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## Modern Pottery-Making In San Anton, Mexico

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The principal contemporary pottery-making techniques which are recognized for the Mexican area are; hand-modeling, building, molding with convex molds, molding with concave molds, molding with concave "vertical halves" molds, modeling with revolving "moldes," and wheel-throwing (Foster 1955:3). We can attribute this diversity of pottery-making techniques to the blending of pre-Conquest native practices with those of the post-Conquest Spanish.

Today in many of the larger country markets of Mexico, nearly the full range of techniques may be found represented in the pottery displayed. (Clues as to which methods were used are often impossible to determine by visual inspection because the skill with which much of the pottery is executed quite often hides any indication of technique. For example, weld marks on a vessel made from any one of the mold types are often erased by the potter from the interior as well as the exterior walls of the vessel. Often too, one encounters such perfect smoothing and shaping of vessels made by the hand-modeling or building techniques that the finished product may be quite difficult to differentiate from mold-made or wheel-thrown pieces.

Combination of two or more of the techniques cited above, which is most often the case found in Mexico, may result in a vessel whose method of manufacture can best be determined only by actual observation of the process involved.

Pottery made in the barrio of San Anton in the city of Cuernavaca, state capital of Morelos, Mexico, combines the use of building, convex molds, and wheel-throwing. The barrio is the site of a waterfall known as *Salto San Anton*, the access to which is from an unpaved street which runs the length of the area inhabited by the potters. To one side of this street lies a wide arroyo in which the water for the falls runs. Potter families live along the street and on both sides of the stream in the arroyo. The spectacular falls and the shaded walk along the side wall of the gorge into which the water plunges attract a constant stream of visitors to the area.

Observations of San Anton pottery and pottery-making techniques have been made and published previously (Molina 1925; Rendon 1950; Foster 1955). The present study was made during a four week period in the winter of 1961 as a part of a larger modern pottery study in Mexico undertaken with the aid of a Wenner-Gren Foundation grant. Field photographs were taken by Carol Watson and studio photographs by Charles Johnston, Staff Artist, The Science Museum, St. Paul, Minnesota.

*The Potters:* Approximately twenty-five families are engaged in pottery production. The potters interviewed state that their families have been potters for many generations. The occupation is at present inherited patrilineally and practiced only by the father and older males of the family. There appears to be no system of apprenticeship outside of the family. Younger children, male and female, as well as the women of the family help with such incidental chores as gathering wood or grass for the kilns and in loading the kiln. Several potters said that some women occasionally make small souvenir pieces but no woman in San Anton is presently known as a potter.

Workrooms are in the immediate area of the potters' homes if not actually constructed as part of the house itself. The typical one room houses and workshops are of adobe brick.

Individual families specialize in particular types of vessels. Large water jars, planters, and tortilla platters, may be made by one family while another will specialize in the often more decorative water coolers, small flower pots, jardineres, ashtrays, etc. The one unpaved street running from one end of the settlement to the other provides access to the majority of the potters who specialize in these more ornamental or souvenir types of pottery. In the arroyo section the specialization appears to be primarily in the larger, less ornamental and utilitarian types.

The majority of the potter families living on the street have opened small sales shops where their ware is shown and sold directly to tourists. Relatives and friends living in the arroyo often sell individual pieces of their ware to these families for resale in their shops. The majority of the pottery made in the arroyo however, is sold to a wholesale pottery warehouse located in San Anton. This warehouse is one of many independent purchase points throughout the Mexican area from which distribution of pottery products is made to retailers in larger towns. The potters have no connection with this enterprise other than in selling to it. Another outlet for San Anton pottery is in direct commissions from individuals in Cuernavaca for specific types and amounts of pottery vessels, usually plant containers, which are used for decorative purposes in homes and gardens throughout the city. Several restaurants located near the path leading to the falls purchase pottery for sale to visiting tourists. No potter sells in the Cuernavaca market and it appears that the entire commercial aspect of San Anton pottery production is centered within the confines of the barrio.

*Clays:* The clays used in San Anton are obtained locally from communally shared pits located along the stream bed running through the arroyo. Two clays known as *barro amarillo* or yellow clay, and *barro negro* or black clay, are used. The pits from which the black clay is taken are within the community itself. The yellow clay is dug from pits located further down stream and beyond the falls. Clays are transported to the workshop area on mules or are carried in baskets from the site by the potters themselves.

At the workshop the lumps of clay are spread out in the open and left to dry for two or three days. They are considered ready for use when a 2 or 3 inch piece is broken and found to be dry to the core. During the latter months of the dry season the black clay is soaked in water after being brought from the pits due to its extreme hardness. It is then left to dry.

Both dry clays are beaten separately with a wooden mallet known as a *pison* (Fig. 2, A) until pulverized and are sifted through a section of common window screen mounted in a wooden frame (Fig. 1, A). Particles that do not sift through this screen the first time are again beaten and sifted. Lumps remaining after this second screening are discarded.

To prepare the paste the two clays are mixed in equal proportions. In San Anton no tempering agent is added to the clay. Several potters interviewed did not understand the use of temper when it was described to them. The clays are simply moistened to soften them and not washed. The clay when mixed is of low plasticity. A higher plasticity is achieved for clay used in wheel-throwing only through the addition of water to the clay surface while on the wheel. A week's supply is ordinarily mixed at one time. The dry mixed clay is kept in a sheltered area usually within the workshop itself. Moist prepared clay is kept near the potter's work place and covered with pieces of canvas or straw mats at all times.

A clay used in slipping is said to be obtained locally and contains a high percentage of iron oxide which gives it a deep reddish-rust color. No uniform slip color can be said to result from the slip. Fired pottery ranges in color from deep rust to an almost brilliant red. The puddling process is used in its preparation. This process is a near-universal Spanish technique of clay preparation and is almost always associated with the use of the wheel (Foster 1955:9).

*Manufacture:* All pottery in San Anton is made with convex pottery molds (Fig. 2, C, D,) in its initial stage. These molds resemble the pots themselves but have thicker walls. Foster (1955:15) has noted that molds found in San Anton are the largest and heaviest he has observed in Mexico. Lugs or loop-handles are found on some of the medium sized molds to facilitate removal of the mold. Many of these larger molds are signed and dated by their maker on the outside rim section. The oldest date found on a mold by the writer was April 24, 1924. Several potters claim knowledge of molds having earlier dates.

We can divide the pottery made in San Anton into

two types on the basis of processing techniques which are used in their production. The first, utilizes molds and the potter's wheel and the second, molds and the coil-building technique.

For vessels utilizing the wheel in their production, an amount of paste necessary for the base section of a pot is kneaded on a flat, rectangular stone resting on the floor of the workshop. It is then stamped out into a flat patty with a circular stone or baked clay hammer (Fig. 1, B). This patty of clay is placed over the inverted mold which rests mouth down on the wheel. The mold has been prepared by first wetting the exterior surface, then sprinkling this surface with fine ash to act as a separator between the mold and the clay. The patty is shaped by hand against the mold to approximately three-fourths of the way down the mold exterior (Fig. 1, C). Patting with the baked clay or stone hammer further assists in forming the clay against the mold. After wetting the surface with water; a lump of wet clay is smoothed over this clay cap, producing a muddy effect. While the wheel is rotated slowly with the foot a wet leather strip is held against the surface to smooth it (Fig. 1, D). If the surface is judged as being too wet for this process some fine ash is sprinkled over it. After smoothing the clay cap, another piece of clay is rolled into a coil between the hands and is connected to the base of the clay cap by pinching it with the fingers. Water is applied to this section and the wheel is again revolved to smooth it with a section of wet leather. The clay now covers the mold down to the juncture of the mold rim section. The mold with its clay cap is removed from the wheel and set out in the sun to dry for approximately 30 minutes or usually until at least several more similar vessels have been made. The mold is removed and set upright, and the upper section is then thrown on the wheel. Instances were noted however where one or two days passed without this upper section being completed. Throwing portions of vessels on the wheel is essentially the same process as is used by any potter and need not be elaborated upon in the present paper. A note may be made however on the use of wooden paddles which have been traditionally associated with the wheel technique. The functional and historical relationship between this tool and the wheel is as yet unknown (Foster 1955:31). The writer observed a large number of vessels being made at San Anton on the wheel but only once was the paddle seen in use. While throwing the upper portion of a vessel the potter used the paddle to shape the rim portion. The paddle was held in his right hand against the rim while his left hand was held inside the vessel in the capacity of an anvil against which the paddle exerted pressure (Fig 1, E). From observations it appears that the paddle is used infrequently in San Anton.

Utilization of the wheel by San Anton potters is limited. All pottery observed during the present study in at least partially molded and only certain sections of relatively small vessels are thrown on the wheel.

Vessels which are too large for wheel manipulation and which ordinarily are potential plant containers, are usually made by inverting the larger molds in saucer-

shaped pottery containers called *cineceros*. These range in diameter from 1 to 2 feet (Fig. 2, B). The *cineceros* are filled with ashes not only to stabilize the mold when in use but also to serve as a cushion for the vessel after the mold is removed. The base section of the vessel is set in the container while the uneven edge is being cut off with a piece of cord. (Fig. 1, F). The mold and paste are prepared in the same manner as for the wheel process described above. Application of the clay patty to the mold with the hands and then with the hammer, along with the process of wetting and smoothing of the clay cap with a leather strip, again follow closely the process used for the wheel-finished pots. During the final smoothing process one end of the wet leather strip is held in the center of the vessel base with the forefinger while the potter walks the leather strip around the stationary vessel. By increasing pressure with the forefinger, a depression is formed which later can be easily knocked out for drainage purposes. Most potters rub an *elote* or corn cob over the wetted surface prior to smoothing with the leather strip. This reduces unevenness resulting from patting the clay against the mold. The mold with its cap of clay is set out to dry and is later completed by the coil-building technique. The interior weld mark at the junction of the mold-made and built section of larger vessels is obliterated with the *elote*.

When vessels are completed and dried, the exposed surfaces are rubbed smooth with a dry rag. The slip is then applied.

*Molcajetes* or chili grinders are made on convex molds on which a design, usually including a sentimental legend, is incised. In contrast to the mold-and-wheel technique previously described, processing for the *molcajetes* retains the mold during the throwing process which is used for the cone shaped pedestal base which characterizes these vessels. This same technique is used in making *compotes* (Fig. 1, G). *Molcajetes* are completely slipped.

*Comales* are said to be formed over the bottoms of other *comales* (Foster 1955: 15). The writer noticed shallow depressions in the packed clay floors of several of the workshops which he feels may also serve for this purpose. After forming, the *comales* are roughened on the underside with the exception of a narrow band on the rim and sand is rubbed into this roughened area. The face side is burnished with a smooth stone prior to firing. This is the only example of burnished ware found in San Anton (Fig. 3).

**Decoration:** A red iron oxide slip is characteristic of San Anton ware. Larger vessels such as water jars, planters, jardineres, etc., are slipped completely on the exterior and to a point of no more than 2 inches down the rim interior. Tortilla platters are banded on the rim with a single strip of the red slip. The smaller and more ornamental types of vessels are commonly slip decorated in the form of border strips, spirals and floral patterns (Fig. 3). The slip decoration or treatment is applied prior to firing.

Foster (1955:14) notes the use of a red commercial

oil paint being freely used to point up relief on San Anton ware. Rendón (1951:263), whose comments appear to be limited to observation of collections in the National Museum in Mexico City, refers to a red oil paint used to treat the vessels. This writer found only the red slip being used to give the characteristic color to San Anton pottery at the time of the present study.

Only one potter in San Anton presently utilizes oil paint in decorating his pottery. The decoration in this case usually takes the form of scenic views of the surrounding mountains and volcanos or of the local falls (Fig. 3). This potter has also experimented with other methods of pottery decoration and presently makes and sells a vessel reminiscent of a small barrel. Through smudging he also produces a type of blackware. The barrel shaped vessel was made originally on special order for an individual in Cuernavaca who also explained the basic smudging process to him. The potter has since extended this process to other vessels. The popularity of this blackware along with the oil painted vessel with the tourist trade has provided an incentive for at least this one potter to continue its production.

Other decorative effects on San Anton pottery in general are obtained by molded appliques or through insertion of bits of porcelain, pieces of pottery, and tile which are applied or inserted when the pot is still damp. Some examples of finely modeled animal figures are found on the large water jars and planters. These were observed in the form of lizards placed to look as if crawling up the side of the vessel.

Molds used in making applied ornaments are known archeologically from pre-Conquest Mexico. According to Rendón (1950:263), San Anton is one of the few pottery-making centers in Mexico still using this type of applied ornamentation in combination with stamped decoration. She states that "applied ornaments are often made from the small archaeological molds abundant on the surface in the regions of Teopanzolco, Cuernavaca, and other archaeological sites in Morelos." The writer did find some evidence of molds of this type in use along with decorative stamps at the time of the present study. Those being utilized at this time, however, were primarily modern interpretations of nationalistic motifs such as the eagle, Aztec warriors, snakes, etc. (Fig. 4). These were made by the potters themselves.

Separate molds are found for ornamental feet which are added to some vessels. The most common type of foot, however, is a thick triangular support which is modeled by hand (Fig. 3).

Rims vary from straight to fluted types, with the plain rim appearing to be predominate.

**Firing:** Kilns (*hornos*) of several types, as well as open firing, are found in San Anton. Rectangular and circular shaped kilns are made of irregular, fired adobe brick and bits of rock. The exterior and interior walls as well as the floor grate are plastered with adobe. Examples are found of both single and double firedoor types, the latter possessing four doors occurring in pairs on opposite sides of the kiln (Fig. 1, H). Size of the kilns vary but the

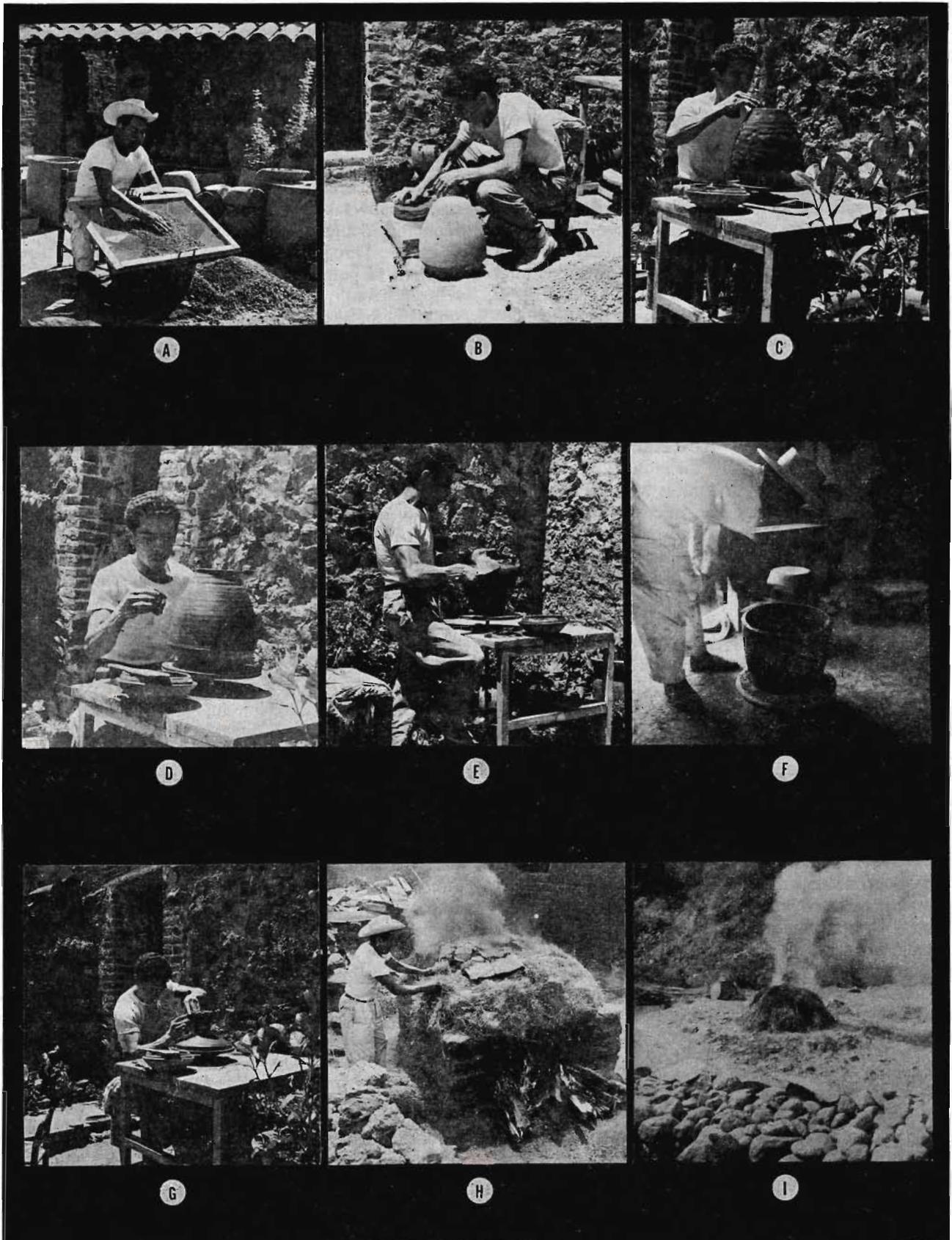


FIGURE 1.—Pottery-making in San Anton. a, Screening clay. b, Pounding out clay patty. c, Using mold on wheel. d, Smoothing with leather strip. e, Using wooden paddle. f, Cutting top

of molded section. g, Throwing base of compote. h, Stacking grass on kiln. i. Firing in the open.

average height for the rectangular kilns is 3 feet. Average inside dimensions of these kilns are 5 by 6 feet.

The grating which separates the fire box from the upper pottery chamber is approximately 1 foot above ground level. This fire box runs the full length and width of the kiln. No example was found of a central pillar to support the grating on single fire-door kilns. Double door kilns have a partition running the full length of the kiln which in essence creates two fire boxes. The majority of the kilns in San Anton are of the types described above.

Foster (1955:15) in his report on San Anton noted only around kilns with subterranean fire boxes, one fire door and grate at ground level. Of four circular kilns observed at San Anton for this paper, no true subterranean fire boxes were noted, doors were double, and the grate was above ground level. Average height for these kilns is 3½ feet with a diameter of 5 feet. The fourth circular kiln had been constructed three years prior to the present study. Basically it is a circular kiln 1 foot 4 inches high with an inside diameter of approximately 4 feet 4 inches. This is built on a 5 feet 9 inch square base, 1 foot 4 inches high. A single fire door gives access to the fire box which extends from front to rear. The grate is at the junction of the circular pottery chamber and the square base.

*Comales* are fired in kilns constructed specifically for this purpose. Essentially they are two parallel, adobe-plastered, adobe brick walls, generally 1 to 1½ feet tall and 1 to 1½ feet apart. The platters are placed vertically on end between the two walls and the fire is built between the walls, under the pottery.

Open firing is often used for large water jars and planters. Firing in the open and *comale* kilns are found only in the arroyo section of San Anton. Rectangular and circular kilns are found throughout the area. *Comale* kilns are limited to only a few families in this arroyo section.

The fuel used for the circular, rectangular and *comale* kilns is *ocote* which is a dry resinous wood from various types of pine. Wood, dung and grass are used for open firing.

The manner of stacking the various types of pottery

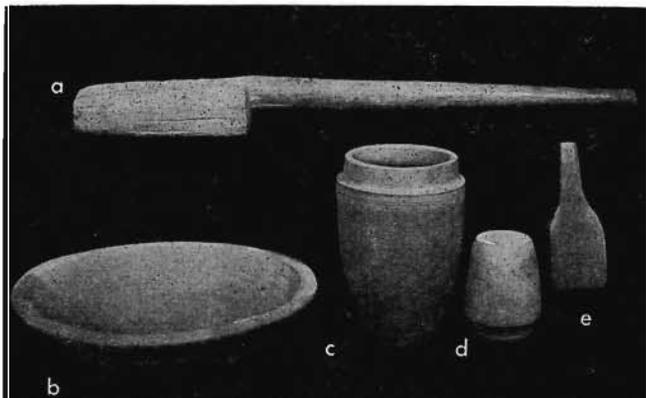


FIGURE 2.—San Anton pottery-making implements. a, Clay beater (*pison*). b, Container (*cincero*) for molds and partially completed vessels. c, d, Convex molds. e, Wooden paddle.



FIGURE 3.—Some typical San Anton pottery ( ) indicates usage. Back row, left to right: *Masetone* (planter), *comale* (tortilla platter), *olla pequeña* (flower pot), *molcajete* (chile grinder), *col con pata pequeña* (flower pot), *col con pata grande* (flower pot). Front row, left to right: *Masetone* (water jar), *olla* (flower pot), *olla* (flower pot), *botella con vaso* (water cooler with glass or cup), *botella con vaso* (water cooler with glass or cup), *frutero* (compote dish). (1 ft. scale in photo.)

in the circular and rectangular kilns appears to be standard throughout San Anton. A layer of large sherds is placed over the grating and the larger vessels are placed upright on this layer. Inverted vessels of medium to large size are placed in the intervals. A second layer of pots is stacked on top of the first, making use of large pottery sherds to bridge any gaps occurring between pots in the bottom layer or across the mouths of the larger vessels in this lower layer. Smaller varieties of pots such as cups, water coolers, and flower pots are used to fill in the intervals of this upper layer. Vessels are never stacked within one another. On top and around the sides of the pottery, which may rise to 2 or 3 feet above the kiln walls, the potter places pieces of corrugated tin. The loaded kiln is then fired using wood which has been partially soaked in kerosene. The ends of longer pieces of wood which extend outside of the kiln door are pushed in as the opposite ends are burned. In firing, the kiln is refueled only once after the initial load. Approximately 20 minutes after the lighting of the fire, a grass called *zacate* is stacked on the tin to a thickness of about 5 inches (Fig. 1, H). This grass has been dampened in nearby water containers. As this grass dries out from the heat of the kiln it is replaced with more damp grass in the areas where scorching appears. After about 45 minutes the grass is allowed to burn to ashes, and the fire below is allowed to burn out. The ashes are removed by brushing, the tin sections taken off and the pottery removed from the kiln with the aid of metal hooks. The entire process of loading, firing and removal of the pottery never exceeded two hours. *Comale* firing did not exceed one hour and is essentially the same process as is described above except for the stacking procedure. For open firing a bed of wood chips, sherds and dry dung is prepared. The vessels to be fired are placed upright on this and surrounded on the margins of the bed by *comales* placed on end. *Comales* are also loosely stacked over the mouths of the vessels to prevent the fire from



FIGURE 4.—San Anton stamp molds. (1 ft. scale in photo.)

falling into them. More dung is banked up against the surrounding *comales* and with the aid of kerosene is ignited. The mound is covered with wet grass and left to burn (Fig. 1, I). Later additions of grass are made as required or when an area begins to flame up. Approximately the same amount of time is allowed for firing in this manner as with the kilns.

In all cases of firing observed in San Anton, visual inspection of the pottery itself was used to judge sufficient firing time. Sections of tin or, in the case of open firing, the *comales* are lifted occasionally to check on the color.

Firing is done at any time during the day, but preferably in the cooler morning hours. Ordinarily one or two weeks' work is fired at one time. If the kiln will not hold all of the pottery, the remainder is saved for the next firing.

During the months of June through September, the heaviest part of the rainy season, less work is done due to problems in firing.

The pottery produced in San Anton can be classified as non-refractory, terra cotta ware.

The most common types of pottery pieces produced in San Anton consist of souvenir type ware such as ash trays, compotes, water coolers, coin banks, cups, and small flower pots. Also produced in number are large water jars and vessels used as planters. Strict utilitarian ware such as tortilla platters, washbasins, and chile grinders does not appear to be manufactured in any great amount. During the month of December, thin walled clay vessels used for the traditional Christmas season *piñatas* are made.

A tendency toward production of pottery items which will appeal to the tourist or local home owner is evident in San Anton. This market potential, which presumably has been brought on by the tourist trade, has been recognized by at least the present majority of San Anton potters. The adaptation of traditional vessel types to

plant containers by the addition of a drainage hole at the base may be considered as indicative. Utilitarian ware, primarily in the form of tortilla platters, is produced in quantity by only a few San Anton families in the arroyo section.

Certain aspects of San Anton pottery production may have their origins in pre-Conquest times. The closest relationships between present day San Anton pottery and pre-Hispanic archeological remains lies in the use of stamped decoration and of ornamental stamp molds. There is no evidence however that this form of decoration has continued through time in San Anton from pre-Hispanic origins and may be a relatively recent decorative device. Archeologically, convex molds are known from pre-Conquest times. Foster (1955:30) suggests that the larger molds used in San Anton might represent a level of mold development above the use of an ordinary pot but below the development of handled molds. It is possible that the origins of San Anton molds lie in pre-Hispanic times. When the present study is compared with the results obtained by previous investigators, it is apparent that pottery-making techniques used in San Anton as well as the customs of its production have changed considerably in at least the last half-century.

Molina (1925) makes no mention of the use of molds, the wheel, or of a formal kiln. He describes the pottery as being fired while grouped around a central fire and covered with sand. A problem arises, however, from certain photographs at San Anton in the collections of The Sci-

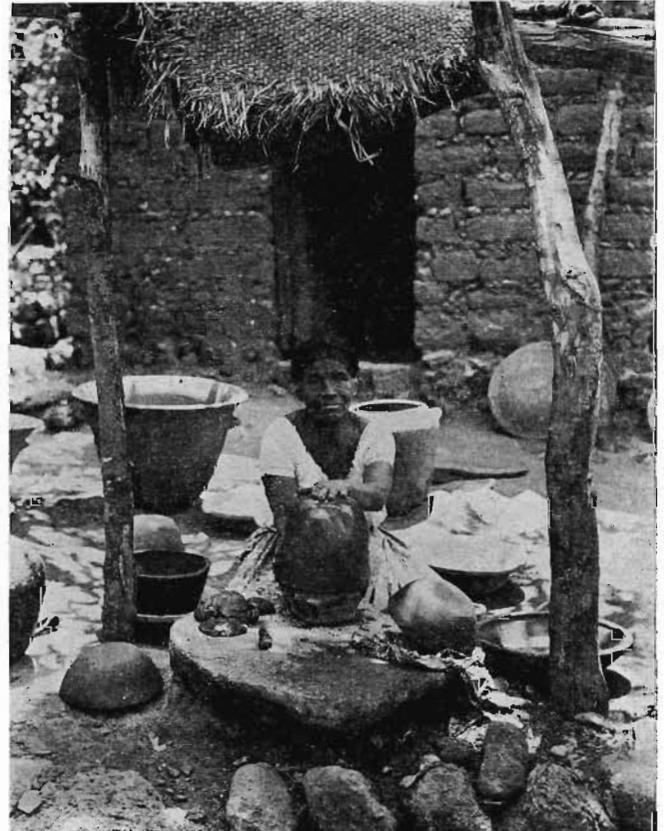


FIGURE 5.—San Anton female potter at work, 1907. (Sci. Mus. Acc. No. 556.)



FIGURE 6.—San Anton male potter, 1907. (Sci. Mus. Acc. No. 556.)

ence Museum, St. Paul, Minn., dated earlier than Molina's study (1907). One of these (Science Museum Acc. 556) shows a female potter utilizing a mold of the type presently used in San Anton (Fig. 5).

In the background may be seen two other molds, a water container of a type which is no longer being made, and a *pson* much like that presently being used. Another photograph taken 1907 (Science Museum Acc. 556) shows a male potter working on what appears to be a *braserro* or charcoal burning stove also of a type not presently found in San Anton (Fig. 6). Potters interviewed by the writer were agreed that the wheel first came into use in the period of 1875 to 1900. If this is accurate, we must also assume that the wheel was in use, at least to some extent, at the time of Molina's report

and in 1907 when the photographs in the Museum's collections were taken. Thus both the wheel and molds must have been utilized during the period of Molina's study, but apparently by only some potters, and perhaps not to the extent that they were noticed or considered important by Molina. The wheel, a Spanish introduction into Mexico, is always associated with male potters. Foster (1955) states that wherever it has been introduced it seems to have relegated women to secondary tasks. In the 1907 photograph a woman is shown producing pottery. At the time of the present study no woman is considered to be or works as a potter in San Anton. We can assume that this cultural change has been affected by the introduction of the pottery wheel.

The Museum photographs were shown to several potters in San Anton. The subjects were recognized as deceased individuals who lived in an area beyond the present limits of the San Anton pottery-making area. The writer was told that during the period that these pictures were taken there were a great many more potter families than at present. Less souvenir-type ware was made during this same period.

Further study will be necessary in order to speculate on the apparent connection between the reduction of San Anton potter families and the change in emphasis from utilitarian ware to the production of decorative ware. One of the factors which would need to be considered in regard to this problem would be the increase in reduction of marketing potential for both types of ware through time.

#### LITERATURE CITED

- FOSTER, GEORGE M. *Contemporary Pottery Techniques in Southern and Central Mexico*. 1955. Pub. 22. Middle American Research Institute, Tulane University, New Orleans.
- MOLINA, ENRIQUEZ RENATO. 1925. Notas sobre las alfarerías de Cuernavaca. *Ethnos*, 3rd series vol. 1. Mexico.
- RENDÓN, SILVIA. 1950. *Modern pottery of Riotenco San Lorenzo, Cuauhtitlán*. Pub. 15. Middle American Research Institute, Tulane University, New Orleans.