POTTERY AND TILES OF GUANAJUATO, MEXICO

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POTTERY AND TILES OF GUANAJUATO, MEXICO

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CHAPTER I
INTRODUCTION

The Purpose of the Study

This paper is the result of a study made in Guanajuato, Mexico, in the summer of 1945. It is an attempt to set forth the development of the methods used in making pottery and tiles in this region -- to trace the methods, forms, and motifs from the pre-Conquest period through the Colonial and contemporary periods, to find what changes have come about in the art of making pottery and tiles, and to discover the causes of these changes.

Pottery making in Mexico is one of the oldest and most widely distributed crafts. It has been said that the history of a nation can be traced by its pottery. In the Guanajuato region, in prehistoric times as at present, pottery was intimately connected with the domestic, personal, and religious needs of life. By examining the clay, forms, and decorations of early pottery remains, archaeologists are able to determine the age in which the specimens were produced and whether the pottery was purely local in origin or was influenced by styles of other areas. From a study of the ceremonial pottery, they get a concept of the native religion.

1
Scope of the Problem

In the first chapter of this study a brief history of the state of Guanajuato is presented. The native materials for pottery making -- clays and glazes -- are discussed. The second chapter gives a brief summary of the pre-Conquest period in relation to the pottery produced and a discussion of the methods used in preparing the clay. The forms, modelling, decoration and firing of the pottery are also discussed. Chapter III summarizes the various influences seen in the ceramics of the Colonial period. A description of the preparation of the clay and glazes, typical forms and the making, firing, and decoration of tiles and pottery are included. Chapter IV gives the background for the contemporary period in relation to pottery and a description of the preparation of clay and glazes, typical forms, modelling, firing, and decoration of the pottery. Chapter V deals with some of the changes and improvements seen in the techniques used in making pottery and tiles in the contemporary period and shows the influence of early forms and motifs on contemporary pottery.

The Method of Procedure

Much information was obtained through conversation with Mrs. Beatriz A. de Gomez, Manuel Leal, and Mrs. F. Villanueva, citizens of Guanajuato. Extensive research in the
library of the North Texas State Teachers College and in libraries of Dallas, Texas, and Guanajuato, Mexico, made possible the study of the techniques, forms and decorations used in the pre-Conquest and Colonial periods. Other sources of information were the collection of pre-Conquest pottery in the Museum of the University of Guanajuato, the private collection of Colonial pottery belonging to Manuel Leal, and the pottery collection in the Museum of the Palace of Fine Arts in Mexico City. The production of pottery and tiles was observed in the factories of Guanajuato, Dolores Hidalgo, and San Miguel de Allende, and specimens were also studied as they were displayed for sale on the streets of these cities.

Historical and Geographical Survey of Guanajuato

The state of Guanajuato is located in the central part of Mexico (see Fig. 1). It is crossed by various systems of mountains and its climate varies according to altitude, the state being divided into three zones: warm, temperate, and cold. According to Vargas, the area of the state is 31,413 kilometers and in 1930 it had a population of 987,801.¹ This area is a part of mestizo Mexico -- "increasingly white as one approaches the cities, increasingly

¹Fulgencia Vargas, Historia Elemental del Estado de Guanajuato, p. 9.
Fig. 1. -- Map of Mexico showing pre-Conquest culture of Guanajuato.
Indian as one nears the mountains." The state produces large quantities of pottery. According to Beatriz Gómez, all of the material used in the production of pottery is found within the state of Guanajuato. The largest centers of production are the cities of Guanajuato, Delores Hidalgo, and San Miguel de Allende.

Guanajuato is one of the oldest and most picturesque towns in Mexico. It was founded in the sixteenth century, soon after the Conquest, as a northern outpost against scattered Indian tribes. It is the center of a mining district that was once very wealthy. Anita Brenner refers to it as "The Silver City of the World." It is situated high above the great plateau, in a narrow mountain gorge. The houses are clustered on the sides of the mountains. Its streets are twisted and so steep that some of them are built of stone steps. Others are so narrow that it is barely possible for two people to pass. The name, Guanajuato, comes from "Guanaxhuato," a Tarascan Indian word meaning "Hill of the Frogs." This name was believed to have been given because of the large number of frogs found in the vicinity and probably because a large rock, carved

3 Beatriz Gómez, personal interview.
4 Downing, op. cit.
5 Anita Brenner, The Wind That Swept Mexico, p. 129.
6 T. Phillip Terry, Terry's Mexico, p. 139.
in the shape of a frog, was found there by the Chichimec Indians, and they were believed to have worshipped it for a time.

**Dolores Hidalgo.** -- In the beginning Dolores Hidalgo was the hacienda belonging to Agustín Guerro de Luna and his wife, María Teresa de Villaseca. It was known after 1843 by the name of Congregation of Our Lady Dolores. In this historical town on the 16th of September, 1810, the priest, Don Miguel y Costella, began the struggle for Mexican independence. After many years the President, Benito Juárez, visited the town, and by a decree in 1863 he raised it to the rank of city, with the official name of Dolores Hidalgo.7

**San Miguel de Allende** was founded in the year 1542 and was aided by the noted Franciscan monk, Juan de San Miguel. It soon became a military outpost against the Chichimecas. It now carries the name San Miguel de Allende in memory of Allende, a young captain from San Miguel who aided Hidalgo and became the co-founder of Mexican independence.8

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CHAPTER II

PRE-CONQUEST CERAMIC TECHNIQUES,
FORMS, AND MOTIFS

The period of pre-Conquest art is said to extend over at least twenty centuries. A part of the Guanajuato region was occupied by the Otomi Indians during the pre-Conquest period, but their culture was mainly agricultural and they produced little of esthetic value. The Tarascans, who probably had migrated from the state of Michoacan, were also found in this region.

The history of the Tarascans is similar to that of the Aztecs. Thomas Gann says: "They must have been a warrior nation, as the Aztecs, usually regarded as the bravest and most efficient soldiers in the valley, were never able to bring them into subjection."¹ According to Margaret Shepherdson, the Tarascans, during the pre-Conquest years of Aztec ascendancy, maintained their independence and progressed steadily in culture. They developed a hatred so deep against the Aztecs that, at the coming of Cortez, they allied themselves with him to overthrow the Tenochtitlan Empire. They used the same methods of making pottery as

¹Thomas Gann, Mexico, p. 82.
the Aztecs used and also developed a technique of their own.² Noguera says there is no doubt that the technique of their ceramic objects resembled the primitive type of work done by those who inhabited the region in a relatively remote age. The archaeological specimens found in this area are very similar to those of the same period found in the Valley of Mexico, and both show a decided similarity to the archaic.³ The museum in the University of Guanajuato contains a large collection of pre-Conquest pottery which was found in this region. It is largely the work of the Tarascans, though some of it probably came from the Valley of Mexico.

Techniques

Preparation of clay. -- Little information is available on the techniques of preparing the clay employed by the Tarascans. Toor describes processes which are now in use, but she calls them primitive; that is, they appear to be processes handed down from primitive times. The men now bring in the clay. They also work the clay with their feet, and the women then knead it on a metate, just as they work up their dough.⁴ The techniques used by all primitive


⁴Frances Toor, Mexican Popular Arts, p. 57.
Mexican tribes were apparently very much the same.

**Building of pottery.** -- The potter's wheel was unknown to the Tarascans, but Joyce says that there was no other method of construction unknown to them. He adds that their pottery was sometimes modeled directly from hunks of clay. Baskets and baked clay were used for molds, this method enabling them to make a vessel in two parts and join them together. They also used the coil method, the coils being pressed into flat strips and attached to a modeled base. One strip was placed on top of the other until the vessel was finished. A pebble or piece of gourd was used to weld the strips together.\(^5\) They depended on their eyes and the skillful use of their hands to get the form they desired.\(^6\) Many of their vessels had feet which were hollow. The feet had small holes or openings in them to permit gases to escape during firing. Many of these had pellets of clay inside that made a bell-like sound when they were shaken. They were called _cascabel_ feet.

**Firing.** -- Joyce says that since the kiln was unknown to the prehistoric Indians of the Puebla region, it may be inferred that the use of the kiln was unknown in the Guanajuato area also. (Pots were probably fired under a heap of wood.)\(^7\)

\(^5\)Thomas Athol Joyce, *Maya and Mexican Art*, p. 96.

\(^6\)George Vaillant, *Aztecs of Mexico*, p. 149.

\(^7\)Joyce, *op. cit.*, pp. 95-96.
Decoration. -- Glaze was not introduced until the coming of the Spaniards, but the pottery was decorated in a number of other ways. Some of the pottery was polished with small pebbles or pieces of bone just before it was thoroughly dry, then decorated and fired. Negative painting was another process of decoration (see Fig. 2). Spinden describes negative painting as a process in which the design was painted on with wax, or something similar, before the whole object was coated with a permanent red or black paint. When the object was fired, it came out with the natural color of the clay where the wax had been, and a red or black background. Many specimens of this type are found in the collection of the Museum of the University of Guanajuato. Noguera says: "The Tarascans' work in negative painting as a decoration for pottery went far beyond any similar work found in other regions." Incised lines,

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8Herbert J. Spinden, Ancient Civilizations of Mexico and Central America, pp. 185-186.

9Noguera, op. cit., p. 289.
pierced decoration, and relief are other types of pre-Conquest decoration found in the Museum.

Forms

The pottery of primitive man was usually based on his domestic and religious or ceremonial needs. As was generally the case, the forms of prehistoric pottery in Guanajuato were determined by their function. For their domestic use, the Indians built bowls, jars, and ollas. The olla, or water jar, was built with a small mouth to keep the water clean; the body was spherical in order to hold a large amount of water. A piece of pottery constructed for storing grain was built with a large mouth (see Fig. 3). A large proportion of the pottery was made for ceremonial use -- censors and vessels used in religious rites.

In the collection of pre-Conquest pottery at the University of Guanajuato, one finds a variety of forms. There are pieces of the jardinere type (see Fig. 4), compote- and
circular-shaped bowls, and others which are square with rounded corners (see Fig. 5). Another type found in Guanajuato is an urn which De Cordova calls a funerary urn\textsuperscript{10} (see Fig. 6). Also, there is a small spherical bowl with a short, flared neck and two handles (see Fig. 2).

\textbf{Motifs}

The decoration of Tarascan pottery is linear, usually lines of motion which give it a dynamic quality. The most characteristic lines are the zig-zag and straight lines. Noguera gives the frequency of the different decorative styles in Tarascan ceramics: forty-six per cent of the Tarascan ceramics had no lines or decoration; thirty-three per cent had geometric motifs; nine per cent had anthropomorphic motifs; and nine per cent had zoomorphic motifs. Rectilinear motifs are more predominant in the pottery as a whole. Curved lines are very scarce,

\textsuperscript{10} Jueaquín P. Cordova, "Tarascan Art Equals Mayan," Modern Mexico, XII (February, 1940), 12.
Fig. 5. -- Square bowl decorated with deep linear carving.
(University of Guanajuato Museum)

Fig. 6. -- Funerary urn from Guanajuato, decorated in geometric design.

with the curious exception of the ornament of very small vases in which the curvilinear motifs are used in the background.

The most elaborate designs are on the ollas and cylindrical vases, the bodies of these types offering more ample ground for decoration. In the case of the crocks, the decoration occurs in narrow bands near the border, and the width of the band is in proportion to the depth of the bowl. The general motifs are rectilinear and are repeated in all the circumference. They are divided by transversal lines, rhomboids, or trapezoids, placed so that one is a continuation of another.11

All of these types of motifs and decoration are found in the University collection. Some of the bowls have heads protruding from the sides of the bowl, with arms and breasts below the head. In this last group the decoration around the circumference is composed of zig-zag and straight lines or geometrical shapes (see Fig. 7). The zig-zag, slanted, and straight lines seem to predominate in this collection of pottery.

Many of the bowls in this collection are supported on three feet, while some have four. The type with three feet is also found in the pottery of other primitive tribes. Several types of feet are used on the vessels. One type is short, a little larger where the feet are attached to the bowl, sloping to a rounded point at the bottom (see

Fig. 7. -- Bowls showing combination of anthropomorphic and geometric decoration. (University of Guanajuato Museum)
Fig. 3). Another type is similar to the female breast. This type is hollow, with openings to prevent breakage from gas which would otherwise accumulate during firing. Occasionally the holes serve as decoration (see Fig. 8). A third type is cylindrical, rounded at the bottom and fairly long. It is also hollow.

Alfonso Caso says that there are three characteristics of pre-Spanish art: the most important of these is the strong religious affiliation, which is evident in the symbolical motifs of their pottery; the second is the naturalistic development of details, although the whole may be an imaginary conception. The third is the transformation of each motif into a decorative unit.  

Fig. 8. -- Bowl showing combination of relief, pierced and geometric design in decoration.
(University of Guanajuato Museum)

Gilbert Medioni says: "To obtain symbolism they borrowed

\footnote{Alfonso Caso, \textit{Twenty Centuries of Mexican Art}, p. ix.}
elements from the Universe which surrounded them."\textsuperscript{13}

The colors used in the pottery of this period are red, cream and black, which are found in different combinations; sometimes the background is red and sometimes cream. In the University collection there are several all-black pieces with incised lines or pierced holes, but these pieces may be from the Valley of Mexico (see Fig. 9).

A study of the styles and uses of pre-Conquest pottery of the Guanajuato region reveals that the ceramic arts functioned extensively in the domestic and religious life of the Tarascan Indians. While their techniques were crude, the great variety of their forms and motifs shows that the potters were unusually gifted in self-expression. Many of their motifs were symbolical in character. Joyce says: "The Tarascan potters developed a style which is full of character."\textsuperscript{14}

\textsuperscript{13}Gilbert Medioni, \textit{Art in Ancient Mexico}, p. ix.
\textsuperscript{14}Joyce, \textit{op. cit.}, p. 120.
CHAPTER III

COLONIAL TECHNIQUES, FORMS AND MOTIFS

The Spanish began to Christianize the Indians as soon as they conquered them. Indian leaders of the Guanajuato region tried to stay in the good favor of the Spanish by requiring their people to become Christians. Many were killed because they refused to become converted;\(^1\) however, the large number of converts created a need for numerous churches. The priests, feeling a need for tiles to decorate the churches and for glazed pottery, sent to Spain for members of their profession who knew the craft and could teach the native craftsmen.\(^2\) Moreover, as a result of Spain's extensive trade with China, large quantities of Chinese porcelain were imported, and Chinese forms and motifs were imitated by the Puebla potters. Puebla became the pottery center of Mexico.

The patriot priest Hidalgo, who started Mexico's revolution for independence from Spain, encouraged the people in Guanajuato and Dolores Hidalgo to imitate the Puebla pottery. In the latter part of the eighteenth century and

\(^1\)E. Phillip Terry, Terry's Mexico, p. 146.

\(^2\)Edwin Atlee Barber, Mexican Faolica, pp. 5-6.
the early part of the nineteenth, Guanajuato became a rival and competitor of Puebla. 3

Techniques

No source of information was available for the techniques used in Guanajuato during this period. Since many of the potters imitated the Puebla pottery, Cervantes' description of the products of that city is used for reference, on the assumption that it would serve also for Guanajuato ceramics. 4

Preparation of clay. -- According to Cervantes, two kinds of clay were used, gray and red. These clays were found to be more successful when combined. This mixture was put into a tank where it was combined with water and thoroughly mixed. It was then poured through a sieve to remove the sand, rock, and other organic matter. After this operation was repeated twice, it was put into another tank to settle. As the clay settled, the water rose to the top and was eliminated by a series of pipes that came out from underneath the walls of the tanks. After remaining out of doors fifteen or twenty days, the clay reached a satisfactory consistency and was stored in another tank for at least two months before it was used.

The next step in the preparation was the kneading of the clay, which the men did with their feet. Relatively

3 Frances Toor, Mexican Popular Arts, p. 65.
4 Enrique A. Cervantes, Loza Blanca y Azulejo de Puebla, pp. 2-15.
small quantities were taken out and the mass was spread on the floor. The workers kneaded it by sinking their heels into it as they walked around and around in concentric circles. This continued until the mass of clay reached the proper consistency.

This mass was divided into smaller portions, and from these portions were taken the quantities necessary for making the pottery or tiles.

**Tile making.** -- In making tiles, the worker cut off pieces of clay that were approximately of equal size and formed them into balls. The balls were placed on a flat surface and mashed into little cakes, being patted between the hands until they were more or less uniform in thickness. Then each cake was placed on a square board of the desired dimensions and trimmed on all four sides with a thin wire. As soon as this process was completed, the tiles were put into special driers, where they remained from six to eight days, and then were arranged in rows to remain thirty or forty days. They were next separated and grouped in fours to remain a month longer. Finally they were placed in the sun for one or two days before they were put into the oven for the first firing. The length of time allowed for drying was much greater in the Colonial period than at present. Tiles of today are allowed to dry only sixteen days.

**Building of pottery.** -- The wheel used by the potter consisted of a vertical axis of wood, to which were fastened two horizontal wooden discs. The smaller one on the upper
end was called the head, and the larger one on the bottom was called the fly. This apparatus was fastened to the top of a table.

The worker placed the clay on the head of the wheel and started the wheel by giving the lower disc a spin with his feet. The clay was worked with the hands, aided by a round piece of tin shaped like a reed. A thread was used to cut the finished piece from the surplus clay at the base.

A piece of clay changed form many times as it was worked on the wheel, going up and down, opening and closing until it reached the necessary elasticity. The worker kept his hands wet constantly by dipping them into a milky liquid composed of clay and water. This gave the clay a certain softness and lightness.

The workers showed a great deal of skill and manual precision in the making of their pieces. They sometimes made as many as a hundred pieces so nearly alike in shape and size that they looked as if they had been made in a mould. Some operators made from five to six hundred pieces of common ware in a day.

When the pieces were finished, they were placed in driers which were in rooms that had no ventilation. They remained there from fifty to ninety days, and were then placed in the sun for one or two days before the bisque firing.

Types of kilns used. -- The kiln used for the bisque firing was a small quadrangular kiln similar in form and
construction to those commonly used in the manufacture of bricks. The kilns used for the second firing were made of brick and clay. The lower part was a square compartment for fire, the grate being made by arches which rested against the side walls. Above was the main compartment with an opening for loading, and over this were two compartments with two openings to aid in loading and unloading. The top was open. Wood was used for fuel.

**Bisque firing.** -- The green pieces were placed in the kiln in vertical rows. Wood was used for fuel, and the length of time required for this firing was from eight to twelve hours. The temperature was estimated by the color of incandescence which was observed through a hole in the wall of the kiln. Thirty to forty per cent of the pottery was lost in firing, due to the foreign substances found in the clay, the defective methods of firing, and other factors that the potter did not understand.

**Preparation of glazes.** -- The enamel, or glaze, used for the background was prepared by mixing tin and lead in the following manner: (1) The lead was melted in a small oven which was equipped to use direct fire and the tin was added immediately. (2) The mixture was stirred constantly until it took on a yellowish color and crystallized. (3) When cold, it was ground and combined with water. (4) The molding sand was ground separately and mixed with water. (5) The two mixtures were then combined in the
proportion of one part of lead and tin to three parts of molding sand.

In preparing the colors, the minerals were pulverized and mixed with water. This mixture was ground until it reached the consistency desired.

The grinders were made as follows: Wooden walls were fastened to a bottom of basalt, or granite, by means of wire or iron rods. In the center there was a revolving axis, to the bottom of which were attached two or three large stones of the same material as the bottom of the bucket. Attached to this axis was a wooden rod in a horizontal position. This served to make the revolving movement when it was turned by hand or when an animal was hitched to it.

Glazing. -- After the first firing, the objects were examined and the good ones separated from the bad ones. This was done by striking the pieces with little taps which made them give a clear ringing sound if good, and a dull sound if defective. The good pieces were then scrubbed hard with a little broom and water. They were then ready for the enamel bath, or glazing.

The process of glazing consisted of covering the pieces with a white background upon which the decoration was done later. This glaze, when fired, made the pieces impermeable to water and gave them brilliance, or shine. The pieces to be glazed were immersed quickly, but carefully, in a tub
of glaze. The glaze was allowed to dry two or three days.

Decoration. -- On articles of importance the motifs for decoration were drawn directly on the ware, or transferred by rubbing charcoal on a piece of thick paper on which the design was perforated. The common ware was decorated freehand, without preliminary drawings or patterns. The painting was done with brushes made by the potters. As the glaze was very porous, the painter had to be very sure of himself, and much practice was required.

Glaze firing. -- For the second firing the pieces were placed inside small cylindrical boxes of clay. These boxes were of different diameters and were covered with a pulp of clay and ashes. It was necessary for the tops to close perfectly to prevent the smoke from causing the enamel to undergo changes. The pieces were carefully separated from one another when placed in the box and set on small tripods of clay called "feet" or "horses."

When the oven was loaded, the upper part was covered with shards until a cone was formed. A small wooden cross was placed on top to insure the success of the enterprise. The openings were covered with brick and sealed with a paste made of clay, sand, and ashes.

Places were marked on the outside of the oven to show where samples were located. The samples consisted of small pieces, glazed and decorated with the same kind of glaze
and the same colors as those used on the pieces in the rest of the kiln. The position of the samples was marked.

The fireplace was stacked with wood kindling and grass. The act of firing was performed by the master and one or two of his officials. The fire was lighted by a resinous torch, and as soon as the fire started burning, the first feeding of the oven began. A little ceremony took place at the mouth of the kiln, before the firing began. These rites were to insure the success of the firing. When the first logs were put on the fire, the master made the sign of the cross three times and the officers with him repeated the ritual.

The fire was kept at a uniform heat for a period of approximately thirty-five to forty hours. It had to be fed regularly until the time expired. There was no sure way to know when the oven was fired correctly. As soon as the oven had been fired for the calculated number of hours, the samples were taken out. If the samples were good, the workmen began the last feeding of the fire. Before the fuel was put on, a second ceremony took place in front of the mouth of the kiln. A cross of palma was placed on the first three logs, and the master of the kiln and his officials repeated: "Praise be to God always and the most holy Sacrament give fire to the oven." Each made

5M. Romero de Terreros y Vinient, Los Artes Industriales en la Nueva España, p. 156.
the sign of the cross three times, until the rest of the wood was placed on the fire.

When the firing was completed, the process of cooling, which lasted about twenty-four hours, began. The kiln was then unloaded, beginning with the upper part.

Forms

It was possible to observe only a few specimens of Colonial pottery from the Guanajuato region. Mexican Maolica by Edwin Atlee Barber and Loza Blanca y Azulejo de Puebla by Enrique de Gervantes have been used as sources of information.6

With the Christianization of Mexico, a change in some forms of pottery occurred. New forms, such as cups and chalices, were used for ceremonies in the Christian churches, and hence were needed in large numbers. Many of the old ceremonial forms disappeared, as the Spanish priests wished to destroy all articles which were associated with the pagan religion. New forms were brought from Spain for the native craftsmen to copy.

New personal and domestic needs caused the development of new forms. Barber tells of ornamented jars for storing liquids, ceramic bath-tubs and cisterns, covered dishes, bowls, salt cellars, tall jars (cylindrical vessels) which were used for storing drugs and sometimes for flowers,

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6Barber, op. cit., pp. 6-19.
jardineres and flower pots. He also describes a variety of plain yellow ware which includes pots, pans, jars, and vases.

As a result of trade with China, about the middle of the seventeenth century, there was an extensive importation of Chinese porcelains into Mexico. Puebla potters began to imitate Oriental forms, and from Puebla the influence spread to Guanajuato and Dolores Hidalgo through models brought in for the native craftsmen to copy (see Fig. 11). Alfonso Caso says the Mexicans left their own touch; then, as now, whether the models were from Talavera or China, the Indians had a style all their own which was evident in all they produced.\(^7\)

Two vases of this period, belonging to the private collection of Manuel Leal of Guanajuato, show the Chinese influence in form (see Fig. 12).

**Motifs**

In discussing the pottery of Puebla, Barber says that it may be divided into four classes: the Moresque, Spanish, and Chinese which were produced previous to 1600 and were decorated in blue monochrome; and the Hispano-Mexican or Pueblan style, which was produced during the nineteenth century and decorated in polychrome, the blue standing out in relief. This relief distinguished the Pueblan style from the Spanish, which was always painted with a thin flat pigment.

Fig. 11. -- Vase from Puebla, showing Chinese influence.

(Pennsylvania Museum)
Some of the earliest examples show a religious influence and are decorated with strap work and scrolled patterns in the Moresque style.

In the first half of the seventeenth century the Spanish influence predominated. Birds, animals and the human

![Fig. 12. -- Vases from Guanajuato, showing Chinese and Mexican influences. (Manuel Leal Collection)](image)

figure were combined with leaves and flowers. The Spanish, or Talavera, style may be divided into two groups, one in
Fig. 15. -- Vase from Puebla, showing Spanish influence.
(Collection of Rodolfo Bello and Son)
which the principal design was surrounded with areas of thickly painted dots and dashes combined with small animal forms. The color sank into the enamel, leaving a depressed effect (see Fig. 13). In the second group the design combined birds and flowers painted in silhouette. The motifs were painted in deep blue and stood out in relief.

About the middle of the seventeenth century the Chinese influence was evident in the motifs as well as the forms. The potters received their inspiration from the imported Chinese porcelains. This class may be separated into four groups; the first group has the background painted blue while the Chinese figures are left white; the second group has Chinese figures painted in blue on white background; the third shows European figures with Oriental details; the fourth is decorated with alternate blue and white medallions of floral and conventional design (see Fig. 14). One may find examples with Chinese form, decorated with Moorish, Spanish or Indian motifs. The Indian motifs are created by the Indian apprentices. Other pieces of Spanish form are frequently decorated in Chinese style.

While the potters of the Guanajuato region imitated the Talavera ware, their pieces were decorated in Mexican style with flowers in greens, reds, blues and browns on white or light brown glazed backgrounds (see Fig. 12).

By the beginning of the nineteenth century the Chinese influence had entirely disappeared, and the later debased polychrome style of the Talavera
maiolica, which was developed in Spain in the latter part of the eighteenth century, was adapted in Mexico (see Fig. 15). This marked the beginning of the decadence of the art. New colors were introduced and the products of the Hispano-Mexican period, which continued from about 1800 to 1860, became gaudy and over-decorated.  

Fig. 14. -- Vase from Puebla showing Chinese influence. (Mrs. Robert De Forrest Collection)

Fig. 15. -- Vase from Puebla showing Spanish influence. (Mrs. Robert De Forrest Collection)

The churches, public buildings and homes of the wealthy were decorated with tiles. The motifs used in the tiles of Guanajuato were flowers, leaves and conventional

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8Barber, op. cit., p. 8.
designs. The motifs were painted in blue monochrome, or browns, yellows and greens on a white or light background (see Fig. 16).

The coming of the Spanish brought about changes in techniques and forms. The Spanish world trade brought the influence of many countries. New forms and motifs were introduced, and out of it all we find a Mexican style developing. The Indians in outlying districts were affected very little by these changes; they still used their primitive techniques.

Fig. 16. -- Tiles from Puebla
CHAPTER IV

CONTEMPORARY TECHNIQUES, FORMS AND MOTIFS

In the first half of the nineteenth century there was little interest in art. The people were exhausted from the Revolution. Maximilian, during his short reign (1864-1867), tried to establish Mexico as a cultural center for European art. After the monarchy was overthrown, Díaz -- whose long dictatorship lasted from 1877 to 1910 -- and the great land owners of this period continued to be interested in imported wares. For this reason little native pottery was produced.¹

The period following Díaz' overthrow was filled with struggle and strife -- a struggle on the part of the Indians to obtain land for themselves and to oust foreign interests in order to make it possible for Mexico to belong to the Mexicans. Labor unions grew rapidly, labor syndicates moved in, and mass production of pottery began.

The pottery factories of the city of Guanajuato are located on the outskirts. Mostly common ware and tiles are produced by this group of factories, but pieces of excellent quality are produced in the factory, San Luisita, which is the largest in this locality. There are many small factories producing the toy sets of tiny dishes for which

¹Miguel Covarrubias, Twenty Centuries of Mexican Art, p. 137.
Guanajuato is noted.

There are two factories of importance in Dolores Hidalgo. The larger one, La Industria, produces great quantities of small tiles and bowls, both of which the Mexicans use for so many purposes. The tiles are used in decorating exteriors of churches, buildings and homes. They are also used in the interior for floors, wall panels, doorways and cabinets. Benches and band-stands are also made of tiles. The smaller factory produces only pottery, but it is of good quality. A small amount of pottery is produced in San Miguel de Allende. It is common ware of a good quality.

Techniques

Preparation of clay. -- The clay is brought from beds in the near-by mountains by burro-back. The red clay of Guanajuato is combined with gray clay to make it more serviceable. The clay used by factories of Dolores Hidalgo is gray, and San Miguel clay is red. The method of refining is the same in all of the factories. A tank built into the ground is used for this purpose. It is lined with rough tile and divided into three or four sections. The clay is dumped into one section, which is then filled with water (see Fig. 17). A worker gets into the tank and churns the mixture around with his feet until the clay is thoroughly combined with the water (see Fig. 18). Most of the sand
and foreign substances sink to the bottom of the tank. The mixture is then poured through a sieve into another section that is called a settling tank (see Fig. 18). The tanks have a drainage system which speeds up the drying process. When the clay is dry enough, it cracks, and it is lifted out in large hunks (see Fig. 19). At one factory it is marked off in blocks just before it is ready to crack, and the cracks come on these lines. The blocks of moist clay are stored in adobe houses (see Fig. 20).

Blocks or lumps of clay are spread on the floor in a mound and men walk around on it, kneading the clay with their feet (see Fig. 21). It is then covered with boards to prevent its drying too quickly. As the clay is needed, it is taken in quantities of about twenty-five pounds and worked on a low rock bench. When it reaches the right
consistency, the clay is made into variously sized balls and stacked on the potter's table.

Fig. 19. -- Removing the clay from the tank.

Fig. 20. -- Blocks of clay stored in an adobe house.

Tile making. -- The worker first sprinkles a portion of his table with arenilla (molding sand). A ball of clay is placed on the table between two narrow strips of wood that are about three-fourths of an inch thick. The clay is rolled with a rolling pin until it reaches the level of the strips of wood. It is

Fig. 21. -- Clay that workmen have kneaded with their feet.
then cut into squares that are approximately the size desired. Each piece is placed on a small thin board which is the size and shape of the tile, and the four sides are re-cut. A fine wire, attached to a small metal rod which is bent in the shape of a U, is used for trimming the clay.

Various other sizes and shapes of tiles are made to be used for roofs, moldings, et cetera. These are cut in the approximate shape and size desired and placed on a mold which has been dusted with arenilla. Another mold of identical shape is pressed against it and the excess clay is trimmed off around the edges. It is then placed on another form of the same shape, which has also been dusted with arenilla, and allowed to dry for two weeks. The tiles are then placed in the sun for two days. The firing process is the same as for the pottery, which is described later.

Building of pottery. -- The work table is comparatively high, with a square opening cut on the back side, where the potter sits. This arrangement enables the potter to work more conveniently. Attached to the table is the wheel, which consists of a small metal disc fastened to a metal rod that serves as an axis (see Fig. 22). A large wooden disc, called the "fly wheel," is attached to the lower end of the rod. The potter spins the fly wheel with one foot, and the small disc at the top revolves. A long bar of wood, attached to the front of the table, serves as a brace for the potter's feet and also as a foot rest (see Fig. 23).
Balls of clay of uniform size are stacked by the side of the potter. Some potters work with balls large enough to make only one piece of pottery, while others use larger balls, one of which makes several articles. The potter places the clay on the wheel and forms a mound. He then shapes his vessel from the mound, using only his hands. He keeps the clay moist by dipping his hands into a bowl of thin slip. In finishing the vessel, the potter uses a small piece of metal or a piece of broken pottery. When finished, the vessel is cut from the wheel or mound of clay by a string. The string has a small piece of wood attached to each end, which makes it easier to hold the string taut while cutting.

Fig. 22. -- The potter's wheel. 

In making the toy dishes, the potter first shapes his clay into a cone. With the aid of a small tool, in a few
seconds' time, he creates a tiny dish that may vary in height from three-eighths of an inch to three inches.

In some of the factories each potter has a room to himself, while in others, several work on one long table. Music is used in one factory to speed production. Some of the smaller factories use boys to turn the pottery and the rooms are small and dark.

As soon as a worker finishes a piece, he places it on a board at his side; and when this board is filled, the pottery is carried away to dry (see Fig. 24). At some factories it is placed in the sun immediately, while at others it is kept inside two weeks before it is placed in the sun.

One factory uses piece molds. Thin slabs of clay are pressed into each part of the mold and the clay is carefully worked into all parts until it is about the same thickness everywhere. The thickness is tested, and as each section is completed, the edges are trimmed with a wire. When all parts are finished, they are put together while still in the mold, by scratching the edges and cementing them with slip. The parts of
the mold are then bound together by wire. When dry enough, the vessel is taken out of the mold, trimmed and smoothed.

One small factory produces small ducks and many kinds of grotesque little animals. The bodies of these animals and ducks are made on the wheel and the other parts are modelled by hand and attached to the bodies. Small slits are put in the backs so that they may be used for banks (see Fig. 32 C).

Types of kilns used. -- There are several types of kilns used in the Guanajuato region. One type that is prevalent back in the mountains is shaped like an inverted bowl. It is built of brick and lined with tile to hold the heat. In the front of the kiln, at the bottom, is a small opening. Inside the kiln, shelves are placed around the wall. The pottery is placed on the shelves by using a long-handled tool which resembles a shovel. When the kiln is filled, a fire is built inside the door of the kiln.  

Another type of kiln is built of cement and brick. It is almost square and not quite as high as it is wide. A rim is built around the top of the kiln, where the pottery is stacked for the bisque firing. There is a small opening at the bottom of the kiln. A wood fire is built in the opening. As soon as the fire burns down, the coals are pushed inside. The glazed pieces are placed on metal trays which

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2 As described by a native potter to Daniel Torres, a student in the Summer Field School, 1945.
have handles. When a good bed of coals has been made, the trays are placed in the kiln, directly on the coals. Several of these trays are put in the kiln at a time. A metal rod, similar to a poker, is used to handle the hot trays. Another fire is then built in the doorway, and as soon as it burns down, the coals are pushed inside the kiln. This firing requires about thirty minutes. The pieces are red hot when the tray is lifted out. It is allowed to cool only a short time, and while still hot, it is packed into the baskets and taken off to the market. Only small dishes and toy banks are fired in this type of kiln.

The larger kilns are also built of adobe brick. Some of the factories build two or three kilns side by side with a roof of sheet metal over all. The kilns are usually of cylindrical shape, about fifteen feet above ground and nine feet in diameter. There is an opening for loading and unloading, placed several feet above the ground with steps leading up to it. Some also have steps leading to the top. The compartment for the fire is mostly underground, with an opening into a room or shed where cord-wood is stored.

Bisque firing. -- In these kilns thousands of pieces may be fired at a time. For the bisque firing, the pottery is stacked upside down in layers (see Fig. 25). When the loading is completed, the pottery is covered over with a layer of broken sherds. It takes six hours to complete this firing. The pottery is then tested by tapping each piece;
pulverize the minerals and glass is constructed by building a circular wall of brick and cement around a base of stone that has a very hard, smooth surface. The diameter of the vat is about four feet. In the center is an axis of wood, with a metal rod which fits into the rock bottom. Two large stones, of the same material as the bottom, are fastened with metal braces and wire to the axis. Near the center is a cross-piece of wood, to which a burro is hitched. He goes around and around the tank and grinds the material (see Fig. 27). In La Industria, at Dolores Hidalgo, most of the mills have motors attached. In the smaller mills this is done by hand, the mills being built on a smaller scale.

Glazing. -- Before the pottery is glazed, it is scrubbed with a crude straw brush and water. It is then stacked on
the floor around the worker, who dips each piece into a bath of glaze or enamel, and places it on a long board (see Fig. 28). When the board is filled, the pottery is carried to the decorators. The pieces are inverted and stacked, one on top of the other, around the decorator.

The tiles are held at an angle and the glaze is poured over them. When dry, they are stacked, ready for decoration.

Decoration. -- The tiles are decorated freehand, but each worker knows the design and puts on a certain part of it. When the tile has gone through the hands of three or four workers, the design is complete. Some of the designs are transferred by using a heavy piece of paper which has lines perforated on it. Charcoal is dusted over the paper and it goes through the holes, leaving the design on the surface of the tile. The design is painted with quick strokes of the brush; and this requires much skill, as the surface is porous and mistakes cannot be corrected. The brushes are made by the potters. Hair from the tail of a horse or mule is used for the bristles. Circular lines are made by placing the tile on a
revolving stand.

Revolving stands are also used for putting lines on the pottery. The men sit on low stools and have their bowls of differently colored glazes close by on the floor. Each worker puts the complete design on his piece of pottery (see Fig. 29).

Glaze firing. -- If the glaze firing is confined to bowls, they are stacked in vertical rows, small tripods of clay being placed between the bowls in order that they may be separated after the firing. Between the layers the potters use small unglazed clay discs that have holes in the centers. Clay pipes about eight inches in diameter and about eighteen inches high are placed at intervals, one on top of the other. They are used to conduct the heat uniformly through the kiln.

When objects of different shapes are packed in the kiln, more care is required. Shelves of unglazed clay are placed on the pipes and each piece is set on a tripod.

When the kiln is loaded, the opening is bricked up and sealed. This firing requires twenty-four hours. After cooling forty-eight hours, the kiln is unpacked by one man. Small boys then pack the pottery into huge baskets and carry

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Fig. 29. -- Decorating the pottery.
it away to be separated from the tripods and stored in the salesroom.

There is little difference between contemporary techniques and those used during the Colonial period. Power machinery is being used to turn the mills at one of the factories. Much of the pottery retains the old forms and decoration. Mass production tends to lower the quality of the pottery, but ware of good quality is still found in this region.

Forms

The great majority of the people of the Guanajuato region still use culinary ware of clay. This is probably due to its cheapness. New forms are being made but many of the forms of the pre-Conquest and Colonial Mexican pottery are still retained.

In the common ware used for culinary purposes are found ollas, pitchers and bowls of various sizes and shapes (see Fig. 30). The pitcher occupies a prominent place in the life of the Mexican people. It is used for decoration in the kitchen; it is the eternal companion of the beggar; it is a comfort to the prisoner and a pledge of love between poor sweethearts. In the homes it is indispensable; it is used by the poor for gruel and coffee. The small pitchers are used for the children's milk.³ (See Fig. 31 A).

³Gerardo Murillo (Dr. Atl, pseud.), Los Artes Populares En Mexico, I, 54-55.
Fig. 30. -- Pottery market, Guanajuato.

A variety of forms is also found in the better grade of pottery. A small bowl form which serves as a cup and for many other purposes is produced in mass quantities (see Fig. 32 A). Plates, cups and saucers, and pitchers are produced (see Fig. 32 B). There are interesting little covered jars that are used for salt or sugar (see Fig. 30 C). Vases are not so numerous. The vase shown in Fig. 33 is similar in form to a jar of the Colonial period (see Fig. 12).
Fig. 31. -- Pottery from Guanajuato.
(A) Pitcher decorated in two shades of brown glaze.
(B) Saucer decorated in polychrome style.
(C) Sugar jar decorated in polychrome style.

The Chinese influence is seen in the form.

Guanajuato is famous for its toy pottery and produces it in mass quantities. The pottery is of excellent quality and is noted for its smallness (see Fig. 34). Large quantities of little banks are produced, some in the form of grotesque animals.

**Motifs**

There has been very little change in motifs since the Colonial period. Most of the common ware is of a light brown color. The predominant motifs are birds, flowers, and leaves. They are usually painted in combinations of brown,
Fig. 32. -- (A) Bowl decorated in polychrome style, from Dolores Hidalgo.  
(B) Pitcher decorated in dark brown glaze and incised lines, from Dolores Hidalgo.  
(C) Toy bank from Guanajuato.

orange, green or white.

The white ware of Dolores Hidalgo is not very attractive. The design is an uninteresting arrangement of dashes of color, applied in a careless manner (see Fig. 32 A).

Some of the pottery is glazed in green or brown with little or no decoration. Incised lines are used with a dark brown glaze on the pitcher illustrated, from Dolores Hidalgo (see Fig. 32 B).

Some excellent polychrome pieces are found in Guanajuato.
The background is a light gray. Both Spanish and Hispano-Mexican, or Pueblan, influences are seen in the decoration. Flowers, leaves, and birds are the principal motifs used, and many of the designs are composed entirely of leaves. Green, blue, orange and yellow are the colors used for the decoration.

The vase from Guanajuato

Fig. 33. -- Vase showing Chinese and Mexican influence, from Guanajuato.

Fig. 34. -- Toy pottery from Guanajuato.
(see Fig. 33) shows Mexican influence, the blue in the leaf design standing out in relief while the handles are green. The lemonade set, from Guanajuato, is also of the same type. The design is painted in blue, green, orange, and yellow, the blue and yellow standing out in relief (see Fig. 35).

The saucer and sugar jar show the Spanish influence, the design being painted with a thin flat pigment (see Fig. 31, B and C).

Most of the tiles are decorated in blue, orange, yellow and green, using combinations of flowers, leaves and lines for motifs (see Fig. 36). The tile from Guanajuato is an exception (see Fig. 37). This design is almost identical with an eighteenth century tile design from Puebla. Both designs are in dark and light blue and show a Moorish influence.

Thus, it was found that there has been little change since the Colonial period in the techniques used by the potter. However, the pottery is now produced in mass quantities and the length of time required to produce it has been shortened. This tends to lower the quality of the
if the ring is clear the piece is good, but if it is dull the piece is defective. There is a great loss by breakage in firing.

**Second firing.** -- If the pottery is to be white ware, it is given a bath in a mixture of kaolin and water. Into this mixture the piece is dipped with a twirling movement to prevent finger prints being left on the surface. It is necessary for the pottery to be fired again before it is ready for the glaze firing. This process is similar to the glaze firing, which will be discussed later.

**Preparation for glazes.**

Fig. 25. -- Bowls stacked -- The glaze being used at the present time is called frit glaze and is composed of tin, lead, and pulverized glass. A small kiln of direct fire is used to melt the metals. The lead is melted first; then the tin is added. The mixture is stirred constantly until it becomes a bright yellow and crystallizes. When cold, this mixture is combined with water and pulverized. Old bottles and bits of broken glass are also mixed with water and pulverized. The glass and the minerals are then weighed and combined in the proper proportions (see Fig. 26). The mill used to
Fig. 36. -- Tiles from Dolores Hidalgo

contemporary ware. There are new forms in the pottery, but most of the old forms and motifs are also retained.
Fig. 37. -- Tile showing Moorish influence, from Guanajuato.
CHAPTER V

CONCLUSION

The problem undertaken in this study was to trace the changes that have taken place in the techniques, forms and motifs of tiles and pottery of the Guanajuato region in Mexico from the pre-Conquest period to the present day, and to investigate the causes of these changes.

Pre-Conquest pottery of the Guanajuato region is similar in character to that of the Aztecs in the Valley of Mexico, and both resemble the archaic style which was rather generally distributed over the Mexican area. This shows that cultural exchange existed between the tribes. The pottery of Guanajuato was intimately connected with the daily lives of the inhabitants. A study of their cooking ware reveals to a certain extent the nature of their domestic life. There are bowls of various sizes and shapes for cooking and storing food, ollas or water-jars, and jars of different shapes for storing food. By examining the ceremonial vessels one may get an insight into their religion. Some of the forms are excellent and unusual. The motifs are symbolic, and geometric designs predominate.

The coming of the Spanish in the sixteenth century
brought changes in techniques, forms, and motifs. Settling tanks were used to refine the clay. The potter's wheel and glazes were introduced. Well-constructed kilns of clay and brick made it possible to fire the pottery more efficiently. After the Christianization of the Indians, many of the old ceremonial forms ceased to exist, and new forms were needed. Anthropomorphic and zoomorphic pottery disappeared. Models were brought from Spain, which indirectly brought Moorish and Italian influences to bear on the forms and motifs of the pottery of Puebla. Many new forms appeared; for example, cups, plates, basins, ceramic bath-tubs and cisterns. Porcelain imported from China was also imitated by these potters. These influences were likewise seen in the pottery of the Guanajuato region. Here the potters also decorated their ware in the Mexican style. They used floral motifs and birds in their designs and painted them in greens, reds, blues, siennas, and browns, on white and light brown backgrounds. Tile manufacturing grew into an important industry because of the demand for tiles to decorate churches, homes, and public buildings. The Indians of the outlying districts were little influenced by all these changes. They kept the primitive techniques and forms.

In the beginning of the nineteenth century there was very little interest in pottery. The revolution had exhausted the people. During Maximilian's and Diaz' rule, interest was centered in imported ware, European and
Chinese. As a result, there was very little native pottery produced during this period. A period of struggle and strife followed Diaz' rule. Labor unions arose and mass production of pottery began. More time is required for the production of fine pottery than is required for the cheap ware. The production of fine pottery proved too expensive and the quality of the pottery was lowered.

Contemporary techniques show few changes since the Colonial period. The preparation of the clay is the same with one exception: the clay and water mixture is now passed through the sieve only once, but the Colonial potters strained it twice. The construction of the potter's wheel is practically the same; a metal shaft has been substituted for the wooden shaft of the Colonial wheel. Pottery continues to be built by the mold, modelling, and coil methods. There is no change in the method of making tiles. The length of time required to complete the production of tiles has been cut to approximately one-fifth of the time formerly required, while the production time for pottery has been cut approximately one-sixth. There are variations in the size, shape, and construction of the kiln, but the changes are of little importance. The firing processes are the same, but the kiln is not loaded as carefully for the glaze firing as in the Colonial period. Glazes are prepared in the same manner, with a few exceptions. Power machinery is used to turn the mills in one of the factories,
although manpower and burros are still being used elsewhere. Old bottles and bits of broken glass are used as a substitute for arenilla in the glazes.

A few new forms are seen: the pitcher, saucer, vase, salad bowl and sugar and salt jars are the most important. Much pottery is decorated with the old motifs, but some is decorated entirely with parallel lines. The colors used for the designs are the same and the background colors are light gray and brown. Green and reddish-brown glazed ware is also produced. The city of Guanajuato is famous for the manufacture of toy dishes. The tile industry is still important in Dolores Hidalgo.

As a result of this study the following record of the evolution of pottery designs and techniques in the Guanajuato region may be presented:

1. The Colonial method of preparing the clay was an improvement over the pre-Conquest method. The use of the settling tank made it possible to refine larger amounts of clay at a time. The Colonial potter strained the mixture of clay and water twice, but the present-day potter strains it only once. The methods of kneading the clay are the same today as in pre-Conquest days, the men working it first on the floor with their feet and later with their hands. The pre-Conquest woman used a metate and kneaded her clay as she did her dough. The Colonial technique was that of the present-day potters, who use stone
benches and work the clay until it reaches the proper consistency.

2. Tiles were introduced in the Colonial period. There have been no changes in the techniques since that time, but the production time has been cut approximately one-fifth.

3. The introduction of the potter's wheel in the Colonial period reduced the length of time required to produce a piece of pottery. As a result, larger amounts of pottery were produced. Primitive methods, which included modelling, coil, and the use of basket and baked clay molds, continued to be used by the Indians in the outlying districts. All of the techniques mentioned above are in use today. A metal shaft has replaced the wooden shaft on the potter's wheel. Production time has been cut approximately one-sixth.

4. The pre-Conquest potter used heaps of wood to fire his pottery. The Colonial potter used well-constructed kilns of clay and brick. The kiln used for bisque firing was small and square. The kiln used for the glaze firing was also square, but it was much larger, with three loading chambers for the pottery. Wood was used for fuel. There are several types of kilns in use today. They are built of brick. Some are round, some are square, and others are shaped like an inverted bowl. Some are small and some are large, with steps leading to the top. In order that they may be loaded and unloaded from the top as well as from the
Metal roofs are placed about four feet above some kilns, while others are open. There is only one chamber for the pottery, and in all of the large kilns it is open at the top. Wood is still used for fuel.

5. Incised lines, relief, negative painting, painting with clay, and polishing were the methods used in decorating the pre-Conquest pottery. Glaze was introduced during the Colonial period and most of the pottery of this period was decorated with glaze. The enameled or glazed background was applied by dipping the object into a bath of glaze, and the design was applied after the glaze was dry. Handmade brushes were used to paint the design. Primitive methods continued in use also. At the present time all of the above methods are in use.

6. There have been few changes in the preparation of glazes. The ingredients are still ground between the smooth flat surfaces of stones just as they were ground by Colonial potters. Man-power and burros were used in the Colonial period and they are also used today, but power machines are now used in one of the factories. The maiolica glaze of the Colonial period was composed of lead, tin and arenilla (molding sand). Today, old bottles and broken bits of glass are used as a substitute for arenilla.

7. Colonial methods of firing were more efficient than those of the pre-Conquest period. Two firings, bisque and glaze, were used on most of the pottery, while primitive
pottery had only one firing. Two firings are used for most of the pottery today. Now, the toy dishes and small banks are stacked on top of the kiln, but the rest of the pottery is placed inside the kiln for the bisque firing, where it is subjected to a much higher heat. The kiln is loaded for this firing in the same manner as in the Colonial period. In loading the kiln for the glaze firing, the Colonial potter took every precaution. Each piece was placed on a tripod, inside of a clay box. Close-fitting lids prevented any changes in enamel that might be caused by smoke. The marks of the tripod are seen on many of the bowls of today, since they are stacked one on top of the other with tripods to separate them. Clay discs are used to separate the layers, and hollow clay cylinders are used to conduct the heat through the kiln. The better class of pottery is stacked more carefully. Each piece is placed on a tripod and clay shelves are used. The toy dishes and small banks are placed on metal trays and placed directly on the coals.

8. Bowls of all sizes and shapes, jars and jardinieres, ollas, and ceremonial pottery are found in the primitive pottery. Water-jugs, jars for storing liquids, plates, covered dishes, cups, ceramic bath-tubs, and cisterns, salt cellars, lavers and other ritual pottery were the forms added during the Colonial period. As a result of the Christianization of the Indians, primitive ceremonial forms
were discontinued. European and Chinese influences are seen in the forms of this period. The old forms of the pre-Conquest and Colonial periods are retained in the pottery of today. The new forms are pitchers of all sizes and shapes, saucers, sugar and salt jars, and salad bowls.

9. The geometric and anthropomorphic decoration of the primitive period has disappeared. Feet are no longer used on the bowls. The principal motifs of the Colonial period were the human figure, animals, birds, and flowers. They were the result of Spanish and Chinese influence. In the seventeenth century the designs were painted in blue monochrome. At the beginning of the nineteenth century the polychrome style of Talavera came into vogue and continues to be used at the present time. Green and brown ware with transparent glaze is also produced today. Birds, flowers, and leaves are the motifs used on the pottery. They are painted with a thick glaze as a rule, making the design stand out a little above the background. Some of the pieces have a combination of thick and thin glaze in the same design. Special orders are taken at one factory, and the name of the purchaser is worked into the design.

The political history and art of Guanajuato are very closely related. While the cost of labor is higher since the rise of unions, man-power is still cheaper than power machinery. The low cost of production by the old methods
is probably the reason that there have been so few changes in techniques. Some of the factories are still operated by members of one family (three generations of one family were operating one of the factories). The larger factories employ outside labor. Mass production has lowered the quality of the pottery as a whole.
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