

THE METROPOLITAN MUSEUM OF ART • NEW YORK

CATALOGUE OF  
**ENGRAVED GEMS**  
GREEK • ETRUSCAN • AND ROMAN

GISELA M. A. RICHTER



«L'ERMA» di BRETSCHNEIDER • ROMA

“L’Erma” published Gisela M. A. Richter’s *Catalogue of Engraved Gems: Greek, Etruscan, and Roman* in 1956, exactly fifty years ago. This book proved to be Miss Richter’s last comprehensive collections catalogue for the Metropolitan, though of course she continued to draw on the Museum’s Classical holdings in her numerous subsequent publications. The great majority of our ancient gems have not been on view for many years, due to lack of exhibition space. However, we are nearing the completion of our fifteen-year-long Greek and Roman Masterplan, with the new Hellenistic, Etruscan, and Roman galleries scheduled to open in April 2007. Now that the bulk of the gem collection will again be on view, it seems both appropriate and desirable to republish Miss Richter’s magisterial catalogue, with the addition of color illustrations of many of the major pieces. I offer my warm thanks to Dr. Roberto Marcucci of “L’Erma” di Bretschneider for proposing to reprint the catalogue, to Paul Lachenauer of the Museum’s Photograph Studio for the excellent color illustrations, to Peter Antony, chief of production in the Museum’s Editorial Department, and to Dr. Joan R. Mertens for acting as coordinator.

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## PREFACE

When the Catalogue of Engraved Gems of Classical Style was published in 1920 the collection was a comparatively modest one. Since then several hundred examples have been added, including many of first-rate quality. By these additions the showing in the earlier categories—Geometric, Orientalizing, Graeco-Phoenician, Graeco-Persian, and Etruscan—which was meagre before, has become representative, and the collection of Greek sixth- fifth- and fourth-century stones, which constitute the acme of gem-engraving, has been much enriched. The Roman section has likewise been greatly strengthened, and now illustrates the great variety of subjects and styles current in the imperial period. Furthermore a number of important cameos have been acquired.

It seemed advisable to show this rich material in a new publication and thereby supply an up-to-date handbook on Greek and Roman gems; for no such book exists in spite of the fact that engraved gems reflect the whole history of classical art better than any other class of antiquities. As one of the reasons for the comparative neglect of gems is their minute size and the consequent eye strain involved in their study, most of the examples in this book are illustrated in enlargements. It is hoped that in this way the study of an important branch of Greek and Roman art may be stimulated.

Though I have utilized what I could of my 1920 catalogue, much has naturally had to be rewritten after a lapse of more than thirty-five years. The book is, therefore, not merely a second, revised edition of the older catalogue, but a new presentation.

The Table of Contents shows the classification. A major change from the 1920 edition is the omission of the Minoan and of the post-classical gems, which it was felt, required separate treatment. (The post-classical gems now form part of the collection of Renaissance and Modern Art). Two other important changes are the elimination of separate sections for the "first-century Italic gems" and for the "late imperial Roman gems". For reasons given in the text (see pp. 57, 62 f.), it seemed best to classify these gems with the others of the Roman period and subdivide them according to the subjects represented on them.

The enlarged photographs used for the illustrations are mostly by Edward Milla. Those of the intaglios were taken from plaster impressions, of which the more recent were made by H. Pflzer. Since the designs on ancient gems were intended to be seen in the impressions, it is they that give the artist's intention. Moreover, in photographs taken from impressions disturbing highlights are avoided. In the exceptional cases in which the ancient settings of the stone are preserved, these are briefly described and illustrations of the various types given.

## PREFACE

Some of the drawings in the text giving the forms of the rings are taken from the 1920 catalogue; the others were kindly drawn for me by Mrs. G. U. S. Corbett.

The books listed in the Abbreviations show my indebtedness to those colleagues past and present who, like me, have had the great privilege of intimately studying collections of ancient gems. Foremost among the books are Furtwängler's catalogue of the Berlin Collection (1896) and his *Antike Gemmen* (1900), and Beazley's *Lewes House Gems* (1920).

I am deeply indebted to the directors of various Museums for facilitating the study of their collections of gems and for supplying photographs and impressions, I have benefited from discussions with many kind colleagues of whom I want particularly to mention Mr. Enrico Paribeni, Miss Vollenweider, Mr. Sangiorgi, and my sister, all of whom have been over my whole catalogue, at least in the illustrations. Sir John Beazley saw the Greek section in one of its very early stages (in 1946). Mrs. Raissa Calza and Mrs. Felletti Maj have helped me with the section on Roman portraits, and Miss Margherita Guarducci with the deciphering and dating of the inscriptions. Miss S. von Bockelberg has kindly verified my references. And the staff of the Metropolitan Museum has assisted me in innumerable ways. To all I render my best thanks.

As is well known, the dividing line between ancient gems and those of the xviii and xix centuries is sometimes difficult to draw (see p. XLII). I have included in this catalogue a few gems I took to be modern in 1920, and I have excluded some I thought ancient at that time. A number of gems the antiquity of which seems to me uncertain I have included with a question mark, mentioning the reasons for doubt in the text. A few gems of very cursory workmanship mentioned in the 1920 edition have been omitted.

N. B.—The exact degree of magnification of the gems on the plates can be computed from the actual dimensions given in the text—which is always the greatest—be it length or width.

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## HISTORY OF THE COLLECTION

A number of fortunate circumstances have combined to make the collection of engraved gems in the Metropolitan Museum one of the best in existence, comparable to those in London, Paris, Berlin, and Boston. The Cesnola collection, which was purchased in the seventies of the last century, contained a number of early pieces of first-rate quality. The King collection, formed between 1845 and 1877 by the Rev. C. W. King of Trinity College, Cambridge, was presented to the Museum in 1881 by John Taylor Johnston. It was a large collection, comprising gems of all periods, chiefly Graeco-Roman. The Gréau Collection of glass, formed by Julien Gréau, was given to the Museum in 1917 as part of the J. Pierpont Morgan Collection; in it more than fifty glass intaglios and cameos were included. Three Graeco-Phoenician stones were presented respectively by Helen Miller Gould in 1910, by Benjamin Altman, as a bequest, in 1913, and by Edward S. Harkness in 1926. A bequest by Richard B. Seager in 1926 added not only a large number of Minoan and Mycenaean stones, but several of the classical period. Milton Weil presented several gems in 1932. In 1941 the bequest of William Gedney Beatty enriched the collection by several hundred examples; some of our best Graeco-Persian gems are derived from that source; of the over 600 Graeco-Roman stones a representative selection has been included in this catalogue. Single pieces of outstanding quality were given from time to time by Rupert L. Joseph. Lastly, in 1949, a number of Graeco-Persian gems were presented as a posthumous gift of Joseph Brummer through his brother Ernest Brummer.

In addition to these generous gifts, the Museum had the opportunity of buying select pieces through the years from famous private collections—the Francis Wyndham Cook, the Marlborough, the Story-Maskelyne, the Southesk, and in 1942 thirty-two gems from the A. J. Evans collection.

Due to these exceptional opportunities, the Museum now has a representative collection, both qualitatively and quantitatively.

# ABBREVIATIONS

## BOOKS

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- Kibaltchitch, *Gemmes*—T. de Kibaltchitch, *Gemmes de la Russie Méridionale*, 1900.
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- Kris, see under Eichler.
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PERIODICALS, LEXIKONS, CORPUSES, ETC.

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- Ann. dell'Inst.—*Annali dell' Instituto di corrispondenza archeologica*, 1829-1885.
- Annuario—*Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente*, from 1914.

ABBREVIATIONS

- Ant. Denk.*—*Antike Denkmäler, herausgegeben vom Deutschen Archäologischen Institut, 1886-1931.*
- Arch. Anz.*—*Archäologischer Anzeiger, Beiblatt zum Jahrbuch des Deutschen Archäologischen Instituts, from 1889.*
- Arch. Class.*—*Archeologia classica, from 1949.*
- Arch. Ztg.*—*Archäologische Zeitung, 1843-1845.*
- Ath. Mitt.*—*Mitteilungen des Deutschen Archäologischen Instituts, Athenische Abteilung, from 1876-1942.*
- B.C.H.*—*Bulletin de la correspondance hellénique, from 1887.*
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- Bull. dell'Inst.*—*Bollettino dell' Instituto di corrispondenza archeologica, 1829-85.*
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- Jhb.*—*Jahrbuch des Deutschen Archäologischen Instituts, from 1886.*
- J.H.S.*—*Journal of Hellenic Studies, from 1880.*
- J.R.S.*—*Journal of Roman Studies, from 1911.*
- Mem. Pont. Acc.*—*Atti della Pontificia Accademia Romana di Archeologia, ser. 3, Memorie, from 1923.*
- M.M.A. Bull.*—*Bulletin of the Metropolitan Museum of Art, 1905-1942; new series from 1942-3.*
- Mon. Piot*—*Monuments et mémoires publiés par l' Académie des Inscriptions et Belles Lettres (Fondation Eugène Piot), from 1894.*
- Mus. Helv.*—*Museum Helveticum, from 1934.*
- Not. d. Scavi*—*Notizie degli Scavi di antichità, comunicate all' Accademia dei Lincei, from 1876.*
- Pauly-Wissowa, R.E.*—*Pauly's Real-Encyclopädie der klassischen Altertumswissenschaft, new edition by G. Wissowa, W. Kroll and others, from 1894.*
- Rev. arch.*—*Revue archéologique, from 1844.*
- Röm. Mitt.*—*Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung, from 1886.*
- Roscher's Lexikon*—*Ausführliches Lexikon der griechischen und römischen Mythologie, edited by W. H. Roscher, 1884-1937.*
- Studi etruschi*—*Studi etruschi, from 1927.*

## GENERAL INTRODUCTION

The art of engraving stones to serve as seals was practised in Western Asia as early as the fourth millenium B.C. and has been continued in many different countries off and on ever since. It is a miniature art, requiring deftness of hand and sureness of eye, but eminently rewarding, for the beauty of the material enhances the artistry of the design.

The contribution of Greece in this field can only be understood against the background of the great Oriental achievements. It was doubtless from Mesopotamia that she learned the difficult technique of engraving hard stones and borrowed some shapes and materials; and from Egypt she evidently took over the scarab form. But, as in other fields, Greece was an independent borrower. What she adopted was external, the spirit was her own. She transformed both subjects and style. Instead of endless repetition of stock themes, the Greek designs show constant variety; instead of demons and potentates, the world of nature predominates. Gods and heroes are made to resemble human beings, the incidents of daily life and the animal world are explored with eager curiosity. In style the gems reflect the development of Greek art in its many phases, as do Greek sculptures and paintings. In fact, the little representations on the gems give a comprehensive picture of Greek art in miniature.

Our story begins with the so-called geometric period, that is, with the centuries after the decline of the Minoan-Mycenaean civilization, from a little before 1100 B.C. until about 700 B.C. Though it is now known that Indo-European, Greek-speaking peoples entered Greece long before that time—presumably soon after 2000 B.C.—and that the Mycenaeans may properly be called Greeks, it is only later that what we understand by the "Hellenic" civilization came into being; for the amalgamation of the race that had settled in Greece in the Early Helladic period (third millenium B.C.) with the later Indo-European invaders was naturally slow. At first Minoan influence predominated. It was only after the so-called Dorian invasion, that is, after the coming of fresh Greek tribes from the North, and the consequent overthrow of the Mycenaean civilization, that a new era began. Gradually, after that time, the cardinal features of the Hellenic civilization came into being—the formation of city states and colonies, the crystallization of Greek religion and myths, the building of temples, the institution of pan-Hellenic games, the use of coinage, and the formation of the Greek alphabet in its various forms. The geometric period, therefore, is the proper prelude to the Hellenic age. Naturally, however, the debt to Mycenaean culture is considerable and is gradually

becoming better understood. In the art of gem engraving in particular the splendid Mycenaean representations of animals show kinship with Greek renderings.

After the geometric period the engraving of gems continues through the various epochs of Greek art, from the archaic to the Hellenistic and the Roman. In each period the style changes, as do the forms and the materials of the stones. The characteristics of each epoch must, therefore, be analyzed separately; but in this general introduction the aspects common to all gems—their uses, the choice of their designs, the technique and materials employed, and their appreciation at various times—are discussed; also what is known of the artists and of later imitations.

## THE USES OF GEMS

There are three chief uses of gems in Greek and Roman times: as seals, ornaments, and amulets.

### (a) GEMS AS SEALS.

Besides their artistic and historical interest, ancient gems make a strong appeal through their intimate relation to the personal lives of the people. Their primary object was, as it had been in the Orient, to serve as seals. As such they played an important rôle. They took the place of Yale keys and combination locks; for the Greek and Roman householder guarded against theft by placing his seal on the doors of chambers and closets in which he kept his jewelry, his secret papers, his supplies of oil and wine, and other precious belongings. Ancient writers often refer to this practice. On Agamemnon's return from Troy Clytemnestra sends him a message that he will find his treasures intact, with no seal broken (Aeschylus, *Agamemnon*, 614). In the *Thesmophoriazousai* of Aristophanes (418 ff.) the women complain that the stores of meal, oil, and wine are guarded too well by their husbands' seals; and Isokrates (*Orations*, XVII, 33, 34) is shocked by the action of Pythodoros, who opened the voting urns, "sealed by the Prytanes and countersealed by each of the choregii". Horace (*Epistles*, II, 2, 132 ff.) describes an amiable neighbor who is kind to his slaves and "does not get mad when the seal of his wine jar is broken".

Furthermore, in the ancient world the seal corresponded to the written signature today. At a time when the majority of the people could not write and had to depend on the services of a professional scribe, the impression of a personal seal was the only reliable identification mark. And before the handling of mail by a postal service such identification marks were doubly necessary, for letters had to be entrusted to private carriers who might or might not be trustworthy. When Agamemnon sends a slave with a letter to his wife Clytemnestra and the slave asks him "Yet how shall thy wife and thy daughter know my faith therein

that the thing is so? ", Agamemnon answers "Keep thou this seal, whose impress lies on the letter thou bearest" (Euripides, *Iphigeneia in Aulis*, 156; tr. A. S. Way).

Theseus, on discovering the tablet fastened to his dead wife's hand, knows it is truly hers by the "impress of the carven gold", and then proceeds to "unveil the seal's envelopings" (Euripides, *Hippolytos*, 862). In the trial of Lentulus Sura and his accomplices for guilt in the conspiracy of Catiline they are confronted with their letters and seals as unmistakable evidence (Cicero, *Orations against Catiline*, 3, iii, 6, and v, 10). Both Greek and Latin authors refer to the sealing of letters and documents with an engraved gem as a regular practice (cf. Thucydides, I, 132, 5; Euripides, *Iphigeneia in Aulis*, 325; Plautus, *Bacchides*, IV, 6, 787; Ovid, *Tristia*, V, 4; Suetonius, *Claudius*, XLIV; Martial, X, 70). Seneca (*De beneficiis*, III, 15) bewails the wickedness of the human race which makes us put more faith in signets than in men.

The seal was also used to attest a spoken message. When Deianeira sends Lichas to Herakles with the fatal robe, she gives him the impress of her signet-ring as a token "that he will surely recognize" (Sophokles, *Trachinai*, 614); and Orestes, in order to convince the doubting Elektra of his identity, shows her their father's signet ring (Sophokles, *Elektra*, 1222).

Against the danger of fraud strict precautions had to be taken. Solon, as early as the sixth century B.C., is said to have made a law forbidding gem engravers to keep copies of the seals they engraved (Diogenes Laertius, I, 2, 9). A safe way was to mention the device of the seal in a separate letter. Pliny the Younger, writing from Nikomedeia to the Emperor Trajan, says that he is sending with the letter a nugget of ore from a mine in Parthia, and that the package is "sealed with his own ring, the device of which is a quadriga" (*Letters*, X, 74 [16]). Areios, king of Lacedaemon, in a letter to the Jewish priest Osias, writes: "Demotolos will give you a letter written on a square sheet and sealed with a seal on which is an eagle holding a serpent (Flavius Josephus, *Antiquitates Judaicae*, XII, 227). Sometimes the device was decided beforehand, as in the letter of Plautus' soldier to the slave dealer, which was sealed "with the device on which we two agreed" (Plautus, *Pseudolus*, IV, 2, 40 ff.).

The danger of having one's seal fall into the wrong hands was naturally great and could entail serious consequences. The story of Hannibal appropriating the seal of the Roman general Marcellus and almost capturing a town in consequence is well known (Livy, XXVII, 28). To prevent such deceptions it was best to have one's seal in safe-keeping before death, and either destroy it or give it to a trusted friend, as Alexander did to Perdikkas (Quintus Curtius, X, 5, 12, and Aemilius Probus, *In Eumenen*, II, 1), and Augustus to Agrippa (Dio Cassius, LIII, 30). Sometimes there was no such friend. According to Suetonius, Tiberius on his deathbed pulled off his ring to give it to a bystander and after some hesitation replaced it on his finger (*Tiberius*, LXXIII, 2).

## (b) GEMS AS ORNAMENTS.

Besides serving the practical purpose of sealing, engraved gems were used by the Greeks and Romans merely as ornaments; for the combination of a precious material and an artistic representation had great appeal. The varied colors and the glitter of the stones were to many attraction enough, so that unengraved stones were oftener employed for this purpose than engraved ones. But, to the discriminating at least, the pleasure in a beautiful engraving must have outweighed that derived from sparkling stones.

In early Greek times the ornamental use of gems was reserved mostly for public and religious purposes. The throne of the statue of Zeus at Olympia was "adorned with gold and precious stones, as well as with ebony and ivory" (Pausanias, V, 11). The eyes of statues were inlaid with ivory and precious stones (cf., e.g., Plato, *Hippias major*, 290, b, c). In jewelry the extant examples show that the gold itself was worked with great proficiency without the addition of stones. Only occasionally were stones used in necklaces and earrings (cf. *I.G.*, II, 2, 645, 652).

When private luxury increased in Hellenistic and Roman times, and Oriental stones were made more accessible to the West through the conquests of Alexander the Great, fashions changed and gems were used to decorate every conceivable object of public or private use. Gold and silver vases studded with gems were particularly popular and became almost a mania in the Roman imperial period. There are many references to them in Roman writers (cf., e.g., Athenaeus, *Deipnosophists*, V, 199 b; Martial, *Epigrams*, XIV, 108, 109; Juvenal, V, 37 ff.). Many such vases that had been produced in the East were brought to Italy by the Roman conquerors as booty and were eagerly sought after and imitated (cf., e.g., Strabo, XV, 69; Theophrastos, 23). The enormous wealth in such precious material is brought home when one hears that in Pompey's triumphal procession gold vases set with gems "enough for nine buffets" were carried among the spoils (Pliny, XXXVII, 6), and that in the imperial household special servants were appointed whose sole duty it was to act as "superintendents" and "assistant superintendents" of "gold set with gems" (*C.I.L.*, VI, 8734-8736). Such vases were kept in luxurious cases, sometimes also made of gold and adorned with precious stones (Athenaios, V, p. 109 f.), and when taken out for use at dinner parties they were watched by special guardians "to count the gems and keep an eye on the guests' sharp finger nails" (Juvenal, V, 37-45).

In addition to vases, all manner of jewelry was set with precious stones, as well as many articles of apparel (cf. Virgil, *Aeneid*, I, 647-655; Martial, XI, 49 [50]; Suetonius, *Caligula*, LV, 3, and LII, 1; Pliny, XXXVII, 6; Athenaios, V, p. 200 b). Lollia Paulina, the wife of Caligula, is described at quite an ordinary function as wearing emeralds and pearls on her head, hair, ears, neck, arms, and fingers, (Pliny, IX, 58). According to Pliny (IX, 56), women were particularly fond of pearls, and sometimes wore two or three in their ears so that they rattled one against

the other. Suetonius (*Julius Caesar*, L) says that Julius Caesar gave a costly pearl to Brutus' mother. Caligula appeared in public with bejewelled cloaks and bracelets, and gave a necklace set with precious stones to his favorite horse. Both he and Elagabalus were fond of wearing gems on their shoes; and that these stones were sometimes engraved is shown by the remark that one was supposed to appreciate the carvings of the best artists on Elagabalus' feet (Aelius Lampridius, *Vita Elagabali*, 23).

Besides personal apparel, we hear of couches, tripods, household utensils, garlands, arms and armor, musical instruments, and even walls profusely decorated with precious stones (Lucan, *Pharsalia*, X, 122; Athenaios, V, p. 199 d, 202 d, e; Virgil, *Aeneid*, IV, 26). Lucian (*Πρὸς τὸν ἀπαίδευτον*) speaks of a man going to Delphi to take part in a musical contest with a kithara made of pure gold and set with different colored gems. To have your portrait made of pearls and carried in triumphal procession, like Pompey the Great (cf. Pliny, XXXVII, 6), is a typical instance of such extravagance. Sometimes, however, such gems were doubtless of glass instead of stone (see pp. XXIV, XXVIII).

Roman fashion in ringwearing passed through several stages. During the Republic the use of a ring was more or less practical, that is, for sealing, as a token of betrothal (Isidorus, *Origines*, XIX, 32; Macrobius, *Saturnalia*, VII, 13, 12), and so forth. The common material was iron. To wear a gold ring was a mark of merit (Pliny, XXXIII, 4; Appian, VIII, 104). In the Roman empire, however, this privilege was gradually extended to persons of lower rank, until by the time of the later emperors every one except a slave was allowed to wear a gold ring (Macrobius, *Saturnalia*, VII, 13, 12).

The number of rings worn was equally on an ascending scale. Crassus (53 B.C.), we are told, was one of the first to show himself with two rings (Isidorus, *Origines*, XIX, 32). In Horace's time three on one hand was considered a large number (Horace, *Satires*, II, 7, 8 f.). Later more and more rings were worn, some people putting them on all fingers and sometimes several on one finger, using all three joints (Martial, XL, 59, V, 11, 12; Isidorus, *Origines*, XIX, 32; Pliny, XXXIII, 6; Seneca, *Naturales Quaestiones*, VII, 31, 2). Quintilian (*Institutio Oratoria*, XI, 31, 2) recommends orators not to wear too many and not above the second joint; and Juvenal (I, 28) and other satirists ridicule young men who change rings according to the seasons, or who wear rings whose size and weight are better adapted for their legs than their fingers (cf. Martial, XI, 37).

#### (c) GEMS AS AMULETS.

In addition to serving as seals and ornaments, gems in ancient times played an important rôle as objects supposed to have curative and protective power. There is abundant evidence of this both for Greek and Roman times. Aristophanes (*Ploutos*, 883 f.) speaks of a " medicinal ring " which druggists sold to their clients.

They could avert the evil eye and guard against snakes (Scholia to Aristophanes, *loc. cit.*). Pliny (XXXVI, XXXVII) gives a long account of the magical properties of stones. The diamond, he says, cures insanity and vain fears, and prevents poisons from harming; the amethyst prevents drunkenness, and if engraved with the sun and moon and hung around the neck with hairs of cynocephalus or swallow's feathers, it is an antidote for poisons, gives access to kings, and averts hail and locusts. An emerald engraved with an eagle does the same. A certain kind of agate is beneficial against bites of spider and scorpion. Haematite is good for the eyes and liver, gains requests addressed to kings, and is useful in lawsuits; mixed with juice of pomegranate it cures those who vomit blood. Sideris increases anger between parties to a lawsuit. And so on through a long list.

The use of gems as magical amulets does not seem to have become widespread until Roman times. At least it is only then that there appear on gems magical inscriptions and representations of syncretic and Egyptianizing deities that make their use as talismans certain. Occasionally magical inscriptions occur also on gems with well known types of Graeco-Roman deities; but it by no means follows that the gems without such inscriptions or other insignia had a magical meaning. Naturally a person who wore on his ring an engraving of Zeus or Helios or Aphrodite or Fortuna might feel that these deities would help and protect him; but this was not the primary purpose, as was the case with the magical gems.

On this whole subject cf. the fundamental work by Bonner, *Magical Amulets* (1950). As he rightly observed (p. 10), on stones used as amulets the engraving was made to be seen as cut, not, as was the case in seals, to be seen in the impressions.

## THE CHOICE OF DESIGNS ON GEMS

In the designs for their seals the Greeks and Romans borrowed from the prevalent artistic stock. In contrast to the people of Mesopotamia, who favored ritual scenes, the Greeks drew their inspiration from the life around them and from their many colorful legends. Furthermore, it would have been an alien thought to a Greek or a Roman to have as his device merely his monogram, as we might nowadays. His name, especially in shortened form, might appear in a secondary place, but the principal design was pictorial. The choice was a favorite deity, or mythological hero, or animal, or symbol. Sometimes the design commemorated a glorious event in the family, or a personal deed of valor, or it was the portrait of an ancestor, or friend, or leader. Occasionally the device might have no special relevancy, but be merely a beautiful composition that appealed to individual taste, or one that was supposed to have magical properties. Frequently, of course, the significance of a scene and of the emblems sometimes added in the background now escapes us; for we do not have, as often in coins, a knowledge of the historical background to help in the interpretation.



A number of seal devices of prominent men are described by ancient writers. Sulla used a representation of Jugurtha delivered to him by Bocchus (Pliny, XXXVII, 4). In the sarcophagus of Scipio Barbatus a gold ring was found with an engraving of a winged Victory holding a palm branch. Pompey's signet bore a lion holding a sword (Plutarch, *Pompey*, LXXX, 5), or three trophies (Dio Cassius, XLII, 18). The latter device was also sometimes used by Sulla (Dio Cassius, *loc. cit.*). Julius Caesar had on his seal an armed Aphrodite, since he claimed descent from that goddess through Aeneas (cf. Dio Cassius, XLIII, 43). Augustus began by having a sphinx as his device, then a portrait of Alexander, and finally his own portrait (Pliny, XXXVII, 4; Suetonius, *Augustus*, L). The frog used by Maecenas was held in terror by the people, for it appeared on decrees levying taxes (Pliny, XXXVII, 4). Galba chose for his badge an ancestral seal with a dog on the prow of a ship (Dio Cassius, LI, 3); Hadrian his own portrait (Aelius Spartianus, *Vita Hadriani*, 26); and Commodus a portrait of his mistress Marcia as an Amazon (Aelius Lampridius, *Commodus Antoninus*, II).

It was considered an honor to have a portrait of a distinguished ancestor on a seal, but you were expected to live up to it. When young Lucius Scipio disgraced himself by coming to an election in a soiled toga, his relatives removed from his hand the ring with the head of his father Scipio Africanus (Valerius Maximus, III, 5); and Cicero rebuked Lentulus Sura for being implicated in the Catilinian conspiracy when he ought to have been restrained by the portrait of his illustrious ancestor Cornelius Lentulus, engraved on his seal (Cicero, *Orations against Catiline*, III, 5, 10). Another popular device was the portrait of a close friend, especially during absence. Thus Ovid (*Tristia* I, 7, 6 ff.) addresses a friend: "you, who carry me about on your finger". Epikouros' portrait, we are told, appeared on the seals of all his followers (Cicero, *De finibus*, V, 1, 3).

There were, of course, official seals as well as individual ones. The seal of Augustus with his own portrait was used by later emperors as the imperial seal of Rome (Dio Cassius, LI, 3), and, according to Pliny, XXXIII, 12, a seal with the head of Claudius was used to gain admittance to the imperial presence. A picturesque as well as an appropriate device was the western star selected by the Ozolian Locrians, the most westerly tribe of the Locrians (Strabo, 416).

An engraved gem used for an official purpose resembles a coin; for coins are the public counterparts, so to speak, of gems. They are the seals of the state while gems are the seals of individuals. The connection between the two was, therefore, close, especially as they presented similar problems to their makers. Occasionally, but not often, the same motif occurs on both. Doubtless the Greek mints were a constant source of inspiration to the gem engravers, and sometimes one and the same man was perhaps master of both arts. The gems, however, since they represent individual taste, show greater variety of subject than the coins, which bear the emblems of cities.

## THE TECHNIQUE OF GEM ENGRAVING

Only soft stones and metals can be worked free hand with cutting tools. The harder stones require the wheel technique. This technique was known to the Mycenaeans, who probably learned it from artists of Western Asia. It was discontinued during the geometric period, when only the softer stones were used; but was reintroduced during the archaic epoch, and then was used continuously until late Roman times. It is indeed only with the wheel technique that the best results in this difficult craft can be attained.

Our knowledge of the methods used by Greek and Roman gem engravers is based: (1) on the somewhat general references to the craft occasionally made by ancient writers,<sup>1</sup> (2) on a few ancient representations of gem engravers, (3) on an examination of the stones themselves.

From this evidence it may be deduced that the ancient method of engraving hard stones was much the same as that used today. The stones were worked with variously shaped drills which are made to rotate by the help of the wheel or some other device such as a bow. The actual cutting was not done by the drills, which were of comparatively soft metal (in Mycenaean times of bronze or copper, later of iron), but by the powder that was rubbed into the stone with the drill. This is nowadays the diamond powder, mixed with oil. What it was in ancient times is not certain, as it is not known how early the diamond was known. It must have been accessible in Roman times, as it is mentioned both by Pliny (XXXVII, 15) and by M. Manilius (*Astronomicum*, IV, 926). The Greeks probably used the so-called Naxian stone, a species of corundum found in the island of Naxos.

The wheel used by gem engravers today is either worked by the foot or by an electric motor lathe. On the gravestone of a gem cutter of the Roman empire,

<sup>1</sup> The most important are:

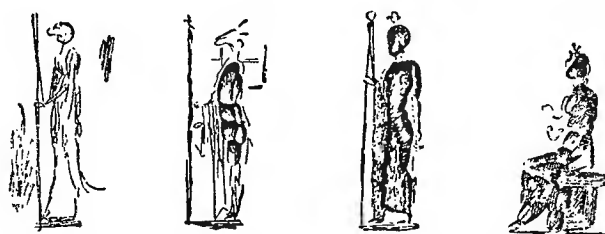
Pliny, XXXVII, 76: Tantaque differentia est, ut aliae ferro scalpi non possint, aliae non nisi retuso, verum omnes adamante. Plurimum vero in his terebrarum proficit fervor. "There is such a difference in the hardness of gems that some cannot be engraved with an iron tool, others only with a blunt graver, but all may be cut with the diamond. The heat of the drill is of great assistance in engraving". By heat Pliny must of course mean the heat engendered by the rapid rotation of the drill.

XXXVII, 15: Et adamas cum feliciter rumpere contigit, in tam parvas frangitur crustas ut cerni vix possint. Expetuntur a scalptoribus ferroque includuntur, nullam non duritiam ex facili cavantes. "And when a diamond by good luck happens to break, it separates into particles so small that they can hardly be seen. These are in great request among engravers, who set them in iron and by this means are able to hollow out any hard surface with ease".

Theophrastus, *Περὶ λίθων*, I, 5: γλυπτοὶ γὰρ ἔνιοι, καὶ τορνευτοὶ καὶ πριστοὶ, τῶν δὲ οὐδὲ ὅλως ἄπτεται σιδήριον, ἐνίων δὲ κακῶς καὶ μόλις. "There are some stones which can be engraved, others which are worked by the aid of the drill, still others which can be sawn; upon some an iron tool makes no impression; upon others again only slightly and with great effort". VII, 41: ἔνιοι δὲ λίθοι καὶ τὰς τοιαύτας ἔχουσι δυνάμεις εἰς τὸ μὴ πάσχειν, ὡσπερ εἵπομεν, οἷον τὸ μὴ γλύφεσθαι σιδηροῖς, ἀλλὰ λίθοις ἐτέροις. ὅλως μὲν ἢ κατὰ τὰς ἐργασίας καὶ τῶν μειζόνων λίθων πολλὴ διαφορά. πριστοὶ γὰρ, οἱ δὲ γλυπτοὶ, καθάπερ ἐλέχθη, καὶ τορνευτοὶ τυγχάνουσι (Teubner text). "There are some stones which have the property, as I have said, of resisting an iron graver, but may be engraved by means of other stones. And in general there is a great difference between even the... stones in the manner of working them, for some may be cut by the saw, some engraved as has been described, and some worked with the drill".

found at Philadelphia in Asia Minor, a tool is represented which looks like the bow used by modern jewelers (cf. Furtwängler, *A.G.*, III, p. 399, fig. 206). A similar bow drill used by a carpenter is engraved on a scarab in the British Museum (Walters, *B.M.Cat.*, no. 645). By being drawn quickly back and forth, the bow could impart a rotating movement similar to that of the wheel. As, however, the wheel was well known to the ancients in the making of pottery, it is probable that they made use of it in gem engraving also.

Nowadays the gem to be engraved is fastened to a handle and held to the drill, and moved as required. It has been thought that in ancient times the process was reversed, and the stone was held stationary while the rotating tools were guided by the hand. There is no means of settling this question.



Unfinished engravings of Egyptian deities on a four-sided stone.  
From Furtwängler, *Antike Gemmen*, III, p. 400, figs. 207-210.

The tools must also have been essentially the same as those in use today, that is, drills with a ball, disk, cylinder, or little wheel at one end, in sizes ranging from about a quarter of an inch to a pin point. In the earlier Greek period the diamond point was apparently not used; but on Hellenistic and Roman gems there are occasionally fine lines with sharp ends that could only have been produced by such means; for lines made with drills always have rounded ends. The passage in Pliny (XXXVII, 15) which speaks of particles of diamond being set in iron has been thought to refer to the diamond point; but it may refer simply to work with diamond powder. Natter, in his *Traité*, p. XI, mentions the use of the diamond point for making a preliminary sketch. The unfinished engraving on a four-sided chalcedony reproduced above shows two different stages in the work—a preliminary sketch drawn in fine lines, similar to that on Athenian vases, and rounded depressions made by the drill.<sup>2</sup>

After the cutting of the engraving was finished, the surface was often polished. Practice varied at different times. In early Greek times the engraving was either left dull, or the polish was confined to the larger surfaces. Etruscan scarabs, on the other hand, often have a high polish, even when the carving is cursory. Beginning with the Hellenistic period and throughout Roman times the more carefully worked gems are generally highly polished. Modern gem engravers use very fine diamond powder and oil for a surface polish, and tripoli powder mixed

<sup>2</sup> This gem was formerly in the possession of Professor Furtwängler (cf. *A.G.* III, p. 400, note 2), later in that of Sir Robert Mond. Its present whereabouts are not known either by Sir Robert's descendants, or in the British Museum.

with water for a polish of the engraving. According to Pliny (XXXVI, 10), the ancients used Naxian stone (naxium) for polishing.

Glass gems were cast from terracotta moulds made from existing stone gems, both intaglios and cameos. A number of these moulds have been found in Tarentum (now in a private collection and shortly to be published by the owner). The design was occasionally retouched afterwards. For a description of the modern method of making glass reproductions cf. Mariette, *Traité de pierres gravées* (1750), pp. 92 f., 210 ff.

The technique of cameos is in all respects similar to that of intaglios, so that the same remarks apply to both.

It is not definitely known whether the ancient gem cutters made use of the magnifying glass. The general principle of magnification by concentrating rays was known to Aristophanes who refers to "the transparent stone used to start fire", τὴν [λίθον] διαφανῆ, ἀφ' ἧς τὸ πῦρ ἄπτουσι (*Clouds*, 766 ff.). Pliny (XXXVI, 67, and XXXVII, 10) mentions balls of glass or crystal brought in contact with the rays of the sun to generate heat, and Seneca (*Quaestiones naturales*, 1, 6, 5) speaks of this principle applied for magnifying objects. It may be difficult to believe that the ancients could execute the fine work they did without lenses, and merely looked, as Pliny (XXXVII, 16) prescribes, at emeralds when their eyes were tired; but it is a fact that even nowadays, when strong lenses are easily available, gem engravers do not always use them. The well known gem cutter, Mr. O. Negri, for instance, used lenses only in his later years.

The manifold difficulties of gem engraving are well set forth by Natter, the famous eighteenth-century engraver, in his *Traité*, pp. X f.:

"Certainly (the art of gem engraving) is the most painful and discouraging of all others. For besides the knowledge of drawing, which is as necessary to an engraver in stone as to a sculptor or painter, he is obliged when he does whole figures or groups to regulate his design or composition according to the method of engraving; he must avoid, for example, perspective, which is so great an advantage to a painter, and the foreshortening of the parts of the body; he must always strive to give his figures a light and easy position. . . . Another difficulty attending this art is that the engravings are commonly done on such small stones. . . . that it is scarcely possible to draw the just proportions with the diamond point, which greatly fatigues the eyes; nor can they be cut afterwards without excellent eyesight and very good light. Furthermore, you cannot have the assistance of another to forward your work; and the least mistake in executing the design is very difficult if not impossible to correct. You must also form your idea of the design for the reverse of the engraving and engrave deep what is to appear in relief. Add to this that the stone is liable to be spoiled by many accidents. All these reasons discourage people from cultivating an art that requires so much precaution and labour, and which is at the same time without protection of the rich and great".