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MOHAVE POTTERY

BY

A. L. KROEBER AND MICHAEL J. HARNER

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FOREWORD

The pottery here described was collected fifty years ago by Kroeber and is all in the University's Museum of Anthropology.

It is described for ethnological comparability by Kroeber, with emphasis on use, shape, painted design, and names of designs; and for archaeological utilization by Harner, with special attention to ware, temper, firing, hardness, forms, paint and color, and technological considerations generally. The two parts were written independently. They overlap here and there, especially on vessel shapes; but, after a few duplications were excised, it has seemed advantageous, after adding a brief concordance of terms employed by the two authors, to let the independent treatments of shapes stand double.

No comparisons with other native ceramic arts, recent or ancient, are undertaken by us.

A. L. K.
M. J. H.

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MOHAVE POTTERY

PART I ETHNOGRAPHICAL ANALYSIS

BY
A. L. KROEBER

POTTERY SHAPES RECOGNIZED BY THE MOHAVE

The generic Mohave name for pottery vessels seems to be kwáθki,¹ the word for bowl.

The shapes for which Mohave names were obtained are mainly those which segregate out objectively on examination of a collection:

kwáθki, an open bowl with slightly everted lip, often with a band of mesquite bark—both bean mesquite and screw mesquite are specified in my notes—tied around the neck. The shape is shown in pls. 1, 2, 6, a-c, 8, d-h; the name kwáθki was specifically applied to 1, d, 2, b, 2, h, 6, a.

kayéθa, a platter, that is, a low round bowl or flat dish without neck or everted lip, was applied to pl. 3, d. The shape is shown in pls. 3, a-d, g, 8, c.

kayúka, pl. 3, c, or kakápa, also a platter, but oval, and smaller. Pls. 3, e, f, h-j, 6, d, e.

kam'óta, a spoon, ladle, dipper, or scoop, more or less triangular. Pls. 4, 7, a-i, 8, i-k. Subclasses were not named to me, except for kam'óta ahmá, those with a quail head at the handle.

katéla, bipointed tray for parching. Pl. 6, f, g.

It will be observed that the last five names all begin with ka-.

The name suyíre was given to pl. 6, c, which is intermediate between bowl and platter.

táskyena is a cook pot. Pl. 5, c.

tšuváva, a large cook pot, a foot and a half to two feet high. I have seen one of these in use, full to the brim with maize, beans, and fish, being stirred by an old man with three arrowweed sticks tied in the middle; but I did not secure one. It is set on three conical supports of pottery as shown in pl. 7, n, o.

A still larger pot, up to a yard in diameter, too big to cook in, was sometimes made to ferry small children across the river, a swimmer pushing the vessel (Handbook, 1925, p. 739). I would imagine it would be least likely to tip over if made in the shape of a giant kwáθki bowl.

hápurui, water jar, as kept around the house, "olla" shaped, pls. 5, a, b, 8, a. The name contains the stem for water: (a)há.

I happened not to secure the name of the small-mouthed canteen water jar used in traveling, as shown in pl. 6, h.

A small-mouthed jar with short side-spout at one end, too large for travel and probably used chiefly for storage of seeds, is called hápurui hanemó, "duck jar," from its resemblance to the floating bird. Pl. 6, i.

There are also handled jugs, pl. 5, d-g, and handled cups, pls. 5, h-i, 8, b, which I suspect of having been devised after contact with Americans, although some specimens show use and the painted designs are in good Mohave style. My doubts are strengthened by my having obtained no specific name for either handled shape: the high jug, 5, g, was called a jar, hápurui; the low jug, 5, e, kwáθki, bowl; and in 1900 I bought a cup for which the name kwáθki aha-suraitš'i was given.

In the dreamed Mastamhó myth of the origin of culture (AR 11:1, 1948, see 7:76, p. 63), the culture hero calls some of the principal vessel forms by two sets of names, the first being recondite, twisted, or punning. The list is:

to bring water in	(u)más-toyám ²	hápurui
to cook in	umás-te-to'óro	táskyena
to cook in	umás-te-hamóka ³	tšuváva
spoon, ladle	umás-uyúla	kam'óta
food platter	han'amé	kakápa
bowl	umás-íáða	táskyena
parching dish	umás-eyavkwa-havík ⁴	katéla
arrowweed stirrer	umás-kasára	so'óna

It will be noted that handled jugs and handled cups are lacking from this list, though so are canteens and round platters.

Small-and-flaring-necked spheroid jars, holding a gallon or more, are found in the region, and in 1900 I secured two Mohave examples which were destroyed in 1906 with the Academy of Sciences building. They served to store seeds, and seem often to have been hidden in caves and out-of-the-way spots by Shoshonean desert tribes. I secured one near Needles in 1908, now no. 13875 in the Museum of Anthropology, but it belonged to a Chemehuevi woman who was born in Chemehuevi Valley and was in 1908 living in Mohave Valley, married to a Mohave who was himself half-Chemehuevi. She had made the jar many years before: in fact, it was the first and last pottery vessel she attempted, she said. The ware is definitely paler than Mohave pottery: a sort of half-yellow. It bears on its upper half a red pattern, but this is fainter than most Mohave patterns, and most resembles occasional

¹ Orthography: θ, δ, like th in thick, this; s, somewhat retroflex; tš, much like English ch; ly, ny, palatalized l, n, like Castilian ll, ñ (y is never a vowel in the transcription used); v, bilabial; ʃ, retroflex; ' , glottal stop; q, a back k; h is rather faint initially, but rough, nearly like Spanish j when medial, final (or initial through slurring of an unaccented initial vowel). Unaccented phonemic a is sounded a or e indifferently. Length is not indicated in this paper. The acute accent on vowels indicates a stressed syllable, which is also raised in pitch.

² Umás- is frequent in ritual names. It may be a form of humar, "child."

³ Hamók(a) is "three"—because of the three pot rests.

⁴ Havík is "two"—because of the two hornlike ends.

fishnet patterns on the under sides or backs of Mohave bowls, platters, or spoons. It has 42 vertical (radiating) lines and 7 horizontal (encircling) lines, resulting in 252 hollow quadrilaterals. The vessel also has two mends or strengthenings with lumps of black gum. The overall

height, 225 mm., is 75 per cent of the maximum body diameter, 300 mm., which comes at about 100 mm., or less than halfway up. The mouth and neck diameters are 69 and 58 mm., or 23 per cent and 19 per cent of the body diameter.

POTTERY OBJECTS OTHER THAN VESSELS

Two figures idly modeled, or serving as toys—made for sale, it was said—were found in a household: a lizard and a hummingbird, plate 7, j, k, nos. 1726, 1727. They seem at least partly baked, but have since been washed with yellow ocher, which would turn to red on baking. The bird also has a white-painted beak and spots.

I saw pottery human figures and dolls, both with and without hair of shredded cottonwood bark, cradles, etc., offered for sale by Mohave women to tourists on the station platform—Needles was a scheduled 25-minute meal stop for most trains. I did not purchase any of these, nor any small platters or handled jugs or cups, which were sometimes also offered. This was perhaps a mistake; but I was eager to impress on the Indians generally that my interest was in native, nontourist objects. While material was occasionally brought to me in town, this was uncommon, and I secured most of it from Mohave houses, especially native-style ones across the river in Arizona. Typically, the bows and arrows hawked by a few old men at the trains for twenty-five cents were not

the plain long Mohave willow bows, but red- and blue-painted miniature willow imitations of the Chemehuevi retroflex horn or composite bow.

Pipes, short and tubular, are made of pottery. Plate 7, l (no. 4264), was made for a boy, and was unfinished, remaining unbaked. Plate 7, m (no. 13870), is a fragment, 62 mm. long, about 11 through the mouth end, 19 at the break, buff-colored, with gray (overfired) paste at the fracture. I secured at least one other pipe, no. 1719, which cannot at present be found in the Museum.

Pot rests, put under the large tšuvava cookpots, were made of clay, as shown in plate 7, n, o.

In 1904 I secured an arrow-straightener of pottery, no. 4367, shown in Handbook, plate 49, f. It carries a longitudinal ridge, a sort of notched comb; presumably to receive, after being heated, the joints of arrows of cane or reed. However, cane arrows, though known to the Mohave, were only occasionally used. The usual ones of arrowweed, without foreshaft or attached head, were simply warmed and bent by hand.

TECHNOLOGICAL NOTES

I saw pottery made about 1902-1904, and have little to add to the record.

Clay is tempered with sandstone crushed on the metate, and built up by coiling. The start of a vessel may be spiral, but its body consists of concentric rings. The paste is rolled out into a slim sausage, the length of which is roughly estimated on the vessel. It is then laid on the last [preceding] coil, and any excess pinched off. It is beaten, with a light and rapid patting with a wooden paddle, against a smooth cobble held inside, and its edge finished flat by scraping between the thumbnail and index finger. Then the next coil is added. The maker sits with the growing vessel on the thighs of her stretched legs, or with one leg flat in front of her and the other doubled under. The paint is yellow ocher, which is put on with a little stick and burns dull red. The patterns are carelessly done, and often shaky. (Handbook, pp. 737-738.)

In 1904, I added the following in notebook 60-33:

A "dish" [bowl] is modeled with the rim incurved [or vertical]. Finally, the rim is turned outward with the fingers, a few inches at a time; [to make the slight neck which] after firing is bound with screw-mesquite [a'ise] fiber. A small oval platter seen made was built up circularly with rolls of clay, then additional pieces were added on two sides and paddled even.

I noted that no slip was being used by Mohave potters, nor does examination reveal any.

In 1904, notebook 60-34, I noted: "If dishes crack, they are mended by hair binding, or now a wire, being passed between two perforations." I did not note how the holes were bored, nor whether the hair was human or horse.

No. 4326 is a small piece of rock such as was crushed

and metate-ground for temper. It is not sandstone, as I stated in 1923, but granite, according to my colleague Professor Charles Meyer, whose courtesy is acknowledged and whose information is summarized in Appendix III.

No. 4295 consists of several small slabs of yellow oxide of iron, for grinding up as design paint, which on firing makes the red ocher color which is both darker and more saturatedly red than the light reddish-buff ground color of Mohave pottery. Its composition is also given in Appendix III on the basis of Professor Meyer's examination. Both it and no. 4354 were obtained at matekwaθ-kutšyep, "yellow paint wide open," a spot in a wash cutting across the plain from Avimota, Mt. Manchester, in Nevada opposite Fort Mohave.

Several samples of material that might help further elucidate the technology of Mohave pottery have unfortunately been misplaced in the Museum since at least several years. Quite possibly they have been put together into one tray, which was then mislaid. They include:

- 1759, sample of pottery clay.
- 4326, sample of pottery temper, presumably after grinding.
- 4295, 4354, sample of yellow ocher for painting designs.
- 4277, piece of broken pot.
- 13871, two sherds.
- 1719, pottery pipe.

Another lot of similar accessories was once included in a collection belonging to the California Academy of Sciences and is listed in Appendix I.

I secured half a dozen paddles, kanóθki, for smoothing the fresh coils of pottery vessels. All of these prove to have been cut from white oak staves of whiskey barrels, whose two-way curvature perhaps suggested to the Mohave

their adaptability for the purpose. Four of the six pieces still show staining by iron barrel hoops. Three, however, had had their concavity partly whittled flat. I presume that in the old days paddles were made of cottonwood or mesquite. The length and width dimensions of the "blades," that is, exclusive of handles, are:

4276.....	117	90	
4311.....	113	100	
4346.....	118	100	flattened

4347.....	100	80	flattened
4348.....	70	50	with 2 last makes a 3-size nest
13839.....	140	75	flat, almost biconvex

The second and last of these paddles are accompanied by their "anvils"—waterworn stones. No. 4312 is somewhat three-cornered, 90-95 mm. in length, 43 mm. thick, has one flattish side, one convex, and weighs 18 oz. No. 13840, though got four years later, is quite similar: 85-90 mm., 48 mm. thick, one side flattish, weight also 18 oz.

DESCRIPTION OF THE POTTERY

All pieces are actually inscribed with and cataloged under a number beginning with the prefix l-, which denotes provenience from native California. This prefix, being unvarying, is omitted in the present treatise.

The objects described were collected by myself in three lots, in Mohave Valley, on both sides of the Colorado River, as follows:

In 1902	Accession 40	Specimens 1-1710-1760
In 1904	Acc. 135-138	Specs. 1-4259-4381
In 1908	Acc. 325	Specs. 1-13771-13775

Of these nearly 300 objects, some 70 are of pottery.

An earlier collection, made in 1900 for the California Academy of Sciences, was destroyed by fire on the day of the San Francisco earthquake, April 18, 1906. Some notations on it were preserved and are summarized in Appendix I.

PLATE 1: BOWLS

- a, 13773, diameter 258 mm., height 127 mm.
b, 1733, d. 233, h. 177. Design: ta-lame-θlame, "patches" (?). The painting is very uneven.
c, 13772, d. 281, h. 140.
d, 1715, d. 269, h. 151. Design, linear: ta-tsir-qa-(t)sirqa face paint; dots: belly of yellow-hammer (red-shafted flicker, kukhó). The outside is striped. The execution is experienced, sure, light, and effective.
e, 13774, d. 240, h. 142. The designs inside are similar to those of d, and are repeated on the outside of the vessel.
f, 13778, d. 195, h. 97.
g, 13780, d. 181, h. 89.
h, 13779, d. 185, h. 87.

Of these 8 bowls, 3 (f, g, h, evidently from one household) run from 181 to 195 mm. in diameter; the other 5, from 233 to 281 mm. Proportions of height to diameter are, seriated: 47, 49, 49, 50, 50, 56, 59.

The pattern is fundamentally the same on the inside of all 8 bowls, except that spotting is omitted in f. It consists of triple-line bars that branch at an acute angle; one fork soon ends, the second goes on and merges with a branch from another bar, and so on in a complex pattern extending over the entire inside. The forks—which are also junctions—each contain a small solid-filled triangle, into which the thin middle line of each bar runs. Or, the middle lines might be said to emerge from the points of the solid triangles. The two remaining lines of the bars are therefore mere borders or shadows: they never touch a solid triangle. The dead ends of the forking branches point at each other, or inward toward the center, in most cases: a, b, d, f, g, h. In c they point parallel;

e is unskilfully painted and lacks the dead or free ends.

This pattern is complex and calls for skill in execution. e is a botch, a irregularly crowded, g, h simplified and open; the rest show successful control, especially b, c, d. Only b differs in that the dead or free branches each end in a solid circle. The solid triangles tend to vary somewhat in shape, from equilateral to narrow isosceles, even in well painted bowls: cf. b, c; this variation is perhaps unavoidable.

This pattern is the most ambitious of Mohave design treatments.

The outer side of these bowls is painted with vertical stripes down from the rim 6 times. Usually they are thinnish lines, in c wider stripes. Bowls e and f partly repeat the inside pattern on their outside.

PLATE 2: BOWLS

- a, 13771, diameter 246-260 mm. slightly oval, height 115-118 mm., thickness 7.5 mm. toward bottom. Weight 38 oz. There is a neck band of mesquite bark.
b, 4321, d. 282, h. 150. Design: kan'ú, (Maricopa) basketry pattern.
c, 13775, d. 260, h. 100. Almost as flat as the platters of pl. 3, but there is a neck, and it is bound.
d, 1740, d. 210, h. 104. Design: coyote teeth.
e, 13776, d. 266 (260-272), h. 140, thickness toward bottom 9, at neck 4-4.5, at lip 5. Both paste and surface are unusually yellowish. A neck-binding has been lost, leaving a 20-mm. wide yellowish strip paler than the darkened general surface. Wt. 37 oz.
f, 1732, d. 227, h. 130. Wt. 35 oz. Design, inside: humanape, butterfly; outside, hotahpave face paint.
g, 1714, d. 177, h. 121. The H/D proportion, 68 per cent, is, with pl. 8, h, the highest of all bowls. I called it a "deep pot" when I acquired it. Wt. 23 oz. Design, outside: (i)yamtsupet(a) face paint.
h, 4292, "model," i.e., made for sale, d. 149, h. 77. Design, inside, halytōta, spider; outside, atcí'ara, fish tail. This vessel, as well as the platter 4294, pl. 3, j, was secured from the wife of Tokwaθa, "Musk-melon"; he gave the account of Olive Oatman's return published in 1951 in No. 4 of the Publications of the Kroeber Anthropological Society, also dictated a myth about the origin of war, and was accorded a running or mourning ceremony on his death. He is a historic character, having been encountered by the Ives party in 1858 and mentioned in Möllhausen. He was one of the nine hostages imprisoned at Fort Yuma and escaped from there—a disturbance that ended in the defeat of the Mohave in battle by Armistead later in 1859.

These 8 bowls vary more in proportion than those of plate 1. H/D ratio runs, seriated: 38, 45, 50, 52, 53, 57,

68 per cent, average 52, as against 51 per cent average for plate 1. The lowest bowl in the present lot is c, with a next; the highest is g. These three are outside the limits of plate 1.

The interior designs are less uniform than in plate 1.

a and b show an overall interior pattern of solid rhomboidal quadrilaterals or hexagons reduced to triangles in the interstices and toward the rim; each such figure being surrounded by 3 thin parallel lines. Where the outermost of these enclosing lines intersect, two of the four angles are solidified, producing secondary hourglass figures. The effect is a bit like a tortoise carapace; but the design was named only for b, and then as recalling an overall pattern of basketry, which the Mohave do not themselves weave or coil though they know and use it. In a, there are four large hexagons filling most of the field (actually one is more pentagonal, one heptagonal); along the edges are four lenticular areas, each enclosing two triangles; two of these lenses show in the photograph. In b, the figures are grouped in four parallel tiers extending across the bowl. In b, the outside carries vertical stripes; in a, eight right-slanting and eight left-slanting lines enclosing as many diamonds and hourglass figures, with solid filling of the upper and lower corners of the diamonds and meeting corners of the hourglasses.

c and d are crossed by rows of solid triangles touching at the corners. These aim at being equilateral in c (the flattest of the bowls), so that the intervening background spaces are also roughly equilateral, and there is an overall dark-light effect. But in d the triangles are narrower-based, or isosceles, and their points meet the bases instead of the corners of triangles in the tier above, so that the effect is one of pattern in rows rather than overall. This is the design that was called "coyote teeth"; which fairly agrees with plate 4, l, q.

f also has solid triangles, but they meet point to point, leaving light rhomboids between their two rows. The center is a lightly quartered circle; toward the rim, there is a row of smaller, double, point-to-point (hourglass) triangles, each set over the outer point of a rhomboid. These outer triangles are each crossed by a bar of light background—a feature not repeated in the collection, and seeming strange to me; but it does yield a pair of miniature solid triangles—that favorite Mohave design device—in the waist of each outer hourglass. The miniature solid angle also recurs in the central quartering. The solid middle triangles as well as the medium-sized ones toward the rim are followed outside their edge (or inside the light rhomboids) by a row of dots. These rows of dots, with faint lines, further extend to the actual rim of the vessel, completing skewed hexagonal shapes of their own (one is heptagonal). The design name given, "butterfly," probably applies to the point-to-point large solid triangles, possibly to the rhomboids. On the outside, to which the design name "halter face paint" applies, there are eight double-outlined hourglass triangle pairs, meeting tips solid, the rest of their interiors and the intervening hexagons being stippled with oval, streakish dots. Cf. the outside of a.

e has been much rubbed in the middle, but the design toward the rim is allied to those of the bowls in plate 1—triple lines turning back or forking at acute angles. Only the solid small triangles at junctures and ends seem to be lacking. The outside carries 58 vertical stripes averaging about 4 mm. wide.

g is the tallest bowl, with a height-diameter ratio of more than 2/3, due in part to a semiconical bottom. It is considerably worn inside, and food has spilled over and

crusted part of the outside. The discernible interior design is in a band below the rim. This is crossed by a series of diagonals sloping downward to the right, with a little solid filling triangle in the acute angle made by the diagonal with the border of the band. In addition, a left-sloping diagonal extends down from the rim to the middle of the right-sloping one, with a filling triangle at the juncture. The outside is continuously covered by what in other vessels was usually called "fish bones"—but here was named (i)yam-tšuperta, a face paint—19 columns of downward and 19 of upward pointing zigzags, all points filled in red. Eight such horizontally progressing zigzag lines are still perceptible; there may have been one or two more, but not over ten altogether. This pattern is most effective in a fairly high field (it is common in spoons), such as this tall bowl affords on its exterior.

h has free-standing eight-legged spider figures interspersed with dots. A spider design recurs in plate 3, i; and in 3, j a similar figure is called tortoise. The stripes and lines of the outside were called "fish tail"—it is not quite apparent why.

In summary for exterior designs, a and f have hourglasses, g the zigzag fish bones, the others in this plate "radial" or vertical lines, wholly or partly widened in e, h to stripes.

PLATE 3: PLATTERS

Plate 3 shows flat bowls, dishes, or plates, more or less platterlike, sometimes round and sometimes oval. They differ from the bowls of plates 1 and 2 in being lower, in having no neck, and no outcurved rim.

Pl.	No.	D(L)	W	W/L (per cent)	H	H/D (per cent)	Th.	Curv.
3, <u>a</u>	13784	272	...		79	29	5.0	330
3, <u>b</u>	13783	283	...		88	31	5.0	348
3, <u>c</u>	1713	262	...		77	29	5.5	320
3, <u>d</u>	1722	202	...		71	35	5.5	270
3, <u>e</u> , <u>f</u>	13785	266	215	81	66	28 ⁺	6.5	303
3, <u>g</u>	1751	145 [*]	...		48	33	6.0	195
3, <u>h</u>	13786	166	147	89	59	38 ⁺	5.5	217
3, <u>i</u>	1738	157	135	86	43	29.5 ⁺	5.0	191
3, <u>j</u>	4294	155	121	78	44	32 ⁺	5.5	178

Note: D(L), diameter or greatest length; Th., thickness; Curv., length of tape laid curving along diam. or max. length of under side; *147 long, 143 wide, but round in intent; ⁺Mean of H/L and W/L. All dimensions in mm.

It will be seen that the H/D ratio is from 28 to 38 per cent; whereas that for bowls is from 38 to 68 per cent, with 21 out of 24 between 45 and 61.

Platters i and j were described when collected as "dishlike spoons" or scoops; j, like plate 2, h, is from Tokwa's household.

Designs

As regards painted design, a and b revert to the all-over regular forking of plate 1, but with dark background instead of light or spot-studded, so that the pattern really is negative in effect. It is probably significant that the only two platelike bowls carrying this design should be the only ones to present it negatively. The pattern is well executed in both. It is of course somewhat easier to carry out regularly on a flattish plate than in an up-curving bowl.

d was called "himáka lameθlame, its back leaves" (or "patches"?—cf. pl. 4, d). This presumably refers to the large dot-studded hexagonal areas—hexagonal at least in intent. My notes also name a "tšitθók face-paint" design, which would then be the name of the interconnected hourglass figures which constitute the primary or positive element of the patterning. The combination of these two design elements recurs on the exterior of the jar of plate 8, a. The back or under side of d in the present plate is boldly checkered, as shown in plate 8, c. It is possible that the leaf name refers to this checker.

c and g were both designated as fish backbone, which as a pattern we have already encountered on bowl 2, g, though there on the outer side and named after a face paint: parallel zigzags with solid-filled angles. The idea seems to be that of a fish backbone as it might be drawn out with ribs attached—"herringbone" in our own nomenclature. Then 3, g would be the more representational form with the vertebral column left in—though it is also partway transitional to the triple-line angle-and-forking pattern of plate 1 and of 3, a, b above. The simpler, merely parallel-chevron form of the design—with the vertebrae omitted—is perhaps more usual, and is shown recurring in e and in plate 4, f, k. The under side of c has 67 vertical (radiating) lines.—Plate 3, g, no. 1751, was obtained from Nyavarup along with no. 1749, plate 4, o, which see. Nyavarup, like Tokwaθa, was a historic character, having been encountered by the Ives party in 1858 and mentioned in Möllhausen. In 1902 he told me the creation, which will be published as myth no. 9.

f is the under or convex side of e, but its spots (12-14 mm. diameter) reappear as the sole inside pattern in h, and between the tortoises of j. The inside dots of h and the outside ones of f were however put on differently: in h in rows across the oval, in f irregularly or perhaps spirally. The under side of h also has dots, fainter than on the front. In j the dots seem inserted with reference to the larger figures of tortoises.

These tortoises of j are definitely similar to the halytθta spiders of plate 2, h, but are also distinctive, with enclosed-line quadrilateral body, 3-toed legs at corners, and head and tail. Both 3, j and 2, h however were made to sell, are more representational than most Mohave pottery paintings, and should be viewed with a degree of reserve, though I believe that their designs have basis in native usage.

3, i as halytθta, spider, is puzzling as to why its name, and is also abnormal formally.

PLATE 4: SPOONS

These are ladles, dippers, scoops, as one will, but I retain the "spoon" which the Mohave most often gave as their English term for native kam'óta. They are of course not taken into the mouth, but held to it while gruel flows out; or perhaps more often they serve as a convenient holder of an individual or temporary portion which is

scooped into the mouth with two or three fingers which are then sucked off. They also serve to ladle boiled food from large cook pots into bowls or platters.

I give, first, identifications, sizes, and design names; then shapes; and finally a discussion of painted patterns.

Identifications

- a, 13800, length 174 mm.
- b, 1731, l. 201. Called kas'uyule. Design doubtfully recorded as hotahpave face paint.
- c, 13802, l. 182.
- d, 4320, l. 175. Design name: ta-hlame-hlame, "patches," and "butterfly inside," humanap iyaly ("in the mouth"?).
- e, 1736, l. 123; handle hollow, rattling, "tšíwitšiwitš."
- f, 7098, from older University collections (pre-1901), Mohave provenience assumed, not recorded; l. 194; handle hollow, rattling.
- g, 1737, l. 175. Design name: kyauelkyau, "angled, zigzag."
- h, 13803, l. 225.
- i, 13805, l. 178.
- j, 13804, l. 190.
- k, 1747, l. 186.
- l, 1730, l. 198. Design name: coyote teeth.
- m, 13809, l. 207.
- n, 13810, l. 156.
- o, 1749, l. 113. Design name: fish backbone. This piece was obtained from Nyavarup: see pl. 3, g.
- p, 1712, l. 155. Design name: raccoon hand.
- q, 4319, l. 225. Design name: coyote teeth.
- r, 4356, l. 177.
- s, 13807, l. 210.

Shapes

Hollow, rattling handles, consisting of a three-cornered box, are found on e, f, r. In each case, the end is modeled into a rude quail's head, showing eyes and beak (or top-knot?).

Some rudiments of a quail head, but without hollow compartment, appear also in a-d, q; possibly in i, k.

The foregoings have the outer edges, toward the top, somewhat raised and a bit incurved. This sort of an edge shows also in g, h, j, which however possess no rudiments of the quail's head. The edge faces forward (if the hollow of the spoon is regarded as its front).

Another group of spoons have their edge rather turned outward—that is, away from the hollow. This group includes l-p and s. These average somewhat flatter, and the apex is generally rounder, than in those with forward-turned edge: see especially n, o, p, s; also m; only l comes to a point. Also, the total width ratio is greater in this group.

The classification thus is:

- A. Edge raised, turned forward; apex pointed
 1. Quail head apex, hollow rattling compartment
 2. Quail head or rudiment
 3. Plain apex
- B. Edge facing outward, top usually rounder, total shape shallow, broad.

Additional spoons are shown in plates 7, i and 8, i-k; and in 7, a-h appear the back patterns of eight spoons

whose fronts are reproduced in plate 4. This comes to a total of 23 pieces; which seriate in size, and group as to subclass, as follows:

Pl.	L (mm.)	Subclass			
7, <u>i</u>	226				B
4, <u>h</u>	225			A3	
4, <u>g</u>	225		A2r		
4, <u>s</u>	210				B
4, <u>m</u>	207				B
4, <u>b</u>	201		A2r		
4, <u>l</u>	198				B
4, <u>f</u>	194	Alq			
4, <u>j</u>	190			A3	
4, <u>k</u>	186		A2r		
4, <u>c</u>	182		A2r		
4, <u>i</u>	178		A2r		
4, <u>r</u>	177	Alq			
4, <u>g</u>	175			A3	
4, <u>d</u>	175		A2r		
4, <u>a</u>	174		A2r		
8, <u>k</u>	167	*			
4, <u>n</u>	156				B
4, <u>p</u>	155				B
8, <u>j</u>	140				B
8, <u>i</u>	135				B
4, <u>e</u>	123	Alq			
4, <u>o</u>	113				B

* Handle retroflex

It will be seen that all four subclasses of spoons are represented by examples both above and below the median 178 mm. length. Also, the three longest spoons in the collection belong to three different subclasses. The salient feature is that the blunt-ended "B" spoons have a bimodal distribution: from 198 mm. up, from 156 down. I should not be surprised if B forms turned up in the intervening range; but I should expect the bimodality to remain even if many additional specimens became available.

For the rest, it may be significant that the pointed-end classes A2, A3 are unrepresented below 170; and the clear quail-head (and rattle-box) class A1 not above 195. It may be that beyond a certain size the firing of the juxtaposed solid head and hollow rattle was difficult for the Mohave.

Designs

The great majority of spoons are painted inside, usually outside (on the back) also, though there mostly with longitudinal lines or stripes only.

The angled-and-forking overall pattern so characteristic of bowls occurs in spoons, but is rare: b is an example. The area of a scoop is generally hardly wide and large enough for this design. In b it reduces in effect to a sort of cramped swastika.

One of the two most frequent patterns of spoons is that of g, h, i, j, m—the last in negative effect and unsprinkled with dots. The central feature is a column of three (or two and a half) rhomboids. These are flanked and meshed by four (or three) triangles. The rhomboids and the triangles are separated by three lines, making, with their own boundaries, five parallel lines in all (though this number is sometimes reduced); and where points of triangles meet

(and sometimes of rhomboids also) the corners are solid. It is obvious that this pattern is related in several features to the commonest pattern of bowls, but with adaptation to a more cramped field—chiefly by omission of forking and back-angled elements. The only name obtained—once—was *kyaelkyau*, which is said to mean zigzag or angled.

Another spoon pattern has two or three tiers of light rhomboids separated by pairs of dark triangles, apex to apex (hourglass): see a, d. There is no thin-line bordering or separating in this pattern. For d, the design names cited were *ta-hlame-hlame*, "patches," and "butterfly inside"; but I do not know which of these names refers to the hollow rhomboids and which to the paired solid triangles.

Another tiered design arrangement is shown in l and q. Both were called coyote teeth, which speaks for itself. It will be seen that the teeth are in opposite rows, geared into diastemas—which does not hold for plate 2, d. In one of these spoons the solid-color teeth have a line border, in the other a row of dots. In both there are two longer double-toothed bands across the middle, two shorter one-way-facing bands of teeth at the ends. "Coyote teeth" appears as a face paint—a cross-barred line—in Handbook, figure 61, b.

A second design of outstanding frequency in spoons is represented by e, f, k, o, (s). It was twice designated as fish backbone (with adhering ribs). The backbone itself appears only twice in the five examples in plate 4 (e, o), and is by no means dominant then. The sets of parallel ribs or chevrons number from 10 to nearly 20, and make either 3 or 5 bends (i.e., are formed by 4 or 6 lines). The bends are filled in with small solid triangles in f, k, s. Rows of dots show in e and s.

Other designs each occur only once in the collection.

c, polka dots only.

n, a fishnetlike design, no name obtained, vertical corners filled in solidly.

p, raccoon hand (first mistranslated "otter," but the otter is "water-raccoon" in Mohave), with five hollow-line toes, background of fine dots. There is some reminiscence of the forking bowl design, but without angling back or hooks.

s, perhaps a simplified version of the pattern of g-j, m?

There is no marked correlation between any of these designs and the shape classes of spoons that have been defined.

PLATE 5: JARS, POTS, JUGS, CUPS

a, water jar, 1723, recorded as "hapurui, small olla for seeds, or for water in summer"; diameter mouth 128 mm., height 200 mm. Neck d. about 83 per cent of mouth, body d. about double that of neck and greater than height. There is an annular base which is not present in the two other water jars. Design: *tšit06k* style of face paint.

b, water jar, 13792, mouth d. 177, h. 194. Neck d. 81 per cent of mouth, body d. equals height.

c, fire-blackened cook pot, 13789, mouth d. 250, h. 192. Neck d. 227, body d. 250.

d, handled jug (spoutless pitcher), 1725, mouth d. 85, h. 95. Design: *ta-skilye-skilye*, viz., outside points of chin tattooing.

e, handled jug, 1724, mouth d. 86, h. 90. Design: *hotahpave*, viz., halter pattern of face painting.

f, handled jug, 13795, mouth d. 105, h. 147. This piece had not been used when collected, and may have been a model for sale.

g, handled jug, 1739, called hapurui, jar, mouth d. 92, h. 140. Design: fish backbone.

h, small, handled cup, 13796, mouth d. 88, h. 47. Used and somewhat worn.

i, handled cup, 2-7359, mouth d. 128, h. 90. From older (pre-1901) University collections, provenience and collector not recorded. Assumed to be Mohave, but condition suggests the vessel was made for sale and not used.

The two water jars are of about the same height, toward 8 in., but a is smaller-mouthed and bigger-bellied than b. The neck diameters are around 5/6 to 4/5 of the mouths, a is somewhat greater through the body than it is high; b, nearly the same. Another and larger jar is shown in plate 8, a.

The cook pot, c, has the opening as large as the body diameter; the neck is only 9 to 10 per cent smaller than the mouth, the height only 77 per cent of the width. This pot is somewhat higher in silhouette proportion than any of the bowls, but not much higher than the highest of them, viz., 2, g and 8, h.

The four handled jugs fall into two classes: d and e, medium; f and g, high. In the former, the height is about a tenth greater than the mouth diameter, in the latter, about a half greater. Also, in the medium jugs, the base of the handle springs from the lower half of the vessel; in the high ones, from the middle or above. In all cases the handle rises somewhat above the lip. The neck is less than the mouth by 12 to 15 per cent.

The cups are like the jugs except that they are lower and the main painted designs come inside. In fact, the cups seem to be small bowls with a handle attached.

I am quite uncertain whether the handled jugs and cups are native Mohave forms or derived in imitation of Caucasian shapes. It is unclear what specific function their handles would have served in Mohave life, in sand-floored houses empty of furniture or apparatus. Yet probably g and certainly h have been used. And the ware of the jugs and cups, as well as their painted designs, are typical Mohave. They look like an "acculturation acceptance"—a new trait adopted into the old native pattern. The problem will probably be solved when enough datable pre-contact and protocontact ware from the Mohave and kindred Yuman tribes becomes available.

With these round vessels the forking-and-angled design of the bowl interiors recurs: in the jar a, the jug f, on the interior of cup i. It will be seen that these come with and without dot stippling. The pattern of jug d was called tattoo points; but it is the same as the coyote teeth of plate 4, l, q. Similarly, e, though called hotahpave halter, resembles plate 4, g-i; and g, called fish backbone, lines up with the fish backbone designs on spoons: plate 4, e, f, k, o, s.

PLATE 6: BOWLS, PLATTERS, PARCHERS, CANTEENS

a, bowl, 4293; diameter 151 mm., height 76 mm. Design: inside, raccoon hand; outside, fish bone, atcí isáka.⁵ This is from Tokwaθa's wife.

b, broken bowl, 4282; d. 157, h. 85. Design: raccoon hand.

c, large bowl or platter, 1745, of type called suyíre, d. 330, h. 125. Weight, 44 oz. The flanges to hold mesquite bark binding in place are unusually prominent.

⁵ Atíí is fish, isáka is bone, but the form mostly obtained was (i)taí, backbone.

This is the largest and second heaviest round vessel in the collection; but it is low, 38 per cent of the diameter—at the minimum for bowls, maximum for platters. It is not strictly a bowl, because there is no neck constriction: the vessel curves in unbroken convexity up to the rim. On the other hand it is not a typical platter because it has flanges and is bound like a bowl. There are 11 of these flanges, 25 to 35 mm. long, projecting 5 to 8 mm., and spaced quite irregularly, with 120, 95, 90, 55, 85, 65, 115, 95, 75, 120, 75 mm. between their centers.

The bowls a and b are grouped together because of their raccoon-hand designs; compare also plate 4, p. Bowl a looks unused and may have been made for sale; b has been used and is probably from the same house, though almost certainly not painted by the same person.

The large platter-bowl c has its painted design built up around four big rhomboids or hexagons, nearly rounded into pointed ovoids with triple solid tips; between which similarly pointed triangles project toward the center from the rim.

The oval platters d and e, nos. 1738, 4294, are the convex backs or under sides of plate 3, i, j. The former looks used, the latter new and perhaps for sale. The tortoisés on the under (6, e) and tortoise carapace on the upper (3, j) side of the same piece seem an exaggeration from normal Mohave style. In my field catalogue I entered d as "dish-like spoon"; and e, two years later, simply as "oval spoon," which is confirmed by the notation: kam'óta kapeta, viz., "tortoise spoon."

The two katéla or parchers, f and g, having adjacent numbers, 13787 and 13788, are probably out of one household—a conservative one, inasmuch as they were secured in 1908. They differ slightly in proportions, yet are closely similar. Piece f, the longer and flatter, has its ends brought into a semblance of the abbreviated quail beaks and eyes found on some spoons—class A2. The rims of both f and g are transversely flat and wiped or pinched over inward to extra thickness, then scored regularly with a fingernail or stick; in g the outer edge has also been lightly punch-marked.⁶

The canteen in its net, h, no. 13793, has evidently seen use. This was the kind taken on journeys. There is a faded design of three vertical figures in double outline. Each of these consists of three near-rhomboids set on top of one another, with the joints between them open, so that the three of them appear as a single figure. Within each of the figures and between them there are dots 4-6 mm. in diameter. The bottom of the vessel is unpainted.

The plain duck seed-bin or canteen i, no. 4297, would be practical for use sitting in the sand in the house or under the ramada shade. It contained melon seeds when I purchased it.

PLATE 7: SPOON BACKS, TOYS, PIPES, POT RESTS

a, back of spoon 13803 shown in pl. 4, h; l. 225 mm.

b, back of 13809 shown in pl. 4, m; l. 207.

c, back of 1749 shown in pl. 4, o; l. 113.

⁶ In 1904, I saw in a native house upriver from Fort Mohave a bipointed parcher or katéla which had nose and eyes at the ends like those on quail spoons; and another which had along the edge a line of overlapping impressions that might have been made by the square corner of a board or tool. This description suggests 6, f and 6, g, which I secured four years later at Needles.

- d, back of 13810 shown in pl. 4, n; l. 156.
e, back of 1736 shown in pl. 4, e; l. 123.
f, back of 1747 shown in pl. 4, k; l. 186.
g, back of 1731 shown in pl. 4, b; l. 201.
h, back of 13802 shown in pl. 4, c; l. 182.
i, back of 13808; l. 226; front not shown.
j, lizard figure, 1726; max. l. 110. Probably a toy or amusement; not used ritually.
k, hummingbird figure, 1727; l., beak to tail, 54.
l, clay pipe, 4264, boy's, unbaked, unfinished;
 1. 55.
m, clay pipe, 13870; broken, 62 mm. remaining.
n, o, clay pot rests, 4283b, 4283c; h. 92, 85.

The convex backs of spoons a-i are not the only painted ones, but show the more ambitious attempts, if this adjective is applicable to rudeness of their degree. The prevalent painting is lengthwise striping, though crosswise (i), and both ways (d), occur. The lengthwise stripes may be plain lengthwise lines (b, g); heavy stripes with light (e) or with rows of dots (f); flanked by multiple zigzags and forming the fish backbone design (c, h); negative effect (e). Piece a is irregularly interesting: three diagonally curved lines sweep across the convex back, and are subdivided by transverse lines into about a dozen triangles and quadrilaterals of unlike shapes; nine of these contain a polygonal spot or daub.

PLATE 8: JAR, CUP, PLATTER, BOWLS, SPOONS

This plate comprises vessels of various shapes which I had at first intended not to illustrate or which had been overlooked.

a, large water jar, 13791, classing with pl. 5, a, b. Rim diameter 255 mm., neck 227, maximum body diameter 315, height 255. The design is of large solid hourglass figures separating rhomboidal-hexagonal areas each bordered by double lines and containing about 35 oval-round spots about 7-12 mm. across. The pattern recalls that of the interior of pl. 3, d.

b, handled cup, 38406, of the type of pl. 5, h, i. Mohave provenience assumed. Rim d. 100, h. 70. Interior design, 6 radiating lanceolate or petaloid areas, double-line bordered, containing from 33 to 50 spots. There are small solid triangles where the "petal" borders meet, and dots also in the peripheral spaces. The handle is striped crosswise; the outside of the vessel, vertically. Compare pl. 5, h, i.

c, under side of platter 1722, front shown in pl. 3, d; d. 203 mm. The design is a solid dark and light checker of 25 whole or partial squares.

d, bowl, 1721, d. 220 mm., h. 135, ratio 61 per cent. Design: the forked-and-angled pattern, crudely executed, and called teft06k face paint. The dots were

named hatúhk, rows of tattoo dots. The outside is painted with crossing lines, forming triangles and diamonds, called sóaka, small net.

e, large bowl, 1746, d. 320, h. 150, ratio 47 per cent. Wt. 41 oz. The interior design, called atalyke hamalye, leaves of an edible tuber-bearing plant, is fishnetlike: thin lines forming squares bisected by diagonals running one way; or, a network of right-angled triangles turning somewhat irregular toward the vessel's rim. Opposite acute angles filled in solid. This design apparently was begun by drawing 5 parallel lines across the interior, demarcating 6 segments. These were then crossed, nearly vertically, by 6 lines; and then by 6 diagonals. Outside, vertical stripes 10 or more mm. wide. There are three peglike projections, irregularly spaced, to keep binding from slipping. Two, broken off, are 7-8 mm. across; the third projects 11 mm.

f, g are outside-painted bowls, both with height 48 per cent of their rim diameter, almost the same as e. f, 13777, d. 310, h. 150; thickness near bottom 7-9 mm., at neck 4.5-6, at lip 6.5-7; wt. 48 oz.—heaviest piece in the collection. g, 13781, d. 165, h. 80; wt. 14 oz. The design of f is negative in effect: a band of light diamonds reserved on darker background; they are about twice as high as wide, and each is inner-outlined with a dark border. The interior is dark and worn smooth. The pattern of g is irregular: diagonals sloping to the right, with left-sloping ones crossing every other one of these; but to the side, the left-sloping lines come thicker, the right-sloping ones are omitted.

h, 13790, is a fire-blackened bowl that has been cooked in and the contents run over; d. 185, h. 125, ratio 68 per cent. This is the maximum for a Mohave bowl, though equaled by pl. 2, g; and the shape is still that of a bowl rather than of a pot (olla) such as pl. 5, c. The ratio of rim, neck, and body diameters is 100, 95, 97 per cent for 8, h, whereas the pot 5, c has 100, 91, 100 per cent, and its height is 77 instead of 68 per cent. i, j, k, 13811, 1750, 13806, are spoons, the first blunt-topped, the last with 135° back-curved handle. The maximum lengths are 135, 140, 167 mm. The patterns are as follows.

i, no. 13811, outlined diamonds and triangles containing from 9 to 4 dots. The surface is worn, and the arrangement of figures of the two shapes may have been more regular than now appears; but the painting was slovenly at best.

j, no. 1750, very similar to the fishbone design of plate 4, o. There are 12 thinnish cross lines, each with four upward angles. 8j and 4o are very similar and bear adjoining numbers, 1750 and 1749, and were almost certainly the product of the same hand.

h, 13806, parallel line-angles, pointed right, then left, then again right across the front of the hollow of the scoop. These angles are formed by 18 or 19 cross lines.

SUMMARY OF SHAPES

Bowls: kwá0ki. Diameter about twice the height; neck concave, often strengthened with a lashing of mesquite bark; lip gently everted; principal design inside; outside design usually mere lines, stripes, rows of dots. H/D down to 38 per cent, usually 45-61 per cent, in two cases 68 per cent—one of these has been cooked in. (Pls. 1, a-h, 2, a-h, 6, a-c, 8, d-h.)

Round platter or plate: kayé0a. Lipless; continuous

curvature. Principal design inside (above). H/D 29-35 per cent. (Pls. 3, a-d, g, 8, c.)

Oval platter: kayúka or kakápa. Like the last except for being oval, with width/length percentage between 78 and 89. They also average smaller than the round plates—modes around 160 mm. and 260 mm. respectively; but the two classes do overlap in size. (Pls. 3, e-f, h-j, 6, d-e.)

the two classes do overlap in size. (Pls. 3, e-f, h-j, 6, d-e.)

Spoon, ladle, dipper, scoop: kam'óta. These are oval trays brought at one end to (A) a point or rude quail's head, or (B) to a sharp rounding or blunt point. The second type is obviously related in form to the oval platters; though most spoons are longer than most platters. Their range is from 113 to 226 mm. Painted design on the inner side varied; on the back it is usually simpler, but also varied. A few spoons are built up at the "handle" into a hollow box that rattles.

Parcher: katéla. As the spoons can be construed as oval platters pointed at one end, the parchers—used to shake live coals with grain or seeds—are two-ended, with well-raised points. They are about twice as long as spoons, and longer than any known platters or bowls: 340-385 mm., with a width about seven-tenths that. They are wholly unpainted. (Pl. 6, f, g.)

The five foregoing shapes are all "open" and relatively flat. There are about the same number of "tall" shapes—pots, jars, jugs, etc. But these are represented by notably fewer specimens. Whether this disproportion existed in precontact times, I do not know. It is possible that cooking vessels and containers of American make had begun to crowd out native forms by 1902-1908 faster than bowls, platters, and spoons were being displaced.

Cook pot: táskyena. The single specimen available, 5, c, is about the size of a bowl but higher (77 per cent as against 68 per cent maximum); mouth and body diameter the same, neck constricted 9 to 10 per cent. No handles, paint, or decoration.

Large cook pot: tšuváva. Set on three rests. It may have been proportionally higher than the táskyena, but my recollection is fifty years old.

Water jar: hápurui. Unhandled, painted. The largest dimension is the body diameter, usually below the middle. Next largest dimension is the height, though in one case this is about equaled by the mouth diameter. The neck has from 80 to 87 per cent the diameter of the mouth.

One specimen (5, a) differs from the two others in showing considerably more taper from body to neck and mouth and in having an annular base. The contained volume would be around a gallon or up. (Pls. 5, a, b, 8, a.)

Oval seed-storage jar (or canteen) with short side spout: hápurui hanemó, "duck jar" from its shape. The single specimen is unpainted. (Pl. 6, i.)

Seed jar with small flaring mouth. see Appendix I. Canteen for carrying in sling or net. Short spout on top, as in a basket or gourd. One specimen, painted. (Pl. 6, h.)

Handled jug: no native name obtained, except hápurui, jar, or kwaθki, bowl. May be a postcontact form. Higher than wide; no spout. Painted outside. (Pl. 5, d-g.)

Handled cup: also unnamed, except perhaps kwaθki, and perhaps postcontact. Wider than high. Painted design mainly inside. (Pls. 5, h-i, 8, b.)

TRANSITIONAL AND EXCEPTIONAL PIECES

Bowls with principal painting outside: 8, f, g.

Bowls of height more than two-thirds diameter: 2, g, base somewhat conical; 8, h, fire blackened.

Bowl with cylindrical projections to prevent slip of neck binding: 8, e.

Transition bowl-platter with 11 flanges to hold binding; no neck or recurved rim; H/D ratio 38 per cent on border between bowl and round platter classes. The diameter is greater than that of any other bowl or platter in the collection (8, e is next), and the weight is second heaviest (8, f being first): 6, c. Called suyíre.

Spoon with ribbon handle curled back (only "handled" spoon): 8, k.

Water jar with annular base (found otherwise only on handled jugs), and considerably reduced neck and mouth: 5, a.

SUMMARY OF PAINTED DESIGNS AND ELEMENTS

"Angled-and-forked" continuous pattern: usually of triple lines; background stippled or empty. Bowls 1, a-h, 2, e, 8, d; platters 3, a-b, 3, g (called "fish bones"); spoon 4, b; jar 5, a, jug 5, g; cup 5, i. I did not obtain a name for this design as an overall pattern. Some element in it, perhaps the filled-in angle, was twice denominated tšitθók face paint.

"Hourglass" figures: (1) as principal design, bowl 2, f; platter 3, d; spoons 4, a, 4, d (in rows), 4, q; jar 8, a; jug 5, e. (2) as secondary design element with rhomboids, bowls 2, a, b; spoons 4, g, h; i, j, m with diamonds in column. The hourglass figure can of course be construed as the "filled-in angle" enlarged.

Quadrilaterals-hexagons, shifting from one to the other according to exigencies of the field. The mark + designates painted figures, that are dark; others are open, left as part of the lighter background, or stippled.

- Four central polygons: bowls +2, a, +6, c (in this, rounded into ovals).
- More than four: bowls +2, b, 2, f; platter 3, d; jug 5, e; cup 8, b.
- In rows: spoons 4, a, d; jar 8, a.
- In columns: spoons 4, g, h, i, j, +m.

Rows of dark and light triangles: bowls 2, a, b; spoons 4, l, q (these spaced and "geared"); 2, b, 4, l, q named coyote teeth; jug 5, d, named tattoo points.

Fishbone (fish backbone) pattern: of parallel angled lines, from one to four chevrons in each line. Usually about half the angles are filled in; this is indicated by the asterisk*.

- With vertebral column shown by central line: platter *3, g (transitional to angled-and-forked pattern); spoons 4, e (with stippling), *4, o, 7, h outside, 8, j; jug *5, g.
- Without vertebral column, zigzag parallels only: Bowl *2, g; platters *3, c, *3, e; spoons *4, f, *4, k, *4, s, 7, c outside, 8, k (direction of angles unusual).
- (Named fishbone or fishtail, but design of straight stripes only: bowl 2, h outside; spoon 7, e outside.)

Circular center of design: bowl 2, f; oval platter 6, d; cup 8, b.

Fishnetlike design, crossing lines, square or diagonal. Asterisk * denotes filled-in angles.

- A. On inside of vessel: bowls *8, e, perhaps 2, g; spoons *4, n, 8, i (really rows of polygons, stippled).
- B. On outside of vessel: bowls 8, c (bold checker), 8, f, 8, g; spoons 7, a (with blobs in centers), 7, d.

Large polka dots as design: platters 3, f outside, 3, h, 3, j (combined with tortoisés); spoons 4, c, 7, a (central blobs in polygon), 7, f (with stripes).

Stippling: more or less as shading or value effect or border.

- A. Of areas: bowls 1, a, b, c, d, e, g, h, 2, e, h, 8, d; platters, 3, d, (3, j); spoons 4, b, e, g, i, j, q, r, 8, i; jars 5, b, 8, a; jug 5, f; cups 5, i, 8, b.
- B. Row of spots as outer or inner border: bowl 6, a; platter 3, g; spoons 4, h, p, q; canteen 6, h.

Solid angles, corners filled in: (see * under fishbone and fishnet patterns; and regular in "angled-and-forked.") Total occurrence is in more than thirty vessels. Bowls 1, a-h, 2, a, b, (c), f, g outside, 6, c, 8, d, e; platters 3, a, b, c, d, e, g; spoons 4, b, f, g, h, i, k, m, n, r, s; jar 5, a; jugs 5, e, f, f; cups 5(h), i, 8, b.

Negative (dark) effect:

- A. Dark background, pattern light: bowl 8, f outside; platters 3, a, b; spoon 4, m.
- B. Dark and light areas alternating evenly: bowls 2, c, d; platter 8, c outside.
- C. Seeming negative, owing to masses of dark polygons: bowls 2, a, (b).

SUMMARY OF DESIGN NAMES

Designs are named most frequently after animals or their parts, once after a leaf. Next most frequent are names derived from patterns of face painting or tattooing. A few are descriptive, like "patches," "zigzag."

Animals or parts.

Fish (back)bone: 3, c, 3, g, 4, o, 4, q, 5, g, 6, a outside

Fish tail (?): 2, h outside

Coyote teeth: 2, d, 4, l, 4, q

Raccoon hand: 6, a, 6, b, 4, p

Yellowhammer belly: 1, a

Tortoise: 3, j, 6, e outside

Spider: 2, h, 3, i, 6, d outside

Butterfly: 2, f; "in mouth," 4, d

THE MOHAVE POTTERY STYLE

Mohave pottery was made in a culture which set little intrinsic value on anything technological and looked upon economic acquisition as in itself unworthy and fit only for dissipation. Artifacts were used but not prized; and they all perished upon their owner's death.

Certain qualities of Mohave pottery are expectable as a product of this atmosphere: lack of evenness and finish or precision, the appearance of haste or indifference in manufacture. Surfaces are not quite true or even, thicknesses variable, firing intensity somewhat spotty; diameters vary enough for the eye to see some lopsidedness from the round, or sway in the level of a rim. Particularly in the painted designs, which do not contribute to functional use, inequalities, crowding, wavering lines,

Plant parts.

(Cottonwood) leaves: 3, d, 8, e

Of these, coyote teeth, yellowhammer belly, butterfly, and (atalyka) leaf occur also as names of face paintings (Handbook, p. 732, fig. 61, b-e).

The Handbook (p. 738) mentions a few additional names for pottery designs: rain, rainbow (this also a face painting), melon markings.

Face paintings or tattoo.

tšit0ók: 3, d, 5, a. This seems to denote an element in what I have called the forked-and-angled pattern of plate 1. Also recorded as tšitgók.

hotahpave, "halter": 2, f, 5, e. It seems to refer to paired crossing lines as part of hourglass figures. In Handbook (fig. 61, i-j) it appears as point-to-point chevrons on the cheeks.

ta-tsirqa-tsirqa: 1, d. In Handbook (fig. 61, k,l) it appears as sharp points under the eyes (cf. *ibid.*, fig. 61, g,h, "ha-tsira-tsirk," a vertical line down from the eye).

ta-skilye-skilye: 5, d. Reference is to a column of horizontal points at the edge of one style of women's chin tattoo. (See Handbook, p. 521, fig. 46, q.)

iya-m-tšupe(r)t(a): 2, g. Iya is the mouth; tšupeta, to hold back or cover.

"Adjectivally" descriptive.

ta-hlame-hlame, "patches": 1, b, 4, d

kyauelkyau, "angled, zigzag": 4, g

kan'ú (?), "patterned": 2, b

It is evident that there is no deeper symbolic significance in the pattern names. They are like our crow's foot, horseshoe, pigtail, fleur-de-lys, diamond, spade, wavy, broken—metaphorically or directly descriptive. The Mohave in addition have available a number of striking and familiar types of designs with which women ornament their faces.

In their actual, though of course transient, face decoration, the Mohave, though not quite the artistic equals of the Seri, paint with far more care, neatness, and precision than they bestow on their pottery. It is significant that it is the patterns of pottery that are named after those painted on their cheeks, not the reverse.

departures from symmetry, are all conspicuous.

At the same time the ware is never incompetent. It has reasonable strength, toughness, hardness for its purpose. Its shapes are definite and well standardized. It never tries merely to get by. This is proved by the fact that, except for vessels like cook pots and parchers, where decoration would be wasted, painting is the rule, and mostly, painting on both sides. The execution of this painting is often enough slovenly; but it is firm in aim. There are a series of design patterns more or less fitted to the several shapes; there is considerable choice between these, and even more freedom of adaptation to shape of field. Timidity was not one of the earmarks of the Mohave potter; if her pattern came out neatly, well

and good; if uneven or crowded, there was no harm done. Standards were not particularly high, especially not as regards exactness; but they called for vigor of approach. Emphasis is on the overall effect of pattern, not on its items. The continuous forked-and-angled design, the combinations of hourglass figures, of spaced rhomboids or hexagons, even the simpler fishbone pattern—all have this total-field approach, with relative indifference to figure elements that got squeezed, stretched, or distorted.

Some of these patterns, especially the forked-and-angled continuous or interlocking one, are not easy to plan or apply with reference to a given field, whether circular or otherwise; yet they are attempted again and again with a slapdash gusto.

Elements like the triple line, or an extra line shadowing the edge of a solid area, or a row of dots following an inner or outer contour, or the filling either of figures or background with stippled spots, and the superabundant solid-filled angles—either opposite or apart—are simple enough to execute in themselves; but the frequency of their use, often of two or three of them at once, are evidence that the Mohave potter was at least not skipping her decoration, even though she was unworried if it came out skew or ragged. After all, these details might have simply been left out instead of being executed.

In fundamental form, the bowls, platters, parchers are pleasing; and in design and its relation to its field, vessels like 1, b, c, 2, g, 3, a, b—or 3, c, e, 5, g; or 4, g; h, m, p; or 3, d, 4, r—show concepts that in the hands of

a more interested or aesthetically more experienced population would have had definite potentialities.

There is then a standard in the Mohave pottery art, and behind this a tradition. How this tradition grew will be gradually worked out as a corpus of published data on the ceramic wares of other tribes of the region becomes available, and especially as archaeological information accumulates. Personally, I have always assumed that Colorado River ware as represented by historic Yuma and Mohave pottery was a variant in a cotradition that includes also Hohokam, much of Sonora, and probably southern California. This seems also the basic view of Malcom Rogers, Schroeder, Treganza, Meighan, my present collaborator Harner, and the few others who have concerned themselves with Colorado Valley pottery. But of course the full story is long and complex; and the present description and Harner's analysis are merely thresholds from which the problem can be really entered. Rogers' "Yuman Pottery Making" is a useful preliminary survey and stimulating. Meanwhile a Patayan tradition has been set up for the mountains and desert east of the Mohave habitat along the Colorado. But we have scant information on the Patayan development, and that little seems quite different from the historic Mohave one. So far as there may be resemblances, I hope that our present detailed contribution will induce those who know Patayan to point out in print such similarities as they discern.

APPENDIX I

MEMORANDA ON THE DESTROYED ACADEMY COLLECTION

The Mohave ethnological collection which was destroyed by fire at the California Academy of Sciences in San Francisco in 1906 consisted of 67 items, according to a record preserved in my notebook 7. Of these 67, 32 were pottery vessels and 12 were ceramic ancillaries. The latter consisted of four paddles, three pebbles used as anvils, yellow pigment, two samples of potter's clay, one of clay pounded small, and a sample of fine-crushed rock for tempering.

The vessels comprised:

11 bowls, one of them of kwáθki shape; mostly listed by me as "dishes"; they may include some platters

3 bowllike vessels, listed as: "kwáθki, small pot"; "suyíre, round dish"; "tšemátšive, pot with designs inside and out"

1 "dish, corrugated outside"

9 spoons

1 fire-blackened pot

1 cup, named as "kwaθki aha-suraitši"

1 jar, "hapurui, water jug"

2 seed jars, described as: "25, water jug, wheat jar, aha-tše-kemauvitše, in halves, rejoined with mesquite gum"; and "39, jar, top sealed with mesquite gum; contains melon seeds for roasting and pounding; to take them out, the mouth of the jar is set on hot coals"

2 parchers, double-ended

1 jar with rope handle (canteen like pl. 6, h? or a water jar carried by a rope around its neck?)

I do not know whether in 1900 I meant the same by jar, jug, pot as now. My "dish" of then may have included some platters as well as bowls. I was not using the term "bowl"; and "pot" seems to have designated sometimes a cook pot or olla, sometimes simply any open pottery vessel, including bowls. Nor can I imagine now what I may have meant by the "corrugation" on a dish. A cup is mentioned, but called a special kind of kwaθki. If the "hapurui, water jug" was handled, it would show that handled jugs were called by the same name as wide-

mouthered jars, hapurui. The two seed jars were evidently of the small-necked and small-mouthed type discussed in connection with the Chemehuevi seed jar no. 13875.

The design names obtained in 1900 were:

Fish bones, fish back, usually written atciθtatr (= atšitaṭ): on four spoons and one "dish."

Spider, haldāda (for halytōṭa), on one "pot." I sketched the core of the pattern: an hourglass figure (meeting angles) with double lines from the corners.

Cottonwood leaf, on three spoons and the jar with rope handle

Matitšiaiv leaf (a bush growing away from river), on one spoon

Turtle (viz., carapace markings), on one spoon

Hotaxpam, on the tšemátšive "pot," also on one spoon; described as a red X painted below the eyes by women; hotaxpave, halter, the cross-strap being near the horse's eye

Kari hanyora, "basket pattern," on the outside of a dish

Rain, kovau, on two dish-pots; on the outside in at least one

Rainbow, kwalisei, on the outside of two "dishes" and one spoon. I think these are simply stripes or parallel lines on the under side. Rainbow occurs also as a design on women's wooden dice, and as a face paint.

Fishnet, once on the outside of a "dish"

Melon markings, kamíto hanyóra, on one of the seed-water jars

Clouds were given as the name of the "corrugations" on dish no. 46. I evidently asked a foolish question.

Handbook of California Indians (fig. 64, p. 738) shows a typical bowl and spoon from this Academy collection, which I had drawn before their destruction. The bowl pattern is outside, consists of heavy stripes and thin lines, and was called "rain." The spoon pattern was probably on the inside, was called "fish backbone," and is similar to that of plate 4, f, k, s.

APPENDIX II

A SMALL MOHAVE BOWL

About 1908 I was given or purchased as a souvenir a small bowl which is now Peabody Museum no. 54-41-10/34461. It is a typical bowl except for being smaller than any in the University collection.

It is 123 mm. in diameter, 64 in height; H/D ratio is therefore 52 per cent. The ridge is finished with a horizontally flat edge 4-5 mm. wide. I estimate the mean thickness of the ware as around 4 mm. The weight is 7 oz. There is a mesquite lashing below the rim with three knots in it.

The inner side is worn by use, and parts of the design

are no longer plain. The basic element is the raccoon hand, of which there were originally 20 to 24 units. Each of these consists of a solid red triangle, isosceles or equilateral, with sides of 15-20 mm. From each triangle project four digits—bars 6-12 mm. long. The hands are scattered rather evenly over the field, but pointing in all directions: toward the center, toward the rim, or across the circle. Between the hand units there are red dots 2-3 mm. in diameter.

The under side carries 41 vertical (radiating) lines 1-2 mm. wide and 30-80 mm. long.

APPENDIX III

GRANITE TEMPER AND LIMONITE PIGMENT EXAMINATION

By

PROFESSOR CHARLES MEYER

The piece of granite, no. 4326, used for temper is high in quartz (20-25 per cent) and potash feldspar (35-40 per cent), with perhaps 10 per cent of black mica now chloritized. The remainder is probably soda-rich plagioclase, a feldspar. This is a very acid granite, silica probably constituting around 70 per cent of the total mass. As a result, as the rock surface weathered, it would not wash off as clay but would maintain hard spicules and sharp angles of quartz useful as temper.

The limonite pigment, no. 4295, $\text{Fe}_2\text{O}_3 \cdot n(\text{+})\text{H}_2\text{O}$, has

mostly crystallized on exposure to become toethite, $\text{Fe}_2\text{O}_3 \cdot n\text{H}_2\text{O}$. If originally derived from a sulphide, none of this seems to remain. Some clay is contained and a little quartz silt; also some carbonate in the form of calcite, which acts as a cement for the whole; but the total of silicates and carbonates, that is, noniron oxide, is not over 10 per cent. On roasting, the water content is driven off, and the remaining Fe_2O_3 is red. A reducing heating with carbon however produces magnetic powder Fe_3O_4 , a black pigment.

APPENDIX IV

MOHAVE POTTERY IN OTHER MUSEUMS

In 1934 F. H. Douglas, of the Denver Art Museum, wrote my colleague Gifford about Mohave pottery which he had seen on display in various museums, without special search of catalogues or storerooms. The list may still be useful.

U. S. National Museum: 25 vessels, mostly old, many collected by Palmer, some evidently mislabeled Diegueño or Pimo. One anvil stone. [Yuma, a bowl and a 5-necked vase, from Palmer; the Yuma went in for "fancy" or tourist pieces earlier than the Mohave. Cocopa, McGee got 4 plates, a Mohave type dipper, unpainted, 2 paddles.]

Peabody Museum, Harvard: 10 vessels collected by Edward Palmer in 1876, viz., 1 very large jar, 2 other jars, 1 tiny jar, 3 bowls, 3 dippers; also 2 pottery dolls, a paddle, an anvil stone, a "vessel of mud and straw." There is also a pottery doll secured by Jules Marcou in 1854—he must have been on the Whipple Expedition! [I have seen this lot and, like everything Palmer got, it is excellent. Together with National Museum pieces, these of Palmer's are the most important collection of Mohave pottery extant. There seem to be no handled vessels; but there are dolls—besides Marcou's. The Palmer collections, formed twenty-five to thirty years before mine,

will be the touchstone of the "purity" of mine. From having seen the Palmer material, I am confident that Mohave native ware had not been seriously impaired technologically or stylistically by 1902-1908; but it must have been affected somewhat—the railroad came through in 1886—and it will be desirable to know at what points it had begun to change.—A. L. K.]

Chicago Natural History Museum: 8 vessels (bowls, dippers, jars, canteen), also 3 dolls, collected in 1901. [The date points to Owen, who was in southern California about then. From Yuma, one painted, one unpainted bowl.]

Museum of the American Indian: 15 assorted pieces, 3 of them unpainted. [Same number from Yuma]. [Possibly Edward Davis of Mesa Grande collected these.]

University of Pennsylvania: [2 Yuma pottery dolls].

Denver Art Museum: 3 human-headed vases, pre-1900. Also 5 brand-new pieces bought at Needles in 1934.

It is curious that none of these collections have been described, except possibly for stray pieces in nonethnographic connections. They aggregate into a group probably at least as large as that discussed here; perhaps considerably larger when the storerooms shall have been examined.

APPENDIX V

CORRELATION OF KROEBER AND HARNER SHAPE CLASSES

<u>Kroeber</u>	<u>Harner</u>
Bowl	I
Platter	II
Bowl, deep	III
Cook pot	IV
Water jar	V, VI
Canteen	VII
Handled cup	VIII, IX
Handled jug	X
Spoon (scoop)	XI-XVI
Parcher	XVII-XVIII

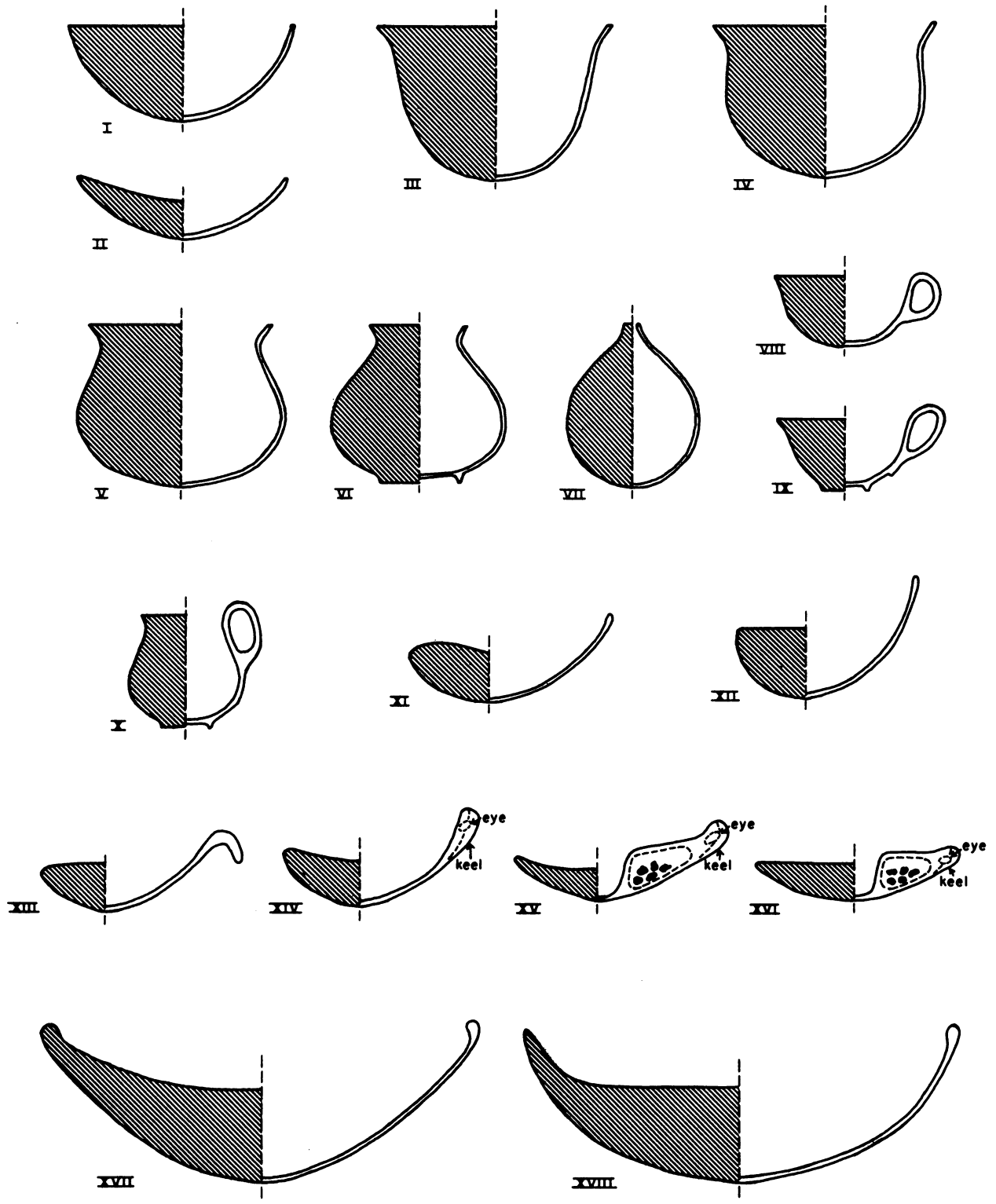


Fig. 1. Profile shape types. Exterior to left; section to right.

PART II
 A DESCRIPTION FOR THE ARCHAEOLOGIST
 PARKER RED-ON-BUFF, FORT MOHAVE VARIANT
 AND PARKER BUFF, FORT MOHAVE VARIANT

BY
 MICHAEL J. HARNER

INTRODUCTION

The following analysis of the Mohave pottery collected by Professor Kroeber is primarily for the use of the archaeologist to aid him in identifying historic Mohave ceramics. Not represented in the collection is pottery made by the Mohave south of Parker. Some typological differences may exist between the pottery of those settlements and the pottery in Kroeber's collection, which is from Mohave Valley. In addition, the evidence seems to indicate that Mohave ceramics were undergoing changes in the late historic period. Since the historic period can be considered to extend back to the time of the first Spanish contacts, other chronologically significant "historic" Mohave pottery types or type variants may be discerned through additional research. For these reasons "Fort Mohave" is introduced here as a variant or subtype name in preference to using "Historic Mohave" which is felt to be too inclusive a term.

In referring to historic Mohave pottery, Malcolm Rogers (1945, p. 179) once used the name "Needles Red-on-Buff." However, the description of Needles Red-on-Buff by Colton (1939, pp. 12-13) and the use of that type name by Schroeder (1952, p. 32) indicate that each has in mind a type distinguishable from the pottery described in this paper. At the same time, Schroeder (1952, p. 20) clearly considers that his Parker types include historic Mohave pottery within their typological range, and I am of the same opinion. The descriptions of Parker Red-on-Buff, Parker Buff, and Parker Stucco by Schroeder (1952, pp. 19-22) agree in basic characteristics with most of the pottery described in the present paper. However, some forms which do not seem to occur prehistorically in the Lower Colorado Buff Ware, such as cups, ring bases and keels, are present in the late historic collection described here. Such new forms can be of definite use as chronological diagnostics, but it is difficult to justify setting up a new type on the basis of them alone. Consequently, the qualification "Fort Mohave variant" has been added to the Parker type names to denote this late historic pottery complex. When more detailed descriptions are available for the earlier ceramics of the Parker Series, the typological contrast may prove to be of sufficient scope to warrant classifying the Fort Mohave variants as full-fledged types. In any case, such descriptions must be made before useful comparisons can be attempted.

The description which follows does not include pottery figurines, toys, rattles, pipes, or pot rests. Also one undecorated jar¹ was not included in the study.

Techniques of description used here are almost entirely based upon Colton and Hargrave (1937), Shepard (MS), and Gifford (1953); the latter paper being also the source of the paint permanency scale.² Color analysis is based upon the Munsell Soil Color Chart and hardness tests upon Moh's scale. Depth and diameter measurements refer to exterior dimensions.

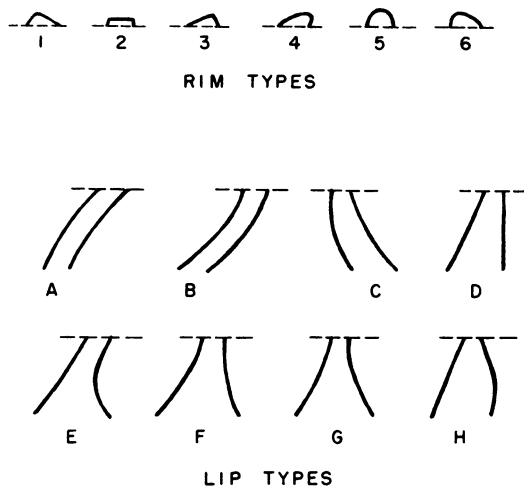


Fig. 2. Rim and lip types.
 Interior to left; exterior to right.

Since the size of the collection leaves much to be desired, particularly as regards Parker Buff, Fort Mohave variant, the writer wishes to emphasize that the definitions of these variants are only tentative and hopes that others will not hesitate to revise them in the light of additional evidence.

¹ UCMA no. 1/4297. Pl. 6, i.

² I wish to thank A. H. Schroeder, R. C. Euler, and H. S. Colton for their constructive criticism of this description.

PARKER RED-ON-BUFF, FORT MOHAVE VARIANT

GENERAL DESCRIPTION

Synonym: None.

Variant named for: Fort Mohave Reservation.

Illustrations: This publication.

Type specimens: Mohave pottery collection at the University of California Museum of Anthropology.

Type sites: All specimens were collected ethnographically on the Fort Mohave Reservation in the vicinity of Needles, California.

Cultural association: Historic Mohave.

Time: In use and collected during the years 1902 through 1908.

Size of sample: 33 bowls; 4 jars; 7 cups; and 29 scoops.

ANALYSIS

Construction technique: Coiling.

Finishing technique: Paddle and anvil.

Firing: Fully to incompletely oxidized.

Paste:

Color.—Range: hue 2.5YR to 10R; value 6 to 7; chroma 4 to 6. Most common: 2.5YR 6/5 (between a weak reddish orange and a weak orange.)

Temper.—Size: average .4 mm. (fine); maximum 1.4 mm. (coarse); minimum microscopic. Greatest range between average and maximum observed in a single vessel is .4 to 1.3 mm. Kind: predominantly white angular and subangular particles (feldspar) together with a small amount of white rounded particles (quartz). Some mica (copper-colored) is present, but except for a few vessels is hardly noticeable.³ No sherd temper is visible. Amount: When seen in cross section the amount of the paste surface occupied by temper particles ranges from ca. 30 per cent to ca. 50 per cent; the average being ca. 40 per cent.

Carbon streak.—None.

Texture.—Rough.

Hardness.—Where the paste is buff-colored: range of hardness is 2 to 6.5; average is 4. Where the paste is grayish: range 3.5 to 8.5; average 6.5. These hardness ratings can be in error \pm .5 owing to variability in the mineral set used for testing.

Fracture.—Medium to crumbling.

Surface finish: Anvil depressions are generally discernible on interior surfaces of vessels. Surfaces are uniformly smoothed, but not polished. All vessels are unslipped (a few scoops have a sliplike surface appearance, owing to one or both of their surfaces being completely painted over; but the painting marks make it evident that these are not applications of the clay wash that characterizes a true slip.).

Surface color:

Bowls.—Exterior: range of hue 10R to 10YR; value 2 to 8; chroma 1 to 6. Most common: 5YR 6/4 (pale neutral brown). Interior: range of hue 2.5YR to 10YR; value 3 to 8; chroma 1 to 8. Most common: 2.5YR 6/7 (weak to moderate orange).

Jars.—Exterior: range of hue 10R to 10YR; value 3 to 7; chroma 1 to 8. Most common: sample insufficient. Interior: range of hue and value same as for exterior surface; chroma 1 to 6. Most common: sample insufficient.

Cups.—Exterior: range of hue 10R to 10YR; value 3 to 8; chroma 1 to 7. Most common: 2.5YR 6/6 (moderate orange pink). Interior: range of hue and chroma same as for exterior surface; value 4 to 8. Most common: 5YR 7/4 (between moderate orange-pink and weak yellowish orange).

Scoops.—(For colors of completely painted-over surfaces, consult section on "Decoration.") Exterior: range of hue 2.5YR to 7.5YR; value 2 to 8; chroma 1 to 6. Most common: 5YR 5/4 (between pale reddish brown and moderate yellowish brown). Interior: range of hue and value same as for exterior; chroma 1 to 7. Most common: 5YR 6/4 (between weak reddish orange and light yellowish brown).

Fire clouds:

Placement.—Occur on any part of the exteriors of all classes of vessels; never occur on the interiors of bowls, but sometimes on the interiors of jars, cups and scoops. Indistinct in shape.

Amount.—Every vessel has at least one fire cloud on its exterior surface. Presence of fire clouds on the interior surface is more variable. Fire clouds are extremely variable in size.

Bowls: Exterior: as many as 14 per vessel.

Often cover more than one-half of the surface. Interior: no fire clouds.

Jars: Exterior: as many as 4 per vessel. Cover less than half of the surface. Interior: ranges from being entirely free of fire clouds to being completely blackened through use.

Cups: Exterior: as many as 4 per vessel, and at least 1. Interior: with the exception of 1 cup, which has 1 small fire cloud, they are lacking.

Scoops: Exterior: as many as 12 per vessel. Often cover more than one-half of the surface. Interior: not more than 1. Occur only occasionally.

Color.—Value 2 to 7, chroma 1 (light gray to near black). Hue depends upon vessel surface color.

Form:

Bowls: Straight wall (circular and oval).—

Profile form types: I (circular bowls) and II (oval bowls).

Lip and rim types: Lip type B. Rim types 1, 2, and 3. Types 1 and 2 occur on both circular and oval bowls, type 1 being the more common. Type 3 occurs on a single circular bowl.

Shoulders: None.

Base: Rounded.

Diameter range: (a) for circular bowls, 12.3 to 33.0 cm.; (b) for oval bowls, maximum length ranges from 15.4 to 26.8 cm. and maximum width from 12.0 to 21.6 cm.

Depth range: (a) for circular bowls, 6.0 to 13.4 cm.; (b) for oval bowls, 4.5 to 6.6 cm. when measured at the point of maximum length and 3.1 to 5.5 cm. when measured at the point of maximum width.

³ Mineral identifications were kindly made by Dr. Adolf Pabst, Department of Geological Sciences, University of California.

Wall thickness range: (a) at rim, 4 to 9 mm.; (b) at a distance of 1 cm. below rim, 4 to 7.5 mm.; (c) at center of vessel base, 4 to 9 mm.

Additional features: None, with the exception of the largest circular straight walled bowl, which has pottery knobs. (a) Nature of feature: short oval pottery knobs apparently for the purpose of holding in place vegetal bindings which were sometimes wrapped around vessels at the lip. (b) Placement: encircle the vessel at the lip and project horizontally from it; tops of the knobs are 15 to 20 mm. below the rim. (c) Dimensions: knobs project from the vessel 9 to 12 mm. Their dimensions horizontally range from 30 to 38 mm., and vertically range from 21 to 24 mm. (d) Method of attachment: affixed to vessel before firing. (e) Number: 11.

Bowls: Recurved wall bowls.—

Profile form types: Range from type III to type IV.

Lip and rim types: Lip type A. Rim types 1 and 2, sometimes grading into types 4 and 5.

Type 1 is the most common; types 4 and 5 the least.

Shoulders: Rounded.

Base: Rounded.

Mouth diameter range: 14.1 to 32.0 cm.

Depth range: 7.9 to 16.3 cm.

Wall thickness range: (a) at rim, 4 to 9 mm.;

(b) at point of greatest incurve, 3.5 to 8.5 mm.; (c) at vessel base, 3.5 to 10 mm.

Additional features: A minority of the recurved wall bowls have pottery knobs. (a) Nature of feature: short oval knobs or longer conical knobs (the latter on only one vessel) apparently for the purpose of holding in place vegetal bindings which were sometimes wrapped around vessels at the lip. (b) Placement: Knobs encircle the vessel at the lip and project horizontally; tops of the oval knobs are 17 to 41 mm. below the rim; tops of the conical knobs are 23 to 28 mm. below the rim. (c) Dimensions: oval knobs project 4 to 9 mm. from the vessel; range in horizontal length from 14 to 58 mm.; range in vertical length from 8 to 22 mm. Conical knobs project from the vessel ca. 12 mm. (only one is unbroken and measurable); basal diameter is 8 mm. (d) Method of attachment: affixed to the vessel before firing. (e) Number per vessel: varies for oval knobs, 3, 4, or 6; the one vessel having conical knobs has 3.

Jars: wide mouth.—

Profile form types: V and VI (the latter type having an annular base).

Lip and rim types: Lip type A. Rim types 1 and 2.

Shoulders: Rounded.

Bases: Rounded, sometimes with the addition of an annular base.

Mouth diameter range: 12.6 to 25.1 cm.

Depth range: 19.2 to 25.4 cm.

Wall thickness range: (a) at rim, 4 to 8 mm.;

(b) at point of greatest incurve, 4 to 5 mm.;

(c) at center of vessel base, 4.5 to 5.5 mm.

Additional features: One jar has an annular

base, probably in imitation of such bases on chinaware. Dimensions: diameter, 10.2 cm.; thickness at rim of base ring, 6.4 to 8.0 mm. Base ring lip is type D; rim of ring is type 2.

Jar: narrow mouth (canteen).—

Profile form type: VII.

Lip and rim types: Lip type C. Rim type 6.

Shoulders: Rounded.

Base: Rounded.

Mouth diameter: 3.9 cm.

Depth: 18.2 cm.

Wall thickness range: (a) at rim, 4 to 5 mm.;

(b) at a distance of 1 cm. below rim, 7 mm.;

(c) at center of vessel base, 6 mm.

Additional features: None.

Cups.—

Profile form types: VIII, IX, and X (the latter two types having annular bases).

Lip and rim types: Lip type A. Rim types 1 and 2, sometimes grading into 4 and 5 respectively.

Shoulders: Rounded.

Bases: Rounded, often with the addition of an annular base.

Mouth diameter range: 8.4 to 12.8 cm.

Depth range: 4.5 to 14.8 cm.

Wall thickness range: (a) at rim, 4 to 7 mm.;

(b) at point of greatest incurve, 3 to 6 mm.;

(c) at center of vessel base, 6 to 8.5 mm.

for cups without an annular base and 9 to 12 mm. for cups with an annular base.

Additional features:

Loop handles: (a) Nature of feature: single pottery loop per cup. (b) Placement: upper end of handle at rim of vessel; bottom edge of lower end of handle is from 3.6 to 7.5 cm. below rim. (c) Dimensions: range of maximum distance between inside surface of loop and exterior surface of the nearest part of vessel proper, 12.5 to 33.8 mm.; range of handle width (tangent to vessel) 11 to 30.9 mm.; range of handle thickness (perpendicular to vessel), 6 to 14.2 mm. Loop handle edges can be classified as to rim type: types 1, 2, 3, 5 occur.

Annular bases: (a) Nature of feature: a ring base is often characteristic of the cups, probably in imitation of such bases on chinaware. (b) Dimensions: diameter range, 5.8 to 7.1 cm.; thickness at ring rim, 4 to 8 mm. Lips of base ring are types D, E, F, or G. Rims of base ring are types 1, 2, 3, 4, or 5.

Scoops without rattle handles.—

Profile form types: XI ranging to XII and, in one case, modified to XIII; type XIV represents the scoops with modeling.

Lip and rim types: Lip type B. Rim type 1, sometimes grading into rim type 4 at the lower, circular end of the scoop.

Shoulders: None.

Base: Rounded.

Diameter range: (a) for scoops without modeling, maximum length ranges from 10.9 to 22.6 cm. and maximum width ranges from 7.1 to 16.1 cm.; (b) for modeled scoops, maximum length ranges from 13.4 cm. to 27.8 cm. and maximum width from 8.8 to 17.0 cm.

Depth range: (a) for scoops without modeling, depth ranges from 2.6 to 5.3 cm. when

measured at the point of maximum length and 2.4 to 5.1 cm. when measured at the point of maximum width.

Wall thickness range: (presence or absence of modeling does not seem to correlate with any variation in wall thickness) (a) at rim, 4 to 5 mm.; (b) at a distance of 1 cm. below rim, 4.5 to 8.5 mm.; (c) at center of vessel base, 4.5 to 14 mm.

Additional features: None for the scoops without modeling, with the exception of one vessel which has a curved handle (see profile form type XIII) 42.1 mm. long. Scoops with modeling have two types of features:

"Keels": (a) Nature of feature: a keel-like ridge characterizes every scoop with modeling. (b) Placement: Along the exterior surface of the vessel, starting at the handle end and tapering in the amount of projection as it approaches the base of the scoop. (c) Dimensions: range of keel projection from surface proper of vessel, ca. 5 to ca. 15 mm. Keel lip is type G. Keel rim is type 5. (d) Method of attachment: either molded from the coils of the vessel proper or affixed before firing.

"Eyes": (a) Nature of feature: round to oval lumps of clay occurring on most of the vessels having keels, and on no others. (b) Placement: the two "eyes" are located on opposite sides of the keel at the juncture of the keel and the vessel proper on the handle of the scoop. (c) Dimensions: diameter of "eyes" ranges from 5 to 24 mm.; they project 2.7 to 8.3 mm. from the surface of the vessel. (d) Method of attachment: affixed before firing.

Scoops with rattle handles.—Differ from scoops without rattle handles as follows.

Profile form types: range from XV to XVI.
Diameter range: range of maximum length, 12.2 to 18.9 cm.; of maximum width, 6.9 to 9.2 cm.
Depth range: at the point of maximum length, 3.1 to 6.4 cm.; at the point of maximum width, 2.8 to 3.3 cm.

Wall thickness range: (a) at rim, 3.5 to 6.6 mm.; (b) at a distance of 1 cm. below the rim, 4.5 to 8.5 mm.; (c) at center of vessel base, 5.5 to 9 mm.

Additional features: All rattle-handled scoops have the "eyes" and "keel" previously described.

Rattle handle: (a) Nature of feature: a single closed compartment containing some loose, small, hard objects (probably pebbles or pottery pellets). (b) Placement: located in the handle of the scoop and with its length oriented along the length of the handle. (c) Dimensions: compartment occupies less than one-half the total length of the vessel. Its exact dimensions are uncertain, since none of the handles are broken open; probably the interior length ranges from ca. 30 to ca. 49 mm. and the interior width from ca. 32 to ca. 55 mm.

Decoration:

Paint.—(a) Color: range of hue 7.5R to 2.5YR; range of value 2 to 5; range of chroma 2 to 8. Most common color: 10R 3/3 (a dark red). (b) Material: iron, from limonite. (c) Permanency: averages the same for interiors and exteriors of vessels. Approximately 50 per cent of the tests yielded a rating of 1, with the remaining 50 per cent about equally divided among ratings 2, 3, and 4. (d) Polishing over decoration: None.

Design.—The reader is referred to the discussion of this subject by Kroeber in Part I.

COMPARISON

The reader is referred to the corresponding section for Parker Buff, Fort Mohave Variant.

RANGE

The reader is referred to the corresponding section for Parker Buff, Fort Mohave Variant.

PARKER BUFF, FORT MOHAVE VARIANT

GENERAL DESCRIPTION

Synonym: None.

Variant named for: Fort Mohave Reservation.

Illustrations: This publication.

Type specimens: Mohave pottery collection at the University of California Museum of Anthropology; specifically, specimens 1/13788, 1/13789, 1/13790, and 1/15707.

Type sites: Same as for Parker Red-on-Buff, Fort Mohave variant.

Cultural association: Same as for Parker Red-on-Buff, Fort Mohave variant.

Time: Same as for Parker Red-on-Buff, Fort Mohave variant.

Size of sample: 2 bowls; 2 parchers.

ANALYSIS

Construction technique and finishing technique: The same as for Parker Red-on-Buff, Fort Mohave variant; firing and paste characteristics are likewise within the range described for that type.

Surface finish: Anvil depressions are generally discernible on interior surfaces of vessels. All vessels are unslipped. Interior surfaces of all vessels and the exterior of one parcher and part of the exterior of the other are smooth, but not polished. The exterior surfaces of the bowls and part of the exterior of one of the parchers have an extremely rough, granular surface, called "stucco."

Surface color: Exterior surfaces of bowls are covered with the soot from cooking fires. Interior surfaces of

parchers and one bowl are likewise uniformly blackened through use. Otherwise the surface color is visible and within the range described for Parker Red-on-Buff, Fort Mohave variant.

Fire clouds: These are partially visible on the exteriors of the parchers and may be present on the exterior and interior surfaces elsewhere. However, the considerable smoke-blackening prevents adequate observation of them (removal of a portion of the soot on the exterior of one bowl revealed one such cloud).

Form:

Bowls.—

Profile form type: IV.

Lip and rim types: Lip type A. Rim types 1 and 2, sometimes grading into types 4 and 5 respectively.

Shoulders: Rounded.

Base: Rounded.

Mouth diameter range: 18.5 to 25 cm.

Depth range: 13.4 to 19.8 cm.

Wall thickness range: (a) at rim, 5 to 9 mm.; (b) at point of greatest incurve, 3.5 to 5 mm.; (c) at center of vessel base, 6 to 8 mm.

Parchers.—These are boatlike, double-pointed shapes.

Profile form types: XVII and XVIII.

Lip and rim types: Lip type B. Rim types 1 and 2.

Shoulders: None.

Base: Rounded.

Diameter range: range in maximum length is 34 to 38.1 cm.; range in maximum width is 23.9 to 26.6 cm.

Depth range: at point of maximum length, 13.7 to 13.9 cm.; at point of maximum width, 8.6 to 8.8 cm.

Wall thickness range: (a) at rim, 7 to 9 mm.; (b) at a distance of 1 cm. below the rim, 5 to 6.5 mm.; (c) at center of vessel base, 5.5 to 7.5 mm.

Additional features: On one of the bowls and on both of the parching trays the topmost coil, constituting the rim and upper part of the lip, is not completely flattened, resulting in what is sometimes called a "folded rim." This makes the rim and the lip thicker in cross section. This "folded rim" is characterized by a treatment of parallel, angular (fingernail?) indentations both on the interior and exterior surfaces. The distance from the rim to the bottom edge of the fold ranges from 2.4 to 7 mm.

Painted decoration: None.

COMPARISON

Differs from Parker Red-on-Buff, Fort Mohave variant, in not having painted decoration; and in having a "stucco" surface and/or an indented "folded rim." The parcher is a form which does not occur among the painted vessels (i.e., as Parker Red-on-Buff, Fort Mohave variant) in the collection.

RANGE

Incompletely determined. At least from the northern end of Mohave Valley south along the Colorado River to the valley below Parker.

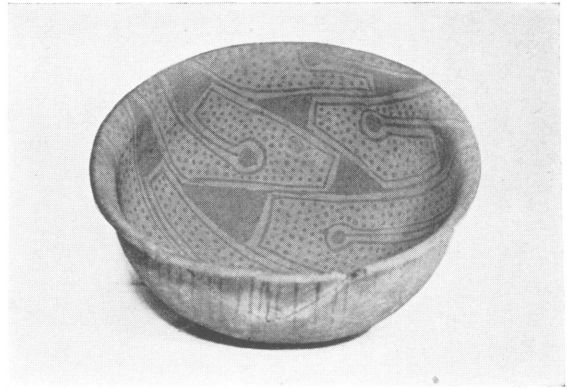
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PLATES



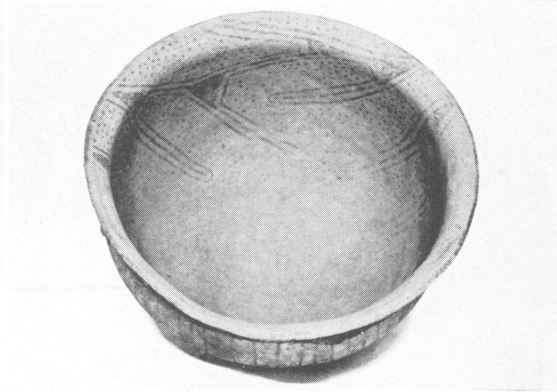
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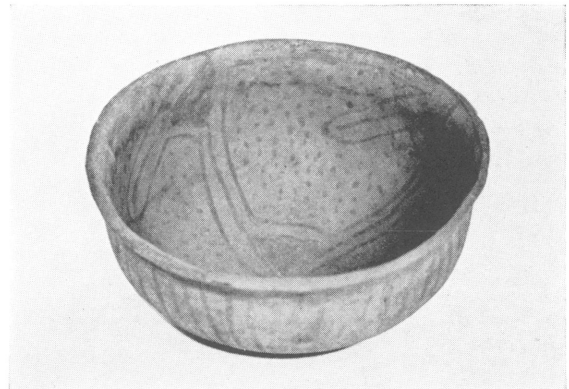
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Plate 1. Bowls



a



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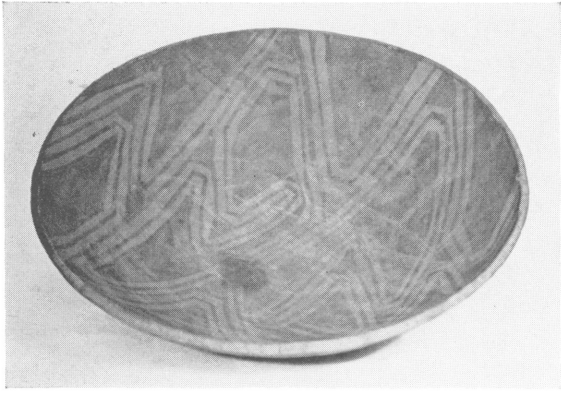


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Plate 2. Bowls



a



b



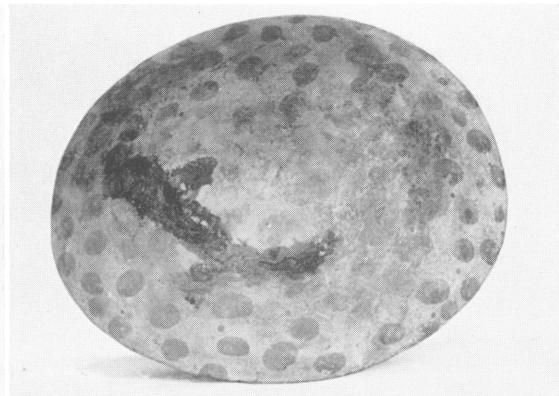
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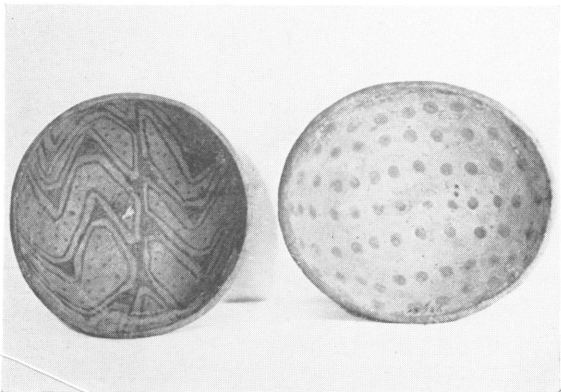
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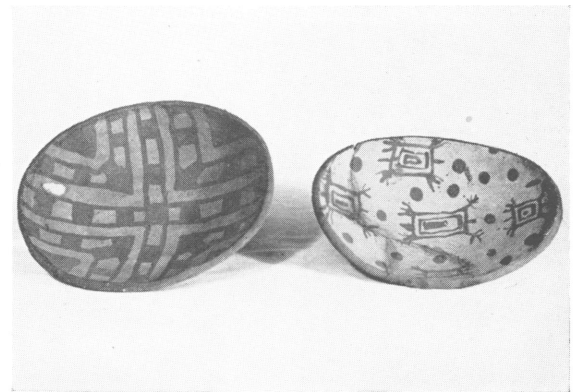


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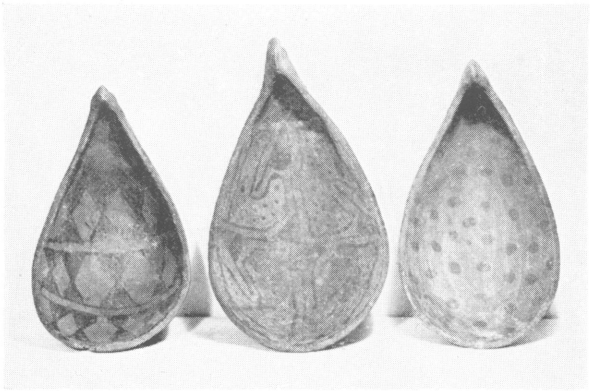
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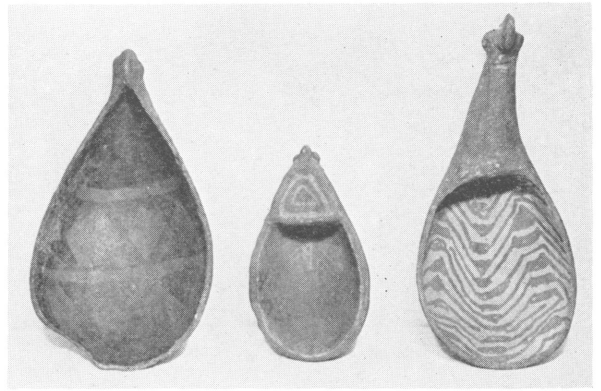
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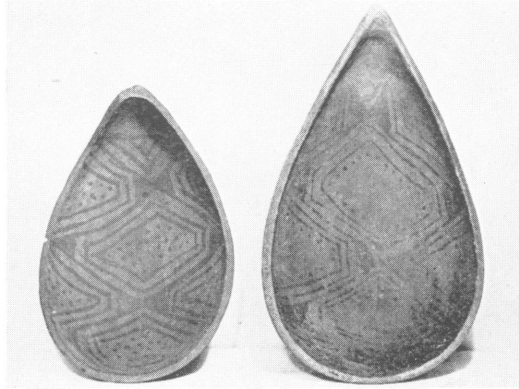
Plate 3. Platters



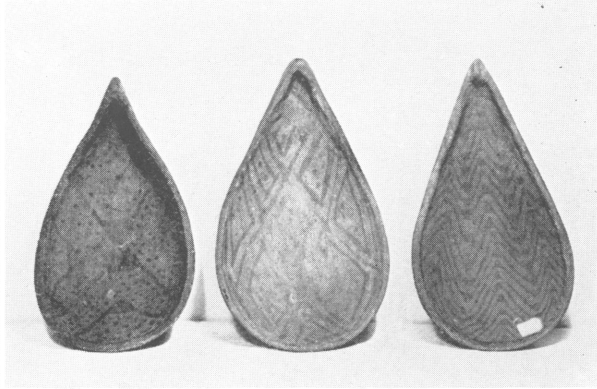
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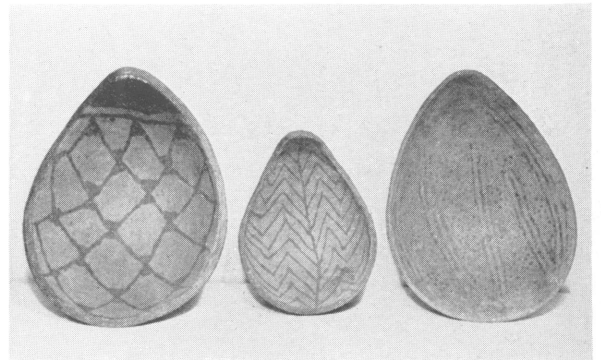
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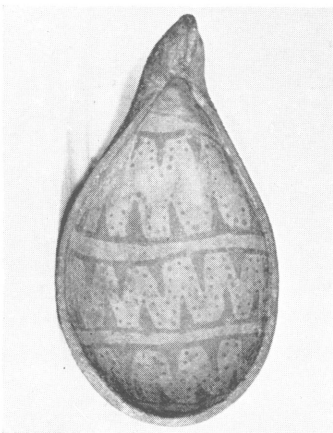
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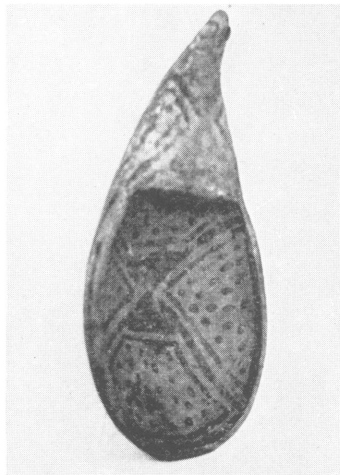
l *m*



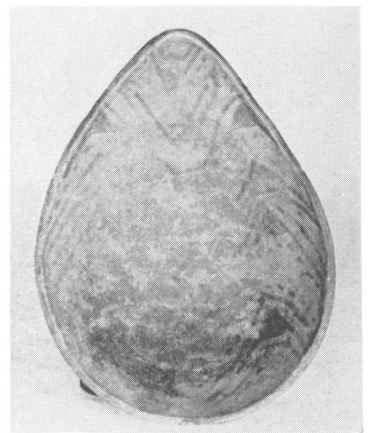
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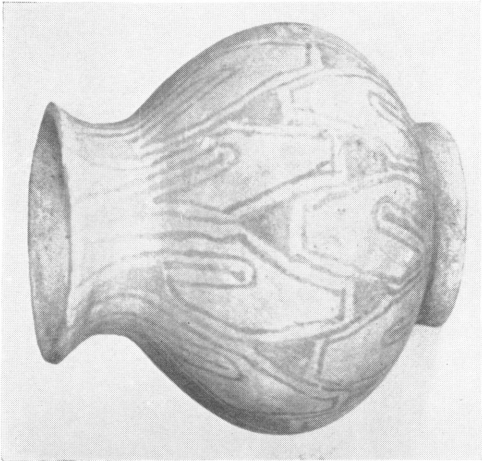


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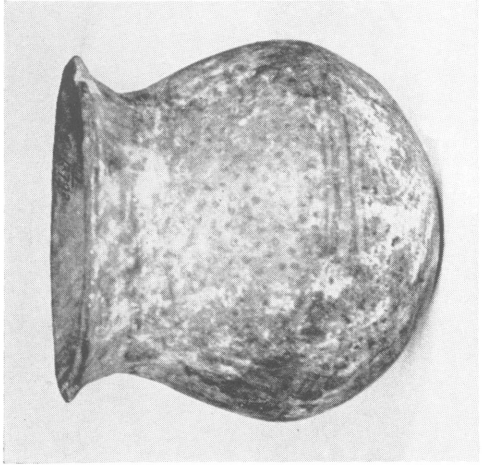


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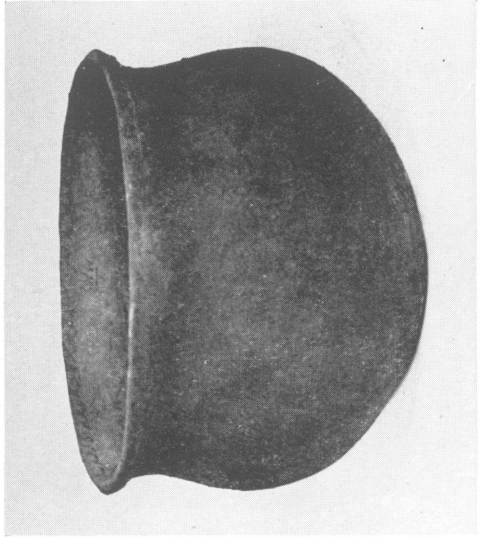
Plate 4. Spoons



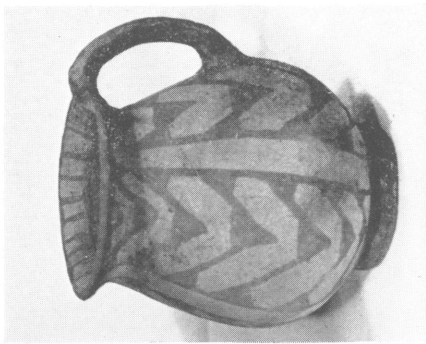
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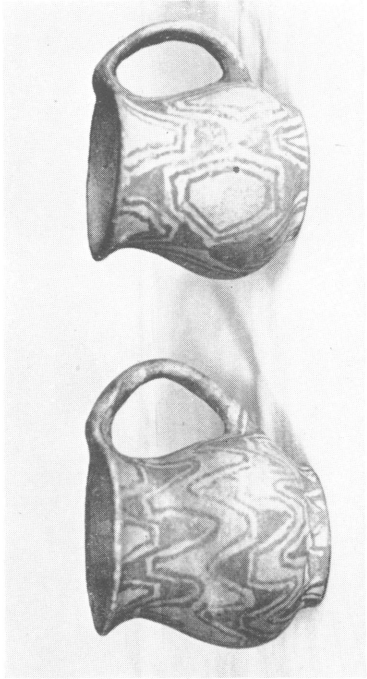
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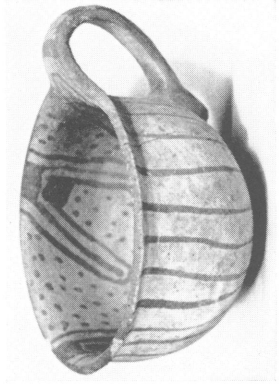
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Plate 5. Jars, pots, jugs, cups



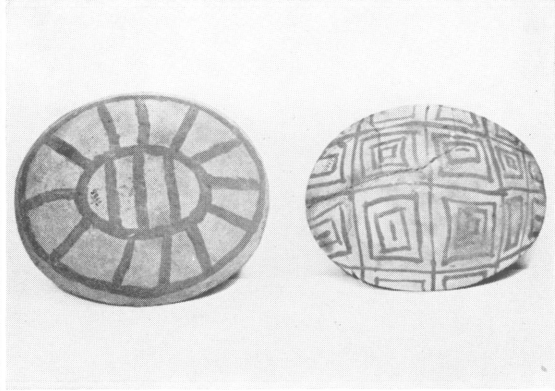
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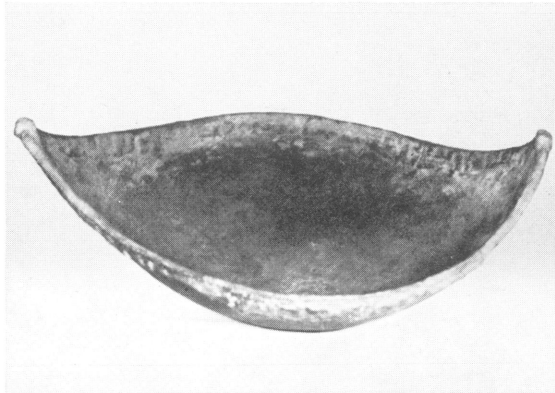


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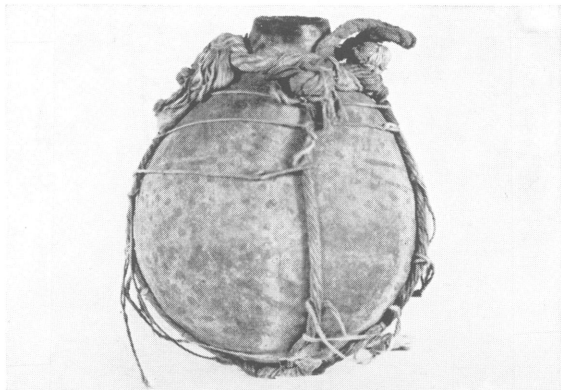
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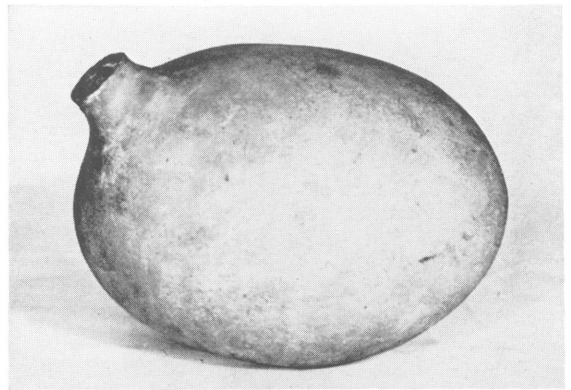
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Plate 6. Bowls, platters, parchers, canteens

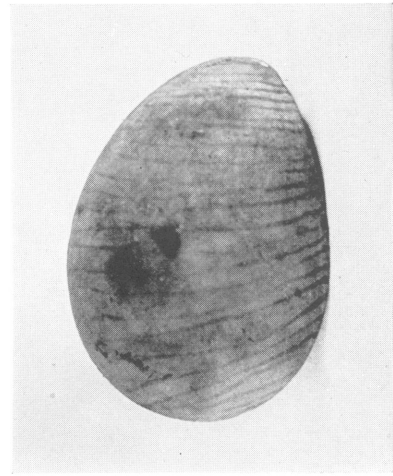
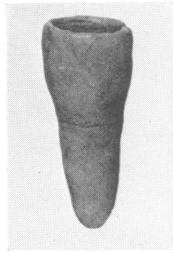
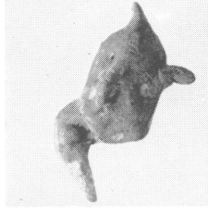
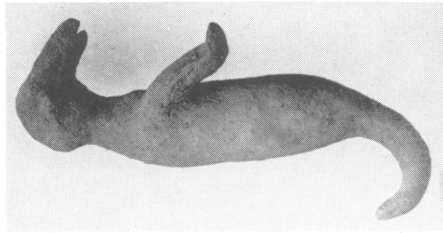
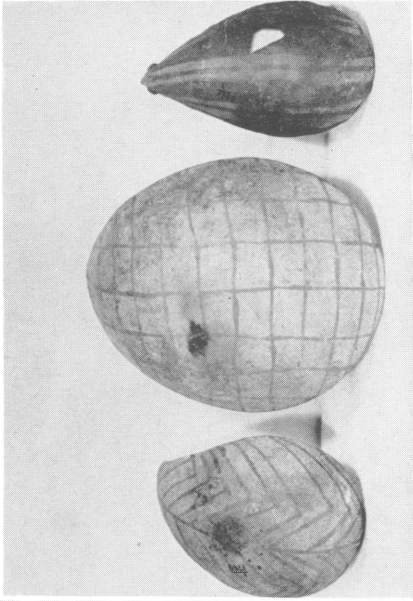
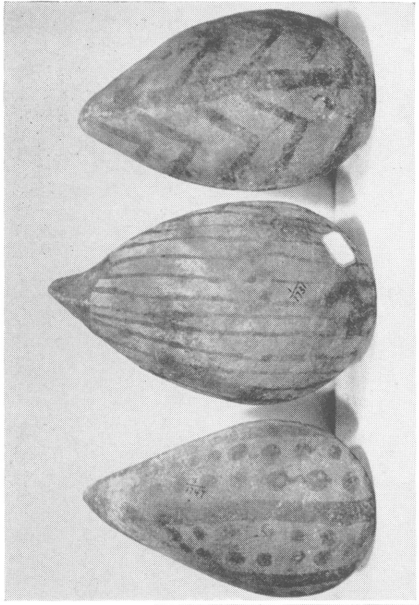
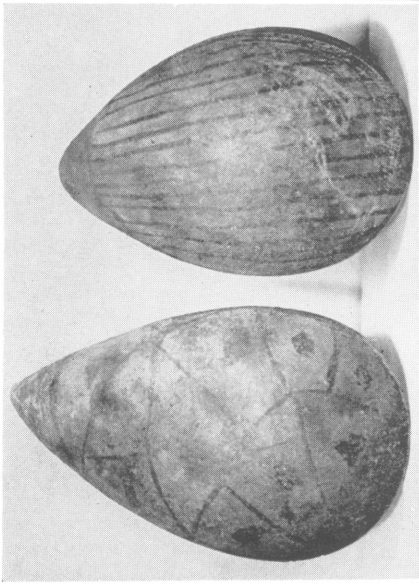
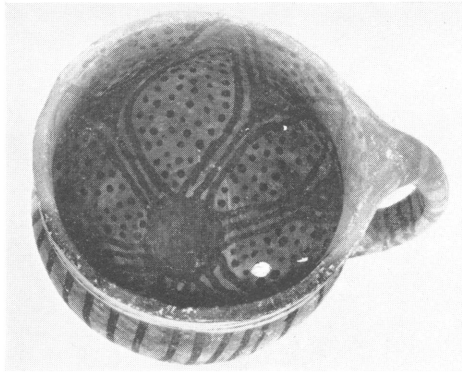


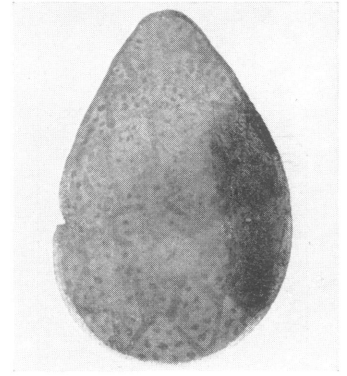
Plate 7. Spoon backs, toys, pipes, pot rests



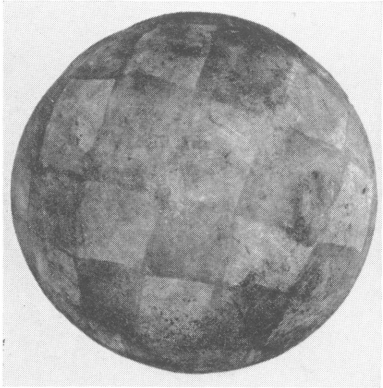
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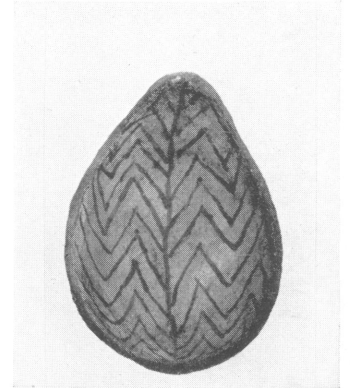
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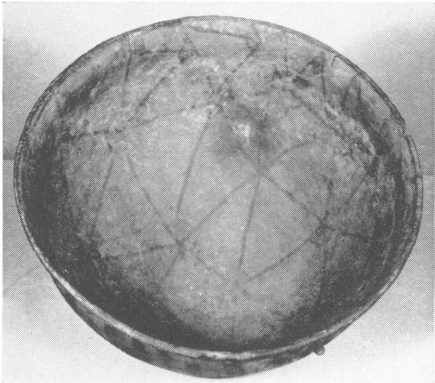
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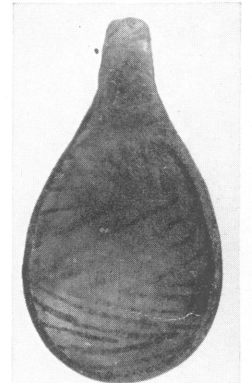
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Plate 8. Jar, cup, platter, bowls, spoons