A Gold Libation Bowl

by Dietrich von Bothmer

Curator of Greek and Roman Art

The most frequent form of sacrifice in the ancient world was the libation. In this rite two vessels were employed, a wine jug and a libation bowl. Wine was poured from the jug into the bowl, which was then tipped so as to allow the liquid to spill on the ground.

In Greece, vases for this use become known in post-Homeric times as phialai. In the beginning of the sixth century B.C. the word occurs on a silver bowl found on Cyprus, which is inscribed “I am the phiale of Epioros, the son of Dios.”

There are also ample references to the name in ancient literature, and the word occurs often in the inscribed temple inventories. Phialai in use are shown on many vase paintings that represent libation scenes or the banquets of gods and heroes, and the manner in which they were carried can be learned not only from vases, but also from statues and reliefs. Lastly, we have a great many of the phialai themselves, in all materials—terracotta, glass, onyx, bronze, silvered tin, silver, and gold—from all parts of the ancient world. Earliest among them are the Assyrian libation bowls; others have been found in Persia, Anatolia, Cyprus, Egypt, Greece, the Balkans, South Russia, Galicia, Italy, France, and Spain.

In shape the libation bowl is essentially metallic, that is, it could be hammered from a single disk of metal, and the decoration is taken from the repertory of toretic art. There is much variety among phialai. The earliest phiale from Greece, a gold bowl in Boston (Figure 1), is fluted and has a dome in the center, the omphalos, or navel. Later Greek or Etruscan phialai retain the omphalos, but abandon the fluting. The rim becomes circular, and the walls are either plain or decorated. The decoration is strongly influenced by Near Eastern models. It consists of egg- or nut-shaped bulges, or it is floral, sometimes combined with abstract designs. In all metal bowls so decorated, the ornament is convex on the outside and concave on the inside.

Convex bulges tend to increase the capacity of the bowl without enlarging either the height or the diameter, and they also combine with the central depression, the omphalos, in providing a better grip for the hand. A Greek phiale was held in the palm of the right hand: in this position the thumb rests along the outside edge or reaches over the top, and the four fingers are spread over the bottom, with the tips of the middle and ring fingers hooked in the hollow of the omphalos. With this grip a phiale could not only be held securely while the wine was poured into it, but could also be tilted slowly for the pouring of the libation. When empty, it was carried vertically with the fingers still in the same position.

The preserved phialai vary in size, but few of them measure more than ten inches in diameter. Bigger ones were made for dedications or display, but they could hardly have been used for actual libations, since it would have been difficult to hold them in one hand, especially when full. Some Etruscan bronze phialai are exceptionally large, such as the one found with the bronze chariot at Monte Leone. Like the chariot itself, this phiale may never have been used in life and may have been made expressly for the burial. Moreover, as Brian F. Cook has discovered, it was equipped with four swinging handles, attached below the rim, of which three are still preserved and have now been reattached.

The function of the phiale made it a vase of and for the gods, and almost demanded that it be made of a noble metal. Silver phialai were favorite dedications to the gods and are mentioned in the temple inventories in great num-

The Metropolitan Museum of Art
is collaborating with JSTOR to digitize, preserve, and extend access to
The Metropolitan Museum of Art Bulletin

www.jstor.org
bers. Gold phialai also occur in the inventories, but in proportionately smaller numbers, and those that are still preserved can be counted on one's fingers.

The Museum was recently able to buy such a gold libation bowl (Figures 2-4). Nothing precise is known of its provenance, but it may have been found in the Mediterranean sea: parts of a heavy incrustation, evidently the accumulation of ages, and especially well preserved under the overhang of the omphalos, turned out under the microscope to be the calcareous remains of various marine invertebrates, chiefly bryozoa and annelids. The gold is almost pure and is of more than twenty karats. Thus it is very soft, and the bowl may have been bent out of shape and partly crushed: there is evidence that some blemishes were corrected before it was acquired.

The ornamentation, which at first glance looks so very simple, is actually quite detailed. On the outside it consists of three rows of thirty-three acorns and one row of beechnuts. The acorns become progressively bigger in each row: the interstices between the acorns in the row nearest the rim are filled with young bees, seen from beneath. The other interstices are used for simple ornaments based on a stylized lotus. On the inside of the bowl there is additional ornamentation (Figure 5) around the omphalos. Under its overhang, and almost completely hidden by it, there is a circle of beading. Next to it, half-obscured by the omphalos, is a circular band of fifteen palmettes, bordered by a sharp ridge. Adjacent to the ridge are six regularly spaced oblong soldering marks (Figure 6), which indicate that something else was once attached here, either a decorative gold collar, or, more likely, separate gold ornaments or precious stones mounted in gold.

On the outside of the bowl there are on the flat zone around the omphalos two inscriptions. One of them, a mere graffito, or scratch, gives the letters PAUSI in Greek, perhaps the beginning of a Greek name such as Pausimachos. The other, clearly visible (Figure 7), is boldly engraved in Carthaginian (Punic) characters. The work of deciphering them has been kindly undertaken by a colleague at Harvard, Frank Moore Cross. The inscription reads from right to left. The first three letters can be read and identified but cannot yet be explained as a word or an abbreviation. Next comes a symbol well known from Carthaginian inscriptions, which resembles a Greek caduceus with streamers attached to it. After that comes the letter M, probably the abbreviation for the word meaning weight, followed by a punctuation mark and five characters. The first of them is the numeral “100”; the next is the letter meaning “and”; the last is the numeral “20.” The character before “20” is written twice and must be another numeral. Carthaginian numerals are written in descending order, and the sign can therefore not be lower than twenty. Neither can it be forty or higher, which would bring the total to two hundred or more. The sign is not found as a numeral on other Carthaginian inscriptions, and its meaning can only be obtained by this method of elimination. Professor Cross suggests the value “30.” If this is correct, the numbers add up to 180. The weights of gold and silver objects were usually rendered in units of a commonly used coin. Today the bowl weighs 747 grams. To arrive at its original weight we must add an unknown small quantity for the additional decoration around the omphalos. Now, the weight of Greek gold and silver vessels is commonly given in Attic drachms, and the weight “180” probably refers to this monetary unit. There is some difference among the actual weights that are

preserved, and the Attic drachm, for instance, does not maintain the same standard weight through the centuries. If we assume the loss in weight of the bowl to be about nine grams and divide the restored weight by 180, we obtain 4.2, or the average weight of an Attic drachm in the period between 429 and 230 B.C. The Carthaginian inscription can be dated by the letter forms in the third century B.C., and the lettering of the Greek graffito does not contradict such a date. The bowl itself may, of course, be earlier than the inscriptions, but if the reading of the Punic inscription is correct, we learn that the bowl was weighed, if not made, in the third century B.C. It is unlikely that the bowl was actually made in Carthage, since the weight seems to be given in an Attic measure. Perhaps it was the property of a Carthaginian living in a Greek community that used the Attic standard.

Another consideration that might yield a date is the style, which in the late classical and early Hellenistic periods, however, furnishes few reliable criteria. There are only three other complete bowls and the fragment of a fourth in gold which because of the material, shape, and decoration can be compared with the phiale in the Museum: a fragment in the National Museum at Warsaw, two bowls in the Hermitage in Len-
ingrad, and a bowl in the National Archaeological Museum at Plovdiv, Bulgaria. Of these the phiale in Bulgaria has been the subject of a recent study by Saul Weinberg, who postulated a novel theory as to its manufacture. He claimed that the decoration on the phiale in Plovdiv was produced by placing the bowl between two metal molds “locked into a fixed position and forced together.”

It seemed most unlikely, however, that the decoration of the bowl now at the Museum, or for that matter, any of the other decorated gold phialai, was done in this technique, and Weinberg’s theory raised many questions that could not be answered from photographs and publications. It therefore became important to examine and handle all the gold phialai themselves, and the acquisition of our bowl was made subject to an examination of the comparative material. The resulting visit to Poland, the U.S.S.R., and Bulgaria cleared up all questions of technique and many stylistic problems. Constant consultation with my colleagues in the Museum and abroad produced many of the observations and conclusions that are here presented with grateful acknowledgments.

Since examination of the known gold phialai shows that all were made in the same technique, each step can be described in detail, using the bowl in the Museum as a model for the class. The ultimate weight and size were probably predetermined by the number and weight of gold coins or other pieces of gold that the customer was prepared to spend on the object. The gold would be melted and cast into a disk of the proper thickness and diameter. This disk was then shaped into a shallow bowl by hammering, or “raising.” The bowl in New York is remarkably flat, with the rim almost vertical. In this technique the rim of a bowl always comes out uneven: it has to be made straight by filing and paring, and then strengthened by hammering down and back. This produces the thickening of the rim characteristic of hammered vessels.

Now the convex design, on our bowl the rows of acorns and beechnuts, was sketched on the inside, and the place for each bulge marked. As there are thirty-three nuts in each row, a number that, unlike four, six, eight, twelve, etc., cannot be readily obtained geometrically, considerable planning and experimentation, perhaps on a clay model, must have preceded the final sketch. After each bulge had been marked, matrices were carved, perhaps in wood: three for the different-sized acorns and one for the beechnut. These matrices had to provide only the exact outline but not the exact shape of each bulge: the detail was reserved for a later step. The bulges were then produced by hammering the metal into the matrices. A puncheon was formed or cast with the convex shape of the bee, and the design was hammered into the interstices of the last row, either while the bowl rested in a container of some yielding substance such as pitch, or while it was rotated over a wooden stake that fitted between the acorns. That a special puncheon was used is certain, for there is the same slight flaw in the tip of the right wing.

6. Detail showing the overlap of the palmettes and one of the soldering marks. Enlarged
of each bee. Throughout the hammering, great care had to be taken not to strike the bowl too hard, lest the metal be cut and cracked. Here the goldsmith of our bowl was not uniformly successful. In eight separate places his tools went through the metal, and the damage had to be repaired by placing gold strips on the outside over the cracks. These are so thin that the strips hug the relief and can only be detected with strong magnification.

If the bowl were resting in pitch while the bees were produced, the ornaments in the interstices of the remaining rows could have been produced during this phase, by hammering from the inside, as well as the tips of the acorns and the vertical ridges of the beechnuts. The cups of the acorns, on the other hand, were tooled from the outside, and for this phase of the work the bowl must have been filled with pitch and turned upside down. This can be seen from the crosshatched lines of the acorn-cups: those on the outside are much sharper. Such an effect, incidentally, could not have been produced by locked metal molds.

It was most likely after the completion of the convex decoration that the goldsmith started on the center of the bowl. First he marked two concentric circles for the ridges that were to frame the zone of palmettes. The ridges were produced by chasing: driving the metal toward the lines until a welt or ridge formed. He notched the inner ridge to produce the beading, and then he stamped the fifteen palmettes with a die, moving in a clockwise direction with the bowl resting on an unyielding surface such as a metal stake or anvil. Here a slight miscalculation pro-

duced an overlap: the first palmette has been partially obliterated by the last (Figure 6).

Next the goldsmith turned to the omphalos. First he stretched the metal by hammering from the underside into a wooden depression or concave stake; the final shape was achieved by hammering from the inside of the bowl while the omphalos sat on a metal stake with a slight flange to produce the pronounced overhang.

There remain the soldering marks (Figure 6). The two phialai in Leningrad and the one in Plovdiv all have a separate gold collar set around the omphalos (see Figure 14). Since the entire phiale, including a collar, could have been hammered in one piece, one must ask why the collar is separate. Perhaps it was a way to employ the leftover gold. After the bowl had been raised, the edge of the rim had to be trimmed, and these scraps of gold may have been melted down and cast in the shape of a ring or collar, to be attached last, so that the customer would get an object weighing exactly, or nearly exactly, as much as the gold he had supplied. On the phiale at the Museum, such a gold ring or collar could only have been very narrow, and the soldering marks are probably for separate attachments, either gold ornaments or gold mounts for precious stones (as on two gold phialai in the Delian inventories, dedicated by Stratonike, daughter of Demetrios Poliorketes, and the twenty asserted to have been given to Entimos by Artaxerxes). The regular spacing of the marks favors six separate ornaments rather than a ring, and two gold phialai in Stara Zagora, Bulgaria.
9. Detail of a gold necklace with acorns, from Eretria. 
National Archaeological Museum, Athens

10. Fragment of a gold necklace with acorns, from Temir Gora IV (South Russia). IV century B.C. 
The Hermitage State Museum, Leningrad

11. Detail of a gold necklace with acorns, from Kerch (South Russia). IV century B.C. Ashmolean Mu-
seum, Oxford

much smaller and less ambitious than the others, and not otherwise comparable, still have gold 
staples on the rim and a hole in the omphalos, as if ornaments had been attached to them.

X-rays bear out all these observations concerning technique, for they show very clearly 
the variation in the thickness of the metal from the flat area around the omphalos to the rim, 
and also within each bulge or boss from the edges to the center—phenomena typical of har-
mered works. Similar variations in the thickness of the bowls in Leningrad and in Plovdiv, as 
well as marked differences in the details of each

decorative element prove that the decoration 
was not produced and finished mechanically, 
but achieved by raising, repoussé work, and 
chasing in the same way as on the bowl at the Museum.

The principal element of decoration on our phiale is the acorn. This must have been a per-
sistent motif, for many acorn-phialai are men-
tioned in the temple inventories. Among those 
phialai that have been preserved, acorns appear 
for the first time on a fragment in Warsaw (Fig-
ure 8). The shape of the phiale can be recon-
structed from the preserved portions of the peri-
phery and the curve of the bowl, giving a di-
ameter of not quite ten inches and a height of 
more than three inches—much deeper and more 
that any of the complete phialai. Such proportions and shape speak for 
an early date, as we learn from representations of phialai painted on vases.

Fortunately the fragment can be dated with 
a fair degree of accuracy. It was found in 1886 
in the second necropolis of Marion on Cyprus, 
in a tomb that included coins and an Attic black-
figured neck-amphora firmly dated in the last 
quarter of the sixth century B.C. The acorns on 
this fragment are plump and heavy. In the fifth

12. Fragmentary marble phiale from a Roman copy of 
one of the caryatids on the Erechtheum at Athens, 
found in the Forum of Augustus, Rome. House of 
the Knights of Rhodes. Photograph: Römisches 
Institut
century they become slimmer, as can be seen in gold necklaces found in Eretria (Figure 9) and from the phialai held in the right hands of the famous caryatids of the Erechtheum on the Acropolis at Athens. The hands are lost on the mutilated originals in Athens and the British Museum, but some are preserved in recently discovered Roman copies. A fragment of such a bowl (Figure 12) from the Forum of Augustus in Rome is now in the House of the Knights of Rhodes. Here the interstices of the last row are decorated with a shallow ornament not unlike the stylized lotus of our bowl. Even more complete statues have been excavated in Hadrian’s villa. They show very clearly how the caryatids held these bowls (see Figure 13).

Unfortunately no metal phialai of this type and period have been found in Greece proper, and in the search for comparisons one must therefore turn to the periphery of Greece and to her far-flung colonies. Not all the comparable gold phialai are purely Greek, but they are sufficiently alike in shape, size, and technique, as well as in details of decoration, to merit discussion.

Quite Greek is the gold phiale at Plovdiv, dug up by chance thirteen years ago in a clay pit near Panagyurishte in Bulgaria. The decoration is in four concentric rows, as on our bowl, and the acorns (Figure 16) are remarkably similar in form. Here they constitute the row nearest the omphalos, while above them are three rows of Negro heads, increasing in size toward the rim. One is struck by a connection between the two decorative elements: add a face to the smooth portion of an acorn, with a snub nose, and elaborate on the crosshatched cups, and you have the head of a Negro (Figure 15) as represented in Greek art, with the typically rounded facial features and short kinky hair. Now, Pausanias, describing the statue of Nemesis at Rhamnous in Attica, reported that Ethiopians were represented on the phiale in her hand. “Ethiopian phialai” are also listed in Attic inventories, but until the phiale from Panagyurishte was found, nobody could visualize what “Ethiopian phialai” looked like.

According to ancient legend, the statue of Nemesis was carved from a block of marble brought over by the Persians during their inva-

13. Marble phiale from another Roman copy, found in Hadrian’s villa. Photograph: Römisches Institut

sion of Attica to serve as a victory monument; it was, understandably, abandoned after their defeats at Salamis and Plataea. The Ethiopians on the phiale of the statue were therefore taken by archaeologists to stand for some of the defeated auxiliaries. Other, more recent explanations refer to the exalted position held by the Ethiopians in Homer, as friends of the gods who lived at the extremities of the earth. But the heads on the phiale from Panagyurishte are almost caricatures, and we see in them little of the Homeric spirit. The notion of Negro heads in rows can perhaps be traced to an Egyptian convention. At Medinet Habu and elsewhere in Egypt, rows of captive foreigners appear under the ledge of the so-called “window of appearance,” with only their heads and shoulders shown. Not all the captives are Negroes; they represent many races and tribes, but to the Greeks Negroes were the most obvious foreigners, and a Greek visitor to Egypt in the fifth century—a period of much travel between the two countries—may well have been struck by this detail of Egyptian art and reported upon it. The principle may then have been applied for the first time to the phiale of Nemesis at Rhamnous.

The Panagyurishte phiale was found in a hoard, together with eight other gold vases, hastily buried without protective covering in
a clay pit at a time of unrest or invasion. Like our phiale, it is purely Greek in style and technique; the other vessels found with it, a rhyton-amphora, four drinking horns in the shape of animal heads, and three oinochoai in the shape of female heads, are in a somewhat different style and could hardly have been made by the same artist. They may be contemporary with the phiale, but it is difficult to date the entire hoard precisely. If the occasion of the hasty burial was an invasion, it must have been that of the Gauls, between 286 and 270 B.C. The objects in the hoard may be dated in early Hellenistic times—somewhere between the death of Alexander the Great (323 B.C.) and that of his successor in Thrace, Lysimachus (281 B.C.).

Negro heads, acorns, and bees occur on a terracotta phiale with reliefs (Figure 17) found in a temple deposit at Locri in southern Italy. Here, as usual on terracotta imitations of metal phialai, the decoration appears in relief on the inside of the bowl, while the outside is smooth. The terracotta phiale thus provides an important link between the bowl in Plovdiv and ours, since it shares the Negro heads and the acorns with the phiale in Bulgaria, and the acorns and bees with our new accession. In addition, the palmettes in low relief in the zone adjacent to the omphalos are astonishingly close to the palmettes on our bowl. Since the terracotta phiale was found without any datable material it can only furnish us with iconographic comparisons but does not help in the dating.

The two remaining gold phialai were found in South Russia and are now in the Hermitage in Leningrad. They differ from the ones in Plovdiv and at the Museum in that they show features betraying an alien, non-Greek taste. On one of them (Figures 18, 19), a very elaborate gold phiale from Kul Oba, the motif of bees recurs. The ornamentation is patterned upon an open flower. Twelve large leaves or petals radiate from the center, and the intervals are divided by three successive rows of smaller petals, one of twelve, one of twenty-four, and one of forty-eight radiating tips. All ninety-six tips are aligned at the circle on the bowl where the rim rises, and bees are placed in the small triangular spaces between them. While on the phiale in the Museum the bees are shown from beneath, with their heads pointing toward the rim, those on the Leningrad bowl are seen from above with their heads toward the center.

The leaves have all but lost their floral origin. The forty-eight smallest are shaped into boars’ heads; the twenty-four in the next layer are bearded heads wearing pointed, perhaps Scythian, caps. The remaining twenty-four are decorated with gorgoneia, volutes, and palmettes. Lastly there are twelve panthers’ heads, shown upside down and facing toward the rim of the bowl, between the bases of the leaves or petals of the first layer.

Independent of the elaborate floral complex is a narrow zone around the omphalos, decorated with sixteen dolphins and many other creatures of the sea, and framed by two borders. The outer border is decorated with a kymation; the inner one is notched diagonally to represent a rope.

This phiale was found in 1830 in a large tumulus not far from Kerch, called the Kul Oba (“Mound of Ashes”). The tumulus is one of the richest ever discovered in South Russia and must have been the tomb of a Scythian king or chief-tain. The objects found with the bowl range in style from purely Greek engravings on an ivory veneer, and Scythian jewelry and utensils of Greek workmanship, to purely Scythian works. The phiale is a good example of art in a mixed, or semi-Hellenized culture. Its shape conforms
to the Greek type, and the details of the figure decoration as well as the disciplined pattern-work are paralleled in Greek art. Non-Greek, however, is the composition, with its profusion of decoration, which obliterates the basic floral structure. Nor does it seem likely that the owner used the phiale as a libation bowl: there are two crude rings soldered at opposite points on the outside of the rim, recalling the legends Herodotus tells of golden phialai among the Scythians and of their custom of using them as clasps of belts or baldrics.

In spite of the wealth of the tomb, it is difficult to date all the objects from the Kul Oba with any degree of accuracy. Not all need be contemporary: some may have been heirlooms, and others native imitations of earlier Greek prototypes. The drawings on the ivory veneer afford good comparisons with Attic red-figured vases and may be as early as the late fifth century B.C. On the phiale itself, the marine frieze is of a later style than the frontal heads of the gorgons and the men with pointed caps. Therefore, rather than bring the date of the tomb down to the middle of the fourth century B.C., as has been

15. A Negro head, from the outside of the gold phiale from Panagyurishte, revealing the details of repoussé work. Enlarged

done, it may be safer to speak of the late fifth and early fourth centuries B.C.

The other gold phiale from South Russia (Figure 20) dates from the same period. It was found in 1913 near the village of Bolshaya Snamenka, in the district of Melitopol, in a tumulus called by the neighbors “Solokha.” Shape and proportions are traditional, and the weight is an even two hundred Attic drachms. The inscriptions on the outside of the rim are Greek, and so are the individual designs, an ivy wreath near the rim, and the animal groups. The latter are in three concentric zones, divided into seven sectors. In the biggest zone, near the rim, two lions have felled a horse; in the central one, a panther and a lion have brought down a deer,
with the panther, for reasons of space, shown nearly vertical; in the inner zone there is room in each sector for only a lion and a stag. All twenty-one animal groups are separate, without any overlapping, but they fill the space in an undisciplined, non-Greek mêlée, with every square inch of the surface covered. It is hard to recognize anything on this bowl from a distance, and even the pattern formed by the groups does not become clear until one looks at the decoration closely. The other contents of the princely tomb of Solokha run the entire gamut from Greek imports to purely local Scythian products. The date of the phiale is again the late fifth, or the very beginning of the fourth century B.C.

It is salutary to go from time to time beyond the political boundaries of classical Greece, and to look at the ancient world as a whole. The political and religious, linguistic and cultural divisions may have been as great then as they are still, but these phialai tell something of the unity of ancient man, who lived in a world where a golden libation bowl could be of Near Eastern ancestry, Greek in shape and decoration, and inscribed by a Carthaginian.

A wealth of interest is awakened by our bowl, not only because of its rarity, or because of the technical, chronological, stylistic, and philological questions it raises, but also because of the sheer delight of a beautiful shape, worked in the noblest of all materials, and decorated both simply and handsomely. Those who look for a deeper significance may find it in the bees and acorns, and may catch a glimpse of the good life that awaits the men who practice true justice, for whom, as Hesiod said, “the earth brings forth livelihood aplenty, and the oak in the mountains bears acorns on top, and in the middle, bees.”

17. Terracotta phiale with Negro heads, acorns, bees, and palmettes, from Locri (southern Italy). Diameter 7 7/8 inches. Museum, Reggio di Calabria

The two gold phialai from South Russia occupy an important place in the group. If we ignore the non-Greek system of decoration, we can concentrate on the features they share with the purely Greek gold bowls. The four are remarkably uniform in shape, size, and proportions. All are executed in the same technique and three of them are connected with one another through their decoration.

18, 19. Gold phiale, from Kul Oba (South Russia). Late V—early IV century B.C. The three-quarter view below shows the soldered rings and the bees near the rim. The Hermitage State Museum, Leningrad
REFERENCES

1. 74.51.4552. Olivier Masson Inscriptions chypriotes Syllabiques (Paris, 1961) p. 193, fig. 49, no. 177 (with bibliography).


6. There are three descriptive adjectives for acorn phialai: in the fourth century akylotai (from an Attic word for a variety of acorn), balanotai, and, from the third century on, karyotai (from the generic word for nut). Balanotos can also refer to other tree fruits, including dates, and karyotos can also refer to dates, but, as Marjorie J. Milne points out, the phialai karyotai of the Delian inventories need not have been phialai embossed with dates—the drastically shortened Epitome of Athenaeus XI 502 b being insufficient evidence.

NOTES

The most comprehensive monograph on phialai is Heinz Luschey Die Phiale (Bleicherode, 1939) and his article in Pauly-Wisowa-Kroll Real-Encyklopädie der klassischen Altertumswissenschaft Supplementband VII (Stuttgart, 1940) cols. 1062-1090. The most recent discussion of the phiale from Panagyurishte is by N. M. Kontoleon, in Balkan Studies, III (1962) pp. 185-200, who gives a complete bibliography. The Warsaw fragment was first published by Max Ohnefalsch-Richter in Kypros, The Bible and Homer (London, 1893) pl. 98,3; he describes the tomb and its contents on pp. 361-362. The bowls from Kul Oba and Solokha are best published by Miss A. P. Mantsevich (Sovetskaya Arkeologiya, XIII [1950] pp. 217-238).

TABLE OF DIAMETERS, HEIGHTS, AND WEIGHTS

| Metropolitan Museum | 22.7 cm. | 3.6 cm. | 747 gr. |
| Warsaw (fragment)   |          |         |        |
| (restored measurements in brackets) | [25] | [8.4] | 105.3 |
| Plovdiv              | 24.7     | 3.9     | 845.7  |
| Kul Oba              | 22.6-23.1| 3       | 698    |
| Solokha              | 22-22.5  | 3.5     | 865    |

20. Gold phiale, from Solokha (South Russia). Late v—early iv century B.C.
The Hermitage State Museum, Leningrad