

CHAPTER VIII

STONE VESSELS

1. HISTORY OF THE DEVELOPMENT OF EGYPTIAN STONE VESSELS FROM THE PRE-DYNASTIC PERIOD TO DYNASTY V

(A) THE STONE VESSELS OF THE PRE-DYNASTIC PERIOD

STONE vessels are rare in ordinary graves in all periods of Egyptian history, except during the first three dynasties. Their occurrence in predynastic graves is indicated by the following examples of cemeteries of that period:

1. El-Amrah (incomplete record)	33 vessels	108 graves
2. El-Mahasna (empty graves omitted)	3 "	132 "
3. Ballás (mss. notes; all graves)	7 "	401 "
4. El-Ahaiwah (mss. notes; all graves)	12 "	285 "
5. Mesa'eed (mss. notes; all graves)	<u>20</u> "	<u>728</u> "
Totals	75 "	1654 "

The number of pottery vessels in the cemeteries of which I possess complete records is nearly one hundred times the number of stone vessels. The proportion varies greatly from cemetery to cemetery according to the apparent wealth of the community. In each cemetery the stone vessels occurred usually in the richer graves, and often in groups of two to seven in single graves. Thus:

- Graves T 5, T 16, and 743 at Naqada¹ each contained five stone vessels.
- Grave 17: 83 at Khor Ambukol² contained seven.
- Grave b 62 at El-Amrah³ contained five.

And other examples might be cited.

The most characteristic material used for stone vessels in the Predynastic Period is basalt; but alabaster, limestone (especially pink), red and white breccia, porphyry, and syenite also occur.

The vessels have been hollowed by boring. The boring marks are coarser and less regular than in the later stone vessels and appear to have been produced by a different method of boring, perhaps not by using the crank-borer represented in the reliefs of the Old Kingdom. The hole bored by the predynastic borer is of two forms: (1) straight sided with fine striation marks due to a continuous boring from top to bottom with one stone; and (2) concave sided with broad concave grooves finely striated due to boring with stones of different sizes or rubbing with a stone held in the hand. The interior has seldom been dressed smooth except in bowls. The exterior surface has usually been beautifully dressed by rubbing, not turning. The holes in the pierced handles have been drilled from both sides and show a good deal of play in the tool.

The Predynastic Period covered a considerable length of time, and a distinction must be drawn between the vessels of the Early Predynastic (E. P.), the Middle Predynastic (M. P.), and the Late Predynastic (L. P.). A fourth division comprises the so-called Dynasty O, which is intimately connected with that part of Dynasty I which was previous to the death of Menes or, perhaps, previous to King Zer.

The vessels are here classified into twelve principal types, for the sake of convenience. Types I–VIII are jars of various sorts; types IX–XI are cups, dishes, and bowls; and type XII includes the tables. Some other classification might easily have been found, but this seems to me practical for the purpose. A few vessels of peculiar form, "fancy" vessels as they have been labeled by Professor Petrie, have not been included — sack-like jars, frog form pots, etc. The types which can be definitely described as predynastic are only six in number, types I, II, III, IV, IX, and X. In addition, types V,

¹ Petrie, *Naqada and Ballás*, pp. 19–20.
² Reisner, *Nub. Arch. Sur. 1907–08*, p. 125.
³ MacIver and Mace, *El-Amrah and Abydos*, p. 20.

VI *a*, and XI are each represented by one or two examples which are, however, modifications of types II and IV and certainly not the forms attached to these types in Dynasty I. The above types occur in the different predynastic periods as follows:

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|-----------------------------------|-------|--|
| (a) Early Predynastic (E. P.) | | Types I and II alone. |
| (b) Middle Predynastic (M. P.) | | Types I and II continue.
Types III, IV, and IX begin. |
| (c) Late Predynastic (L. P.) | | Types V, VI <i>a</i> , and XI occur sporadically.
Types I, III, IV, and IX continue.
Type X <i>a</i> begins. |
| (d) Dynasty O — Menes (Dynasty O) | | Types I, III, IV, V, IX, and X continue.
Types VI <i>b</i> , VII, and VIII begin. |

The poverty of the type forms of the Predynastic Period, and especially of the E. P., is striking in comparison with Dynasty O and, as will appear later, the forms of Dynasty O are few in comparison with those of the Early Dynastic Period when a multitude of sub-types are represented by examples in the tombs.

It is to be noted that:

- (1) The E. P. and the M. P. are firmly tied together by types I and II.
- (2) The M. P. and the L. P. are joined by types I, III, IV, and IX.
- (3) The L. P. and Dynasty O are connected by the same types — I, III, IV, IX, and X.

Dynasty O and the archaeological group of Menes are admittedly one. The group of Menes has from the first been recognized as intimately joined to that of the succeeding kings of Dynasty I. Thus the types of stone vessels developed progressively from the E. P. to the Early Dynastic Period, indicating that the Egyptians of Dynasty I were the historical descendants of those of the E. P. This conclusion applies also to the pottery, the flints, the copper weapons and tools, and both grave and burial types. Thus the archaeological evidence proves that the Egyptians from the E. P. to the Dynastic Period are one race developing from the use of stone to the full practical use of metal. There is no evidence of the introduction of foreign culture and, I believe, no archaeological evidence of the influx of a foreign race, the so-called "dynastic race." I am aware of the results of the measurements of bones, but the somatological material is very defective, and the results of the anatomists are far from conclusive.

(1) *Type PD-I. Cylindrical Jar*

The cylindrical jar begins certainly in the Early Predynastic Period. The variations of the form are almost as many as there are jars, and all are rather irregular and clumsy. Predynastic cylindrical jars are characterized by the absence of the cord in relief around the neck. The materials are ivory, basalt, limestone, and alabaster. I suggest that the form is a natural one for wood or ivory and that the stone forms were derived from earlier wood or ivory jars. The following examples may be cited:

Type PD-I

- (1) Ayrton and Loat, *El-Mahasna*, grave H 29, two ivory, one alabaster, and one limestone. Early Predynastic (Fig. 23, Nos. 1-4).
- (2) Reisner, *Nub. Arch. Sur. 1907-08*, Pl. 64 b,
Grave 17:6, Nos. 3 and 10 (both alabaster). Early Predynastic.
Grave 17:83, Nos. 2, 3, 4, two of alabaster and one of basalt. Middle Predynastic.
- (3) Petrie, *Diospolis parva*,
Grave B 102, three alabaster and one limestone. Early-Middle Predynastic (Fig. 23, No. 5).
Grave B 122 (Pl. VI), material not given, grave not described.
Grave U 290, one basalt, grave not described.
Grave U 384, one basalt, grave not described.
- (4) MacIver, *El-Amrah*, grave a 16, one "stone" jar; and a 95, three basalt. Both Middle Predynastic (Fig. 23, No. 6).
- (5) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 28, No. 1, alabaster. Middle Predynastic (Fig. 23, No. 7).
- (6) Hearst Expedition, *mss. notes on Ballás*,
Grave 30, No. 2, limestone. Middle Predynastic.
Grave 144, No. 7, alabaster. Late Predynastic.

- (7) Petrie, *Nagada and Ballás*, Pl. X, 3-11. The insufficiency of the published record renders the dating of these examples very difficult. None of them appears to be earlier than the Late Predynastic.
- (8) Harvard-Boston Expedition, *mss. notes on Naga-'l-Hai*, grave 2131, basalt. Late Predynastic (Fig. 23, No. 8).

Other examples were found by our expedition in the graves of the Early and Middle Predynastic Periods in Cem. 6000 at Naga-'d-Dêr, but none at all in the Late Predynastic Cemetery at El-Ahaiwah.

(2) *Type PD-II. Egg-Shaped Jar with Foot and Handles*

The egg-shaped jar occurs in both bulging and slender elongated examples, and almost always with foot and two horizontally pierced handles. The examples without foot had, I believe, a foot made of a separate piece, perhaps wood. The examples without foot and those without handles are rare. The most usual material is basalt, but breccia and limestone also occur.

The type is well attested in the Early Predynastic Period and again in the Middle Predynastic Period, but it is doubtful whether any examples have been found in the Late Predynastic Period. After that

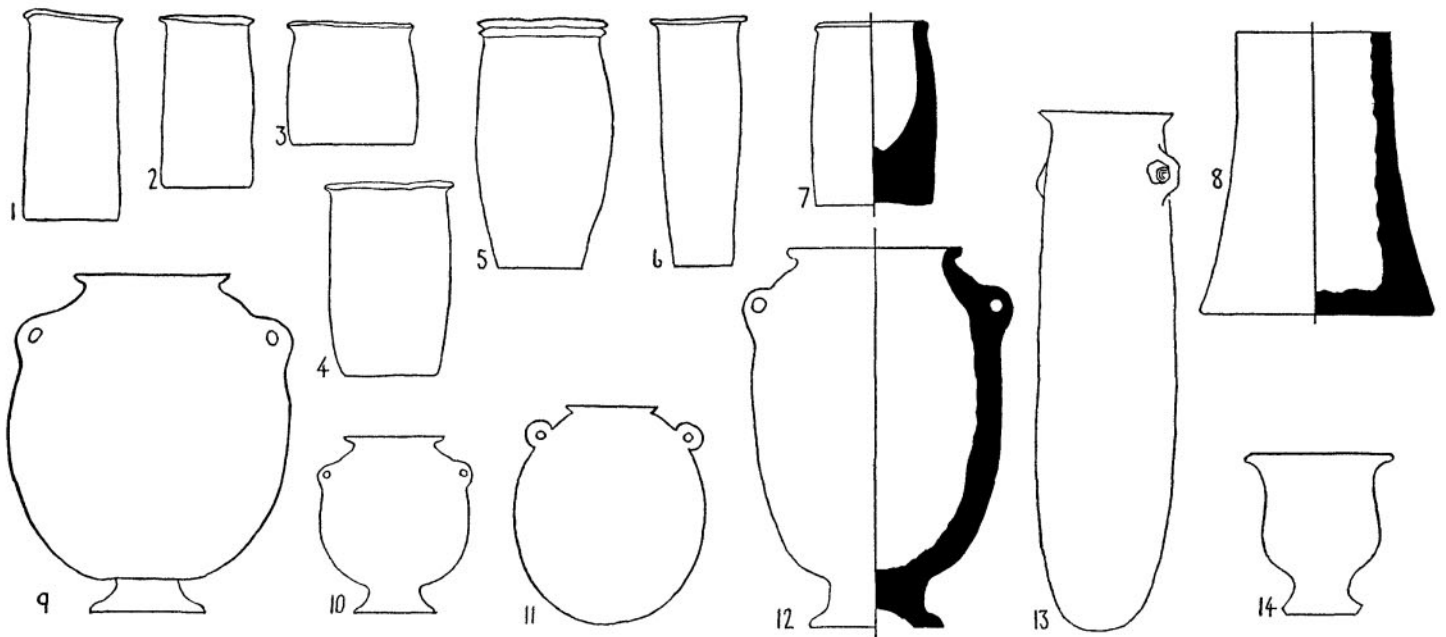


FIGURE 23. PD STONE VESSELS, TYPES I, II. SCALE $\frac{1}{4}$

time I know of none except the two from the Mycerinus valley temple. The bulging variation seems to be the original type-form, while the elongated examples are generally of the Middle Predynastic Period. The foot is curious and difficult to explain. The stone and metal vessels with foot of the Early Dynastic Period and Old Kingdom are usually compounded of a jar or a bowl with a stand or a ring-stand. The broad foot of the *hes*-jars and of the narrow cylindrical jars is produced by splaying the lower part of the body of the jar. But these predynastic jars have a foot more like that of the cups and goblets of the New Kingdom. A few copies in black polished pottery are known, but are later than the Early Predynastic Period. The one ivory jar of this type is of the elongated form and comes from a grave not earlier than the late Middle Predynastic Period (see below, example No. 12). The form obviously suggests an egg (ostrich egg) or a gourd on a small ring stand of wood or cloth; but in the absence of any examples speculation is futile. The type occurs in stone in the Early Predynastic Period; it presents the first examples of vessels with two handles horizontally pierced, and has a foot of unique form.

The examples are:

Type PD-II a, bulging form with foot and handles.

- (1) Petrie and Quibell, *Nagada*, Pl. IX, form H 70, from graves 218 and 271, late Middle Predynastic; form 72, from graves 271, late Middle Predynastic, and 1241, Middle Predynastic; form 69, miniature, from grave T 4, Middle Predynastic.

- (2) MacIver, *El-Amrah*, grave B 144, basalt, Early Predynastic; a 66, limestone, Middle Predynastic; grave a 33, basalt, miniature, late Middle Predynastic; grave a 68, miniature, late Middle Predynastic.
- (3) Petrie, *Diospolis parva*, Pl. IX 5 and 7, basalt, from grave B 56, Early Predynastic (Fig. 23, Nos. 9 and 10).
- (4) Ayrton and Loat, *El-Mahasna*, grave H 30, basalt, Early Predynastic.
- (5) Reisner, *Nub. Arch. Sur. 1907-08*, grave 17:83, two of basalt and one of breccia, Middle Predynastic; grave 17:50, basalt, Middle Predynastic.
- (6) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 20, basalt, Early Predynastic; grave 981, limestone, late Middle Predynastic.

Type PD-II b, bulging form with handles but no foot.

- (7) Petrie and Quibell, *Naqada*, Pl. XII, form S 71, from grave T 5, Middle Predynastic (Fig. 23, No. 11).

Type PD-II c, slender form (sometimes elongated) with foot and handles.

- (8) Petrie and Quibell, *Naqada*, Pl. IX, form H 67, from grave 271, late Middle Predynastic; form 71, from grave T 4, Middle Predynastic.
- (9) MacIver, *El-Amrah*, grave b 220, basalt, late Middle Predynastic.
- (10) Petrie, *Diospolis parva*, Pl. IX, 6, limestone, irregular form, from grave B 133 (not described); grave 56, basalt (Pl. V), Early Predynastic.
- (11) Peet, *Cemeteries of Abydos II*, Pl. XXVII, grave U 1, Middle Predynastic.
- (12) Ayrton and Loat, *El-Mahasna*, grave H 38, limestone, Middle-Late Predynastic; grave H 23, ivory, Middle-Late Predynastic.
- (13) Reisner, *Nub. Arch. Sur. 1907-08*, grave 17:83, basalt, Middle Predynastic.
- (14) Hearst Expedition, *mss. notes on Ballás*, grave 309, basalt, Middle Predynastic.
- (15) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 29, basalt, Early Predynastic (Fig. 23, No. 12); grave 744, basalt, Middle Predynastic.

Type PD-II d, slender form without foot.

- (16) Petrie and Quibell, *Naqada*, Pl. IX, form H 62, no provenience discoverable (Fig. 23, No. 13).

Type PD-II e, slender form with foot but no handles.

- (17) Petrie and Quibell, *Naqada*, Pl. XII, form S 62, graves 1417 and 1487, Middle Predynastic.
- (18) Quibell and Green, *Hierakonpolis*, Pl. LXIV, 16, basalt, from "prehistoric cemetery" (p. 50b); No. 20, twin vase of same type, basalt, same provenience.
- (19) Petrie, *Diospolis parva*, Pl. IX, 18, basalt, grave U 134, not described (Fig. 23, No. 14).

(3) Type PD-III. Spheroidal Jar with Two Horizontal Handles

Professor Petrie in *Naqada and Ballás*, Pl. VIII, forms H 1-5, reproduces a series of spheroidal jars with two horizontal handles, but a painstaking search of the text has revealed the provenience of only one example. These jars are now well known from the beautiful vessels found in the royal tombs at Naqada and Abydos, and a number of examples are dated with certainty to Dynasty I. In the Middle Predynastic Period the form was freely used for a fine series of painted pottery vessels and persisted into the Late Predynastic. Some of the pottery examples are painted with obvious imitations of hard stone, and possibly even those with spirals or zones of wavy lines are also intended to be imitations of hard stone. These facts suggest that the form was originally a stone form. One example in stone is recorded from the Middle Predynastic Period (pottery form in same tomb), five others from the late Middle Predynastic or early Late Predynastic. Two miniature jars are from about the same period. Thus there can be no doubt that the type belongs to the predynastic corpus. It is to be noted that all the examples are of the round-bottomed type; but cf. Type PD-IV d, miniatures.

Type PD III a (1), round-bottomed, large forms:

- (1) Petrie and Quibell, *Naqada*, Pl. VIII, form H 2, from grave 430, Middle Predynastic (Fig. 24, No. 1).
- (2) Petrie, *Diospolis parva*, grave b 217, breccia, late Middle Predynastic (Fig. 24, No. 2).
- (3) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, four of limestone, from grave 982, late Middle Predynastic.

Type PD III a (2), round-bottomed, miniature forms (Fig. 24, No. 3).

- (4) Petrie, *Diospolis parva*, two limestone, from grave b 62, late Middle Predynastic.
- (5) Hearst Expedition, *mss. notes on Ballás*, grave 3, limestone, late Middle Predynastic.
- (6) Firth, *Nub. Arch. Sur. 1909-10*, Pl. 28 a 2, breccia, from grave 102-199, Late Predynastic.
- (7) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, alabaster, from grave 873, Late Predynastic.

(4) *Type PD-IV. Barrel-Shaped Jar with and without Handles*

The barrel-shaped jar has usually two horizontally pierced handles, and this variation is probably to be marked as the original type. The majority of the examples have a flat disc base, but many have only a plain flat base. The widest part of the jar is usually at or near the middle (Type PD-IV a), especially in the earlier form, but is higher up in others (Type PD-IV b), forming often a true shoulder jar. Type IV has not been recorded before the Middle Predynastic Period. The most usual material among the older jars is basalt; but porphyry, syenite, and breccia also occur.

The following examples may be cited:

Type PD-IV a (1), barrel-shaped with disc base. Fig. 24, Nos. 4-6.

- (1) Petrie and Quibell, *Naqada*, Pl. VIII, forms H 28, 29, materials not given, from graves T 5 (three) and 1241, Middle Predynastic; from graves T 16, 421, and 1247, Late Predynastic.
- (2) Quibell and Green, *Hierakonpolis II*, Pl. LXVII, diorite (?) from the "painted tomb," Late Predynastic, or Dynasty O.
- (3) MacIver, *El-Amrah*, grave b 119 ("stone"), b 62 (two of marble), b 225 (basalt), all late Middle Predynastic; grave b 232, breccia, Late Predynastic.
- (4) Hearst Expedition, *mss. notes on Ballás*, graves 91 and 121, both of basalt, Late Predynastic.
- (5) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 47, two basalt and one limestone, Middle Predynastic (Fig. 24, Nos. 4, 5, 6).

Type PD-IV a (2), barrel-shaped with plain flat base. Fig. 24, Nos. 7, 8.

- (6) Petrie and Quibell, *Naqada*, Pl. VIII, forms H 25, 26, 13, from graves T 5, T 14, Middle Predynastic; grave B 99, late Middle Predynastic; graves 421 and 1247, Late Predynastic to Dynasty O.
- (7) Petrie, *Diospolis parva*, grave B 75 (grave not described).
- (8) MacIver, *El-Amrah*, grave a 118, limestone, late Middle Predynastic.
- (9) Peet, *Cemeteries of Abydos I*, Pl. III, 6, breccia, from grave E 272, Late Predynastic.
- (10) Hearst Expedition, *mss. notes on El-Ahaiwah*, grave 213, basalt, Late Predynastic.
- (11) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 10, basalt, Middle Predynastic (Fig. 24, No. 7).
Grave 651, limestone, late Middle Predynastic.
Grave 829, limestone, Late Predynastic.
Grave 925, porphyry, Late Predynastic.
- (12) Harvard-Boston Expedition, *mss. notes on Naga-'l-Hai*, grave 615, basalt, Dynasty O (Fig. 24, No. 8).

Type PD-IV b (1), swelling above middle, disc base. Fig. 25, Nos. 1, 2.

- (13) Petrie and Quibell, *Naqada*, Pl. VIII, forms H 32-45, from graves 743 (four limestone), T 16, 1247, Late Predynastic; grave 185, very Late Predynastic or Dynasty O (Fig. 25, Nos. 1, 2).
- (14) MacIver, *El-Amrah*, graves 46 (basalt), b 62 (two, one breccia), b 87 (basalt), b 224 ("stone"), late Middle Predynastic; graves 76 ("stone"), b 189 (two of "stone"), Late Predynastic.
- (15) Peet, *Cemeteries of Abydos I*, Pl. III, 5, graves E 12 (not described) and 169 (Late Predynastic).
- (16) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VI 6, two examples, from grave 142, Late Predynastic; Pl. VIII, 3, from graves G 31, 93, 154.

Type PD-IV b (2), swelling above middle flat base.

- (17) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII 1, two examples, from grave 142, Dynasty O.

Type PD-IV, miniature jars. Fig. 25, No. 3.

Form PD-IV a:

- (18) MacIver, *El-Amrah*, form H 7, limestone, from grave b 88, Middle Predynastic; stone, from grave b 235, Late Predynastic.
- (19) Peet, *Cemeteries of Abydos I*, Pl. II, 8, basalt, from grave E 272, Late Predynastic.

Form PD-IV b:

- (20) Petrie, *Diospolis parva*, form H 24 (Pl. IX 2), from graves U 311 and B 328.
- (21) MacIver, *El-Amrah*, from grave b 233, Late Predynastic.
- (22) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII 4, from grave 16.

Form PD-IV c, broad form:

- (23) Petrie and Quibell, *Naqada*, Pl. VIII, form H 41, limestone, from grave 743, Late Predynastic (Fig. 25, No. 3).
- (24) Petrie, *Diospolis parva*, four examples, from graves B 57 (L. P.), B 328 (not described), B 378 (two; L. P.).
- (25) Reisner, *Nub. Arch. Sur. 1907-08*, grave 17:15, limestone, Middle Predynastic.
- (26) Hearst Expedition, *mss. notes on El-Ahaiwah*, breccia, from grave 66, Dynasty O.
- (27) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII 5-8, from graves 31, 85, 170, 105, 145 (date uncertain).

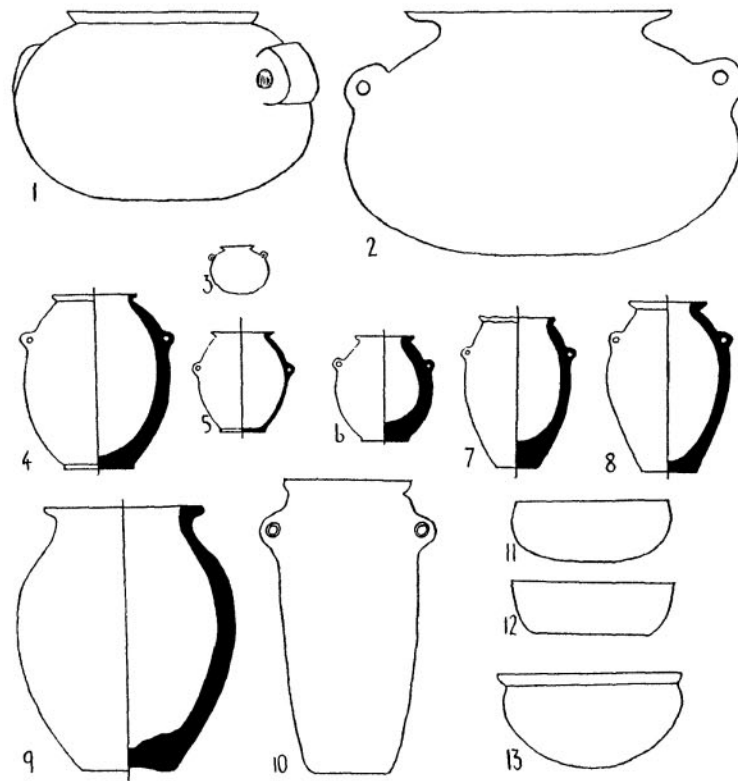


FIGURE 24. PD STONE VESSELS, TYPES III, IV, V, VI, IX-XI. Scale $\frac{1}{4}$

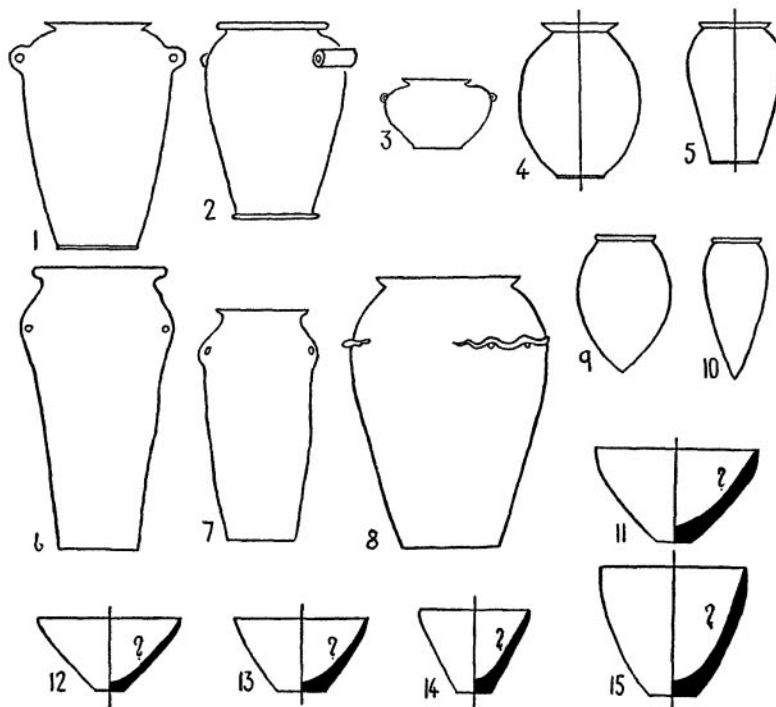


FIGURE 25. PD STONE VESSELS, TYPES IV, V, VI, VII, VIII. Scale $\frac{1}{4}$

(5) Type PD-V. Jar without Handles

The type of jar without handles is practically unknown in the Predynastic Period. I know of four examples, which are only Type IV a without handles. These examples are therefore rather modifications of Type IV than a new and separate type. I introduce Type V here merely because of its later importance.

Type PD-Va equals PD-IV a and b, without handles: Fig. 25, Nos. 4, 5.

(1) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, basalt, grave 49; probably late Middle Predynastic (Fig. 24, No. 9).

(2) Petrie, *Diospolis parva*, Pl. VII, basalt, from U 384, doubtful form, perhaps even a rude cylindrical jar.

(3) MacIver, *El-Amrah*, type IV b without handles, miniature, from grave a 189; Late Predynastic.

(4) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VII, 10, 11, from graves G 88 and 83 (date ?) (Fig. 25, Nos. 4, 5).

(6) *Type PD-VI. Vertical Jar with Handles*

The vertical jar with two handles and a slight swelling below the rim occurs in two variations which are apparently not connected — one in basalt and the other in alabaster or limestone. The basalt form has been found in only a few examples, none of them earlier than the late Middle Predynastic Period, and appears to have been a degeneration or modification of type II d.

Type PD-VI a, basalt, irregular form: Fig. 24, No. 10.

- (1) Petrie and Quibell, *Naqada and Ballâs*, Pl. IX, form H 63, no provenience given.
- (2) Petrie, *Diospolis parva*, Pl. IX 4, basalt, grave U 135, grave not described (Fig. 24, No. 10).
- (3) MacIver, *El-Amrah*, graves a 95 and b 87, both basalt and late Middle Predynastic.

The form which occurs in alabaster or limestone seems to be a cheap or degenerate variation of type IV b. It has usually been recorded from graves of Dynasty O or Dynasty I. The only example which might be as early as the Late Predynastic Period is that found by Mr. Green in the "painted tomb" at Hierakonpolis (5, below). Professor Petrie dates that tomb to S. D. 63, or Late Predynastic. Some of the forms on which this conclusion was based (R 1 e; R 94; W 41) have certainly a range which reaches below S. D. 63, even in Egypt, while the other forms such as B 42, P 40, and D 8 may be dated in Nubia as late as Dynasty I. It is to be noted that Hierakonpolis is within the Nubian sphere of influence. The brick lining of the grave, the partition, and the stone vessel of type VI b, would ordinarily be dated to Dynasty O at the earliest. As a result, I would date the "painted tomb" to Dynasty O, not to the Late Predynastic Period.

Type PD-VI b, alabaster or limestone, regular form: Fig. 25, Nos. 6, 7.

- (4) Petrie and Quibell, *Naqada*, Pl. IX, forms 51-55; No. 52 is shown by Pl. V to be from grave B 874, Dynasty O (Fig. 25, Nos. 6, 7).
- (5) Quibell and Green, *Hierakonpolis II*, Pl. LXVII, limestone, from the "painted tomb," Late Predynastic.
- (6) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 679, Dynasty O.

(7) *Type PD-VII. Wavy-Handled Jar*

In the Late Predynastic Period, a small shouldered jar (Petrie's type W 41-47) of grey-surfaced pottery is of frequent occurrence. This jar has two ledge handles of wavy outline and has been derived by Professor Petrie quite correctly from the larger bulging forms of Middle Predynastic date. Two copies in stone of the later form have been recorded by Mr. Wainwright at El-Gerzeh, where one of them occurs associated with the corresponding pottery form. The pottery form is dated by Mr. Wainwright to the Late Predynastic Period (S. D. 58-63), and the stone forms are presumably assigned by him to the same period. The graves are not described. Elsewhere this form is definitely dated to Dynasty I, and in view of the defect in the publication, I feel unable to date these examples previous to Dynasty O.

Type PD-VII, wavy-handled jar, two ledge handles:

- (1) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII 2, from graves 25 (cf. Pl. XI 19 b) and 148 (Fig. 25, No. 8).

(8) *Type PD-VIII. Pointed Jar*

The pointed conical jar with contracted mouth furnished with roll rim is well known in black-topped and in red-polished pottery from the late Middle Predynastic and the Late Predynastic Periods.¹ Of the stone form a few examples only are known, and one of these is certainly dated to the time of Zet (Dynasty I). The only predynastic examples are those miniature forms recorded by Mr. Wainwright at Gerzeh, which he dates to S. D. 57-60, 63, that is, Middle to Late Predynastic; but he does not describe the graves in any way, and I am unable to date these jars before Dynasty O (see preceding paragraph).

Type PD-VIII a, pointed jars:

- (1) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII, 12-14, graves G 123, 126, 145, 146, and 203 (Fig. 25, Nos. 9, 10).

¹ See Petrie's forms B 39 and P 98.

(9) *Type PD-IX. Round-Bottomed Saucers and Bowls*

Stone cups, saucers, and bowls are among the rare forms of the Predynastic Period. The only examples known previous to the Late Predynastic are the round-bottomed shape. I find two round-bottomed bowls which may be as early as the Middle Predynastic Period, but one of these with a stick handle is clearly a fancy form and ought, strictly speaking, to be excluded. The round-bottomed form of bowl or cup is fairly common in pottery of the black-topped, the red-polished, and the coarse wares. The saucers of coarse ware are often used as containers of copper ore or of galena.

Type PD-IX, round-bottomed saucers:

- (1) Reisner, *Nub. Arch. Sur. 1907-08*, grave 17:68, alabaster, with stick handle, Middle Predynastic.
- (2) MacIver, *El-Amrah*, alabaster, from grave a 85, late Middle Predynastic (MacIver, "before S. D. 41").
- (3) Petrie, *Diospolis parva*, Pl. IX, 19, from H 57, Late Predynastic (Petrie), (Fig. 24, No. 11).
- (4) Hearst Expedition, *mss. notes on El-Ahaiwah*, grave A 192, alabaster, Late Predynastic; grave 226, alabaster, Dynasties O-I.

(10) *Type PD-X. Flat-Bottomed Saucers and Bowls*

As stated in the preceding paragraph, I know of only two bowls, both of them small cups or saucers, previous to the Late Predynastic Period, and both of these are round-bottomed shapes. In the Late Predynastic Period, a few crude flat-bottomed cups or saucers with plain rims have been recorded of about the same technique and finish as the corresponding round-bottomed saucers. The fine cleanly cut bowls with flat bottoms do not appear until the very end of the Late Predynastic Period. It may be doubted whether any example occurs previous to Dynasty O. All these early fine bowls have the straight-sided conical form with plain rim.

Type PD-X a, flat-bottomed saucers and cups, of crude form:

- (1) Petrie and Quibell, *Naqada*, Pl. XII, form S 49 (small), alabaster, from T 16, Late Predynastic.
- (2) Petrie, *Diospolis parva*, Pl. IX, 19, from grave H 51, Late Predynastic (?) (Fig. 24, No. 12); grave B 57, alabaster (Pl. VI), Late Predynastic or later.
- (3) Hearst Expedition, *mss. notes on El-Ahaiwah*, graves A 45, A 69, A 118, all alabaster, and about Dynasty O.
- (4) Harvard-Boston Expedition, *mss. notes on Mesa'eed*, grave 925, pink limestone, Late Predynastic.

Type PD-X a (2), flat-bottomed bowls, of fine form:

- (5) Petrie and Wainwright, *Labyrinth, Gerzeh and Mazghuneh*, Pl. VIII, 15-21, thirteen examples, probably Dynasties O-I (Fig. 25, Nos. 11-15).

(11) *Type PD-XI. Cups and Bowls with External Rim*

In Dynasty I the bowls with external rim make their first appearance in two definite forms (see below, type 1-X), one of which presents a rounded external rim apparently for trying on a cloth or parchment cover. But all these early dynastic examples (until Dynasty III) have flat bottoms. It is therefore improbable that the two isolated examples of round-bottomed bowls recorded at Diospolis parva have any connection with the later rimmed bowls.

Type PD-XI, round-bottomed cups with external rim:

- (1) Petrie, *Diospolis parva*, Pl. IX, 17, 18, from grave B 122, late Middle Predynastic; grave B 500, grave not described (Fig. 24, No. 13).

(12) *Type PD-XII. Tables*

No example of a table in stone has been found in any predynastic grave. Tables make their appearance at the very end of the Predynastic Period in pottery, high forms with dished tops. And the earliest stone tables of Dynasty I are also dish-topped, but not so high as the older pottery tables.

(B) STONE VESSELS OF DYNASTY I

In the Early Dynastic Period, the manufacture of stone vessels received such an impetus that even the poorest graves of the latter half of Dynasty I, of Dynasty II, and Dynasty III usually contained at least one stone vessel,¹ while the royal tombs of Naqada and Abydos and the important private mastabas

¹ See Reisner *Naga'-d-Dêr I*, pp. 99-101.

of the first three dynasties have yielded a large number of beautifully worked jars, pans, and bowls in a great variety of types and materials.

In comparing the stone vessels of the Early Dynastic Period with those of the Predynastic, two conclusions are obvious:

- (1) Certain types of Dynasty I are the same as earlier types, or are developments of earlier types, so that the archaeological continuity of the two groups is clear — types I, III, and IV.
- (2) The forms of the Early Dynastic Period are larger and much more finely worked than those of the Predynastic Period.

The advance in technical skill presented by the early dynastic vessels is manifested in the symmetry and proportions of the forms, the internal smoothing, the external polish, and the thinness of the walls of some examples. The climax was reached perhaps in the thin, highly polished alabaster bowls and pans of private graves of Dynasty III. Facility in the handling of hard stones, which was one of the racial characteristics of the Egyptians and the source of the artistic merit of their later sculpture, was already discernible in the stone vessels of types II and III of the Early and Middle Predynastic Periods and in the other stone implements of the same age (mace-heads and slate palettes). When the dated examples of the Early Dynastic Period are compared with the earlier pieces, the only technical difference appears in a slightly greater regularity of the boring marks, and I would ascribe this regularity to the adoption of a better borer, the weighted stone-borer turned with a crank, as represented in the reliefs of the Old Kingdom. The improvement in the forms and the finish of the stone vessels of Dynasty I is to be ascribed not merely to the invention of the mechanical stone-borer, whose greatest effect was the cheapening of the process, but also to a general high development of technical skill in the craftsmen — a skill to which the ceremonial slate palettes and mace-heads of Hierakonpolis bear witness. This development in skill arose out of the demand for ostentatious objects both practical and ceremonial created by the establishment of the monarchy and the accumulation of wealth in the hands of the royal family — a striking example of what human progress owes to the differentiation of wealth. Another result of the new political and economic conditions was the provision of abundant supplies of various hard stones from newly opened beds and quarries, some of them in remote districts, a fact proved by the profusion of materials used in the stone vessels. Thus the great extension of the manufacture of stone vessels in Dynasty I was one of the most characteristic features of the general development of that time and was due to the cheapening of the process of manufacture by: (1) the invention of the mechanical stone-borer; (2) the provision of an abundant supply of various hard stones; (3) the development and spread of a high degree of technical skill fostered by the political conditions and the accumulation of wealth in the hands of the royal family and the court.

The first proved evidence of expansion in the manufacture of stone vessels is given by the tomb of Menes at Naqada. The vessels from this tomb are beautifully formed and finished; but one striking fact is to be noted, no bowl with an internal rim is reported from that tomb, nor any with a sharply contracted mouth. The tomb of Narmer has not been found, but vessels with sharply contracted mouth and internal rim appear in the tomb of Zer, the third king, and in all royal tombs thereafter. The vessels from Dynasty O belong clearly to the Menes group and present the prototypes of the simpler forms of the Menes tomb. Strictly taken, therefore, Dynasty O and Menes form one archaeological group, and should be marked as the connecting group between the Predynastic Period and Dynasty I. The tomb of Menes marks the types which belong to this period as:

Type I a, b, c	Cylindrical jars with cord, etc.
Type III a, b	Spheroidal jars, flat and round bottom.
Type IV a	Barrel-jar with handle, rare, fancy.
Type V	Small shoulder jars, rare.
Type X a	Bowls, flat bottom, plain rim.

This is a very small group of forms for a royal tomb, and if the two rare forms are omitted, it is reduced to three common forms. The private graves of Dynasty O and early Dynasty I naturally present a different group of types, for even the private tombs of early Dynasty I, because they were private graves, represent a stage in the development which is earlier than that of Menes, the royal tomb of their time.

Type I c	Cylindrical jars without cord.
Type IV	Small jars, truncated ovoid with two horizontal handles.
Type VI	Swelling jars with two knob handles.
Type VII	Wavy-handled jar with two ledge handles, usually pierced vertically.
Type VIII	Pointed jar with roll rim.
Type IX	Cups and saucers, round-bottomed.
Type X a	Saucers and bowls, flat-bottomed, plain rim.

It is to be noted that this group of forms from private graves is still dominated by the predynastic forms — I c, IV (which is also the original of VI), IX, and X. Form VI b is apparently a degenerate form of PD IV; forms VII and VIII are copies of predynastic pottery vessels; and the finer flat-bottomed bowls are a natural development of the older flat-bottomed bowls. The Menes group dispenses with types VI, VII, and VIII. Types VI and VII are manifestly poor forms, and their omission from the Menes tomb is not surprising; and form VIII is really a very small form, which might well have been omitted from the tomb or have been lost by plundering or even dropped from the record as unimportant. Thus I have reached the conclusion that a certain number of graves of Dynasty O and of the earlier part of Dynasty I are to be marked as a connecting group between the Late Predynastic and the Early Dynastic Period.¹

The materials used in the stone vessels found in the royal tombs of Dynasty I include alabaster, dolomite marble, various limestones, slate, volcanic ash, syenite, porphyry, crystal, serpentine, and basalt. In the private tombs the variety is not so great, and there alabaster is used in the majority of vessels, while slate, volcanic ash, basalt, porphyry, and the limestones occur in scattered examples. It is further to be noticed that the proportion of alabaster increases with the poverty of the tombs, so that in the case of the poorest tombs alabaster is used almost exclusively. This is only a natural result of the fact that the vessels of the harder stones were obviously more expensive. Probably no reliable deduction can be drawn from the relative numbers of the various materials, and certainly nothing can be gained by comparing the relative proportions of materials in royal graves with those in private graves. In the following table I use Professor Petrie's percentage figures² for the Giza tomb (designated Giza), the tomb of Zet (designated Zet), and the whole group of royal tombs at Abydos (designated Aby.); for the tomb of Khasekhemuw (designated Khas.) I have made up the figures as well as possible from M. Amelineau's defective publication; and the others are from the respective publications:

	(a) ROYAL TOMBS				(b) PRIVATE TOMBS				
	Zet %	Aby. all %	Khas. %	Myc. %	Aby. M %	Giza %	Naga'd-Dér I Dyn. I %	Dyn. II %	Hesy %
Alabaster	28	18	48	58	60	47	53	64	67
Lst. + marble	39	36	14	9	6	22	7	8	..
Slate	7	8	?	0.6	16	19	27	12	..
Volcanic ash	5	11	?	0.5	4	1	13	14	..
Porphyry + syenite + breccia	10	11	24?	14	6	7	..	1	?
Basalt	3	5	?	4	6	3	..	1	..
Crystal	5	8	0.4	..	..	1	..	..	..
Serpentine	3	3	..	..	..	1	..	..	..
Diorite	..	..	14	14	..	..	..	..	?

The following conclusions may be drawn from these figures:

- (1) The proportion of alabaster vessels in royal tombs rises from 28 per cent in the tomb of Zet to 58 per cent in the Mycerinus temple.
- (2) The frequency of limestone, and especially the fine colored limestones and marbles, decreases from 39 per cent in the tomb of Zet to 9 per cent (largely blue marble) in the Mycerinus temple. The blue marble appears in the tomb of Khasekhemuw along with diorite. The combined figures for these materials and alabaster are of interest:

	Zet %	Aby. %	Kha. %	Myc. %
Alabaster + limestone + marble	67	54	62	67
All other stones	33	46	38	33

¹ The stone vessels from the Predynastic Cemetery at Gerzeh (see Mr. Wainwright in Professor Petrie's *Labyrinth, Gerzeh and Mazghuneh*) might throw some light on this question, if they had been properly reported. On Pl. VIII a number of miniature forms are shown with the grave numbers, but, as not a single grave is described, the numbers are of small utility. I am not even sure just what dates Mr. Wainwright assigns to any but the pointed jars, and such information as he gives for them does not enable me to control his conclusion. I have therefore been obliged reluctantly to ignore the dates which he assigns to these vessels.

² See Petrie, *Gizeh and Rifeh*, p. 5a. (Mastaba V).

- (3) The variety of non-calcareous stones does not vary greatly, but the numbers of vessels of slate, volcanic ash, crystal, and serpentine decrease to the vanishing point in the Mycerinus temple. At the same time the porphyries and related stones increase:

	Zet %	Aby. %	Kha. %	Myc. %
Porphyry + syenite + granite + breccia	10	11	24	16
Diorite . . . . .	..	..	14	12
	<u>10</u>	<u>11</u>	<u>38</u>	<u>28</u>

- (4) The great change in the materials used in the royal tombs was the introduction of diorite in the tomb of Khasekhemuw, to become one of the characteristic features of the private tombs of Dynasty III. It had occurred in scattered examples in Dynasty I.
- (5) In the private tombs, the percentage of alabaster rises in Dynasty III, but otherwise it varies greatly according to the wealth or poverty of the tombs. Cemetery M at Abydos, which was the least important socially of the three First Dynasty cemeteries, has the highest percentage of alabaster, and the small graves of Dynasty III at Naga-'d-Dêr seldom yielded any other stone.
- (6) The combined alabaster and limestone figures for the private graves are:

	Aby. M. %	Giza %	Naga-'d-Dêr I		Hesy %
			Dyn. I %	Dyn. II %	
Alabaster + limestone + marble	66	69	60	72	67
All other stones	34	31	40	28	33

- (7) Porphyry, syenite, and breccia occurred in Cem. M (Abydos) and in the Giza graves, but only one example (breccia) is shown in the remaining columns. The most important non-calcareous stones in the private graves were slate and volcanic ash:

	Aby. M. %	Giza %	Naga-'d-Dêr I		Hesy %
			Dyn. I %	Dyn. II %	
Slate	16	19	27	12	..
Volcanic ash	4	1	13	14	..
	<u>20</u>	<u>20</u>	<u>40</u>	<u>26</u>	<u>..</u>

The total amount of slate and volcanic ash in the tomb of Zet was 12 per cent, and in all the royal tombs at Abydos, 19 per cent. The remarkable excess of the percentage of these stones at Naga-'d-Dêr was probably due to local conditions. At any rate no other plausible explanation presents itself to my mind.

It must be remembered that any comparison of this sort suffers greatly from the unfortunate manner in which so many of the royal tombs at Abydos were excavated before Professor Petrie rescued what was left. The figures from the Mycerinus temples and the private graves are dependable and subject only to the chances of preservation, which are often curiously incalculable. But these chances would not affect appreciably the proportional frequency of the commoner stones.

The chief forms of all twelve of my types were established in Dynasty I or before, and the following list will show the range of these and of the sub-types:

Type	Inclusive limits of occurrence
I c	Plain cylindrical jar E. P. to Dyn. VI.
a	Fine cylindrical jar with cord in relief Dyn. I to Dyn. V
b	Cylindrical jar with ridge or band Dyn. I to Dyn. V
d	Slender splay-footed cylindrical jar Dyn. III to Dyn. VI
e	Models of types b, c, and d Dyn. IV to Dyn. VI
II a, b	Egg-shaped jar with foot and two horizontal handles E. P. to M. P. (Myc.)
c, d	Elongated variation of type II a M. P. (Myc.)
III a	Spheroidal jar with two horizontal handles M. P. to Myc.
b	Spheroidal jar with two handles, flat bottom Dyn. I to Myc.
c	Quasi-spheroidal jar with shoulder and handles Khas. to Dyn. V
IV	Barrel-shaped or shoulder jar with two horizontal handles
a (1)	Barrel-shaped with disc-base M. P. to Dyn. I
a (2)	Barrel-shaped with plain flat base M. P. to Dyn. I
b (1)	Swelling above the middle, disc-base L. M. P. to Dyn. I
b (2)	Swelling above the middle, plain flat base Dyn. O to Dyn. II
a-c	Extra. Miniature forms M. P. to Dyn. I
c	Broad form, disc-base Dyn. I
d	Shouldered form, disc-base Dyn. I
e	Broad-shouldered form, broad disc-mouth Khas. to Dyn. V