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ENGRAVED ETRUSCAN MIRRORS:  
QUESTIONS OF AUTHENTICITY<sup>1</sup>

All of us are painfully aware of the difficulties inherent in studying objects without specific archaeological context. For example, more than 3,000 Etruscan mirrors survive, but most were recovered during the 19th century when little attention was given to their original context<sup>2</sup>. To complicate matters further, we now know that some early excavators could not resist the temptation to provide engravings for the blank mirrors which they found.

An excellent case in point is a mirror in the Nelson-Atkins Gallery in Kansas City (*tav. I, a-b*)<sup>3</sup>. It was given to the museum in 1956 but there is no record of where or when it was purchased by the donor, who is now deceased. The mirror was published in 1967 and accepted as authentic<sup>4</sup>.

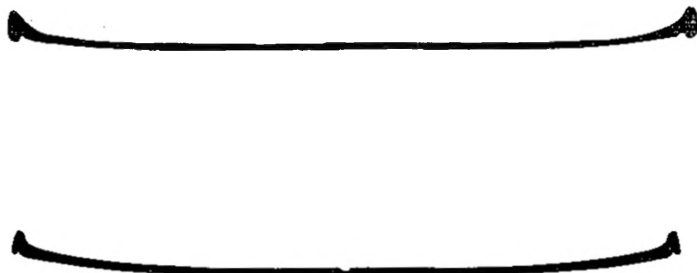


fig. 1 - Disc sections: A (Top), Detroit Institute of Arts, no. 47.399. B (Bottom), Kansas City, Nelson-Atkins Museum of Art, no. 56.124.

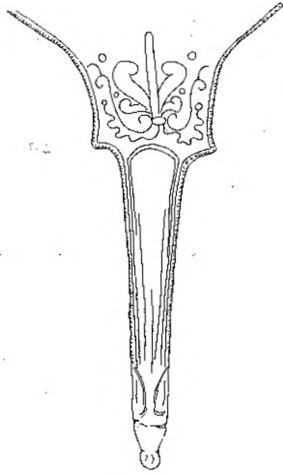
<sup>1</sup> Portions of this paper have been presented at the Archaeological Institute of America Conference in Cincinnati (see *AJA* 88 [1984] 241-242) and at the Midwest Art History Society Meetings in Bloomington in 1985.

<sup>2</sup> Recent bibliographies on Etruscan mirrors may be found in D. REBUFFAT EMMANUEL, *Le miroir étrusque* (1973) 337-342 and N. DE GRUMMOND, ed., *A Guide to Etruscan Mirrors* (1982) 187-196.

<sup>3</sup> Inv. No. 56.124. Gift of Katherine Harvey. Horizontal D., 17 cm.; Vertical D., 16.5 cm.; Max H., 31.5 cm.; Weight, 476 gr. The mirror is No. 23 in my *Corpus Speculorum Etruscorum. USA 1: Midwestern Collections*.

<sup>4</sup> R. TEITZ, *Masterpieces of Etruscan Art* (1967) no. 78. The vestiges of an inscription, mentioned by Teitz on p. 88, were not observed by me when I studied the mirror in 1983.

It has the distinctive piriform disc (*fig. 1 B*) and handle characteristic of examples produced during the 4th and 3rd centuries B.C. at Praeneste. The obverse has a small palmette engraved at the base of the disc (*fig. 2*). The thickness



*fig. 2* - Engraved extension ornament (obverse), Kansas City 56.124.

of the engraved lines here contrast dramatically with the very faint, sketchy lines on the reverse (*fig. 3*). There we see four figures which are very similar



*fig. 3* - Engraved scene on disc (reverse), Kansas City 56.124.



fig. 4 - Engraved mirror with *apulu*, *fustuns* and *semla*. East Berlin, Pergamon Museum, inv. no. 3276.

to those on a famous mirror from Vulci now in East Berlin<sup>5</sup>. An accurate engraving of that mirror was published in 1833 (fig. 4). All figures except the seated boy-satyr are provided with identifying labels. *Apulu* watches as *fustuns* kisses his mother *semla* in the contorted but elegant backward embrace. The Kansas City mirror shows the same scene *without* inscriptions and framed by a much simpler border which appears to represent stylized pairs of laurel leaves and is unique.

A comparison of three areas from each object will illustrate that the Kansas City mirror is a weak imitation of the 1833 engraving. The first pair (tav. II, a-b), shows the boy-satyr. Important details, such as the satyr's pointed ears and tail, are missing. The upper contour of the left leg is omitted; both feet are also missing. In general, all renderings are far less refined and there is inconsistency and hesitation in much of the engraving. A similar lack of finesse may be obser-

<sup>5</sup> Pergamon Museum, East Berlin, Inv. Fr. 36 (= M.I. 3276). Acquired from E. Gerhard in 1859. The earliest published engraving of this object is in *MonIst* 1 (1829-1833) pl. 56, 2 and is repeated in GERHARD, *ES* I, pl. 83 (here fig. 6). For discussion of the subject and five other mirrors with the same representation see U. FISCHER-GRAF, *Spiegelwerkstätten in Vulci* (1980) 64-72; G. PFISTER-ROESGEN, *Die etruskischen Spiegel des 5. Jhs. v. Chr.* (1975) 76-81; G. BATTAGLIA, *RendLincei* 7 (1930) 275-290. All of the examples appear to have modern engravings, copied from the published images of the East Berlin original, added to authentic blank mirrors. See also I. Krauskopf in *LIMC* II (1984), nos. 36-37.

ved in the second pair of details (*tav. II, c-d*). Most of *semia's* elegant jewelry and headband have been omitted; there is an awkwardness in the contours and profiles of both *semia* and *fuflums*. Finally, the last pair (*tav. II, e-f*), a detail of *apulu's* head, shows the perfunctory treatment of the curly hair so beautifully rendered on the Berlin mirror. This detail also illustrates the typical appearance of the corrosion products on the Kansas City mirror. Most engraved lines go over or through the patina. Furthermore, it appears that a major portion of the disc's center was polished to remove the patina and provide a better surface for the new engraving. In *tav. I, a* this appears as a matt gray area <sup>6</sup>.

We will return to this mirror again, but for now the evidence suggests that we are dealing with an authentic Praenestine mirror that was engraved sometime after its discovery with a scene copied from an image first published in 1833. Now, let us focus our attention on a second mirror but pose the same question: is this an authentic original, a complete counterfeit, or an original mirror with modern engravings?

The mirror (*tav. III, a-b*) was acquired in 1947 from an American dealer by the Detroit Institute of Arts <sup>7</sup>. Before that, it can be traced to a British collector

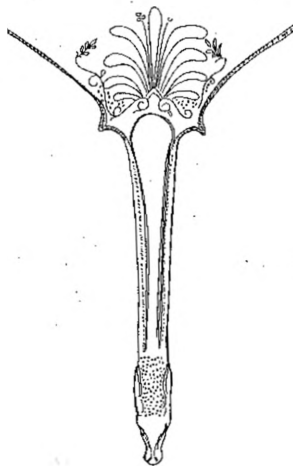


fig. 5 - Engraved extension ornament (obverse), Detroit 47.399.

<sup>6</sup> A close comparison of both images shows that the Kansas City scene is very nearly identical in size to the 1833 engraving. This suggests that a slide or negative of the 1833 engraving may have been projected onto the blank disc to aid the modern engraver.

<sup>7</sup> Inv. No. 47.399. Formerly in the collection of Sir Guy Francis Laking, London; acquired from E. S. David in 1947 with funds from the Founders Society, the Laura H. Murphy Fund. Horizontal D., 17.5 cm.; Vertical D., 18 cm.; Max. H., 30.6 cm.; Weight, 470.9 gr. Bibliography: Christie's Sale Catalogue (London) for 19 April 1920, no. 4; Spink and Son, Ltd. advertisement in the *Burlington Magazine* for May, 1920; F. W. ROBINSON, *Bulletin of the Detroit Institute of Arts* 27, 3 (1948) 67-68; N. de Grummond, ed., *A Guide to Etruscan Mirrors* (1982) 66 (where the engravings of the reverse are considered modern for iconographical reasons); figs. 7, 64; R. DE PUMA, *CSE USA 1: Midwestern Collections* No. 21.

who sold it in 1920. There is no earlier record and no archaeological context. The shape is immediately recognized as the piriform variety normally associated with Praenestine workshops<sup>8</sup>. In fact, many other details (e.g., the disc section, *fig. 1 A*) conform to the Praenestine standard. Let us examine just one, the engraved palmette above the handle on the obverse (*fig. 5*). This is perfectly normal for 4th century Praenestine mirrors and reminds one of designs on contemporary South Italian pottery. But, the question still remains: Even if the mirror itself is authentic, and the engraving on the obverse is ancient, could not the engravings on the reverse be modern?

Let us look at them more closely. We see three nude women engaged in conversation (*fig. 6*). Space does not permit a thorough discussion of the iconography or sources of this scene<sup>9</sup>. Suffice it to say that it is one of several similar treatments, within the Praenestine type, which illustrates non-mythical nudes in conventional poses.



*fig. 6* - Engraved scene on disc (reverse), Detroit 47.399.

Subsidiary ornaments offer much evidence for stylistic parallels. The leafy border is the most common ornament on these Praenestine mirrors. The cross-hatched groundline and acanthus plant below it are not as popular, but find

<sup>8</sup> The shape is very close to Birmingham City Museum, Inv. No. 447.61 (see G. LLOYD MORGAN, *PBSR* 43 [1975] pl. 1).

<sup>9</sup> Compare *Mon.Ant.Linc* 20 (1910) 79-81, *fig. 48*; GERHARD, *ES* IV, pl. 317; A. KLÜGMANN - G. KÖRTE, *Etruskische Spiegel* V (1884-1897) pl. 154 and pp. 204-205, nos. 154a-b; R. LAMBRECHTS, *Les miroirs étrusques et prénestins des Musées Royaux . . . à Bruxelles* (1978) 43-48, no. 6.

parallels on a number of other mirrors, some of which are collected in figure 7. All of these again recall the abundant vegetation on South Italian vases. This must be the origin for much of what we see on the engraved mirrors associated with Praeneste.

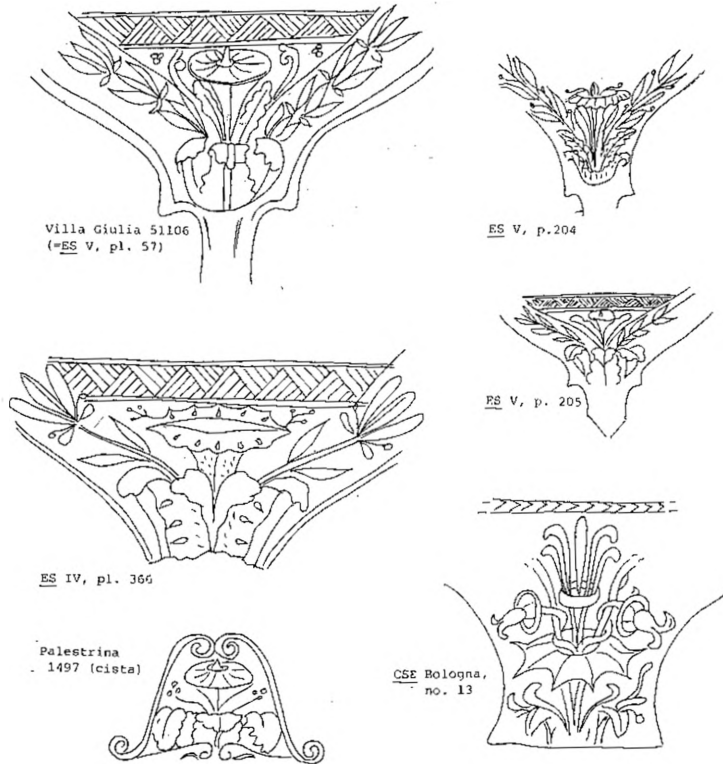


fig. 7 - Engraved acanthus ornaments, 4th century B.C.

For those concerned about the rather hesitant style of the engravings, let us compare the Detroit mirror (*fig. 6*) with some other objects. All of these have secure archaeological connections with Praeneste. A mirror in Rome<sup>10</sup> represents a very different subject (Herakles fighting an Amazon) but shows quite similar border and extension motifs (*fig. 8*). It even has some of the same architectural elements, chevron groundline (cf. *fig. 7*), and strange hair-styles.

<sup>10</sup> Villa Giulia, inv. no. 51106, found at Palestrina before 1870: A. CIASCA, *Il capitello detto eolico in Etruria* (1962) pl. 24, 1; the drawing in KLÜGMANN-KÖRTE, *cit.*, note 9, pl. 57 (here *fig. 17*) is inaccurate in several details.



fig. 8 - Villa Giulia, inv. no. 51106, from Palestrina.

The other engraved objects I wish to compare to the Detroit mirror belong to a different, but contemporary, class produced at Praeneste. These are the bronze *cistae*. They obviously share the same engraving techniques as the mirrors and many must have been decorated by artists who also engraved mirrors. There are three good parallels for the Detroit mirror and all are from Praeneste. The first is in Baltimore<sup>11</sup>. Details show again the same kinds of pillars, Aeolic capitals, and palmette ornaments as well as a related, careless figure style, especially evident in the cursory treatment of hands, feet, facial features and hair-styles. The second, a tub-shaped *cista* (fig. 9), is in the Palestrina Museum<sup>12</sup>. We see again similar architectural elements and a very similar figure style, especially noticeable in the pose of the nude woman illustrated in the detail (fig. 10). The third *cista*, also ovoid in shape and still at Palestrina, was damaged but remade in abbreviated form during antiquity<sup>13</sup>. The upper portion of the original

<sup>11</sup> Walters Art Gallery, inv. n. 54.132. Formerly in the Massarenti Collection; acquired in 1902. See G. BORDENACHE BATTAGLIA, *Le ciste prenestine* (1979) 43-44, no. 2; pls. 48-51. I am pleased to note that D. K. Hill first mentioned a stylistic relationship between this *cista* and the Detroit mirror; see *Hommages Grenier* II, 814.

<sup>12</sup> Palestrina, Museo Archeologico, inv. no. 1495, found in the Colombella necropolis at Palestrina in 1859. Formerly in the Barberini Collection; acquired by the Villa Giulia in 1908 but then transferred to Palestrina in 1956. See BORDENACHE BATTAGLIA, *cit.* note 11, 165-167; pls. 234-240; H.

<sup>13</sup> Palestrina, Museo Archeologico, inv. no. 1497; same provenance and history as no. 1495 (see n. 12 above). See BORDENACHE BATTAGLIA, *cit.* note 11, 167-169; pls. 241-244.



fig. 9 - Engraved cista. Palestrina, Museo Archeologico, inv. no. 1495.



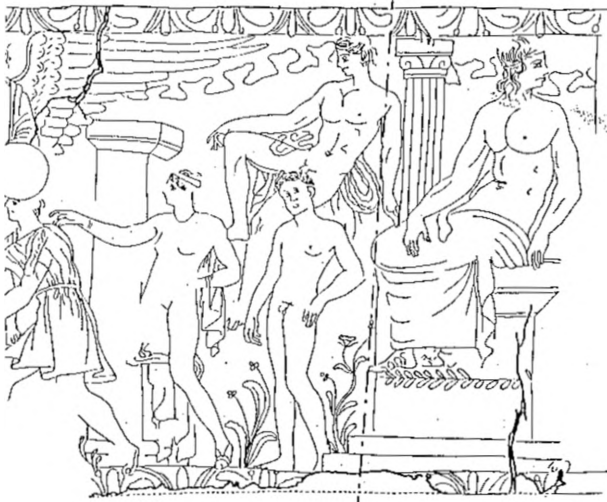


fig. 10 - Detail of fig. 9.

frieze (fig. 11-12) shows the now familiar Aeolic capitals, the same figure style with peculiar hair treatment and characteristically inept facial features. The border (if inverted) provides an acanthus plant related to that on the reverse extension of the Detroit mirror (fig. 6-7). Figure 13 summarizes a few of the non-figural relationships.

Thus far, this analysis of the Detroit mirror has followed traditional lines. Related objects with known provenance have been synthesized to establish the characteristics of a type. Then a related object without a context was checked against these criteria to see if it belonged to the group. Essentially, this is a stylistic analysis based on appearance: the Detroit mirror *looks* Praenestine. Its shape, size, disc section, rim and handle relief ornaments, and weight all conform to known Praenestine standards. Furthermore, the style of the engravings on both sides can be paralleled by other related mirrors and cistae, probably engraved in the same workshop if not by the same artist.

Our eyes are still the best judges, but we must realize that they can be biased. Less-traditional methods of analysis can supplement and corroborate our stylistic evaluations. In recent years, a number of Etruscan mirrors as well as other ancient bronzes have been analyzed by Atomic Absorption Spectrometry. The results are still tentative and a larger sample size is needed, but the method is producing some valuable findings. For example, Paul Craddock and a team of investigators at the British Museum, have shown that the Etruscans used a bronze recipe for mirrors which differed from that used for other cast objects that were not polished<sup>14</sup>. This recipe contains more tin than usual

<sup>14</sup> P. T. CRADDOCK in H. SALS KOV ROBERTS, *CSE Denmark 1*, 131-132 with bibliography.

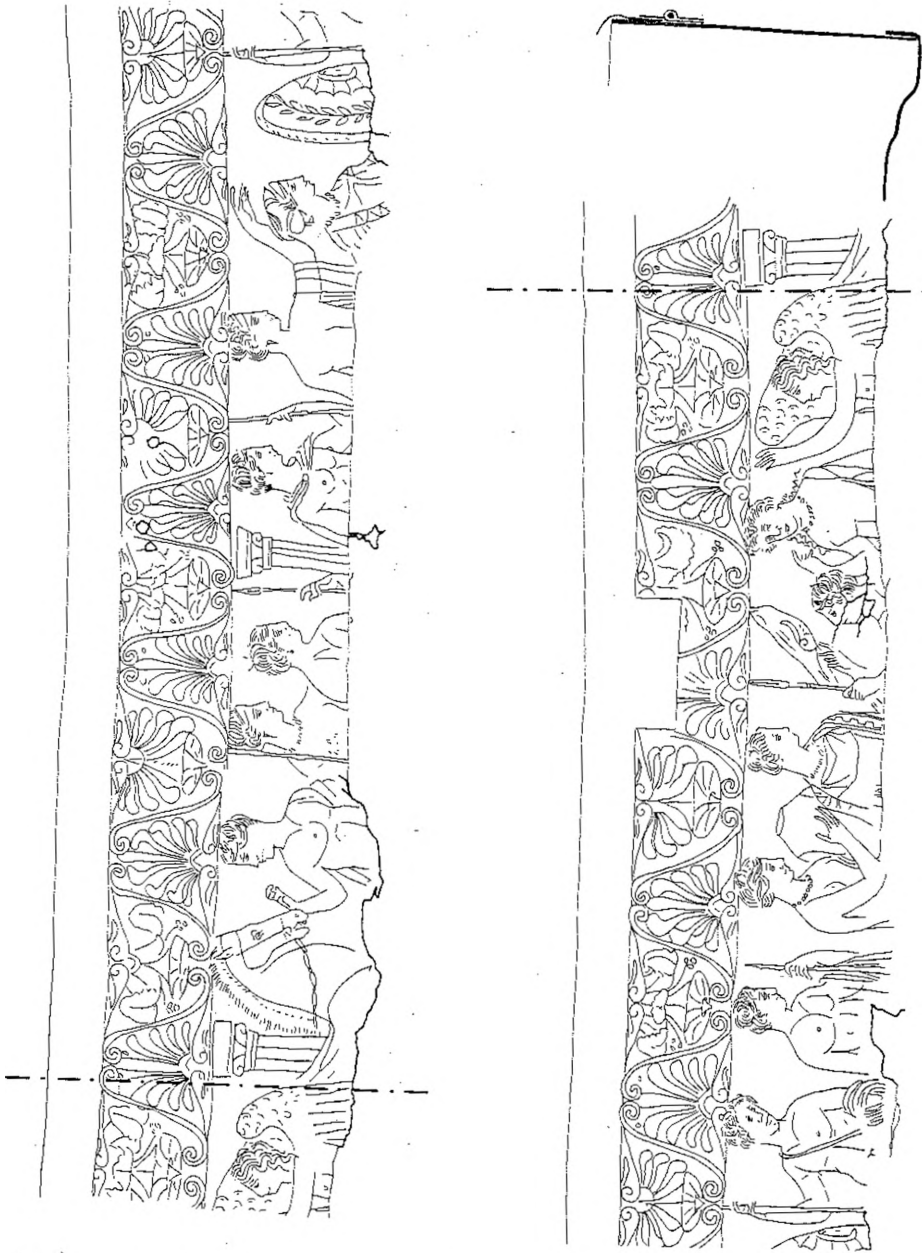


fig. 11 - Engraved cista. Palestrina, Museo Archeologico, inv. no. 1497.



fig. 12 - Detail of fig. 11.

Detroit 47.399

Baltimore 54.132

Palestrina 1495

Palestrina 1497

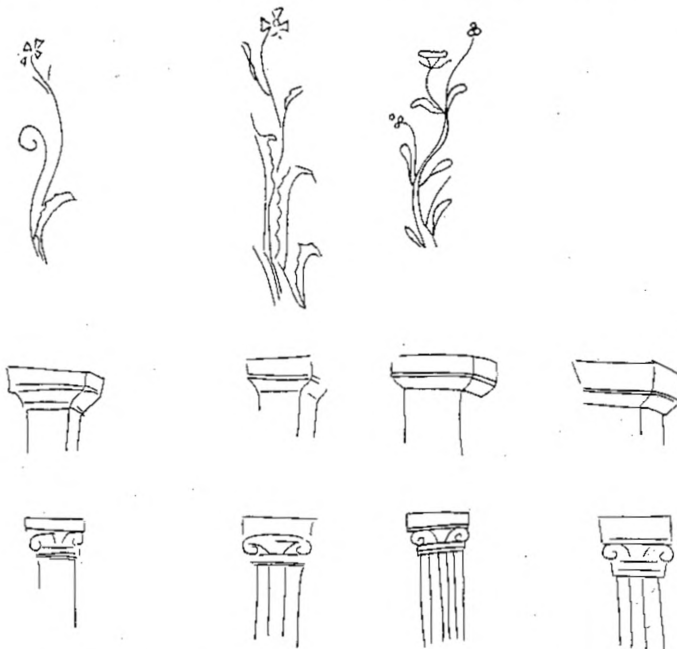


fig. 13 - Non-figural stylistic relationships between the Detroit mirror and three engraved Praenestine cistae.

(about 10-12% compared to 8.6% for other bronzes) and normally only traces of lead, which is more abundant in other bronzes. The Etruscans obviously had discovered that lead inhibits the bronze's ability to maintain a high polish and also encourages the formation of minute cracks on the engraved surfaces.

My own research in this area evolved from my work on a *Corpus Speculorum Etruscorum* fascicle dealing with mirrors in twenty Midwestern collections. The elemental and dimensional data for these forty mirrors have been compared to results from three European studies of 263 mirrors<sup>15</sup>. We thus have data for about 300 examples, or approximately one-tenth of the extant mirrors, a statistically-valid sample size.

The plots illustrated in *Tab. III-V* indicate the importance of physical and chemical variables in the study of mirrors. Only three types of mirrors are considered: those associated stylistically and archaeologically with (1) Praeneste or (2) Vulci, and (3) undecorated tang mirrors. In *Tab. III-V* Praenestine mirrors are represented by crosses, Vulcian mirrors by diamonds, and the undecorated tangs by dots. *Tab. III* illustrates a discernible difference between the ratio of height to diameter in Praenestine mirrors but no appreciable difference between Vulcian mirrors or the undecorated tangs. Less obvious differences emerge when we look at the chemical compositions. *Tab. IV* shows the relationship between percentages of copper and tin. There is a clear distinction between Praenestine mirrors and undecorated tangs: Praenestine mirrors tend to have higher concentrations of copper and lower concentrations of tin. *Tab. V* illustrates still another variable: Praenestine mirrors have low concentrations of iron and tin compared to the other types.

We can exploit these statistical relationships to classify mirrors according to their chemical and physical characteristics. A statistical procedure, discriminant analysis, was used to derive a classification rule from the heights, diameters, and chemical compositions of 182 mirrors for which these data were available. These classification rules were then cross-validated on data from 20 mirrors in US Midwestern collections<sup>16</sup>. The cross-validation showed that the Midwestern mirrors were accurately classified about 70% of the time as shown in Table I. We must, though, consider these promising results as preliminary until more data are available.

The chemical compositions for both the Kansas City<sup>17</sup> and the Detroit mirrors are given in Table II. The relative percentages for twelve elements were analyzed and they are consistent with the percentages of those elements in other

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<sup>15</sup> Elemental analyses of mirrors: L. MAES and G. GENIN in LAMBRECHTS, *cit.*, note 9, 373-377; L. FOLLO *et al.* in G. SASSATELLI, *CSE Bologna* 1, 207-211; II, 102; B. VAN DER MEER, *CSE Netherlands*, 167-168. See also note 14.

<sup>16</sup> AAS analysis was not yet available for the Midwestern mirrors when the cross-validations were executed. Instead data provided by EMA was used for these twenty mirrors. I wish to thank Dr. Richard L. Sawyer, American College Testing Program, for his invaluable advice and assistance in the data analysis and preparation of the tables.

<sup>17</sup> Table II indicates a difference of more than 3% between the AAS and EMA readings for lead. This may be explained by the fact that lead is not soluble in copper but forms distinct microscopic globules within the copper. Such globules were avoided when analyzing bronze samples by EMA.

TABLE I: Cross-validation of Discriminant Analysis Classification of Mirror Type.

Actual Mirror Type	Classified Mirror Type			
	Praenestine	Vulcian	Undecorated Tang	Other
Praenestine	5	0	0	1
Vulcian	0	2	0	1
Undecorated Tang	0	1	0	0
Other	3	0	0	7

Note: The classification rule was based on a discriminant analysis of the diameter, height, and percentage of Cu, Sn, Pb, As, and Fe of 182 mirrors. The cross-validation was based on corresponding data for 20 additional mirrors in US Midwestern collections.

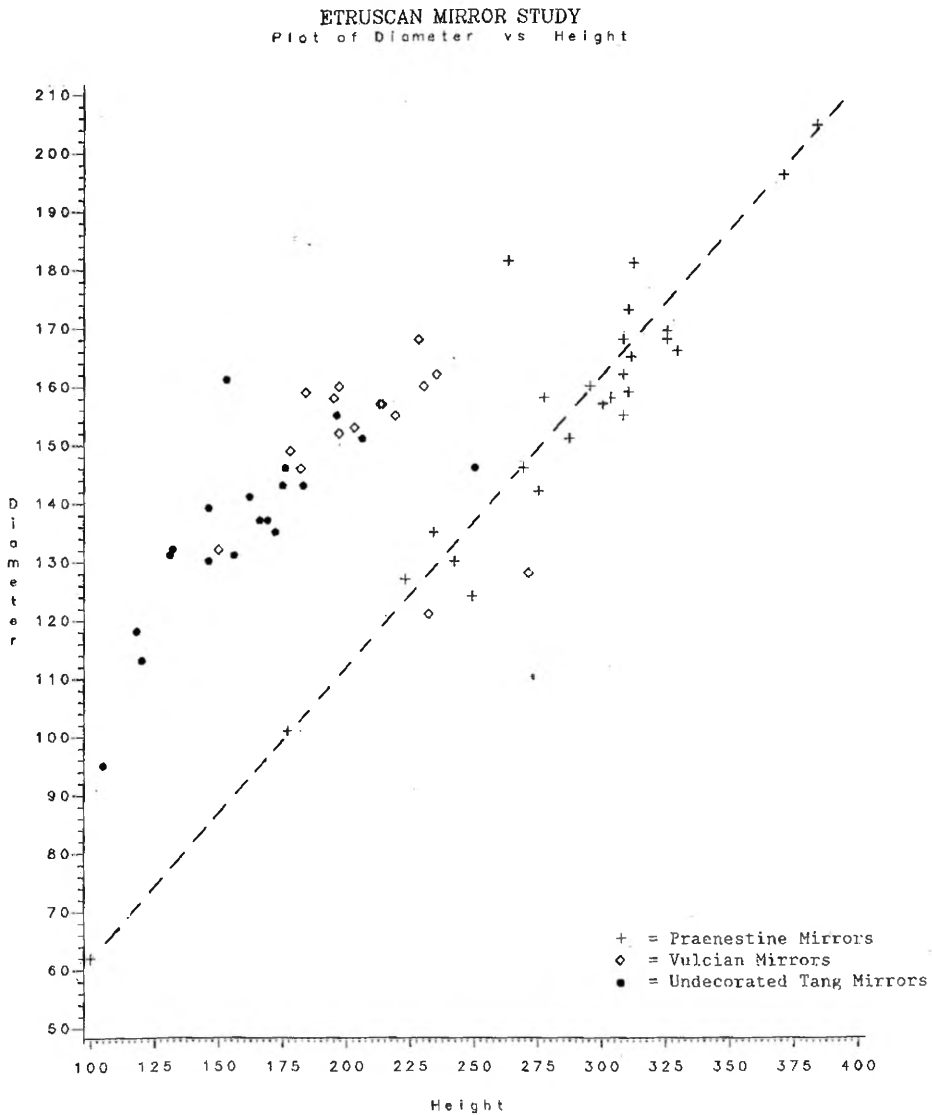
Praenestine mirrors<sup>18</sup>. Of course, this fact only suggests that the mirrors themselves are authentic. It does not prove that the engravings are ancient. In the case of the Kansas City mirror they are not, for reasons discussed above. This was originally a blank mirror, made ca. 300 B.C., with engraved ornament confined to the obverse extension (*fig. 2*). The engraved design of the reverse, copied from a published image of the East Berlin mirror (*fig. 4*), is an inept replica whose lines disturb or penetrate the ancient patina. But I do believe that the engraved scene on the Detroit mirror is an authentic product of the 4th century B.C. for three reasons:

TABLE II: Percentages by weight of twelve elements determined by Atomic Absorption Spectrometry (AAS) and Electro Microprobe Analysis (EMA).

	Cu	Sn	Pb	As	Ni	Fe	Co	Zn	Ag	Sb	Mn	Bi
Kansas City 56.124												
AAS =	85.09	10.0	3.47	0.16	0.03	0.08	0.06	< 0.01	0.07	0.12	< 0.01	0.07
EMA =	88.42	10.79	0.30	0.26	0.06	0.08	0.02	0.06	0.06	0.00	0.01	0.03
Detroit 47.399												
AAS =	88.22	11.7	0.26	0.08	0.02	0.04	0.05	< 0.01	0.05	0.11	< 0.01	0.03
EMA =	89.23	10.6	0.10	0.06	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.00

<sup>18</sup> Atomic absorption spectrometry analysis was conducted according to standardized procedures by Drs. Lee Friell and Shamsher Brar of the University of Iowa Hygienic Laboratory. The microprobe analysis was carried out by Dr. John Edie of the Electron Microprobe Analysis Facility of the University of Iowa. Funds for these and other analyses were granted by the Graduate College, University of Iowa. Final results for twenty-seven mirrors appear in the Appendix of *CSE, USA 1: Midwestern Collections*.

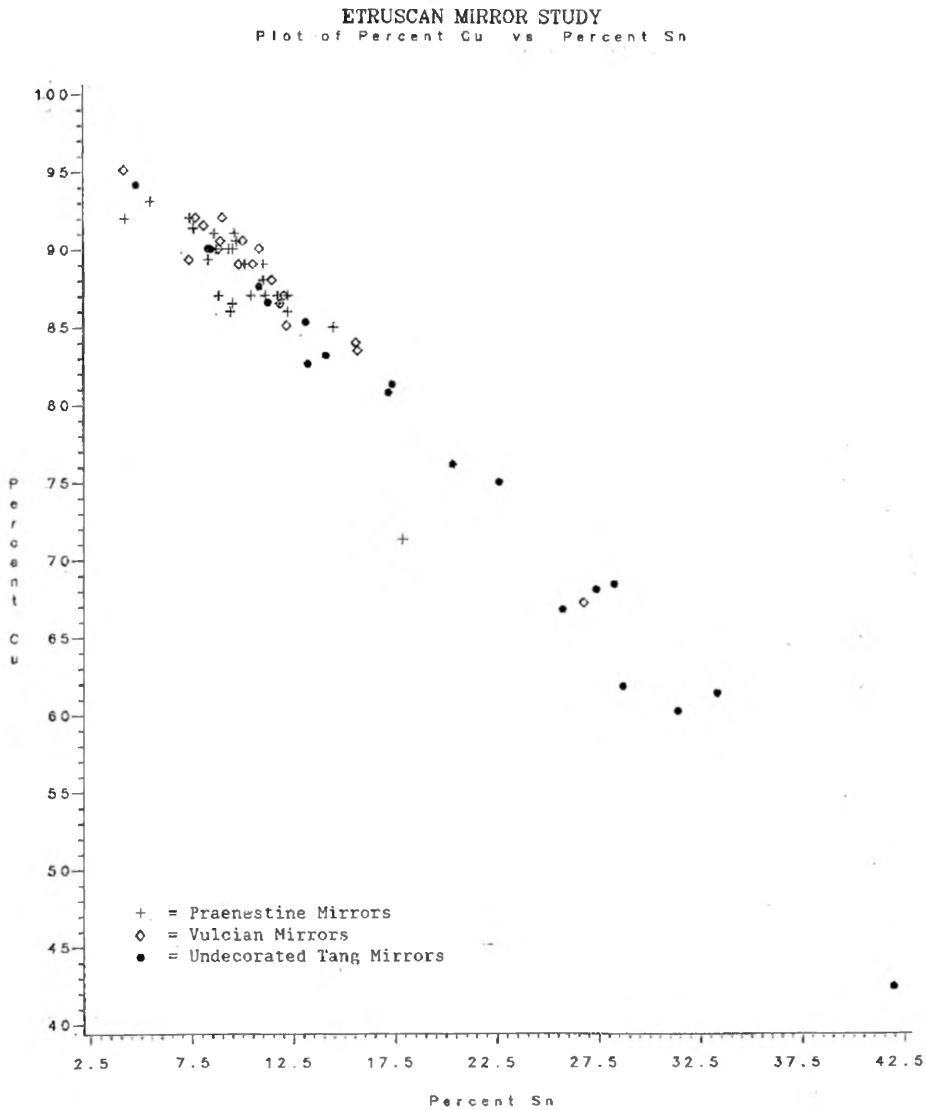
TABLE III - Plot showing ratio of diameter to height in millimeters.



First, our earlier stylistic analysis has demonstrated that the figure style and various elements of the composition are closely paralleled by related works excavated at Praeneste (e.g., *fig. 8-12*).

Second, the engraved lines are patinated. The photograph of the reverse (*tav. III, a*) shows a modern white infilling, added to make the designs more legible. This has been removed. A careful investigation with microscope shows that

TABLE IV - Plot showing ratio of copper to tin in percent by weight.

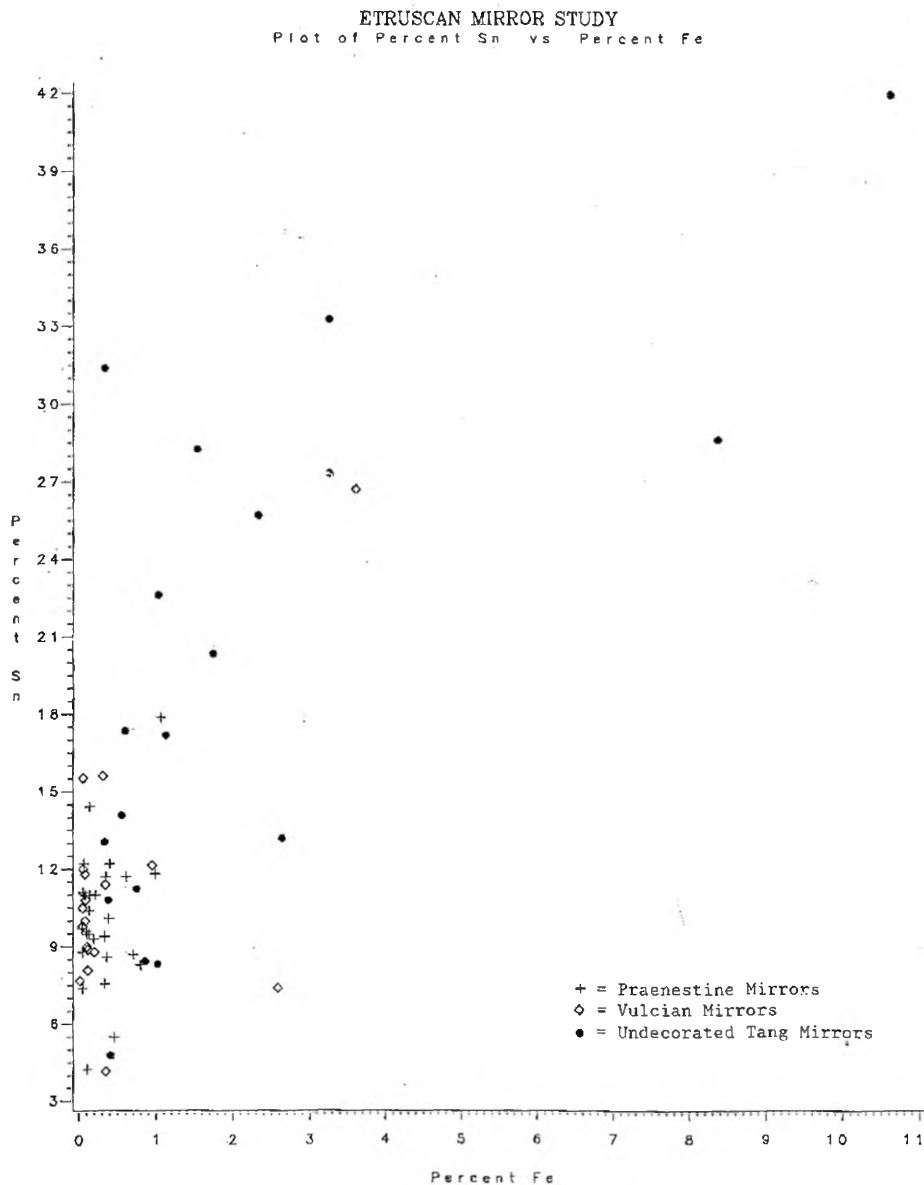


the engraved lines do not disturb the patina but instead are covered by it in proper fashion.

Third, the chemical composition suggests that the mirror was not intended to be left blank like some other Praenestine examples<sup>19</sup>.

<sup>19</sup> Preliminary results suggest that Praenestine mirrors which were not intended to carry much engraved decoration have a higher lead content (about 3-4%) than normal (less than 1%).

TABLE V - Plot showing ratio of tin to iron in percent by weight.



What can we learn from our examination of these mirrors? Connoisseurship is important, and there is no substitute for a broad familiarity with Etruscan mirrors studied in person. All aspects must be considered. Moreover, the complexities of Etruscan iconography and style allow for many divergences from



Greek art. We should not, therefore, be tempted to apply Greek art as a standard in determining authenticity. Strange motifs, bizarre subjects, unfamiliar juxtapositions and inferior workmanship should arouse our suspicions but, before declaring the work a forgery, we should realize that not all Etruscan engravers were masters of their trade. Moreover, since relatively little of what they produced is extant, we are likely to find some unique or unexpected and disturbing items occasionally.

In summary, by combining traditional stylistic and iconographical analyses with objective evaluations of chemical and physical data, we should be in a much better position to provide realistic judgments on the authenticity of these important Etruscan artifacts.

#### ILLUSTRATION CREDITS

Figs. 1-2: Courtesy of the Nelson-Atkins Museum of Art, Kansas City.

Figs. 3-5, 15-17, 23-26: Drawings and plots by the author.

Figs. 6, 7, 9, 11: From Gerhard, *ES* I, pl. 83.

Figs. 8, 10, 12: Photos by the author.

Figs. 13-14: Courtesy of the Detroit Institute of Arts.

Fig. 18: From Klügmann-Körte, *ES* V, pl. 57.

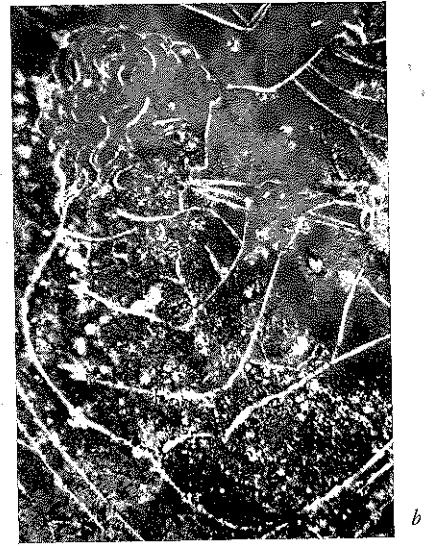
Figs. 19-20: Drawing by B. Del Piano, from G. Bordenache Battaglia, *Le ciste prenestine* I, 1, pl. 240.

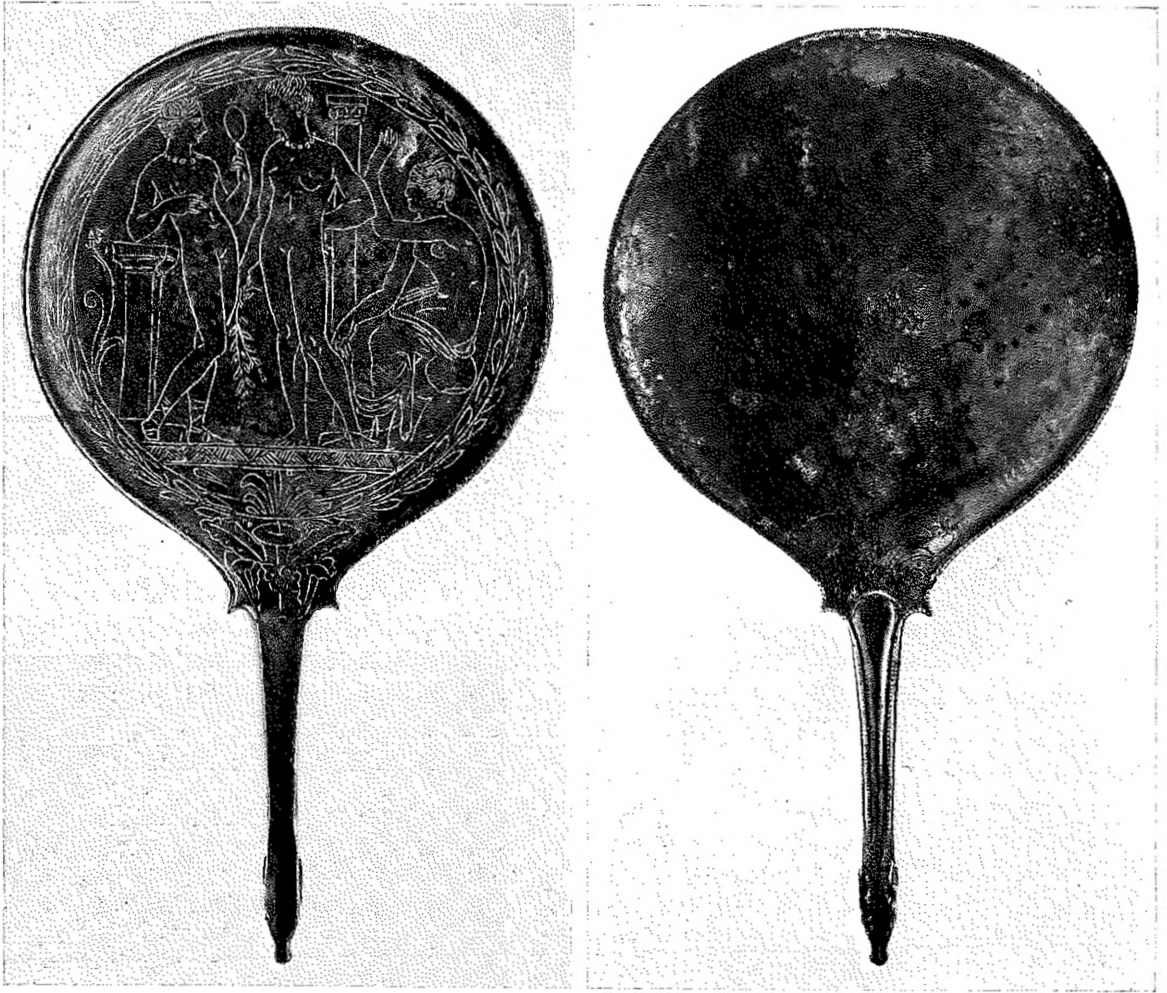
Figs. 21-22: Drawing by B. Del Piano, from G. Bordenache Battaglia, *Le ciste prenestine* I, 1, pl. 244.



a) Praenestine mirror, reverse. Kansas City, Nelson-Atkins Museum of Art, inv. no. 56.124. Gift of Katherine Harvey; b) Praenestine mirror, obverse. Kansas City, Nelson-Atkins Museum of Art, inv. no. 56.124. Gift of Katherine Harvey.

a) Detail of Fig. 4 (boy-satyr); b) Detail of tav. I a (boy-satyr); c) Detail of fig. 4 (*semia* and *fufluns*); Detail of tav. I a (*semia* and *fufluns*); e) Detail of fig. 4 (*apulu*); f) Detail of tav. I a (*apulu*).





*a* Praenestine mirror, reverse. Detroit, Institute of Arts, inv. no. 47.399; *b*) Praenestine mirror, obverse. Detroit, Institute of Arts, inv. no. 47.399.