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POTTERY OF THE SOUTHWESTERN INDIANS

BY PLINY EARL GODDARD



GUIDE LEAFLET SERIES No. 73

THE AMERICAN MUSEUM OF NATURAL HISTORY

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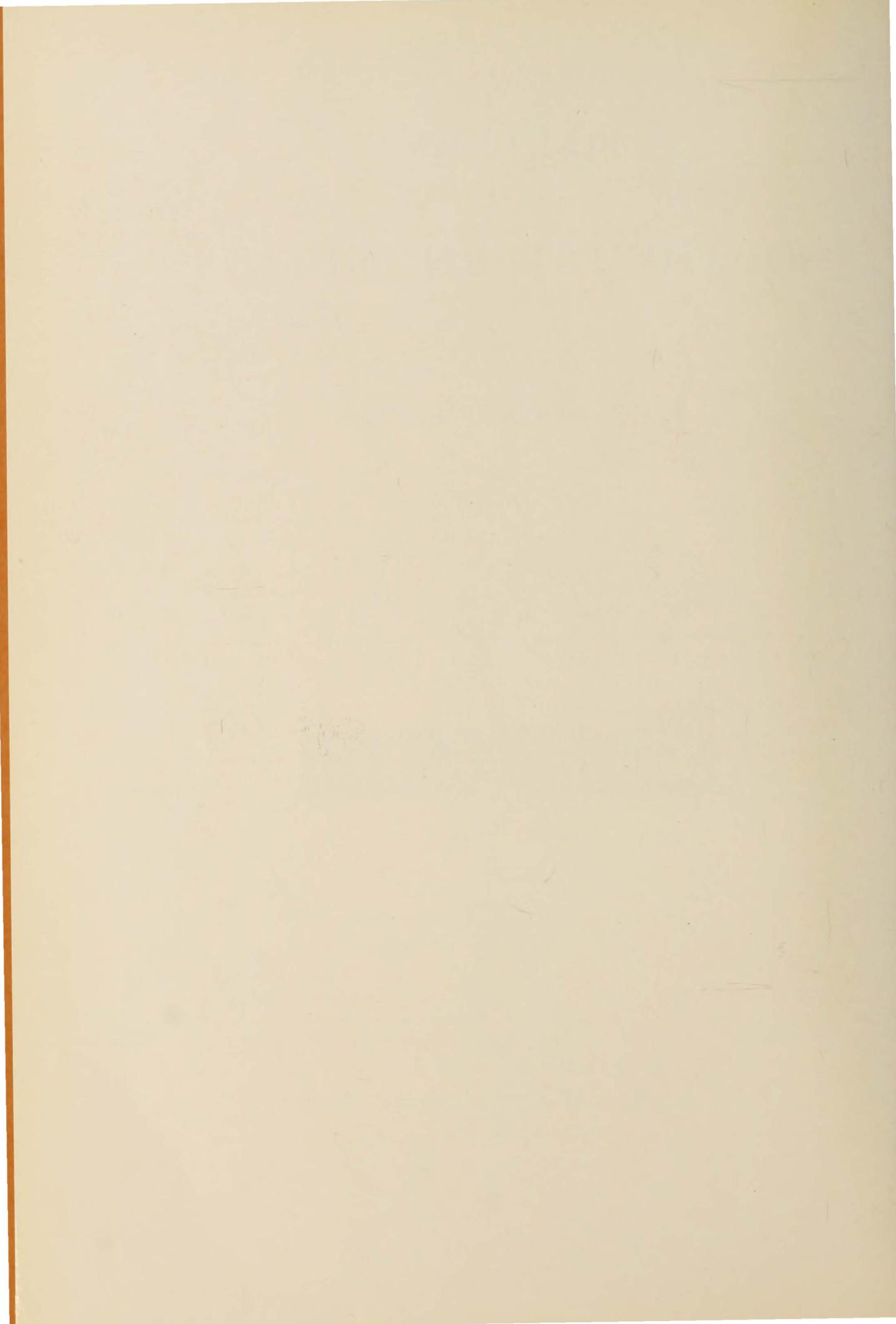
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INTRODUCTION

The pottery of America differs in two important respects from that of the Old World. For several thousand years the potter's wheel has been used in the Old World and the ware has been covered with a vitreous glaze. In America the potter's wheel was unknown in pre-Columbian times; glaze was sparingly used and not over the entire surface of the vessel. When the potter's wheel is employed the centrifugal force produced by its rapid revolving throws the paste outward against the bare hand or some implement and the vessel of necessity takes on a circular shape. The vertical outline is controlled by moving the resisting hand in toward the center or away from it as may be desired. In America, where the Indians do not use the wheel, vessels are sometimes shaped in a mould or modeled free-hand. Usually, however, they are built up by applying cylinders or ropes of clay, round by round, or in a long spiral. These successive rounds of clay are made to adhere by pressure exerted with the fingers.

From the Southwest a great abundance of pottery vessels has been secured. Some of these are of recent manufacture, made by the Indians now inhabiting the Pueblo villages. A much greater number has been recovered from the ancient ruined Pueblo buildings and from the nearby burying grounds.

METHODS OF MAKING

The methods employed in making pottery in ancient times can only be surmised, but for the modern peoples we have excellent detailed information. The following account is based upon the work of Dr. Carl Guthe.

The women go to the clay pits from which the material has been secured for generations and bring back a supply in a shawl or some other container which they can carry on their backs. The clay is first very carefully sifted and hand picked to remove all pebbles and other extraneous matter. To the clay is added a considerable amount of tempering material, sand, finely pulverized lava, or ground fragments of discarded pottery. When the materials have been thoroughly mixed, water is added, and the mass kneaded with the hands. The amount of tempering

material is judged by the potter without resorting to measurement. There must be sufficient to prevent the cracking of the vessel when it is sun-dried and not enough to cause the vessel to fall apart.

When the material has been prepared, the vessel is begun by molding the bottom portion with the hands. This is placed on a shallow bowl-like piece of pottery to support the vessel and allow it to be moved about without direct handling. To this molded bottom is applied round after round of the paste rolled into cylinders or ropes. It is usually necessary to allow the material to dry after the addition of each three or four rounds of the moist clay. While one vessel is drying another may be worked upon. The vessel is given its approximate final shape as it is built up, but the modeling is completed by rubbing the inside with a piece of gourd shell, while the hand is held on the outside of the vessel directly opposite to control the amount of pressure exerted. The exterior of the vessel is also rubbed down and all traces of the method of building up with cylinders of clay are obliterated. The modeled vessel is then set aside to dry either in the sun or in the house oven with a slow fire.

When the vessel is sufficiently hardened by the slow drying it is scraped to produce an even surface and polished or smoothed. The next step is the application of a slip on the surface of the vessel to be decorated. The material employed is a fine clay, either white or red, of which a saturated solution is made in water. This is applied to the vessel with a small mop in five or six coats, each of which is allowed to dry before the next is applied. This slip is polished with a smooth, water worn pebble. The designs are drawn in free-hand with a brush made of a strip of yucca leaf, the end of which is frayed. The paints employed are black or some shade of red. The latter material is a mineral and the color is no doubt due to the presence of some form of iron. Black paint, however, is of vegetable origin. A syrup is made from bee-balm, a thick-stemmed herbaceous plant which is boiled in water for several hours before the syrup is of a sufficiently dense consistency. It is allowed to ripen for several months after being prepared and is then ground in water and applied to the vessel. The black color is no doubt due to the carbonization of this syrup, the fire not being sufficiently hot to consume the carbon.

When a number of vessels are ready for firing the oven is prepared. A fire is built on the ground where the firing is to take place. After the fire has burned down a grate-work is put in place a few inches above the surface of the ground. On this the vessels are arranged, bottom side up, so that they will rest securely. Around these vessels are placed slabs of manure from the corrals. Sheep manure is preferred, horse or cow

manure may be employed. The material must be thoroughly dried so as to burn evenly. Kindlings are placed under the grate and set on fire. The woman watches her ware closely, noting the color, and when that is just right withdraws the fuel, removes the vessels, and places them where they will cool.

METHODS OF ORNAMENTING

The visual effect of a pottery vessel depends first upon its shape and second upon the character and treatment of its surface.

The forms of the vessels in the Southwest vary somewhat with the locality, but a classification into several prevailing types may be useful. The following are usually recognized. Bowls are vessels with wide mouths and sloping sides that are not straight; usually the walls of the bowl flare outward, but in some cases they recurve toward the top, forming a hemisphere or somewhat more than that. Ollas have narrow mouths and curved sides. In some cases vessels are provided with vertical lips for holding covers in place. Cylindrical jars occur with straight or fairly straight walls and therefore with mouths of medium width, the vessels being taller than they are wide. Pitchers have a constricted top and a vertically placed single handle. Ladles and spoons both occur, the former having hemispherical bowls which may have been derived from the use of gourds. Besides these recognized forms, there are many curiously shaped vessels, including human effigies.

The character of the rims of the vessels is frequently employed in the classification of pottery objects, particularly where only sherds are available. In some cases the rims are straight, in others they are curved inward or outward; the edges may be either flat, rounded, or sharp.

The second important feature giving a definite appearance to pottery vessels is the treatment of the surface. This may be merely smoothed down and left plain or it may be ornamented. The ornamentation may be produced by making the surface uneven so as to cause variation in light and shade. This is accomplished by several methods. One of widespread use is to indent the surface of the vessel, while it is still soft, with a pointed instrument, by the application of a carved paddle, or by rolling an incised disk over the surface, transferring the designs on the paddle or disk to the pottery. A second method is the application of pellets or strips of clay to the surface of the vessel, to which they are made to adhere. In the Southwest these methods are but sparingly used. Lastly the surface may be made to produce light and shade by leaving the successive rounds of clay unsmoothed, with the prints of the finger or implement used in pressing the rounds together left in view.

Pottery of this type is called corrugated and is found generally over the Southwest but is not known in other regions of North America.

The surface of vessels may also be decorated by the use of pigments. Ordinarily the vessel is prepared for painting by smoothing the surface and by applying a slip to produce a uniform background of the desired shade. The designs are then painted in free-hand and become permanent after the vessels are fired.

Southwestern pottery should be regarded from two points of view. The first is historical, tracing the development of the art of making and decorating pottery from their beginnings to the present; and second, the local variations of pottery styles both in ancient and modern times.

ORIGIN AND DEVELOPMENT OF POTTERY

The first people known in the Southwest made no pottery. They were highly skilled in textile art, which is shown by the baskets and woven bags found in their graves. Because of this textile skill they are known as Basket Makers. Following them were a people, perhaps the descendants of the Basket Makers, who mixed clay with strands of bark or cornhusks and molded thick-walled vessels. Many of these were molded in baskets, as can be seen from impressions left on their exteriors. These crude vessels were sun-dried but not fired. The firing would have consumed the vegetable binding material. The people who made this unfired pottery have been assigned to the period known as Basket Maker III, in the Southwestern chronological scale. At the close of this period and during the succeeding one (Pueblo I) tempered or true pottery which was properly fired was made.

Up to this time vertical walled stone houses were not built. When these houses were first constructed the units were so small that they accommodated only one or at most a few families. Somewhat late in the pre-Spanish period the people gathered together in large villages, living in great communal houses. These builders of the straight-walled compound houses are known as Pueblo dwellers. From the beginning until the Spanish period they made two prevailing styles of decorated ware, one in which the surface was left uneven or intentionally made so, producing light and shade; and the other decorated with designs painted on a white or red slip.

PREHISTORIC POTTERY CORRUGATED

Manipulation of the pottery-making technique, in order to produce ornamentation, may be observed in early examples of fired wares (Basket Maker III). By leaving unsmoothed at the rim, the last few coils of clay used in building up the vessels, broad decorative bands with plain

surfaces were produced. Later, the entire outer surface of the vessels was allowed to remain unsmoothed, showing distinctly each round of the spirally applied rope of clay as well as the finger marks where pressure was exerted to make the successive rounds adhere to each other. Decoration was achieved by treating successive rounds differently, producing a banded effect, and by applying the fingers with some regard for spacing, so that designs were produced. Pottery of this sort is known as corrugated. In most localities these coils of clay are of some width, about five or six to the inch. On the headwaters of the Gila River were a people who specialized in corrugated pottery. Some of their wares have twelve coils to the inch. Not only are these coils very fine but very evenly and regularly executed. These unpainted wares were used largely for cooking. Painted decorations on vessels placed over the fire would soon be obscured by the smoke. The surface of sun-dried vessels before they are burned was sometimes highly polished by smoothing with a stone. If the fire was smothered just before the firing of these vessels was completed, the ware came out a lustrous black. The Santa Clara Indians at the present time make use of this process and the interiors of some of the Tularosa prehistoric bowls have such a finish.

PAINTED WARE

Vessels decorated with painted designs are in most cases first given a slip. The surface of the sun-dried vessels is scraped and well smoothed. The slip consists of a solution of clay in water and the color depends upon its composition. White was most commonly employed in prehistoric times, but vessels with a red slip are distributed over the entire Southwest.

The painting on these prehistoric vessels is chiefly in black. The designs fall into two main classes, depending upon whether the lines are straight and form angles; or curved, frequently making spirals. The spaces which compose the designs may be in solid black or in hatch work, the two being often combined on the same vessel for purposes of contrast. With the exception of one region—that of the Mimbres Valley—the decorations are usually not realistic nor the result of conventionalization, but geometric. Pieces with drawings of animals and men, poorly executed and ludicrous in aspect are rarely found in other regions. The designs generally are applied to the vessels in encircling bands but sometimes in panels. The bands may consist of lines of varying width, or of one or more simple motifs repeated many times. In both the angular and curved designs interlocking is frequently employed. Some of the most characteristic design elements are shown in the illustrations.

LOCAL VARIETIES

The following are the main regions in which distinctive pottery types are found:

Mesa Verde in Colorado and northeastern New Mexico; Chaco Cañon, south of the Mesa Verde region; and Kayenta in north central Arizona, are within the drainage of the San Juan River. On the headwaters of the Gila River, chiefly in the drainage of the San Francisco River, one of its main tributaries, a very special style of ceramics was made. Southward, in the Mimbres Valley, beautiful black-on-white pottery was decorated with many realistic and conventionalized life forms. All these regions were deserted and uninhabited when the Spaniards arrived in the Southwest in 1540. Three important regions in the Southwest have been continuously occupied until the present time—the upper valley of the Rio Grande in New Mexico, the headwaters of the Little Colorado where the Zuñi now live, and the Hopi mesas in Arizona, in all of which there are easily distinguishable styles of pottery decoration. Some of the most striking characteristics for each region will now be mentioned.

The pottery of Mesa Verde may be distinguished by the rim formed by the continuation of the sides of the vessel without a definite inward or outward flare. The full thickness of the walls is maintained and the edge of the rim is flat. The slip is usually a grayish pearly white and the decorations are generally in bands of repeated designs, the key motif prevailing. These bands are bordered by lines of varying width, symmetrically placed above and below. Designs in hatching, are bordered by lines of the same width as those employed in the body. The flat topped rim usually has a row of dots.

The Chaco Cañon ware has a straight rim, rounded or sharp at the edges. The slip is very white and the figures are hatched in fine lines, somewhat wavy, and enclosed by much heavier lines. Frequently narrow lines are bordered with rows of dots.

The Kayenta ware of Kietsiel and Betatakin has a white slip nearly covered with black paint so that in some cases at least the white appears to form the designs. The bands have interlocking keys, frets, and double spirals. Designs are often made by cross hatching of considerable fineness resembling mosquito netting.

The Tularosa pottery on the upper Gila is noted principally for its modeling. One prevailing type consists of vessels which are molded to represent birds. They have vertical strap handles almost invariably terminating in modeled heads. The designs, which generally interlock, are made with solid black and hatching, nicely contrasted.

Not far south of the Tularosa region in the valley of the Mimbres a special style of black-on-white ware developed. Here are found bowls in complicated and very beautifully executed geometric designs. Solid black and hatch work are combined and often cover much of the surface of the vessel. The most astonishing characteristics are the realistic or slightly conventionalized animal figures. These are not only beautifully drawn but very interestingly spaced, often in opposed pairs. Frequently figures of this sort are blocked out in black within a delimited white field.

The four regions mentioned above were not occupied by pueblo-dwelling people at the arrival of the Spaniards and were probably deserted several centuries before that time. There remain to be discussed three districts which were occupied by villages when Coronado's expedition reached the Southwest in 1540. Two of these, Zuñi and Hopi, lie in the drainage of the Little Colorado River. Zuñi is situated in New Mexico, about forty miles south of the town of Gallup, near the headwaters of the Little Colorado, and the Hopi mesas are in Arizona, a considerable distance northwest of Zuñi. Between these still inhabited towns are many ruins of villages deserted before the Spanish occupancy of the country. All along the Little Colorado the earlier ruins yield abundant sherds of corrugated, black-on-white, and black-on-red pottery of the general character described above. At a later date the black-on-white ware was displaced by a more general use of black-on-red. In the Zuñi region a black glaze came to be used in place of black paint. The color of this glaze is not constant, varying toward green or purple. There also occurs along the Little Colorado, dating from prehistoric and early historic times, a ware with a buff or yellowish paste decorated in black, brown, and red. The designs on these vessels have a larger proportion of life forms and of representative or conventionalized decorations than are found in other parts of the Southwest. The most striking examples of this pottery are found at the two former Hopi villages, Awatobi and Sikyatki, which were abandoned in 1680.

The Rio Grande region in the northeastern portion of the Southwest shows a continuous record of pottery development from the early period of small family houses when the prevailing ware was corrugated and black-on-white, down to the present day when the potters of San Ildefonso are making wares for sale to tourists in quite new styles. The history of pottery development in this region has been recovered by the work of N. C. Nelson of the American Museum of Natural History and of Dr. A. V. Kidder of Phillips Academy, Andover, Massachusetts. Mr. Nelson worked intensively in the Galisteo Valley and by making sections of a rubbish heap brought the record up to 1680, when the Pueblo rebellion occurred and the region was deserted. Dr. Kidder, at Pecos, has

verified Mr. Nelson's findings and has extended the history to 1838, when that village was abandoned. In the Rio Grande region corrugated and black-on-white ware lasted until the time when large Pueblo structures were built. Then a gray type of pottery replaced the white and the designs were put on with a black glaze. Somewhat later the body of the designs was painted in dull red and outlined in black glaze. About the time of the Spanish occupation the glaze, for some cause, degenerated, and began to run badly during the firing process. About the time of the rebellion against the Spaniards in 1680, the use of glaze was abandoned and gray colored vessels were decorated with designs in dull red and black. The same general changes also occurred in the Zuñi region. This has been revealed by excavations at Hawikuh by Mr. F. W. Hodge of the Museum of the American Indian, Heye Foundation. In that region also there was a period during which glaze paint was used, which was followed by the manufacture of a polychrome ware.

MODERN WARE

The pottery vessels in the Southwest Indian Hall from the modern Pueblo villages were collected during the last thirty years, the larger number only twenty or more years ago. The striking differences, when these modern vessels are compared with the prehistoric wares, are to be found in the use of red as well as black in painting the designs, and in the prevalence of life forms.

The characteristic Zuñi vessel is an olla, nearly spherical in shape, but flaring toward the neck. The decoration most prized by the Zuñi shows a deer enclosed in a framework which is called his house, and near this a sunflower on which he is believed to feed. In drawing the deer the organs of the throat, mouth, and thorax are indicated, regardless of the fact that they are not in view when looking at the living animal. Scrolls and angular figures in solid color and hatching are also employed. The painting is in black and brownish red on a gray background. By these colors the Zuñi vessel is most quickly identified.

The walls of vessels made by the Acoma, near neighbors of the Zuñi, are sloping toward the bottom rather than rounded. The designs are in black and a yellowish red, often of a floral origin and cover two-thirds or more of the surface of the vessel, the lower portion being left solid red.

Santo Domingo ware is easily recognized by the nearly pure white glossy slip. The designs are usually in black only and are more open or widely spaced than in other modern ware, and frequently are purely geometric. Each village in the Rio Grande valley has in fact certain distinctive features in the shape and decoration of its pottery.

Recently, that is since 1921, a new ware has been made at San Ildefonso. The body of the vessel is a glossy black with the designs in a mat surface. The latter is obtained by the use of a paint which is made by mixing a powdered yellow stone with the syrup of the bee-balm. The ware is very pleasing and has found a ready market.

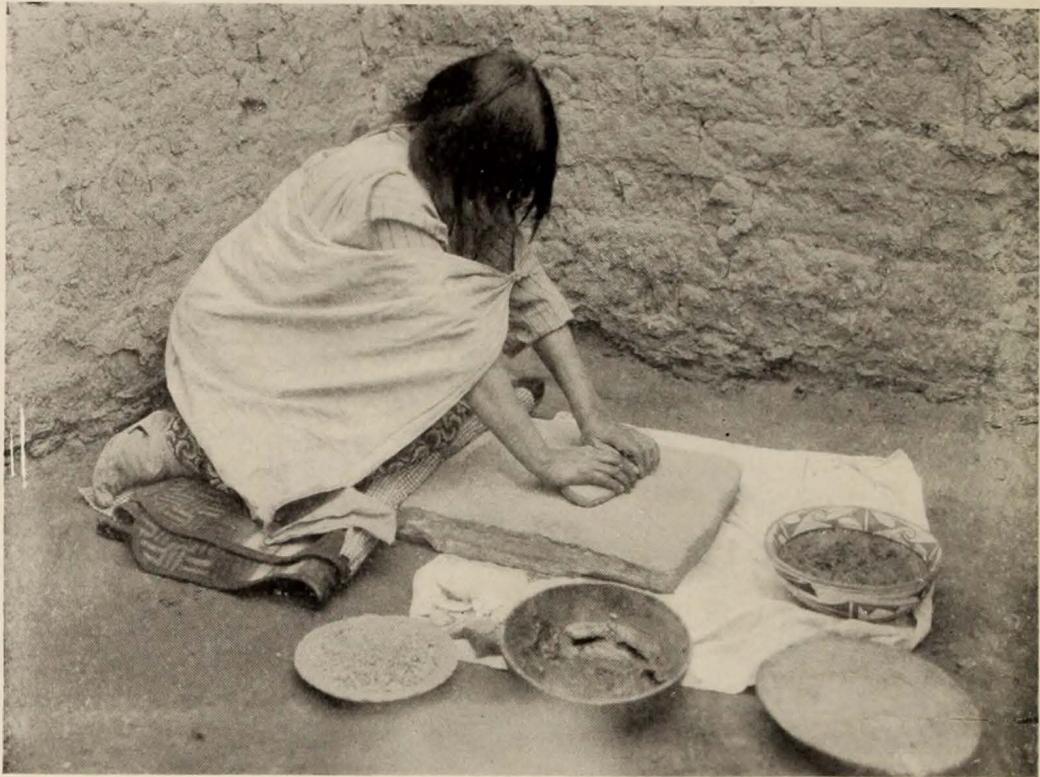
Among the Hopi, pottery is made at the present time only by the inhabitants of the First Mesa. Some years ago when the ruined village of Sikyatki, mentioned above, was being excavated a woman from the village of Hano named Nampeyo became interested in the pottery being recovered there. She began to manufacture pottery somewhat similar to this ancient ware, getting her inspiration from the designs she found upon it. Great quantities of this pottery are now produced on the First Mesa and sold to tourists. Much of it is quite unsuited to household uses. The older Hopi ware which has now been displaced was decorated in brown, black, and red designs on a dirty white slip which becomes covered with fine cracks.

Beside those described above which are used in the household or sold to tourists, vessels with a portion or portions of the rim projecting and terminating in terraces are made for ceremonial use. The painted decorations are symbolic, consisting of cloud designs and of life forms connected with water. The dragonfly is frequently represented. The cloud design consists of a group of semi-circles from which depend vertical lines indicating rain and with diagonals projecting upward to represent lightning. Such vessels are used to hold cornmeal and other sacred materials needed in the ceremonies.

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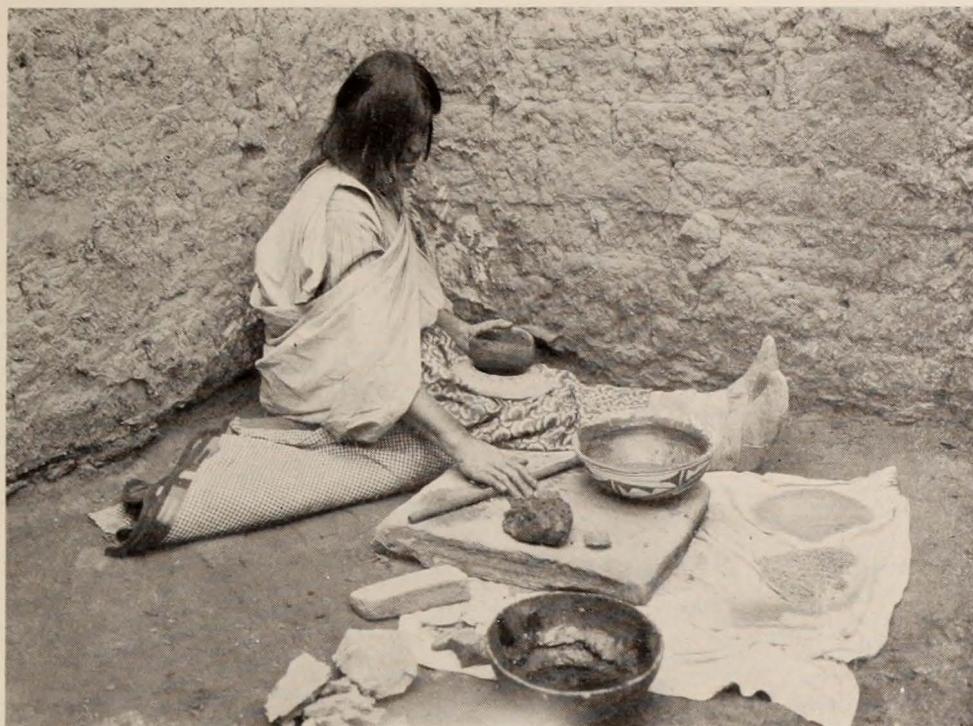
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1. POTTERY MAKING AT ZUÑI. The first step after the ingredients have been gathered and freed of foreign materials is to crush the dry clay and tempering materials with a hand stone, thus mixing them.



2. POTTERY MAKING AT ZUÑI. When the clay and temper have been sufficiently pulverized they are mixed with water to make a paste and kneaded. In the photograph the decorated bowl contains prepared clay; the second bowl, water.



3-4. POTTERY MAKING AT ZUÑI. The vessel is built up with rolls of clay applied spirally. In the upper illustration the potter is rolling out the clay preparatory to adding it to the already completed lower portion of the bowl. In the lower photograph she is adding a roll of clay with her left hand, while with her right she presses it to the edge of the preceding roll to hold it in place.



5. POTTERY MAKING AT ZUÑI. When the pot has been built up to the desired size and shape the surface is smoothed with a molding tool. Throughout the process thus far the vessel is held in a base mold.



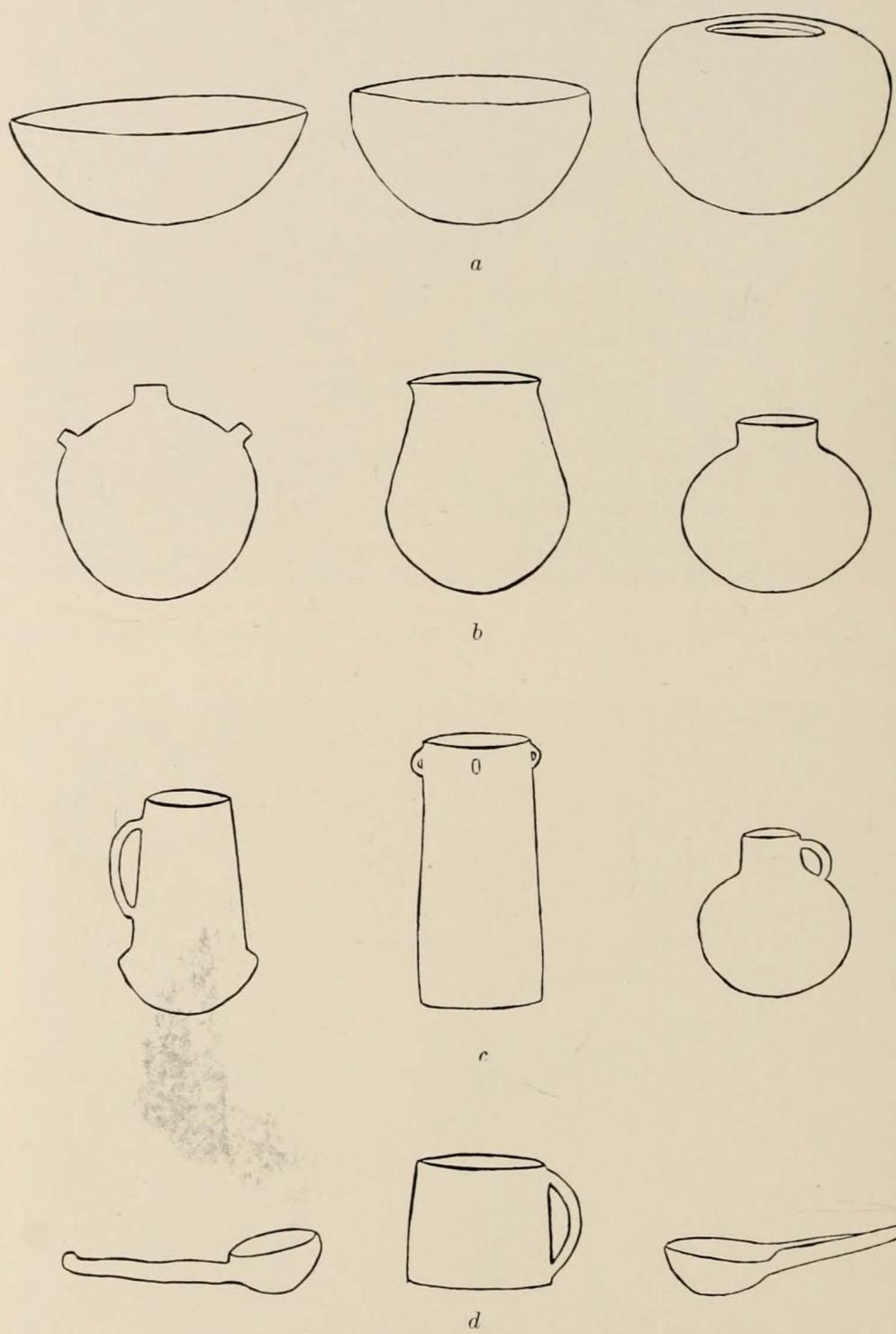
6. POTTERY MAKING AT ZUÑI. The vessel has been removed from the base mold and a white slip, contained in the bowl in the foreground, has been applied. Then the white slip is polished with a rubbing stone.



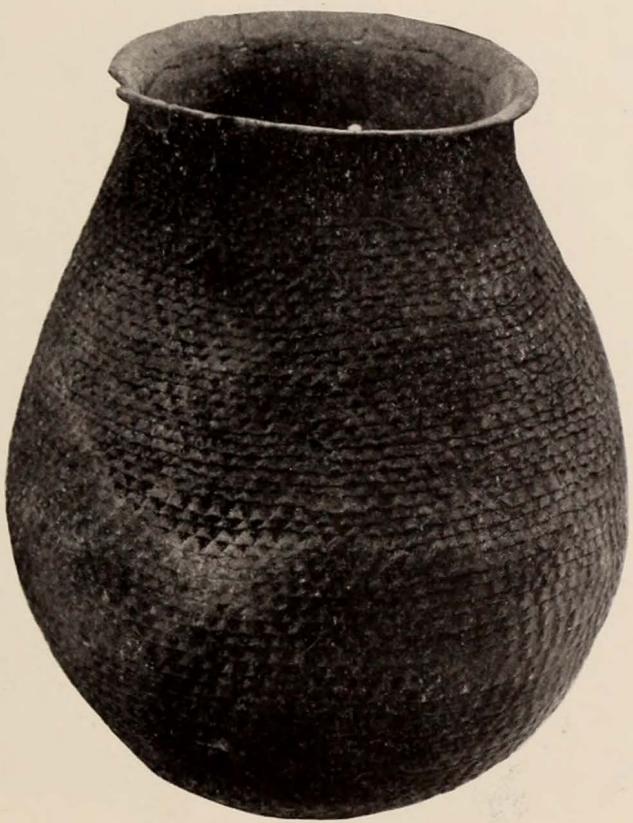
7. POTTERY MAKING AT ZUÑI. The red and black design is painted with a yucca leaf brush.



8. POTTERY MAKING AT ZUÑI. The completed vessel is placed in an oven, covered, and fired.



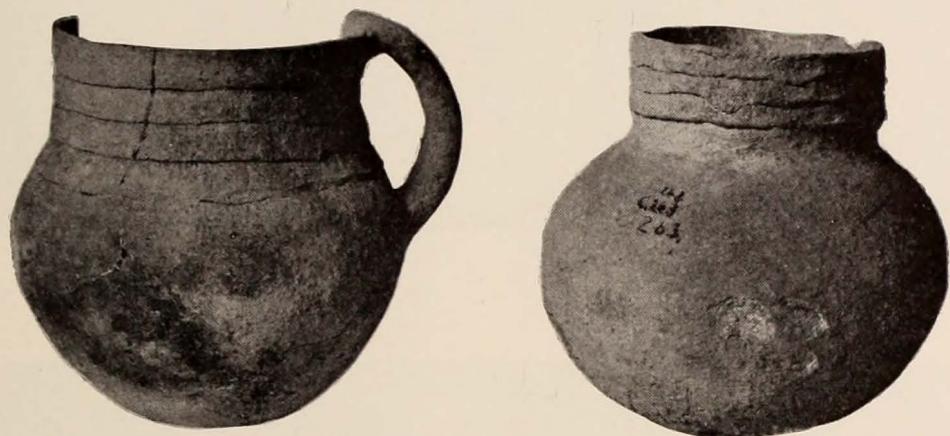
9. POTTERY FORMS in the Southwest; a, Bowls; b, Ollas; c, Pitchers; d, Ladles and a Mug.



10. A COOKING VESSEL of Corrugated Ware
from the Aztec Ruin, New Mexico.



11. SHERD from a Basket-Moulded Unfired Bowl with a smooth interior and a plain rim added above the edge of the basket and a large lug. The tempering material was cedarbark.



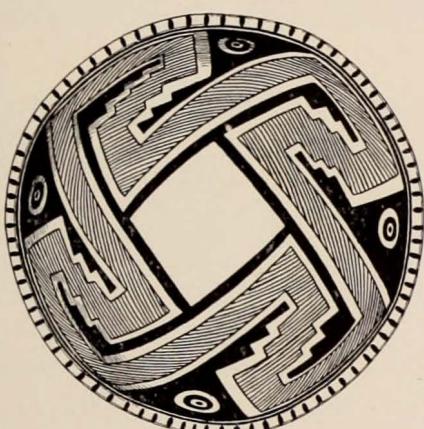
12. CULINARY VESSELS with Banded Necks, marking the beginnings of the technique later developed in corrugated ware. From graves on the Navajo Reservation.



13. A Bowl with the Decorative Value of the Corrugations further enhanced by the addition of an incised ornamental design.



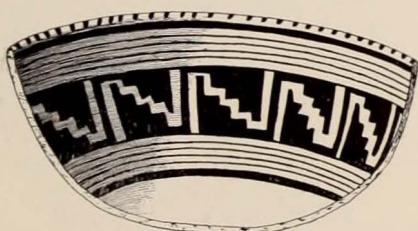
14. TYPICAL BOWLS AND MUGS with designs in black on a white ground, from the Aztec Ruin, New Mexico.



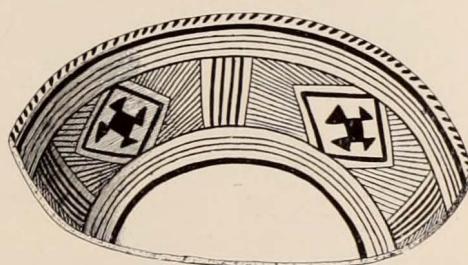
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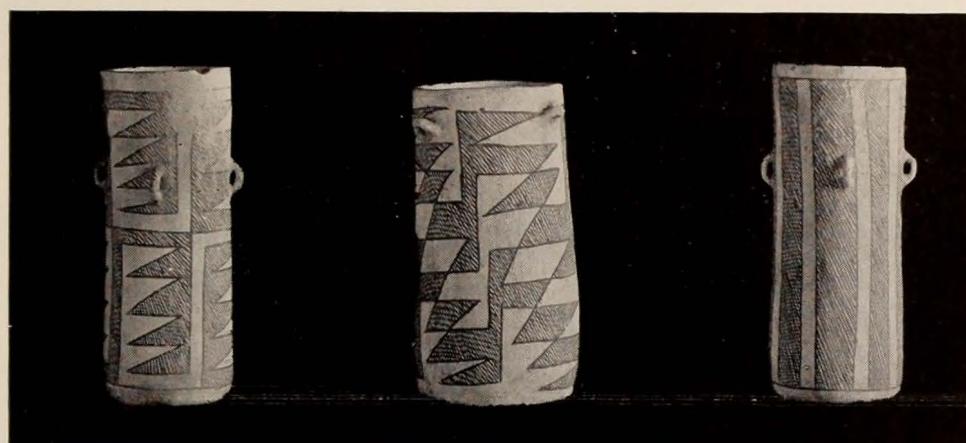
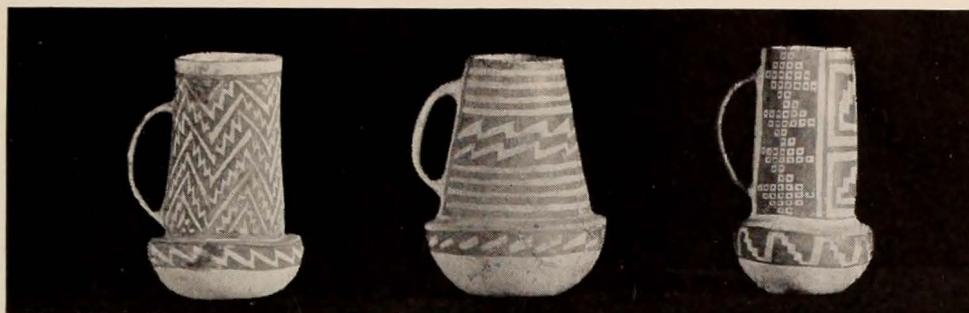


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15. a-b, INTERIOR ALL-OVER DECORATION on Black-on-white Bowls from the Aztec Ruin; c-d, Types of Zonal Ornamentation on Black-on-white Bowls from the Aztec Ruin.



16. JARS AND BOWLS of Black-on-white Ware from the Aztec Ruin and Pueblo Bonito, Chaco Cañon, New Mexico.



17. PITCHERS, CYLINDRICAL JARS, AND BOWLS in Black-on-white Ware, from Pueblo Bonito, Chaco Cañon, New Mexico.



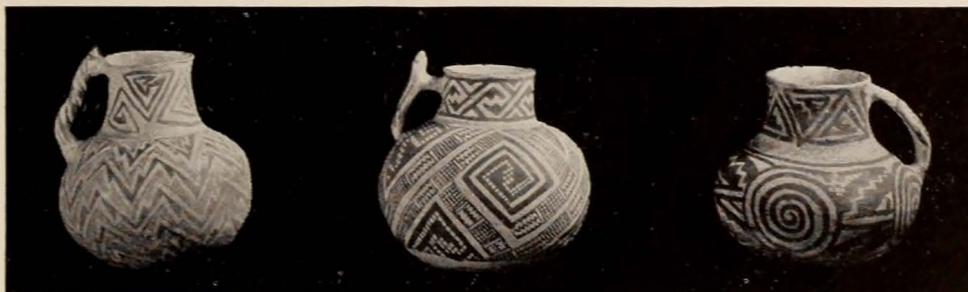
18. BOWLS in Black-on-white ware from the Mimbres Valley in southeastern New Mexico. Usually this interior decoration consists of one or two wide lines, or a series of fine lines, beneath which is a band of geometric decoration, leaving the bottom of the bowl free to receive distinctive treatment in the form of the realistic animal, bird, fish, insect, or human figures.



a



b

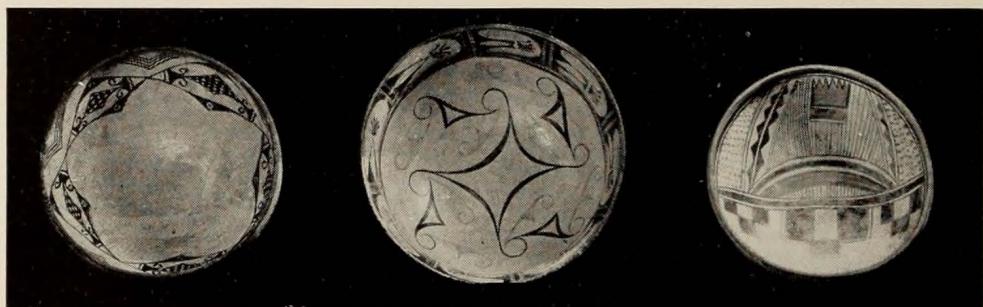


c

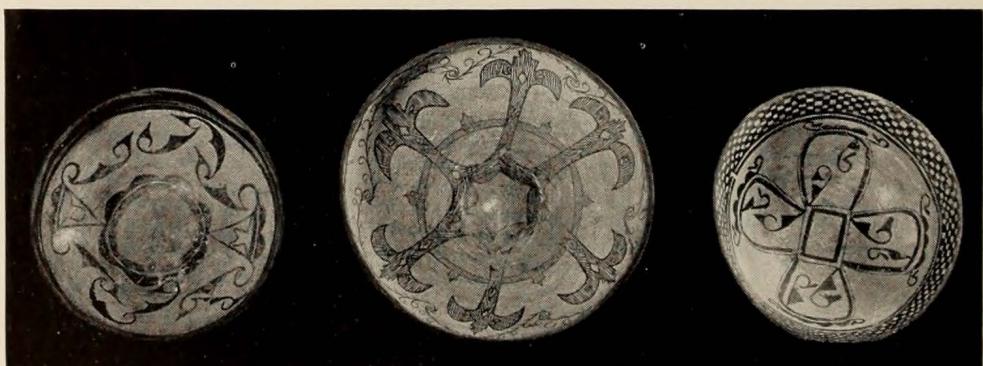
19. a-b, JARS AND BOWLS in Three Colors, Black-and-white on a red slip, from the Little Colorado region; c, Black-on-white pitchers, the commonest form in the Upper Gila Region, with striking interlocking designs and handles often modeled in animal form.



HOPI

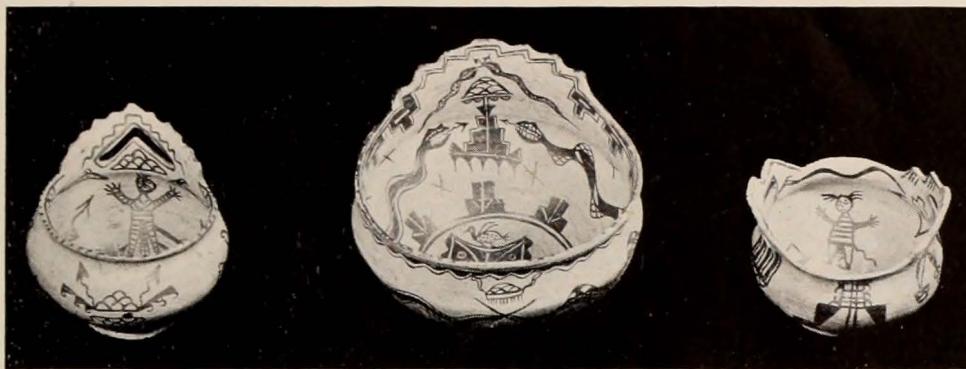


HOPI

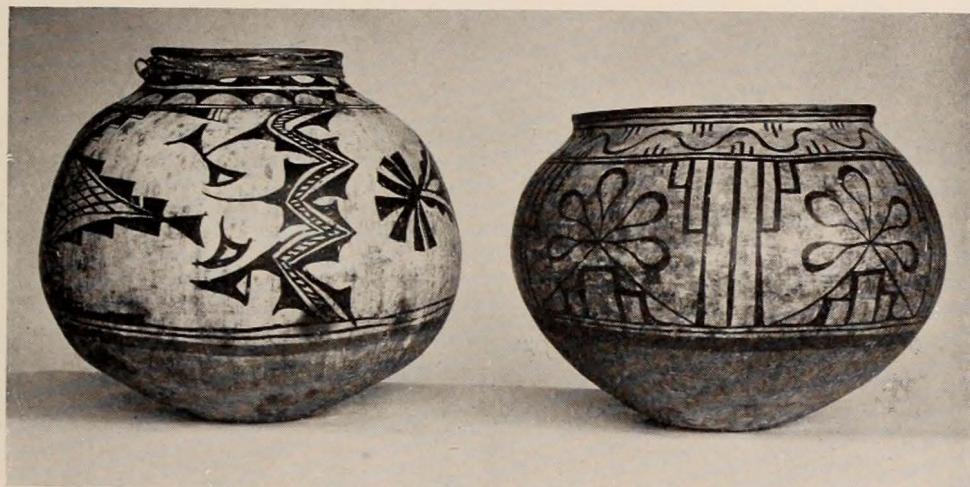


ZUÑI

20. MODERN PUEBLO POTTERY



PRAYER MEAL BOWLS—SAN ILDEFONSO



STORAGE JARS—SAN ILDEFONSO

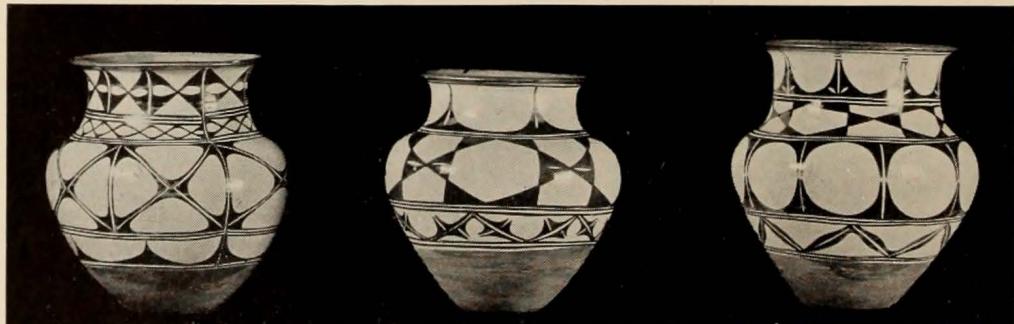
21. MODERN PUEBLO POTTERY



LAGUNA



SIA AND SANTA ANA



SANTO DOMINGO
22. MODERN PUEBLO POTTERY





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