ^{from February to May,} ~~to be~~ held at the Museum ~~for four months, beginning February 3] 1953.~~ The jewellery in the exhibition ~~has been~~ selected entirely from the permanent collections of the Museum. Even without any outside support, our pieces demonstrate the beauty, ingenuity, and technical skill of the ancient designers and craftsmen. However, not all countries and

First three paragraphs re-written

periods within the scope of the exhibition are equally well represented in the Museum's ^{ancient jewellery} collections, and for this reason ^{by} a section of the Special Exhibition Gallery has been reserved for the display of supplementary ^{we included} photographs of world-famous pieces. Also ^{it} included are a case illustrating techniques and another illustrating the manner in which the pieces were worn. At the close of the exhibition the jewellery will be ^{was} returned to the galleries of Greek, Roman, Egyptian, West Asiatic, and prehistoric European antiquities, all on the Second Floor, and will ^{it} again contribute to the wider picture that is only possible when all known aspects of ancient life are examined together.

~~Not by any means all of the jewellery that is permanently on view in the Museum has been included in the exhibition; and many of the specially exhibited pieces are not illustrated here.~~ This publication is not intended to be a catalogue of our ^{ancient} jewellery collections in general but only a guide to the finer pieces ~~assembled for the special exhibition.~~ We hope, ~~too,~~ that it will help to make the Museum's ancient jewellery as well-known as it deserves to be.

A few of the Egyptian pieces, those from Harageh and Tell el-Amarna, came from excavations of the Egypt Exploration Society. The rest of the jewellery was purchased from dealers, either directly by the Museum or by its benefactors, and the provenance is rarely known. The dates that are given—sometimes tentatively—in the descriptions of our material are not based on archaeological evidence drawn from the circumstances of discovery but only on careful comparison with dated specimens. Some books that may be of interest to anyone who wishes to pursue the subject further are listed on page 25; these are only a few of the more general works used in the task of identifying our jewellery. The cylinder seals on Plate 15 have been published (among a much larger group of the Museum's ancient seals) by Professor T. J. Meek, in *Berytus* 8 (1943), and the later gems on the same plate have been studied by Dr. Elie Borowski.

The photograph of fine modern jewellery, included for purposes of comparison, was contributed by Henry Birks and Sons, Jewellers, of Canada. The jewellery of the ancient world is the direct ancestor of the jewellery of to-day. Most of the techniques in use at present were known to the ancients and the ancient designs still appeal to the modern eye. It had at first been intended to include among the plates a group of modern pieces that were obviously inspired by ancient patterns, for many such exist; but it was decided that the modern pieces should be selected on the grounds of their intrinsic merit. In this way the reader will be able to compare the ancient work with outstanding examples of the present time.

The Origins of Jewellery

The desire for self-adornment is common to all mankind, and we can guess that our ancestors possessed the rudiments of jewellery to impress their lovers, friends, and enemies at an early stage of human development. No actual clothing worn during the Old Stone Age has survived; it is assumed that earliest man protected himself from the elements by wrapping himself in animal skins and perhaps in crudely plaited fibres, such as mammoth's wool and grass matting. Stone, bone, and shell, however, are less perishable than skin, wool, and matting, and therefore it is not surprising that the earliest known objects worn for personal adornment are older than the earliest known clothing. The Museum possesses some simple beads of stone, bone, and teeth made by the cave-dwellers of France and Spain during the last part of the Old Stone Age; bone needles are the only tangible evidence of the skin clothing that must have been worn for protection against the bitter cold of that time. From the beginnings, other motives besides vanity prompted men and women to wear ornamental objects. Beads and pendants might have been conceived in the first place as charms to protect the individual or his possessions from mysterious powers; in subsequent ages the material, as well as the form, of amulets was often considered to be efficacious. Small portable objects of value would be worn for safety or convenience and would then assume decorative importance. Both clothing and ornaments must have been secured with strings, thongs of raw-hide, or real or imitation thorns, the earliest pins. Strings around the head and waist, prototypes of the fillets and girdles so prominent in the later history of jewellery, must have been necessary to curb the bulky skin garments and the billowing hair of early man. While various motives may thus have played their part from the very beginning, even the simplest ornaments that have survived from this distant time suggest that vanity, superstition, and practical considerations were always linked with an instinctive interest in colour and symmetry for their own sakes.

West Asia

Although earliest man enjoyed the rudiments of jewellery, the first use of metal did not come until long after the beginnings of agriculture, which brought life in small settled communities and consequently many new discoveries. Copper and gold were the first metals to be used. Copper objects were at first small and scarce and were worked in much the same manner as stone, but in Mesopotamia tools and weapons of well-cast copper were in general use by about 3500 B.C. They are the earliest known examples of advanced metal-working

techniques. It is still uncertain where ^{in West Asia} this knowledge was first discovered; ~~perhaps in the Iranian hills near the southern end of the Caspian Sea;~~ but it is thought that the Sumerians, who are also credited with the invention of writing, brought metallurgy with them when they first settled in the lower part of the Tigris-Euphrates Valley, at the beginning of their rapid advance towards civilization. The "Royal Tombs" of Ur (about 2500 B.C.) dramatically revealed their achievements in the field of applied arts.* The famous gold objects found in these tombs prove that the Sumerians were remarkably skilful goldsmiths and knew the techniques of casting, engraving, repoussé, inlay, overlay, filigree, and granulation. The flamboyant jewellery worn by the ladies of Ur includes gold fillets and ornamental combs of elaborate floral design, large crescent-shaped gold earrings, inlaid finger-rings, and variegated bead necklaces of gold, silver, and semiprecious stones. Richly decorated gold daggers and cylinder seals of gold and lapis lazuli not only served practical purposes but were highly ornamental accessories of dress.

Mesopotamian cylinder seals (nos. 105 to 107) are of special interest to the modern designer of jewellery because they are the ancestors of the ornamental engraved gems that became so popular by the Roman period and have been almost continuously produced through mediaeval and modern times down to the present. Stone cylinders, with a proprietary design carved on the surface, were used as seals from about 3200 B.C. until they were gradually superseded by stamp seals (no. 109), ~~which were introduced from the north~~ ^{which} during the second millennium and became general about the seventh century B.C. Rolled on dabs of clay, the cylinders often sealed personal property of various kinds; but they served principally as signatures on the clay tablets that were the usual documents of ancient West Asia for more than two thousand years. Cylinder seals were at first made of comparatively soft stones, such as limestone and serpentine, but as the skill of the lapidary increased through the centuries, harder stones, such as hematite, quartz crystal, and different forms of chalcedony, became common. The Museum possesses specimens in lapis lazuli, agate, carnelian and chrysoprase (not illustrated). Before 1000 B.C., when iron tools became common, the engraving was done with copper gravers and drills; it is often so fine that it can only be fully appreciated through a magnifying glass. A bow was used for rotating a simple drill, and later (from about 1500 B.C.) for a cutting-disk as well. For hard stones, an abrasive powder, probably emery, was

*G. L. Woolley, *Ur Excavations: The Royal Cemetery* (Oxford, 1934).

always used with the tools. Cylinder seals were usually perforated and strung on a necklace or wristband; their ends were often set in metal caps. From the beginning, the designers of these seals showed a remarkable genius for adapting natural forms to decorative purposes, and at times, particularly in the Akkad period (about 2350–2180 B.C.) and the Middle Assyrian period (about 1400–1000 B.C.), their technical skill almost reached perfection. As fashions changed, stamp seals and ring-stones naturally followed the same traditions of stone engraving.

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Nothing from later times as spectacular as the Ur jewellery is as yet known in Mesopotamia or in the neighbouring countries to the north, west, and east that ^{were deeply influenced by} inherited Sumerian culture. A few scattered pieces suggest that Mesopotamian goldsmiths continued and improved the traditions of the Ur jewellery for many centuries. But the gold ornaments of the late second millennium B.C. from Syrian and Palestinian sites are chiefly interesting because they are cultural hybrids, showing the imperfectly assimilated influence of rising powers in the north and of Egypt, Mesopotamia's old cultural rival. A more attractive blend of diverse elements is seen in some of the gold ornaments surviving from the first half of the first millennium B.C. [for example in] the beautiful gold objects ^(Plate 23a) which have recently been discovered at Zawiyeh in Kurdistan, Iran, and which were made by Iranian craftsmen under strong Assyrian influence (about 800 B.C.). Contemporary with the Zawiyeh treasure are the less showy but quite as interesting ornamental bronzes with animal motifs—horse trappings, standard finials, garment pins, bracelets, and other objects—that are known from the illicit excavations of natives in the hills of Luristan, western Iran. These bronzes have highly stylized but lively designs that are related to the art of northern nomads, and at the same time they use traditional Mesopotamian forms. Most of the Museum's Luristan bronzes cannot be classed as jewellery, but the beautiful animal designs, even including those worn by horses, could be adapted with fine effect to-day for belts, brooches, and pendants.

They also suggest connections with nomads of the northern steppes.

The all-bronze signet ring with an engraved design showing an ibex among plants is from Luristan (no. 111). This ring, which may be dated to about 1000 B.C., is in a naturalistic style more typical of the Middle Assyrian seals. The bronze pin drawn in Fig. 1 is decorated in true Luristan fashion with a stylized "lion." The fine silver pin, Fig. 2, is also from Luristan; it has an engraved head terminating in three stylized birds. The third pin (Fig. 3) is earlier; it is a flat-headed gold specimen provided with an eye to attach the string that secured



FIG. 1



FIG. 2



FIG. 3

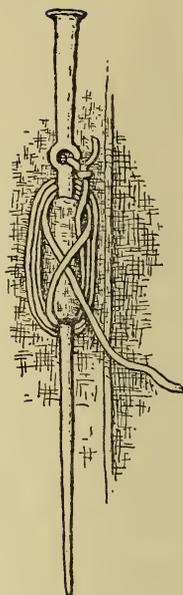


FIG. 4

the pin to the garment; Fig. 4 shows how it was used. This perforated type was worn in West Asia from the early second millennium; it seems to have gone out of fashion about 1000 B.C., perhaps because of the increasing popularity of the more efficient fibula (see pages 15-16).

Scenes from the relief sculptures that decorated Assyrian palaces show more clearly than actual specimens the styles of jewellery in vogue during the first half of the first millennium B.C.: the elaborate pendent earrings, the massive metal armllets, the simple bead necklaces sometimes carrying a heavy pectoral ornament, and the headbands and bracelets decorated with large rosettes. The women, who only occasionally appear in these Assyrian pictures, wear fewer ornaments than their lords. Magnificent gold jewellery, ^(Plate 26) often inlaid with lapis lazuli and turquoise, survives from the time of the Persian Empire (549-331 B.C.). At the end of that period the conquests of Alexander the Great brought Near Eastern jewellery into the direct current of Greek civilization.

Egypt

In order to follow the history of the jeweller's craft in Egypt, we must retrace our steps to the same remote age that saw the beginning of Mesopotamian jewellery, for Egypt and Mesopotamia emerged from a primitive state of society at about the same time. Mesopotamia almost certainly led the way, and was associated either directly or indirectly with a similar and apparently later development in north-west India as well. Of the three centres, because of its dry climate and the excessively elaborate burial customs of its ancient inhabitants, Egypt has left by far the best record of the arts and crafts (but not the best written records since papyrus, the common writing material, was perishable). Jewellery was always buried with the dead, along with other equipment for the next world. Although many ornaments were made expressly for the tomb, pieces worn during life were sometimes deposited. These were generally of better quality, and they are, of course, a truer indication of fashions in the world of the living. Ancient Egyptian tombs, moreover, are decorated with scenes from daily life which were intended to perpetuate the owner's enjoyment of it; sometimes these pictures give detailed information about ancient metal-working techniques and about the styles actually in vogue at various periods.

During the fourth millennium B.C., Egyptian beads and amulets scarcely progressed beyond the Old Stone Age forms, and were made mostly of shell and coloured stone. The beads of shell and lapis lazuli are interesting proof that trade was widespread in late prehistoric times: the lapis lazuli probably came from Afghanistan, through indirect channels; the shells are both Mediterranean and Red Sea species. In general the beads show gradual technical improvements, and a vitreous glaze was used first on stone beads and then on powdered quartz. Glazed powdered quartz, known as "faience," became an important industry; its plastic nature and its bright colours were ideally suited to the manufacture of beads, which became the most characteristic form of Egyptian jewellery. Amulets, of which the "bull's head" (Fig. 5) is a very common type, became more complex. Ivory hair-pins and combs were attractively decorated in animal designs (Fig. 6). Bracelets were cut out of a single section of a large shell and shell finger-rings were similarly made. The earliest known use of copper in Egypt was for small beads and pins (in the Badarian culture, probably about 4000 B.C.). Gold does not seem to have been used quite so early as copper, but small gold ornaments from prehistoric Egypt are known. Prehistoric silver objects have also been found.

Silver was very rare, however, until the second half of the second millennium B.C., when it was imported from West Asia, and even then it remained scarcer and more highly valued than gold.

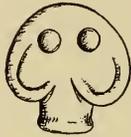


FIG. 5

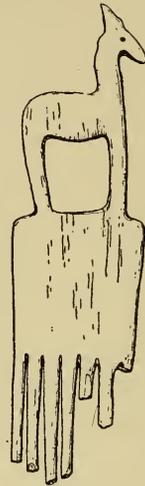


FIG. 6

If Egypt received her first impulse towards civilization from Mesopotamia, her development at the beginning of the third millennium was so rapid that she soon overtook, and even surpassed, her rival, at least in many material respects. The jewellery surviving from early historic times reflects this rapid rise. Four bracelets of gold and semiprecious stones (Cairo Museum), belonging to a queen of King Zer, show that as early as about 3000 B.C. jewellery of a high order was being produced. The varied elements of these bracelets are planned as part of a unified design. The gold is beaten and soldered to form hollow beads; it is drawn into wires that are coiled and plaited; and it is elaborately cast. The gold and silver objects from the tomb of Queen Hetep-heres (Cairo Museum, about 2700 B.C.) are unsurpassed in beauty and purity of design.* Among these objects, which include gold vessels and goldsmith's work applied to household furniture and to boxes, there is scarcely any jewellery, since most of the personal ornaments vanished when the sarcophagus was plundered before the intact secondary burial; but two sets of ten anklets, graduated to fit the leg, were found in their gold jewel-box. They are of hollow silver with a delicate dragon-fly design inlaid with turquoise, lapis lazuli, and carnelian.

*G. A. Reisner in *Bulletin of the Museum of Fine Arts, Boston*, 25 (1927) spec. supp.; 26 (1928); 30 (1932). The final publication of the tomb is now in press (*History of the Giza Necropolis*, vol. 2, Harvard University Press).

Very little ^{other} gold and silver jewellery has survived from the great Pyramid Age (about 27th–23rd century B.C.); both men and women, however, are shown wearing jewellery in the contemporary wall pictures, the women with a variety of circlets, necklaces, bracelets, and anklets, the men not quite so elaborately adorned. Jewellery is also shown being distributed as rewards of honour.

Some exquisite pieces from the Middle Kingdom period (21st to 18th century B.C.) were worn by princesses of the 12th Dynasty and were found at Dahshur and Lahun (about 1850 B.C.). Among this jewellery are the earliest surviving examples of so-called cloisonné work, probably invented during the Old Kingdom, in which minute inlays of semiprecious stones were set into cells formed by strips of sheet-gold soldered on to a gold plate. The Museum possesses a piece of this type of work (no. 8), undoubtedly of 12th-Dynasty date. It probably came from a pectoral ornament, like well-known examples of the period, but perhaps from the applied decoration of a head-band; Fig. 7 is a theoretical reconstruction based on a pectoral from Lahun,



FIG. 7

in the Metropolitan Museum, New York. One of the Dahshur ornaments, a gold diadem of delicately interlaced flowers and berries, in gold wire and inlay-work with semiprecious stones, represents the peak of perfection in design and technique (Cairo Museum). The earliest known example of granulated work from Egypt (page 17) came from these 12th-Dynasty finds. Other 12th-Dynasty pieces reveal such interesting details of design as ingenious clasps for bracelets, anklets, and necklaces, dainty chains, and hollow elements containing pellets to form tinkling girdles (Cairo Museum and Metropolitan Museum, New York). The Museum possesses examples of another type of ornament popular at this period and later: gold rosettes stamped in quantity for attaching to ladies' wigs and for sewing on clothing (no. 12).

Far more jewellery of the 18th Dynasty (16th–14th century) has survived, a fact partly explained by the wealth and lavish fashions of the period; it usually lacks the restrained beauty of design seen in the earlier ornaments. As a rule, the earlier traditions were followed, although increasing foreign contacts in this imperial age brought many innovations. The quality is in general lower, in spite of an extravagant use of materials. Artificial stones of opaque glass often take the place of stone beads and of inlaid stones in cloisonné work; the glass was cut and ground to fit in the same manner as the stones, and true enamel was unknown; rarely, however, a kind of glass inlay was set into cloisons in a plastic or powder form, but not heated sufficiently to fuse with the metal. The jewellery of Ahmose and his queen (Cairo Museum, 16th century B.C.) in general follows the traditions of the Middle Kingdom; an interesting point is the occurrence of niello (a blackish metallic sulphide inlaid in a semi-liquid state); the style of one of the two pieces on which it appears—a gold dagger—suggests Mycenaean or Asiatic workmanship, although it contains the king's name in Egyptian hieroglyphs. Necklaces made up of gold amulets and pendants were fashionable during the 18th Dynasty, and are attractive examples of repoussé work (Plate 3). In this kind of work, the ornamental value of amulets seems to have eclipsed the superstitions connected with them. By the end of the dynasty (that is, 14th century B.C.), the fashions that were introduced by court ladies from Egypt's Asiatic empire had noticeably affected Egyptian jewellery design, and the foreign merchants and craftsmen who were swarming to the imperial capital, Thebes, also played their part in the trend towards cosmopolitan tastes. The luxurious jewellery of the time is evident in the tomb paintings, which show ladies elaborately decked out with earrings (scarcely known in Egypt before the 18th Dynasty), bracelets, collars, girdles, and enormous curled wigs decorated with circlelets and other ornaments. Finger-rings are only seldom shown in these pictures although actual specimens are often excavated (for example, nos. 13–15, and solid metal signet rings derived from this type). Garment pins were never used, since the elaborately draped and pleated dresses were wrapped and tied, not tailored. Men also wore jewellery, but usually with more restraint than their women, as in the Pyramid Age. The jewellery from the famous tomb of King Tutankhamun (Cairo Museum, mid-14th century B.C.) eclipses all other finds in sheer lavishness. With the exception of the recently discovered royal burials at Tanis that belong to the period of decline, this is the only known tomb of an Egyptian king to escape serious plunder; it proves the magnificence of royal jewellery, although Tutankhamun

was a comparatively unimportant monarch who ruled only nine years. The Tutankhamun jewellery, like other objects from the tomb, is often over-elaborate and poorly designed, but its exuberance, as in the fantastic composite earrings or the lavish pectorals, is always impressive.

Symptoms of Egypt's long decline set in soon after Tutankhamun's time. The jewellery of the 19th Dynasty (14th-13th century B.C.) is usually inferior, although there are some showy and interesting pieces such as the hinged bracelets of Ramesses II, in elaborate gold work with lapis lazuli inlay, and the diadem and earrings of Sety II's queen (both Cairo Museum, 13th century B.C.). A barbaric fashion of the 19th Dynasty was the insertion of large discoid or conical studs in the lobe of the ear. Some excellent work was produced during still later periods, particularly in the 21st Dynasty (11th-10th century B.C.) to which our ram's head earrings (no. 11) probably belong, and in the 25th and 26th Dynasties (8th-6th century B.C.), when under the threat of Assyria Egyptian nationalism looked for inspiration to Egypt's great past. The tiny, carefully worked gold figure of the god Ptah (no. 16) probably belongs to this retrospective age. Egyptian arts and crafts from the period of Persian domination (525-332 B.C.) are generally stereotyped and poorly executed, while fine Greek jewellery (see below) was sometimes seen in Egypt. Undistinguished beads and amulets of traditional Egyptian style continued to be produced, even as late as Roman times. The upper classes, however, quickly adopted Greek fashions of jewellery after the conquest of Egypt by Alexander the Great in 332 B.C., and Egyptian goldsmiths never again produced as fine work in the native tradition.

Egyptian jewellery techniques in use from the Pyramid Age to the end of the second millennium B.C. are attractively illustrated by ancient wall-pictures of goldsmiths at work, and this information can be supplemented by examination of their surviving tools and products. Thus, in paintings of the 18th Dynasty, we can see with our own eyes the ancient craftsmen drilling beads with a bow-drill (several drills were operated simultaneously with a single bow), stringing beads, grinding stones, working with a blow-pipe at a portable furnace (probably in the act of soldering), and engraving and polishing metal. Their chisels, knives, punches, and simple cutting saws were of copper in the third millennium and of bronze in the second. Their drill-heads were of stone, copper, and probably sometimes reed. They had no files, and their hammers—always stone—had no handles. Powdered quartz mixed into a paste was constantly used as an abrasive in drilling, grinding, and cutting hard materials, and explains the effectiveness of

these comparatively soft cutting and grinding tools. Polishing was done with pieces of quartzite. Methods of casting metals must be inferred from the open and composite stone moulds that have survived, and from technical examination of complex metal objects obviously made by the lost-wax process. The stone dies into which sheet metal was pressed are difficult to distinguish from the stone moulds into which molten metal was poured; the Museum possesses a stone tool of the fourteenth century B.C. from Tell el-Amarna, which is probably a die since there is no pouring channel. Dies for stamping (see no. 12) must have been made of bronze. Gold was beaten into thin sheets for plating (see no. 10) and still thinner leaf for gilding, sometimes no more than a tenth of a millimetre thick. Ornamental gold and silver wire was used by Egyptian jewellers with versatility and good taste. The simplest and earliest way of making wire was to cut a narrow strip of sheet-gold and then to hammer it into a roughly rounded section. The evenness of some specimens suggests that wire made in this manner was sometimes further reduced by means of primitive draw-plates. Some Egyptian wire, moreover, appears to have been made by coiling a wider strip lengthwise to form a spiral section, and then drawing it; this would not require as strong a draw-plate as the modern method.

The beads of the Museum collection furnish interesting examples of the ornamental cutting of hard stone. They were cut, drilled, ground, and polished with skill, and combined—often with gold beads—for wonderful colour effect. Beads and other ornamental stones were never faceted until the Roman period. Sometimes, however, stone beads were cut into elaborate three-dimensional forms, such as the lions and shells in no. 3, which are no less remarkable examples of gem-cutting than the cloisonné inlay (no. 8). The beads also illustrate the use of faience, and its offspring true glass. Throughout ancient Egyptian history faience remained popular as a cheap substitute for stone beads and pendants. It was worn as “costume jewellery” in daily life, and was commonly supplied to the dead (Plate 4). During the 18th Dynasty, faience beads were often brilliant in colour, complex in design, and combined with great skill, as the floral collar (no. 26) demonstrates. The wide bead collar, a typical Egyptian ornament with ritual significance, was often made with gold and semiprecious stones. It must have been a highly prized product of the goldsmith’s craft in very early times, since the hieroglyph for “gold” is in this form. In a painted relief sculpture of about 2000 B.C., the goddess Hathor wears a fine bead collar, above a beaded dress adorned with jewelled straps and border band (Fig. 8, Museum collection).

Scribes, the intellectual snobs of ancient Egypt, looked down on metal-workers. A passage in the popular school textbook, *The Teaching of Khety to his son Pepy*, runs “. . . but I have seen the coppersmith when he toils at the mouth of his furnace; his fingers are like crocodile skin, and he stinks worse than fishes’ eggs. And has every craftsman who uses a chisel any more rest than a ploughman?” (The Museum owns an ancient copy of this passage, about 1200 B.C.) Nevertheless the social position of jewellers must have been important and the profession a lucrative one. The title “goldsmith” is common, and several goldsmiths had expensive tombs built for themselves.



FIG. 8

Crete

The earliest civilization of Europe began on the island of Crete. Under the stimulus of contact with Egypt and the Near East, a distinctive civilization began to develop on the island soon after 3000 B.C. and reached a climax toward the middle of the following millennium in a spectacular outburst of artistic activity. This was the time of the famous Palace of King Minos at Cnossus, excavated within the present century by Sir Arthur Evans, with its labyrinth of rooms built in several storeys about a great central court, and decorated with gay wall-paintings picturing the cultured life of the court and the beauty of the Cretan land and sea.

Cretan ladies with elaborate coiffures, flounced skirts, and well-displayed bosoms were of course further adorned with jewellery, such as delicate necklaces and bracelets. Men wore armlets and anklets of silver, and the famous “Cup-bearer” of the Cnossus mural also has a

curious silver ornament beside his ear and an agate sealing on his left wrist.

Surprisingly little jewellery has yet been found in excavations in Crete, with the exception of an early group of fine gold ornaments from Mochlos and, from soon after 2000 B.C., an exquisite gold pendant in the form of a pair of antithetical hornets decorated with granulated work. Cretan seals in a variety of shapes and stones have been found, and large numbers of impressions in clay. In the finest period the designs are commonly drawn from the animal world, often executed with a vigour and a truth to nature that reminds us of Cretan mural paintings: a wounded calf paws at the arrow with its hind foot; a man leaps on a bull as it drinks at a tank; or a goat placidly gazes at a barking dog from the safety of a cliff. In Plate 15 (no. 108) we have a good example of the more formal, almost heraldic style from the period shortly before the eclipse of the Cretan civilization with the destruction of the palaces about 1400 B.C.

Mycenaean Greece

Fine metal-work including jewellery—some perhaps made in Crete—has been discovered in much greater abundance in the cities of the Greek mainland where Cretan civilization penetrated deeply and brought about the flowering of what we now call the Mycenaean civilization, in the period about 1600–1200 B.C. In the intact graves of early rulers of the greatest city, Mycenae, called “rich-in-gold” by Homer, Schliemann in the 1870’s found quantities of gold treasure, including diadems, rings, daggers, masks, and clothing ornaments. Most remarkable are the daggers, which were obviously ornamental and ceremonial rather than practical, for they have golden hilts and bronze blades decorated with lion-hunts and other scenes executed by inlaying gold, silver, and niello; the technique is clearly similar to what Homer had in mind in his famous description of the shield of Achilles. A dramatic discovery within the last year has been that of another series of intact royal graves of a slightly earlier date (before 1500 B.C.). Our Museum has recently acquired two of a set of three gold bracelets said to have been found at Mycenae (Plate 5); they are very similar to two from the same site now in the British Museum. The beauty of the gold is enhanced by the simplicity of the design.

Geometric Greece

Not long after their successful but exhausting expedition against the city of Troy in the early twelfth century B.C. the Mycenaeans saw their own cities destroyed. The destroyers were the invading Dorians, who

spoke a dialect of the same Greek language probably spoken by the Mycenaeans, but who, being still quite uncivilized, proceeded to plunder and ruin the cities of the Mycenaeans and to occupy much of their land. As a result, for the next several centuries a simple peasant culture isolated from contact with the civilizations of the Eastern Mediterranean world prevailed in Greece. The major arts disappeared;

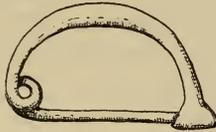


FIG. 9

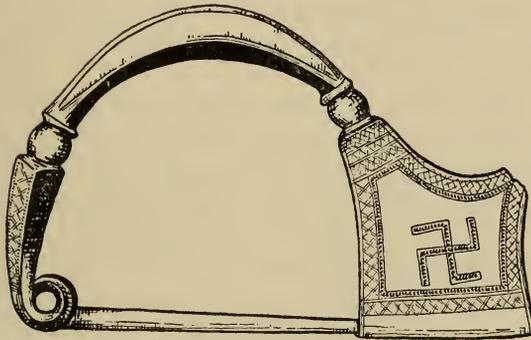


FIG. 10

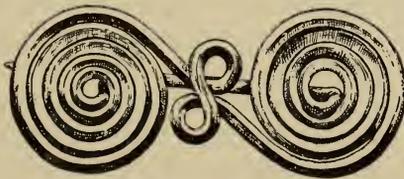


FIG. 11



FIG. 12

pottery, simply but effectively decorated with geometric patterns, and strikingly conventionalized bronze figurines, suggest a dormant artistic talent. Beginning in the late Mycenaean and continuing through the Geometric Period, bronze fibulae (safety-pins) were in common use. They include simple early forms such as Fig. 9, types with broad catch-plates decorated with geometric designs (Fig. 10), and "spectacle" fibulae (Fig. 11) made from a single continuous piece of wire. Pairs of bronze pins, such as that in Fig. 12, were used in this period to fasten the Doric chiton or tunic at the shoulders. The gem (no. 110) with animal designs, also from our collection, likewise represents the minor arts of the Geometric period.

Archaic Greece and Etruria

The "Dark Ages" began to lighten toward the end of the eighth century, as Greek mariners developed a lively trade with the Near East and with Egypt. New ideas began to flow into Greece. The invention of coinage stimulated commerce. The adaptation of the Phoenician alphabet provided an efficient system of writing, easily learned by everyone, and stimulated the growth of democracy. Egyptian and Oriental art encouraged the development of architecture, sculpture, and an artistic pottery.

The craft of the jeweller was exposed to the same stimulus. Yet early Greek taste seems to have been against wearing much jewellery. For all their gaily patterned and coloured garments, the sculptured Ionic "maidens" of the sixth century content themselves with a simple disk earring and an occasional necklace or bracelet; women on early Attic vases are likewise sparingly adorned. As for men, jewellery was avoided entirely. Thus, as we should expect, little Greek jewellery from this period has been discovered—there is none in our Museum—but what has come to light bears witness to extraordinary technical skill as well as good taste. We may mention, as an example, a series of rosettes found on the island of Melos, apparently decorative elements from a diadem, which represent, with a delightful combination of delicate fancy and striking realism, birds and bees settling on flowers from some of which emerge gargoyle-like griffin-heads; the details are outlined in very fine and even granulation (good pictures in the *Illustrated London News*, April 1940, p. 569).

The delight which the early Greek took in what we so unfortunately term the "minor arts" is strikingly illustrated by Herodotus' tale of the Ring of Polycrates. Polycrates, tyrant of Samos in the sixth century B.C., was so ominously prosperous in everything he undertook that a friend warned him to avert divine jealousy by bringing on himself

some misfortune, and made the suggestion that Polycrates irrevocably throw away what he valued most of all his treasures. After careful deliberation the tyrant selected an emerald seal-ring, the work of the famous engraver Theodorus. In the sequel, of course, Polycrates found it impossible to rid himself of the gem even by casting it into the depths of the sea, and the worst fears of his friend were realized in the horrible fate which shortly overtook the tyrant. A more modest example than Polycrates' famous gem is illustrated in Plate 15 (no. 112); it is of the common scarab shape derived from Egypt. Another archaic gem of the same form from the Museum collection (925.7.1) is mounted so as to swivel freely on a gold hoop; such hoops evidently served rather as handles than to fit over the finger. Archaic gems were engraved with the aid of a revolving drill operated by a bow, a method known in the Creto-Mycenaean period but lost in the ensuing "Dark Ages."

In contrast to the scarcity of finds in Greece, a great deal of superb jewellery of this same period has been discovered in Italy in the tombs of that mysterious folk, the Etruscans. There is fairly general agreement at present that this people migrated from Asia Minor by sea to the west coast of Italy around 700 B.C. They seem to have brought with them a notable skill in metalwork, for which the peoples of western Asia had been noted since early times, and their art and culture show the influence of both Greece and the Orient. The Greek influence is especially strongly seen in the paintings on the walls of the underground tombs, which also were often found to contain large numbers of black-figure and red-figure vases, both Greek-made and local Etruscan imitations. Their jewellery exhibits the same influences, and while it is not always as well designed or as tasteful as Greek work, yet in technical execution, particularly in the fineness and evenness of its granulated work (see Plate 6), it was quite unsurpassed. Indeed it is only within the past quarter century that methods have been discovered of reproducing granulation as fine in quality as the Etruscan.

It may be of interest to give a brief account of the technique of granulation which, though an old one, reached such a peak of perfection among the early Etruscans. The art of granulation consists in attaching minute spheres of gold or silver to a flat or curving surface of the same metal. The granules may be spread over a considerable area without any definite arrangement ("field granulation"); they may be arranged in various small patterns such as triangles; or they may be drawn out in single or double rows to form straight or curved lines making up meanders, waves, or the like. Perfection of workmanship

is attained when the granules are smooth spheres only attached to the background at a small point of their base, and each granule is distinct and separate from its neighbours. Rather coarse granulation is found on some of the gold objects from the famous Royal Tombs at Ur of about 2500 B.C. (see above). Finer, but still imperfect, work is known from Egyptian jewellery of the Middle Kingdom (c. 2000–1800 B.C.), and sporadic examples of varying quality are found in later Egyptian and Mycenaean (c. 1400–1200 B.C.) jewellery and elsewhere. But all previous examples are eclipsed by the Etruscan granulation in which we sometimes find as many as one hundred and eighty granules to the inch. The *Illustrated London News* for April 1934 (pp. 658f) pictures some examples produced by W. T. Blackband, a modern experimenter, which even surpass their models. Another Englishman, H. A. P. Littledale, has recently been successful in reproducing fine granulation work by using glue containing copper in suspension; the glue held the granules in position until, on being heated, it carbonized and disappeared, leaving the very finely divided copper which, by alloying itself with some of the gold, formed a solder and fixed the grains firmly in position (*American Journal of Archaeology*, LI, 1949, pp. 110f. and reference).

Hellenic Greece

The fifth and fourth centuries B.C. represent the period of highest quality in content and execution in virtually all fields of Greek art: in literature, sculpture, painting, and architecture. In jewellery this is no less true; but the quantity of material from this period so far found is not extensive, and our Museum contains no important examples.

As in the Archaic period so also in the fifth and fourth centuries “jewellery” is really fine metalwork, for jewels were rarely used in personal ornaments of this period. The skill displayed is remarkable and utilizes most of the resources of the goldsmith: casting, repoussé, plait-work, and in particular the most delicate of filigree work (see above), which was rapidly replacing the favourite archaic method of decoration, granulation. Exquisitely wrought little human and animal figures are a favourite element of design, and these were combined with intricate stylized plant motives—fanciful, imaginative, and rich in effect, yet avoiding vulgar display or ostentatious virtuosity. The scarcity of sealstones from this period in our Museum is not accidental. Although the use of seals for various purposes was common enough at this time, personal seals were apparently not as generally used as in the Near East, and relatively few have been discovered. Quality, however, atones for quantity. Some of the finest known were signed by



PLATE I. Egyptian jewellery, 12th Dynasty and earlier.

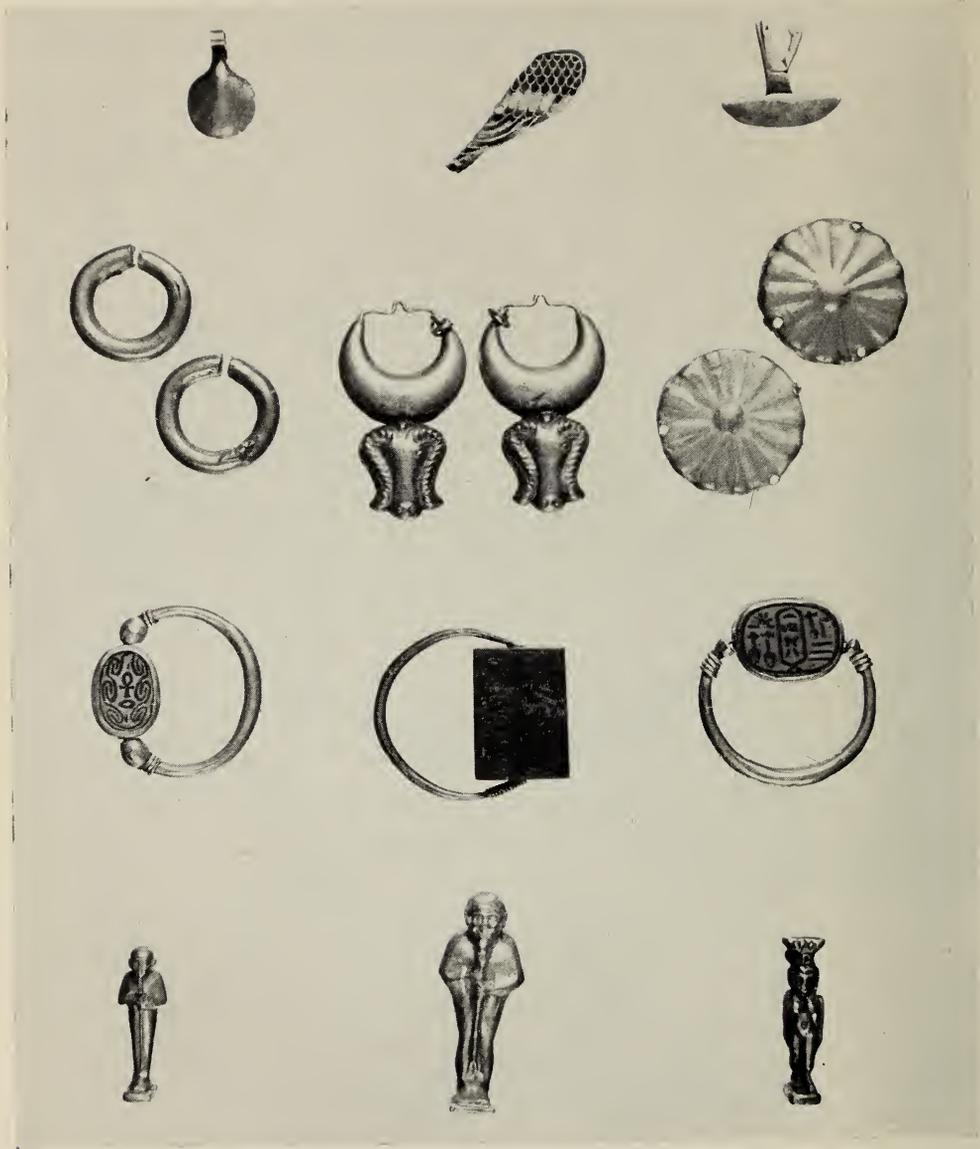


PLATE 2. Egyptian jewellery, various periods.

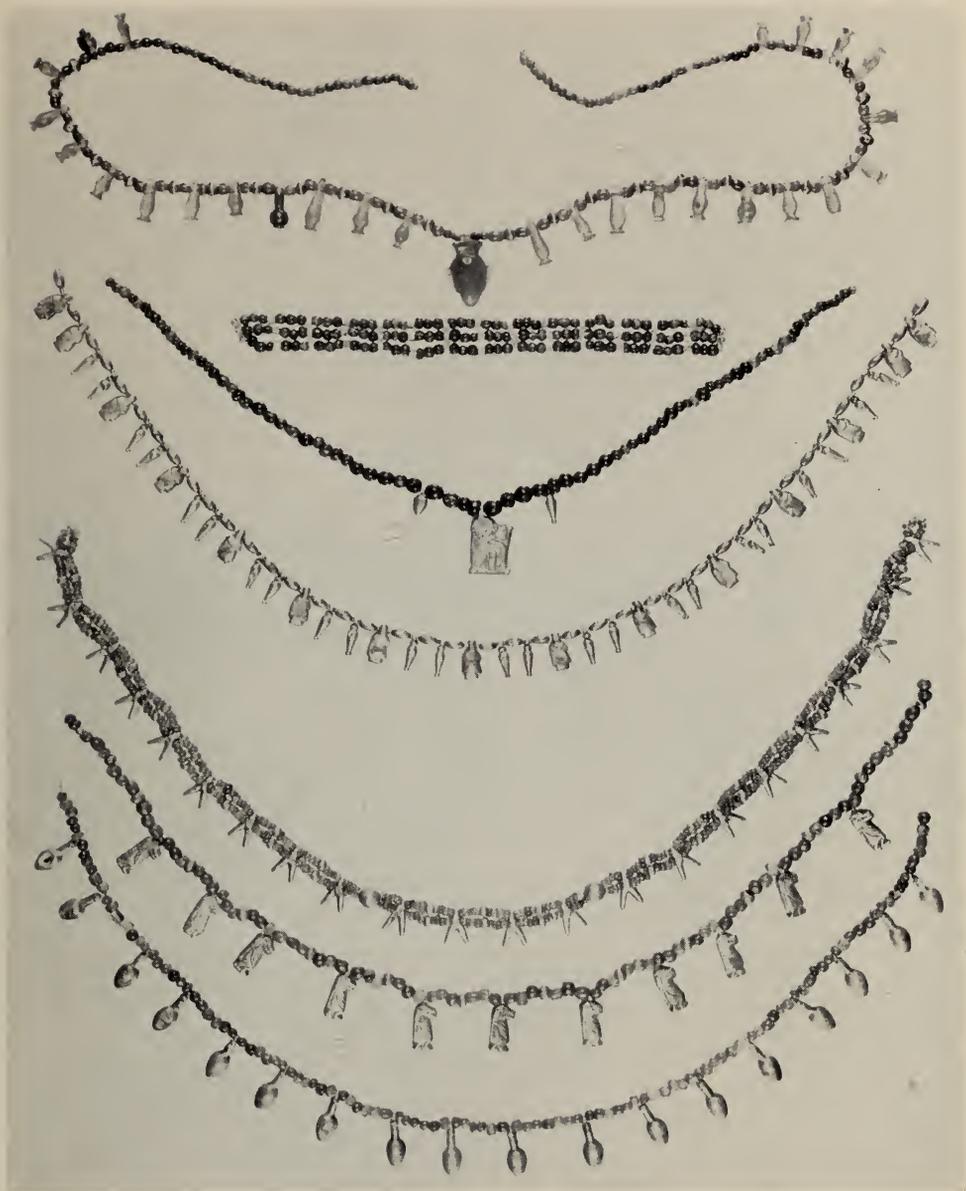


PLATE 3. Egyptian jewellery, New Kingdom.

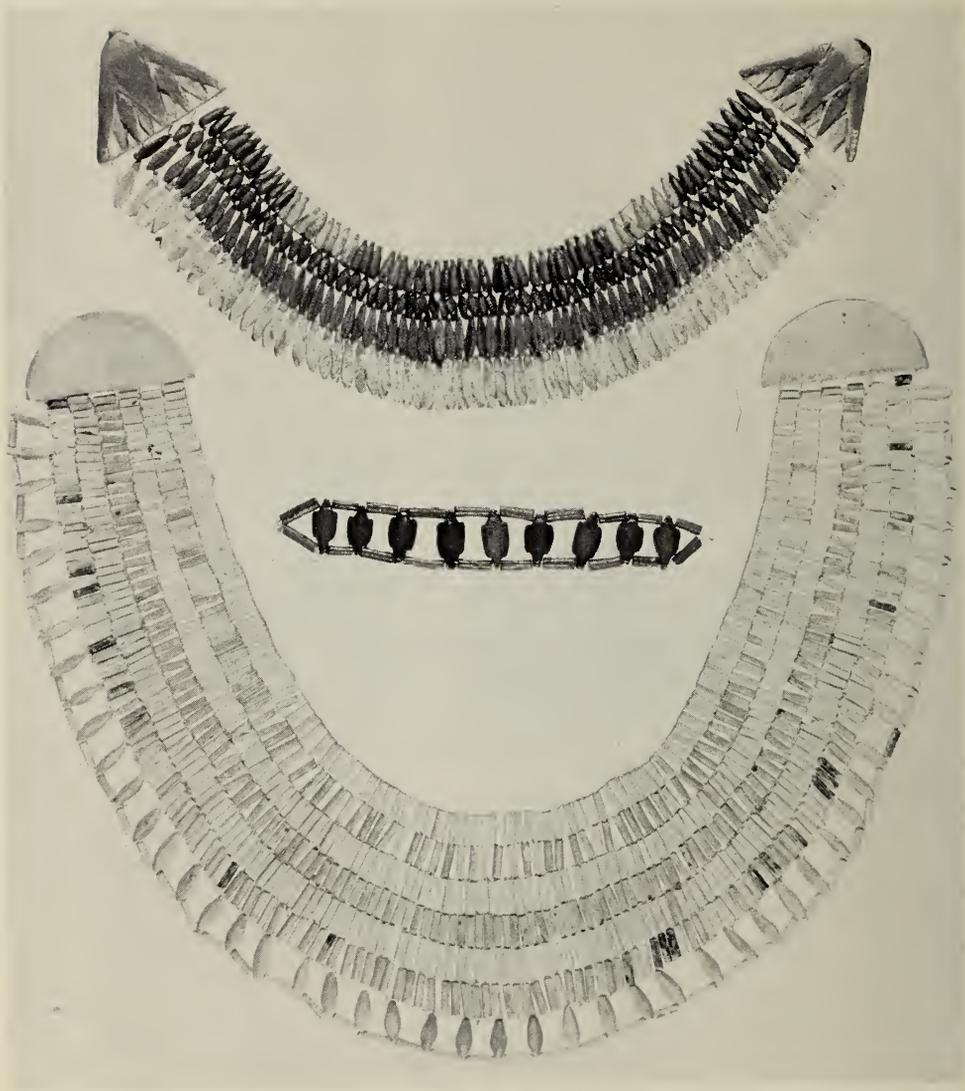


PLATE 4. Egyptian faience work, 12th and 18th Dynasty.

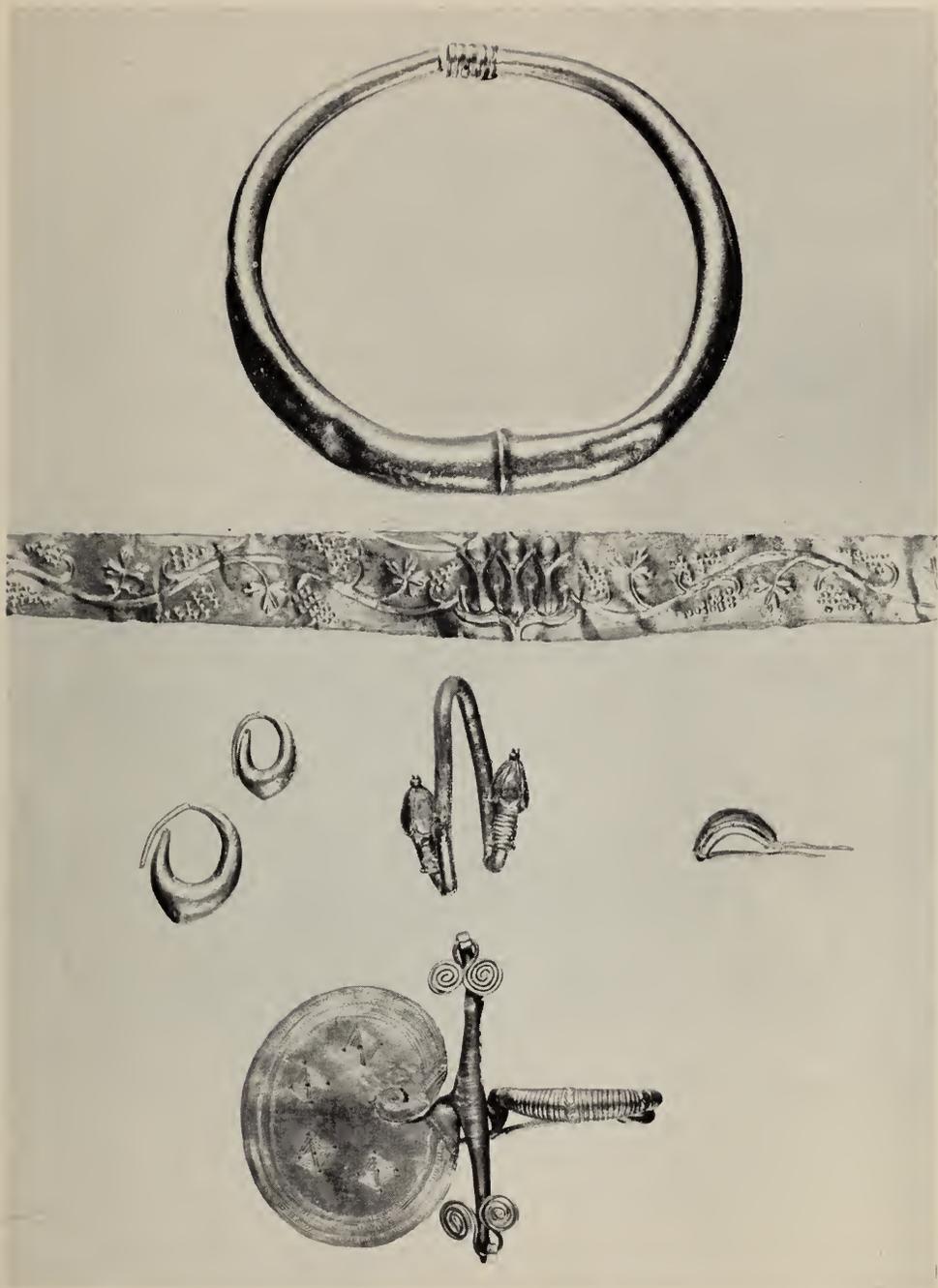


PLATE 5. Mycenaean, early Greek and Italian gold jewellery.

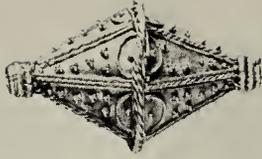
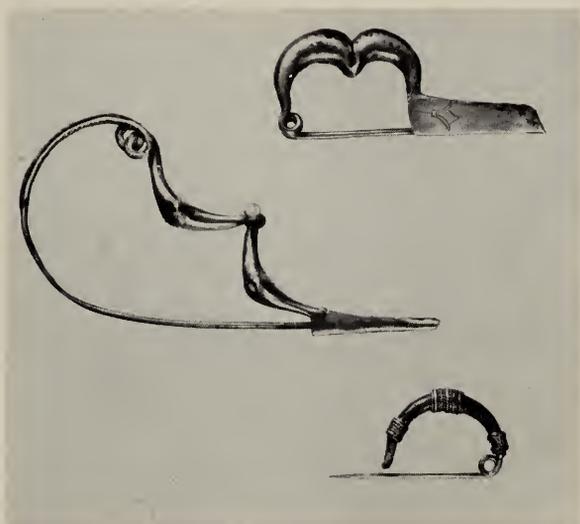


PLATE 6. Early Greek and Etruscan gold jewellery.



(a)



(b)

PLATE 7. (a) Greek silver wreath, (b) Early Greek and Italian silver fibulae.

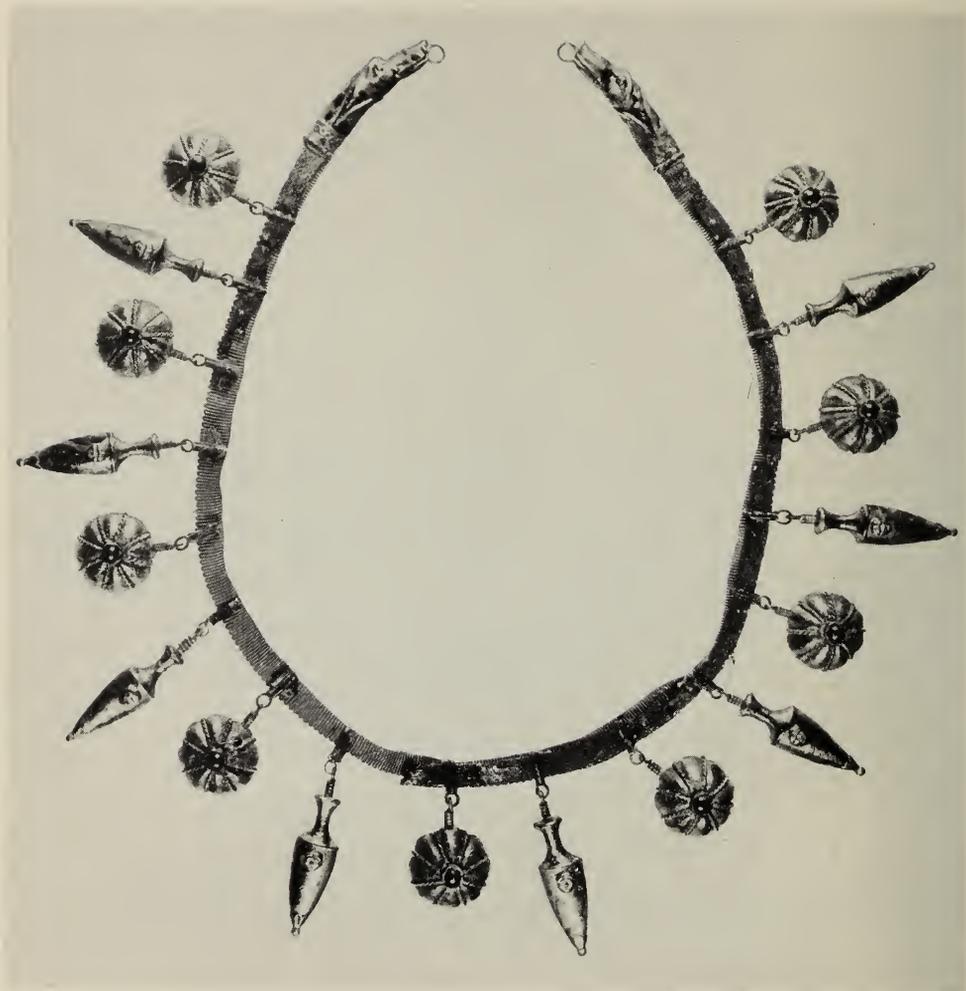


PLATE 8. Silver necklace, 4th or 3rd century B.C., probably from Cyprus.

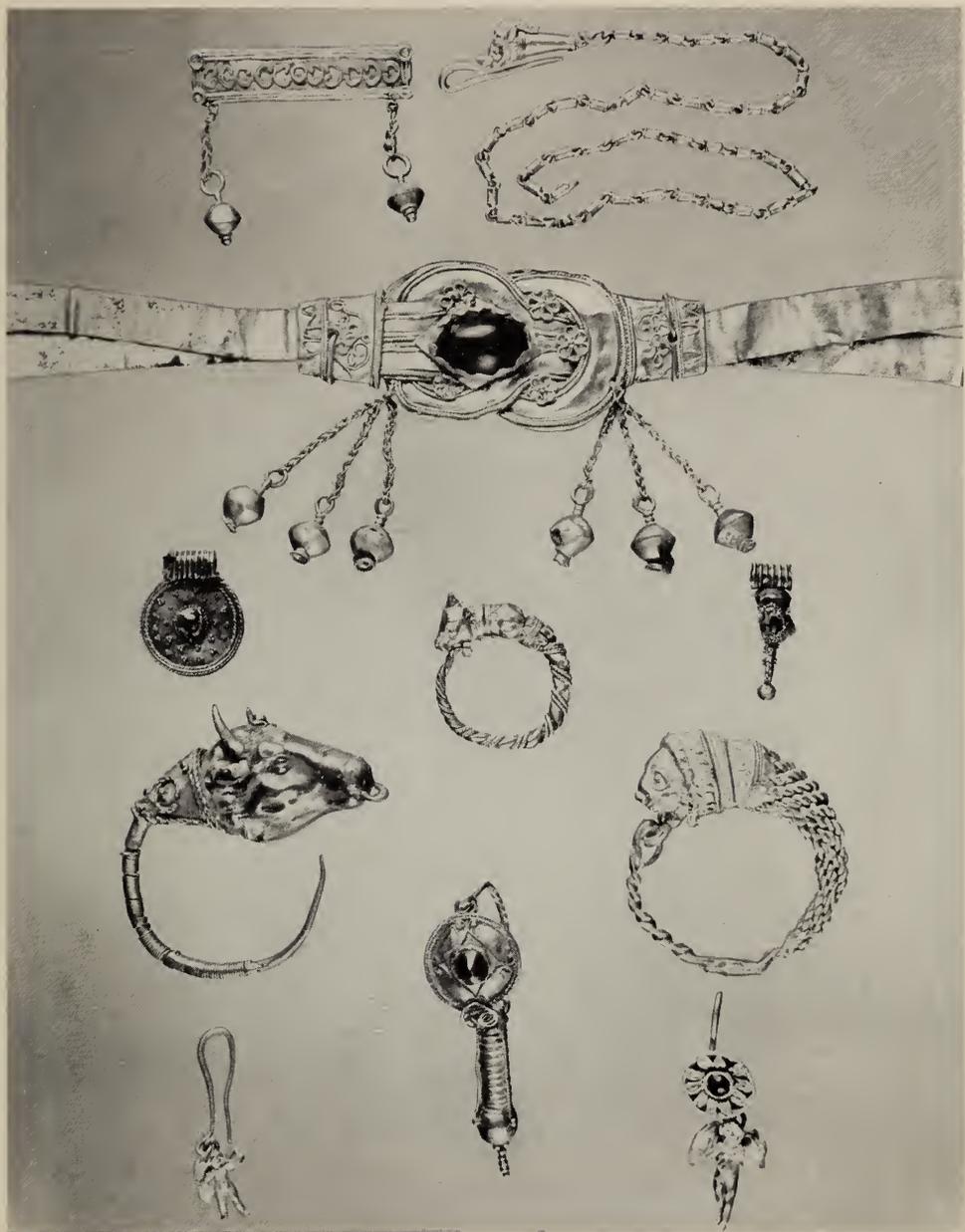


PLATE 9. Gold jewellery of the Hellenistic period.



PLATE 10. Gold necklaces of the Roman period.

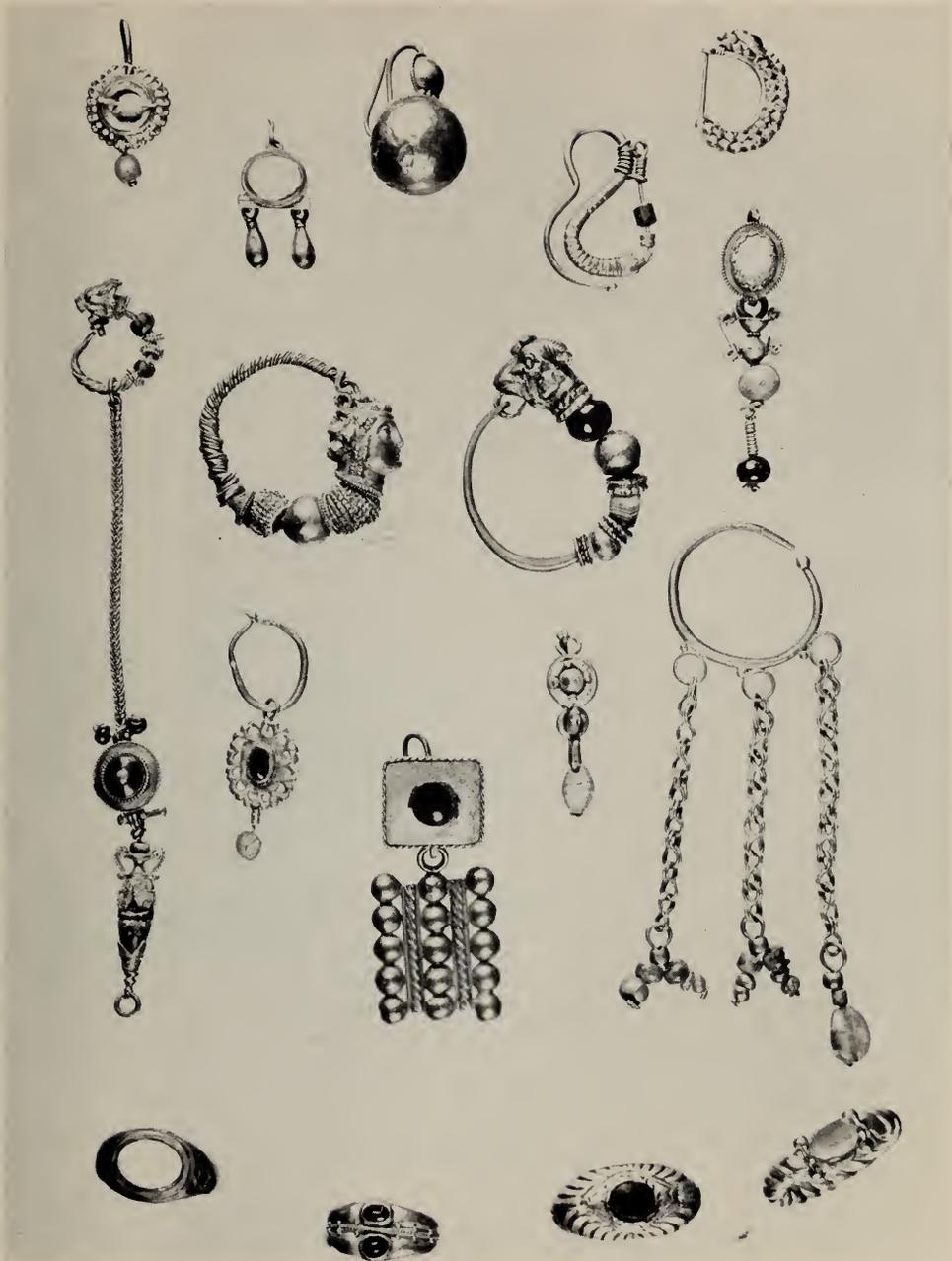


PLATE 11. Gold earrings and finger-rings of the Later Greek and Roman periods.



PLATE 12. Gold and silver bracelets and fibulae of the Roman period.



PLATE 13. Teutonic jewellery made during the disintegration of the Roman world.

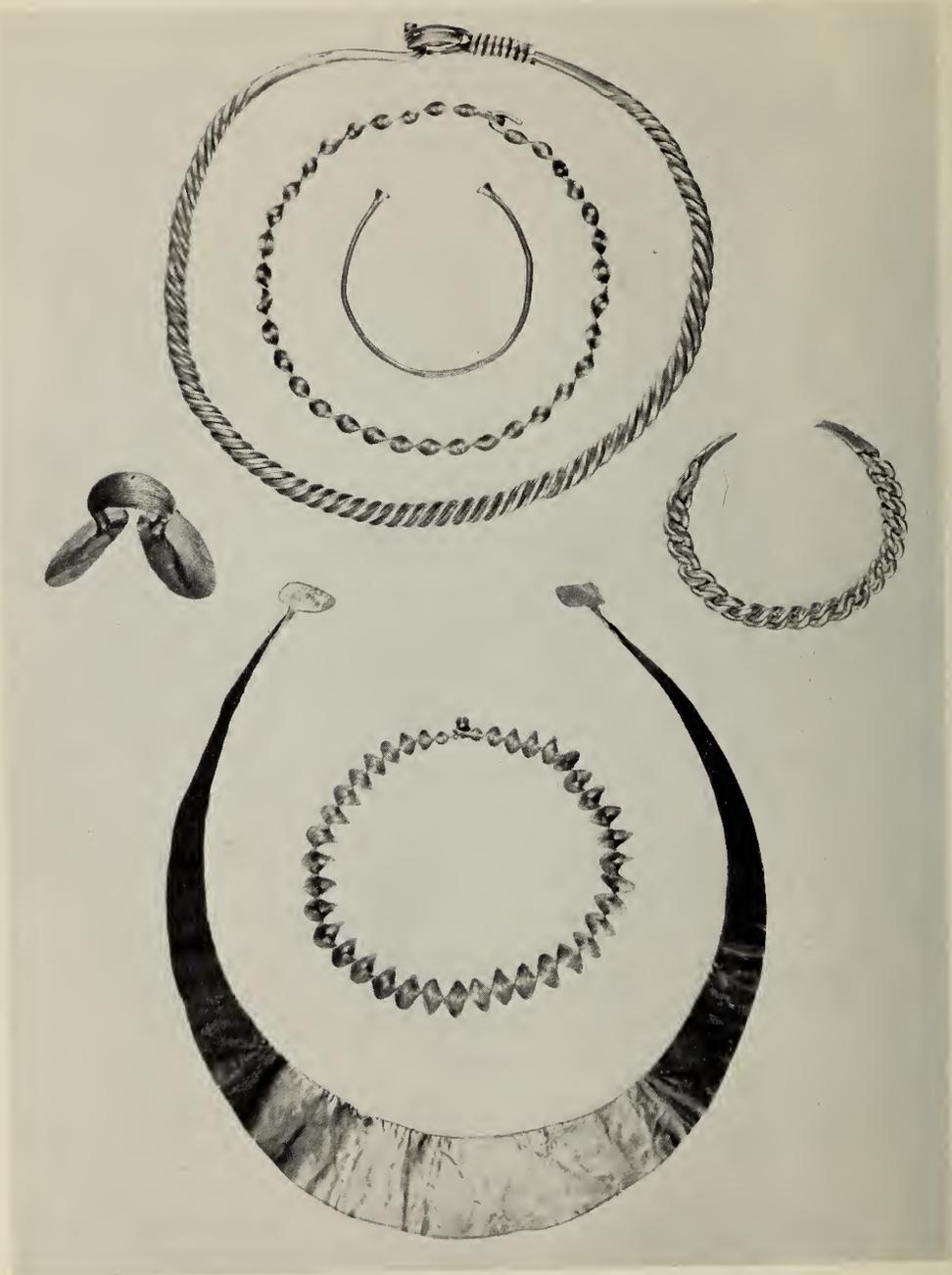


PLATE 14. Gold and silver jewellery of Early Europe.



PLATE 15. Impressions of ancient seals and ring-stones to show the development of gem cutting.

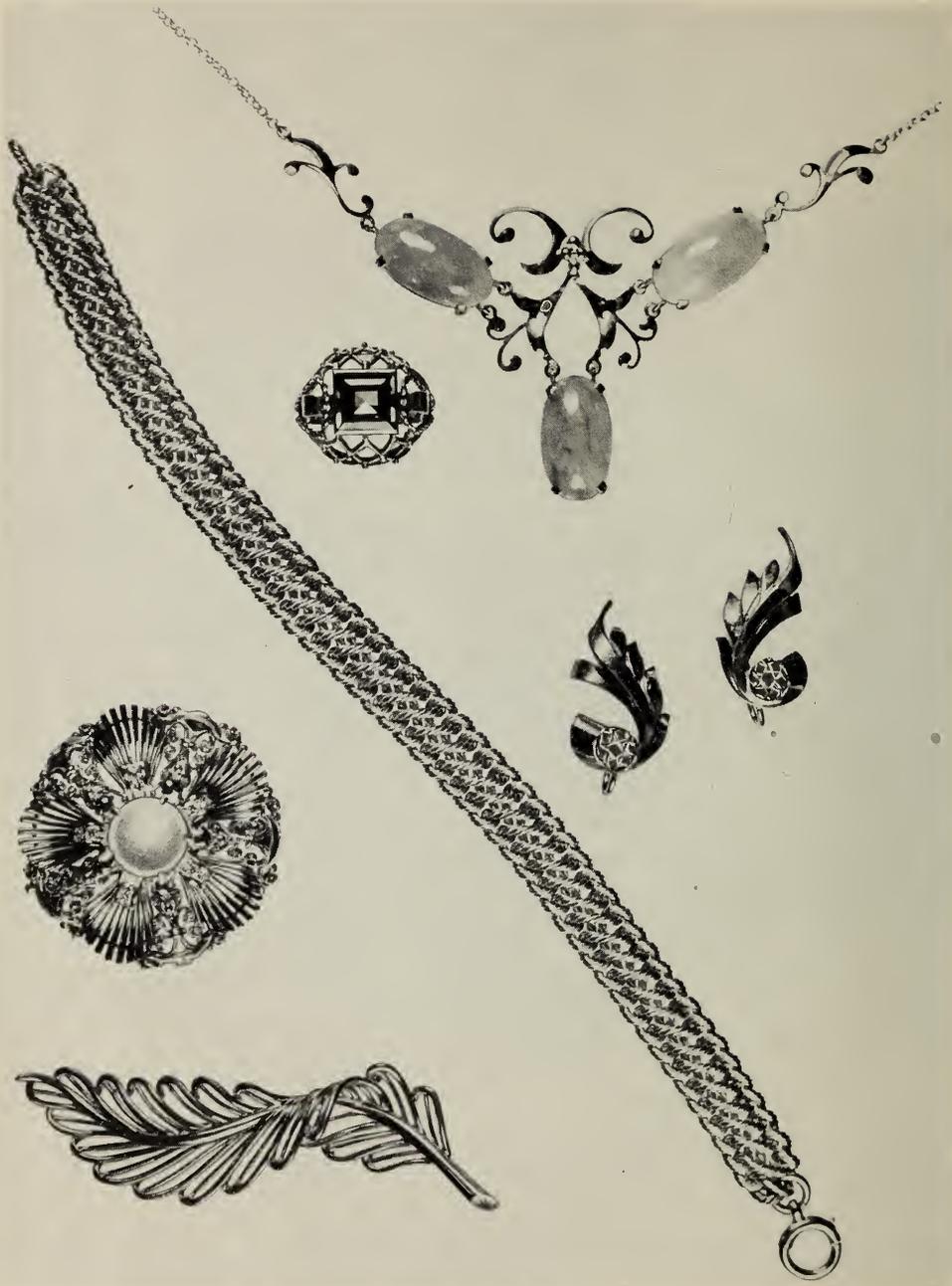


PLATE 16. Jewellery of to-day, to compare with the ancient patterns and methods of workmanship. Kindly lent by Henry Birks and Sons, Jewellers, of Canada.

Dexamenus of Chios, whose original creations we can thus still see and enjoy, though the sculptural and pictorial masterpieces of his contemporaries Phidias and Polygnotus have long since disappeared.

Hellenistic Greece

The whirlwind campaign of Alexander in the third quarter of the fourth century B.C. destroyed the decadent Persian Empire and opened up Greece and the Near East to a mutual flood of influence. The treasures in gold and jewels of oriental courts fell to the Greek conquerors, while their manners were affected by the more luxurious habits of the East; particularly affected were those Greeks who settled in the midst of foreign populations in the new capitals of the Hellenistic kingdoms, Alexandria in Egypt, Antioch in Syria and Pergamon in Asia Minor. Hellenistic jewellery of the last centuries B.C. is consequently much more abundant (Plate 9). It flaunts a wide variety of jewels, and makes up in brilliant effects for any shortcomings in workmanship. The fine plait-work (Plate 8) of the earlier period gives way to linked chains, and the delicate filigree decoration deteriorates. Certain types are turned out in great numbers, especially animal-headed earrings (nos. 51-53) and earrings with pendent Erotes (nos. 54, 56). The cameo gem, with design in relief and hence not adapted for sealing as were the earlier intaglio designs, is introduced, and portraits become as popular as they do in the sculpture and coinage of the period.

Rome

But the Hellenistic empires of the eastern Mediterranean were gradually swallowed up politically by the vigorous and insatiable colossus of the West, a process which was completed by the annexation of Egypt after the death of Cleopatra in 31 B.C. The world's wealth now poured into Rome; Greek and Oriental artists and craftsmen were eager to serve their Roman masters and many moved to Rome itself.

Some of the Romans spent fortunes on jewels, and some became ardent collectors of fine gems, which they sometimes put on display in temples, the ancient museums. With the lack of restraint of the *nouveaux riches*, and encouraged by the luxurious tastes of the Hellenized Orient many Romans followed and exaggerated the tendency toward showy magnificence in jewellery.* More and more the metal-

*With the decline in taste and quality of workmanship between Classical Greek and Roman times compare that between Old Kingdom and New Kingdom Egypt noted above.

work becomes a mere setting for the stones, the execution, though still often fine, tends to grow coarse and hasty, and the delicacy and simple designs of the early period are likely to become ponderous and over-elaborate. The wearing of rings, which in the simple days of the early Republic was severely restricted, was gradually relaxed until in the days of the Empire several might be worn on a single finger and every finger be beringed. The amount and weight of jewellery worn in these later times is already parodied by Petronius of the first century A.D. In his novel, the ex-slave, Trimalchio, who has come to Rome and "made good," delights in displaying to his dinner-guests his own and his wife's jewels, and finally calls for a pair of scales to convince them that his gold bracelet weighs more than ten pounds!

Somewhat less ostentatiously adorned is the lady in our Fig. 13. It is the portrait of a Greek woman who lived in Egypt in the second century A.D.; at death it was placed over the face of her mummified body. The wreath, earrings, and necklaces which she wears are similar to pieces illustrated from our collection in Plates 10 and 11.



FIG. 13

In view of the generally ornate character of jewellery in the Imperial period it may seem strange to us that in general even the Roman went in little for "precious" stones. Of "the big four," the diamond, emerald, ruby, and sapphire, only the last is at all common. Very popular for

jewellery were such semiprecious stones as the garnet, ranging from brilliant red to violet; beryl, of which emerald is a variety; and pearls (in the Imperial period). Less common are the amethyst, carnelian, agate, and onyx. Ancient preference in stones was clearly governed by the intensity and beauty of the colour and lustre, not by the brilliance of reflected light. The reason for this is that even as late as Roman times the ancients had only a rudimentary understanding of the art of faceting. The cutting of transparent stones, such as the diamond, in intricate patterns so that the light is reflected back through the stone in brilliant polychrome flashes, is a comparatively modern development made possible by a better understanding of the character of the crystalline structure of gems and by improved technical methods in conjunction with a rapidly revolving wheel. The ancients largely confined themselves to opaque or translucent gems of pleasing colouring, which they rounded to convenient forms or used in their naturally occurring crystalline form (which rarely exhibits a gem to its best advantage). A certain amount of shaping was done, however; for example dark garnets might be cut rounded on top and concave beneath, the "hollow cabochon" form, while the colour of pale ones might be reinforced by lining the hollow with gold foil.

A greater variety of stones was used for gems than for jewellery. In style the engraved gems continued in the Hellenistic tradition, and the gem-engravers were Greeks. Thus Dioscurides made portrait gems for Augustus, and some of his signed surviving works attest his great technical skill. Cameo cutting in the early Empire produced some remarkable achievements, most spectacular being a series of cameos of very large size representing imperial subjects. Typical is the great Paris Cameo of A.D. 17, measuring some twelve by ten-and-a-half inches, and cut out of a five-layered sardonyx. The main register represents the emperor Tiberius (in the guise of Jupiter) surrounded by his family; above are deceased members of the Royal House, including Augustus; while at the bottom are shown conquered peoples.

One last class of gems may be briefly mentioned, a class which is represented by several interesting specimens in our Museum. They are commonly referred to as "Gnostic Amulets" but better termed simply "Magical Amulets." In the Roman Imperial period they were made in large numbers, evidently to satisfy a strong popular demand, and the workmanship is commonly hasty and careless. As we have seen above, precious and semiprecious stones were considered to have magical powers or properties from earliest times. The Greek word "amethyst" is a simple illustration of this, for it means "without-drunkenness"; it was a charm against intoxication, its supposed powers

being suggested probably by its wine-like colour. These late Roman gems combine the powers resident in the stones themselves with the force of mystical symbols engraved on them, and with the efficacy of the written word. The inscriptions occur either in some simple formula, such as "Protect from all Evil," in the form of lengthy abjurations or lists of "powerful" deities, or in occult phraseology which often degenerates into sheer mumbo-jumbo.

Conclusion

The ancient world came to an end with the disintegration of the Roman Empire. As the power and prestige of Rome declined and more primitive peoples began to assert themselves culturally, classical artistic traditions blended with barbaric forms. The hybrid ornaments that flourished in this period of turmoil deserve mention before our short account of ancient jewellery is ended. For during and long before Rome's downfall, northern barbarians, who finally built a new civilization—our own—on the ruins of the old, produced gold, silver, and bronze jewellery that repeatedly influenced the sophisticated styles of their civilized neighbours, and infused new life into worn-out traditions. The influence was usually mutual; primitive peoples have always tended to be dazzled by the products of cities, and corrupted by commercial contacts with luxury. Since the beginning of history a series of impacts between highly developed centres and outlying peoples created new forms of ornament out of the old; we have seen, for instance, how the more primitive bronze-workers of Luristan adapted old traditions to a new and distinctive style of ornament; and how the Greeks, whose primitive ancestors had entered the country from the north, assimilated the motifs and techniques of the civilizations long established in the eastern Mediterranean, to create masterpieces of an entirely different kind. There were similar movements on the southern fringes of the civilized world, as desert tent-dwellers periodically swarmed into long-settled fertile areas and likewise influenced the development of the arts and crafts. The lightning advance of the Arabs under the prophet Muhammad (A.D. 571–632) and his successors is the most spectacular of these movements. The Arabs, who quickly assimilated the mixed Greek and oriental culture with which they came in contact, produced a brilliant civilization of their own in the early Middle Ages. Although the metal-working traditions of the Arabs later influenced the West, they are not in the main current of our inheritance from the ancient world, and we must return to the north.

The art of enamelling was brought to the civilized world by the barbarian Celts. They probably invented it about 300 B.C. as a cheap substitute for coral: the earliest specimens of this enamel are coral-red, and they had previously used coral for inlay. Britain was a flourishing centre for enamel-work during the hey-day of the Roman Empire (1st-3rd century A.D.). The Celtic craftsmen used opaque coloured glass which they powdered and placed in cells scooped from the surface of a bronze ornament (or occasionally an iron one). This process of cutting away the surface is known as *champlevé*, to be distinguished from *cloisonné* which is the formation of cells by adding partitions of wire or sheet metal. Five enamelled brooches, probably all from Britain, are shown in Fig. 14.

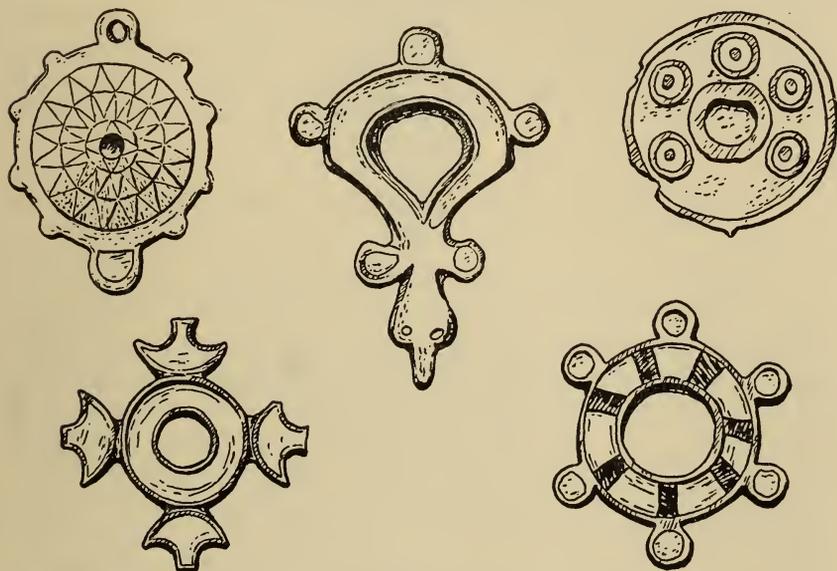


FIG. 14

When the Roman empire was finally divided after the death of Constantine (A.D. 337) Christianity became a strong cultural influence in both the East and the West, and contributed to the blending and maturing of regional styles. The Byzantine (Eastern) Empire developed a semi-oriental civilization of its own that flourished during the Middle Ages. The craftsmen of Coptic (Christian) Egypt, in the fifth, sixth, and early seventh centuries, produced a provincial type of Byzantine jewellery with a distinctive blend of Greek, Persian and

earlier Egyptian styles. Fig. 15 is a Coptic necklace of bone beads with bone pendant; it is shown for comparison with the jewellery of ancient Egypt's great periods.



FIG. 15

Teutonic jewellery of Western Europe is reproduced on Plate 13. This is roughly contemporary with the Coptic period in Egypt and like the latter shows the influence of Christianity. The Teutons came from the East in a fresh wave of migration, with jewellery traditions that were quite different from those of their kinsmen the Celts. Teutonic metalsmiths brought to the West the technique of inlaying metal with slices of stone, usually garnet, and coloured glass (nos. 95-97). They liked to combine overlays and inlays of different materials, and their lavish linear decoration in engraved and repoussé work shows a mixture of very debased oriental motifs and newer borrowings from Rome. At the end of the Roman Empire the fibula, which had gradually evolved into a fantastic variety of forms, underwent the final stages of distortion at the hands of the Teutons (no. 88).

Before their trek to western Europe the Teutons may have acquired their gaudy tastes in jewellery from Achaemenid Persia (7th-5th B.C.), and the tendency towards luxurious ornament would no doubt have been stimulated later by contact with Roman extravagance. The jewellery of the barbarians who were not immediately influenced by these empires is strikingly different. The gold and silver ornaments in Plate

14, which are dated variously and without certainty, are impressive in their simplicity. Ireland was an important centre of gold-working in the second millennium B.C. (see nos. 101 and 103); the gold "dress-fastener" (no. 101) is particularly fine. The Museum also possesses a large number of simple but attractive and ingeniously made bronze ornaments of the northern barbarians (not illustrated). Most of these were probably made in the early first millennium B.C., and are closely related to Greek bronze ornaments of the same period. Indeed the "spectacle brooch" shown in Fig. 11 belongs to a type that was well known in Austria, where it was first discovered, but which has often been found in Greece and also in southern Italy.

Modern jewellery exemplified by the pieces shown in Plate 16 can gain little by slavishly copying ancient designs, for design of lasting interest must be inspired by the tastes and requirements of modern life. The slow adaptation of styles by one nation from those of another, as described in these pages, may help to teach us the true importance of our heritage from ancient jewellery.

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DESCRIPTION OF PLATES

PLATE 1. EGYPTIAN

Above

1. STRING OF AMETHYST BEADS, barrel-shaped, graduated, with 10 gold spheroid beads spaced along it, and in the middle an amethyst scarab engraved with a figure of the goddess Ta-weret. The gold beads were made of thick sheet-metal punched into a hemispherical die. The thread-holes were punched from the outside in the centre of paired hemispheres, after the latter were soldered together; the surface of the bead was burnished axially, 12th Dynasty (20th–19th century B.C.).
L. of scarab $\frac{7}{8}$ " 922.8.25

2. STRING OF BLUE FAIENCE BEADS, alternately barrel-shaped and discoid, and 14 hippopotamus heads of carnelian, amethyst, and green jasper, strung at regular intervals. Probably 1st Intermediate Period (23rd–21st century B.C.).
L. of largest head $\frac{3}{4}$ " 922.8.23

3. BRACELET; 26 beads in the form of conus shells, of carnelian, lapis lazuli, turquoise, and gold, strung in double rows held together near the middle by two carnelian beads in the form of recumbent lions. At each end are three gold cylinder beads. The gold shells and the cylinders are of gold-leaf over a moulded pottery core. The detail of the shells was probably tooled directly over the core. From Harageh. 12th Dynasty (20th–19th century B.C.).
L. of each lion $\frac{1}{2}$ " 910.81.1

Middle

4. STRING OF HEMATITE BEADS, graduated, ranging in shape between barrels and spheroids. 12th Dynasty (20th–19th century B.C.).
L. of middle bead $1\frac{1}{16}$ " 910.81.2

Below

5. STRING OF BEADS AND AMULETS; carnelian disks and amethyst barrels and spheroids; strung at irregular intervals are 15 amulets of carnelian, amethyst, and green felspar, in the form of a claw (middle), legs, hippo-

potamus heads, falcons, and "female sphinxes." 11th or 12th Dynasty (22nd–19th century B.C.).

L. of largest amulet (the claw) $1\frac{1}{8}$ "
922.8.31

6. STRING OF BEADS; amethyst spheroids and barrels, roughly graduated and interspersed with green felspar amulets: a figure of the goddess Ta-weret, an eye of Horus (*udjat*), three falcons, and two "female sphinxes." 12th Dynasty (20th–19th century B.C.).
L. of Ta-weret 1" 922.8.28

PLATE 2. EGYPTIAN

Top row

7. PENDANT in the form of a shell. Electrum, cut and hammered out of a single piece of the metal, including the suspension loop. Probably 12th Dynasty (20th–19th century B.C.).
L. $\frac{3}{8}$ " 950x205.32

8. FRAGMENT OF CLOISONNÉ WORK: a bird's wing. Lapis lazuli, turquoise, and carnelian inlay, in cells formed by strips of sheet gold soldered on to a gold plate. The inlay, some of which is missing, is exceptionally delicate; the feathers in the top section are scarcely more than $1/16$ " long. 12th Dynasty (20th–19th century B.C.).
L. of fragment 1" 910.82

9. PENDANT in the form of a symbol for the crown of Upper and Lower Egypt. Cut, hammered and engraved out of sheet-gold, with a gold suspension-loop soldered to the back. 6th–11th Dynasty (about 2400–2000 B.C.).
L. $\frac{3}{8}$ " 910.46.374

2nd row

10. EARRINGS (pair). Gold-foil plated over solid copper. A simple hoop of oval section broken by a narrow slit. 18th or 19th Dynasty (16th–14th century B.C.).
D. $\frac{3}{8}$ " 910.83.1

11. EARRINGS (pair). Gold; a ram's head beneath a crescent. The head and the crescent were formed separately

with dies, each in two identical parts (front and back); there is a core of a greenish composition, probably faience; the seams were carefully soldered and the repoussé detail was finished with chasing. Probably 21st–22nd Dynasty (11th–8th century B.C.).

L. 1¼" 948.34.131

12. TWO ROSETTES. Sheet-gold, punched between an upper and a lower die; three perforations at the edge, for attachment to a wig or to a textile (such ornaments were used in quantity). 12th Dynasty (20th–19th century B.C.).

D. ¾" 910.83.2–3

3rd row

13. FINGER-RING. A scarab of green-glazed steatite mounted on a hollow electrum ring. The hoop has a carefully soldered seam along its inside and terminates at each end in a hollow spheroid bead soldered to it. The scarab, which is set in an electrum band at the angle of the base, is attached by means of a wire threaded through its perforations and through the beads, and secured by winding around the ends of the hoop. The scarab is inscribed with two hieroglyphic signs ('nh r) within a scroll border. Early 18th Dynasty (16th century B.C.).

L. of scarab ½" 910.47.131

14. FINGER-RING. A rectangular plaque of lapis lazuli mounted on a solid silver ring. The plaque is attached by means of a silver wire secured by winding around the ends of the hoop. The plaque is inscribed on one side with the name of Ramesses II and on the other with the name of his Hittite queen. 13th century B.C.

L. of plaque ¾" 932.13.1

15. FINGER-RING. An oval plaque of blue faience mounted on a hollow gold ring; the form and technique of the ring and the attachment of the plaque are similar to no. 13 (above) but the terminal beads are hemispherical. The plaque, which is set in a gold band, is inscribed on each side with the pre-nomen of Tuthmosis III (Men-kheper-Re). The name of this king is sometimes found on later scarabs and seals

but the object can be assigned to the period of his actual reign by the style and by the quality and colour of the glaze. Early 15th century B.C.

L. of plaque (with setting) ¾"

910.47.1

Bottom row

16. FIGURINE of the god Ptah. Gold, cast solid by the lost-wax process, except for the eyelet at the back of the head, and finished with engraving. The god is fully modelled in the round and stands on a small rectangular base cast in one piece with the figure. Probably 26th Dynasty (7th–6th century B.C.).

L. ⅞" 948.34.77

17. FIGURINE of the god Ptah. Hollow gold; the back and front halves of the figure were worked separately into dies, soldered and finished with chasing; the small rectangular base is made separately in two pieces and soldered. The figure is fully modelled in the round; it has no device for suspension, and was probably designed for the tomb. Persian Period or early Ptolemaic (5th–3rd century B.C.).

L. 1¾" 948.34.78

18. FIGURINE of the goddess Nephthys. Silver. The goddess stands on a small rectangular base and against a narrow plinth pierced for suspension; the arms are undercut; the object is cast by the lost-wax process in one piece, including base and plinth, and finished with engraving. Ptolemaic Period (4th–1st century B.C.).

L. ¾" 948.34.80

PLATE 3. EGYPTIAN

19. STRING OF BEADS AND PENDANTS. Carnelian "poppy-fruit" pendants spaced regularly between groups of three beads, each group consisting of a gold biconical bead between smaller carnelian spheroids; in the middle of the string a large carnelian pendant in the form of the hieroglyphic heart. The gold beads were made out of sheet-metal: the two halves were worked separately into a die and soldered at the medial angle of the bead. 18th Dynasty (16th–14th century B.C.).

L. of heart pendant ¾" 910.8.3

20. BRACELET. Three rows of small spheroid garnet beads are held together at intervals of every six beads by gold spacers, each consisting of three short cylinders soldered together. On each string and midway between each spacer are three detached gold cylinders of the same size as those forming the spacers. The gold cylinders consist of a narrow strip of sheet-metal with soldered seam. Probably 18th Dynasty (16th–14th century B.C.).

L. of object 5 3/4" 910.81.5

21. STRING OF BEADS WITH PENDANTS. Garnet spheroid beads, graduated. In the middle a gold pendant in the form of a lion-headed goddess seated on a throne; at each side a smaller gold pendant, one a heart (as in no. 19) and the other a tall vase (*hs*). The goddess is a plaque made of sheet-gold with a core of undetermined material; the front has embossed detail; the back is a plain sheet soldered to it. The two smaller pendants are also hollow; all three are suspended on separately formed loops of sheet-metal. 18th or 19th Dynasty (16th–13th century B.C.).

L. of large pendant 3/4" 922.8.26

22. STRINGS OF BEADS AND PENDANTS. All gold. Pendants in the form of *bulti* fish and *hs* vases, two vases between every fish, and a barrel-shaped bead between every two pendants; each of the above elements is separated by a minute disk bead. The technique of the pendants is similar to no. 21 except that they have no core and the fish have a vent-hole in the back (necessary during soldering) and their thread-holes are punched through the top of the object itself. The barrel beads were made in the same technique as the spheroids of no. 1. 18th Dynasty (16th–14th century B.C.).

L. of pendants 1/2" 910.81.6

23. STRING OF BEADS. Two strings, mostly carnelian disks, pass at regular intervals through gold beads in the form of a fly; the strings pass through the fly in two separate thread-holes; midway between each fly are two gold ring-

beads, except in two spaces near the middle of the string where they are replaced by a large gold spheroid. The flies are similar in technique to the pendants in no. 22; the spheroids are similar to no. 1; the ring-beads are convex and fluted and are of gold-leaf over a hard faience or clay composition. 18th Dynasty (16th–14th century B.C.).

L. of flies 7/16" 910.81.7

24. STRING OF BEADS AND PENDANTS.

Gold pendants in the form of the goddess Ta-weret; between each of these are six carnelian spheroid beads and a single fluted gold spheroid bead. The technique of the pendants is similar to no. 21; the core is of a greenish composition, probably faience. The gold spheroids are similar in form and technique to the fluted beads in no. 23, but larger. 18th Dynasty (16th–14th century B.C.).

L. of pendants 3/8" 922.8.45

25. STRING OF BEADS AND PENDANTS;

hollow gold pendants, perhaps in a simplified form of the hieroglyph for "good" (*nfr*); between each of these are six carnelian barrel-shaped beads. The pendants are similar in technique to no. 22, with small vent-holes; they have separately formed eyelets. 18th Dynasty (16th–14th century B.C.).

L. of pendants 3/8" 922.8.27

PLATE 4. EGYPTIAN

Above

26. COLLAR. Four rows of faience beads in the form of fruit, leaves, and flowers, with eyelets at top and bottom of each bead. *Top row*: dates, in groups of blue, yellow, green, and red; *2nd row*: lotus buds, white with yellow sepals. Each of the faience end-pieces is in the form of a lotus flower and is moulded in low relief and coloured white, yellow, blue, and green; it has six diagonally pierced thread-holes to receive the collar-threads and a single thread-hole for a simple string of beads at the back. From Tell el-Amarna. Late 18th Dynasty (14th century B.C.).

W. of end-pieces (at petal tips) 2 3/4" 910.48.15

1st row - blue
2nd row - white
3rd row - yellow
4th row - green

Middle

27. BRACELET(?). Bright blue faience. Nine large beads slightly convex on the outside and roughly rectangular in outline with projection for thread-hole at each end, through which passes a connecting string of cylinder beads. Early 18th Dynasty (16th-14th century B.C.).
L. of large beads 1" 910.81.4

Below

28. COLLAR. Six rows of faience cylinder beads, and a spaced row of drop-shaped beads with cylinder beads connecting their outer ends. The drop-shaped beads have thread-holes at each end; the cylinders were threaded axially. The colours, now faded, were blue, green, red, and perhaps white, and are arranged according to rows. The faience end-pieces are plain semi-circular plaques with seven diagonally pierced thread-holes to receive the collar-threads and a single thread-hole for a simple string of beads at the back. From Harageh. 12th Dynasty (20th-19th century B.C.).
D. of end-pieces 2 3/8" 910.81.8

PLATE 5. MYCENAEAN, EARLY GREEK AND ITALIAN

Top row

29. BRACELET. Gold. The Museum possesses another similar bracelet, and a third from the same set is now in the Walters Art Gallery, Baltimore. Hollow, made in two pieces soldered along the inner circumference and at the point of greatest diameter, and joined by a ribbed collar at the small ends. Said to have been found at Mycenae. Mycenaean Period (about 1400-1100 B.C.).
Greatest D. 3" 951.166.2

2nd row

30. DIADEM. Gold. Design of grapevine with central pattern resembling the Egyptian triple *atef* crown, done in repoussé. Possibly Ptolemaic (3rd to 1st century B.C.).
L. 14" 950x205.5

3rd row

31. EARRING (pair). Gold. "Leech" type, East Greek. 7th century B.C.
L. 1/2" 950.205.2

32. EARRING (pair). Gold. "Leech" type, similar to the preceding. East Greek. 7th century B.C.
L. 3/4" 950.205.1

33. EAR-PENDANT (pair). Gold-plated over bronze. Two terminals end in hollow buds whose petals are outlined in beaded wire. Greek or Cypriote, about 5th century B.C.
L. 1 1/4" 950x205.22

34. FIBULA (safety-pin). Gold. "Leech" type. Decorated with beaded wire. Italian; about 6th century B.C.
L. 1" 918.3.97

4th row

35. FIBULA. Gold, made in one piece. Bow (of "leech" type), cross-bar, and catch-plate decorated with fine incised patterns; double-spirals hung from the ends of the cross-bar. Italian, about 7th century B.C.
L. 2 3/4" 918.3.93

PLATE 6. EARLY GREEK AND ETRUSCAN

Above

36. BEAD. Pale gold. Biconical bead decorated with fine granulation and wire appliqué. Probably East-Greek, 6th century B.C.
L. 1 1/8" 950.205.4

Middle

37. EARRING (pair). Gold. In form of hollow cylinder ("a baule" type). Decorated with fine granulation and filigree work. Etruscan, 6th century B.C.
L. of cylinder 3/4" 918.3.94

38. EARRING. Gold. "Leech" type. Decorated with beaded wire and small bosses in repoussé. Greek, about 7th century B.C.
Greatest D. 3/4" 918.3.95

39. EARRING (pair). Gold. "Leech" type. Decorated with five rows of filigree looped around granulations. Greek or Etruscan, about 6th century B.C.
L. 1 1/16" 950.205.3

Below

40. FIBULA. Gold. On the bow a recumbent lion with protruding tongue. Bow and lion hollow; fine granulation and appliqué work. Etruscan, 7th to 6th centuries B.C.

L. 3½" 918.3.96

PLATE 7. GREEK AND ITALIAN

Above

41. WREATH. Silver. Bay leaves with five-petaled flower at centre front with anthers in form of gold granules; small buds with gold calices around the wreath. Greek period.

D. 8½" 906.3.1

Below

42. FIBULA. Silver. Lotus engraved on catch-plate. Italian type, 6th century B.C.

L. 3" 918.5.34

43. FIBULA. Silver. Italian type, about 7th century B.C.

L. 4½" 918.5.33

44. FIBULA. Silver. Catch-plate missing. Greek, 5th to 4th century B.C.

L. 1½" 918.5.35

PLATE 8. GREEK

45. NECKLACE. Silver. Partly preserved flat band of fine plaited silver; convex rosettes with garnet centres alternate with vase-form pendants decorated with gilt gorgon-heads; dog's head terminals. Said to have been found in Cyprus. About 3rd century B.C.

L. about 20", as restored 952x185.1

PLATE 9. HELLENISTIC

Top row

46. ORNAMENT. Gold. Of unknown use. Greek, about 3rd century B.C.

W. 1½" 952x185.2

47. CHAIN. Gold. Terminal in form of an antelope's head; each link consists of a small cylinder with a loop at each end. Greek, about 3rd century B.C.

L. 8" 952x185.3

2nd row

48. DIADEM. Gold. Hercules knot at crossing of two gold bands; central garnet with filigree and appliqué decoration; six pomegranate pendants. Greek, 3rd century B.C.

L. about 19½" 950.205.11

3rd row

49, 50. DISK PENDANT and CONICAL PENDANT from the same ornament, probably a necklace. Gold. Ornamented with fine granulation and small garnets. Said to be from Palestine. Probably Greek, about 3rd century B.C.

D. of disk ½" 952x185.4, 5

51. EARRING (pair). Gold. Bull's head (cast solid). Greek; about 3rd century B.C.

Greatest W. ¾" 950.205.7

4th row

52. EARRING (pair). Gold. Bull's head; hollow, decorated with filigree and large granules; ring bound with fine wire. Greek; about 3rd century B.C.

Greatest W. 1½" 950.205.6

53. EARRING. Gold. Lion's head (cast); ring of twisted gold wire. Greek; 3rd century B.C.

D. 1¼" 918.3.98

Bottom row

54. EARRING. Gold. Cupid holding saucer. Graeco-Roman; about 1st century B.C. to 1st century A.D.

H. of Cupid ¾" 950.205.22

55. EARRING. Gold. Decorated with filigree and central garnet. Probably Hellenistic period (3rd to 1st centuries B.C.).

L. 1½" 952x185.6

56. EARRING (pair). Gold. Disk decorated with filigree rosette and central garnet or red glass. Greek; about 3rd century B.C.

Height of Cupid 9/16" 950.205.23

PLATE 10. ROMAN

57. NECKLACE. Gold. Fine plaited chain with openwork gold pendant. Roman; 1st to 2nd century A.D.

L. 15" 952x185.7

58. CHAIN WITH PENDANT. Gold. Large links of bent double-loop form terminating at each end in a corrugated cylinder to which is attached a large disk ornament of free-hand hammered sheet-gold with Gorgon's head bordered by continuous olive branch. Attached to the chain, opposite the gorgon disk in our photo, is a small bust of Isis (cast solid); it is not certain that it does belong to the chain, but has been so attached on the analogy of a very similar bust and chain with gorgon disk in the Benaki Museum, Athens (no. 102). Roman; about 2nd century A.D.

L. of chain with disk 14" 952x185.23;
950x205.35 (bust)

59. NECKLACE. Gold. Chain with 10 pairs of pearl pendants and two central spherical gold pendants; leaf terminals of stamped sheet-gold. Roman; about 2nd century A.D.

L. 10½" 952x185.8

60. NECKLACE. Gold. Composed of 28 volute-form elements mounted on continuous chain. Volute elements stamped from sheet-gold. Roman; about 2nd century A.D.

L. 14¾" 952x185.24

61. CHAIN AND PENDANT. Gold. Fine plaited chain with snake's head terminals. Roman; 2nd-3rd century A.D. The pendant, of colourless crystal in sheet-gold mounting, probably does not belong to the chain but is of the same period; it was found in Egypt.

952x185.10
L. of chain 12½" 952x185.9

62. NECKLACE. Gold clasp fastens to eight-spoked wheel with filigree work. Hexagonal green crystals (beryl) on a gold chain. Roman; about 3rd century A.D.

L. 17" 910.81.9

PLATE 11. LATE GREEK AND ROMAN

Top row

63. EARRING (pair). Gold. Concave disk with openwork border containing a

pearl bead; another pearl as a pendant on rigid wire beneath. Roman; 2nd-3rd century A.D.

D. of disk 7/16" 952x185.11

64. EARRING (pair). Gold. Main setting missing and restored; two gold pendants in form of elongated drops. Roman; about 3rd century A.D.

W. of disk. 7/16" 910.41.9

65. EARRING (pair). Gold. Large hollow bead with small disk masking junction of attachment. Roman; 1st to 2nd century A.D.

D. of bead ⅝" 952x185.12

66. EARRING (pair). Gold; small green beryl bead. Roman; about 1st century A.D.

L. 1¾" 952x185.13

67. EARRING. Gold. Composed of soldered rows of small gold globules; at one end a small garnet. Possibly Syrian work; 1st century B.C. to 1st century A.D.

L. 13/16" 910.3.2

2nd row

68. EARRING (pair). Gold. Hoop with lynx-head terminal, granulated circlets and bead; from which hangs a plaited chain with pendant consisting of disk with central garnet and two small garnets above, and a two-handled vase whose body is formed by an agate. Roman; about 2nd century A.D.

L. 4¾" 952x185.14

69. EARRING. Gold. Hoop of spirally twisted wire strung with one smooth and two knurled beads and two granulated circlets; terminates in Maenad head, whose hair is decked with rows of ivy-leaves and base of neck finished with rows of granules. The type continues into Roman times but this seems to be of Greek workmanship of perhaps 3rd century B.C.

D. 1 7/16" 918.5.30

70. EARRING (pair). Gold. Smooth hoop ornamented with gold, agate, and red glass (?) beads; goat's head terminal. Roman; about 1st century A.D.

Greatest W. 1 5/8" 952x185.15

71. EARRING (pair). Gold. Green glass (?) mounted in gold disk from which hangs a gold volute-handled

amphora on a green beryl bead; beneath this a pendant garnet. Graeco-Roman; about 1st century A.D.
L. 1 13/16" 952x185.16

3rd row

72. EARRING (pair). Gold. Garnet in openwork mounting with pearl pendant. Roman; about 3rd century A.D. From Palestine.
L. 1 1/2" 910.41.10

73. EARRING (pair). Gold. Garnet set in heavy square plaque with twisted wire border; three rows of lentoids soldered to two bars formed of twisted wire flanked by plain wire. Roman; about 3rd century A.D.
L. 1 1/2" 952x185.17

74. EARRING (pair). Gold. Imitation pearl in gold mounting with agate pendant. Roman; 2nd to 3rd century A.D.
L. 1 1/4" 910.41.8

75. EARRING (pair). Gold. Amethyst and two pairs of pearl pendants suspended by long chains from gold hoop. Roman; 3rd century A.D. Said to be from Denderah, Egypt.
D. of hoop 1" 952x185.18

Bottom row

76. RING. Plain sheet-gold. Raised oval bezel with white stone or glass inset. Roman; about 1st to 3rd century A.D.
D. 13/16" 950.205.14

77. RING. Gold. Flat hoop, branching into two at the shoulders; between them is soldered a beaded wire with pairs of globules fastened to it at intervals; two oval settings with a garnet in each. Graeco-Roman, of a type made in Egypt as early as the XVIIIth dynasty; about 1st century A.D.
D. 11/16" 910.41.6

78. RING. Gold. The hoop expands at the shoulders; oval bezel with sardonyx in form of truncated cone. Roman; about 3rd century A.D.
Greatest W. 1" 910.41.4

79. RING. Gold. Hoop of thick wire twisted spirally; pearl bezel threaded on a gold pin. Roman; about 2nd century A.D.
D. 1" 910.41.5

PLATE 12. ROMAN

Above

80. BRACELET. Gold. Heavy twisted wire terminating in corrugated cylinders, with large oval red jasper set in eight-rayed-star mounting; loops-and-pin fastening at either side of bezel (one pin missing). Roman; 3rd century A.D.
D. 2 1/4" 950.205.8

81. BRACELET. Gold. Band triangular in section; made extensible by means of sliding spiral clasps. Roman; 3rd century A.D.
D. 2 1/4" 952x185.19

82. BRACELET. Gold. Openwork band with sardonyx bezel set in eight-pointed-star; loop-and-pin fastening at either side of bezel (one pin missing). Roman; about 3rd century A.D.
D. 2 1/2" 952x185.20

Middle

83. BRACELET. Gold. Twisted wire with ram's head terminals united by pin through loops concealed by coarse granulation. Roman; about 3rd century A.D.
Maximum W. 2 1/4" 952x185.21

84. BRACELET. Silver. Snake form. Common late Hellenistic and early Roman form; about 1st century A.D.
D. about 2" 952x185.22

85. BRACELET. Gold. Snake form. Head and tail finely engraved. Graeco-Roman period; 1st century B.C. to 1st century A.D.
D. about 2 1/2" 952x185.25

Below

86 (*Left*). FIBULA. Silver. Bilateral spring. S-shaped bow in "anchor" form; cross-bar decorated on face with loops of silver wire and four lines of twisted wire, and on top with two cones (one broken off) faced with alternating twisted and smooth wire and capped by coarse granules. Germano-Roman type; about 3rd century A.D.
L. 1 1/2" 918.5.26

87 (*Right*). FIBULA. Silver. Bilateral spring; bow decorated with a series of circles of tightly coiled wire with soldered central globule. Roman; about 3rd century A.D.
L. 2 1/2" 918.5.27

PLATE 13. TEUTONIC

Above

88. FIBULA-BROOCH. Gilt bronze; the bronze with its decoration was cast, probably in an open mould; the gold overlay was finished with chasing; the foot is cruciform in its decoration and the rectangular head has a border of concentric circles; both contain panels with debased animal motifs. About 6th century A.D.

L. 1½" 909.15.1

89. DECORATIVE MOUNT for a brooch or belt. A bronze disk with a concentric design of three stylized birds, which is engraved, not cast. A vertical rivet attached the object on one side, and a slight flattening of the opposite edge suggests that it was also held in position laterally by another projection. 6th or 7th century A.D.

D. ¾" 909.15.5

90. BRACELET. Solid silver, hammered into a rounded rod thickening at each end and then bent into a penannular hoop; the ends are decorated with simple transverse engraved lines. Probably about 5th-7th century A.D.

Greatest D. 2¾" 926.26.1

91. EARRING (single). Silver. A cruciform plate set with a piece of red glass is hinged to a hollow biconical pendant which is decorated with coarse filigree work. From the arms of the upper element and the base of the lower element hang three chains each terminating in a green or blue glass bead, and from the sides of the lower element hang three chains each terminating in a leaf-shaped spangle. 5th-7th century A.D.

Total L. about 3¾" 936.13.1

Middle

92. BUCKLE. Plain bronze tongue hinged to a leaf-shaped bronze plate originally gilded and with a central gold boss in heavy repoussé work. The gold-leaf was applied over a roughly engraved surface which formed a base for the chased decoration: a linear border with a bird on each shoulder. The boss is in the form of a rosette with

twelve "petals," alternately wide and narrow. 5th-7th century A.D.

L. 3¾" 936.13.3

93. BUCKLE-PLATE. A square iron plate overlaid with gold and, over the gold, with silver. The silver is cut out so that the gold beneath it forms the ground of a central cross, a dot at each angle and an octagonal border. The silver is decorated with S-scrolls in repoussé work, imitating filigree, and the gold cross has a punched design of dots in the form of a diagonal cross and four circles. The object originally had a domed rivet-head at each corner. 5th-7th century A.D.

W. 2¾" 936.13.4

94. BUCKLE. A plain bronze tongue hinged to a circular bronze plate; the latter is composed of two sheets: the upper ring-shaped and the lower a disk, the edge of which is hammered over the edge of the ring. The sunk surface within the ring is overlaid with gold-leaf which is decorated with a repoussé pattern of scrolls and circles; the centre is inlaid with a dark blue piece of glass set in gold wire; three empty circles of gold wire are applied to the patterned gold-leaf. The bronze border is decorated with an engraved zig-zag pattern and is edged with bronze twisted wire. 5th-7th century A.D.

L. 2½" 936.13.2

Below

95. CIRCULAR BROOCH. A bronze plate overlaid with gold-leaf except for a border which has a moulded lozenge pattern. A central cabochon garnet and four radiating triangles of sliced garnet are set into the gold overlay, which has decorated panels (indistinctly preserved) and dotted borders in repoussé work. 5th-7th century A.D.

D. 1¼" 909.15.4

96. ROSETTE, originally mounted on a brooch or belt. Cells formed by strips of silver soldered to a base plate hold inlay of sliced garnet and a central cabochon of white stone(?). Beneath each of the eight garnet inlays is a piece of hatched silver-foil to enhance the sparkle. 5th-7th century A.D.

D. ¾" 909.15.2

97. CIRCULAR BROOCH. A sheet of silver is folded back at the edge to form a border with a zig-zag pattern in niello. In the centre is a cabochon garnet and radiating from it are four petal-shaped inlays of sliced garnet; all these stones are set in gold strips soldered to the base; between the petals are four disks of blue glass. The stones, the glass and the inside of the border are edged with gold filigree and the ground is overlaid with thin gold-leaf. 6th or 7th century A.D.
D. 1¼" 909.15.3

PLATE 14. PREHISTORIC EUROPEAN

Above

98. TORQUE. Four heavy strands of silver, square in section, twisted together to form a composite hoop tapering towards the ends. At each end the strands are fused into a heavy cylindrical, tapering wire; at one end this wire forms a loop of two complete turns, secured in a long spiral twist around the stem; at the other end it is bent into a hook. Said to have been found in Hungary. Probably 5th-1st century B.C.
Greatest D. 6½" 918.5.31

99. SMALL TORQUE OR LARGE ARM-LET. A twisted hoop formed out of a single strip of heavy sheet-gold, each end forming an interlocking hook. Said to have been found in England. Probably early 1st millennium B.C.
D. 4¼" 952.184.1

100. BRACELET. Solid gold, hammered into a rod of oval section thickening abruptly at each plain flat end, and then bent into a penannular hoop. Probably Irish, 1st millennium B.C.
Greatest D. 2¾" 952.184.3

Middle

101. "DRESS FASTENER". Gold. Two disks, approximately at right angles to each other, are connected by a thick solid bow. The bow was cast, probably by the lost-wax process; the disks were cast in one piece with it and were finished by hammering; the bow is decorated with fine engraved channel-

ing except at its ends where the engraving is in transverse bands of cross-hatching within triple linear borders. Irish, probably 2nd millennium B.C.
Outer distance between disks 2"

918.3.100

102. BRACELET; three plaited strands of heavy silver wire bent into a penannular hoop. At each end the strands are fused into plain pointed terminals. Said to have been found in Hungary. Perhaps Celtic, 5th-1st century B.C.
Greatest D. 2¾" 918.5.32

Below

103. LUNULA. A simple crescent of heavy sheet-gold with ends cut into transverse cross-pieces twisted at right-angles to the rest of the object. Undecorated. Irish, probably 2nd millennium B.C.
Greatest D. 8" 909.14.1

104. ARMLET. Beaten spirally out of a thick band of gold, tapering at the ends to interlocking knobbed terminals. Said to have been found in England. Probably 2nd millennium B.C.
D. 3¾" 952.184.2

PLATE 15. IMPRESSIONS OF SEALS AND RING-STONES, 2500 B.C.-A.D. 300

Top row

105. CYLINDER SEAL. White marble. A hero attacks a lion which is attacking a long-haired sheep. Sumerian, Early Dynastic III period (26th-25th century B.C.).

L. of seal 9/16" 910.84.1

106. CYLINDER SEAL. Red marble. *Upper register*: a man and woman seated at a table of food, attended by a servant. *Lower register* (reversed): a spread eagle with a long-haired sheep in each talon. Sumerian, Early Dynastic III period (26th-25th century B.C.).

L. of seal 1¾" 910.84.2

107. CYLINDER SEAL. Serpentine. A lion attacks an ibex. Also shown are a palm tree, and symbolic representations of the sun, moon-crescent, and Pleiades. Neo-Assyrian Period (about 900-612 B.C.).

L. of seal 15/16" 937.10.1

2nd row

108 (*Left*). LARGE CIRCULAR GEM engraved with two bulls in antipodal position. Pierced; similar gems were worn threaded around the neck with other engraved and unengraved stones. Serpentine. Minoan; about 15th century B.C.

Greatest D. 1" 949.161.2

109 (*Right*). STAMP SEAL. Gray banded chalcedony; conical form with perforated knob. Two recumbent horned animals. Aegaeo-Anatolian; about 14th century B.C.

D. of seal 5/8" 939.10.2

3rd row

110. CIRCULAR CHALCEDONY GEM, engraved with running ibex. Pierced. Greek, Geometric; 9th-8th century B.C. D. 3/4" 939.10.6

111. RING. All bronze; the design is cast and finished with engraving; an ibex among plants. From Luristan, West Persia. About 1000 B.C.

D. of ring 1 1/2" 935.11.1

112. GREEN JASPER SCARAB, engraved with lion attacking boar. Pierced. Orientalizing Greek, from Tharros in Sardinia, 6th century B.C.

Greatest D. 11/16" 928.4.1

Two at lower left

113. LIGHT GRAY CHALCEDONY GEM engraved with seated sphinx. Graeco-Persian; 5th century B.C.

Greatest D. 1/2" 939.10.11

114. NICOLO GEM engraved with resting warrior holding shield. Greek; 4th century B.C.

Greatest D. 11/16" 927.2.4

Centre at bottom

115. AGATE SEAL engraved with comic actor playing a lyre and wearing a Silenus mask. Mounting modern. Hellenistic; 2nd-1st century B.C.

Greatest D. 1" 926.7.4

Two at lower right

116 (*Left*). GEM with engraved profile head of a lady. Nicolo. Fine workmanship. Roman; 1st-3rd century A.D.

Greatest D. 3/8" 949.161.19

117 (*Right*). STAMP SEAL. Limonite. Hemispheroid form with transverse perforation. A recumbent stag. Iranian, Sasanian Period (3rd-7th century A.D.).

D. of seal 13/16" 910.94.3

PLATE 16. JEWELLERY OF TODAY, FOR COMPARISON

(Henry Birks and Sons, Jewellers, of Canada)

Upper right

118. NECKLACE of pierced gold scrolls, set with pieces of green jade cut *en cabochon*.

119. FINGER-RING of open work gold in geometric design, with amethyst centre.

Centre

120. PAIR OF GOLD EARRINGS, scroll and leaf design, set with garnets.

121. FLEXIBLE BRACELET composed of laced links of chased gold.

Lower left

122. BROOCH of delicately pierced gold work, in shell motifs, adorned with diamonds and a central opal.

123. BROOCH composed of a spray of leaves, outlined in plain gold wire.

LIST OF FIGURES IN THE TEXT

- FIG. 1. Bronze garment pin, from Luristan, Iran. The head, in the form of a stylized animal (lion?), is cast. About 800 B.C.
L. 5 1/16" 935.12.1
- FIG. 2. Silver garment pin, from Luristan, Iran. The hollow head, in the form of three birds, is cast, and the whole upper half of the pin is engraved. About 800 B.C.
L. 7 1/16" 935.12.2
- FIG. 3. Gold garment pin, said to be from Palestine. Hammered. Probably about 1500 B.C.
L. 2 3/8" 910.87.1
- FIG. 4. Reconstruction to illustrate the use of the garment pin in Fig. 3. After E. Henschel-Simon in *Q.D.A.P.* 6 (1936-38), 172, Fig. 3.
- FIG. 5. Serpentine "bull's head" amulet. Egyptian, Late Predynastic period, before 3000 B.C.
Greatest width 1 5/16" 910.46.383
- FIG. 6. Ivory comb decorated with outline decoration representing an antelope. Egyptian, early Predynastic period, about 3500 B.C.
L. 4 15/16" 910.85.1
- FIG. 7. Reconstruction of the fragment of cloisonné work no. 8, (Plate 2), after Mace and Winlock *The Treasure of Lahun*, Plate 7 A (Metropolitan Museum of Art, New York). Egyptian, 19th century B.C.
- FIG. 8. The goddess Hathor. After a painted relief sculpture in the Museum, from the mortuary temple of Neb-hepet-Re Mentuhotpe, at Deir el-Bahari. Egyptian, 21st century B.C.
H. (from top of head) 10 1/4" 910.34.2
- FIG. 9. Bronze fibula, Greek, probably Geometric period (9th-8th century B.C.).
H. 13/16" 906.4.1
- FIG. 10. Bronze fibula, with swastika and other engraved decoration. Greek, about 9th century B.C.
H. 2 3/16" 930.12.1
- FIG. 11. Bronze "spectacle brooch", made out of a single length of wire, including pin. Greek, about 9th-8th century B.C.
H. 2 3/4" 953.5.1
- FIG. 12. Bronze garment pin, with engraved decoration. One of a pair. Greek, about 9th century B.C.
L. 5 1/8" 930.12.2
- FIG. 13. Portrait of a lady, from her mummy. After a painting in encaustic in the Museum. Roman-Egyptian, about 2nd century A.D.
Total height of painted panel 14" 910.20.1
- FIG. 14. Bronze brooches with enamel inlay, in champlevé technique. Celtic, probably all from Britain, 2nd-3rd century A.D.
Upper left: red, reddish brown, green and blue enamel.
L. 1 11/16" 918.5.36
Lower left: enamel missing, probably originally red and blue.
L. 1 7/16" 918.5.38
Centre: red, green and blue enamel.
L. 2 3/16" 918.5.37
Upper right: yellow, dark-red and black enamel.
D. 1 1/16" 953.4.1
Lower right: enamel missing, probably originally red and blue.
D. 1 5/16" 953.4.2
- FIG. 15. Necklace of bone beads with bone pendant; engraved decoration. Coptic Egyptian, 5th to early 7th century A.D.
Height of pendant 1 15/16" 910.86.1

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