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About the authors . . .

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PREFACE

During the past few decades, interest in the archaeology of colonial Spanish America and its borderlands has accelerated rapidly. It has become increasingly apparent to culture historians that one particular category of artifact, generally associated with Hispanic sites of the late 15th through 19th centuries, can provide considerable pertinent data regarding the shifting crosscurrents of human activity, as well as offer a means for dating cultural or archaeological deposits. Maiolica pottery, an earthenware covered with lead glaze opacified and whitened by the addition of a small percentage of tin oxide, is easily distinguishable from native pottery, is comparatively plentiful, and has enough stylistic variability to suggest cultural change through time and space.

The name maiolica was bestowed on the ware by 14th or 15th century Italians, who erroneously believed such pottery traded to them from the Kingdom of Aragón in Spain via the island of Majorca was produced at the latter locale. Although the Italians also contemporaneously made tin glazed earthenware, at that time maiolica referred to one specialized variety that had undergone an additional enrichment of other metallic oxides. In the western Mediterranean the manufacture of such maiolica was a secret of the Spanish Muslims. In time, however, the definition of the term expanded to include all tin glazed types regardless of overlying decoration, if any. The Spaniards quickly adopted the word, and the spelling used in this book is from the Italian and Spanish form. Later Anglicism preferred the alternate majolica spelling (i and j are interchangeable in Spanish) to avoid three consecutive vowels. To confuse things even more, English tin glazed ceramics were known as delftware and Italian tin glazed products were called faience in the rest of western Europe.

Maiolica was common tableware in Spain at the time of the Spanish Conquest of the New World. As late as the 1960s the specific Iberian source for pottery reaching the Western Hemisphere had not yet been determined, nor had criteria been established for distinguishing Spanish-made products from colonial counterparts. The processes for the transfer of ceramic technology to the Spanish colonies were not well understood. Places of overseas production were not pinpointed, with the exception of the city of Puebla de los Angeles in central Mexico. At Puebla the taste for architectural ceramics (wall tiles, roof tiles) of maiolica on 17th and 18th century structures was an avid one, and to some degree the craft survives there to the present time.

In the late 1940s and 1950s, building on the work of Mexican and American art historians who, earlier in this century, published studies of museum and private collections of colonial maiolica, John M. Goggin, of the University of Florida, pioneered research in the subject through archaeological analyses. He worked primarily with fragments of common household utensils recovered in the course of scientific explorations rather than solely with whole special objects such as those favored by the art historians. After a background journey to Spain, Goggin paid special attention to materials from the West Indies and his home state of Florida. He painstakingly arranged the pottery into a stylistic and chronologic frame of reference; his study was published posthumously and remains a basic handbook. However, no large-scale excavations on the American mainland that focused on the stratigraphic recovery of maiolica were accomplished prior to Goggin's premature death. Hence the validity of his proposed taxonomy, with its high percentage of types suggested to have originated in Mexico, remained essentially untested outside of the Caribbean.

A field associate, José M. Cruxent of Venezuela, has continued the maiolica studies started in the Caribbean. His work promises further information about a grouping of Iberian and other European earthenwares exported from Spain to the Caribbean. We, a potter-ceramic historian and an archaeologist with long experience in the prehistoric American Southwest and Mexico, began research concerning the transfer of maiolica technology and the subsequent evolution of colonial styles in the hope that our combined vantage point might enhance our understanding of the maiolica problem.

For clearer perceptions of the dimensions of maiolica expression in Spanish life, it was first necessary to probe it in situ from as many angles as possible – to search documents relative to potters and their mode of life, their methods of pursuing their craft, their sales of their products in the motherland and abroad; to examine specimens wherever they were to be found, whole or partial, medieval or modern, in the attempt to sharpen visual and tactile judgments and become familiar with the regionalisms characteristic of Spanish pottery; to obtain potsherds or clay samples for physical comparisons with American specimens; to talk with Spanish experts who all too frequently neglect to share their knowledge in print and, on occasion, to request their reactions to examples from the New World; to scout bookstores for those obscure, sometimes valuable, items that do get published from time to time but seldom get widely distributed; to visit workshops where in conservative countries ancient methods sometimes are perpetuated; to try to trace interactions of artisans and pottery-making concepts, as well as actual trade of vessels, between Spain and her neighbors. For these purposes over the course of the past fifteen years we made a number of repeated study trips of varying lengths to Spain, Portugal, the Canary Islands, Italy, England, France, and Morocco.

Using the same multi-pronged attack on the basic problem on this side of the Atlantic, comparable fact-finding journeys have been undertaken to areas where the Spaniards were deeply entrenched and where, it was reasoned, they could have established maiolica industries based on their previous experience. Mexican participation, past and present, in the craft was an accepted fact. In Mexico we observed a number of collections in private and public hands, a few meager examples obtained as a by-product of work concerned with Indian remains, and modern maiolica potters at work in three localities. At that time maiolicas with archaeological associations were sadly lacking.

Moving southward, we learned that a small provincial maiolica industry had flourished during part of the colonial period in Guatemala, and in fact it continues today. Its output, however, bears only a meager resemblance to the more familiar Mexican types. Collections in the Dominican Republic contained Spanish and other European types, some probable Mexican imports, but no local manufacture was indicated. Panama furnished proof of another colonial maiolica operation. It existed perhaps for only fifty years prior to the late 17th century destruction of Panama Viejo by pirates. Colombia, Ecuador, and Peru similarly produced some evidence that maiolicas had been made locally, but their trade was with Spain or Panama and not Mexico.

On the northern flank of the Viceroyalty of Nueva España, evidence is lacking that such a sophisticated pottery as maiolica ever was made there by either colonial Spaniards or natives under their tutelage. Nevertheless, specimens of the ware have been recovered across this broad territory. Three main reasons prompted us to examine firsthand all known maiolica collections from California, Arizona, New Mexico, Texas, and Florida, and the north Mexican states of Sonora and Chihuahua. First, more archaeological studies in sites of the Spanish colonial era have been accomplished in these peripheral zones than in central Mexico and with a greater yield of such artifacts obtained under controlled circumstances. Second, most of the sites involved – missions, presidios, government headquarters, and haciendas – have been well dated. Third, such a review could provide insight to trade networks connecting sectors of the borderlands with the capital; these networks functioned at different times according to the ebb and flow of the empire or, in the case of Florida, also with Spain. Goggin utilized some of this same corpus of data, but work since his death has greatly expanded the amount and distribution of the materials available for analysis.

Of special importance in reaching the crux of the problem of New World maiolica obviously was some digging in colonial deposits in Mexico. Even though Puebla generally was credited with dominance of the colonial maiolica craft, there was little evidence to suggest any such activity there prior to the 17th century. It seemed plausible that the introduction of the technology for manufacturing tin glazed ware and perhaps the first stages of the regional ceramic continuum had taken place somewhere nearer the capital, where the Spanish population was most concentrated throughout the first century of occupation. Therefore, we considered it especially fortuitous that two major engineering projects located not only in Mexico City but at the very heart of the viceroyalty, its central plaza, at last afforded us an opportunity to pursue this notion. In both cases archaeological interests were of secondary concern to the construction personnel in charge; retrieval of artifacts and recording methods did not always meet our standards; and our analysis, the topic of this presentation, occurred a year after excavations had terminated. Even with these drawbacks, ceramic collections of the magnitude resulting from these municipal programs – representing, as they do, a wide spectrum of time, origin, style, and caliber – have been rare indeed anywhere in Spanish America.

In 1972 we were delighted to gain permission from Dr. José Lorenzo and the Instituto Nacional de Antropología e Historia to study the maiolica recovered during construction of the Mexico City Metro, or subway. Part of these excavations extended through the ancient *traza* and around the plaza. Our work was carried out at the *bodegas* of the viceregal museum at Tepotzotlán, as magnificent a colonial ambiance as anyone could have desired. A second important opportunity arose when the Mexican government undertook to prevent further uneven slumping of the massive Mexico City Cathedral, which was slowly sagging out of plumb because of the instability of the old lake deposits and the Aztec rubble beneath it. The cathedral was situated on one side of the Plaza Mayor. For the first time in central Mexico, pits and trenches beneath the edifice yielded an impressive array of tin glazed ceramics from a reasonably reliable stratigraphic context. Through the cooperation of the Dirección de Restauración de Inmuebles Federales and the field archaeologist, Prof. Jorge Olvera, we were assigned work space in an upper level room in one of the cathedral's belltowers, where the view across ancient roof tops and the daily deafening boom of the bells brought the colonial makers and users of maiolica very close at hand.

Special thanks are given to Richard Ahlborn and Jacqueline Olin of the Smithsonian Institution, and Helene Warren of the National Park Service, for their interest in vital physical analyses, and to our scores of colleagues scattered throughout the Spanish world and its fringes who have shared information, specimens, and good times. We are especially grateful for funding from the American Philosophical Society, Philadelphia; the Museum of International Folk Art, Santa Fe; the University of Colorado, Boulder; and the Smithsonian Institution, Washington. The Southwestern Mission Research Center in Tucson provided aid in publication, and appreciation is expressed to Carol Gifford, editor for the Department of Anthropology, and to the University of Arizona Press and its capable staff for production of this volume.

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1. INTRODUCTION

In 1521, as the siege of the Aztec capital of Tenochtitlán tightened, the Spanish troops under Cortés were forced by military expedience to destroy the city block by block in order to fill in many of the canals that laced the island metropolis (Prescott 1936: 587). Once the conquest was completed, the religious convictions of the invaders demanded that the entire sacred precinct be cleared of its huge monuments dedicated to a pantheon of what to the Spaniards were monstrous gods. These drastic measures produced a scene of chaotic devastation, and once ornate temples, balustrades, and platforms were reduced to mountainous heaps of rubble. Sad on the one hand, archaeological treasures were created on the other. Some of these shattered remnants of the Indian center gradually were reused in construction or covered over with fill dirt, but for years many were left where they had fallen as mute immovable testimony of the past. Predictably, drifts of new trash soon banked around their craggy perimeters as conquerors and conquered alike settled in to rebuild anew.

The Spanish town that arose over these ruins during the 16th century generally conformed to the plan earlier established by the Aztecs, and suffered the same drawbacks because of its waterlogged locale. Throbbing at its heart was a grand square, or Plaza Mayor, in the same area where the aboriginal ceremonial enclosure formerly had opened, bound on one side by a canal daily teeming with a throng of canoes bringing supplies into the markets and ultimately bordered by palaces of the elite. In the early years of occupation, Cortés's colossal home of audience chambers, apartments, shops, courtyards, and two kitchens stood on the western side of the square on a spot once the special property of the vanquished Axayacotl. Eventually most of this structure became the viceroy's residence and Audiencia headquarters, which, as was customary at the time, incorporated ground level stores facing the plaza. By 1531 a second Cortés palace had been erected on the eastern flank of the square where the ill fated Moctezuma had lived. After the death of the conqueror, it was sold to the Crown in 1562 to serve as a seat of the provincial government. The Ayuntamiento was quartered in a large structure, also housing a jail and a meat market, that overlooked the principal waterway along the southern edge of the plaza. Throughout the 16th century a modest church sat in mid plaza slightly north of center, facing the first Cortés home, the Casas Viejas. Completed about 1532, the church remained standing until 1626 when it was dismantled. On the streets leading away from the square were the establishments of the richest citizens and hospitals and monasteries of the many religious orders that flocked to New Spain to spread the faith. Nearby the workshops of the hundreds of various kinds of craftsmen who provided the innumerable necessities for daily life were grouped in traditional ways, although potteries apparently were not among them, and around the plaza itself was a congestion of market stalls *(cajones),* where handicrafts and colorful assortments of foodstuffs were hawked. Farther out from the town's center were houses and gardens of the lesser folk. In each of the four directions beyond the *traza,* the restricted Spanish quarter, were districts set aside for the Indian populace (for more complete descriptions and maps see Artes de México 1964; Calnek 1972; Cervantes de Salazar 1963; Kubler 1948; McAndrew 1965; O'Gorman 1938; Toussaint 1938, 1973).

The northern sector of the Plaza Mayor experienced a more varied history than the other three sides of that unoccupied expanse and it is briefly recounted here because of its relevance to the archaeological materials to be discussed below. First, quite early the over-all size of the square was reduced from Cortés's original grandiose plan when, during his absence in Honduras, the city officials granted allotments there to private individuals, thus intruding on the space designated as a municipal zone. The Actas de Cabildo of Mexico City dated February 8, 1527 (Mexico City 1871, Vol. 1: 108-9; Galindo y Villa 1925, Fig. 5; García Cortés 1974: 28; Olavarría 1945: 10), indicate that the block of land in the northwest end of the Plaza Mayor was divided into three lots in a north-to-south alignment and were given to three highly placed men, and a series of three other lots, facing west onto a small square in front of the Casas Viejas of Cortés, was designated for shops of makers of musical instruments. A new street was plotted to separate this western block from a similar block, or *manzana,* at the northeast corner of the plaza that was sectioned into six lots of equal size. Three of these fronted the new street and three, located back-to-back with them, faced the old Calzada de Ixtapalapa that ran along the eastern side of the Plaza Mayor. These parcels went to six other prominent citizens. Although theoretically recipients of such lots were obliged to build homes and wall their properties within a prescribed period of time, compliance was not universal. In the absence of documentation, it is not known whether residences actually ever were erected on any of these plots, but a map of Mexico City thought to date about 1555 pictures one small structure in the area of the plaza north of the original church; it might have been a home on one of the lots of the eastern block (Toussaint 1938: 137, 142).

Within nine years after these grants were made, it was decided that a new cathedral eventually should be erected to replace the inadequate original church. Therefore in 1542

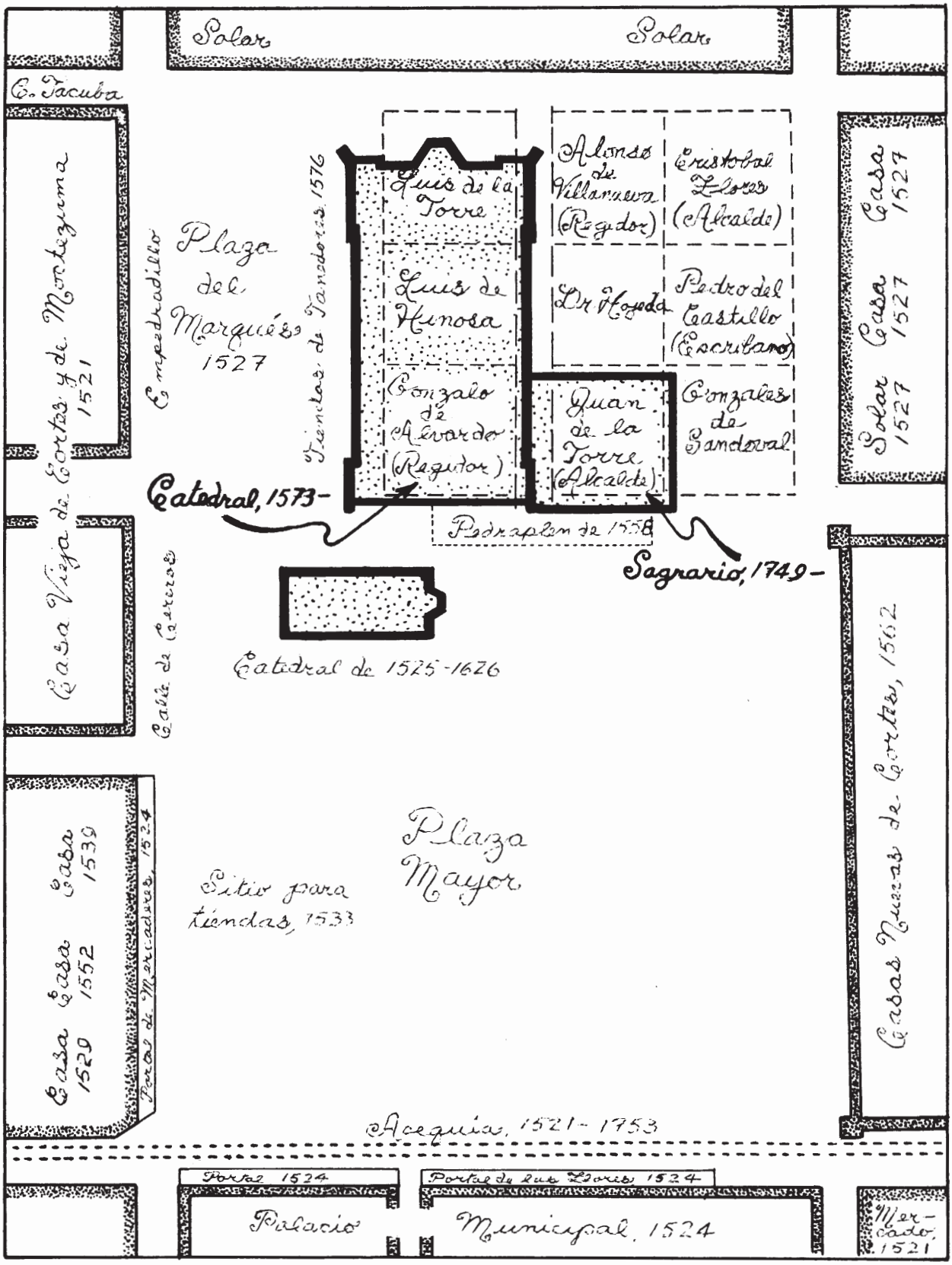


Fig. 1.1. The Plaza Mayor of Mexico City as it was laid out in the 16th century, with the addition of the 18th century Sagrario. Note the orientation of the Metropolitan Cathedral and Sagrario over privately held lots.

expropriation proceedings were completed, perhaps involving several of the earlier allotments, to allow the building of a new structure just northeast of the apse of the first church and likewise oriented west-east (García Cortés 1974: 31). Construction started in 1558, and the church was grandly visualized as a counterpart of the cavernous Gothic monument in Sevilla. A map dated 1562–1566 in the Archives of the Indies indicates a cement foundation slab for the building was then in place (Kubler 1948, Vol. 2: 295; McAndrew 1965: 116; Toussaint 1924, Vol. 12: 22–23, 1938, Fig. 1). Because it was soon realized that the projected building was going to be too expensive and too difficult for novice masons to construct in the absence of an experienced master architect and, according to Zorita (1909), because it was dangerously exposed to repeated flooding, the foundation stood unused for eleven years. During this time measures were taken by the Church to acquire additional land closer to the northern limits of the plaza.

North of the bare foundation, the 1562–1566 map also shows a very large structure designated as a school, perhaps the original university building. The possibly exaggerated scale of the edifice suggests it might have extended over parts of the future Sagrario and Metropolitan Cathedral lands. Any former houses there and the central street had disappeared by that time. Along its western side appear a row of *portales,* likely part of the instrument stores.

The portion of the northwestern block of three private lots was acquired by the Church officials through further expropriations, forcing the final Cathedral plans to be oriented south-to-north over these plots. The eastern wall of the Metropolitan Cathedral would then parallel the street separating this block from that subdivided in 1527 immediately to the east, and the western wall would be flanked by the stores to which the Church could not gain title (Fig. 1.1).

In the decade between 1563 and 1573, when the Escorial was being erected in Castile, large Indian labor forces were at work at the Mexico City Cathedral site operating water lifts to drain off the troublesome subsurface moisture, pounding thousands of *ahuehuete* vertical pilings into the plaza surface, hauling in by Spanish-introduced two-wheeled carts and spreading by typical Indian digging sticks a thick bed of ponderous rocks, and finally pouring a heavy cement layer over all this material to serve as a substantial base for the planned church above (Kubler 1948, Vol. 1: 178–79; México 1947; Toussaint 1924, Vol. 12: 18–19). On the occasion of the visit to New Spain of Don Geronimo de Valderrama, a document serving as an indictment of Spanish exploitation of Indian labor, now termed the Osuna Codex, illustrated the preliminary construction measures (Fig. 1.2; México 1947; México 1973). Torquemada also witnessed disoriented chunks of Aztec structures and sculptures being buried beneath that foundation (Torquemada 1943, Vol. 1: 303; Vol. 2: 146). The shops for musical instruments lining the western edge of the foundation were dismantled shortly thereafter, leaving a small unoccupied area presently called the Plazuela del Marqués.

Meanwhile, what happened on the spot to the east side of the Metropolitan Cathedral where the future Sagrario would stand is not clear, but a reconstruction of possible events there leads out of the 16th century. If a map dated

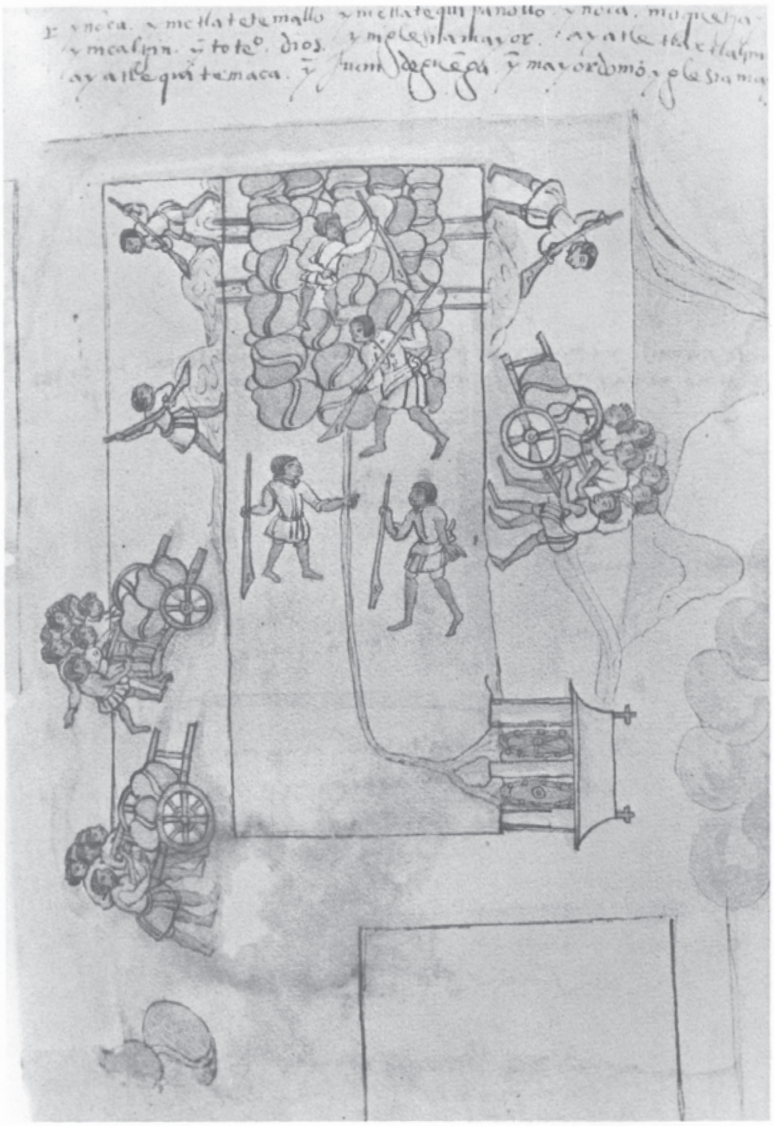


Fig. 1.2. Page from the 16th century Codex Osuna depicting Indian laborers preparing the massive rock foundation for the Mexico City Metropolitan Cathedral. Remains of their digging sticks (*coas*) have been found incorporated in the fill.

1596 is accurate, the land at that particular location may have been vacant then. A 1628 drawing depicting an imaginary aerial view of the city, looking back at it from a height somewhere northwest of Chapultepec, shows in the distance the Metropolitan Cathedral under construction with some associated buildings east of it. How much faith can be placed in this drawing is uncertain because some details of the Metropolitan Cathedral appear to be erroneous (Angulo Íñiguez 1955, Vol. 1: 400; Maza 1968, Figs. 2, 68). School buildings comprising a seminary are thought to have remained along the northeastern edge of the Plaza Mayor. At the end of the 17th century, a pictorial map executed in 1695 by Diego Correa and an oil painting by Villapondo show a large edifice attached to the east side of the Metropolitan Cathedral, over what in the 16th century had been a street and portions of several house sites (Maza 1968, Frontis., Figs. 23, 60, 64,

65). This L-shaped building projected farther south into the Plaza Mayor than did the newly completed entrances to the Metropolitan Cathedral, and it appeared to fill the space east to Calle Seminario. How long it had occupied that location prior to the end of the 17th century and its exact function have not been determined, but commercial shops perhaps are portrayed. Nor are documents known that state whether the building continued in existence until preparations for the Sagrario began in the middle of the 18th century. Another old plan of the 17th century shows a building along Calle Seminario with an unoccupied area between it and the Metropolitan Cathedral (Maza 1968, Figs. 64, 65).

A concentration of structures such as these and their utilization through time are not by any means the whole story of a given city in any century. To have real significance, those buildings have to be peopled, and that invariably means municipal controls. Of some continuing concern to the Mexico City Ayuntamiento were the accumulations of garbage and household refuse that clogged the canals and thickly spewed across vacant lots throughout the *traza,* as revealed by repeated ordinances against littering that went into the records (Gómez de Cervantes 1944: 102; Mexico City, Actas de Cabildo 1871; Romero 1973, Vol. 2, Pt. 1: 246–47). Mountains of trash and cast-offs on every corner of Mexico City were still reported there until the late 18th century (García Cortés 1974: 56–57; Romero 1973, Vol. 2, Pt. 1: 329–30; Rubió Mañé 1956: 19–27; Valle-Arizpe 1939: 428). The Spanish participants in this unsanitized age probably were oblivious to the rubbish because European centers from which they had come were no cleaner, and they ignored the plaza's uneven, unpaved, cluttered surface, the untethered animals that freely browsed the dirty streets, and the ugly middens that daily grew at the plaza margins.

Newcomers undoubtedly were impressed with the tides of commerce from across the realm washing in an eclectic wave of merchandise to be sold to ready Mexico City customers in an exotic marketplace, so crowded that it impeded traffic. Their journals describe the silks, lacquers, and ivory from the Orient; the gilded carriages and sumptuous costumes from Spain; the heavy silver services and precious jewels of Mexico. As Cervantes de Salazar in his famous discourse of 1554 wrote:

> The reason for the great size of the plaza is to prevent goods from being offered for sale in other places . . . In this one market-place weekly market days were established; here the auctions are held; here is found whatever there is for sale; and to this place the merchants of the whole province bring and import their wares. To this market-place also, to sum it up, flow in whatever things are most desirable in Spain (Cervantes de Salazar 1963: 41–42).

Understandably bedazzled, these same observers made little note of mundane household articles for sale in that same market, items so integral a part of the culture they were taken for granted. Yet for students of culture history, those are the very things that most directly reveal the way of life of the majority of the people. Examined judiciously, they can provide insight concerning the intangible aspects of the civilization not generally available for ready examination. One such ignored category of common goods was the ordinary ceramic dishes used daily in most 16th century colonial homes.

Pottery was an intimate part of Spanish life, especially in those areas dominated by Muslims from the 8th century up to the time of the American adventure. It served a thousand purposes ranging from water conduits to baptismal fonts to rabbit hutches. Of special interest because of its historical, cultural, and artistic implications is a particular Islamic contribution to Spanish ceramics that has endured from the 10th century to the present day. Now known in the Mediterranean world as maiolica, this glazed ware was achieved by adding a small percentage of tin oxide to the usual lead glaze solutions, thus promoting an opaque, semimatte, white background and at the same time reducing the fluxing action of the lead to enable designs painted over the surface to remain sharp during firing. Such tin glazed earthenware is known to have been abundant in Medieval southern Spain, where it was fashioned into elaborate display vessels as well as into humble tableware used in the lowliest taverns.

Given this background and knowing of the wholesale exportation to the New World of Iberian material culture, it might be assumed that the 16th century residents of the Mexico City *traza* ate from the same kind of Spanish plates as did their peninsular relatives. Since all kinds of artisans joined the swelling ranks of migrants moving to the promise of America, it also might be assumed that among them may have been potters who founded a colonial enterprise to meet colonial needs. However, because of the dearth of relevant archives and the absence of actual specimens, until recently evidence to support either of these premises has been lacking. Up to now the earliest known tin glazed ceramics in Mexico have been 17th century types believed to have been manufactured in Puebla, a small center beyond the mountains ringing the Valley of Mexico founded some ten years after the conquest of the Aztecs. Knowledge of the kind and derivation of the earlier 16th century tableware utilized by the colonial Mexicans of the capital has awaited current archaeological research.

2. ARCHAEOLOGICAL BACKGROUND

In a land rich in pre-Columbian relics, up to the present time there has been almost no Mexican archaeological interest in the abundant Spanish colonial remains. Such research as has been accomplished generally has been supplemental to other problems related more directly to the Indian rather than the Hispanic components of the colonial society. Architects, art historians, and antiquarians have relied for information on emergency repair measures applied to decaying monuments or the voluminous but usually incomplete, unindexed archives. As bulky as the latter are, they tend to deal with administration and legalities and not with technologies or material goods, which, as in the case of pottery, were so commonplace in the eyes of the colonial scribes as to merit no consideration. Obviously in regard to the 16th century, downtown Mexico City provides a significant opportunity for analyzing the transfer of such aspects of Iberian civilization to New Spain because it was not only the first center to be permanently settled, but throughout the subsequent centuries it remained the largest and most important. However, because its core – the Plaza Mayor and surrounding city blocks comprising the *traza* – has been continuously and intensively used since the first stone was put in place in Cortés's palace, no archaeological delving beneath the modern surface has been possible in that critical zone except that incidental to new construction or renovation (Fig. 2.1). Remains unearthed under such circumstances, or those that have received any attention, most often have been random Aztec sculptures, portions of pyramids, or caches of Indian pottery buried before or after the Conquest in the second decade of the 16th century.

Fig. 2.1. Late 18th century lithograph showing the Mexico City Metropolitan Cathedral still under construction. The Sagrario at its east side was already completed. The edifice known in the 16th century as the Casas Viejas of Cortés can be seen at the left.

Only within the past ten years have two large-scale municipal undertakings adjacent to the Plaza Mayor yielded rich arrays of Spanish or Mexican items, possibly pertaining to the 16th century, that have been saved and recorded. Due to their relative imperishability and widespread usage, the most abundant remains found have been ceramics, seldom intact but nevertheless potentially informative. Most commonly these have been utilitarian wares whose styling persisted for such long periods of time that they offer few clues of periodic cultural interactions or variabilities. Of more interest to archaeologists seeking tools with which to date specific horizons of activity or some means by which understanding might be gained of trade, contact, or a variety of other factors related to provincial developments, are those earthenwares known as maiolicas, present in considerable amounts in these two collections. Now it is possible for the first time to study in some detail not only the immediate importation from the motherland of such essential domestic items as bowls, plates, and cups, but also the early initiation of a derivative industry devoted to the manufacture of similar items in the New World. In essence this new industry was the distillation of ceramic knowledge as it had then reached the group of Spanish potters who migrated overseas. Further, while not equal in quality with the more ostentatious articles associated with the era, the number of tin glazed pottery objects and fragments of broken vessels recovered during these projects, as well as their diversity and caliber, confirm in a convincing way the cosmopolitan nature of provincial life. Perhaps he did not have pottery in mind, but as Cervantes de Salazar (1963) had reported, the best goods then available in the Spanish world were present.

The first sizeable sample of colonial period maiolicas to be recovered in the Plaza Mayor came from trenches dug beneath two sides of the square to accommodate a modern mass transit system, one running beneath the streets directly in front of the Metropolitan Cathedral and Sagrario and the other in front of the National Palace, or what up to the 1560s was Cortés's Casas Nuevas. Another tunnel important in the yield of colonial ceramics was that laid under the route of the aboriginal causeway of Tacuba that connected the Plaza Mayor to the western shore of Lake Texcoco. Although archaeology was only of a secondary consideration during the construction activities, all artifacts recovered were carefully marked as to exact provenience. Nonetheless, the original deposits were mixed, and the modern building work caused further disturbances. Also, in the case of glazed ceramics, laboratory measures were insufficient to protect labeling. Hence crucial information necessary for stratigraphic placement either was lost or became suspect. Analysis of the evolution of various decorative styles had to form the basis for a tentative chronological framework requisite to an understanding of diffusionary patterns (Lister and Lister 1975a). Subsequently in 1975 and 1976 a governmental program aimed at forestalling further dangerous irregular settling of the Metropolitan Cathedral and Sagrario and their restoration afforded a more concentrated probing of the underlying strata representing initial contact between Indian and Spaniard and the use of sounder archaeological controls to assure a relatively reliable stratigraphic interpretation. Happily the two ceramic samples satisfactorily complement each other and together supply most of the basic data for this presentation.

At the Metropolitan Cathedral 174 pits were sunk through the floor down many meters in order to install massive supporting pylons. The shafts reached downward from a known 1573 datum at floor level, in some cases through a crypt zone, then through some ten meters of debris deposited during the fifty years following the Conquest, and beneath them through strata resulting solely from Indian occupation, ending in the sterile slime and volcanic clays of the old lake bed (Fig. 2.2). These peepholes into the past place in doubt some of the archival references to the utilization of the north end of the Plaza Mayor and substantiate others. Father Torquemada's account of Aztec rubble being buried beneath the structure's foundation has been shown to have been a valid observation, although much of the debris surely was so deeply embedded he could not have seen it. At various levels fragments of Indian sculptures, steps, and stone-lined aqueducts were encountered, the latter especially apparent in a northwest to southeast alignment across an area of the Cathedral now designated as the Altar del Perdón. Several buried colonial offerings also were discovered. The floor wells, or *pozos,* have further revealed that the lower profile of the *pedraplen,* that is, the layer of enormous rocks beneath the concrete foundation slab, was irregular because the underlying surface of the old plaza into which the wooden piles beneath the capping were placed was far from level. The bedding varied in thickness from some three feet to twelve feet. Thus the heavy masonry tatters of the Aztecs and the rugged surface point to little, if any, former residential usage of the area. At the same time, these obstructions served as buffers to retain pockets of discarded articles from the bustling plaza markets and the neighborhood kitchens and *salas.* The untidiness of the colonial residents of Mexico City may have been the despair of the Ayuntamiento, but it has been a boon to modern archaeologists. Because the smooth top of the cement layer functioned as a necessary level plane for the building itself, it is improbable that much effort was expended on clearing the plaza surface underneath and thereby displacing the large amounts of residual rubbish accumulated there and into which the piling was thrust. Therefore, it is not strange that maiolica fragments from vessels probably made fifty years apart were found side by side. The seriation charts in Tables 2.1, 2.2, and 2.3 indicate limited pottery deposition in the lowest levels, with an increased frequency from the 5 to 6 m horizon upward through the 3 to 4 m stratum located just beneath the thick layer of rocks over which the concrete seal was put in 1573. All sherds found below that impenetrable bed are considered of 16th century age, perhaps left from the dubious household occupation of the site, from the known businesses next door, or from the adjoining neighborhood, which included the huge Cortés establishment across the Plazuela del Marqués or the 52 stores located on the ground floor of the palace (Kubler 1948, Vol. 1: 190). The few aberrant, or non-16th century, fragments noted in Table 2.3 can be explained by later installation of crypts beneath the outer side chapels or accidental movement of cultural items resulting from current engineering efforts.

Archaeological probing beneath the Sagrario was more extensive because long horizontal tunnels were cut beneath the building rather than vertical floor pits as under the Metropolitan Cathedral. Nevertheless, the nature of the deposits was similar beneath both buildings. By mid 18th century

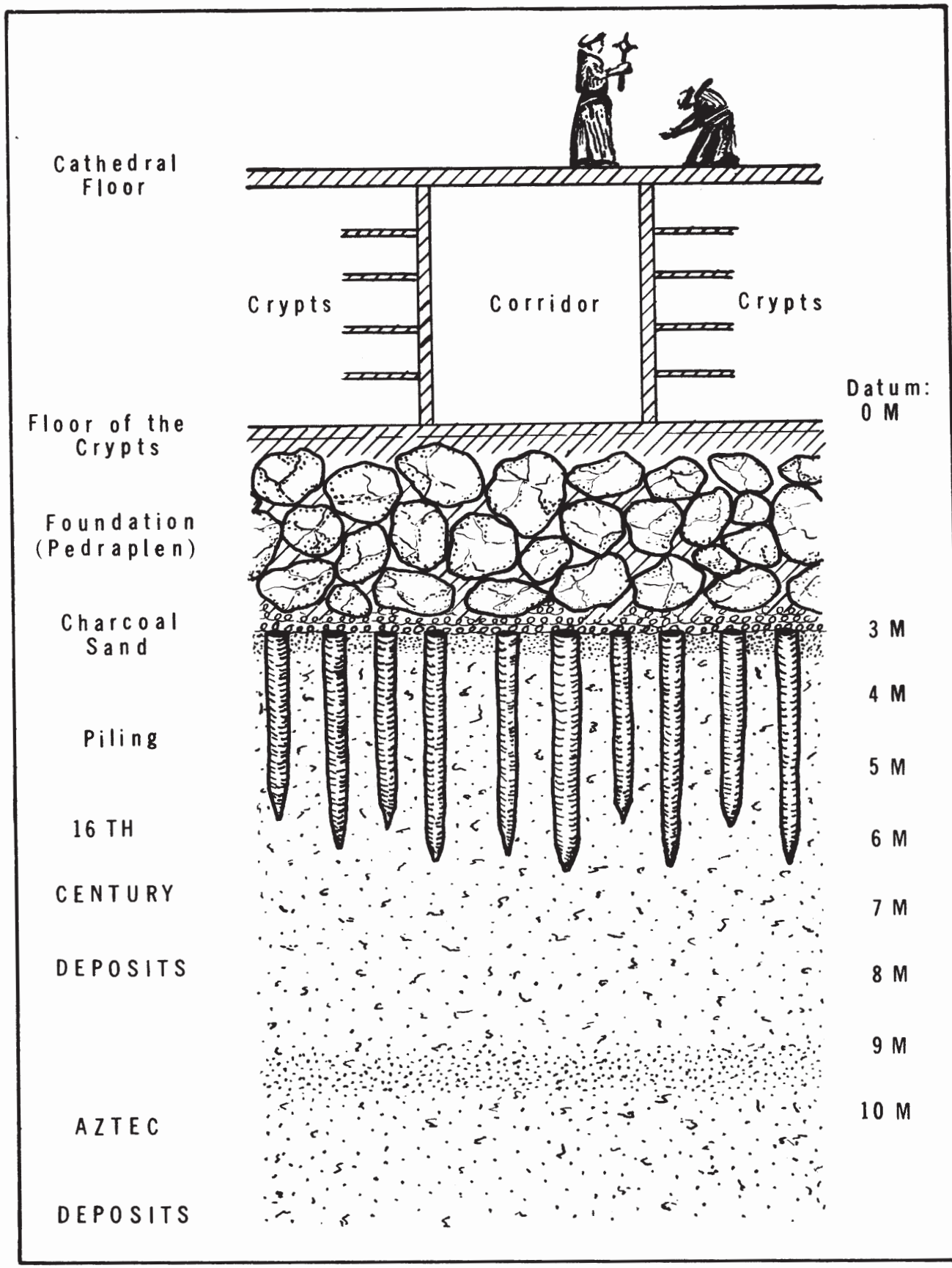


Fig. 2.2. Schematic section of the stratigraphy at the Mexico City Metropolitan Cathedral. (M equals meters.)

the sections of a pyramidal base left from Tenochtitlán, found under the Sagrario, were so deeply buried beneath a concealing mantle of earth and rubbish that they likely had been forgotten by the Spaniards. With the exception of the school indicated on the 1562–1566 map, the general appearance of the eastern half of the future Metropolitan Cathedral compound is thought to have resembled that of the western half before the initiation of construction work there. Both blocks must have been trashy eyesores right at the navel of the viceroyalty. The same rate and proportionate volume of deposition is indicated beneath both buildings. Ceramics were scarce in levels under 7 m, but thereafter steadily increased to peak at 4–5 m, remaining numerically important at 3–4 m (the upper limit of cultural debris at the Metropolitan Cathedral proper), and then declining sharply to one-half the previous amount in the 2–3 m stratum, and experiencing another drop by one-half in the 1–2 m level, finally becoming a nearly sterile layer at 0–1 m just below the foundation *pedraplen* built in 1749 to support the Sagrario. A portion of the foundation for the mid 16th century church that was never built was found to extend under the westernmost side of the present Sagrario, thereby sealing beneath it cultural material distributed before 1558–1562.

The ceramic refuse probably was fairly evenly scattered vertically throughout both principal parts of the Metropolitan Cathedral zone, but such distribution could not be verified in the horizontal tunneling under the Sagrario. In addition, restrictions placed on the excavations did not allow horizontal observations that might have been meaningful in determining areas of concentrated deposition (such as habitually throwing trash to the rear of a lot). Considering the much greater square footage of the Metropolitan Cathedral excavations, the volume of recovered maiolicas from beneath the Metropolitan Cathedral proper and the attached Capilla Animas (788 sherds) is relatively small compared to the size of the collection from beneath the Sagrario (6237 sherds; see Tables 2.1–2.3). Had the two excavations proceeded in an identical manner, some of the seeming inequity unquestionably would have been eliminated. That is to say, up until the late 1560s or early 1570s the land on which the Metropolitan Cathedral was erected is postulated to have received the same degree of usage as a convenient neighborhood or municipal dump as did the ground located slightly eastward. Since the primary mission of the modern program was the stabilization and repair of the buildings themselves, the secondary associated archaeological activities required different methods and approaches for each monument. Hence the explorations permitted in the *known* pre-1573 horizons, precisely the damp earth beneath the Metropolitan Cathedral and Capilla Animas, was limited to test holes of restricted size yielding only a random return, whereas beneath the Sagrario long minelike passageways afforded a wider sampling of cultural deposits. Because of this misleading imbalance in artifact recovery, it should not be concluded that the eastern block of the zone was more important as a trash depository than the western block.

The critical question is whether the stratigraphic levels beneath the Sagrario correspond to those beneath the Metropolitan Cathedral that are under a 1573 seal. The recovered maiolicas demonstrate that they do. There is a striking correspondence in these ceramics, with all the principal wares reclaimed at the Sagrario likewise present at the Metropolitan Cathedral. Only the amounts and some lesser stylistic variations differ. Furthermore, as mentioned above, the general rate of accumulation in each sector appears to have been the same. The obvious conclusion is that the refuse beneath both monuments is basically of 16th century age, with some additional material accruing at the Sagrario after 1573. This somewhat later debris, in most cases, was composed of exactly the same wares as had been in use prior to that date. Judging from these recovered ceramics, it seems probable that the land on which the Sagrario was erected in the mid 18th century was in fact vacant through the 16th century, as seemingly is shown by the 1595 map. Thereafter, either the repeated efforts of the Ayuntamiento to force the city's citizens into a clean-up campaign at last succeeded or the locale was covered over by new structures that curtailed the discarding of worn out goods on that spot. The latter seems more likely.

Mention needs to be made of the meager finds at the Metropolitan Cathedral zone of what are regarded as Puebla maiolicas. The oldest such examples present, of which there are merely 89 fragments, usually have been considered of 17th century date. However, it is entirely possible that these stylistic types, termed for archaeological convenience as Puebla Polychrome and Abó Polychrome, might actually have evolved shortly after the middle of the 16th century. Potters are mentioned in most documentary sources as being at Puebla by the 1580s (for example, see Cervantes, 1939, Vol. 1: 18), but whether they were at work there earlier or whether they were engaged in making stanniferous products awaits future research. Santiago Cruz indicates Puebla potters actively engaged in their craft by 1550, but Puebla historians Albi Romero and Arce do not mention any potters there during the entire 16th century (Arce 1910; Albi Romero 1970; Santiago Cruz 1960: 90). The few later examples of Puebla maiolicas at the Metropolitan Cathedral compound (114 total) likely can be attributed to chance distribution during a one hundred year period when several edifices might have been put up and taken down, to the construction and subsequent repair of the Sagrario underpinning, or even as intrusions in modern times. Whatever the correct explanation, it is clear that the persons using the Metropolitan Cathedral zone dump made virtually no use of Puebla tableware. On the other hand, the subway excavations beneath surrounding streets, and finds made in the course of recent repairs to adjacent government buildings such as the Monte de Piedad and National Palace, reveal that 17th and 18th century Puebla pottery was common at the capital during those periods (Lister and Lister 1975a). Considering the near absence of these same Puebla ceramics at the Metropolitan Cathedral compound, it is likely that the zone was not available for large-scale dumping at that time.

For these reasons, the ceramic deposits beneath the Metropolitan Cathedral buildings are regarded as almost exclusively of 16th century age. It is quite apparent that stratigraphy was neither absolute nor rigid. Aside from the variations in depths beneath the modern structures of deposits resulting from spill over irregular terrain, it is probable that during the time the dump was exposed there were inevitable disturbances by both people and animals, as well as natural disruptions such as the five major inundations of the city. These disruptions occurred in the years of 1553, 1580, 1604, 1607, and 1629 (Maza 1968: 28), and several times were severe

enough to cause near total abandonment of the capital. One such flood early in the 17th century, coming just one year after the Gómez de Trasmonte map of 1628 was made, was so devastating that work on the Metropolitan Cathedral was suspended for six years (Galindo y Villa 1925: 161), and Maza (1968: 30) reports that the Spanish and *criollo* population of 20,000 dropped to 400.

Gage (1958: 50) adds that in 1634 thousands deserted the capital for Puebla because of similar disruptions. The dump on the soggy Sagrario land surely was turned into a miserable slough. Additionally, the possible building activities of the 17th and 18th centuries on the Sagrario location similarly mixed the stratigraphy. But the fact remains that the ceramics are almost completely of the 16th century. What has been lost by known and presumed scrambling of the archaeological record is a more precise chronological placement of ceramic types within that broad horizon of some eighty years at the Plaza Mayor. In the same levels beneath the two structures there were imported, and what are regarded here as local, maiolicas dating from both the first half and the second half of the century. These maiolicas were deposited along with Aztec earthenwares and Chinese porcelains from each end of the represented temporal sequence. The impression gained from ceramic analysis is that the lower strata had been less disturbed than the upper ones. Furthermore, the association of disparate 16th century pottery types was not as meaningful as these figures imply due to the evolutionary gradations of types that make some definitive distinction between original and copied styles impossible.

To erect an arbitrary temporal scaffold on the seriation results, it might be hypothesized that the meter levels represent specific decades, although realistically viewed such uniform deposition is unlikely (Fig. 2.3). For the moment, this disregards downward filtering of small artifacts such as potsherds or the movement of the cultural residue by natural or other means. If the 6-7 m horizon and the strata below represent the years from about 1522 to 1540, the sherd totals from the Metropolitan Cathedral, Capilla Animas, and Sagrario all suggest a situation of limited use of glazed service vessels. Of most significance is the fact that *all* three wares designated in this study as representing local production were already present just twenty years after the Spaniards settled in Mexico City.

Following the same line of reasoning, by the 5-6 m level, or about 1540-1550, the volume of such pottery thought to have been in the kitchens and dining rooms of the surrounding homes had increased substantially. As mid century approached, indicated in this hypothetical model as the 4-5 m horizon, or about 1550-1560, tin glazed ceramics became commonplace. They continued prevalent up to the very time the Metropolitan Cathedral foundation was installed, the 3-4 m zone dating about 1560-1570. After that date, the Sagrario 2-3 m stratum reveals a continuing use, but steadily declining proportion, of the kind of ceramics utilized earlier, lasting until the closure of the dump there. This postulated history of maiolica deposition at the Metropolitan Cathedral complex meshes well with the hypothesized sequence of comparable types noted in the subway collection and with the known situation at Mexico City (Lister and Lister 1974: 23-38; 1975a: 25-48).

For the first several decades of Spanish occupation in the Valley of Mexico there was little wealth among the small white population, and there were few artisans in proportion to men of other callings. Tin glazed dishes, either imported or made locally, likely were relatively scarce. By the middle of the century, however, outlying mines and ranches were beginning to yield rich returns and urban businesses were prospering. At the capital, the number of Europeans accustomed to using glazed tableware greatly increased. Economic conditions had so improved, albeit unevenly, for all levels of the society that acquisition of ceramic goods was facilitated. Additionally, at least three local stanniferous or allied ceramic industries are thought to have been geared to this expanding market. Their diversified output was for sale in all reaches of the capital, principally in the leading emporium, the Plaza Mayor itself. There numerous stalls and permanent shops, as well as weekly open-air food markets, are assumed to have offered such products, whose prevailing fragility insured a high, fairly rapid breakage rate. Furthermore, trade with Spain reached its zenith during this time. Although tablewares may have been only occasional commodities in the international exchange, Andalusian entrepreneurs eager to grasp the vigorous mercantile advantage of the second half of the 16th century directed an important flow of European wares across the Atlantic. In short, more dishes of various styles and grades from a number of different suppliers were available for more users, who by then had the means to obtain them. These conditions continued through the century, with local workshops monopolizing the local market.

0–3 m	c. 1570–1600+	(Sagrario only)
3+m	1573	Cathedral foundation laid
3–4 m	c. 1560–1570	
4–5 m	c. 1550–1560	
5–6 m	c. 1540–1550	
6–9 m	c. 1522–1540	

Fig. 2.3. Tentative chronology of deposits beneath the Mexico City Metropolitan Cathedral and Sagrario based on maiolica wares.

In summary, the maiolica collection obtained during the restoration of the Metropolitan Cathedral and Sagrario implies a common utilization of the northern edge of the plaza as a depository for unwanted trash through 1573 in the case of the Metropolitan Cathedral locale, and perhaps into the opening years of the 17th century in the case of the Sagrario. After that date, the virtual absence of 17th century or later ceramics at the spot on which the Sagrario ultimately was erected is evidence for the cessation of important dumping there, probably because of the presence of buildings.

Maiolicas found in the nearby subway trenches substantiate these findings and extend the chronology of local types from the 16th century examples reclaimed beneath the Metropolitan Cathedral compound into the 17th and 18th centuries. They also provide evidence for a thriving business in contemporary Puebla wares in the Valley of Mexico during these two centuries. These results are partially substantiated by comparable post-16th century pottery recovered from the Pozo X excavations, a disturbed area behind the Sagrario (see Tables 2.1-2.3).

TABLE 2.1

Numerical Frequency of Valley of Mexico Maiolica and Mezza Maiolica from Mexico City Metropolitan Cathedral and Sagrario Excavations

		MEXICO CITY WARE										VALLE WARE				INDIGENA WARE		
		Fine Grade				Common Grade												
							Blue Series			Green Series								
Strata		San Juan Polychrome	San Luis Blue on White	La Traza Polychrome	Tacuba Polychrome	Mexico City White, Variety One	Mexico City White, Variety Two	Mexico City Blue on Cream	Mexico City Polychrome	Mexico City Green on Cream	San Luis Polychrome	Santa María Polychrome	Tlalpan Blue on White	Guadalupe Blue on White	Tlalpan Mottled	Tlalpan White	Romita Sgraffito	Romita Plain	Total
CATHEDRAL All Aisles	3–4 m*	5	1			95		2	1	5			1			22		11	143
	4–5 m	3	2			52		11	2	4						4		3	81
	5–6 m	2	1	1	2	28		2		4						5		5	50
	6–7 m	2	1	1	4			1							1	6		2	18
	7–8 m									1								1	2
	8–9 m					2				3								4	9
	Total	12	5	2	6	177		16	3	17			1		1	37		26	303
CATHEDRAL Three Center Aisles	3–4 m	5	1			4		2	1	5			1					11	30
	4–5 m					1		1		3						3		1	9
	5–6 m	2	1		1	12		2		3						4		5	30
	6–7 m	1													1			1	3
	7–8 m																		
	8–9 m					1												3	4
	Total	8	2		1	18		5	1	11			1		1	7		21	76
CAPILLA ANIMAS	3–4 m	1				17										1		2	21
	4–5 m	6	2			125		1	4							5			143
	5–6 m					96										1	2		99
	6–7 m					14										3			17
	7–8 m																		
	8–9 m																		
	Total	7	2			252		1	4							10	2	2	280
SAGRARIO	0–1 m		4			19										1			24
	1–2 m	37	8	6	4	122		2	2	9				1		21	1	17	230
	2–3 m	62	6	5	6	275	2			11			1	1		64	2	56	491
	3–4 m	35	7	5	4	251	1	10	2	22		1	9	2		185	40	254	828
	4–5 m	83	16	9	16	480	3	14	2	18	2	2	17	10	1	192	23	387	1275
	5–6 m	62	25	9	8	306		13	6	32			7			247	22	282	1019
	6–7 m	29	2	2	4	170		1		2			11	6		94	21	387	729
	7–8 m					20				1						9	1	75	106
	8–9 m					3							2			8	6	7	26
	9–10 m		3			11		1		1						5		5	26
	Total	308	71	36	42	1657	6	41	12	96	2	3	47	20	1	826	116	1470	4754
POZO X	0–1 m	9				34	15			27									85
	1–2 m	2				7	2	1		4							1		17
	2–3 m	9	3			61	141	8		236	6	1						27	492
	3–4 m	1				2	2												5
	4–5 m																		
	5–6 m												1						1
	Total	21	3			104	160	9		267	6	1	1				1	27	600

**0 m represents crypt floor; 0–3 m represents pedraplen*

TABLE 2.2

Numerical Frequency of Imported Maiolica from Mexico City Metropolitan Cathedral and Sagrario Excavations

		SPANISH											ITALIAN						
	Strata	Columbia Plain Tradition	Columbia Gunmetal	Isabela Polychrome	Yayal Blue on White	Santo Domingo Blue on White Tradition	Sevilla White	Sevilla Blue on White	Caparra Blue	Sevilla Blue on Blue	Lusterware	Talavera polychromes, blue on whites	Montelupo Blue on White	Montelupo Polychrome	Ligurian Blue on Blue	Ligurian Blue on White	Faenza compendiaro	Faenza White	Total
CATHEDRAL All Aisles	3–4 m*	11			1	5						1						1	19
	4–5 m	30				5						1			1			3	40
	5–6 m	9				3		1					1					5	19
	6–7 m		3												1				4
	7–8 m																		
	8–9 m																		
	Total	50	3		1	13		1				2	1		2			9	82
CATHEDRAL Three Center Aisles	3–4 m	1			1	5		1				1						1	10
	4–5 m	1				1						1						2	5
	5–6 m	5				3							1					5	14
	6–7 m		1					1										3	5
	7–8 m																	1	1
	8–9 m																		
	Total	7	1		1	9		2				2	1					12	35
CAPILLA ANIMAS	3–4 m	3				2									1			2	8
	4–5 m	12			1	10									2			1	26
	5–6 m	4				4									1				9
	6–7 m	33																	33
	7–8 m																		
	8–9 m																		
	Total	52			1	16									4			3	76
SAGRARIO	0–1 m	1													2			2	5
	1–2 m	16				16	1								5			6	44
	2–3 m	30				23	6	2	2	2		1		2	14		2	17	101
	3–4 m	74	18		2	22	71	5	3	2	3			3	39	1	8	39	290
	4–5 m	57	20		7	45	73	15	9	1	12	5	8	4	65	2	12	43	378
	5–6 m	41	15	2	6	35	56	8	5		13		2	3	34		12	33	265
	6–7 m	15	6		1	8	45	5	2	1	14	2	1	6	46	2	6	34	194
	7–8 m	1	5		1	1	6	4		1			1		8		2	8	38
	8–9 m	1													2		2	4	9
	9–10 m		1			1	1												3
	Total	236	65	2	17	151	259	39	21	7	42	8	12	18	215	5	44	186	1327
POZO X	0–1 m	1																	1
	1–2 m																	1	1
	2–3 m					3	2		3				1					1	10
	3–4 m																		
	4–5 m																		
	5–6 m																	1	1
	Total	1				3	2		3				1					3	13

**0 m represents crypt floor; 0–3 m represents pedraplen*

TABLE 2.3

Numerical Frequency of Puebla Maiolica from Mexico City Metropolitan Cathedral and Sagrario Excavations

	Strata	Puebla Polychrome	Abó Polychrome	Castillo Polychrome	Puebla Blue on White	San Agustín Blue on White	Huejotzingo Blue on White	Aranama Polychrome	Tumacacori Polychrome	Yellow	Guanajuato Polychrome	Oaxaca Polychrome	light paste polychrome	red paste blue on white, and polychrome	Total
CATHEDRAL All Aisles	3–4 m*	1			6		1								8
	4–5 m	10	2		10										22
	5–6 m				3			1		2					6
	6–7 m	1			1										2
	7–8 m														
	8–9 m									1					1
	Total	12	2		20		1	1		3					39
CATHEDRAL Three Center Aisles	3–4 m														
	4–5 m	8	2		4										14
	5–6 m														
	6–7 m	1			1										2
	7–8 m														
	8–9 m									1					1
	Total	9	2		5					1					17
CAPILLA ANIMAS	3–4 m														
	4–5 m	2	1		4		1								8
	5–6 m														
	6–7 m														
	7–8 m														
	8–9 m														
	Total	2	1		4		1								8
SAGRARIO	0–1 m				1										1
	1–2 m		1		4			1			1		2	1	10
	2–3 m		1	1								1	2		5
	3–4 m	12	3		20	1		2		2			8	3	51
	4–5 m	15		1	22	5		1		1			5	1	51
	5–6 m	10	2		7	3							1		23
	6–7 m	1			5			4					1	1	12
	7–8 m														
	8–9 m														
	9–10 m	1			2										3
	Total	39	7	2	61	9		8		3	1	1	19	6	156
POZO X	0–1 m				4									3	7
	1–2 m	3			7			1	2	1			1		15
	2–3 m	20	3	1	66		3	7	1				2	2	105
	3–4 m				2										2
	4–5 m														
	5–6 m														
	Total	23	3	1	79		3	8	3	1			3	5	129

**0 m represents crypt floor; 0–3 m represents pedraplen*

3. MAIOLICA POTTERY

Based on analyses of process of manufacture, vessel forms, and decorative modes, it appears that the initial phase of Mexican maiolica production was one of near duplication of Sevillian wares, using local raw materials (Olin, Harbottle, and Sayre 1978: 216). Comparative physical tests such as neutron activation, X-ray diffraction, and petrographic examination of clay bodies utilized in Andalusia and the Valley of Mexico in the 16th century substantiate this idea. The craft, with its technical secrets and stylistic attributes as they had evolved to that point in time, was introduced ready made, and as such survived in the colony too brief a time to witness outward alterations (Lister and Lister 1974: 24). Volcanic inclusions in the Mexican clay, crystal ash from local air falls, and reduced amounts of quartz represent distinctive features of the colonial natural resources, but they are attributes not readily apparent in the pottery under usual field conditions (Olin and Sayre 1975a, 1975b; Olin, Harbottle, and Sayre 1978; Warren, personal communication 1975). Therefore, because of the marked visual similarities between original (Spanish) and derivative (Mexican) examples, the survey below begins with those maiolicas representing the identifiable Mexican products.

MEXICO CITY WARE

Mexico City Ware varied stylistically so much from the earlier ceramics that there is a strong possibility new potters arrived from Sevilla and set up shop, bringing a revitalized, reoriented attitude toward their craft. Because that craft at Sevilla was then largely in the hands of Christians, it is believed that about 1540 the suspected influx of potters brought an Old Christian Spanish group into Mexico. Certainly the new articulations of form and decorative modes turned sharply away from Muslim predecessors. The focus instead was on the Italian example. Associated with new styling were refinements of potting techniques and firing methods that also can be attributed to Italian influence. (See Chapter 5: *Tin Glaze, Mexico City Ware.*)

A reconstruction of the diffusionary mechanism by which such Italianate ideas swept across the Atlantic to the tiny formative industry is stalled by lack of knowledge of 16th century Sevillian ceramics in Spain. Still, it is recognized that Italian penetration of Spanish art in various manifestations slowly had been gaining ground for a century. These influences were encouraged by the Spanish Crown, which offered tax exemptions to both Italian and Flemish artisans relocating in Spain (Highfield 1972: 265; Mariejol 1961: 218). Insofar as pottery is concerned, the Italianization was hastened during the 16th century by repeated movement to Sevilla of Italian potters and ceramic decorators (Frothingham 1969: 35; Gestoso y Pérez 1903: 244-45). Their concern with technical improvements in the pottery itself and their canons of Renaissance taste found fertile ground in Spain because of the worn-out themes of the past and the fast disappearing shadow of Islam. Somewhat later Italian attitudes found expression on the maiolicas of Talavera de la Reina in Castile, where they may have been accepted more wholeheartedly because of the absence of any previous Muslim association with that center. In the 16th century, however, the developments at Talavera had no demonstrable effect on the nascent activity at Mexico City. For now, it can only be assumed that in Andalusia the impact of the Italian craftsmen and their approach to pottery making was sufficiently great not only to change the course of Sevillian developments (see Chapter 4: *Sevilla Ware*) but diffuse them overseas through Sevillian maestros or exported examples. In time new evidence may reveal the arrival of some Italian potters in the Valley of Mexico, but the common practice of Hispanicizing names clouds our discernment of such descent. Analysis of design application indicates Spanish rather than Italian hands. Toussaint (1967: 176) lists the names of seven potters working in Mexico City during the first half of the 17th century, some of whom probably began their careers earlier making Mexico City Ware. As time passed, the European Spaniards must have been joined by Spaniards born in Mexico and by mixed bloods. Indian and Negro freemen or slaves would have been responsible for the heavy or unskilled tasks of the workshops, thus setting up a division of labor to be continued through the colonial era.

Fine Grade

Pottery obtained from work at the Metropolitan Cathedral, and from excavations beneath adjoining streets for the subway system, indicates at least five categories of fine grade maiolicas were being made in Mexico during the 16th century. The stratigraphy at the Metropolitan Cathedral, admittedly partially disturbed and therefore not entirely reliable, suggests these types may have developed about 1540. The size of both collections, and the heavy concentration of the Spanish population in the Valley of Mexico as compared to outlying districts, implies the vessels were manufactured in some location near the capital. The distinctions between similar types placed within the same ware are based on decorative interpretations, and many individual design elements are not mutually exclusive.

Characteristics

Paste

The paste probably is composed of several kinds of clay mixed, sieved, moistened, and ripened together. Later guild ordinances specified a blend of ten baskets of white clay to twelve of grey (Barrio Lorenzot 1920: 174). Its fired color varies from tan to reddish, the latter being most typical. The lighter color is due to a greater percentage of light firing clay and does not result from higher firing temperatures; an iron-bearing clay will only get darker red or brown under increased heat. The paste appears dense and untempered.

Method of forming

Vessels are wheel thrown, with some ribs and trimming scars evident. There is probably retention of the jigger-and-jolly method for undecorated plate production. Lug attachments likely were moldmade and affixed by hand, but they could have been cut around a template.

Thickness

Body walls are moderately thick, averaging 5 mm. Vessels are thinner than earlier Morisco Ware, comparable to contemporary Sevilla Ware, and thicker than contemporary Faenza types and some later Puebla types.

Glaze

A lead fluxed glaze, opacified with tin, has a fired color from cream to whitish buff. It is not as white as on either contemporary Sevilla or Faenza types. The glaze is applied over a bisqued base by submersion over all surfaces in a relatively thick coat that successfully masks the core, although reverse surfaces often have a thinner coating. It is glossy, but blemishes such as crazing, pinholing, and crawling are typical. Later 17th century guild ordinances specified six pounds of tin to twenty-five pounds of lead (Barrio Lorenzot 1920: 174). There is no evidence for a final transparent lead glaze over the decorated surface.

Decoration

Where decoration was desired, it was accomplished by painting with mineral solutions carried in a gum, water, or glaze medium over a dry unfired glaze. During firing the decoration and glaze became unified. One of the assets of the tin in the glaze is its stability, which permits designs to remain sharp. This was the maiolica process, but the term "maiolica" most properly refers to the glaze itself.

Decorative pigments

Blue from cobalt has a characteristic dark slate to greyed color. During firing the pooling of this pigment, resulting from too heavy and uneven an application, tends to cause rough ashen zones. No impasto quality is seen such as occurs on 17th century Puebla types.

Yellow-orange obtained from antimony and iron oxide appears as a secondary color on several types. It is thick, bright, and stable.

No green appears on these fine grade vessels, although it was a frequent minor color on contemporary Italian maiolica. Perhaps even in the 16th century initiation of this industry there was a Spanish prejudice against green, possibly because it was a special color to the Muslims. By the 17th century Mexico City potters' guild ordinances prohibited the use of green on fine grade types, even though in Spain – principally at Talavera de la Reina and Puente del Arzobispo – the color by then had become acceptable.

Firing method

In accord with standard Muslim and Spanish practice, the vessels of this ware underwent a preliminary bisque firing. For the glost process, all types were fired under oxidizing atmospheric conditions that appear to have been well controlled because no smoke clouds or discolorations resulting from reducing atmospheres are noted. Ideally such an atmosphere contains twenty-one percent oxygen and seventy-nine percent nitrogen (Bourry 1926: 242). Saggars were customary kiln furniture in glost firings. Headpins inserted through perforated saggar walls on which to rest plate rims left distinctive radial scars on exteriors. No evidence yet has been found that the small cone-shaped supporting devices known in 16th century Italian maiolica shops were used in Mexico City. Some bowls may have been stacked on cockspurs, but scars from this procedure have not been noted.

Typical forms (Fig. 3.1)

Plates: most plates are of medium size, averaging between 18 to 22 cm in diameter, with a comparatively deep well and broad flared flattened rim from 2.5 to 5 cm in width. Plates usually have a low ring foot on the base, and are from 4 to 5.2 cm in average over-all height. Some central obverse ridging is present on undecorated types.

Bowls: the only examples noted are small sized hemispherical forms that average 12 cm in diameter and 5 cm in height. They possess direct or slightly everted or rolled rims and a low ring foot. One such foot is so constricted as to be almost a pedestal base. Some undecorated small bowls have paired, lobed horizontal lug attachments.

Jars: small and large sizes may occur, but if so, they are too fragmentary to describe. One possible jar fragment bears a low flange to secure a lid of unknown shape.

Drug jars: no decorated examples are in these collections, but one is known in the materials of the Hispanic Society of America (see Fig. 3.2; Goggin 1968: Fig. 10*e*). It exhibits an hour-glass contour, with angular shoulder and base and constricted waist. A ring foot is indicated.

Tiles: square, smooth-surfaced tiles were also produced. As today, they likely were individually cut around a metal pattern.

San Juan Polychrome (Figs. 3.2–3.6, 3.40*a–d*)

In both the Metropolitan Cathedral and subway samples the most abundant decorated fine grade Mexico City Ware type is San Juan Polychrome. It is named after one of the four indigenous barrios (San Juan Moyotlan) of colonial Mexico City (Lister and Lister 1974, Fig. 4*b*; 1975a, Fig. 8; 1978, Fig. 5*a*). Goggin (1968: 151–54) first described the type. Using the system of nomenclature commonly employed in the American Southwest, he named it Fig Springs Polychrome, after the site in Florida where it was first recognized. In our opinion that procedure is not always appropriate for pottery with an international distribution. In this case, the use of the modern name of a small settlement on

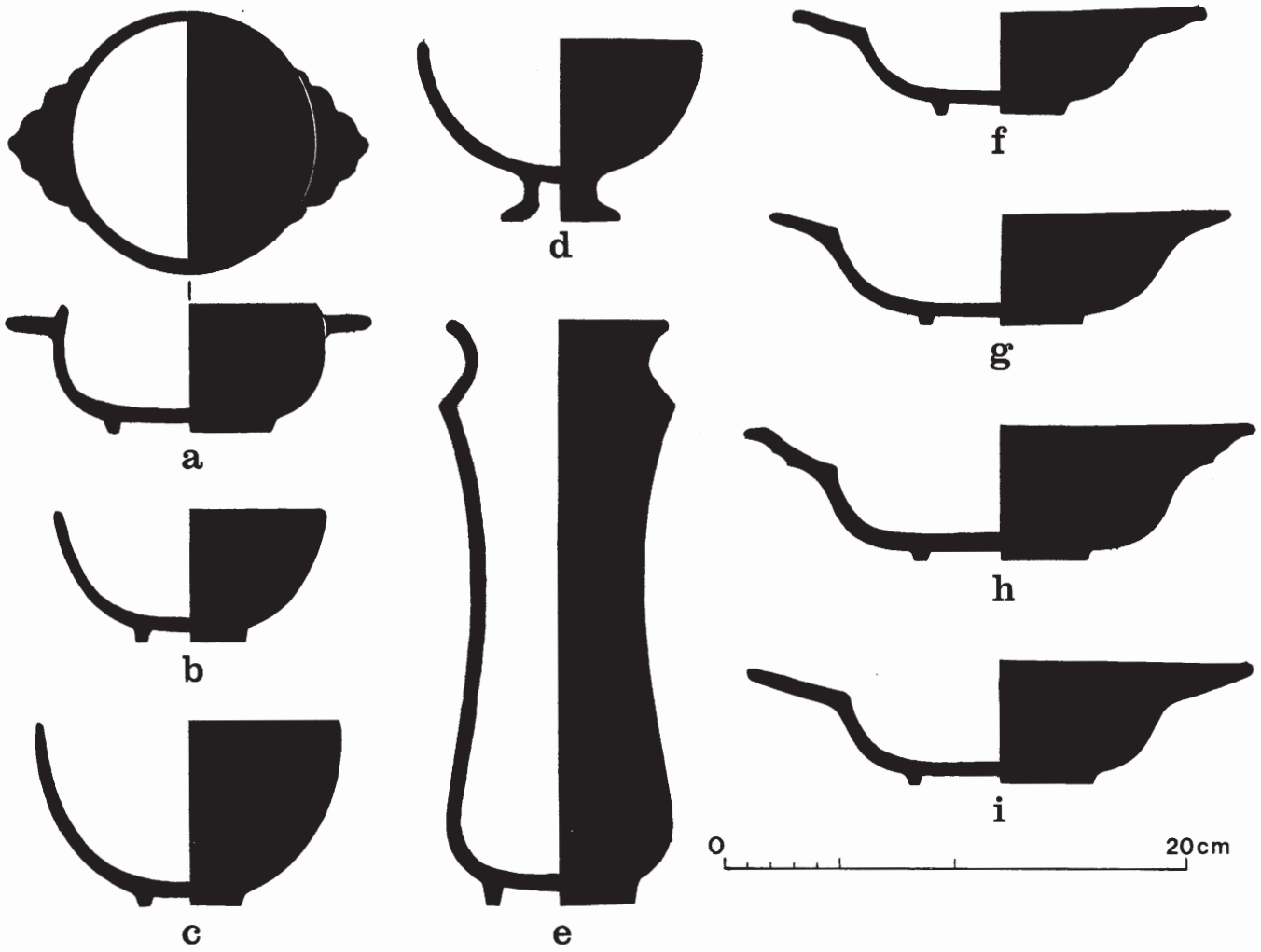


Fig. 3.1. Typical forms of Mexico City Ware, Fine Grade: *a*, small bowl with horizontal lobed lugs; *b*, *c*, small bowls without handles; *d*, pedestal-based bowl; *e*, drug jar; *f–i*, plates.

the very extremity of the Spanish empire, which in no way had any part in the production and spread of the pottery in question, is apt to lead to unnecessary misconceptions. Goggin regarded the type as probably of 17th century Puebla manufacture, although many of the sites in central Mexico from which he obtained collections (Culhuacan, Huejotzingo, Acatzingo, and Tepeaca) had occupations of 16th century age (Goggin 1968: 51-55). From these studies we assign it to Mexico City in the second half of the 16th century (Lister and Lister 1976a: 122, 132; 1978: 13-14). Likely it appeared somewhat earlier, as indicated by its presence from the 6-7 m level upward in the Metropolitan Cathedral deposits, and it continued into the first quarter of the 17th century. By that time it had spread as far north as Chihuahua, New Mexico, and northern Arizona (Lister and Lister 1976a: 132), to Florida, and east and south through the Caribbean. A growing number of examples of this type are coming from accelerated excavation activities, but as yet no specimens have been identified among known museum holdings with the possible exception of the aforementioned drug jar at the Hispanic Society of America (Fig. 3.2; Barber 1915, Fig. XII-16; Goggin 1968, Fig. 10*e*).

The decorative style is the simplest of the four fine grade Mexico City decorated types, which may account for its long appeal for inexperienced ceramic painters (Figs. 3.3-3.6). The most typical design element is a modification of the Persian palmette introduced to European maiolica with the Faenza Gothic-Floral concept (Figs. 3.4*a*, 3.5, 4.44*d*). Such a motif is first noticed in these collections on Santo Domingo Blue on White examples, which may have been made in Mexico, suggesting that the idea already had been incorporated into the local inventory before the rise of Mexico City Ware. It is executed in a palette of Italian colors and consists of a few boldly sweeping outer lines over them. A less common pattern is one of a more delicate floral spray, the primary petals and stems in blue highlighted by several orange lines. More typically Spanish elements appearing as a central decoration are a duck, a rabbit, or a large flower, all rendered in the same free brush work (Fig. 3.6). There is one example of a bird set against a background of framed diagonal lines. Rare rim bands around the outer edge of some vessels are composed of Italianate wavy ray motifs, Talavera-like fronds, or a combination of both. They are unframed by encircling lines. The hundreds of varying

Courtesy of the Hispanic Society of America, New York.

Fig. 3.2. Drug jar, San Juan Polychrome; scale approximately ½.

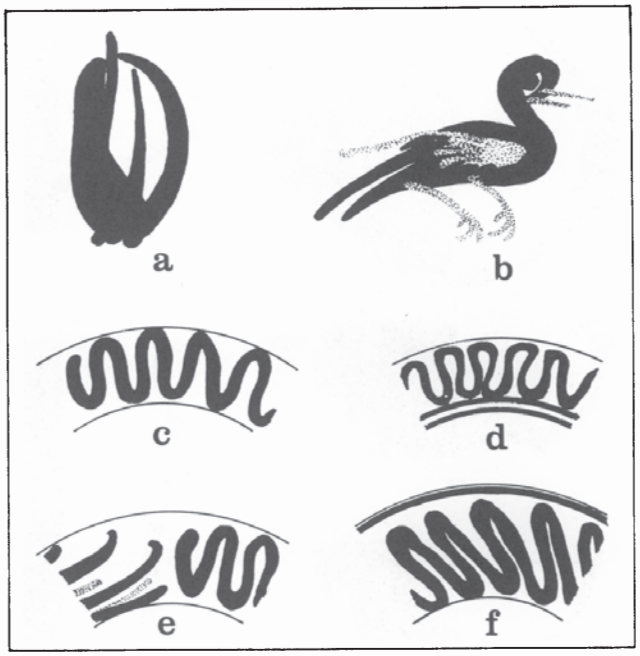


Fig. 3.3. Characteristic designs appearing on San Juan Polychrome: *a*, center pattern of palmette executed in blue only; *b*, center pattern of a water-fowl executed in blue with either yellow or orange accents or both; *c–f*, rim patterns of wavy rays and fronds.

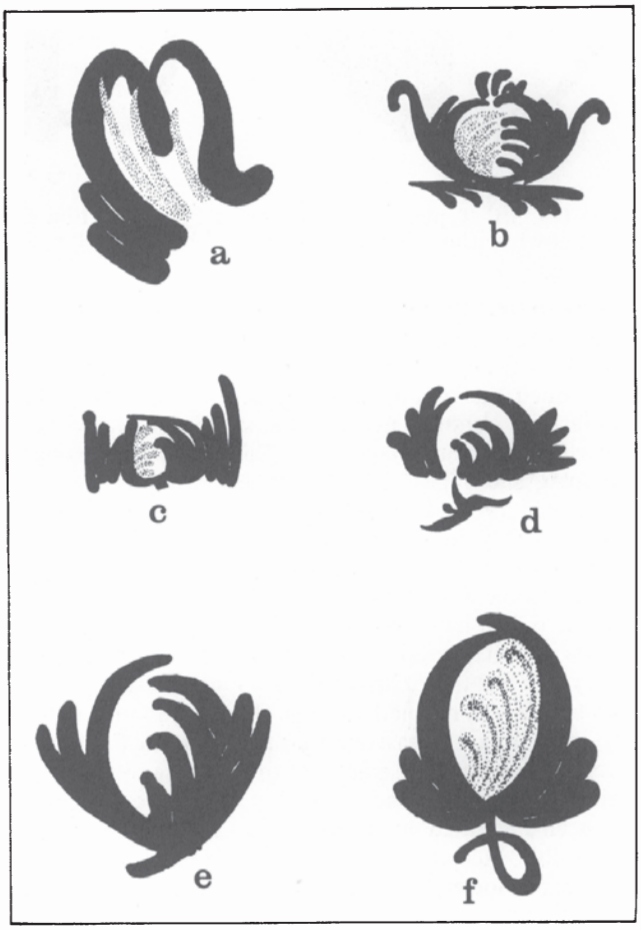


Fig. 3.4. Variations of central palmettes on San Juan Polychrome. The dominant feature is rendered in blue with central petals in either yellow or orange or both. Variability in finished patterns suggests the work of various decorators, all working within one convention but interpreting it differently.

Fig. 3.5. Reconstruction of a complete typical decorative format on San Juan Polychrome.

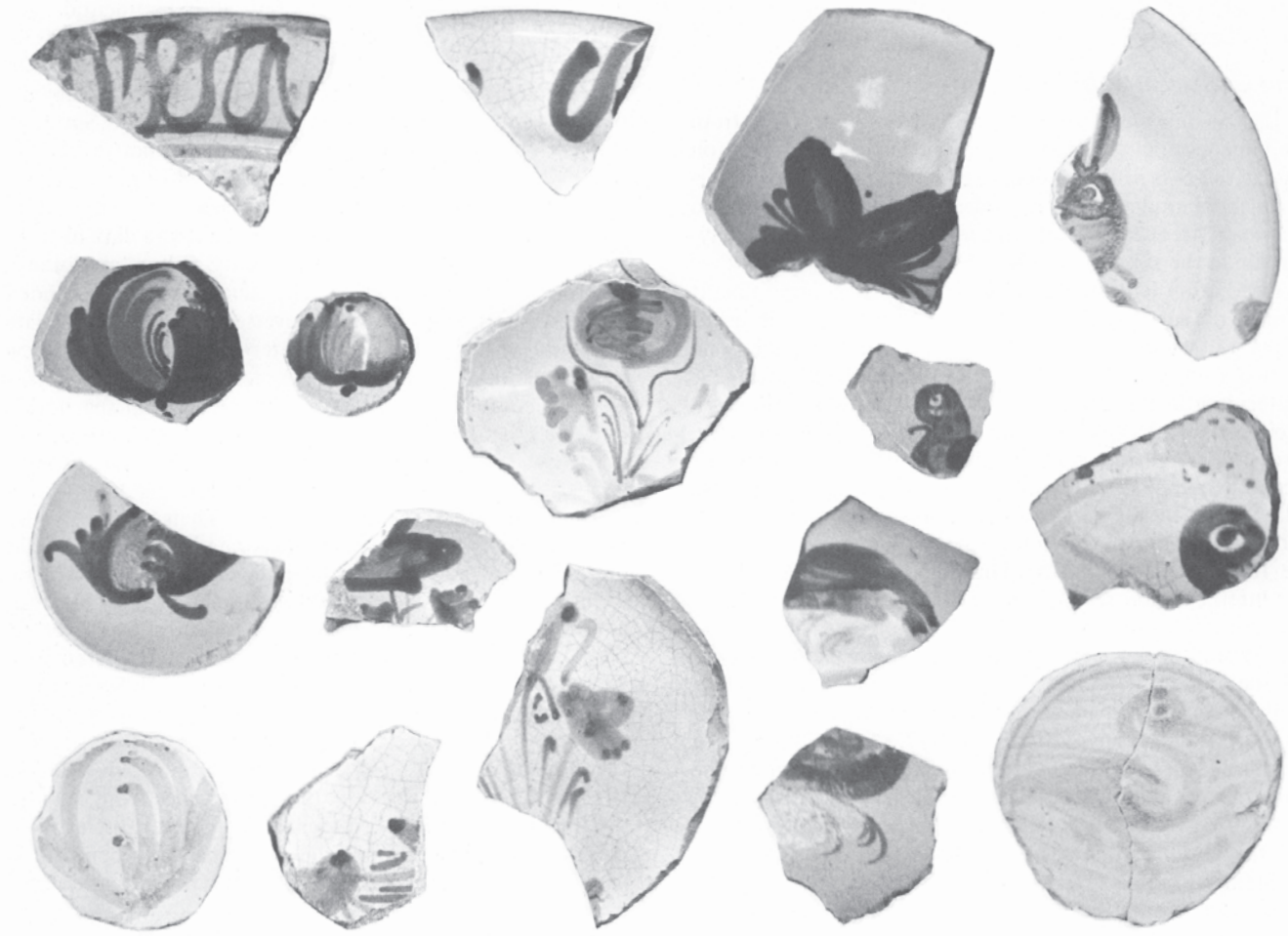


Fig. 3.6. Assorted fragments of San Juan Polychrome recovered beneath Mexico City.

interpretations of these motifs illustrate the way in which Spanish workshops were operated. The basic mode of decoration established by the master in charge was passed on to assistants who painted them in their own individual way. If the assistants were paid by the piece, speed and simplicity of execution were of greatest concern. From that spontaneity came an attractiveness that was absent on some of the more labored coeval styles. One San Juan Polychrome jar in the Metropolitan Cathedral collection bears a carefully lettered inscription in blue reading "A.D. Pastrama," but such legends are uncommon. Also rare are portions of two related modeled small animal and bird figures. A similarity of glaze and the grey-blue, yellow, and orange decorative pigments suggests a parallel tile production, with some patterns closely imitating Sevillian modes datable to the last quarter of the 16th century (Fig. 3.7*c*). Other patterns repeat such motifs as the two-color round-bodied flowers and leaves common on San Juan Polychrome and the other types of fine grade Mexico City Ware. A dozen tiles of this sort in a private Mexican collection, incompletely illustrated in the pioneer study by Goggin (1968, Fig. 10*f-i*), are of the *olambrilla* variety, that is, smaller than the more common *azulejo,* and each bears a self-contained pattern within a roundel. The use of fine-lined orange detailing is reminiscent of a mode current in Talavera during the second half of the 16th century, which probably also was followed in contemporary Sevilla.

San Luis Blue on White (Figs. 3.8-3.10, 3.40*e-h*)

Eighty-one sherds of San Luis Blue on White came from the Metropolitan Cathedral zone. The largest concentration was at the 5-6 m level, making this type second in importance there among the fine grade decorated types. It is also second in frequency to the more common San Juan Polychrome in the subway sample.

Decoration is banded and hence more structured than it is on San Juan Polychrome. Dense patterns on wide brims of plate obverses are framed at the top and bottom by one or two encircling lines. Below that lies a blank cavetto. A centerpiece in the bottom is contained by two or three encircling lines. Motifs used are variations of the palmette, three-lobed and lozenge-shaped leaves, leaves balanced off a central stem line, and ovoid dots at ends of graduated lines splayed off the upper surface of a solid half-round (Lister and Lister 1978, Fig. 5*b;* for a nearly complete specimen, see Toulouse 1949, Fig. 25). The general impression is floral but interpretation remains vague. Colors are limited to light blue for definition lines and dark blue for the principal motifs. Several Sevillian pieces paralleling this style are known, but the motifs themselves stem from the Italian background available to both Spaniards and Mexicans (for example, see Comune di Montelupo Fiorentino 1977, Fig. 4). The banded format likewise came from the Gothic-Floral statement, the later *istoriato* patterns filling the entire field with only a rim frame line to finish it off. The less precise broader painting and the absence of spiraled fine-lined tendrils as fillers on the Mexican sample tend to obscure the relationship between Italian and colonial work.

San Luis Blue on White, described by Goggin (1968: 154-58) as a companion type to his Fig Springs Polychrome, though having a somewhat later life span, here is considered as of Mexico City manufacture in the second half of the 16th century. It was commonly distributed by trade to the same frontiers as San Juan Polychrome, where it is now being recovered in increasing quantity (Lister and Lister 1976a: 132). As with San Juan Polychrome, no museum examples of the type are known in Mexico, but a 1971 Cuban postage stamp pictures a complete plate from the collections of the Museo Metropolitano of Havana. Although the name is derived from a Florida site, it is retained in these studies because San Luis is a frequent Mexican place name.

The San Luis decorative style may have been used on a related wall tile type but orange was added to the palette (see Goggin 1968, Fig. 10*h*). No specimens of such tile were recovered at the Metropolitan Cathedral or in the subway diggings.

La Traza Polychrome (Figs. 3.11, 3.12, 3.40*i-m*)

Named for the district of Mexico City set aside for Spanish residence only, La Traza Polychrome is a newly identified type on which appears the most overt Italian influence of any of the fine grade types. Perhaps it is an example of maturing taste and ability in comparison to the two earlier mentioned types that may represent an experimental stage in the evolution of a local industry (Lister and Lister 1974, Fig. 4*c*; 1975a, Fig. 11; 1978, Fig. 6*a*). Comparable glaze and pigments have contributed to confusion of fragments of La Traza Polychrome with the more abundant San Juan Polychrome, but it is unquestionably a distinctive, though small, grouping (see Goggin 1968, Fig. 10*d-g*). Unfortunately, no complete specimens are known.

The palette is of the Italian mode, light and dark blue for framing lines and outlines of elements, yellow and orange for fillers and lesser accents. The field of design is banded and decoration appears on the obverses of the flattened plate rims and apparently in the center bottom, although few specimens of the latter have been recovered as yet. Cavettos are undecorated on the Metropolitan Cathedral specimens, but one example from the subway bears an inscription in that area. Motifs on the rim zone include several styles of leaves, often in two colors, off an undulating stem associated with irregularly spaced dot fillers. Their scale is smaller than on the other associated decorated types, and their draftsmanship is more controlled. The known Spanish counterparts that must have served as models for the Mexican copies bear a large figural element as a central medallion on plate bottoms. These specimens have been considered Talaveran by Martínez Caviró (1968, Figs. 148-154), Sevillian by Ainaud de Lasarte (1952, Figs. 592-595). We lean toward the latter attribution (see Fig. 4.28; Lister and Lister 1976c, Fig. 10*a-c;* 1978, Fig. 6*a*). Exteriors of small bowls have two or three encircling blue lines below the rim, an idea that might have been taken from Montelupo examples.

The more elaborate styling as compared to companion maiolicas made it a relatively infrequent type whose expected higher cost generally restricted its use to the environs of the

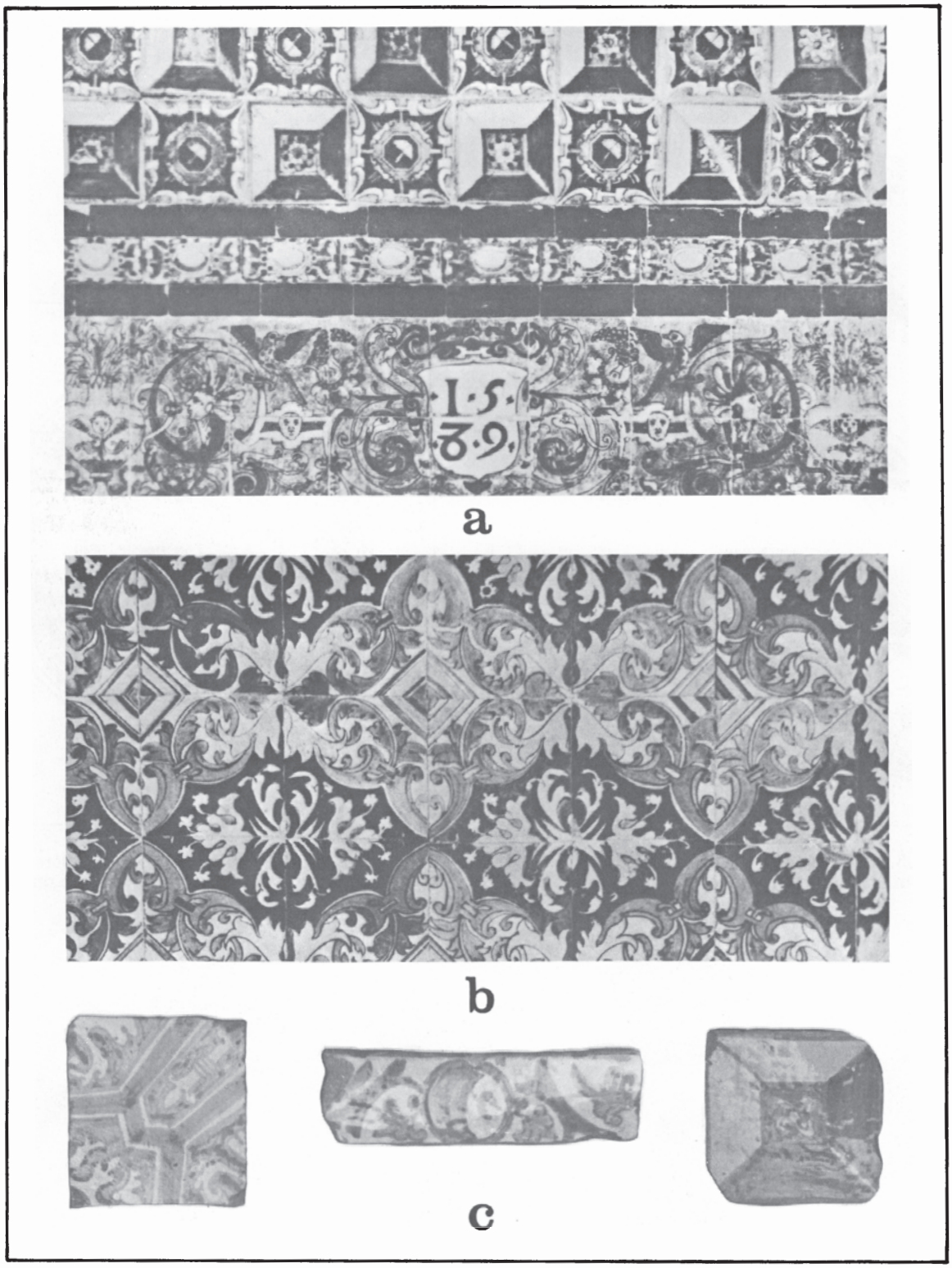


Fig. 3.7. Flat-surfaced polychrome tiles, a 16th century Sevillian specialty: *a,* polychrome tile panel in the Santa María de Jesus church, Sevilla, bearing a date of 1589; *b,* polychrome tile panel in the Santa Clara church, Sevilla, dated about 1575; *c,* examples of tiles recovered from beneath the Mexico City Metropolitan Cathedral compound that probably represent a local development parallel to Mexico City Ware, Fine Grade. Tile size, brush work, colors, and motifs are comparable between Spanish and presumed Mexican specimens, but the quality of the colonial tiles is lower.

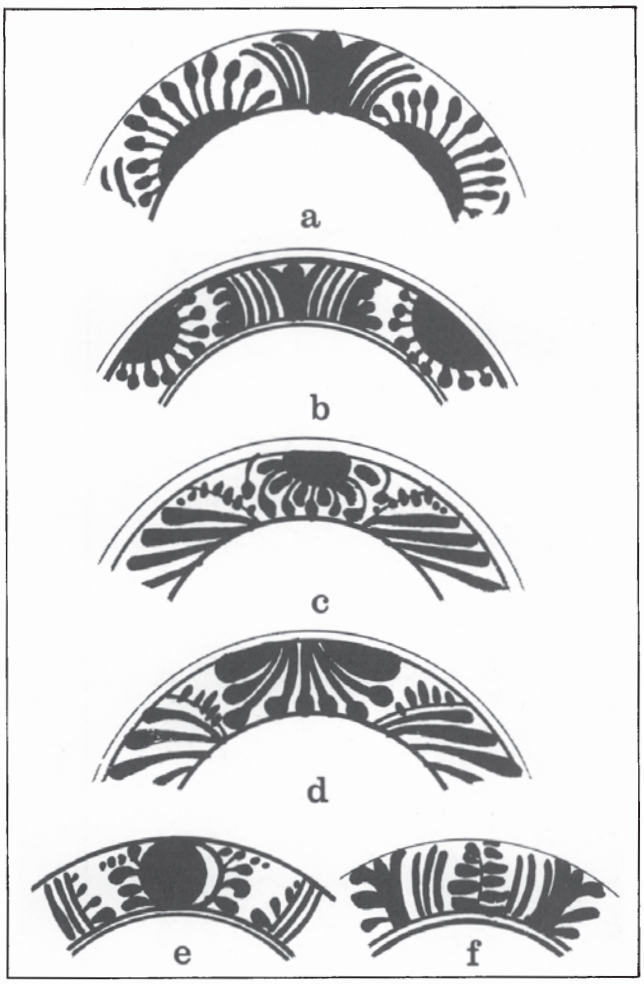


Fig. 3.8. Rim patterns in dark and light blue pigment on San Luis Blue on White.

Fig. 3.9. Reconstruction of a complete typical decorative format on San Luis Blue on White.

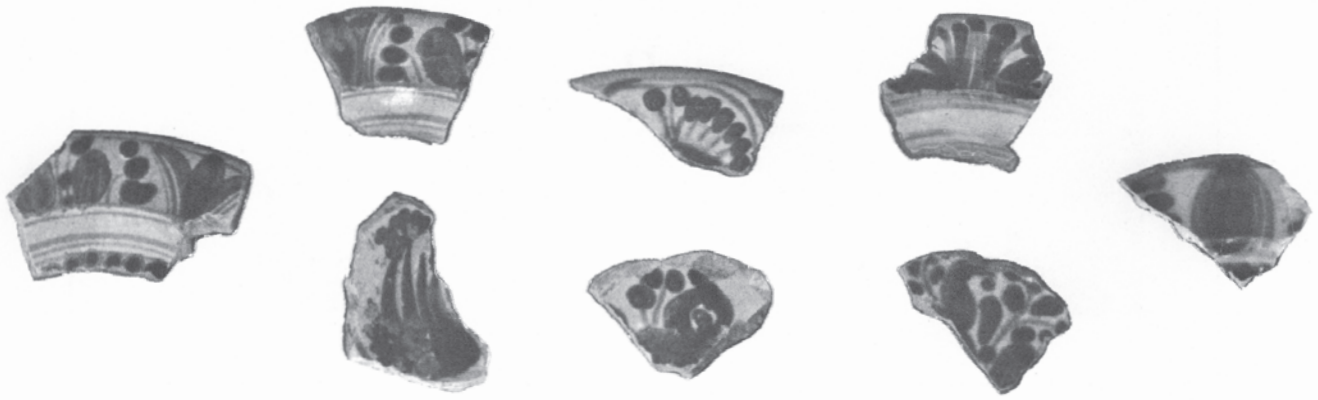


Fig. 3.10. Assorted fragments of San Luis Blue on White recovered beneath Mexico City.

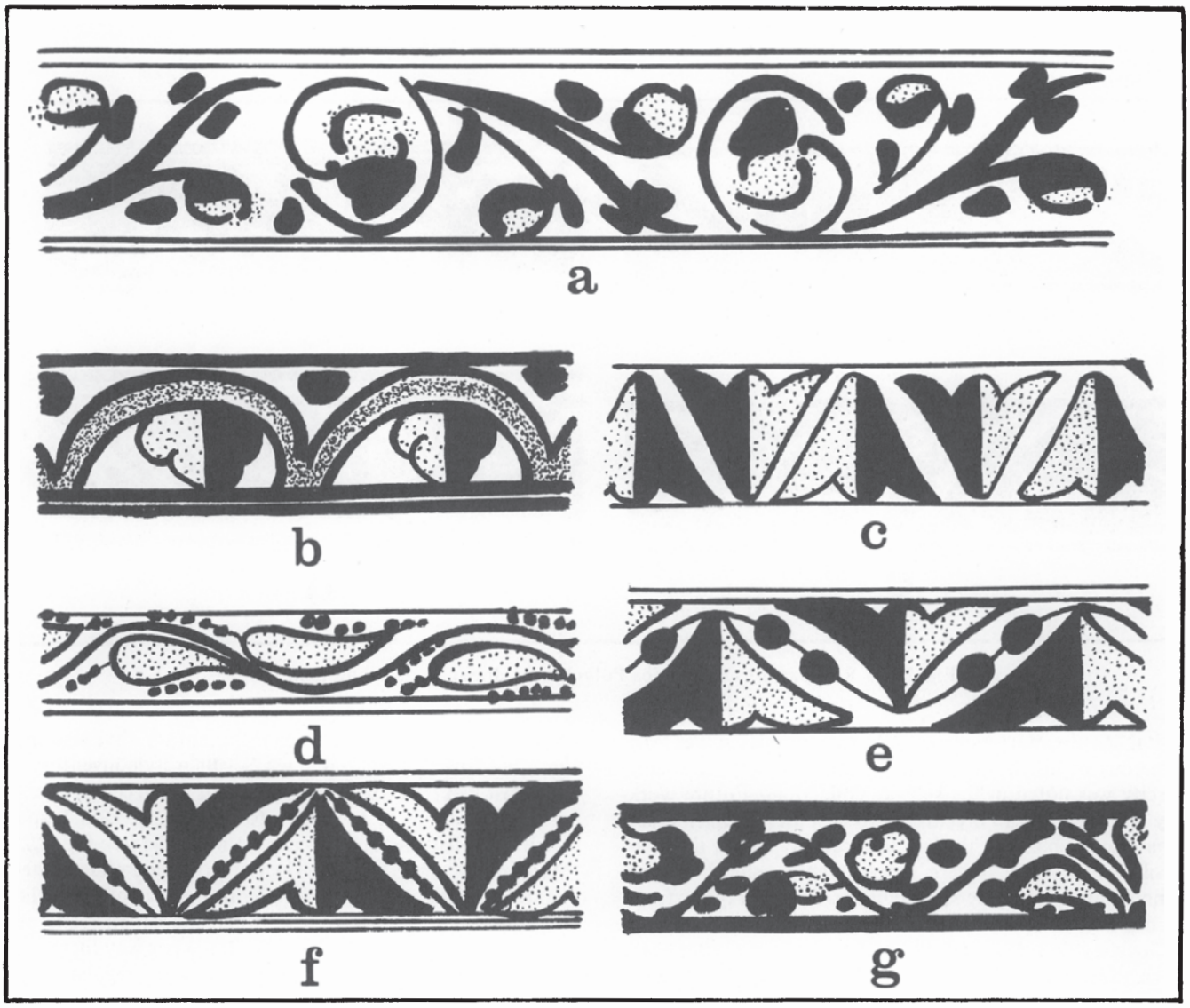


Fig. 3.11. Rim patterns on La Traza Polychrome rendered in dark and light blue with either orange or yellow fillers or both. Design relationships with Sevillian and Italian sources can be judged in a comparison with Figures 4.28 and 4.45.

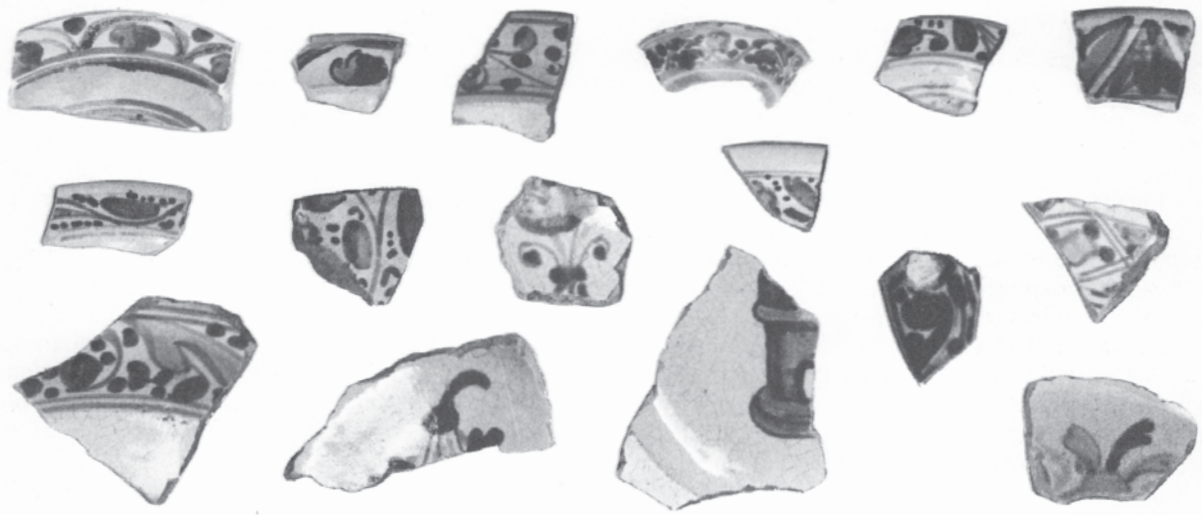


Fig. 3.12. Assorted fragments of La Traza Polychrome recovered beneath Mexico City.

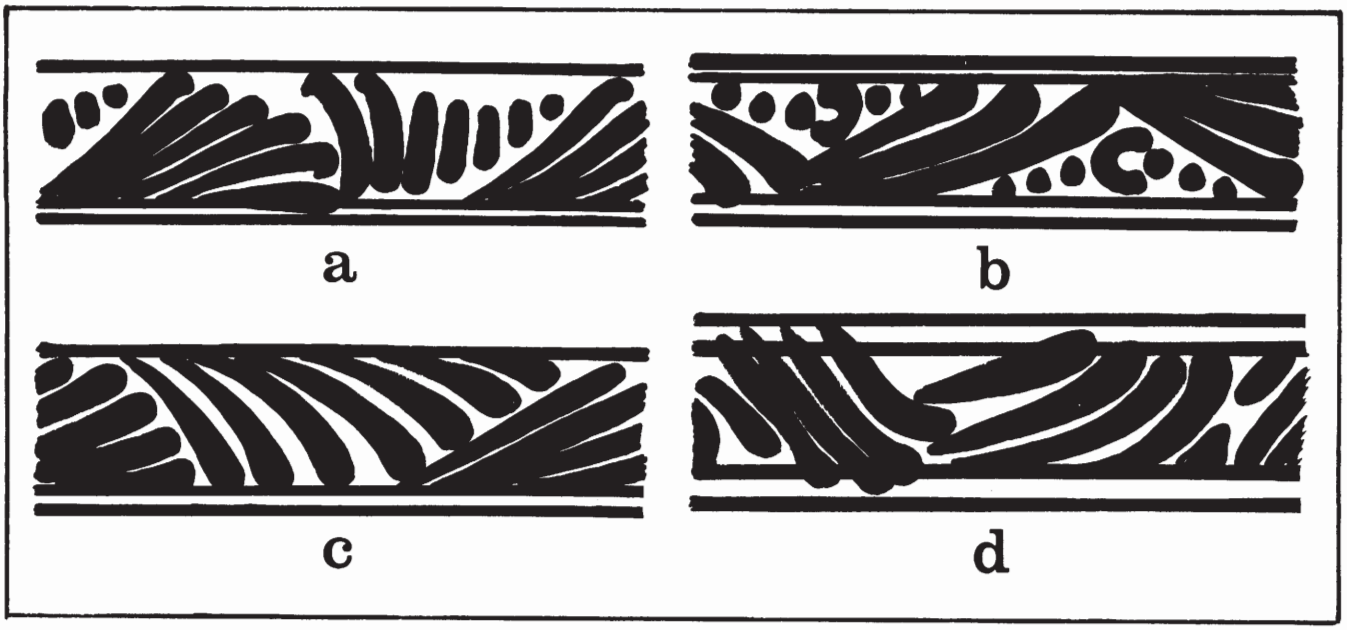


Fig. 3.13. Rim patterns on Tacuba Polychrome drawn in dark and light blue.

capital. At the Metropolitan Cathedral complex it was least numerous of all the local maiolicas (Table 2.1). The same scarcity was noted in the subway collections. Future work may show La Traza Polychrome to be a useful time marker for a discrete phase of the late 16th century, but at the Metropolitan Cathedral, where a stratigraphic model can be demonstrated, it has the same range as the other types, from the 6–7 m level upward.

Goggin (1968, Fig. 10*f, g*) illustrates two wall tiles bearing a comparable design. In the Metropolitan Cathedral refuse there were a few tiles with a variant decoration but the same palette and glaze (see Fig. 3.7*c*). They appear associated with this general mode, although most were recovered in the disturbed Pozo X where later materials were more abundant.

Tacuba Polychrome (Figs. 3.13–3.15, 3.40*n–r*)

A second fine grade maiolica type newly identified in the analysis of the collections obtained at the Plaza Mayor is named for the major causeway leading west to the mainland village of Tacuba (Lister and Lister 1978, Fig. 6*b*). During the Noche Triste rout of 1520 the Spaniards lost their stolen loot along this route, the Calzada de Tacuba (or Tlacópan), near the site of the church that later housed the confraternity of the potters. No complete examples of the pottery type have been recovered as yet.

Again using a formalized banded layout, the patterns, drawn largely in two shades of blue with only an occasional touch of yellow, were ones to capture the interest of the potters making contemporary common grade types. Thus, in their simpler expressions, the patterns of Tacuba Polychrome were perpetuated for a time after the fine grade model had ceased as a viable product. Rim band decoration was usually freely brushed units of alternating hatchures placed between one or two frame lines. Appearance of this kind of rim band decoration is reminiscent of a Talaveran frond mode of the late 16th century that also may have been part of the unknown Sevillian style inventory. It is almost identical to the rim pattern of a 16th century vessel in the collections of the Instituto Valencia de Don Juan in Madrid, which probably originated in Sevilla (see Fig. 4.25; Martínez Caviró 1968, Fig. 87). Cavettos were undecorated. Center bottoms were demarked by several narrow encircling lines inside of which were large floral, animal, bird, and perhaps even human figures. In a very Italianate way these were dramatized by background parallel lines of irregular length extending as rays inward from the frame. Some of the principal designs actually overlay the background (for comparable Spanish examples, most with unverified attribution to Talavera de la Reina, see Fig. 4.28 and Martínez Caviró 1968, Figs. 87, 131, 146–153; 1969, Figs. 1*b*, 8*a*). Exteriors of small bowls or jars exhibit a decoration of two or three encircling blue lines.

Mexico City White (Figs. 3.16, 3.40*s–v*)

Undecorated white maiolica was much more common in 16th century Mexico City than decorated fine grade types (see Table 2.1). The best quality pieces were produced in exactly the same ways as those with painted patterns, though some use of the jigger-and-jolly may have been retained longer. They were fired in saggars on supporting pins beneath their rims. The glaze of the plain vessels is creamier in color, perhaps from a somewhat reduced tin content, but the coating remains thick and shiny. Forms in general are identical to those of the decorated wares with the exception of the *escudilla,* or porringer, with lug handles; so far as is presently known this form occurs only in the plain style (Lister and Lister 1978, Fig. 9*a*).

The gradation of the top white products into those of lesser quality is less obvious than the differences between the two calibers of decorated wares. Therefore, instead of attempting an arbitrary sorting of the white collection, the

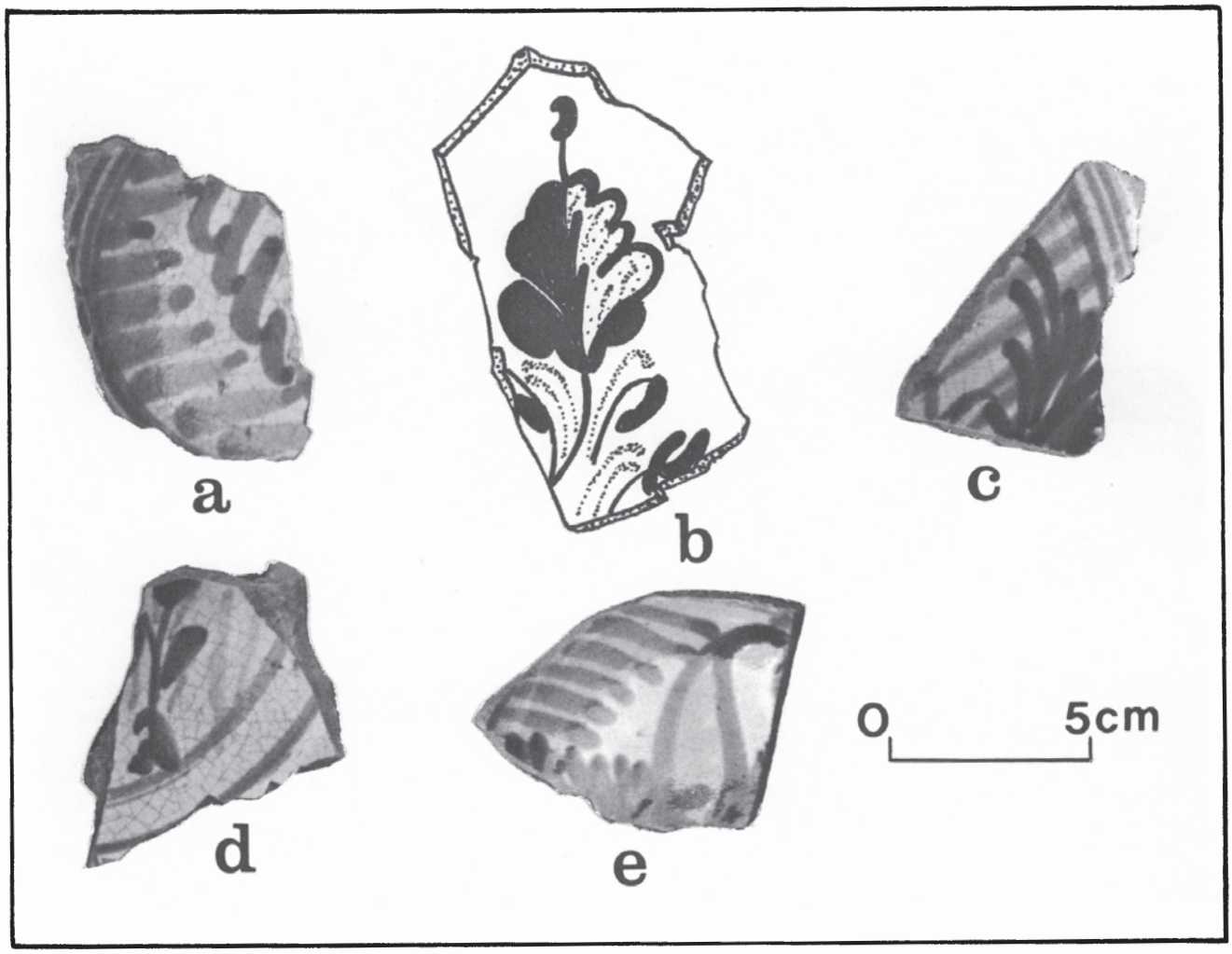


Fig. 3.14. Fragments of center patterns on Tacuba Polychrome: *a*, *c–e*, designs executed in dark and light blue with rare additions of a minor yellow accent or filler and with the diagnostic rayed background; *b*, floral design drawn on a blank white ground.

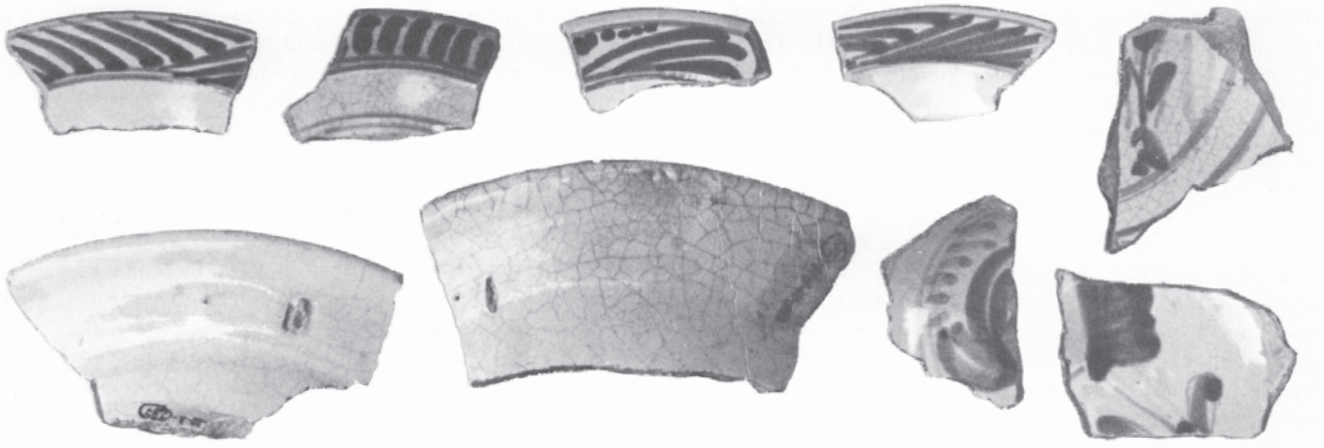


Fig. 3.15. Assorted fragments of Tacuba Polychrome recovered beneath Mexico City. Two sherds in lower left exhibit characteristic small, vertical scars caused by supporting headpins during glaze firing.

Fig. 3.16. Assorted fragments of Mexico City White, Variety One, the companion plain style to the four Fine Grade decorated types of Mexico City Ware. Sherd of a plate reverse at upper right has a vertical scar resulting from the use of supporting headpins during glaze firing.

material is lumped together as Variety One, with the recognition that many of the vessels probably came from the lesser shops to serve as companion pieces to the common grade painted vessels. With added experience, it eventually may be possible to distinguish more readily between them, for example, as in a gradual downgrading in the quality of the glaze. The 17th century guild ordinances required the same amount of tin for the white as for the common grade maiolicas, but observation of these 16th century assortments indicates that plain whites were more highly regarded at that earlier period (Barrio Lorenzot 1920: 174). In fact, late specimens of lower grades frequently seem to display copper or iron contamination, which caused the glaze to assume yellow or green tones. A search for cockspur scars may be another way of separating out the common grade whites, but it would restrict the analysis of fine grade whites to rim sherds only.

One cache of sherds from the disturbed Pozo X deposits and a large quantity of similar examples from the subway had deteriorated to the extent that the thin glaze was virtually devoid of tin additives, resulting in a tannish pottery with a grainy texture. These samples are called Variety Two; they are believed to be late and perhaps not relevant to the main Metropolitan Cathedral deposition or the 16th century (see Table 2.1, Figs. 3.17, 3.41*u–v;* Lister and Lister 1978, Fig. 9*b*). They may represent the yellow wares mentioned in the late 17th century guild ordinances (Barrio Lorenzot 1920: 175).

Common Grade

Concurrent with the manufacture of fine grade maiolica types for the well-to-do, there was a simultaneous production of less varied, less well-made dishes to serve poorer tastes and pocketbooks. Because they shared most fundamental physical and stylistic characteristics with the better crafted products, they are considered in our classification as a second parallel branch of the same Mexico City Ware. The commercialism involved in their production led to simplification of a few standard designs from the common local inventory, and an alteration in amount and kind of raw materials utilized. The growing population of Mexico City, bringing with it an augmented artisan force composed of more *mestizos* than Spaniards, meant more common grade products through time. Yet it is of interest that in the 16th century, to judge from these collections, decorated fine grade vessels continued to be more numerous than decorated low grade counterparts. This may be taken as another sign of the rich materialistic nature of the city's residents at that time, especially those who lived in the proximity of the Plaza Mayor. Still, in the weekly food markets and temporary stalls in the plaza, the utilization and breakage of much low grade pottery must have taken place, and the shattered remains must have ended on the nearby dump.

Characteristics

Paste

The same basic combination of clays occurs in the paste as in the fine grade pottery. The fired color, however, sug-

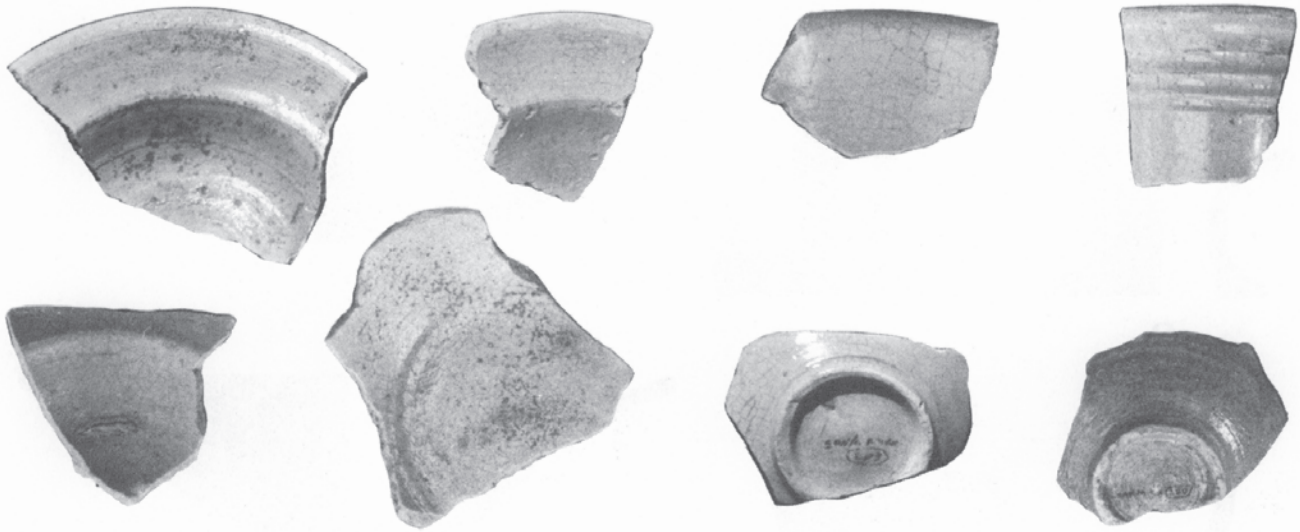


Fig. 3.17. Assorted fragments of Mexico City White, Variety Two (Mexico City Ware, Common Grade).

gests a greater proportion of light-firing clay, which would have been necessary in order to reduce the tin in the glaze and still have a relatively light colored product. The core is generally pinkish-tan, untempered, and a bit granular.

Method of forming
All these vessels appear wheel turned.

Thickness
Wall thickness averages 5 mm, comparable to fine grade types.

Glaze
Common grade products have a typical maiolica glaze, or one with tin added to a lead base to secure an opaque white ground. In this ware the fired color is cream to tan, occasionally yellowish. Glaze is thinly applied to all surfaces, moderately glossy, and subject to wear, crazing, pinholing, and crawling. The 1677 guild ordinances for common grade vessels called for two pounds of tin to each twenty-five pounds of lead, a ratio that seems to be reflected in the glazes of most of these 16th century types (Barrio Lorenzot 1920: 174). Where especially thin or worn, the surface texture is grainy. Some specimens thought to be late in the continuum have a glaze almost devoid of tin, making them comparable to Mexico City White, Variety Two.

Decoration
The maiolica technique, or painting with mineral pigments over a dry unfired glaze coat, was used.

Decorative pigments
Blue was obtained from a mixture of copper oxide and zinc over a glaze incorporating some alkali. The copper base may have been derived from scrap or coins rather than raw ore.

Yellow-orange came from a mixture of antimony and iron oxide. The Italian decorators, who first introduced this color to European maiolists, preferred the iron rust from ships' anchors, but this material would not have been available in the Mexican highlands.

Green was obtained from the same copper oxide solution used for blue, with the omission of the zinc. It has the same deep rich quality as seen on many green lead glazed Spanish *botijos.*

Brown was an iron oxide solution.

Firing method
After an initial bisque firing, all types were refired under oxidizing atmospheric conditions to properly mature the glaze. The use of saggars was eliminated, and the vessels were merely separated by tripods of clay. The scars of these supports are typical on one or both surfaces. It is possible that the least advanced specimens with a nearly tinless glaze may have undergone a single firing.

Typical forms (Fig. 3.18)
Plates: the same medium size vessel with flattened rim, deep well, and ring foot as was made in the fine grade was fashioned in the lesser types. Through time, however, the depth of the vessel and the width of its rim, plus its increased upward flare, grew more pronounced, which essentially converted the plate into a bowl.

Candleholders: the most typical lead glazed candleholder recovered in these and other excavations in colonial Mexico consists of a circular base, a low tubular vertical central section, with a second upper circular disk below the orifice to catch the melting wax. These objects were copied in the common grade types of Mexico City Ware, but none were recovered at the Metropolitan Cathedral compound.

Bowls: simple hemispherical bowls with ring feet and direct tapered rims are indicated.

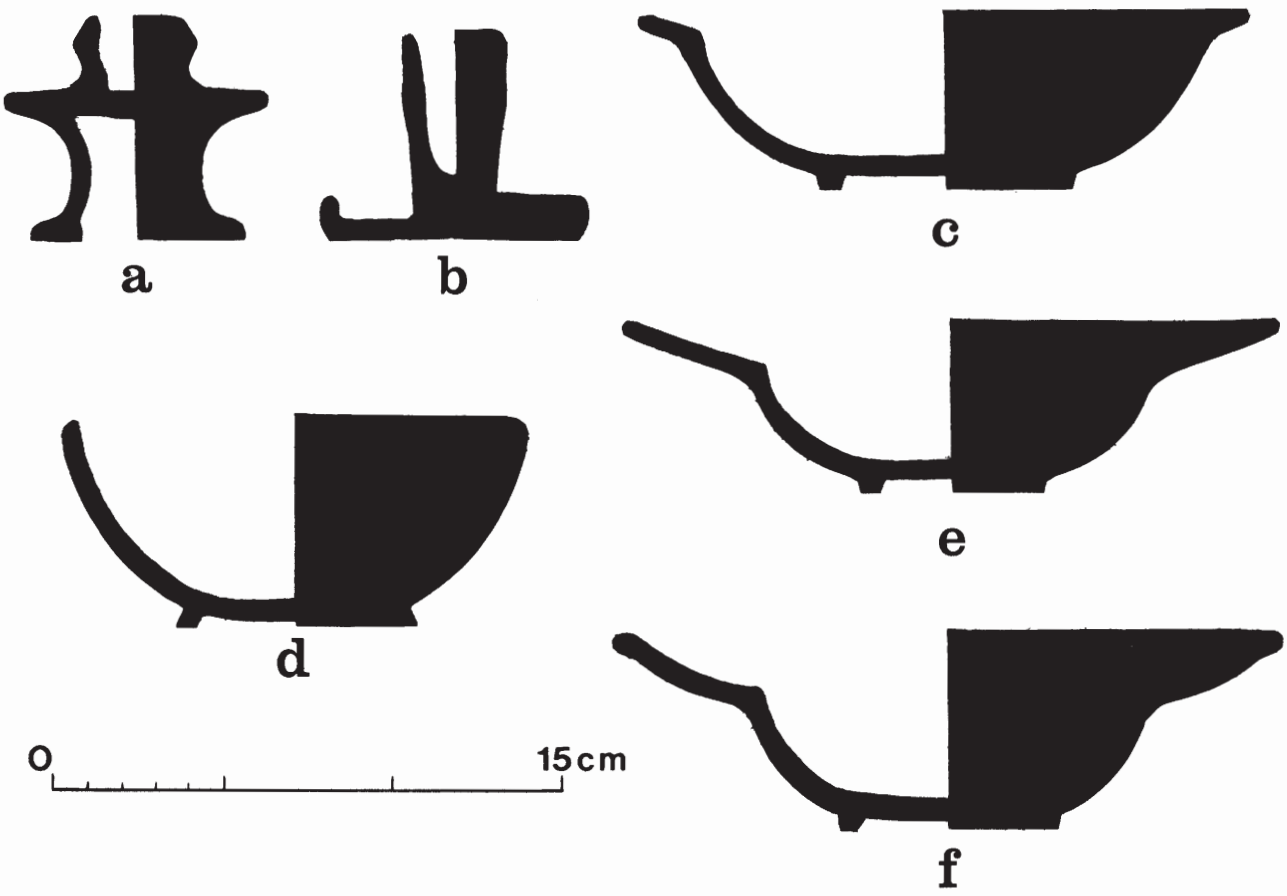


Fig. 3.18. Typical forms of Mexico City Ware, Common Grade: *a,b,* candleholders; *c,* hemispherical small bowl; *d–f,* plates.

Blue Series

What can be assumed to have been the more costly of the 16th century common grade maiolicas were those painted in a color scheme closely resembling that of the finer types.

Mexico City Blue on Cream (Figs 3.19–3.22, 3.41*a–d*)

The Blue Series is represented primarily by this type (Lister and Lister 1978, Fig. 7*a*). As mentioned above, a thinner more transparent glaze permitted the paste to be partially visible, causing the final product to emerge from the kiln something less than white. Not being derived from cobalt, the blue with which it is decorated often has a dull washed-out appearance. In spite of these differences, Mexico City Blue on Cream could have satisfied a modest housewife's desire to be in style. However, whether the *contrahecho* blue type did not gain much popularity with local purchasers or whether it was made for a brief period, it is only about half as numerous in both the Metropolitan Cathedral and subway samples as those of a parallel green vogue. One indication of its restricted production is the fact that so far only one or two fragments of Mexico City Blue on Cream have been identified north of the Valley of Mexico.

The field of design on the most customary plate form was compartmentalized, as in the fine grade, into rim patterns, blank cavettos, and a centerpiece. None of these zones were consistently defined by framing lines, though occasional light blue lines made a gesture at formalizing the layout. The motifs for the encircling rim band were either opposed groups of diagonal hatchure copied from Tacuba Polychrome, or wavy rays or fronds copied from San Juan Polychrome. The center element on plate bottoms generally was a sweeping U that may have been a degraded palmette in imitation of those appearing on San Juan Polychrome. Often it was further reduced to merely several slanted lines in a token decoration. Other fuller renditions seem to copy the San Luis Blue on White half-round with splayed linear attachments or other floral motifs. Painting was cursory in the extreme. No exterior decoration is seen on the flatware of the Blue Series.

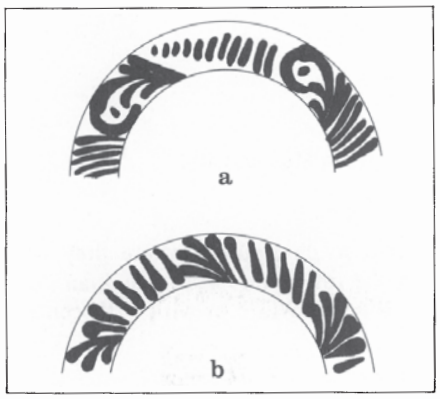


Fig. 3.19. Diagnostic plate rim patterns on Mexico City Blue on Cream, showing the influence of a contemporary Tacuba Polychrome.

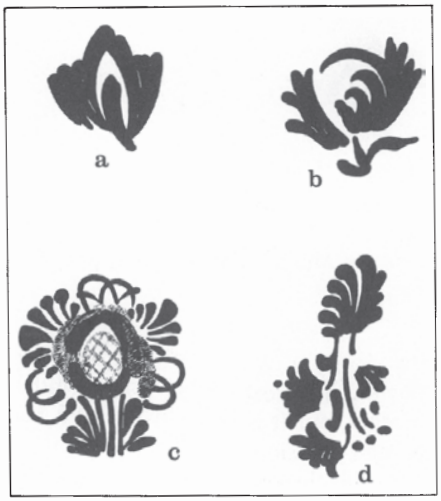


Fig. 3.20. Center patterns on Mexico City Blue on Cream: *a, b,* derivations from the ubiquitous palmette of contemporary San Juan Polychrome; *c, d,* modifications of floral patterns typical of contemporary San Luis Blue on White.

Fig. 3.21. Reconstruction of a complete typical decorative format on Mexico City Blue on Cream.

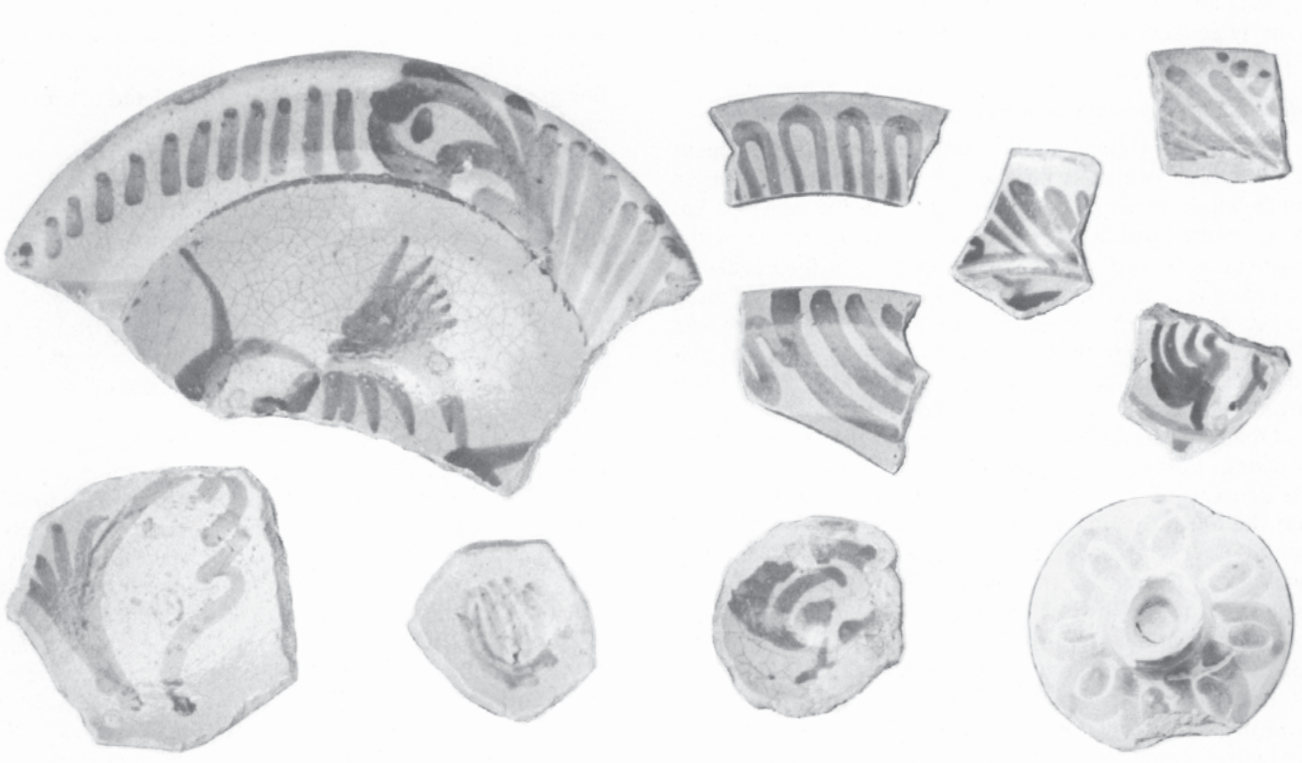


Fig. 3.22. Assorted fragments of Mexico City Blue on Cream recovered beneath Mexico City. Object at lower right is a portion of a candleholder.

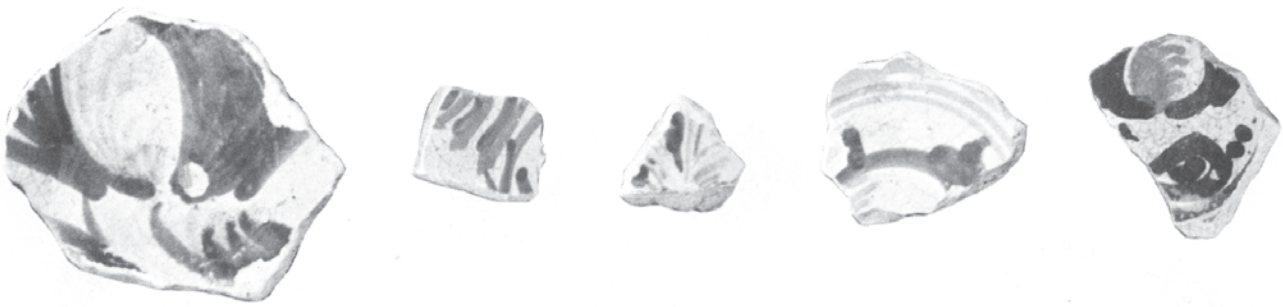


Fig. 3.23. Assorted fragments of Mexico City Polychrome recovered beneath Mexico City.

Mexico City Polychrome (Figs. 3.23, 3.41*e–h*)

This second type in the Blue Series carries the identical design assemblage as Mexico City Blue on Cream, but it is enlivened with a swipe of orange. The palette and occasional palmette are also reminiscent of San Juan Polychrome (Lister and Lister 1978, Fig. 7*b*). The type is very uncommon.

Green Series

In the Green Series, San Luis and Santa María polychrome styles seem to have been characteristic of the second half of the 17th century rather than earlier horizons, which may explain the limited presence of sherds of these types beneath both the Metropolitan Cathedral proper and the Sagrario. They are present in a restricted amount in the subway collection, which cannot be dated (Lister and Lister 1976a: 134).

Mexico City Green on Cream (Figs. 3.24–3.26, 3.41*i–l*)

Over a tan grainy ground the green decorative pigment on this type, which is the most abundant of the common grade types, is very dark and blurred at the edges. It has none of the opaque brightness nor spring-green hue of the pigment later used as a minor component of the Puebla set of colors (Lister and Lister 1978, Fig. 8*a*). Green was used for an exceedingly casual, rapidly applied, closely spaced decoration on plate or bowl obverses; it was limited on rims to hatchure, fronds, and dots, and in centerpieces to a few brush swipes back and forth over the surface.

Of all the various decorated ceramics recovered at the Metropolitan Cathedral compound and in the subway trenches, Mexico City Green on Cream seems to have continued in use the longest, perhaps well into the late 17th or early 18th centuries. In craftsmanship it is just a step above the utility lead-glazed household utensils. It must have been the usual tableware of the lower class citizens of the city, who may not have been able to afford the better wares of Puebla being used by richer customers. A concentration of 267 sherds of this type was encountered among the other late materials in the disturbed Pozo X deposits at the Metropolitan Cathedral compound, perhaps residue from the nearby school occupation. A few sherds of Mexico City Green on Cream have been found as far north as Chihuahua and the province of New Mexico, one of the few maiolica products of the Valley of Mexico so distributed, where they were associated either with the fine grade types San Juan Polychrome and San Luis Blue on White or with 17th century Puebla types.

San Luis Polychrome (Figs. 3.27, 3.41*m–q*)

More careful renditions of the same general style were called San Luis Polychrome by Goggin (1968: 166–69; Lister and Lister 1974, Fig. 5*c;* 1975a, Fig. 10; 1978, Fig. 8*b*). Decorators of this pottery delineated the field of design by narrow brown-black encircling lines. The center medallion was accented by similar dark lines and incorporated rare touches of yellow or orange. On occasion orange framed in brown was used as a rim band in imitation of some contemporary Puebla and Sevilla work. In Sevilla the rim hatchuring is eliminated. Certain similarities of this type with the design styling seen on the contemporary Blue Series and several fine grade types are obvious but very restricted in scope and carelessly rendered.

Santa María Polychrome (Figs. 3.28, 3.29, 3.41*r–t*)

A second more elaborate variation in the Green Series bears a large central open flower, or whirligig, with petals alternating between green and orange separated by fine brown lines radiating from a central orange dot enclosed by a brown frame (Lister and Lister 1978, Fig. 8*c*). Examples with individual petals defined by narrow brown lines may be a late stage in design evolution. Execution was casual and imprecise.

This is a newly defined type, named for the native barrio of Santa María Cuepopan where some of the colonial potteries may have been situated. Its focal element, the whirligig, forms the background of some famous figural tile panels in an 18th century Churrigueresque home near the Plaza Mayor, with blue replacing the multicolored scheme of this maiolica type (México, Secretaría de Educación Pública 1939, Figs. 63, 65, 69, 71; Toussaint 1967, Fig. 343). The whirligig likely was a well known device to all contemporary decorators, and in fact can be seen in modified form on some Aztec IV specimens (Griffin and Espejo 1947, Fig. 10-2), as well as on at least one local decorated sgraffito example in the Metropolitan Cathedral collection. It was also a familiar motif on central obverses of Montelupo polychromes from Italy (Comune di Montelupo Fiorentino 1977, Fig. 32; Comune

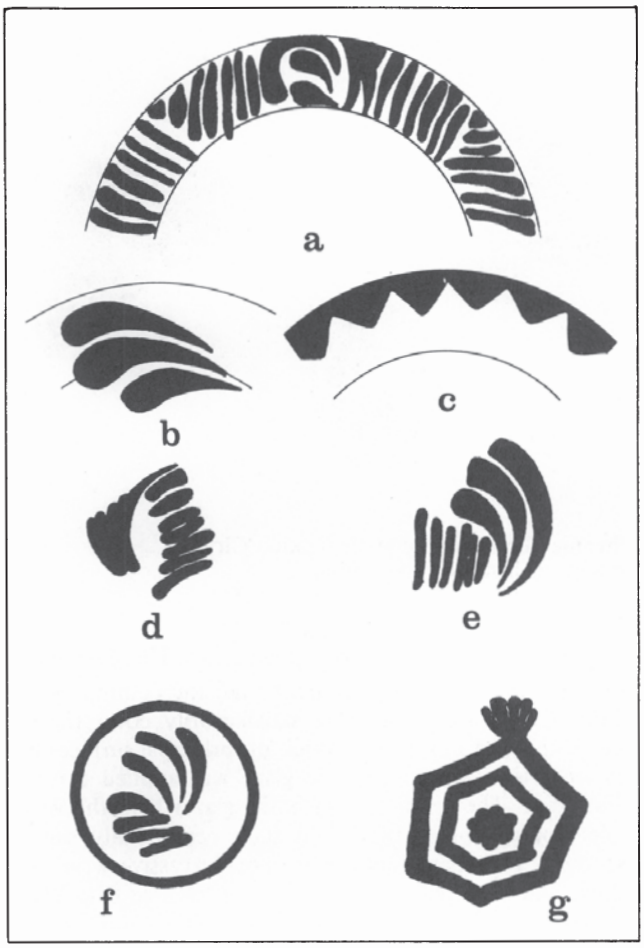


Fig. 3.24. Characteristic designs on Mexico City Green on Cream: *a–c*, rim patterns; *d–g*, center patterns. The serrated encircling design in *c* may represent a copy of a coeval 18th century Puebla element rendered in blue, green, or yellow.

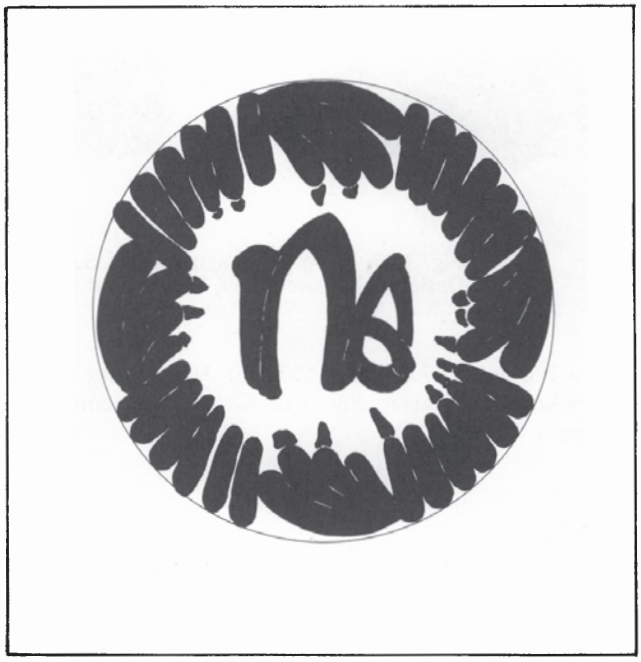


Fig. 3.25. Restoration of a complete typical decorative format on Mexico City Green on Cream. The carelessly applied, dense patterning is indicative of a mass-produced common grade ware.

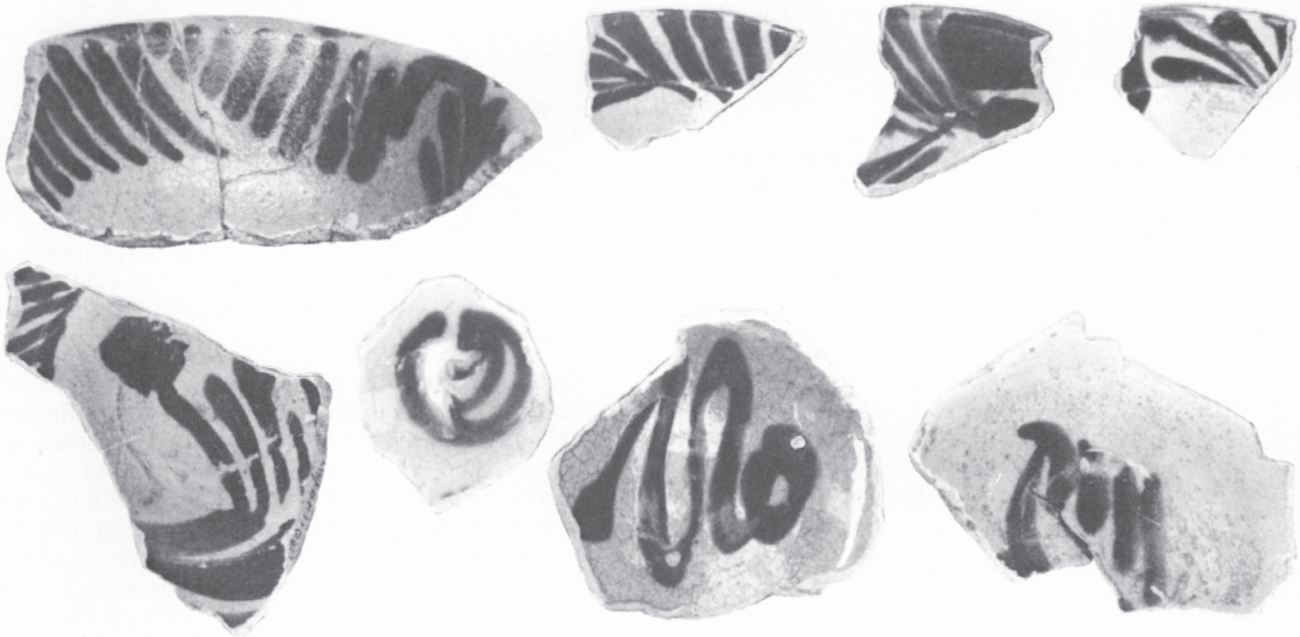


Fig. 3.26. Assorted fragments of Mexico City Green on Cream recovered beneath Mexico City.

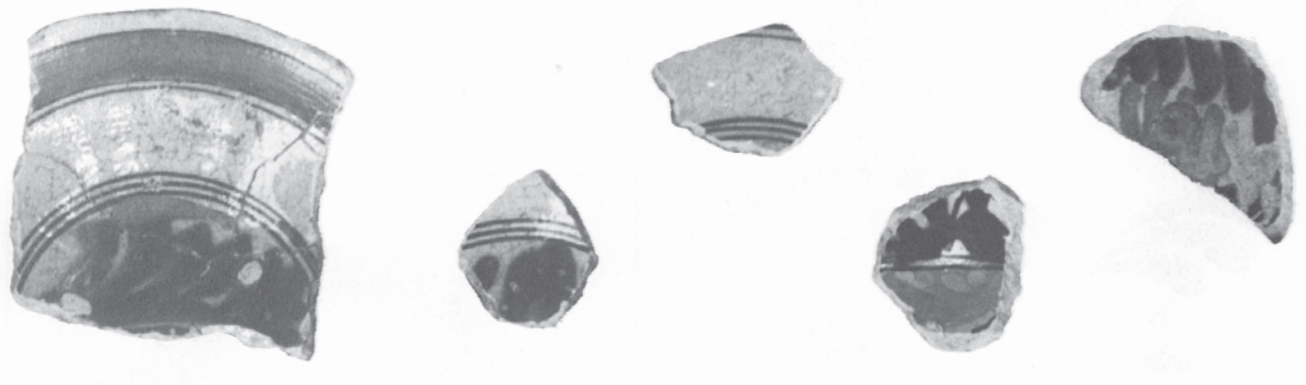


Fig. 3.27. Assorted fragments of San Luis Polychrome recovered beneath Mexico City. Design colors are green, brown, and occasionally orange against a cream ground.

di Sesto Fiorentino 1973, Figs. 30, 46). No exterior decoration is known on this or any of the Green Series common grade types.

VALLE WARE

Valle Ware duplicates the fundamental manufacturing techniques of Mexico City Ware, but with less craftsmanship and expertise. The ware is so named because it appears to have been manufactured, perhaps at some outlying village, to meet the needs of a small suburban marketplace where customers had little means or discrimination. Although its dating is undoubtedly in the 16th century, as revealed by the Metropolitan Cathedral project, the ware exhibits a retention of forms and designs from earlier traditions. The limited number of shapes made and designs in one color, ineptly executed, are further signs that this pottery likely was the tableware of low class mestizo homes and inns on the outskirts of the capital. (See Chapter 5: *Tin Glaze, Valle Ware.*)

Characteristics

Paste

In appearance the paste is most like that used in aboriginal pottery of the region, a rather uniformly bright brick red color with small dark inclusions that may have been native to the clay. Tiny grains of fine quartz sand may represent added tempering nonplastics. The texture of the paste is fairly coarse. The use of a mixture of two clays is not probable.

Method of forming

All vessels appear wheel thrown, with typical use of the jigger-and-jolly method for obverse ridged plates. Lugs were either moldmade or cut from a slab using a metal or wooden pattern, and were attached at the leather hard stage.

Thickness

Wall thickness is variable, from an average of 6 mm for walls to 10 mm for some vessel bases.

Glaze

Employing a tin opacified lead fluxed glaze, its fired color is white to cream with frequent contamination by iron or copper, producing yellow or green tones. The glaze likely had a relatively higher tin content than the common grade Mexico City Ware in order to satisfactorily cover the red core. Shiny and moderately thick on principal surfaces but thin on less obvious areas, the glaze was applied through submersion. The point at which the glazer held the vessel while dipping it into the liquid glaze occasionally can be discerned. The coat is subject to more excessive wear, pinholing, and crawling than the glaze on Mexico City Ware. Furthermore, the large amount of fine-lined over-all crazing present indicates a poor fit of the glaze to the body.

Decoration

Enrichment was achieved by painting in mineral pigments over an unfired glaze.

Decorative pigments

Blue, varying from very dark to very light, is the only color employed. The frequent greenish cast to the pigment observable on some examples suggests a solution other than one based on cobalt may have been used.

Firing method

All types were fired under oxidizing atmospheric conditions without the use of saggars. Cockspur scars are usual. Occasional carbon streaks in the wall cores indicate a firing of too short duration to burn out the carbonaceous matter in the clay; other very darkened cores resulted from overfiring. Although the pottery is of the simplest kind, two firings would have been required – one to bisque the vessels and the other to mature the glaze.

Typical forms (Fig. 3.30)

Plates: two shapes occur, but whether a time differential exists between them has not been verified in these mixed deposits. Common are plates of the old Sevillian tradition seen in Morisco Ware, with a central obverse ridging, sloped walls terminating in a tapered rim, and no ring foot. This form dates to the first half of the 16th century and earlier. Also present are plates with flattened horizontal rims reminiscent of the second half of the 16th century but, unlike contemporary interpretations of Mexico City Ware, most remain unfooted. Occasionally they are fairly large, up to 24 cm in diameter.

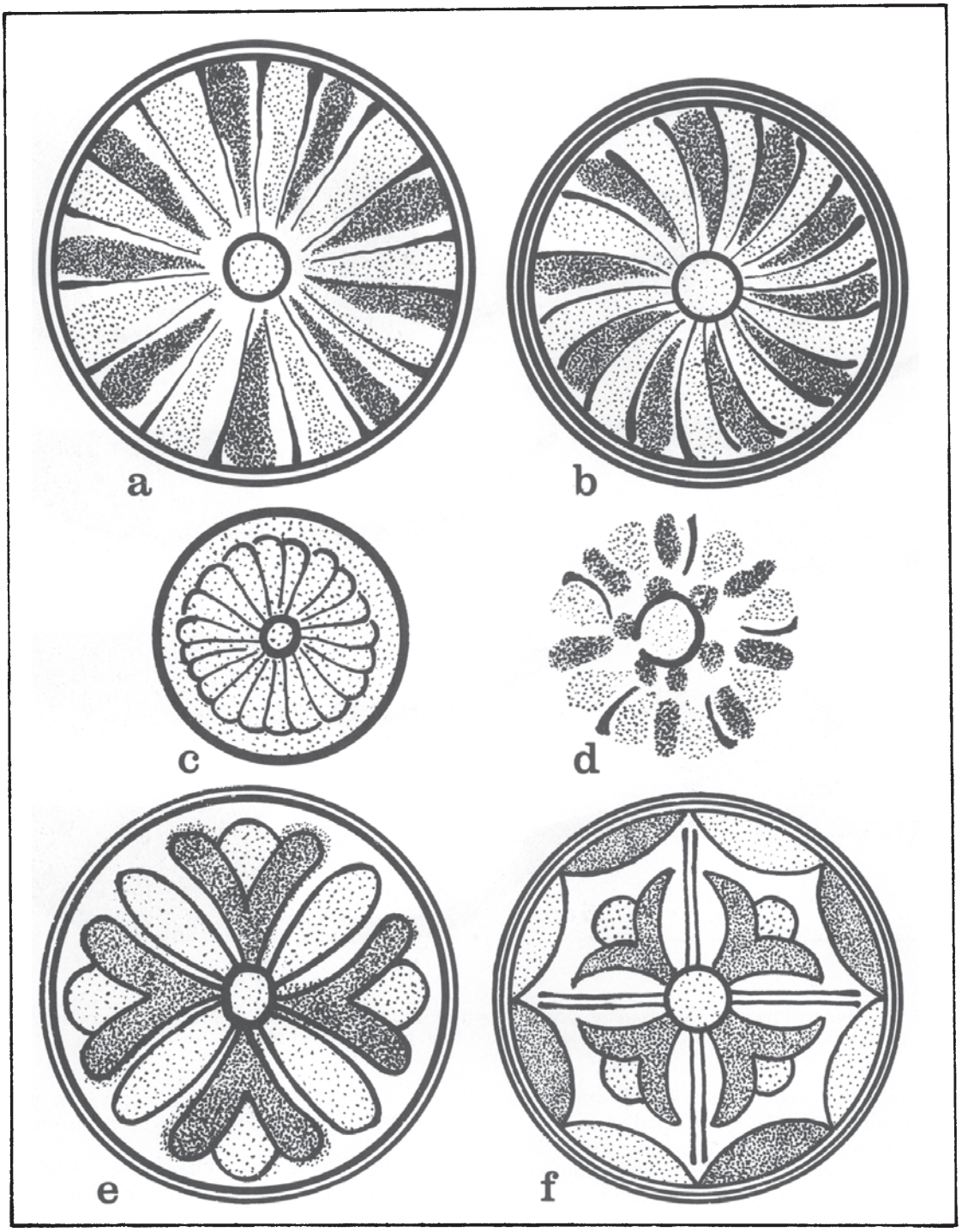


Fig. 3.28. Variations of the diagnostic center floral motif on Santa María Polychrome. Principal colors were green and orange or yellow defined by brown outlining on a creamy ground. The balance and draftsmanship displayed in *e* and *f* recall common Spanish Muslim ornamentation.

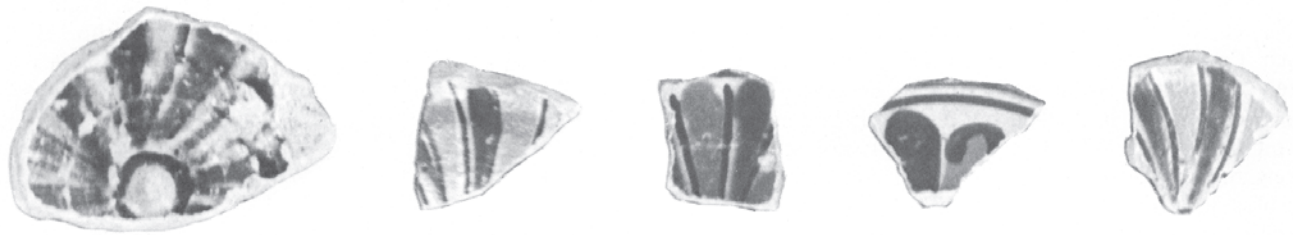


Fig. 3.29. Assorted fragments of Santa María Polychrome recovered beneath Mexico City.

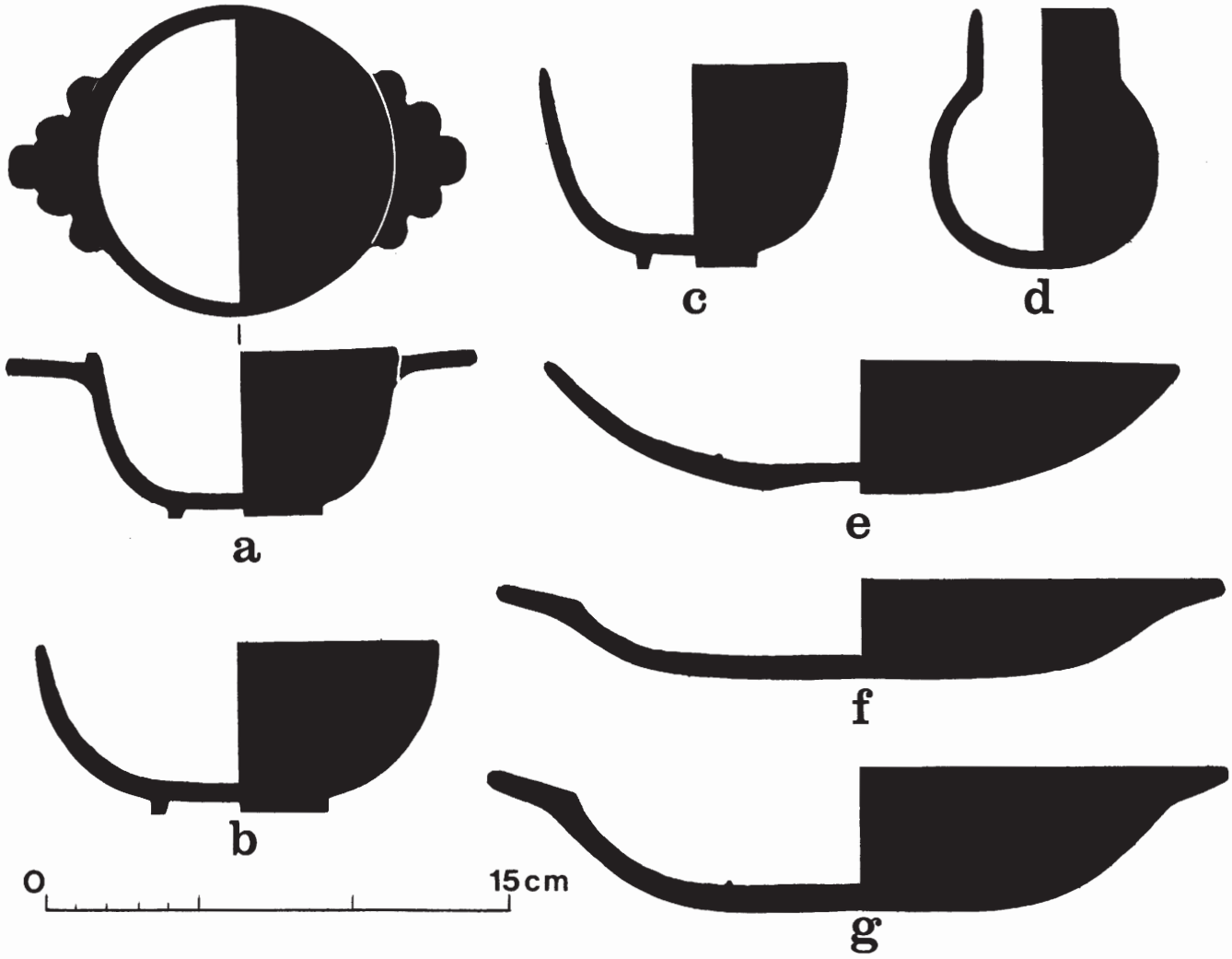


Fig. 3.30. Typical forms of Valle Ware: *a*, porringer with lobed lugs; *b,c*, small hemispherical bowls; *d*, small jar; *e*, plate reflecting retention of ancient Muslim tradition; *f, g*, brimmed plates.

Jars: the only observed examples are of small size, probably without a ring foot but with a short flared neck.

Porringers: there are a number of these small wide mouthed bowls with direct tapered rims and occasionally ring feet. Pairs of small, solid, lobed lug attachments are affixed just below the rim edge. They are of larger size than on coeval Mexico City White. The form with lug is a holdover from the Medieval form inventory.

Bowls: small ring-footed hemispherical bowls from 4.5 to 5.5 cm in height and 12 cm in diameter are present.

Tlalpan Blue on White (Figs. 3.31, *bottom row;* 3.42*a–b*)

Named for a village on the causeway of Ixtapalapa over which Cortés's band of *conquistadores* first entered the Aztec capital, this is the most common decorated type of Valle Ware present in the Metropolitan Cathedral collection (Lister and Lister 1978, Fig. 10*a*). It was not recognized among the subway ceramics. Its design consists of one or two blue lines encircling vessel obverses just below the rims, and also frequently several similar lines painted around the central basal zone. Perhaps there is some correlation between this decoration and the obverse ridged plate form on which it commonly appears, both having earlier precedents in Yayal Blue on White of the Sevillian Morisco Ware.

Guadalupe Blue on White (Figs. 3.32, 3.42*c–d*)

A second new type, named for the village that gave colonial Mexico a patron saint, is decorated in a number of simple unstructured motifs (Lister and Lister 1978, Fig. 10*b*). In the Metropolitan Cathedral collection are two examples expressing the heterogeneity of the Spanish cultural fabric. One is a stylized, large scaled, pear-shaped palmette, which can be observed in a modified rendition on a Yayal Blue on White fragment in Figure 4.12. It appears on 14th or 15th century specimens at Sevilla (see Fig. 4.18), and is illustrated on a late 14th century vessel from Barcelona (Batllori Munné and Llubiá Munné 1949, Fig. 15*b*), all deriving from a generalized Muslim heritage. The other motif is a coarsened copy of the Holy Monogram on a vessel obverse, and on the reverse is the encircling arcade typical of Ligurian Blue on Blue of the same horizon. In this collection the Holy Monogram is a common motif on Christian Sevilla Ware of the second half of the 16th century. Whatever the ultimate source for the designs used, their painting on this ware is crude and unplanned.

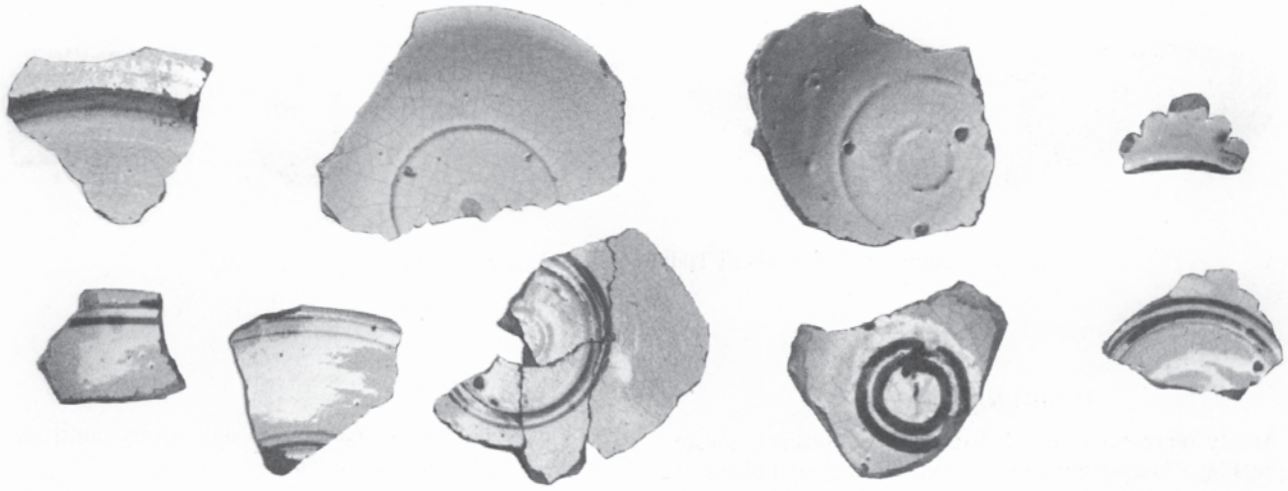


Fig. 3.31. Assorted fragments of Valle Ware recovered beneath Mexico City: *top row,* Tlalpan White; *bottom row,* Tlalpan Blue on White. The retention of the central obverse ridging on plate fragments and the triads of prominent cockspur scars are visible.

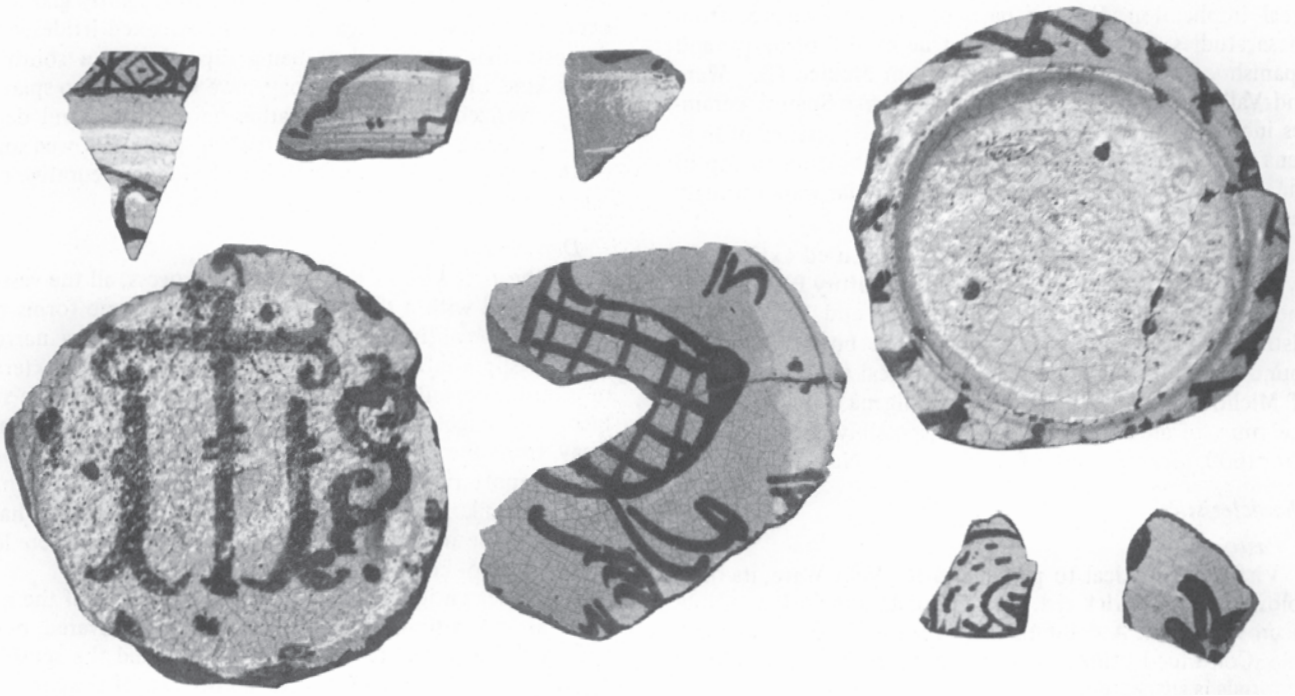


Fig. 3.32. Assorted fragments of Guadalupe Blue on White recovered beneath Mexico City: *lower left,* a Holy Monogram; *middle,* a Medieval palmette; *upper right,* plate exterior with overlapping arcades and cockspur scars. The grainy, crazed surface is clearly observable.

Tlalpan Mottled (Fig. 3.33)

A mere two fragments recovered at the Metropolitan Cathedral compound, both from small jars, imply a low level duplication of either a mottled blue type known for late 16th century Talavera (Figs. 4.36, *center*; 4.37, *upper center*; Frothingham 1944a, Fig. 20) and probably also present at Sevilla, or a solid blue ground such as was used on Sevillian Caparra Blue (Fig. 4.30, *top*; Lister and Lister 1978, Fig. 10*c*). In both cases the mode was used exclusively for drug jars. On Tlalpan Mottled blobs of the same blue pigment utilized for more refined decorations of Valle Ware were scattered over both surfaces of the vessels.

Tlalpan White (Figs. 3.31, *top row*; 3.42*e*)

In every detail, excepting decoration, the type called Tlalpan White conforms to the ware descriptions (Figs. 3.31, *top row;* 3.42*e;* Lister and Lister 1978, Fig. 10*d*). By far, it was the principal style of the group.

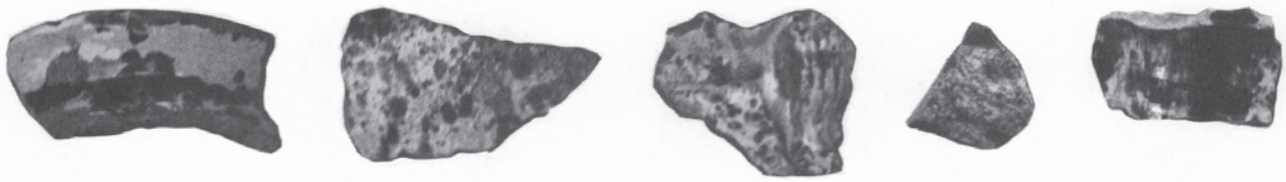


Fig. 3.33. Assorted fragments of Tlalpan Mottled recovered beneath Mexico City.

INDIGENA WARE

Amply represented in the Plaza Mayor deposits is a ware expressing a fascinating technological and cultural blend. It is not wheelmade nor is it true maiolica, and there is evidence to suggest its makers were not Europeans; hence it is designated as Indígena Ware (see Chapter 5: *Tin Glaze, Indígena Ware*). For now, this name only suggests its postulated cultural affiliation rather than any, as yet unsubstantiated, areal implication. On the basis of present evidence from these studies, Indígena Ware is a true hybrid of native and Spanish ceramic traits. It differs from Mexico City Ware and Valle Ware, both of which are *derivative* Spanish ceramics incorporating stylistic differences. The presence of Indígena Ware in significant quantities from bottom to top of the refuse deposits indicates it was a popular ware throughout the 16th century.

Although Indígena Ware obviously was used extensively by persons who lived around the 16th century Plaza Mayor and who dumped their refuse at its north end, in general its distribution elsewhere is not known. The pottery has been found in Chihuahua and in archaeological sites in the state of Michoacán. A few fragments of Indígena Ware came from the ruins of an unnamed hacienda, possibly dating shortly after 1600, located south of Albuquerque, New Mexico.

Characteristics

Paste

Virtually identical to paste used for Valle Ware, its fired color was bright brick red, with minor dark inclusions visible in cross-section. A combination of several clays is improbable. Continued utilization of a pre-Hispanic source of raw materials is suspected.

Method of forming

Hand techniques were used to shape the vessels of Indígena Ware, but at present it is impossible to say whether they involved the coil method or were based on the use of molds. Perhaps the complete output represents both procedures. The uniformity of several sizes and shapes suggests molds. At the leather-hard stage they were scraped and smoothed with some unknown sharp edged tool, such as a flint or gourd rind, which left a telltale network of tiny facets or striations in the clay (see Fig. 3.39*b*). Lug attachments may have been moldmade or cut from a slab using a solid pattern. They were attached by hand at the leather-hard stage.

Thickness

Wall thickness averages 6 mm and is very consistent in the total collection of this ware.

Glaze

A thin transparent lead glaze covers decorated surfaces and sometimes extends over unslipped body walls. Bases of decorated specimens do not have a glaze coating, even when slipped. Plain white vessels frequently were lightly glazed all over. The uneven application and its streaked irridescence suggests that, rather than being dipped into a solution, some kind of a fiber brush may have been used to splatter dry pulverized galena over leather-hard slipped and decorated surfaces. The fluxing action of the glaze yellowed some of the engobe, or slip, beneath it and caused decorative pigments to run.

Decoration

As the first step in the decorative process, all the vessels were coated with a thin white engobe. On some forms the engobe was confined to obverses, or sometimes a narrow band of slip continued down below the rim on the exterior or interior, depending upon which was the major visible surface. The engobe displays a common tendency to flake away from the paste. Its use under a clear lead glaze produces a pottery outwardly similar to maiolica but technically dissimilar, causing it to be known as mezza (or half) maiolica. The majority of the vessels in this ware were left at this stage of completion.

If further enrichment was desired, an outline of the motifs was cut into the leather-hard, engobe-covered body with a sharpened stick or quill. This is called the sgraffito process, a word derived from Italian because of the common usage of the method in Italy. That engraving exposed the base clay beneath the white engobe. If further definition of pattern was needed, broader areas of the engobe were removed. A number of decorated examples were considered finished with this step, the glaze top coat darkening the red clay of the outline and background to contrast sharply with the pattern in white engobe. Still additional decoration was gained by filling in some elements with one or two colorants.

Decorative pigments

Green from copper generally has the same very dark tone that occurs on the contemporary Mexico City Green on Cream of Mexico City Ware, although some lighter applications are more apple green in color. The lead glaze over it

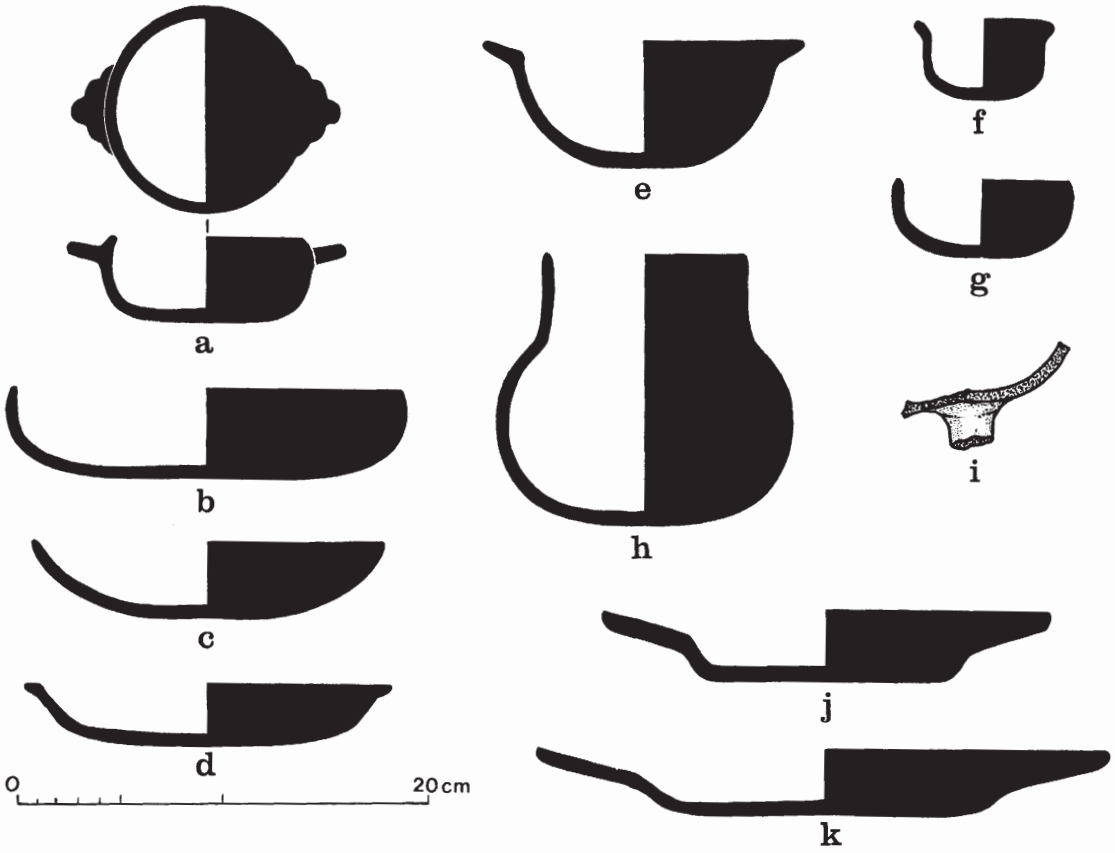


Fig. 3.34. Typical forms of Indígena Ware: *a*, porringer with lobed lugs; *b–d*, variations of basins; *e–g*, variations of hemipsherical bowls; *h*, jar; *i*, drawing of fragment with tripod legs; *j*, *k*, basins.

creates an irridescence in many cases. The use of this green doubtless caused Mexicans to regard the ware as an inferior product to their fine grade maiolicas.

Yellow used under the lead glaze on this ware is amber rather than bright, comparable to some lead glazed Spanish pieces with a coloration known as *melado*. Both pigments appear glassy and blurred because of the action of the glaze.

Firing method

It is possible to complete lead glazed wares such as this in a single firing, and likely that was all that was undertaken. Quite surely such a firing did not occur in the open because a kiln would have been recognized as valuable, though not absolutely essential, in producing a satisfactory glaze. The absence of fire clouds or other discolorations supports this assumption. Unglazed bases would have permitted the vessels to rest on shelving or some kind of support rods without the use of cockspurs. No scars from these tools are observed on this pottery. But even where a glaze covers the entire vessel, it is so thin that unintentional fusing to other objects would have been minimal. The hardness of the ware is such that fragments are of large size, comparatively speaking, with relatively sharp edges, implying a higher temperature to secure a near vitrification.

Typical forms (Fig. 3.34)

Basins or plates: generally rather large vessels, often between 18 to as much as 30 cm in diameter, with flat interior, and with flattened brims from 3.5 to 5 cm in width, flared upward. There is no foot on this form.

Bowls: hemispherical bowls with inverted, direct, and slightly everted rims occur. A few examples bear the stubby remains of tripod supports, but no ring feet are present. On occasion a fillet of clay was applied to the base of a decorated band on the exterior wall and then pinched down in a piecrust pattern.

Porringers: small bowls with solid, lobed, horizontal lug appendages are common. This form does not have a ring foot.

Jars: recovered was one example of a large jar with a modest straight neck and direct lip; basal configuration is unknown.

Romita Sgraffito (Figs. 3.35–3.37, 3.43*a–h*)

All the decorated versions of Indígena Ware are put together in this one category (Lister and Lister 1978, Fig. 11*b*). Future work may permit the style without the yellow or green or both filler pigments to be segregated, perhaps even established as the initial phase of an evolutionary sequence. Because of the absence of those colors, the style appears more related to the Indian past.

Format of field of design is comparable to that on the painted maiolicas associated with it. In the plate or shallow basin form, the broad flattened rims carry an encircling band pattern that most frequently appears to be a variation

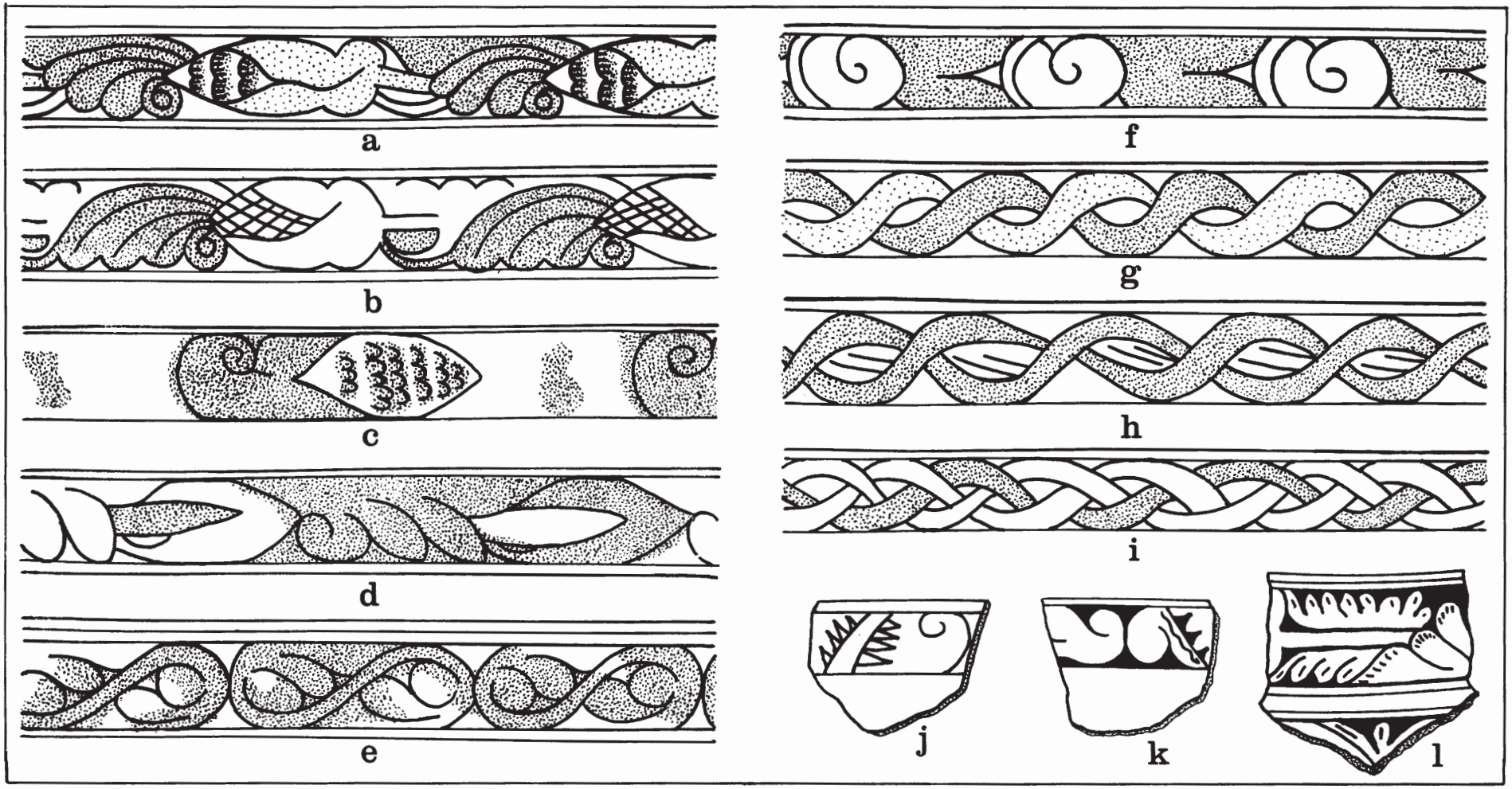


Fig. 3.35. Rim patterns on Romita Sgraffito: *a-f, k, l,* variations of a corn motif; *g-i,* chains. Designs are etched through the slip, then filled usually with either green or amber, or both.

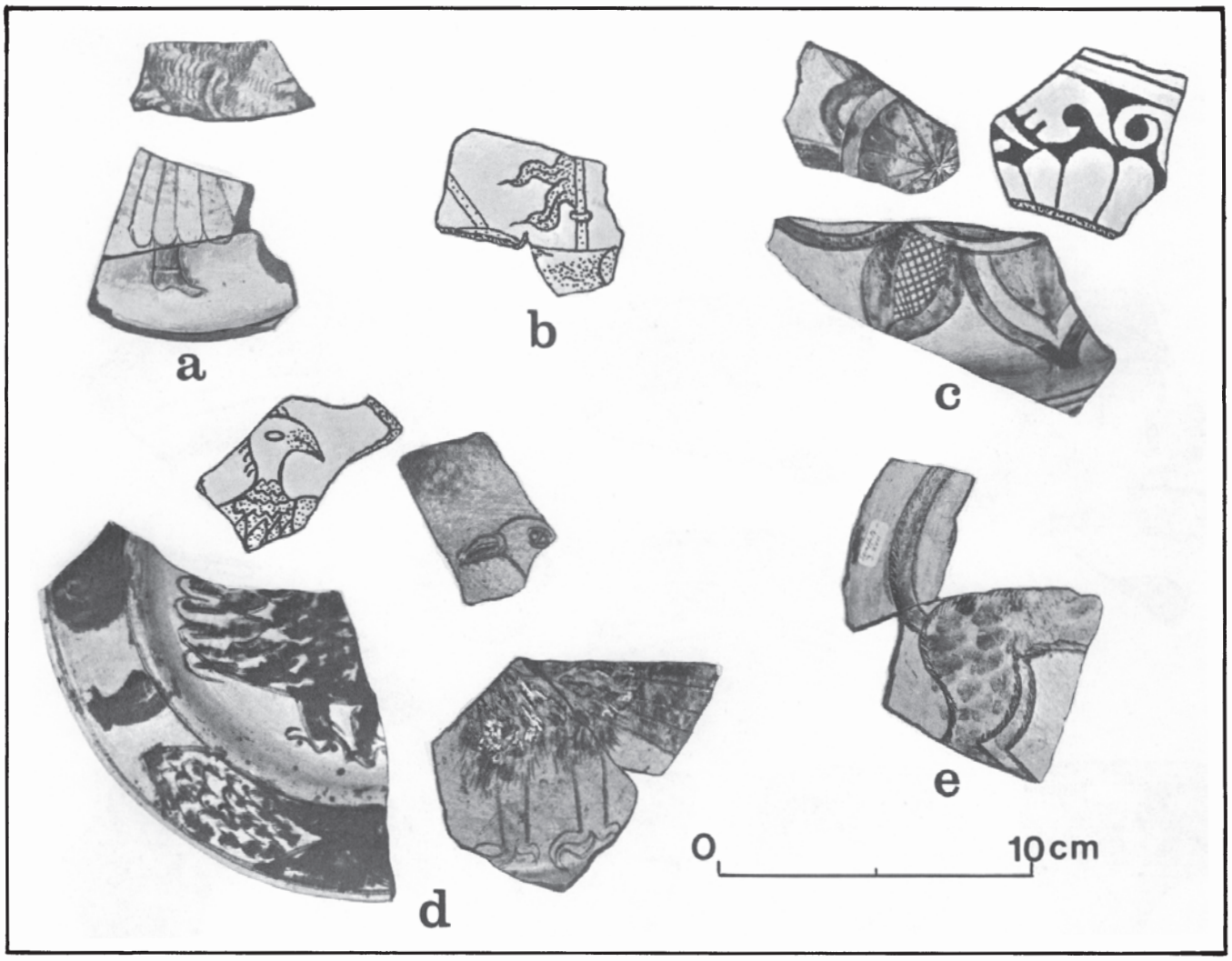


Fig. 3.36. Center patterns on Romita Sgraffito: *a*, human figures; *b*, flag; *c*, floral motifs; *d*, birds; *e*, spotted quadruped.

of a corn motif. S-scrolls and chains also occur. The motifs themselves are rather large and curvilinear. The band is framed on each side by a sgraffito line. All of these features, combined with small lined fillers and zigzags, connote an Indian background (Fig. 3.38). Below the brim, a narrow cavetto was left undecorated. The center bottom offered a wide field that may or may not be demarked by an encircling etched line. Because of the small wall area and the expansive center bottom and broad brim, design on these vessels appears heavier than on most of the contemporary maiolica. Large central basal motifs frequently are naturalistic, including figures of quadrupeds, birds, or human beings. Among these are some assimilations of European ideas. Exteriors are undecorated. Bowls exhibit a similar layout with a framed band composed of S-scrolls or hooked volutes placed just below the rim or an inch or so down the body wall. Below that is an undecorated zone, and in the very bottom is another large centerpiece such as an open flower. Exteriors of bowls sometimes have a comparable band below the rim.

Romita Sgraffito is an attractive, gay pottery that, in its class, ranks high technically. It was an engraver's rather than a painter's forte, with fairly sure-handed line work. There are some spacing problems and inept crossing of line junctures, but these do not destroy the over-all pleasing quality of the pottery. The fuzziness resulting from fluxing of the decorative pigments was a problem also not solved by the European makers of mezza maiolica. Of interest is a single fragment of the ware, characteristic in all respects, but which some rugged individualist chose to paint in green designs rather than to etch a pattern and then fill it in with green.

Romita Plain (Figs. 3.39, 3.43*i–k*)

Indígena Ware covered merely by a white engobe beneath a transparent lead glaze was not only much more common than the decorated companion type, but a major competitor of Mexico City White; approximately 1500 sherds of it were recovered at the Metropolitan Cathedral (Table 2.1). It is here called Romita Plain, after a small mainland potting village that is now engulfed by the modern district of the city known as the Roma. Quite possibly Romita Plain was an inexpensive service ware that withstood hard usage better than the lesser quality common maiolicas (Lister and Lister 1978, Fig. 11*a*).

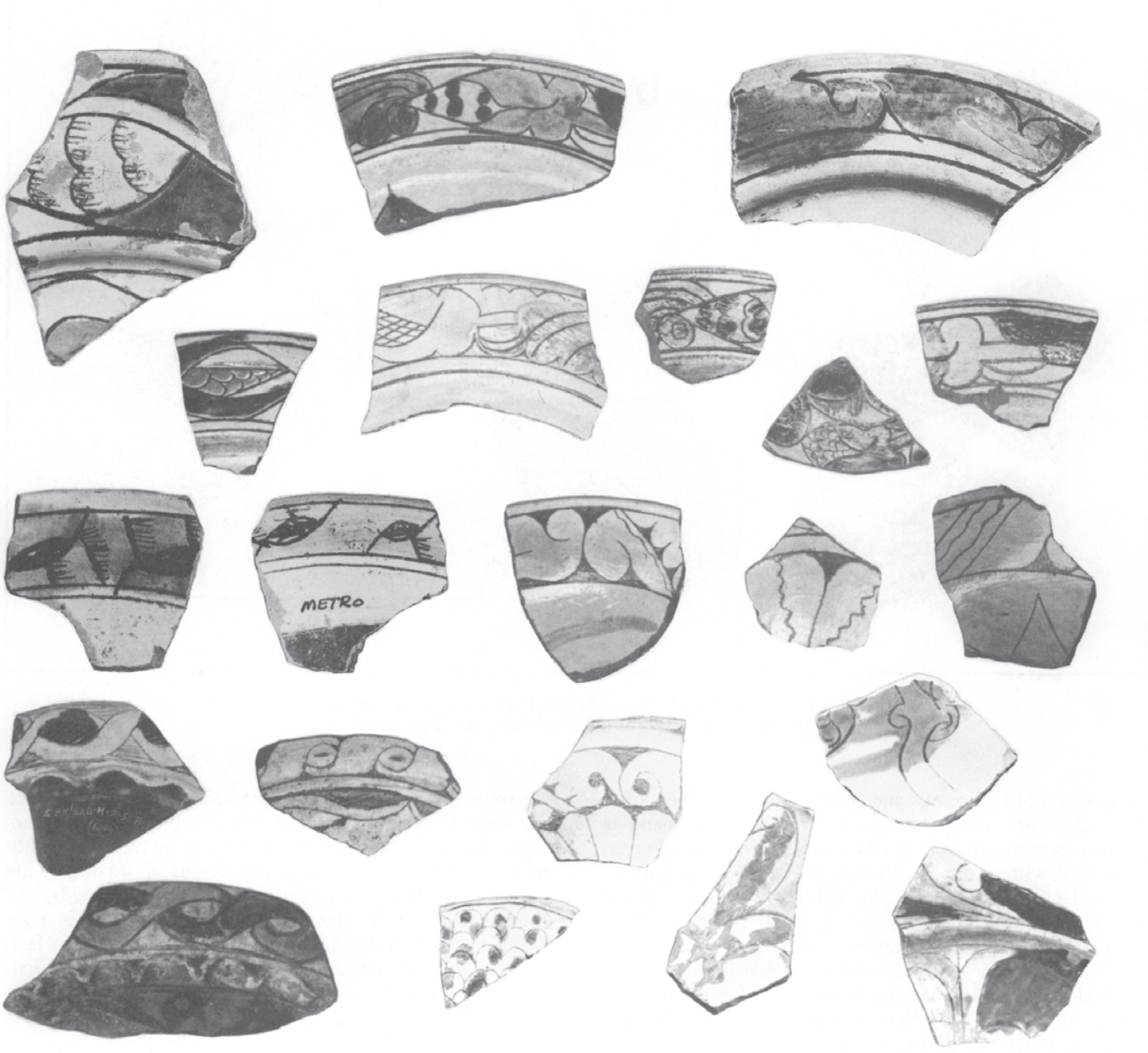


Fig. 3.37. Assorted fragments of Romita Sgraffito recovered beneath Mexico City.

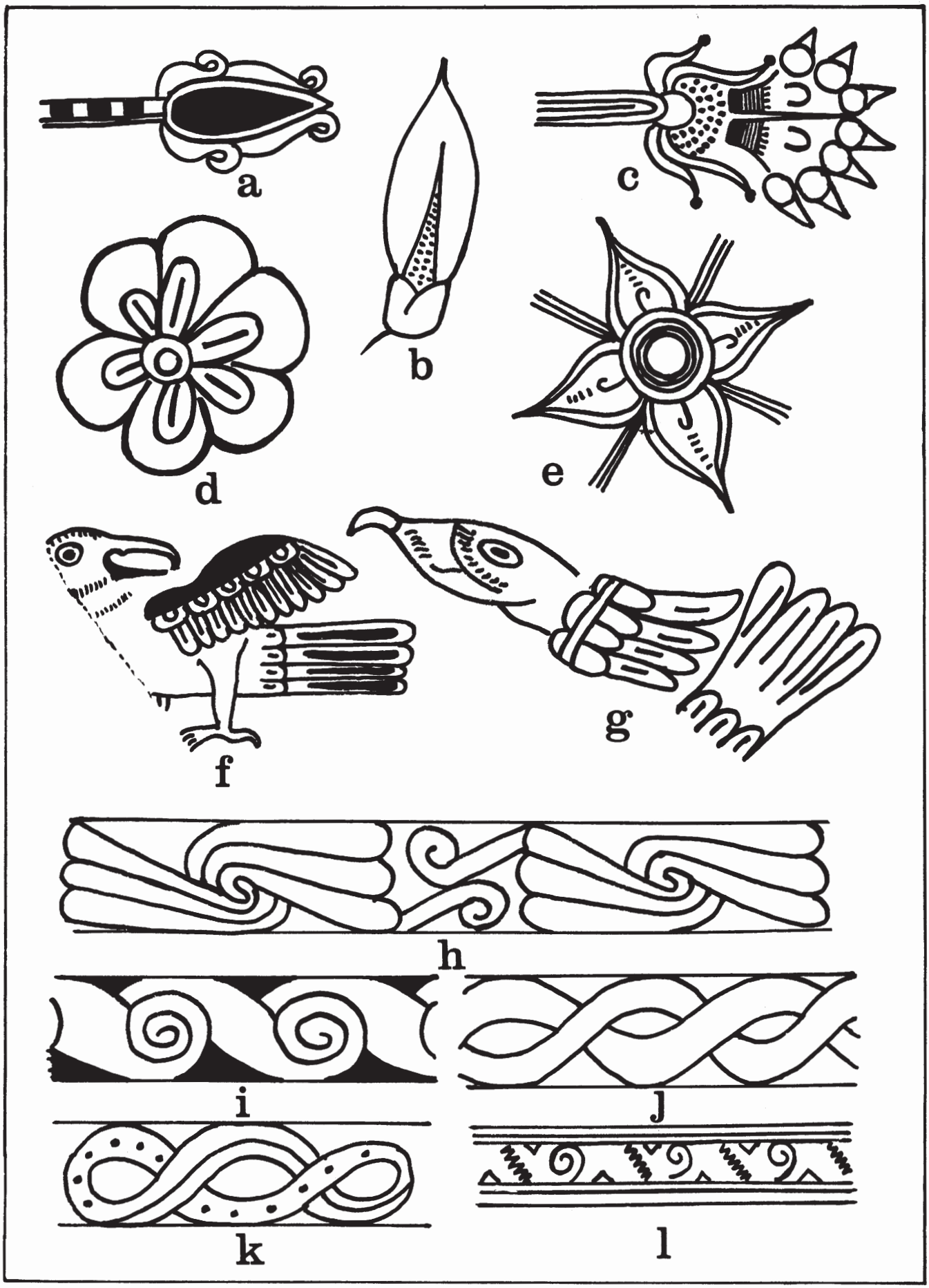


Fig. 3.38. Motifs occurring on late Aztec pottery that influenced the decorative modes of Romita Sgraffito: *a–g*, center patterns incorporating floral and fauna designs; *h–l*, rim patterns.

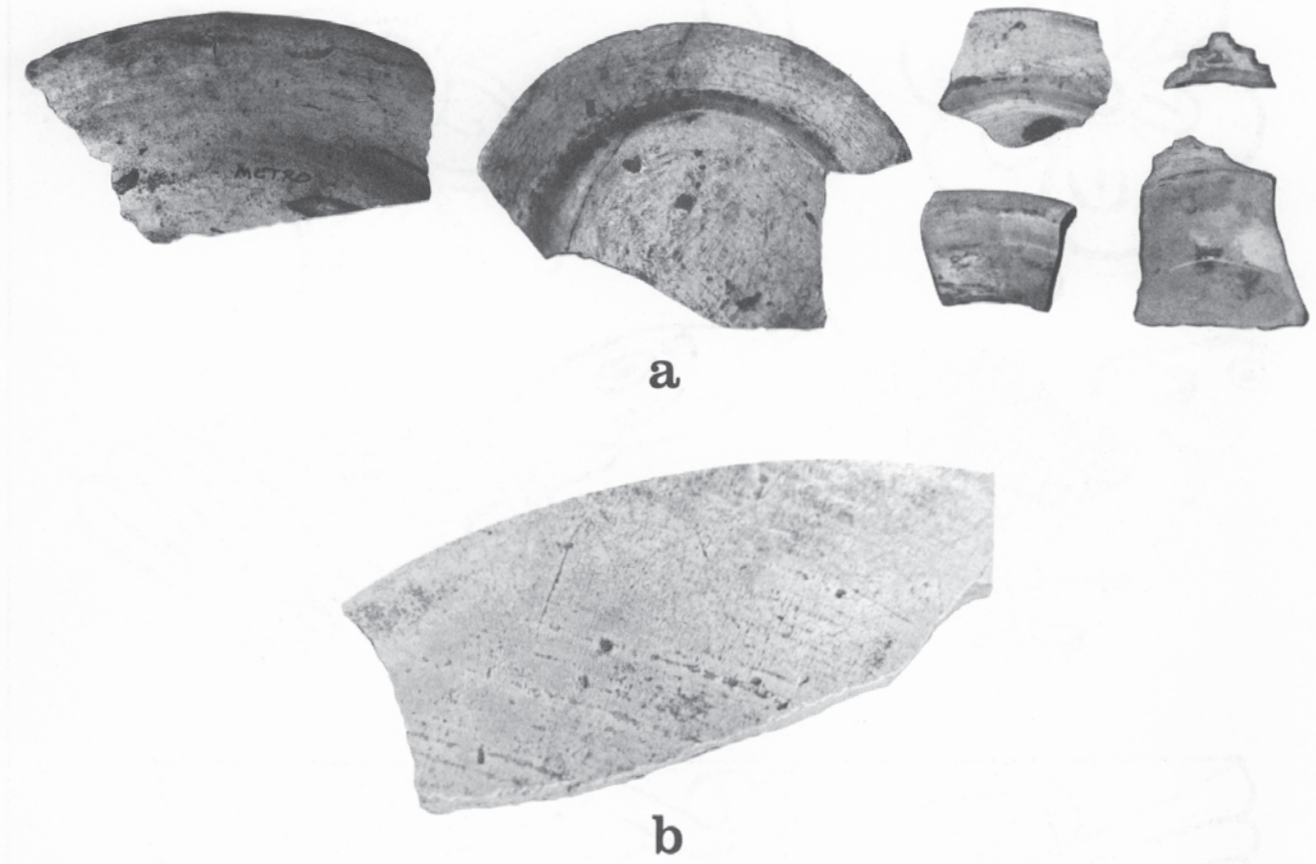


Fig. 3.39. Assorted fragments of Romita Plain recovered beneath Mexico City. The interior surface of a basin sherd, *b*, shows numerous smoothing striations, made by a sharp-edged hand tool, beneath the slip. The slip has worn off the ridges of some striations, bringing the pattern of the finishing operation into greater relief.

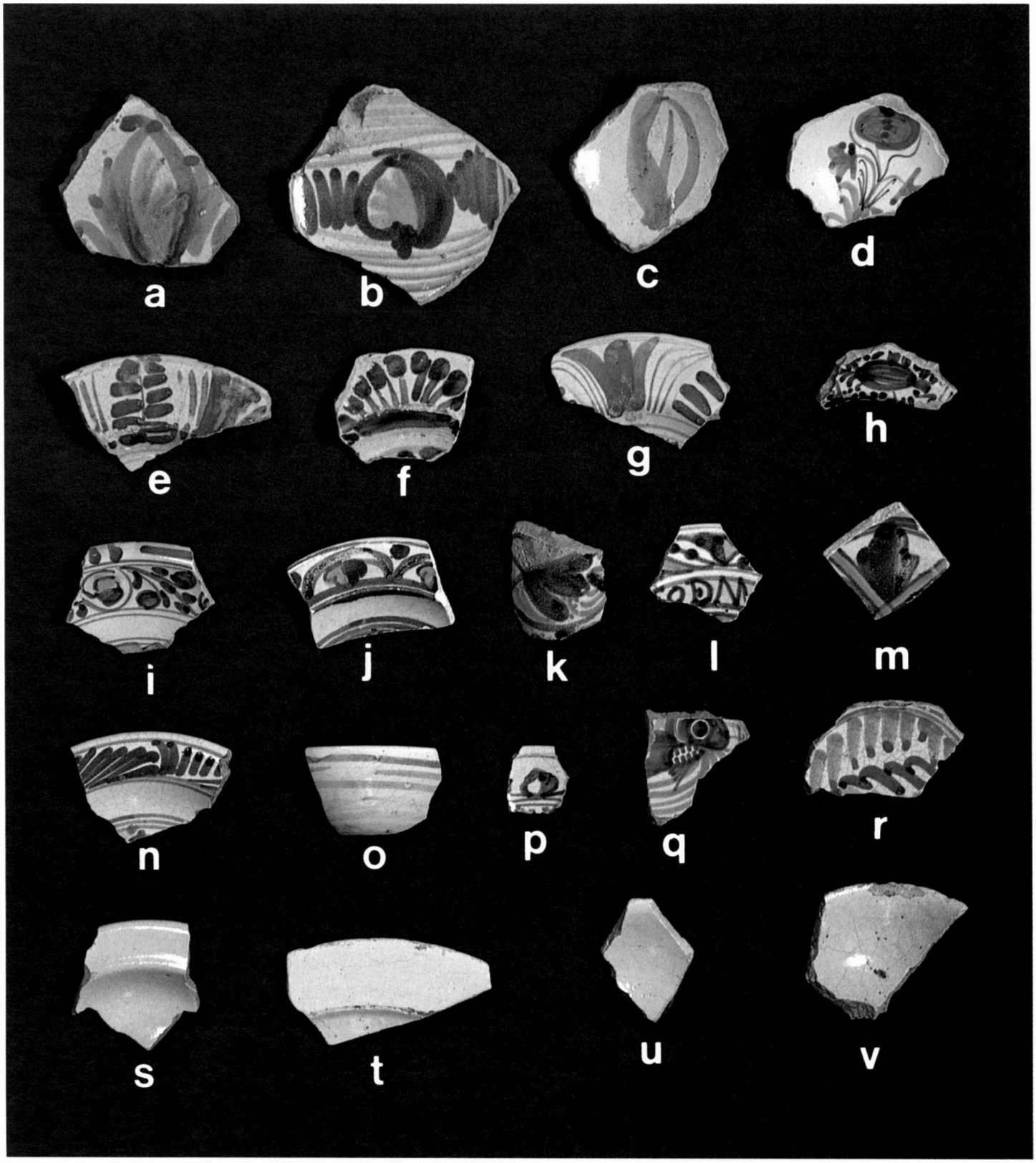


Fig. 3.40. Assorted fragments of Mexico City Ware, Fine Grade, recovered beneath Mexico City: *a–d,* San Juan Polychrome; *e–h,* San Luis Blue on White; *i–m,* La Traza Polychrome; *n–r,* Tacuba Polychrome; *s–v,* Mexico City White, Variety One.

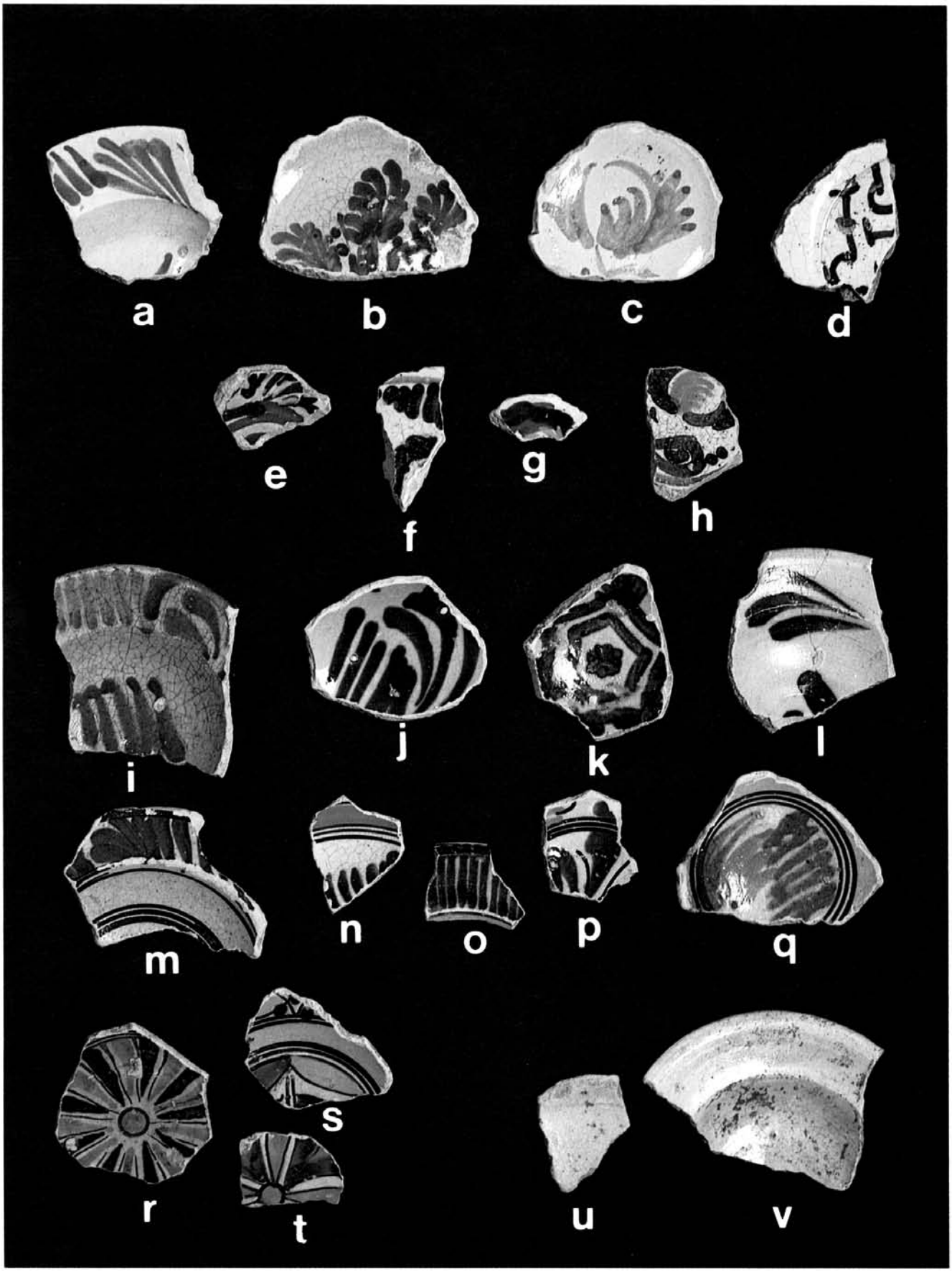


Fig. 3.41. Assorted fragments of Mexico City Ware, Common Grade, recovered beneath Mexico City. Blue Series: *a-d,* Mexico City Blue on Cream; *e-h,* Mexico City Polychrome. Green Series: *i-l,* Mexico City Green on Cream; *m-q,* San Luis Polychrome; *r-t,* Santa María Polychrome. *u-v,* Mexico City White, Variety Two.

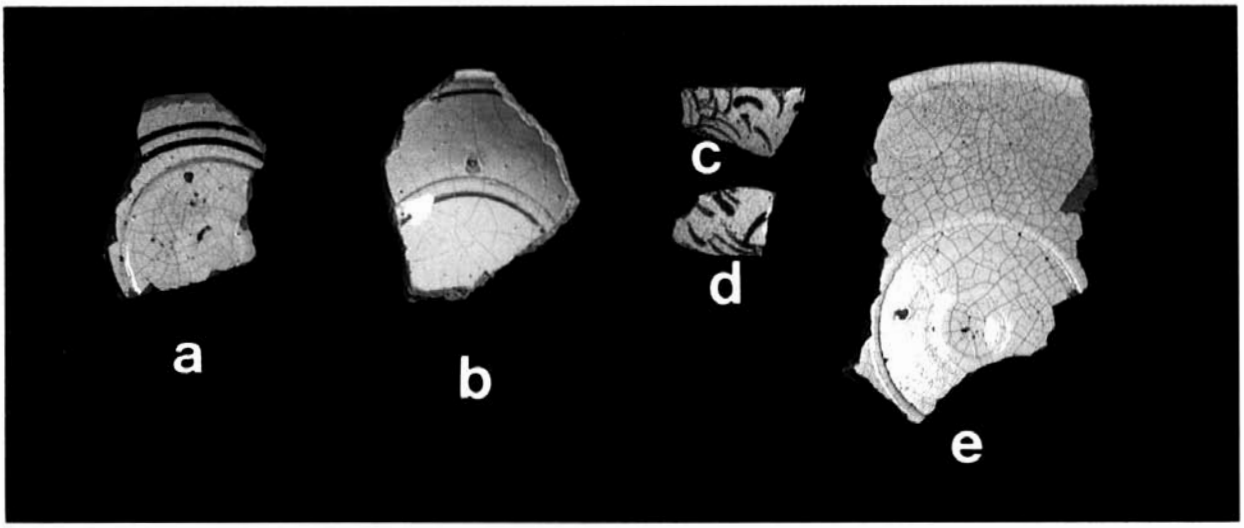


Fig. 3.42. Assorted fragments of Valle Ware recovered beneath Mexico City: *a*, *b*, Tlalpan Blue on White; *c*, *d*, Guadalupe Blue on White; *e*, Tlalpan White.

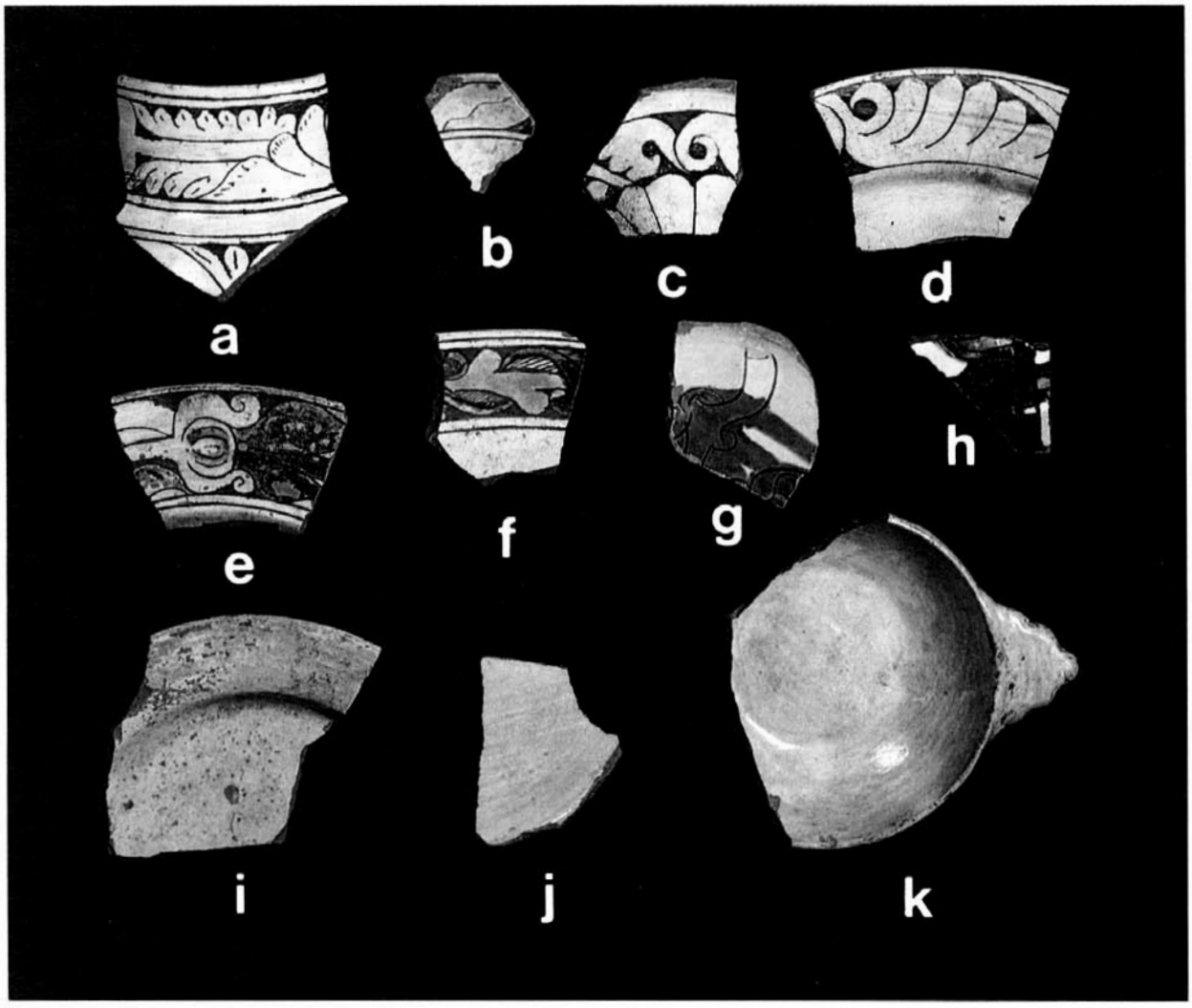


Fig. 3.43. Assorted fragments of Indígena Ware recovered beneath Mexico City: *a-h*, Romita Sgraffito; *i-k*, Romita Plain.

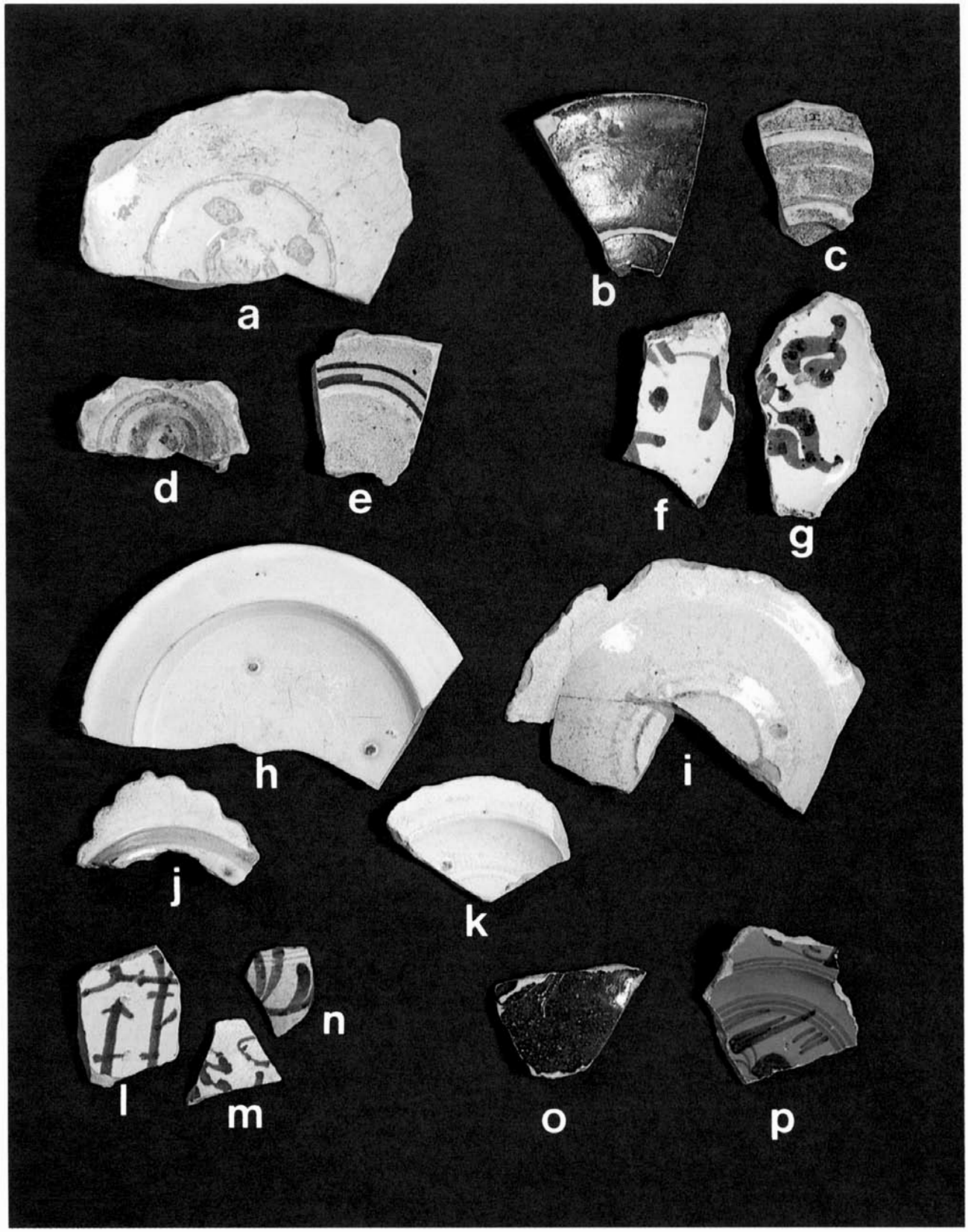


Fig. 3.44. Sevillian maiolicas of the 16th century recovered beneath Mexico City. Morisco Ware: *a*, Columbia Plain; *b*, *c*, Columbia Gunmetal; *d*, Isabela Polychrome; *e*, Yayal Blue on White; *f*, *g*, Santo Domingo Blue on White. Sevilla Ware: *h–k*, Sevilla White; *l–n*, Sevilla Blue on White. Guadalquivir Ware: *o*, Caparra Blue; *p*, Sevilla Blue on Blue.

4. IMPORTED DECORATED CERAMICS

The ceramics recovered beneath the Metropolitan Cathedral compound and in the excavations for the Mexico City subway support the belief that some of the best pottery of contemporary Spain did, in fact, reach the 16th century colonists thousands of miles away. Included was not only Spanish-made merchandise but products from other European countries as well. Moreover, the provincials had access to Oriental luxuries unobtainable or far rarer in the motherland. Colonial Mexico City, located midway between the Occident and the Orient, enjoyed some of the worldly riches of both, as recorded at the beginning of the 17th century in a poem about Mexico by Balbuena: "In thee Spain and China meet, Italy is linked with Japan, and now, ultimately a world joined by treaty and authority" (Benítez 1965: 57).

SPANISH MAIOLICAS

It is not surprising that an important melange of Spanish wares was present in 16th century Mexico City. Between 1504 and 1555 over 2800 ships sailed from Spain to the Indies, and after 1521 a high proportion of them were directed straight to Vera Cruz, the port for New Spain. A study made of the archives by Torre Revello (1943: 773-80) shows that maiolica, indicated as *loza blanca,* on occasion was included with other outbound goods. A similar search of the Archivo de Indias instigated by John Goggin confirms these shipments. The fact that there were reported fifty pottery workshops in operation in Sevilla by the middle of the 16th century indicates that ceramic manufacture—together with the making of gunpowder, hard tack, cordage, and ships—may have been geared to the *flota* trade (Domínguez Ortiz 1956: 15; Gestoso y Pérez 1903: 334; Pike 1972: 139; Spain 1944: 76). Nor is it unexpected that most of the Iberian styles present in the Mexico City excavations can be assigned to Sevilla. Where place of manufacture is given in the thirty references known for the export of 16th century pottery to the Americas, all but one indicate Sevilla-Triana as the source (Goggin, field notes 1955). Judging from relative dating of comparable recoveries made in Andalusia and in Spanish-occupied places around the West Indies, northern South America, and Panama, the largest sample of these Sevillian maiolicas is a cluster of four types and one variant; they are typical of the first half of the 16th century in the Americas, but date much older in Iberia (Goggin 1968: 117-34; Lister and Lister 1974: 19-23; 1975a: 31). Moreover, the types continued to be common in Sevilla well into the first two decades of the 17th century, when they appeared as standard props in genre paintings for artists such as Diego Velâzquez (Figs. 4.1, 4.2). Regrettably, nothing can be added from these studies toward more discretely defining their placement within the 16th century time frame in the New World because of the churned nature of the Metropolitan Cathedral deposits and the absence of stratigraphic data for the subway assortment.

Morisco Ware

In a taxonomic reorganization made possible with continuing research, we propose that these four types and the variant be placed in a single ware grouping. Their paste, glaze, methods of manufacture and firing, as well as place of origin, were shared attributes. In this report the group is named Morisco Ware, a term indicative of the Andalusian cultural strain from which it sprang. From recent finds in the vicinity, this particular grouping now is known to have been a product of Sevilla, but at the same time the ceramics were part of such a widely shared stylistic convention in Spanish and Portuguese Muslim domains that it is possible that other comparable regional expressions eventually will be identified. Physical analysis indicates, however, that examples of this ware recovered in the Spanish Caribbean and those from the environs of Sevilla came from the same source (Olin, Harbottle, and Sayre 1978: 216).

The principal characteristics of the ware are: (a) use of a light-firing paste, known to have originated in beds located some miles west of Sevilla, that appears pale yellow to orange in reflected light, is comparatively free of iron, and has a relatively high calcium content; (b) a granular spongy clay texture when viewed in cross-section; (c) a thin tin opacified glaze subject to usage wear, crazing, pinholing, crawling, and chemical attack through deposition conditions; and (d) a limited range of heavy-walled, crudely-thrown forms most frequently including a small footless plate, an individual drinking bowl with pronounced carination of the lower body, a shallow hemispherical bowl, and an individual porringer often outfitted with horizontal lobed lug handles. Some cylindrical jars, lids, square inkwells, and chamber pots also are known (Fig. 4.3).

Two wheel manufacturing techniques are indicated, one simple throwing and the other a jigger-and-jolly method. In the first procedure potters probably threw off the hump; that is, they drew up each successive vessel from a residual mass of clay centered on the wheel. Hundreds of the typical small *tazas* and *escudillas* could have been pulled up and cut off daily by individual accomplished potters. In the second

Courtesy of the National Gallery of Scotland, Edinburgh.

Fig. 4.1. Oil painting by Diego Velázquez entitled *Old Woman Frying Eggs,* painted about 1618. In the center front is a plate of Columbia Plain, Morisco Ware, clearly bearing the characteristic central obverse ridging that occurred on many examples recovered beneath the Mexico City Metropolitan Cathedral compound and in the Mexico City subway trenches, the partially glazed, heavily ribbed, small pitcher to the right possibly is of the generalized Santo Domingo Blue on White type. The remainder of the ceramics are lead glazed.

Courtesy of the Wellington Museum, London.

Fig. 4.2. Portion of an oil painting entitled *Two Men Eating* by Diego Velázquez, dated about 1616–1617. In the left foreground of the painting is a still life depicting a stack of Morisco Ware plates turned upside down and a small pitcher partially covered with green lead glaze.

method a mold was attached to the wheelhead and clay was pushed down over it as the wheel turned, shaping the vessel interior. In the Sevilla manner exhibited in Morisco Ware, this left the characteristic low ridging encircling the lower center. To shape the reverse side of the vessel, a template or jigger, attached to an armature that probably was fastened onto the wheel frame, cut the clay as the wheel revolved. This produced a low concavity in the center exterior bottom that, especially in earlier examples, tended to push the interior into a low hump. A third, more rarely used, method involved the use of molds without the wheel. Prior to the manufacture of Morisco Ware, all these Muslim methods had been used in Andalusia for centuries for rapid volume production appropriate for the less discerning, less affluent, but more plentiful, buyers. For example, the uniformity in size of plate form, consistently around 21 cm in diameter, emphasizes mass production through mechanical means such as the jigger-and-jolly. Firing was accomplished under the oxidizing atmospheric conditions needed to properly mature and develop the white ground of maiolica. Dealers in such kiln fuels as dried grape vines, *chamiza* or other native brush, or *borujo,* the residue of olive skins and pits left from oil extraction processes, are known to have had their depositories along the Guadalquivir banks near Triana, the potters' quarter of Sevilla (González 1951: 473). These materials produced a quick hot flame, although special care had to be given the olive skin fuel in order to prevent excessive smoking of the oils that would have induced reduction.

The individual types of Morsico Ware present in the Western Hemisphere compose the common grade. Present research so far indicates the coeval fine grade is exemplified in Andalusia by a single type, the unique wax resist *cuerda seca.* This method had been current in Andalusia from the 10th century flowering of the Cordoban Caliphate (Ainaud de Lasarte 1952, Fig. 384; Llubiá 1967, Fig. 46). About the 15th century it experienced a special revival at Sevilla (Martínez Caviró 1968: 71-90). In the next century, as Italian artistic themes infiltrated that city, designs on the Muslim *cuerda seca* pottery began to imitate them. Although a few examples of *cuerda seca* vessels or tiles have been recovered in initial Spanish sites in the Caribbean (Goggin 1968: 141; Ortega and Fondeur 1978, Fig. 78*b*), they do not appear in later occupations such as that in New Spain. Likely they then were diminishing in Spain.

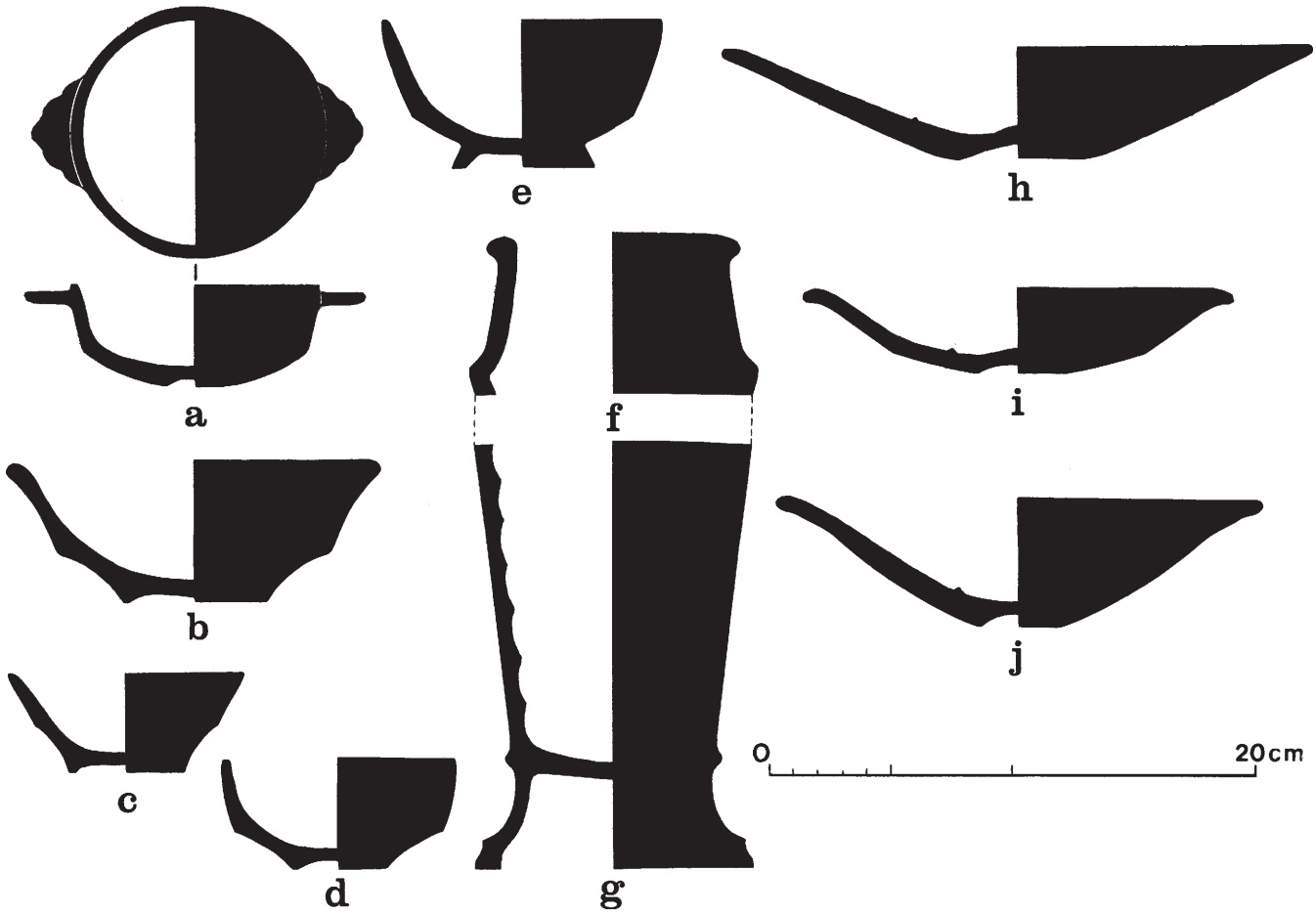


Fig. 4.3. Typical forms of Morisco Ware: *a,* porringer with lobed lugs; *b–e,* carinated drinking bowls; *f, g,* cylindrical jar; *h–j,* footless plates with central obverse ridging.

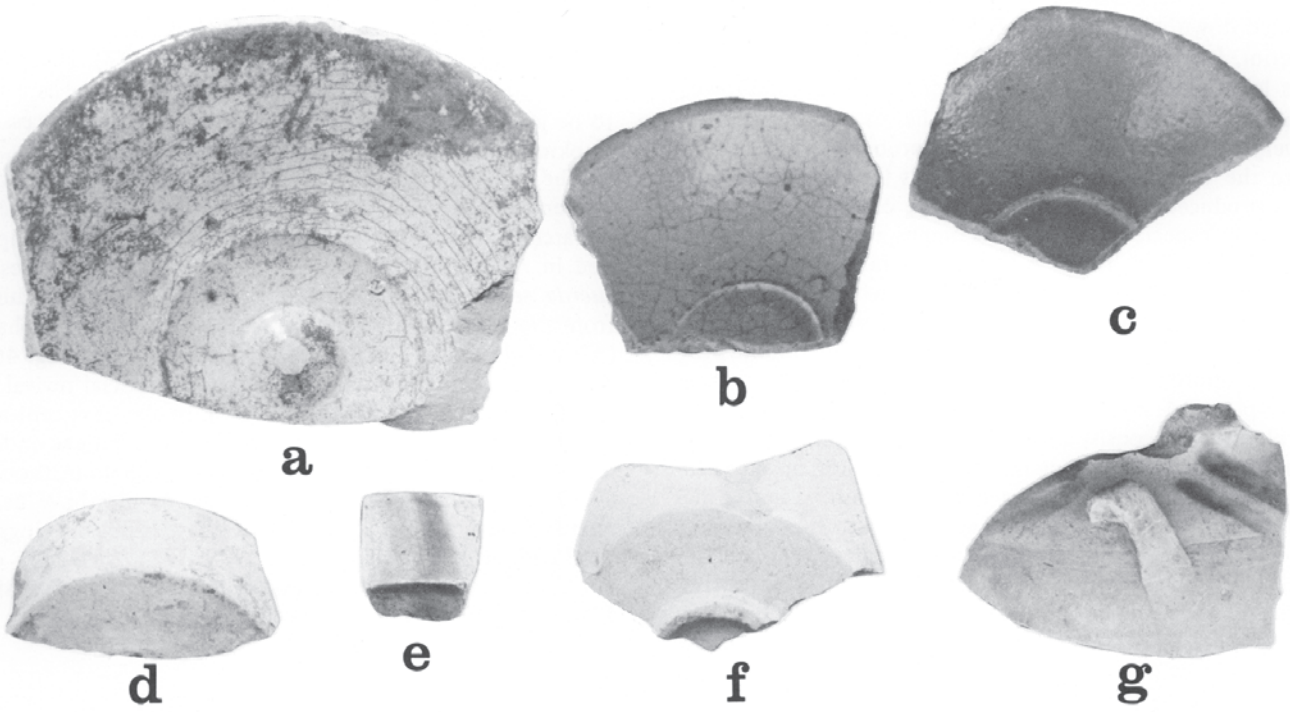


Fig. 4.4. Assorted fragments of vessels in the Columbia Plain tradition recovered beneath Mexico City. These items could have been produced either in Sevilla or in the Valley of Mexico. Plate sherds *a–c* show characteristic obverse ridging and central boss. The *taza* fragment, *e*, and jar shoulder, *g*, bear additional copper green decoration; the lower body of *g* is unglazed.

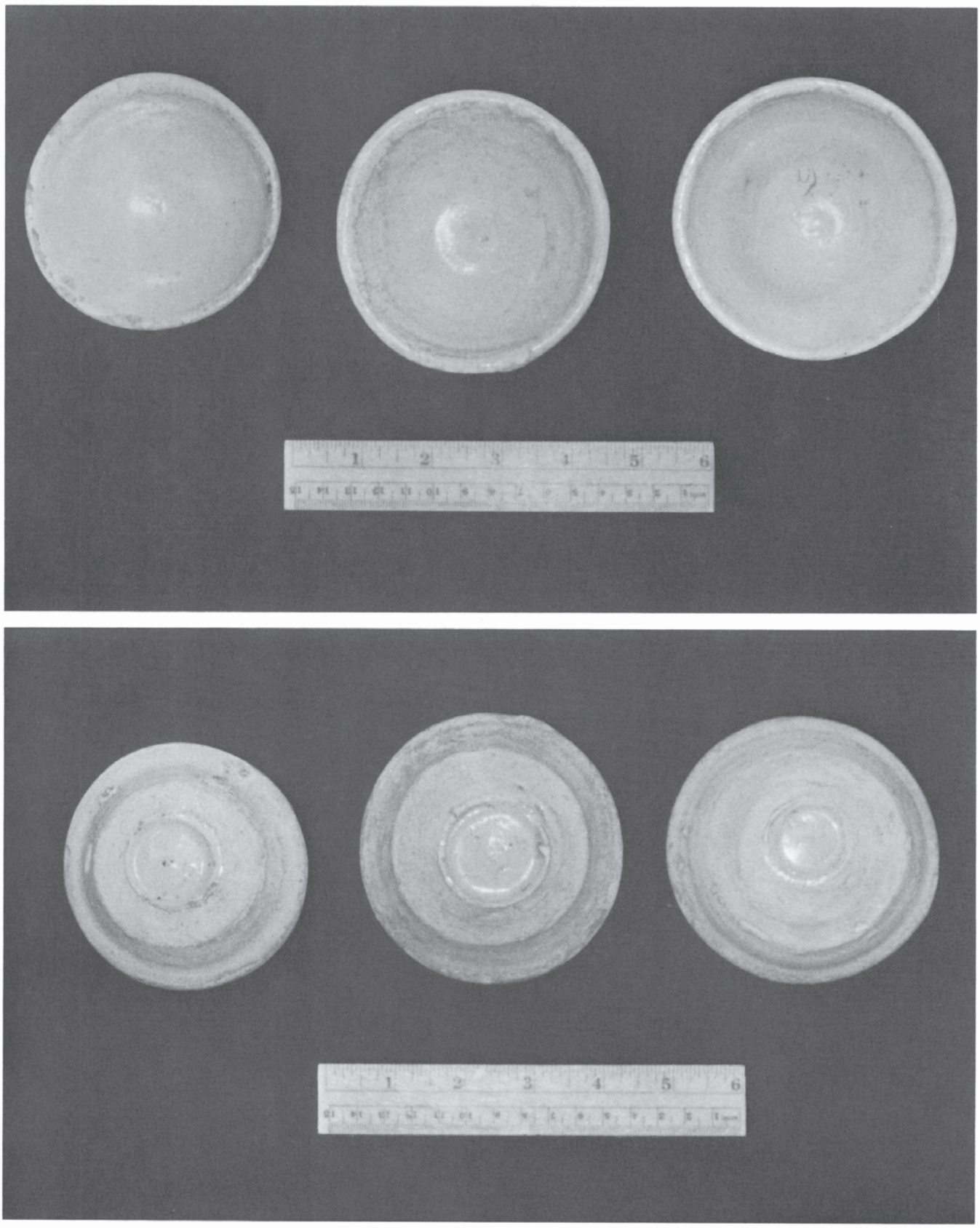
Columbia Plain (Figs. 3.44*a*, 4.4–4.7)

Most abundant in Morisco Ware at the Metropolitan Cathedral compound and in the lot of ceramics from the subway trenches were examples of an undecorated white type designated in the Goggin taxonomy as Columbia Plain (Goggin 1968: 117-26; Lister and Lister 1978, Fig. 1*a*), named not for Columbia, the Gem of the Ocean, but for a county in Florida. Little can be added to the published type descriptions except to note the occasional occurrence of a plate form with flared rim, which, during the second half of the 16th century, evolved into the standard plate contour in all the ceramic traditions in these collections. A diffusionary path of this one minor trait from Renaissance Italian shops to those in Sevilla, where a Muslim mode was still being followed, and then ultimately on to Mexican satellite industries is probable. In the observed Columbia Plain specimens, the plate still lacks the ring foot that later was added to the form; and it retains the ancient obverse ridging known as far back as 9th and 10th century Islamic maiolicas from Nishapur, Persia (Scavizzi 1966: 21, Fig. 7). There is considerable variation in glaze color, ranging from off-white to apple green when, on occasion, copper was added to the more usual basic solution. Combinations of the two colors also occur. One suspects a glazer once in a while could not resist giving a vessel, which normally would have been just white, a quick partial plunge into one of the basins filled with green lead glaze. Because the light-firing clay body was relatively easy to obscure, the tin content of the glaze appears to have been lower than that for the Mexican derivations. In fact, some physical tests have revealed a near complete absence of tin (Warren, personal communication 1975).

The predominance of this white style over coeval decorated styles is exactly the proportion observable in all the various ceramic groupings considered in this report. As noted above, the similarities between Spanish and Mexican versions of these types were such that, at present, distinguishing between them remains uncertain, and they are placed together in the categories appearing on the seriation graph for the Metropolitan Cathedral collection in Table 2.2. Thus the actual quantity of authentic Sevilla-made examples in this collection is considerably reduced over what it might appear to be at first glance. The evolutionary gradations from this widespread legacy, Spanish and Mexican, to modes thought to be part of Mexico City Ware, are most apparent in such features as the characteristic obverse ridging on plates and the emergence of the flared flattened rim.

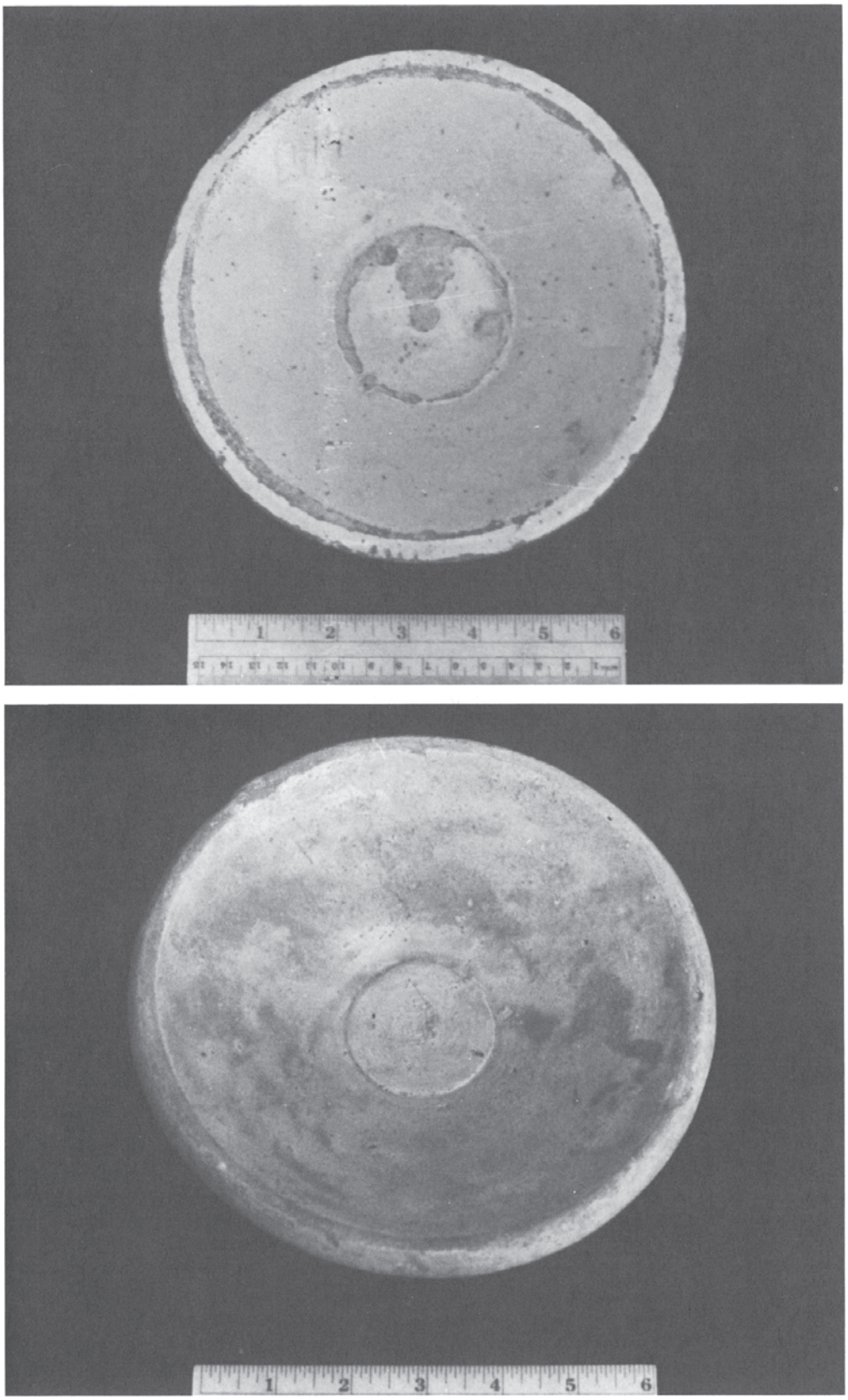
Columbia Gunmetal Variant (Figs. 3.44*b–c*, 4.8)

The abiding 16th century concern with undecorated surfaces, which this study has brought to light, is further emphasized in the Metropolitan Cathedral assortment by a minor variation of only 68 sherds that bear a darkened, rather than white, ground (Lister and Lister 1978, Fig. 1*b*). The ground varies from a dense irridescent black to a light speckled grey. The dense black appears intentional, and may be due to the addition of manganese and iron oxide to



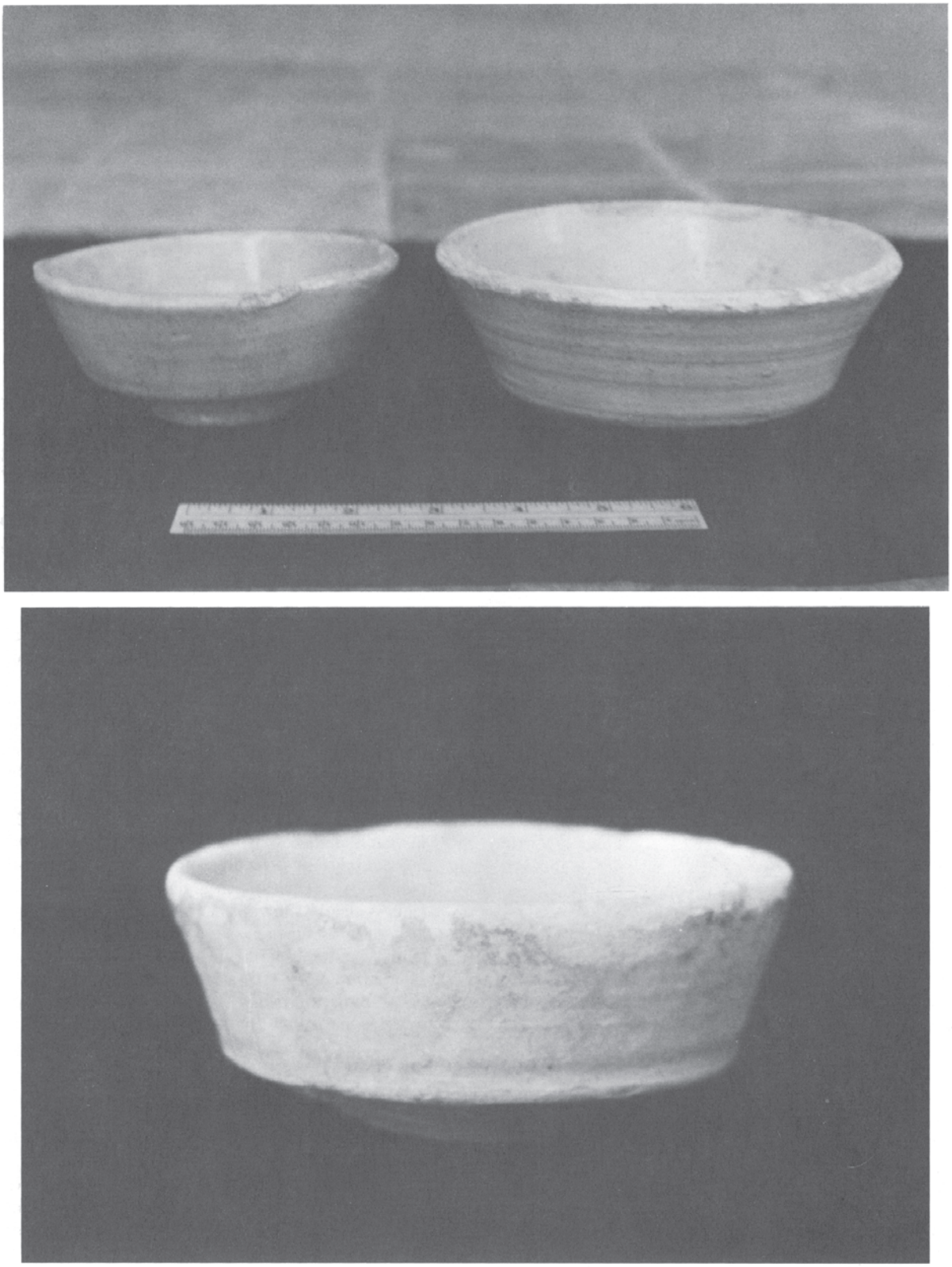
Courtesy of the Museo de Bellas Artes, Sevilla.

Fig. 4.5. Three small bowls of Columbia Plain, Morisco Ware, from excavations in the 15th century cloisters at La Cartuja, Jérez: *top row,* obverse; *bottom row,* reverse.
Courtesy of the Museo de Bellas Artes, Sevilla.



Courtesy of the Museo de Artes y Costumbres Populares, Sevilla.

Fig. 4.6. Two plates of Columbia Plain, Morisco Ware, typical of second caliber Sevillian domestic wares dating from the mid 14th through early 17th centuries. Characteristic central obverse ridging and cockspur scars are visible.



Courtesy of the Hermitage of Nuestra Señora de la Defensión, La Cartuja, Jérez de la Frontera.

Fig. 4.7. Three small drinking bowls (*tazas*) of Columbia Plain, Morisco Ware, found during excavations in the 15th century cloisters of La Cartuja, Jérez. Surface blemishes, thick walls, warped countours, and pronounced throwing ribs are characteristic of the ware.

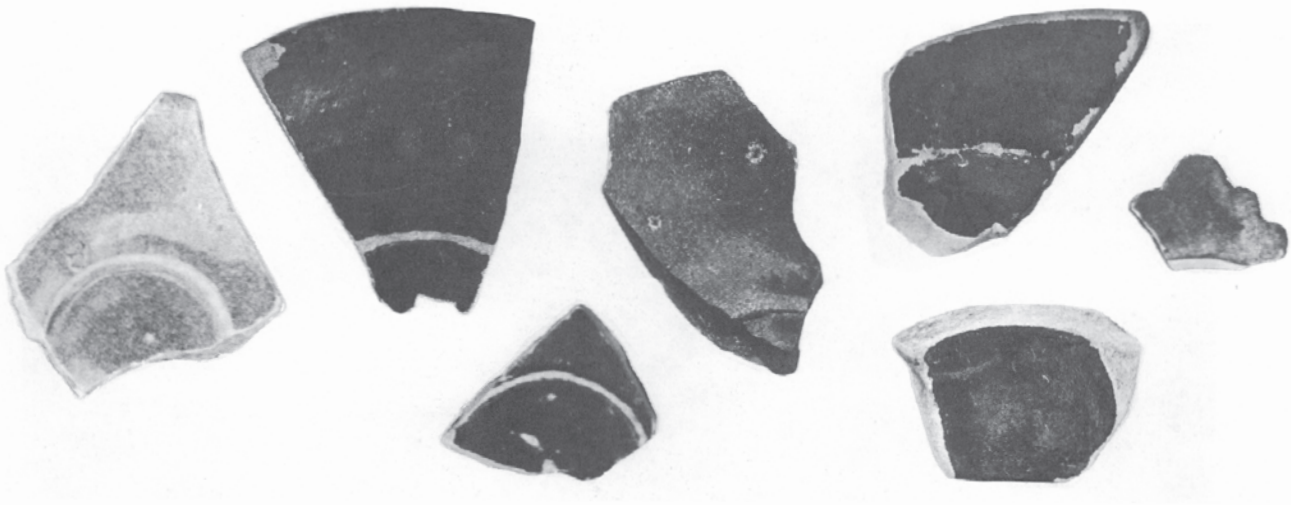
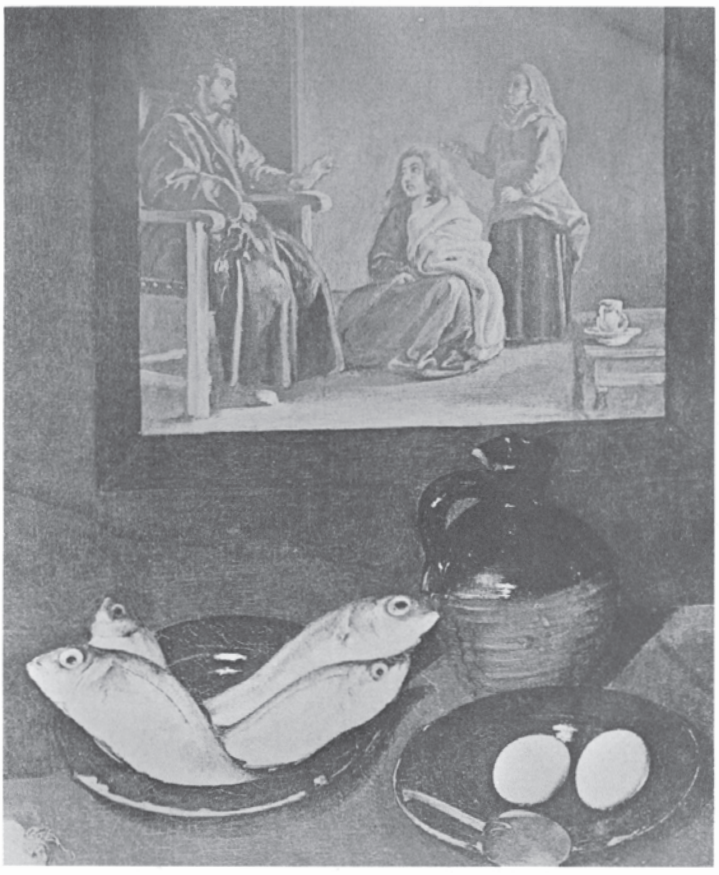


Fig. 4.8. Assorted fragments of Columbia Gunmetal recovered beneath Mexico City.



Courtesy of the National Gallery, London.

Fig. 4.9. Detail of the painting *Jesus in the House of Martha and Mary* by Diego Velázquez, dated about 1618. Two plates in the foreground may be Columbia Gunmetal, but the flattened brims of these vessels are more typical of the second half of the 16th century and later, and the glaze actually may have been copied from plumbiferous rather than staniferous models.

the base solution and to the use of a reducing atmosphere, which would have darkened the lead glaze. The lighter grey coating, with its fine, randomly distributed, flecks of darker pigment, may have resulted from improper preparation of ingredients, from some chance action such as volatilization within the kiln, or from reduction through smoking fuels. Burial conditions in the muck of Tenochtitlán or heat generated in accidental fires in the trash deposits also might have been secondary factors in the glaze alteration. Physical tests conducted so far have been inconclusive, but it should be noted that a similar flecking occurs on other kinds of ware in these collections, including one with a blue ground and another with luster decoration. Therefore, the validity of designating these sherds as a distinct type still is open to question and subject to further research. A Velázquez painting contains in the foreground a still life showing several plates covered with such a glaze. The light paste of the objects is clearly shown, but the coating may have been a pure lead glaze rather than one opacified by tin (Fig. 4.9). In this study the dark sherds are regarded as Columbia Gunmetal, a variation within the Columbia Plain sequence. The clay body, range of forms, and the average 8 mm thickness of walls is indistinguishable from Columbia Plain examples. Additionally, the typical plate was formed by the same jigger-and-jolly technique.

Isabela Polychrome (Figs. 3.44*d*, 4.10, 4.11)

Isabela Polychrome (Goggin 1968: 126–28) is represented among these Plaza Mayor samples by only two sherds of a *taza*, or drinking bowl, from the 5–6 m level at the Sagrario. Typical of this mode are carelessly drawn manganese purple motifs, which in late phases often appear to be debased calligraphy, between cobalt blue banding lines. Its original distribution was across all of Muslim Spain and western North Africa, where it was in use between the 13th to late 15th centuries (Redman and Rubertone 1978). At the time the Spaniards came to America, bringing their pottery with

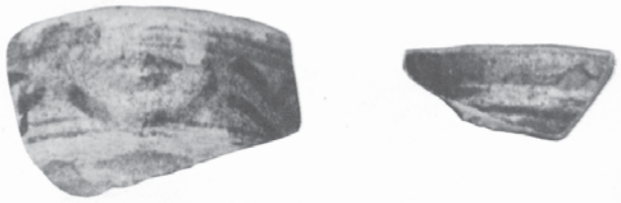
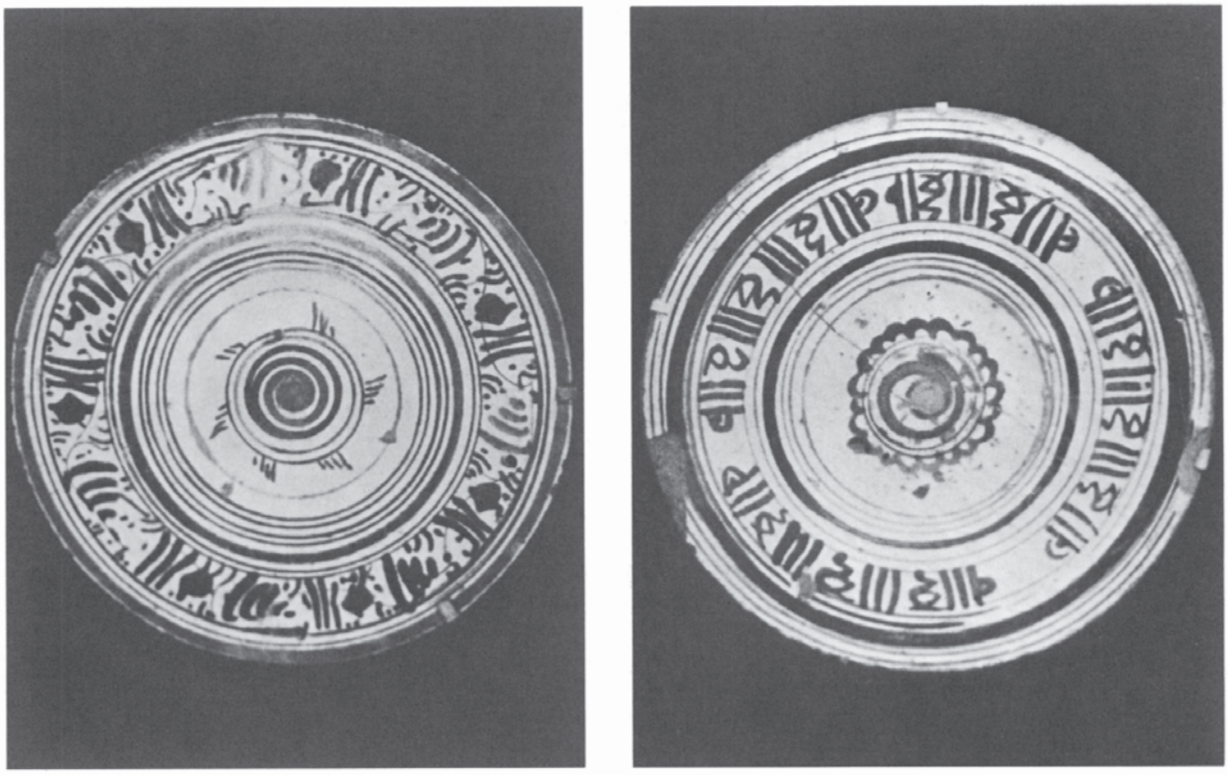


Fig. 4.10. Fragments of Isabela Polychrome recovered beneath Mexico City. Designs are in manganese purple between cobalt blue framing lines.

Yayal Blue on White (Figs. 3.44*e*, 4.12–4.20)

Another puzzle is the comparatively small amount in both the subway and Metropolitan Cathedral collections of a type called Yayal Blue on White by Goggin (1968: 128–30), after a site in Cuba. It was called La Cartuja pottery by Sevillians because of its depiction in a world famous Zurbarán painting of some Carthusian monks from a monastery across the river from the city (Lister and Lister 1978, Fig. 1*c*). In Andalusia the type appears to be the most frequently encountered of all the 15th century to early 16th century decorated Andalusian maiolicas. Decoration usually consisted of several cobalt lines below the rim, around the central bot-



Courtesy of the Instituto Valencia de Don Juan, Madrid.

Fig. 4.11. Two plates of Isabela Polychrome, Morisco Ware. The border patterns are regarded as debased Arabic calligraphy. Although these examples probably originated in Aragón, the vogue was widespread throughout all the former territory of Spanish Muslim Al Andalus from the 14th through the 15th centuries.

them, Isabela Polychrome was slowly fading from the Andalusian ceramic picture. For example, Almagro Basch and Llubiá Munné (1952) found none in their excavations of 16th century deposits at Muel, Aragón, for centuries previously an important Muslim potting town. Hence the designs observable on the limited number of examples from the New World are only a faint undistinguished reminder of what was formerly a more elaborate expression. The tentative date of 1540–1550 suggested for the deposit from which the two Metropolitan Cathedral fragments came seems somewhat too late for the type, but it coincides with the Goggin (1968: 128) chronology. Perhaps their position at that horizon resulted from one of the known disturbances of cultural materials.

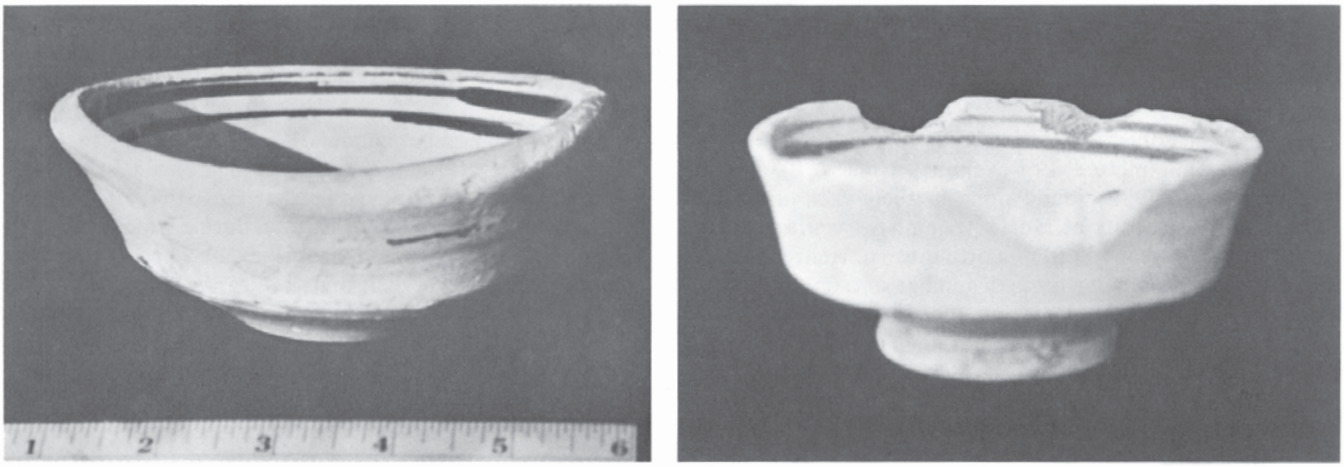
tom, or both, or two undulating lines crossing to form a simple chain, and a rare center medallion based on an ill defined palmette. The type persisted into the early 17th century, as demonstrated by Zurbarán, during which period the cobalt was of a different tonal value, and likely it originated from another source than that used earlier. In some late 15th century versions manganese or iron brown was substituted for cobalt blue, but thus far none of these variants have been reported in the New World. Other vessels bear a central inscription in place of the paired basal lines. A still simpler rendition only utilized parallel ticking on rims.

The slight presence of Yayal Blue on White so far observed in 16th century Mexico City deposits may reflect chance trade distribution, but also there is the possibility

Fig. 4.12. Fragments of Yayal Blue on White recovered beneath Mexico City. Sherd at right exhibits a typically Medieval Muslim interpretation of the palmette.

Fig. 4.13. Detail from the painting *Miracle of St. Hugh,* dated about 1633, by Sevillian artist Francisco de Zurbarán. The painting shows a table set with Yayal Blue on White bowls, a Chinese Ming blue on white rice bowl, and two-handled jars bearing a blue escutcheon of the bishop for whom the jars were made. The bishop resided in the Carthusian monastery situated across the Río Guadalquivir from Sevilla. When viewed at first hand, the painting catches the coarse, creamy, flawed glaze of the Morisco Ware and its faltering line work contrasted to the blue-white porcelain with precisely executed decoration.

Courtesy of the Museo de Bellas Artes, Sevilla.



Courtesy of the Museo de Arqueología, Sevilla, and Hermitage of Nuestra Señora de la Defensión, La Cartuja, Jérez de la Frontera.

Fig. 4.14. Two footed individual drinking bowls (*tazas*) of Yayal Blue on White, Morisco Ware: *left,* bowl recovered in the fill of the 15th century cloisters, La Cartuja, Jérez; *right,* close-up of a bowl found during the repair of Calle Patricio Saenz, Sevilla.

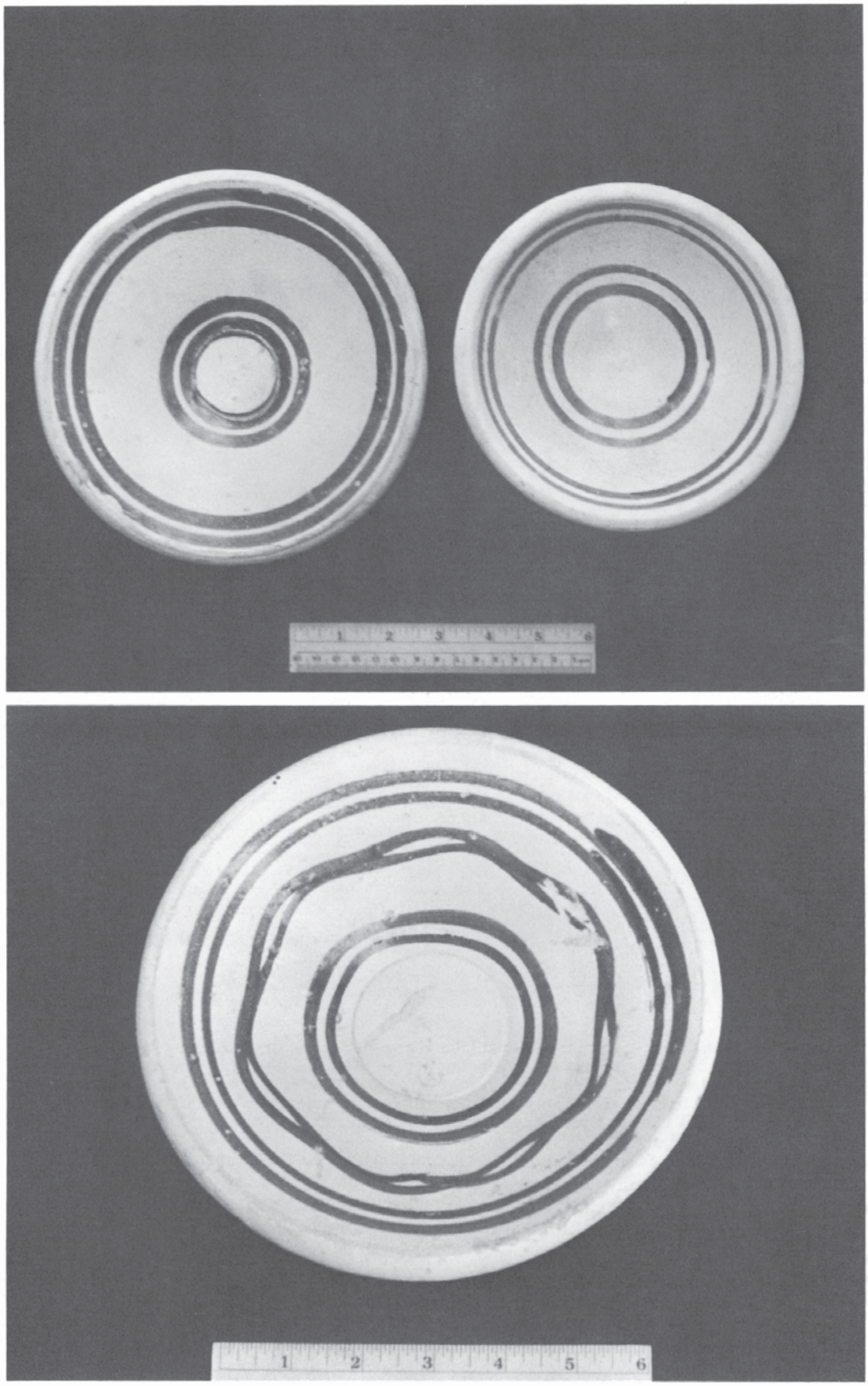
Courtesy of the Museo de Artes y Costumbres Populares, Sevilla.

Fig. 4.15. A rare, late 15th century, small chamber pot (*bacín*), of Yayal Blue on White, Morisco Ware, recovered during a municipal project in Sevilla. Tin-glazed examples of this form are uncommon before the 17th century. As in more usual lead-glazed specimens, the exterior is only partially glazed on the upper half but the interior is completely coated. The flattened rim bears a simple decoration of parallel blue lines.

that on the local Mexican scene, it was superseded by the early evolution of provincial pottery. At any rate, the somewhat more elaborate contemporary Santo Domingo Blue on White was the background resource on which Mexican maiolists chose to elaborate. An exception might be the rustic Valle Ware, which more frequently turned to simple encircling lines similar to Yayal Blue on White decoration. In reference to the previously mentioned peculiarity of the Columbia Gunmetal glaze, some Metropolitan Cathedral examples of Yayal Blue on White exhibit the same speckling.

Santo Domingo Blue on White (Figs. 3.44*f, g,* 4.21, 4.22)

Of the decorated types of common grade Morisco Ware noted at the Metropolitan Cathedral and in the subway collections, by far the most numerous is one called Santo Domingo Blue on White (Goggin 1968: 131–34); it is presently thought to have inspired many local duplications. Its greater abundance meant more models to jog the memories of the Mexican decorators. Displaying the typical physical characteristics of Morisco Ware, forms occurring in these collections are small ring-footed hemispherical bowls, large ring-footed jars, and, most typically, a generally footless plate with 4 cm wide flared rims. Some central obverse ridging of plates is noted, but because interiors more often are smooth, a movement away from the old convention appears to begin at this time. Influence in this regard, as well as in the flared rim and prevailing cumbersomeness, is suggested to have emanated from some Italian source. Montelupo in Tuscany,



Courtesy of the Hermitage of Nuestra Señora de la Defensión, La Cartuja, Jérez de la Frontera.

Fig. 4.16. Three plates of Yayal Blue on White, Morisco Ware, representative of the most frequently found pottery in excavations in the 15th century cloisters of La Cartuja, Jérez. The imprecise line work may have resulted from the practice of manually turning the vessel in a tow filled with esparto grass.

Courtesy of the Hermitage of Nuestra Señora de la Defensión, La Cartuja, Jérez de la Frontera.

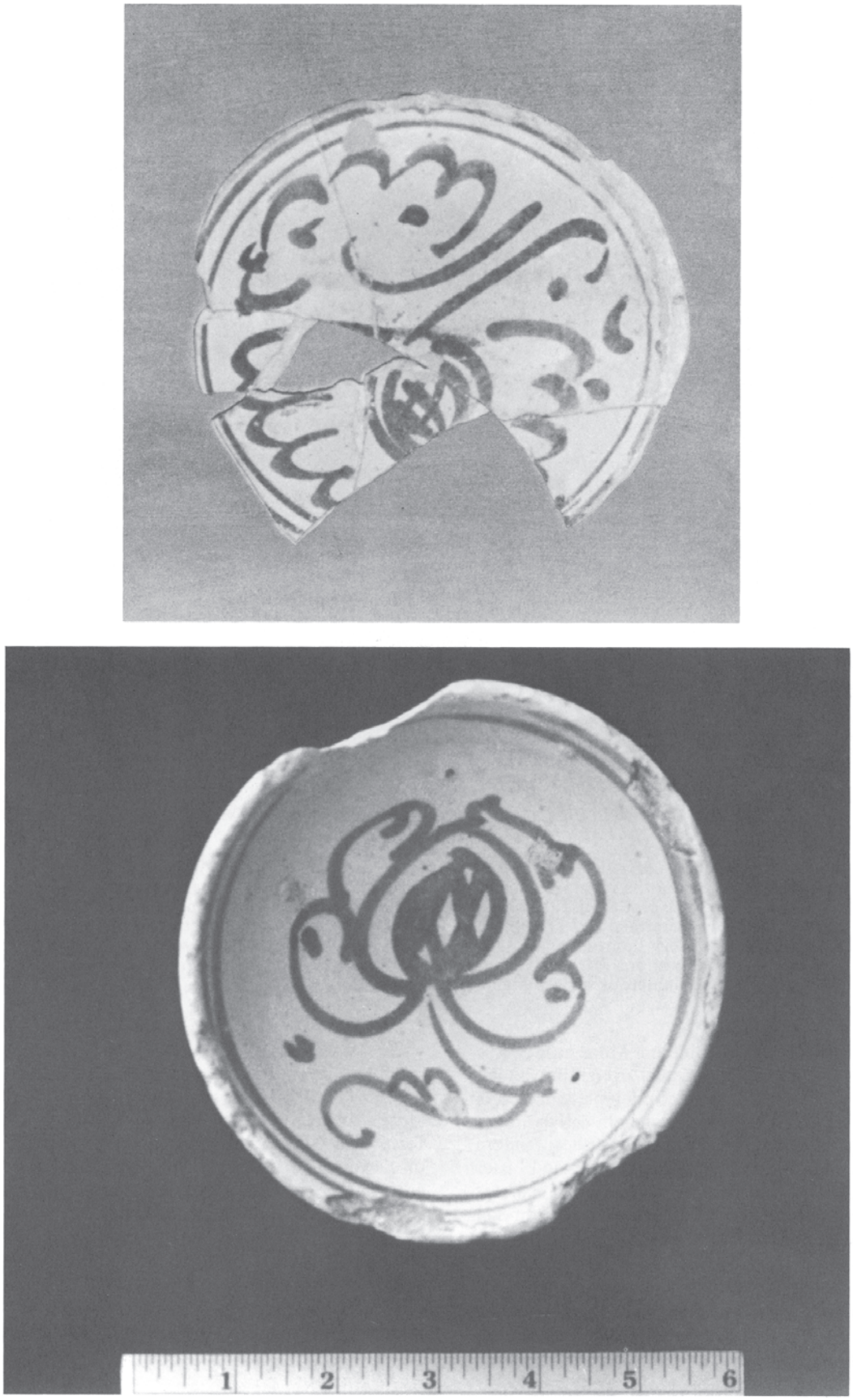
Fig. 4.17. Two plates of a generalized Yayal Blue on White style, Morisco Ware, with a central inscription rather than the more usual paired encircling lines. Left plate reads *albañiles de Cartuja* (masons of Cartuja); right plate reads *Cartuja de X* (Cartuja of Jérez). Both vessels probably were made in Sevilla for the use of workmen during construction of the Carthusian monastery (started in 1463) at Jérez de la Frontera. The plates were recovered during recent excavations in the cloisters. Diagnostic central obverse ridging, thick walls, uniform size, and numerous surface blemishes are visible.

with which the Santo Domingo Blue on White output was contemporary, is one possibility. Casual overall unplanned patterning, which is not relevant to Montelupo concepts, is most customary on the Spanish type, wherein design motifs are a hodgepodge of broad sweeping lines, dashes, random dots, squiggles, and lobed and wavy lines (Lister and Lister 1978, Fig. 1*d*). Among them can be seen several precursors of the styling that became more definitively stated on San Juan Polychrome of Mexico City Ware, fine grade.

Sevilla Ware

Taking into consideration the numerical distortion caused by lumping together Spanish originals and Mexican copies, and the possible stratigraphic disturbances, the ceramic seriation of the Metropolitan Cathedral deposits does point to two cycles: one, the dominance of early 16th century Sevilla maiolicas, or Morisco Ware, which declined through time, and two, a concurrent growth in importance in later decades of two additional types tentatively believed to be part of the Italianate movement at Sevilla. These data are weak. Notwithstanding, the two latter types in question are solidly in the 16th century context; they are technically and stylistically dramatically superior to the previously discussed Morisco Ware, and hence must be presumed to be of a later focus; and they do illustrate some of the overt Italian impact on Sevillian workmanship. In the classification used in this analysis, the Italianate types are considered a part of Sevilla Ware. At the start of these discussions, we acknowledged that, so far as is known, these types have not yet been identified in Sevilla. That unfortunate absence of corroborative data is another example of the frustrating dearth of archaeological information concerning both Spain and its overseas holdings, a situation that plagues all current efforts to understand Spanish-tradition ceramics in the Americas.

As formerly, clay used in the later 16th century Sevilla Ware types, here called Sevilla White and Sevilla Blue on White, is generally comparable to that of the previous series, but it may have been mixed with clay of another origin. It remains light in color but tends more often to a buff or pinkish tone rather than oyster white. It is fine grained and



Courtesy of the Museo de Arqueología, Sevilla.

Fig. 4.18. Two plates of a variant of Yayal Blue on White, Morisco Ware, recovered beneath the streets of Sevilla. This variant of Yayal was probably made in Sevilla from the late 14th through the 15th century. Free brush work reflects Arabic calligraphy and the Near Eastern palmette motif.

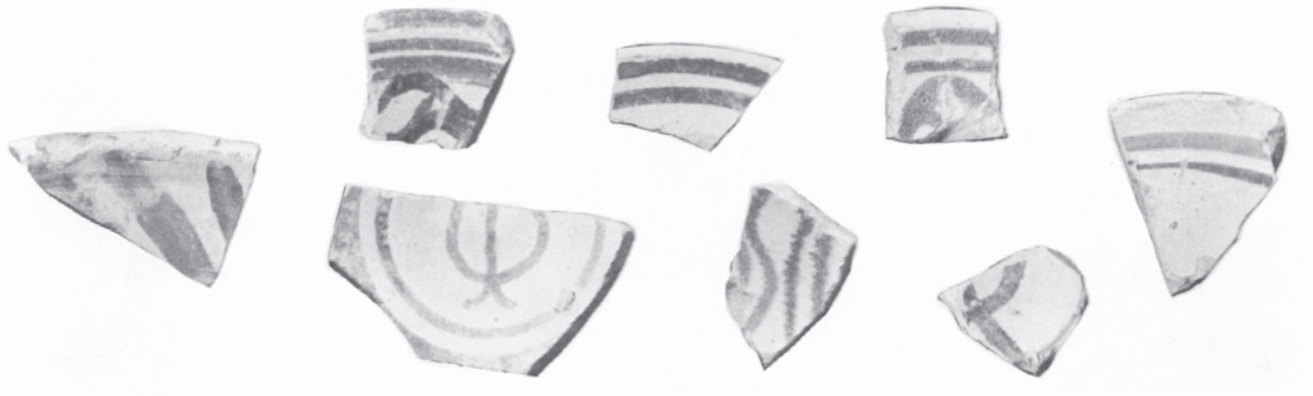


Fig. 4.19. Assorted fragments of Yayal Blue on White, Morisco Ware, recovered from the surface of a dump at La Cartuja, Jérez de la Frontera.

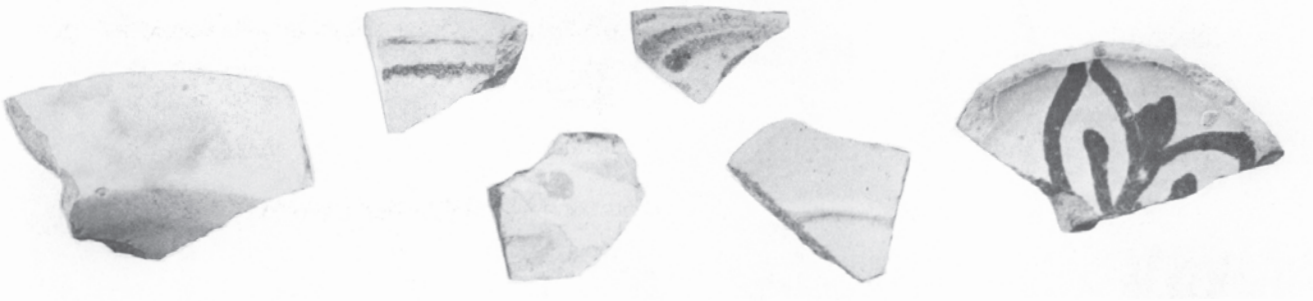


Fig. 4.20. Assorted fragments of Columbia Plain and Yayal Blue on White, Morisco Ware, recovered from the surface of a 16th century kiln site on the grounds of the Alhambra Palace, Granada, Spain.

denser than paste used earlier. Improvements are indicated in the glaze formulation, which makes the fired product very lustrous, hard, slick and pleasant to the touch. Vessels have a faint bluish-grey caste because of exceedingly fine-grained minor speckling of darker matter, suggestive of uncontrolled volatilization of pigments on associated vessels in the kiln or insufficient grinding of fritted components. Physical tests lend support to the latter (Warren, personal correspondence 1978). Probably greater amounts of tin oxide were put into the glaze to increase its opacity and improve its texture. The glaze continues to show the usual Spanish crazing flaws because the coat did not have the same coefficiency of expansion as the body. The network of such lines is finer than on Morisco Ware. Other imperfections, such as pinholing, are not so obvious. One line of evidence for Spanish respect for the improvements occurring in Sevillian maiolica comes through records showing that in 1566 the Crown dispatched a glazemaker from Sevilla to Talavera to help introduce the southern refinements there (Frothingham 1969: 48).

It is speculated that the producers of Sevilla Ware preferred the Italian kiln type over the cruder Muslim model they had used formerly. Adoption of saggars probably followed; but for unknown reasons, the makers of these two types did not practice the Italian firing method of using headpins to support vessels by their rims while being glost fired. Either the styles in question evolved prior to the diffusion of that procedure from Italy, or the resistance to change was too strong on the part of Sevillian potters who, for so many centuries, routinely adhered to usual Muslim ways. Regardless of the reasons, cockspurs continued in use when making these fine grade types.

In the latter half of the 16th century, more care was given to potting. Vessel walls were drawn to an average thickness of 1.4 to 3 mm, compared with the usual 8 mm of earlier types. Vessel profiles were sharply defined (Fig. 4.23). Ring feet made a more frequent appearance, sometimes with the bottom surface of the ring remaining unglazed so that the vessel could be fired without any problem of its fusing to a shelf or saggar. Shallow bowl forms contained a trimmed central depression on the exterior bottom, the outer edge of which served as a supporting base, and many exhibited everted or horizontal rims. These features reflect an upgrading of style. Another form observed is a further evolution of the old flat-bottomed plate, now with a small exterior basal depression that did not affect the interior, and a central obverse area demarked by a less conspicuous, but nevertheless typically Sevillian, ridge. The direct tapered rim of the old plate was replaced by a sharply angled, outwardly flared, flattened rim averaging 3 mm in width. A continued use of jigger-and-jolly production is inferred, but the end product was a more delicate, perfected form. Small porringers with horizontal lug attachments just below rims continued. Their bases were trimmed to create a central concavity, and their lugs often were angularly terraced in the Faenza manner rather than remaining rounded as they

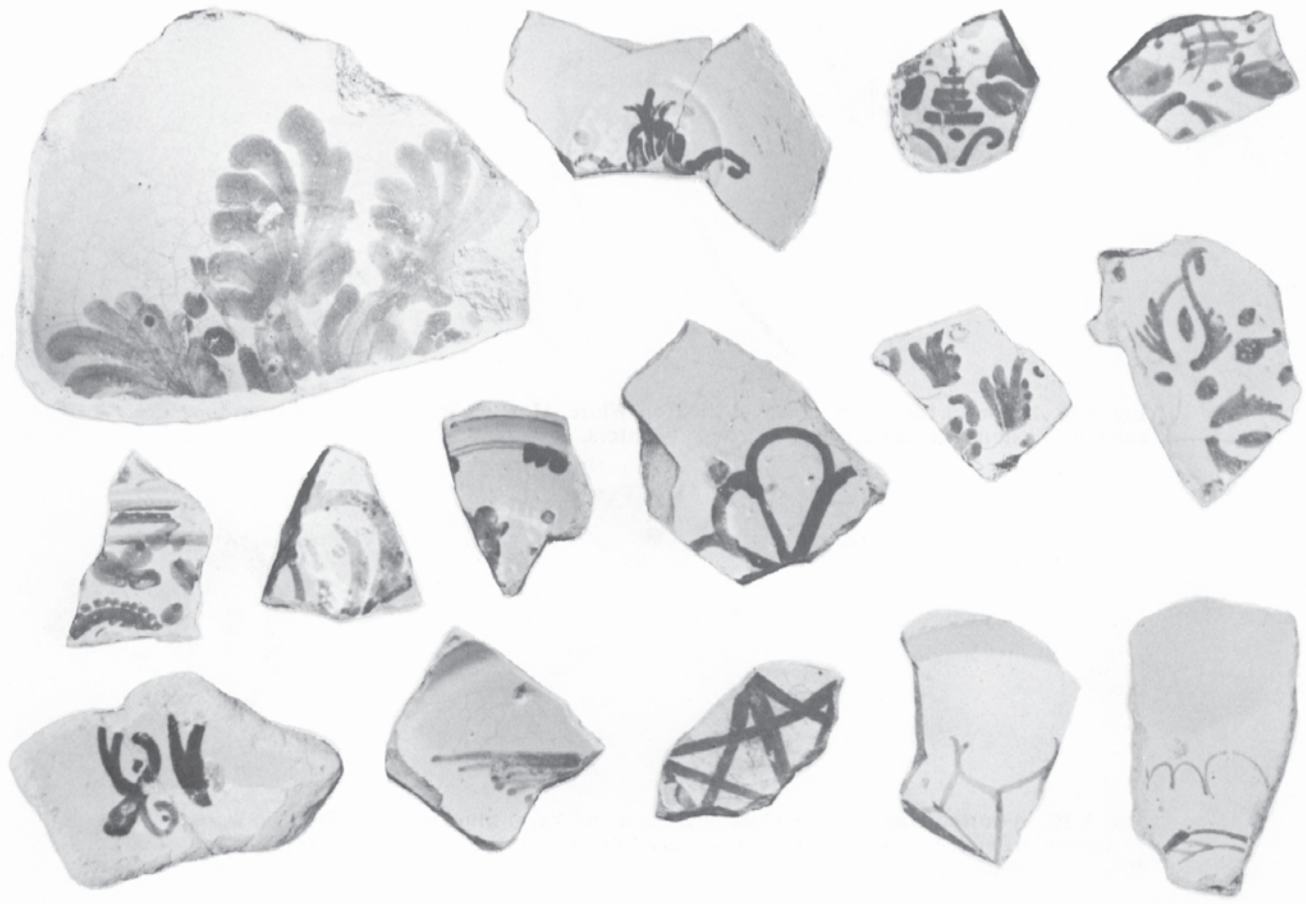


Fig. 4.21. Assorted fragments of Santo Domingo Blue on White recovered beneath Mexico City.

had been in Medieval times. Sizes of vessels were medium to small. Appendages, other than lugs, were scarce. The form repertoire most strongly implies a version of Faenza White that under Spanish hands became heavier, bolder, and simplified. It, in turn, surely must have influenced the contemporary Mexico City White that came in many of the same shapes, showed the same noticeable upgrading over earlier efforts, but still never attained the standard set at Sevilla.

Sevilla White (Figs. 3.44*h–k*, 4.24*a*)
Sevilla Blue on White (Figs. 3.44*l–n*, 4.24*b*)

As with all other wares in these 16th century assortments at the Plaza Mayor, the white pottery of the sequence, Sevilla White, was dominant. A blue on white companion style made in the same shapes adds little to our understanding of the development because only 41 fragments were recovered at the Metropolitan Cathedral; none were noted from the subway (Lister and Lister 1978, Fig. 2*a, b*). The cobalt blue on them has become clear and bright – not opaque nor raised above the surface as in later Mexican work – and on some examples it blurred into the ground. Design motifs appear in smaller scale and are more carefully drawn. The best specimen is a plate interior bearing a large Holy Monogram rendered in a typical 16th century Gothic script (Fig. 4.24, *bottom center*). Portions of the same monogram appear on four other fragments in the collections. The notion of a single design unit isolated on a field of white was taken from Faenza *compendiaro*. A rude copy of the monogram appears on a piece of Valle Ware illustrated in Fig. 3.32.

It is hypothesized that the above white and blue on white modes evolved as fine grade types at Sevilla to replace the earlier *cuerda secas*, perhaps overlapping with some of the common grade Morisco Ware types that may have continued to serve more ordinary Andalusian markets. Several additional stylistic expressions in either blue or polychrome colors placed on the same forms, found in Spain but as yet not in Mexico, must be further contemporary fine grade types of Sevilla Ware (Figs. 4.25–4.28; Ainaud de Lasarte 1952, Figs. 292–295, 597, 599; Martínez Caviró 1968, Figs. 146–154; 1969, Figs. 8, 9; Collections of Museo de Cerámica, Barcelona). In any case, they signify a fundamental departure from the Muslim past and a striking reorientation toward the Italian manner. As the parent industry at Sevilla changed under a new set of historical circumstances, so too did the derivative Mexican pottery change. The Sevilla changes were brought on by the closure of the eastern Mediterranean to Italian merchants after the fall of Constantinople and the American activities that lured them westward, as well as the ousting of Islam. Both Sevilla and Mexico City then looked for inspiration to the central Mediterranean, all the while

Courtesy of the Hermitage of Nuestra Señora de la Defensión, La Cartuja, Jérez de la Frontera.

Fig. 4.22. Two small bowls of Santo Domingo Blue on White, Morisco Ware, recovered during excavations in the 15th century cloisters of La Cartuja in Jérez. Made in Sevilla in the late 15th or early 16th centuries, their exteriors remain undecorated.

growing more independent of that resource and of each other. Mexico City Ware, the colonial response to the new Italianate impetus, was present in the Metropolitan Cathedral deposits and may perhaps date as early as 1540. Sevilla Ware, also, was present at this early date.

Guadalquivir Ware

Noted in the Plaza Mayor materials considered here was one final ware grouping attributable to Sevillian workshops; it arose directly out of a substantial Genoese penetration of Sevillian art circles and the American trade. Like its prototypes, this ware was distinguished by a blue ground.

In the middle 16th century the thriving pottery-making industries in and near Genoa were known for the use of a background glaze made blue by the addition of a small percentage of cobalt to the usual white solution (Liverani 1960: 67). This particular aspect of the Ligurian craft saw some limited Sevillian imitation. Named herein Guadalquivir Ware, the Sevilla blue maiolicas came in one plain and one decorated style. The plain version, Caparra Blue, was a specialized item, perhaps from one factory, perhaps for one special function or product, and thus far is the sole representative of the common grade of Guadalquivir Ware (Figs. 3.44*o*, 4.30, *top row*). Named Caparra Blue because the first important finds of the type were made at the original Spanish settlement on the island of Puerto Rico (Goggin 1968: 134-35; Hostos 1938: 79), it appears in only one principal form, although sherds suggest the possibility of additional shapes (Fig. 4.29). The small cylindrical jar has a prominent carination top and bottom, a slightly indrawn central body, and a short neck around a comparatively broad orifice. In the vocabulary of Spanish ceramics, this kind of jar is an *albarelo,* or drug jar. A municipal document issued at Sevilla early in the 17th century specifically notes these vessels as *urnas azules de boticario* (Gestoso y Pérez 1903: 307). Drug jars were a Muslim contribution to pottery form that continued through the history of Spanish

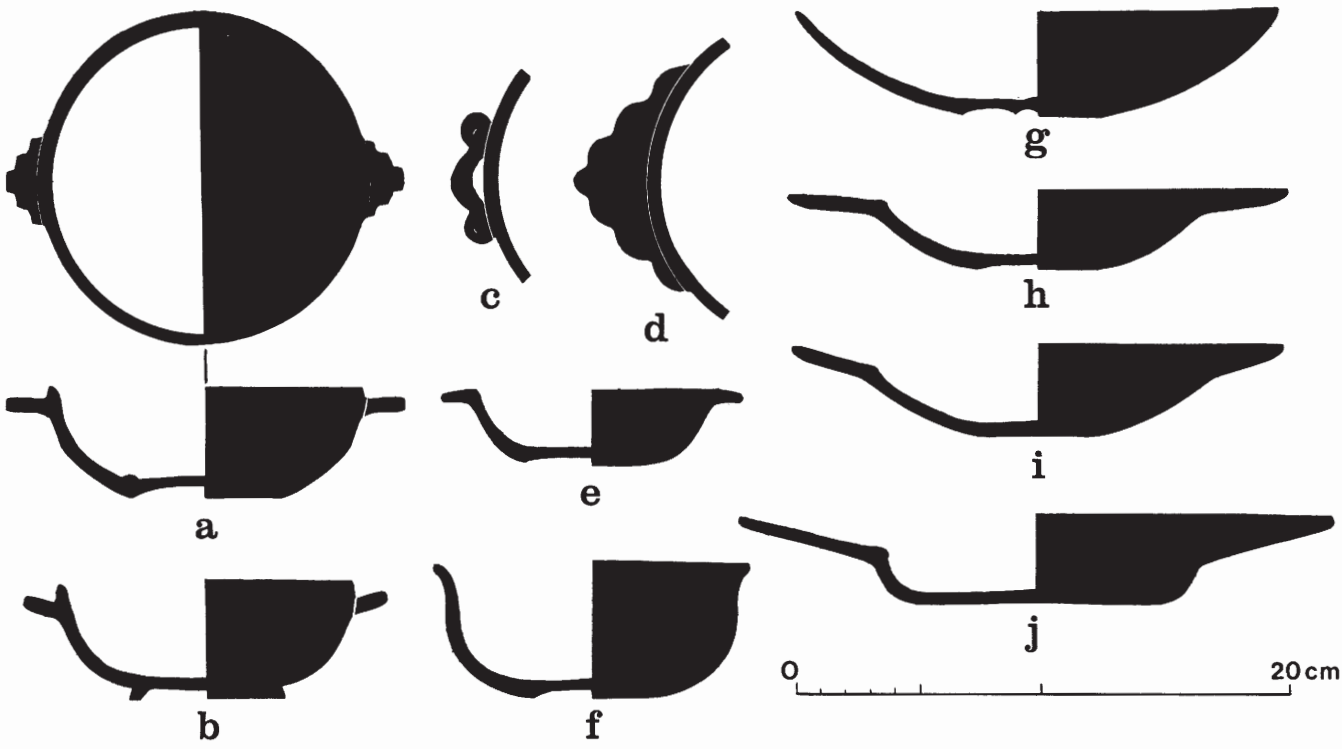


Fig. 4.23. Typical forms of Sevilla Ware: *a–e,* porringers with terraced lugs; *f,* hemispherical bowl with everted rim; *g,* plate with central boss and direct rim; *h–j,* plates with flared brims of different widths.

ceramics. They were fashioned in varying degrees of quality but most often in the best (Lister and Lister 1976b: 13). The form interpretation displayed by Caparra Blue *albarelos* was in accord with traditional Spanish concepts. There is no imitation of the Genoese version, which made rounded contours out of the Muslim upper and lower carinations and which more sharply constricted vessel waists. It is only the color of the glaze that appears to have been an idea borrowed by Spanish makers of this type from the foreigners in their midst. On jar exteriors this color varies from pale blue to a very dark blue that occasionally reveals the same speckling quality apparent on other Sevillian examples in these collections. White interiors are frequent. Never found in abundance, there were just 21 fragments of Caparra Blue beneath the Sagrario (Lister and Lister 1978, Fig. 2*c*), distributed from the 6–7 m level upward to the 2–3 m level.

The second blue ground style, of which there were only 7 plate fragments from the Sagrario refuse and a similar limited number from the subway, was overlaid in simple darker blue patterns likely indicated in the 17th century Sevillian *tasación* (price regulation) as *porcelana azul* (Gestoso y Pérez 1903: 307) or "pottery of Sevilla, from the Puerta de Goles, that is like that of Pisa" (Goggin 1968: 212). The format and some of the motifs were derived from Ligurian rather than Pisan examples, and the workmanship was in the more heavy handed, less precise Spanish manner. In addition to Italianate motifs, a sprinkling of typical Spanish designs was borrowed from other coeval vogues. Sevillian sherds of this type were confused by Goggin (1968: 135–41) with an important Ligurian import after which they were modeled, making his suggested type name of Ichtucknee Blue on Blue unusable because both products were lumped together. For example, the items shown in his Plate 6*b, d,* and *e* probably are Sevillian, as is that in Plate I-*i,* which he assigned to Talavera. Similarly, the Santo Domingo specimens illustrated by Ortega and Fondeur in 1978, Figures 65*b,* 75*a–c,* and 78*a,* likely are Spanish, whereas those in Figures 32*b* and 76*b* appear Italian. Herein the Andalusian variation is termed Sevilla Blue on Blue (Figs. 3.44*p,* 4.30, *bottom row*).

Basing an opinion on ceramics recovered in colonial Santo Domingo, the capital of Hispaniola, the same cluster of designs was utilized on a contemporary white ground type, but no examples were seen at the Plaza Mayor (Lister and Lister 1976c, Fig. 3*a*; 1976d, Fig. G). Just how this blue on white variation may have related to Sevilla Blue on White is uncertain. At present, the former seems allied to a Ligurian prototype, the latter to one from Faenza.

The blue ground does not appear to have become popular with either 16th century Sevillian or Mexican maiolists. It was suspected from examination of the subway maiolica that colonial copies were made occasionally before the late 18th or early 19th centuries, when such a type was fairly common. In such cases the dark blue decoration over the blue ground sometimes was enriched by either yellow or orange (or both) accents (Fig. 4.31). No Mexico City blues could be identified in the 16th century Metropolitan Cathedral sherd lot.

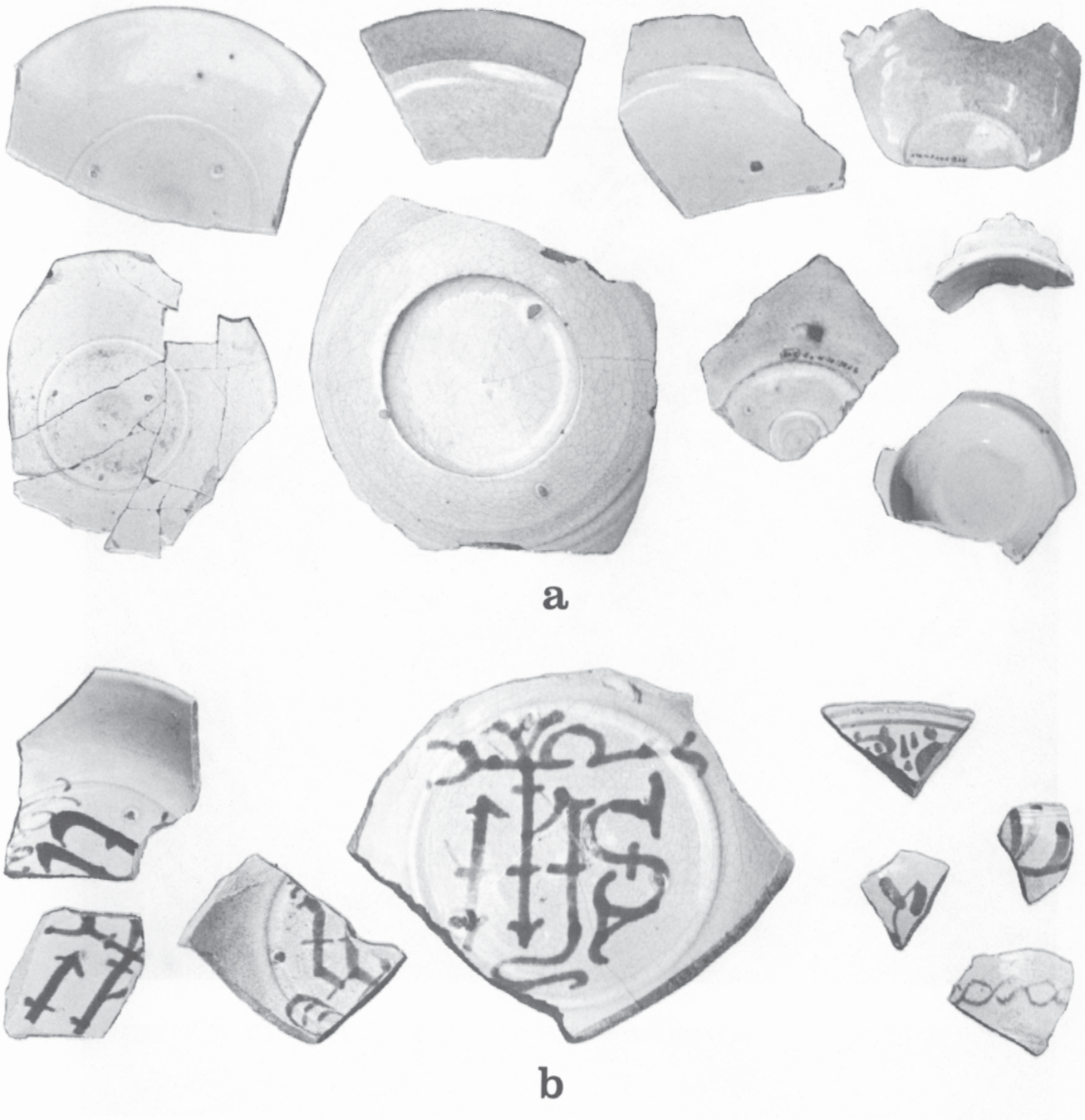
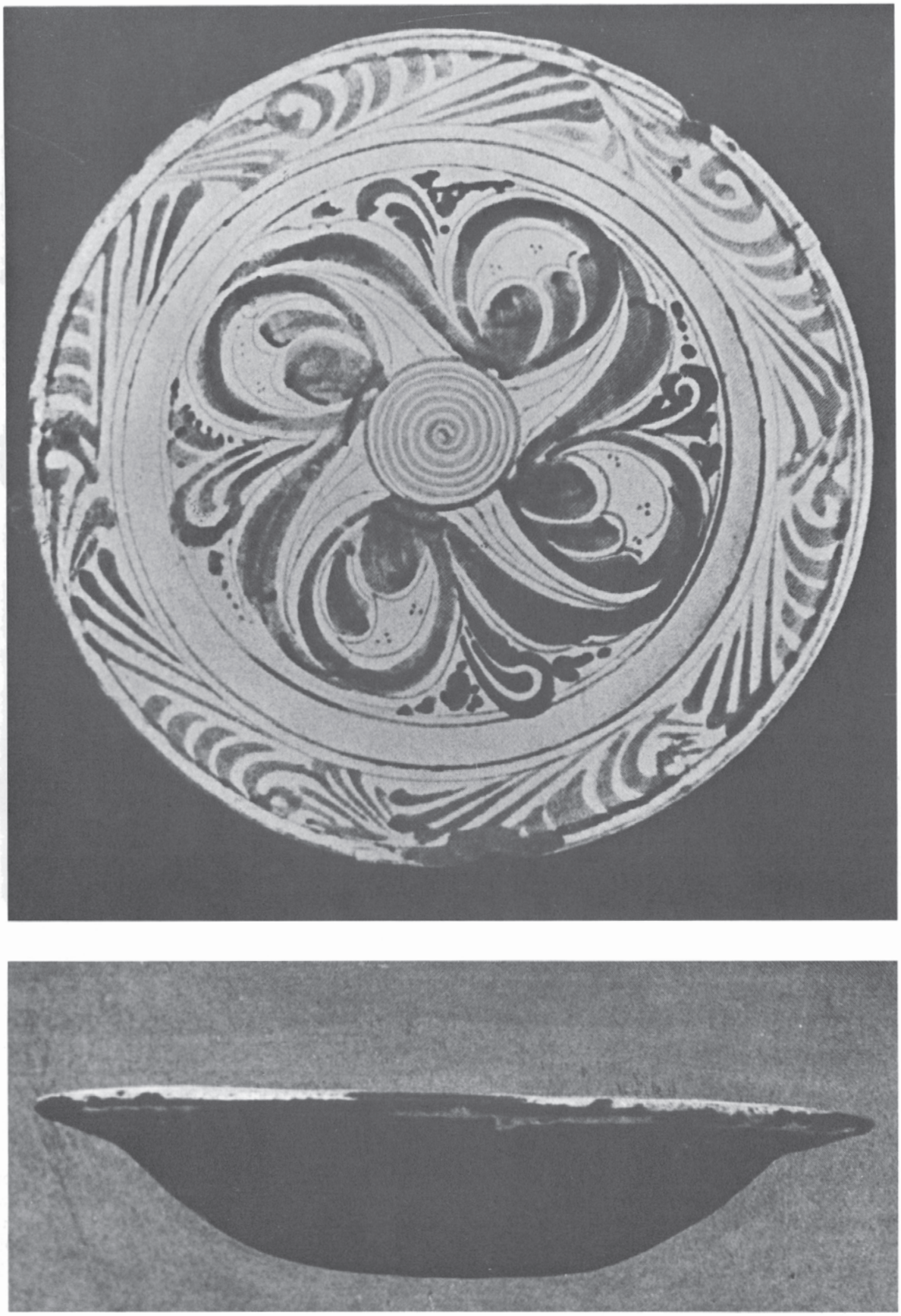


Fig. 4.24. Assorted fragments of Sevilla Ware recovered beneath Mexico City: *a*, Sevilla White; *b*, Sevilla Blue on White. Visible in *a* are the retention of central obverse ridging and cockspur scars, thinner body walls, and refined, more angular contours typical of the second half of the 16th century.

Sevillian ceramics were the most common Spanish types in the pre-1550 colonies such as early New Spain because of a number of circumstances. That regional capital controlled the transatlantic trade, at first because of geographical position, later by a royally guaranteed monopoly. The ships were outfitted there, and stocked with the goods most readily available. Pottery for the use of seamen, emigrants, and overseas factors could be obtained from numerous workshops within a city block from where the galleons were moored. These factories had been operating for centuries and were well known to all Andalusians, most of whom ate or drank from their products every day. Given that local availability and awareness and the limited financial resources of the provincial buyers there is no surprise about the American dispersal of Sevillian earthenwares. That overseas distribution actually began with Columbus's first voyage, when some of



Courtesy of the Instituto Valencia de Don Juan, Madrid.

Fig. 4.25. Blue on white plate of uncertain origin, possibly from Aragón, Cataluña, or most probably Triana-Sevilla (see Martínez Caviró 1968, Fig. 87). Dating to the 16th century, this style had marked influence on contemporary Mexico City Ware, both Fine and Common Grades.

Courtesy of the Instituto Valencia de Don Juan, Madrid.

Fig. 4.26. Blue on white plate assigned to late 16th century Talavera de la Reina or Puente del Arzobispo (Martínez Caviró 1969: 41, Fig. 1); it may also exemplify contemporary Sevillian Ware. Influence of this decorative treatment can be detected in Mexico City Ware, Fine Grade.

his sailors passed broken bits of their dishes to San Salvador Indians (Fig. 4.32; Navarette 1945, Vol. 1: 167, 176–77).

With the exception of the expensive lusterware, after the fall of Granada until the middle of the 16th century there was no pottery being made in Spain that was any better than that in Sevilla. The deplorable conditions of the roads in Spain would have made transporting low caliber, non-profitable ceramics by cart from other outlets to the authorized docks doubly foolish. By the time other potting localities (indicated in Fig. 4.33) began to compete with and then outstrip Sevilla, the goods flowing through that river port to the farflung colonies had become almost non-Spanish.

Lusterware

In the Sagrario refuse there were 42 fragments of the famous lusterware, or *reflejo metálico* (Fig. 4.34; Lister and Lister 1978, Fig. 3*a*). None were seen among the subway sherds. With two possible exceptions, the Sagrario examples

Courtesy of the Museo de Artes Y Costumbres Populares, Sevilla.

Fig. 4.27. Two views of an Italianate polychrome bottle likely made in Sevilla in the second half of the 16th century.

Courtesy of the Instituto Valencia de Don Juan, Madrid.

Fig. 4.28. Two polychrome plates probably made in Sevilla in the second half of the 16th century; their construction indicates Italian potting and decorative influences.

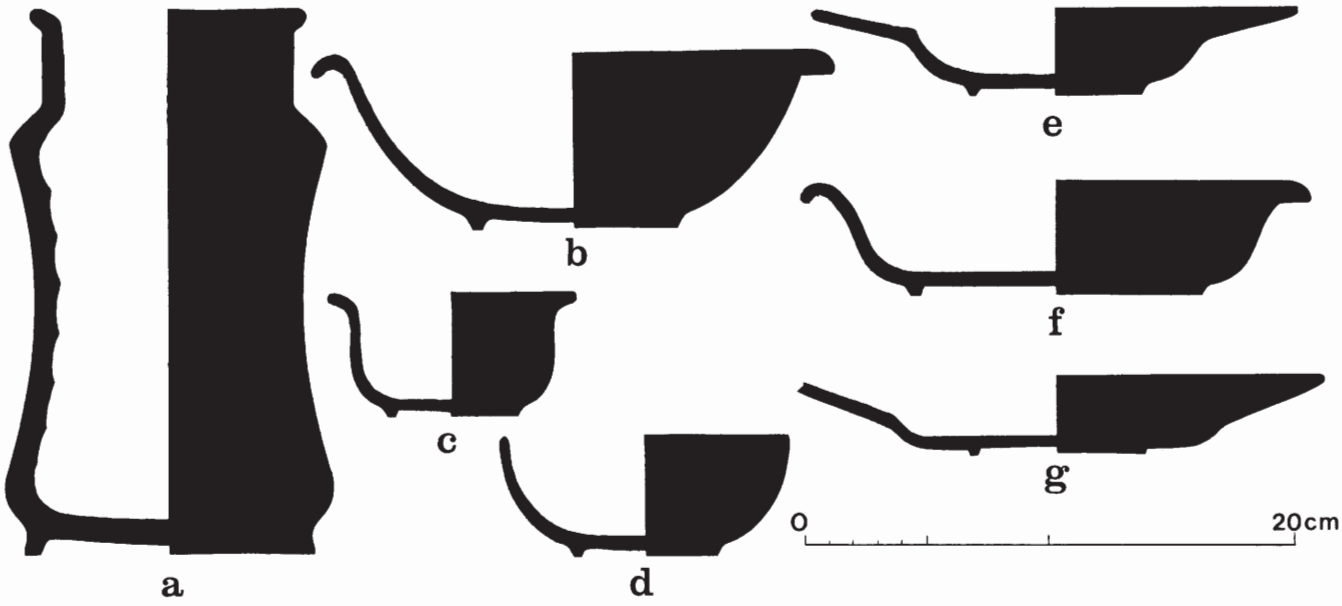


Fig. 4.29. Typical forms of Guadalquivir Ware: *a,* drug jar; *b–d,* variations of small hemispherical bowls; *e–g,* plates.

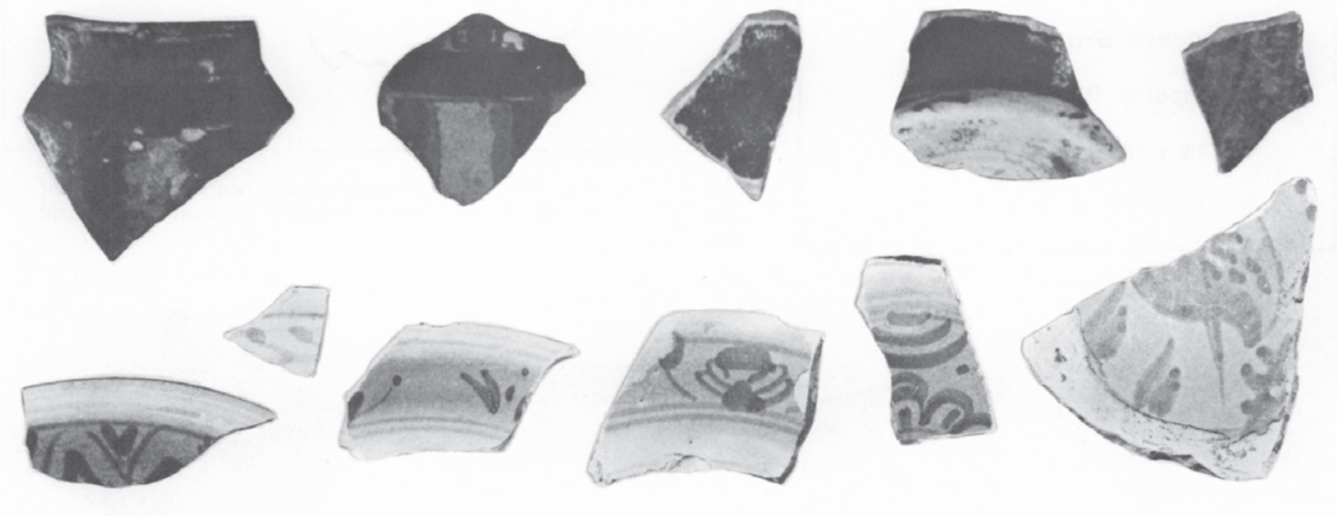


Fig. 4.30. Assorted fragments of Guadalquivir Ware recovered beneath Mexico City: *top row,* Caparra Blue; *bottom row,* Sevilla Blue on Blue.

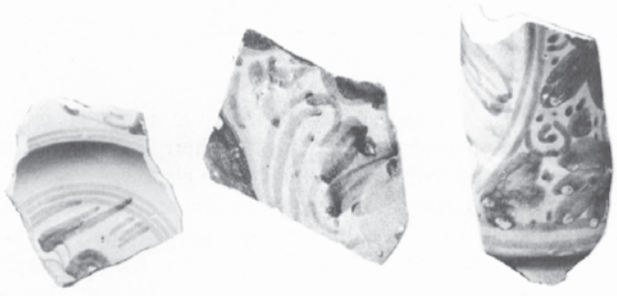


Fig. 4.31. Fragments of an unnamed blue on blue type occasionally made in the Valley of Mexico in imitation of Sevilla Blue on Blue. A comparison with the Italian Ligurian Blue on Blue prototype and its Andalusian copy reveals a coarsening of design and execution as the vogue diffused westward from Italy to Spain and subsequently to Mexico.

I. MORISCO WARE

Common Grade

Columbia Plain

Columbia Gunmetal (variation)

Isabela Polychrome

Yayal Blue on White

Santo Domingo Blue on White

II. SEVILLA WARE

Fine Grade

Sevilla White

Sevilla Blue on White

III. GUADALQUIVIR WARE

Common Grade

Caparra Blue

Fine Grade

Sevilla Blue on Blue

Fig. 4.32. Classification of Sevillian ceramics recovered near the Mexico City Plaza Mayor.

Fig. 4.33. Location of the principal maiolica centers in Spain that produced 16th century tin-glazed ceramics recovered in central Mexico.

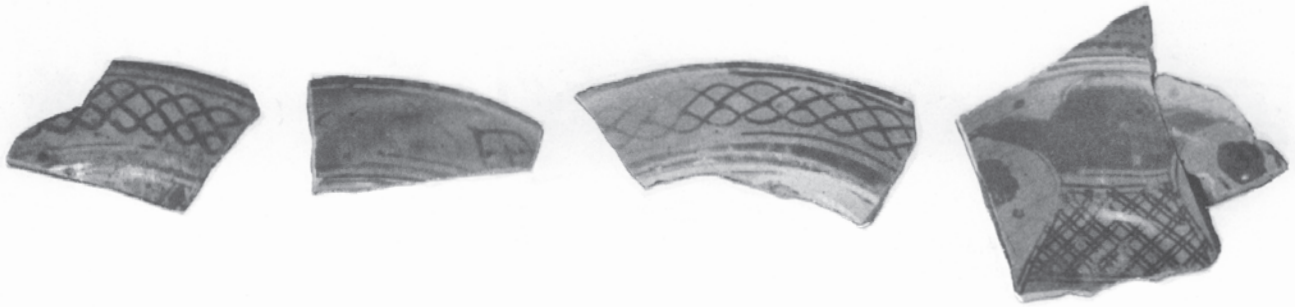


Fig. 4.34. Assorted fragments of Spanish lusterware recovered beneath Mexico City. Decoration is executed in a reddish gold colored copper oxide on a creamy ground.

are assumed to have emanated from Manises, a hamlet on the outskirts of Valencia with a predominately *mudêjar* population that from the late 14th century had been dedicated almost solely to making this one variety of maiolica. Most sherds appear to be from footless plates with wide flattened rims. Obverse decoration consists of encircling lines, chains, hooked lobes, large undetermined elements filled with double lined crosshatching, hooked scrolls, small dots, and an open flower with diamond shaped petals. Reverses carried several encircling lines of various widths below rims and an unknown element in the low center concavity. All of these decorations were executed solely in a mineral oxide, probably copper, which fired from a cherry red to gold, on a creamy or tan, rather than white, base glaze.

Two small pieces of a lugged *escudilla* are of possible Sevillian manufacture. If so proven after further analysis, they will be the first luster decorated hollow ware examples known from Sevilla (Davillier 1949: 409; Gómez Moreno 1924: 70). Documents indicate luster decorated pottery was made there on a limited scale, although to date the only such materials identified are tile (Frothingham 1951: 275). *Reflejo metálico* was considered a luxury product through-

out the 16th century, although it was in a state of technical decadence. The present sherds can be regarded as parts of several special vessels from one of the neighboring high class homes probably occupied by famous families such as Cortés, Zumárraga, Mendoza, or Velasco. They add nothing to the story of the development of Mexican maiolica, but their presence is interesting inasmuch as no other specimens previously have been recorded in central Mexico. Also, only a few lusterware specimens have come from Spanish Caribbean sites, even though a 1509 ship's manifest indicates *loza de Valencia* was sent to Santo Domingo in cargoes accompanying the Diego Colón party (Otté 1964: 492). Two lusterware barber's bowls encountered beneath the choir floor of the church of Las Mercedes in Santo Domingo are of 18th century date (Ortega and Fondeur 1978, Fig. 90*a, b*).

During the late decades of the 16th century the Castilian town of Talavera de la Reina, one hundred miles southwest of Madrid, began to produce maiolica ceramics (Figs. 4.35, 4.36). Potters there came under a double barreled thrust of Italianism. One wave came down from Flanders where earlier Italian artisans had founded businesses, and a second wave drifted up the central tablelands from Sevilla to the south (Frothingham 1944a: 15; 1974: 5). In both cases the movement of a few potters was involved. At Talavera there was no competing Muslim heritage because the initiation of the craft postdated that occupation in Castile, and *mudéjar* Toledo was some distance away. Local ability, good quality raw materials, motivation, and royal sponsorship at the nearby Court and Escorial combined to produce a ceramic efflorescence lasting for two centuries. This development made the name of Talavera synonymous with Spanish maiolica, an identification that has tended to smother regional ceramic research. As the pace setter, Talavera interpretations of the Italian concepts were copied in contemporary Iberian shops, including those at Sevilla. Most known imitations from Sevilla date after the 16th century, when Sevillian economy suffered numerous setbacks that caused potteries to close down (Frothingham 1944a: 158-67; Gestoso y Pérez 1903: 310-11). At the same time, many motifs, freely painted in the Spanish way, came from a widely shared aesthetic inventory that was not necessarily the prior possession of Talaveran decorators. Mutually used forms, such as the 16th century plate with broad horizontal brim, were turned out everywhere.

One explanation for recovering only a handful of sherds of Talaveran origin from the Plaza Mayor collections is that products from that enterprise were not commonly disseminated until after the Metropolitan Cathedral foundation had been laid. By that time the dump at the Sagrario locale was essentially closed, and the main body of refuse composing the Plaza Mayor substrata had been deposited and covered (Fig. 4.37). Much so-called Talaveran pottery recovered elsewhere in 16th century Spanish America actually was of Italian origin. Thus, in this case, negative evidence is as valuable as positive evidence. Whether Talaveran *maestros* or wares were responsible for furthering the Mexican Puebla industry, as is often asserted without either supporting documentation or artifacts, is a problem to be solved as archaeological work in historical sites of central Mexico continues. Barber (1911: 5) represented as fact a general assertion made in 1907 by the American Consul General, A. M. Gottschalk (1907: 15), concerning the Talaveran origin of Puebla maiolica via the Dominican Order, and unfortunately thereafter this unverified statement has continued to be accepted uncritically. As of now, the claim must be regarded as possibly inaccurate and misleading, but with the recognition that the styles and basic quality of Puebla maiolica differ from that believed to have been made in 16th century Mexico City. Most definitely, the name of Talavera should never be used as an adjective in describing 16th century Mexico City developments, because the ceramic history there was determined by Sevilla and not by Talavera de la Reina.

ITALIAN MAIOLICAS

In the early Middle Ages the Muslim occupation of Sicily brought to Italy the same maiolica background as was present in Spain. For several centuries, particularly during the 13th, workshops in both areas produced similar forms, with the same green and purple-brown palette used to depict much of the same imagery (Barile 1975: 211; Caiger-Smith 1973: 83-84; Liverani 1960: 17-18, Figs. 1-3). Recent research in Italy indicates that in addition to this so-called archaic maiolica, which encompassed many regional varieties, a convention for more diversified polychromes known as protomaiolica developed in Apulia of southern Italy and in Sicily (Whitehouse 1978: 42-49). However, at the same time in Al Andalus the Spanish Muslims of the Kingdom of Granada, working under courtly patronage and probably stimulated by a migration there of Persian artisans, rapidly attained a state of perfection in the ancient luster process, another aspect of the maiolica tradition. Basically a blue on white vogue, copper and silver patterns were overpainted and fired in a muffled kiln. This accomplishment generally is regarded as an important ceramic plateau, but it was one that was to be abandoned eventually in favor of varied polychromes comparable to those being developed by the Italian maiolists. The level of excellence in Nasridian lusterware peaked and then began a decline in the 14th century, when the main area of lusterware production became the village of Manises to the northeast. At that center a *mudéjar* corps of potters continued the ware for several centuries. Shipments of lusterware from both these Spanish sources went to Italy, where the pottery became known as maiolica because it arrived via Majorca (Liverani 1960: 21; Rackham 1952: 2).

Meanwhile in Italy in the 15th century the phenomenal burst of artistic brilliance and skill known as the Renaissance was moving toward an apex taking all arts with it, not the least of which was pottery making. The maiolica technique was admirably suited to the favored pictorial representation, and soon tin glazed earthenware, known as painter's pottery, began to draw on the diverse aesthetic strains of the local scene, the eastern Mediterranean, and Muslim Spain. The various artistic expressions were recombined and revamped through a carefully planned polychromatic format into a recognizable regional style. A division of labor was inherent in such an approach. One body of artisans was made up of those men who actually operated the potteries and formed the vessels. Their efforts were concentrated on producing the best possible backgrounds for the decorators, to whom the bisqued ceramics would be passed, and consequently

Fig.4.35. Cliff bank composed of compacted wasters and workshop debris held in place by wind and water borne soil. The bank is located along the Río Tajo at Puente del Arzobispo, a potting village 20 m from Talavera de la Reina, Spain. Maiolica potsherds in the bank represent types from the late 16th through 18th centuries. The practice of using stream banks as depositories for trash from pottery workshops continues to the present day.

much emphasis was given to perfecting all mechanical aspects of the craft. Careful selection and processing of raw materials were fundamental. Chalky clays, generally of riverine origin, that promoted a more adequate fit of the glaze were sought in order to reduce the imperfections such as crazing and pinholing that formerly had been inevitable aspects of the technique. Wheels for the manufacture of cylindrical forms were set at table height. Molds were introduced for flat ware, as were jiggers and jollies (Rackham 1952: 3). The array of associated tools was expanded and refined. Kiln structure improved so that drafts and firing temperatures could be more easily controlled. The use of saggars, headpins, and other supporting means became universal in order to assure consistent, faultless firings (Farris and Ferrarese 1969a: 99-110; Piccolpasso 1934, Fig. 22). For more whiteness and opacity, greater amounts of tin were put into the glaze solution, and after painting was laid on the dry but unfired glaze, a top coat of transparent lead glaze sealed and enriched the surfaces like varnish on an oil

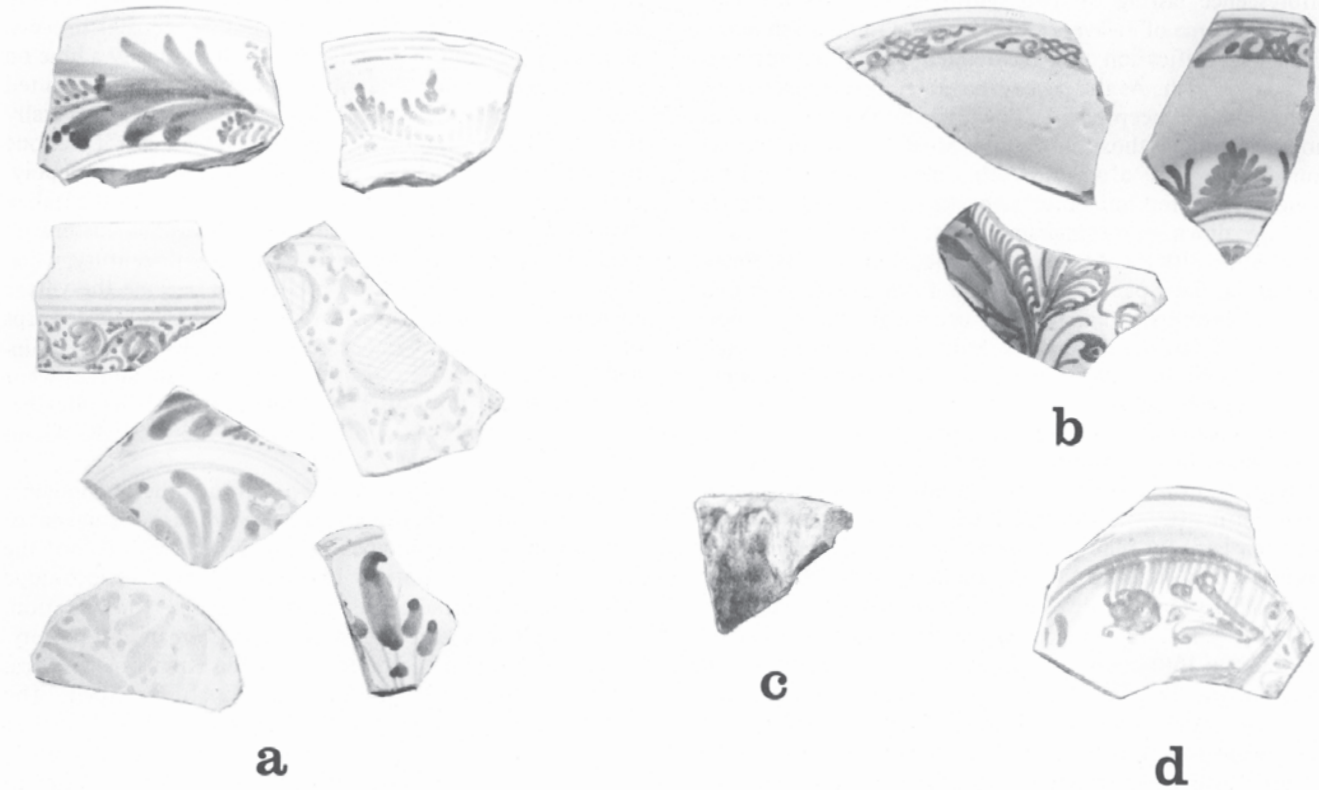


Fig. 4.36. Assorted Talavera sherds recovered from 16th century lenses of a dump on the banks of the Río Tajo, Puente del Arzobispo, Spain: *a*, blue on white; *b*, blue and orange on white; *c*, mottled blue on white; *d*, blue and yellow on white. Many of these designs diffused to colonial decorators and can be seen on contemporary examples recovered beneath Mexico City.

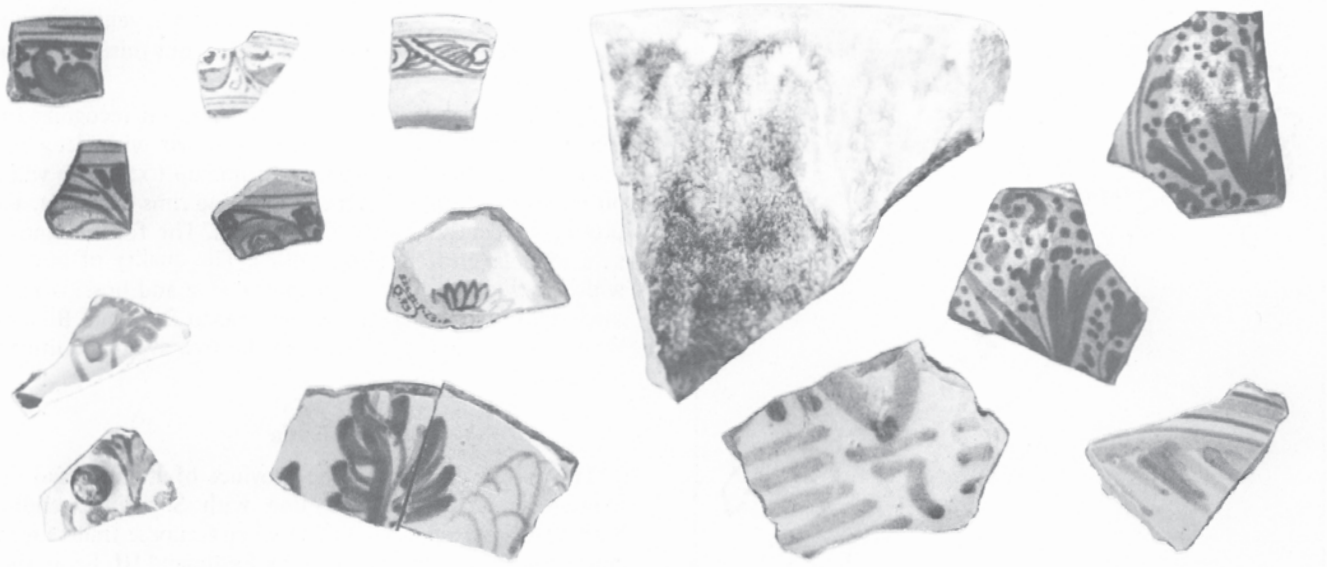


Fig. 4.37. Assorted fragments recovered beneath Mexico City that may be from vessels traded from Talavera or Sevilla. Polychrome sherds at upper left depict a style that inspired some La Traza Polychrome interpretations; the rayed examples at lower right contributed to Tacuba Polychrome vogues. The mottling on the large sherd, upper center, is imitated in Tlalpan Mottled.

painting. Interestingly, the lead glaze was sprinkled onto the decorated surface with a stiff brush, recalling the Medieval way of dusting on lead glaze. The color range was increased through combinations and shading of decorative pigments, which underwent several fritting and pulverizing processes to make them smooth.

Undoubtedly, as in Spain, coarse wares were made for common table use. Piccolpasso (1934: 44-45) described them as plain white without the *coperta* finish and fired without the use of saggars. Until recently, also as in Spain, modern archaeologists have neglected what in European history are such late periods, and therefore little is known about these lesser ceramics. One can guess they reflected to some degree, but with less refinement and at a somewhat later time, less elaborate facets of the styles set for the finer wares, which were steadily moving ahead of them through improvements and variations made by a group of master potters subsidized by ruling families. The common products probably were among those shipped around the Mediterranean by the Venetian, Pisan, or Genoese fleets. Their galleys dominated the sea lanes that converged on Gibraltar and passed by the Atlantic river port of Sevilla en route to northern Europe.

It was the Italian ceramic decorator who, as benefactor of the technical improvements in maiolica making, became the star of the workshop. It was he who acquired prestige and social status and whose name was carefully recorded as though he were the creator of a work of art. One well known maiolica plate from Cafaggiolo displays a scene of a decorator at work wearing a velvet toque, hip length hose, and a rich two-piece outfit. He is seated on a carved chair in a carpeted room. Closely watching him is an elegantly attired couple (Charleston 1968, Fig. 426; Liverani 1960, Fig. 45). It is a luxurious drawing room setting far removed from the grimy disorderly rooms of the Spanish *locerías* and no doubt, also, from the more usual workshops in Italy (Piccolpasso 1934, Fig. 51). Be that as it may, from the efforts of such active and esteemed decorators came the rise of regional schools of maiolica art whose products, expressed on two levels of competence, remained distinctive enough to be recognized. At least three of the schools seem to have shipped considerable amounts of their actual wares to the bustling quays of Sevilla, from where much of it was reshipped on Spanish galleons to the New World (Fig. 4.38). Artistic stimuli welled up from the same geysers of inspiration and in a remarkably brief time sped westward to engulf an Hispanic *artesanado* ripe for change. With each leg of the journey from central Italy to central Mexico much of the original masterful vitality ebbed away.

Montelupo

In the 15th century potters from Montelupo, an Arno valley town within the radius of Faventine domination of the arts, helped evolve the Tuscan regional maiolica mode. It was slanted toward Near Eastern and Oriental conventions due to the naval power of nearby Pisa. Although in the next century some workers from Montelupo moved to the Medici town of Cafaggiolo, where they were responsible for a superior and long lasting industry, the makers of other Montelupo types lapsed into popular commercial ceramics that were dispersed to many markets (Liverani 1960, Figs. 80-82). These common early 16th century types appear in colors and with designs favored at Faenza fifty years earlier (for example, see Liverani 1960, Figs. 9, 11). They have been noted from archaeological excavations in Genoa and northern Morocco in the Old World and Hispaniola and Mexico in the New World (Goggin 1968, Fig. 7*c-h;* Lister and Lister

Fig. 4.38. Location of Italian maiolica centers that produced 16th century wares recovered beneath Mexico City.

1976c, Fig. 2; Mannoni 1969, Fig. 3; Ortega and Fondeur 1978, Figs. 30*a*, 34*c, e,* 72*c*; Redman 1978: 20; Redman and Rubertone 1978). It is expected that ultimately Sevilla will be added to the list as a way station on this diffusionary path that extended half way around the world.

Based on comparative materials from Italy, the Italian ceramics in the Plaza Mayor collections thought to be earliest are those from Montelupo. They are representative of the first half of the 16th century. Two decorative styles are observed, both appearing on vessels of the same light firing clay. One bears a dark blue banded pattern of arabesques and small scale floral scrolls that may occur on both surfaces just below the rim (Fig. 4.39, *right*; Charleston 1968, Fig. 422; Comune di Montelupo Fiorentino 1977, Figs. 8, 19, 20-23, 25, 32; Comune di Sesto Fiorentino 1973, Figs. 5, 11, 21, 29, 30, 49, 54; Lister and Lister 1976c, Fig. 2*a*; 1978, Fig. 4*a*; Liverani 1960: 30). A primary derivation from Ming porcelain motifs is obvious, but it was a style also shared with late 15th century Faenza and mid to late 16th century Liguria. In Italy this style, called *alla porcellana,* is believed to have developed in Anatolian ateliers, whose members were in sporadic touch with Chinese decorative arts. Exteriors of the blue on white vessels commonly have two encircling lines in blue just below the rims, but some examples of an arabesque decoration are seen. The second type is polychrome with harsh orange, very dark blue, light blue, and yellow fillers outlined in black (Fig. 4.39, *left* and *center*; Lister and Lister 1976c, Fig. 2*b, c*; 1978, Fig. 4*a*). Border patterns are alternating banners or concentric bands of orange or yellow overlaid by fine-lined black tracery. Center medallions may be open flowers with petals of two alternating colors. A few random sherds with a yellow ground may also be parts of Montelupo vessels, but this attribution is uncertain.

Forms of the Montelupo examples so far recognized in central Mexico are thick plates or bowls with deep ring bases, widely flared exaggerated brims up to 5 cm in width on plates or sharply flattened thickened rims on bowls, and prominent central humps on interiors. The form is known as a *scodella* in Italy (Fig. 4.40*b*). The quality of potting, which includes a form with central ring and boss, is reminiscent of contemporary Sevillian Santo Domingo Blue on White. Any connection between the two awaits additional research.

Liguria

The Italian Riviera, or the province of Liguria, had the longest, most active connection with Sevilla, extending back to the reconquest of 1248 when Genoese traders were granted special privileges there by Ferdinand III. From that time on they remained in Andalusia, and they gained trading licenses with the Berbería of North Africa (Carande 1925: 292-94; González 1951: 337; Ladero Quesada 1976: 99). With the fall of Constantinople in the mid 15th century, Genoa was blocked from the alum mines in Asia Minor. That in turn drastically curtailed Genoese trade in the eastern Mediterranean and forced a shift of interest to the west, where some Genoese citizens already were entrenched. Genoese aggressiveness, business acumen, and timely financial favors to the Spanish Crown made these people such a powerful, though small, clique there that its members were permitted to join the New World colonization efforts along with the Spaniards. On the west side of the Atlantic they soon had controlling interests in much of the colonial commerce (Gómez de Orozco 1949: 189-212; Pike 1966; Procacci 1968: 52, 138-39; Sancho de Sopranis 1948: 355-402; Verlinden 1953: 199-211). Boyd-Bowman (1963: 181) states that of 557 non-Spaniards in the Americas by 1539, 143 of them were Italians, or 1.9 percent of the contemporary population of Mexico City. Israel (1975: 120) estimates the total Italian population in 17th century Mexico to have been about four hundred, with Genoese preeminent among them.

It is not surprising, therefore, that a substantial array of typical Ligurian maiolicas came from beneath the Metropolitan Cathedral and Sagrario and from the subway excavations (Figs. 4.41, 4.42; Barile 1975: 314-33; Cameirana 1969: 63-72; Farris and Ferrarese 1969b: 9-45; Lister and Lister 1975a, Fig. 6; 1976c, Fig. 3*b;* 1976d: 311-20; 1978, Fig. 4*b;* Liverani 1960, Fig. xlvi). Nearly all are of one type identified with the second half of the 16th century. The pottery is a thin, delicate, blue ground ware carrying fine darker blue patterns, occasionally brightened by a patch of yellow or a bit of white. Physical tests of a few sherds of this kind of Italian maiolica reveal different concentrations of several oxides in the clay body as compared to contemporary Mexican specimens (Olin, Harbottle, and Sayre 1978: 224).

The use of blue glaze seems to have been introduced to Italy at Faenza or Venice, where it was called *berettino.* Liverani (1960: 40) considers it of Middle Eastern origin, as implied in the common equating of blue ground with

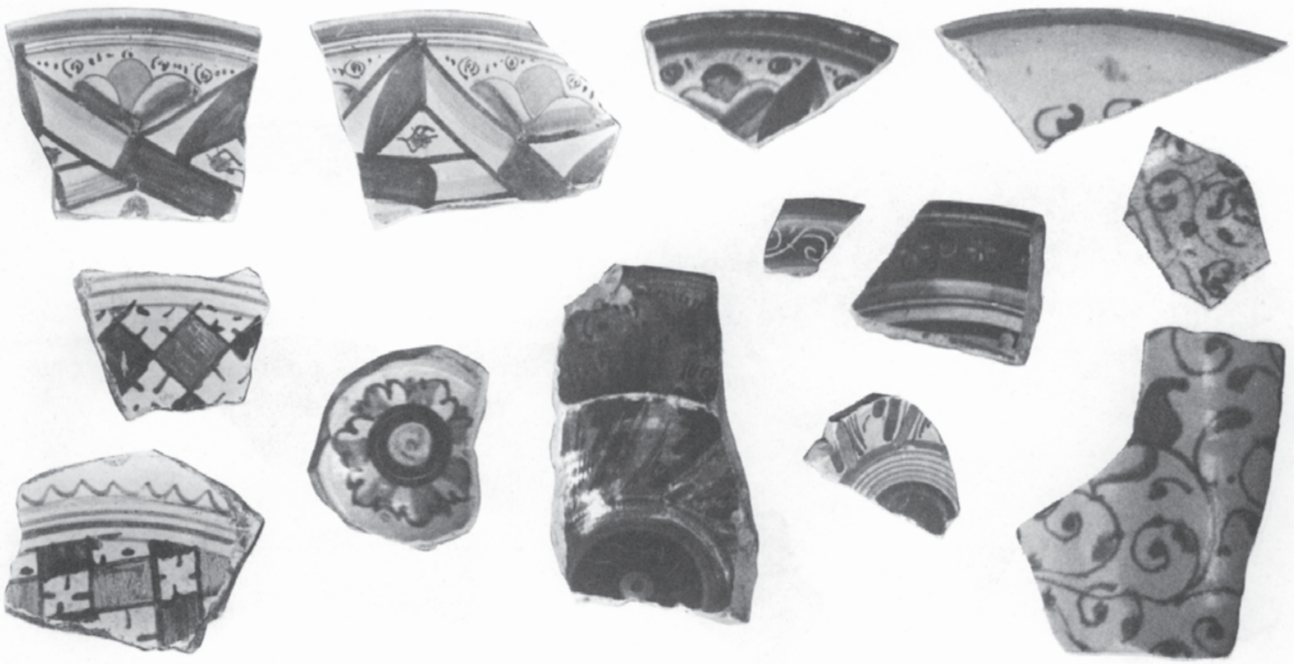


Fig. 4.39. Assorted fragments of Montelupo maiolicas recovered beneath Mexico City: *left* and *center,* polychromes in orange, two shades of blue, yellow, and black on white; *right,* blue on white. Two small sherds, *center right,* also bear tiny patterns etched through the decorative pigment.

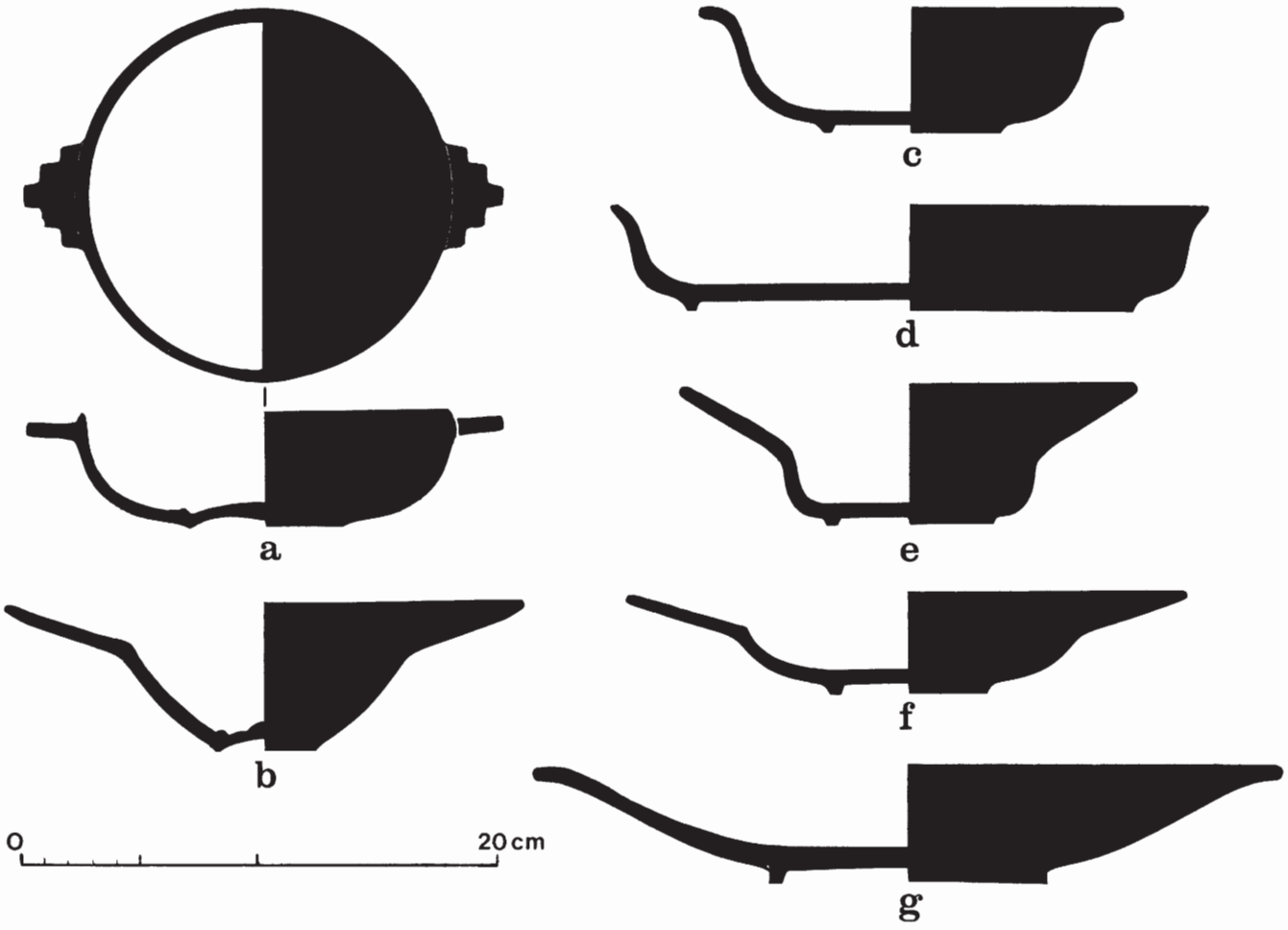


Fig. 4.40. Typical forms of 16th century Italian maiolicas recovered beneath Mexico City: *a,* porringer with terraced lugs; *b,* bowl with prominent central boss; *c–e,* bowl variations; *f, g,* plate variations.

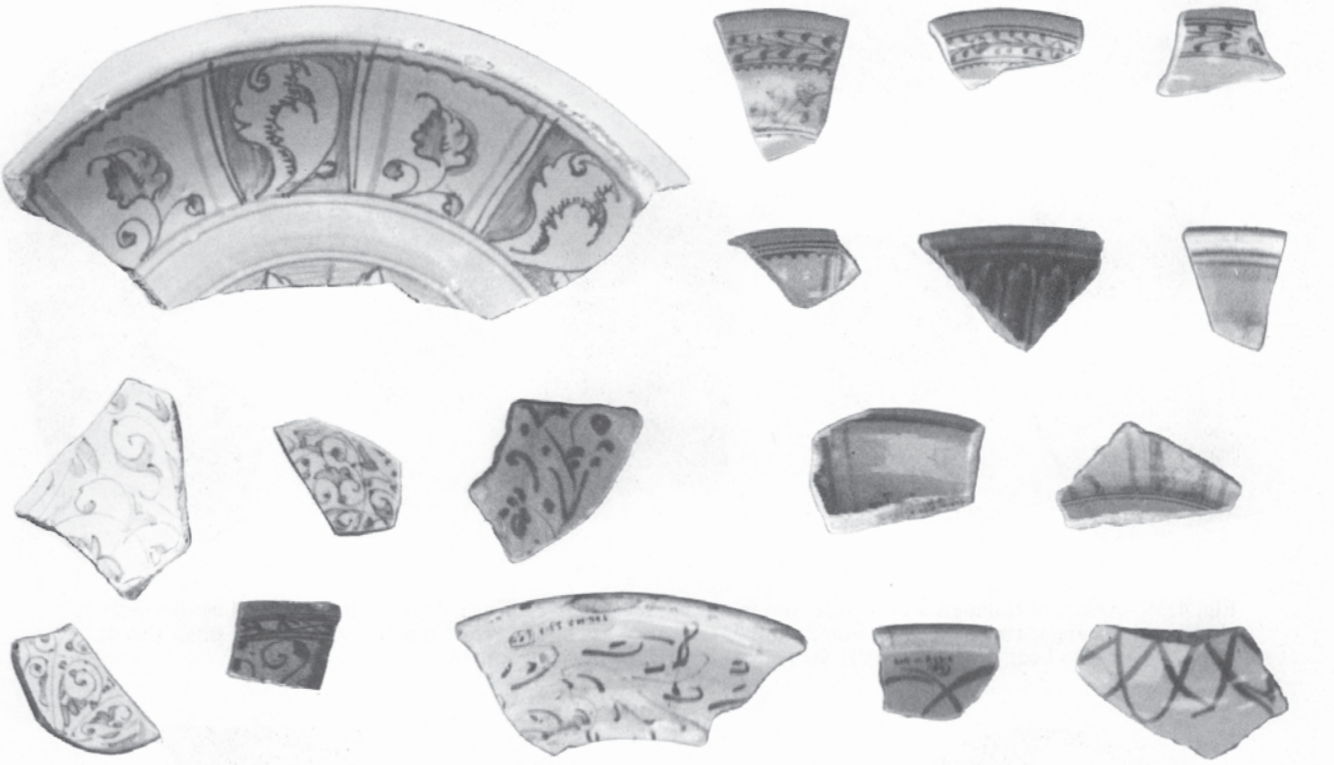


Fig. 4.41. Assorted fragments of Ligurian Blue on Blue recovered beneath Mexico City: *upper left,* bowl fragment with yellow added to leaf motif; *right bottom* and *center bottom,* exterior views.

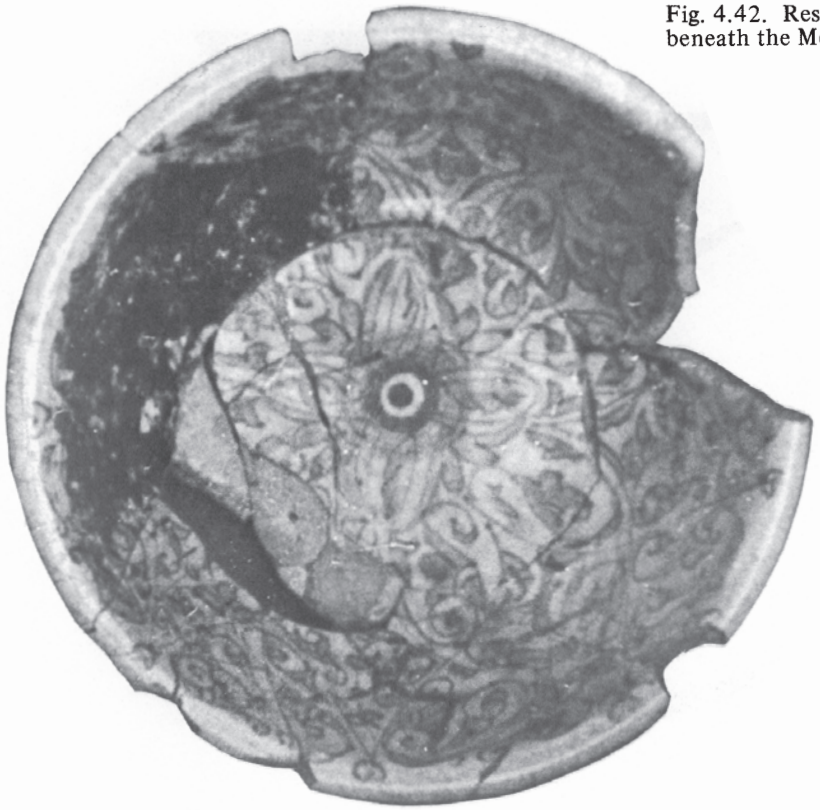


Fig. 4.42. Restored bowl of Ligurian Blue on Blue recovered beneath the Mexico City Metropolitan Cathedral.

Damascene color. Fired hues range from dark irridescent to very pale blue. A second type may be indicated by blue on white pieces with some of the same designs, but these sherds in reality might have come from vessels whose ground color became weakened to near-white during firing. The peculiar speckling of pigment noticed on other examples of certain local and trade types is present on this type also. Some laboratory analyses suggest a possible burning of the trash dumps in which these sherds were discarded, which might have resulted in such surface staining. The *alla porcellana* decorative motifs are based on the same arabesques and floral scrolls that appear on Montelupo Blue on White sherds in these collections from the Plaza Mayor area and that occur on examples of earlier Faenza. Great care seems to have been used in making brushes of goat and ass hair so that a sure-handed draftsman could successfully execute the tiny motifs on a smaller, tighter scale appropriate to the delicacy of the pottery (Piccolpasso 1934: 61). Several landscapes are present. Farris and Ferrarese (1969b: 9–45) divide the usual Ligurian styling into nine subcategories, not all of which have been found as yet in central Mexico. Instead of encircling blue lines on exteriors, the usual device is overlapped arcades with impromptu line work. Also, with similar casual application, are fine arabesques and scrolls

comparable to those on some Montelupo specimens. No examples of marks of makers or factories are present, nor, unfortunately, is there any date painted on bases. One known example at Savona does exhibit a date inscription of 1568 (Barile 1975: 51; Cameirana 1969, Fig. 3).

The blue Ligurian pottery appears to have been inspired by a similar blue style developed in the early 16th century Faenza shops in Romagna (Liverani 1960, Fig. 52). The same color, designs, and forms that were made in Genoa, Albisola, and Savona of Liguria during the second half of the 16th century are explained by the earlier movement to Genoa of some Faenza artisans. The most outstanding was Francesco Pesaro, who in 1520 set up shop next to the old Roman walls where he fathered a potting dynasty of at least seven sons or relatives (Barile 1975: 17, 50–53; Liverani 1960: 67). One of them drifted on to Sevilla after mid century where he opened his own factory in the former palace of Fernando Colón, near the city gate called Puerta Real or Puerta Goles (Frothingham 1969: 35; Gestoso y Pêrez 1903: 104, 244–45; 1919: 9–10; Sancho Corbacho 1948: 6–7). Many of his co-workers, described as maiolica painters or wheel artisans, were from the same Ligurian coast. Other fellow migrants were tilers rather than producers of hollow ware, and they must have aided in the 16th century expansion of that art in Sevilla. Later some Ligurian potters actually may have moved to Mexico to become part of the 17th century Puebla potting activity (Fowst 1971: 177–79).

We have gathered some stray surface sherds of Ligurian Blue on Blue in sites near Sevilla and at Garachico on Tenerife, Canary Islands. Such sherds are far more numerous in Spanish sites in the Caribbean, northern Venezuela, Panama, and central Mexico, and are probably the same pottery referred to in Sevillian documents as *loza de Gênova* (Lister and Lister 1976c: 33; Morales Padrón 1955: 324). A random sample from the collection of Ligurian Blue on Blue obtained during the subway excavation in Mexico City was identified in Italy as having been made at Savona. The Metropolitan Cathedral collection appears more varied, making it probable that examples from the other two Ligurian potting centers also reached the capital.

There are no known specimens in the Western Hemisphere of Ligurian types dating after the end of the 16th century. Because the financial fortunes of the Genoese declined in direct relationship to the bankruptcies of the Spanish monarchy, Ligurian American trade dropped off dramatically after that date.

Faenza

During the last third of the 15th century, as the Golden Age of the Florentine Renaissance was reaching a climax, the small town of Faenza in the north central province of Romagna began to exert considerable stylistic force on competing maiolica industries. The first of these expressions to be adopted or imitated by neighbors has been termed the Gothic-Floral family (Charleston 1968: 148; Liverani 1960: 21–24). The first word implies an interest in linear architectural devices and in fantasies taken from miniatures and choir books, and the second refers to a broad complex of stylized flower and leaf motifs that were absorbed from a number of Near Eastern and Oriental sources known in northern Italy through the Venetian trade to the east. The colors of the style typically were a dark slate blue, yellow-orange, and occasionally green placed over a heavy white ground. A vigorously curving leaf with fine lined tendrils, Persian palmette, peacock's feather eye, undulating stem with opposing dot flowers, leaves of two colors, palm fronds, and arcades were among the more common elements. Sometimes these elements were dramatized by being isolated, and in other instances they were used in framing bands of repeating units surrounding a large central figural motif (Figs. 4.43–4.45; Rackham 1952: 15, 20–22, 25; Ricci 1927, Figs. 8–9, 17–18, 36, 53; Sotheby 1977, Figs. 3–12; Wallis 1904, Figs. 11–17, 43, 45, 80, 82).

In the early decades of the 16th century, the generalized Gothic-Floral approach to ceramic decoration and the *alla porcellana* styling were carried from Faenza to distant shops in other parts of western Europe, because political unrest in Italy provided motivation for movement to a traditionally mobile artisan group. This spread of potters led to the descriptive term for decorated tin glazed earthenwares as faience, or of Faenza.

The varied Gothic-Floral family of designs does not appear on Sevillian ceramics until perhaps shortly before mid 16th century, or as much as half a century after it influenced Faenza output between 1475 and 1525 (Honey 1963: 24–25). Whether the designs were introduced by Faenza craftsmen, through shipments of Faenza wares, or by other Italians who themselves had absorbed some aspects of Faenza styling cannot be determined at this time. One suggestive note is found in Sevilla archives dated 1561. Francisco Andrea, a Flemish ceramic painter, signed a contract with a Sevillian potter requesting instruction in the preparation of pigments and the painting of maiolica in the manner of Pisa. The name of that city was frequently used in Sevilla at that time for anything Italian (Gestoso y Pêrez 1903: 389; Sancho Corbacho 1948: 6). Two things do seem certain: one, that modifications of the vogue did reach Sevillian shops where they were associated with the higher quality wares, and two, that their appearance there came after makers of Faenza fine wares had embarked on another more elaborate pictorial statement known as *istoriato*. The latter narrative vogue, based on mythological, Biblical, or historical ideas, was too advanced for the 16th century state of the maiolica art in Sevilla and too alien to the Spanish world view to be copied by them. Leaves and flowers they understood; classical mythology they did not. The representational period of Talaveran pottery in the 17th century did owe much to this *istoriato* narrative mode, but whether Sevillians at that time followed suit remains unclear.

Once known and accepted by Sevillian *maestros* who were then upgrading their manufacturing methods in accord with introduced Italian ideas, parts of the Gothic-Floral cluster of motifs appeared on local tile and hollow ware work. Such motifs occurred in border bands of encircling wavy lines associated with dot flowers, fronds, two toned leaves, and lollipop dots terminating splayed lines, which often were painted in a polychrome palette not known to have been in use in Sevilla for smooth surfaced hollow ware

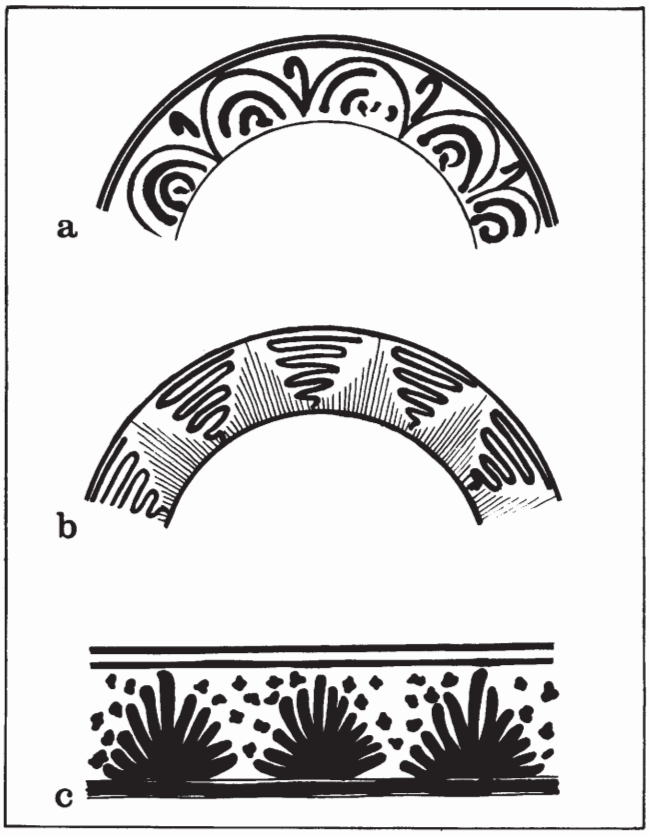


Fig. 4.43. Some commonly used design motifs of the Gothic-Floral style: *a*, graduated arcades; *b*, wavy rays; *c*, fronds. These elements were introduced by late 15th century Faenza maiolica decorators and were adapted in various ways by 16th century Spanish and Mexican ceramists. The elements appear as rim patterns on Mexican types but with obvious simplification of detail.

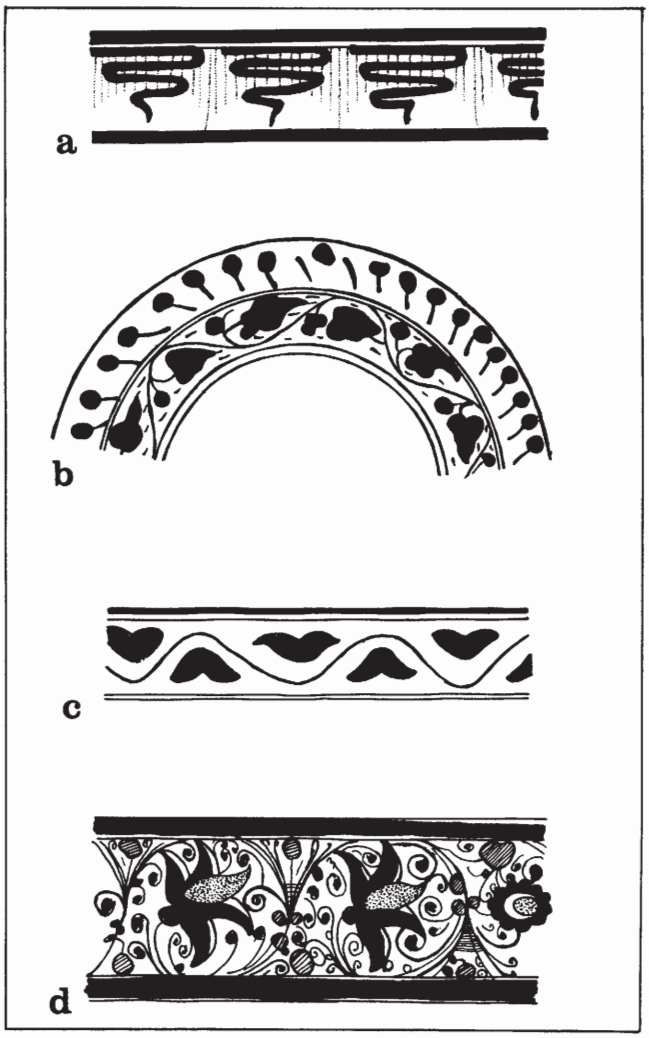


Fig. 4.44. Some commonly used design motifs of the Gothic-Floral style: *a*, wavy ray; *b*, lollipops and alternating vine-leaf; *c*, two-lobed leaf and undulating vine; *d*, palmette encircled by tendril scroll. These elements were introduced by late 15th century Faenza maiolica decorators and were adapted in various ways by 16th century Spanish and Mexican ceramists. The wavy ray appears as an unframed band on San Juan Polychrome of Mexico City Ware; lollipops are a characteristic element of San Luis Blue on White in both borders and centerpieces; palmettes executed with far less clarity are used as central motifs on San Juan Polychrome, Fine Grade, and with even less accuracy appear on both Blue and Green Series Common Grade types of Mexico City Ware.

before this time. Some centerpieces of human or animal figures and angels framed by rayed lines are suggested. Sprightly portrayals of birds and mammals had a long history in Spanish Muslim ceramics, but humans – busts in profile or full standing figures – did not make an appearance on Sevillian pottery until this entry of Renaissance ideals. Then such elements were used on 16th century *cuerda seca* and smooth polychrome, or on blue on white pieces (Martínez Caviró 1968, Figs. 88-89, 146-48; Ortega and Fondeur 1978, Fig. 76*a*). Whether the Spanish decorator did not appreciate the precision of Italian line work or whether he lacked the control to achieve it, his interpretations tended to be bolder, improvised, suggestive rather than explicit, greatly restricted in theme and color, and imperfect. He was not interested in the technical niceties or the mathematically defined field that made Italian maiolica appear almost machine-made. It was this partially digested diet of Italianisms that diffused via Sevilla across the Atlantic, where it reappeared in even greater degradation on the various fine grade Mexico City Ware types. These types, in turn, secondarily passed some of them down to the common grade variations. By that time any relationship with Italian models was at best tenuous.

Concurrent with the reception in Mexico during the 16th century of the Faenza allied ceramic style were two specific related kinds of imported Faenza pottery, both occurring in the same stratigraphic levels at the Metropolitan Cathedral compound. The most important in terms of numbers is Faenza White (Fig. 4.46, *top row;* Lister and Lister 1978, Fig. 4*c*), according to extant contracts known in Romagna by at least 1540. A 1543 document mentions shipments of the white type of Faenza to Genoa (Liverani 1957: 160), and Piccolpasso, writing about 1549, described the type (Charleston 1968: 155; Liverani 1960: 54, Fig. 78). These dates coincide well with its presence in the lowest strata of the Sagrario deposits. A roughly coeval example in Italy bears a 1556 date inscription. From these early beginnings,

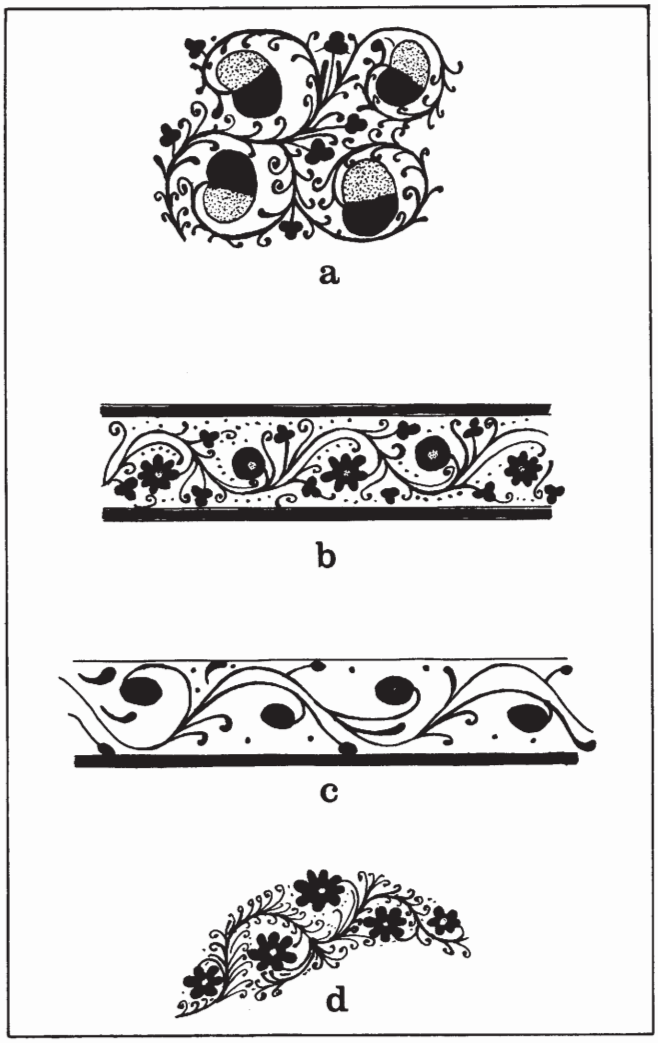


Fig. 4.45. Some commonly used design motifs of the Gothic-Floral style: *a,* two-toned leaves and tendrils; *b,* undulating vine and flowers with dot fillers; *c,* undulating vine and dot flowers; *d,* undulating vine and petaled flowers. These elements were introduced by late 15th century Faenza maiolica decorators and were adapted in various ways by 16th century Spanish and Mexican ceramists. These patterns received their Mexican interpretation on the relatively rare La Traza Polychrome of Mexico City Ware.

the general production period of Faenza White is placed from about 1550 to 1650 (Liverani and Bosi 1974: 20).

The development of the undecorated white style at Faenza resulted from the rejection of the previous *istoriato* vogue that followed the Gothic-Floral craze. Intricate, specialized, and demanding virtuoso brush and potting skills, the *istoriato* mode for fifty years had been so intensely overworked that the inherent appeal of pottery was forgotten, and plates were turned into paintings meant to hang on walls. Nothing could have been in more dramatic contrast to dense *istoriato* depictions than surfaces free of any pattern. Rackham (1952: 28) ascribes this revolutionary about-face as the somber approach of the Counter Reformation. A new focus on the pleasing qualities of the clay medium emerged, which emphasized plasticity, form, and volume. But not content with that, Faenza craftsmen expanded the range of vessel shapes to include many moldmade objects with angular or exotic handles, pedestal feet, and fretted walls copied from admired metal services. In short, functionalism of ceramics returned. To show off the new forms, a blemish free, velvety, intensely white, hard glaze was created, using a formula doubling the amount of tin, that was thickly applied to all surfaces and resulted in vessels of gleaming snowy beauty.

Faenza White became the rage of Europe in the second half of the 16th century, and demand for it intensified by another dispersal over the Alps of Faenza craftsmen. Because Pisa was a generic name commonly applied by Sevillians to anything Italian, an archival reference to the white ware of Pisa possibly can be interpreted as meaning that Faenza White was for sale in that city (Gestoso y Pérez 1903: 306). Surely it must have been available, but it is possible that a Pisa white pottery was made also. White slipped, lead glazed, sgraffito decorated earthenware originating in Pisa did get carried, probably by way of Genoa, into the Spanish transatlantic trade channels (Lister and Lister 1976c, Fig. 4*a;* Mannoni 1969, Figs. 13-22).

At the same time that Faenza White, or *bianco,* was gaining prominence, a companion decorated style known as *compendiaro* evolved (Charleston 1968: 155, Fig. 436; Liverani 1960, Figs. 76-77; Liverani and Bosi 1974: 20; Sotheby 1977, Figs, 15, 16). Sherds of this type were only one fifth as numerous at the Metropolitan Cathedral complex as the plain white, and were not recognized among the subway collections. Faenza *compendiaro* carried an abridged figural decoration composed of sketchy, lightly drawn lines and few colors – usually confined to orange, yellow, blue, and black. The decoration was isolated and unframed on expanses of the smooth white. On occasion the cobalt appears to have been carelessly prepared because a salting of fine white specks can be observed in the fired decorations. This kind of mottling is not unattractive, however, and may have been a purposeful means of shading. Frequent motifs were putti amid swirling garments, heraldic escutcheons, and human figures (Fig. 4.46, *bottom row;* Lister and Lister 1978, Fig. 4*c*).

These two Faenza wares, started before the middle of the 16th century, continued popular in Europe through much of the 17th century. The sherds unearthed at the Metropolitan Cathedral represent an early phase in the history of these wares as they were in a 16th century context (see Table 2.2). They are the first Faenza samples thus far recognized in central Mexico, but their omission in reports should not be construed as absence in fact. American archaeologists have not been aware generally of the early historic usage of such an important body of Italian ceramics in the Western Hemisphere, and consequently they have not identified these types in field situations. Additionally, in Mexico Faenza vessels were probably luxury items in the aristocratic homes at the heart of the capital, and they may never have been distributed to the hinterlands.

Faenza White was of the greatest importance in shaping both local preferences and those of the principal wellspring from which it issued, Sevilla. As has been noted repeatedly, plain whites were dominant in every category in these collections. From them it is possible to document three phases in this transmission of plain whites abroad. The significant presence of white ceramics in 16th century Mexico City undoubtedly was not merely a case of lack of painting expertise among secondary shops, but a universal desire to be in

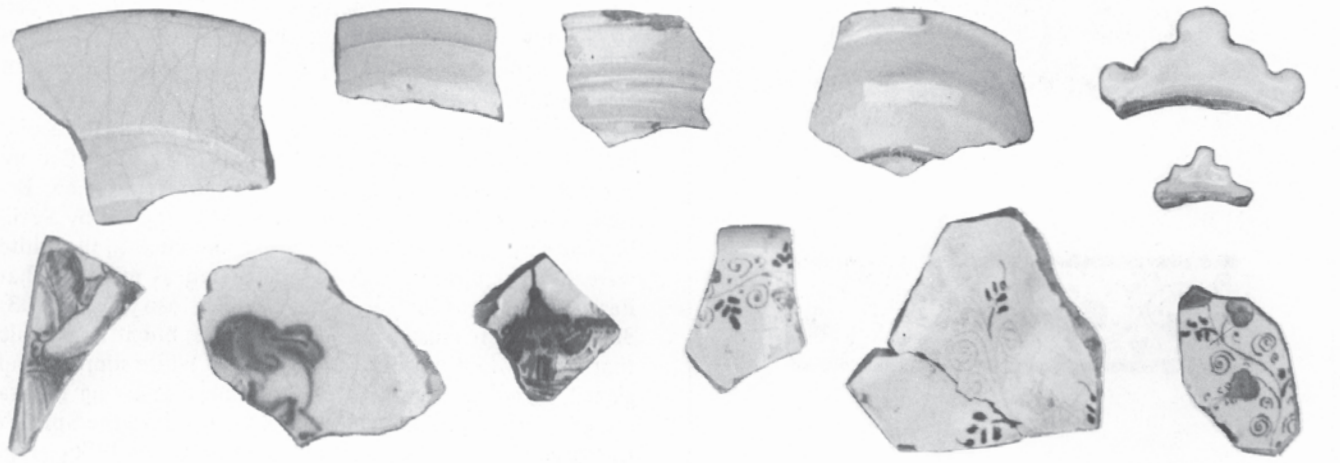


Fig. 4.46. Assorted fragments of Faenza maiolicas recovered beneath Mexico City: *top row,* Faenza White; *bottom row, compendiaros,* polychrome figural style.

step with the times, although it should be recognized that Faenza White was an infinitely more easily copied style than the *istoriato* that preceded it. Superficially the resemblances between Faenza White and Mexico City White are on a "family" level only, as a grandchild may look like her grandmother but have little of her beauty. The original, Faenza White, is pristine white without a scar or jagged craze line. It is thin, light weight, and of varied but elegant balanced contours. The Mexican third-hand copy is creamy, riddled with pinholes and a network of unseemly lines. It is moderately thick walled, heavy, and of only two or three shapes, which lack any feeling of grace. In between the two extremes is Sevilla White of the 16th century, and possibly fretted or molded objects of the 17th century that presumably were made at Talavera (Frothingham 1944a, Figs. 70–71). Not as pure white, nor unblemished, nor thin, nor light, nor diverse as its Faenza prototype, it is nevertheless superior in most of those characteristics to its offspring Mexican counterpart. Only in the absence of cockspur scars does Mexico City White surpass Sevilla White. When the Mexican vessels were copied directly from one immediate source, as in the case of duplications of Morisco Ware, provincial translations were reasonably literal. When vessels resulted from an imitation of a Spanish copy of an Italian mode – itself a composite of many divergent ideas – the outcome was weak, confused, and anonymous. A gradual coarsening in form can be discerned as the Faenza style moved westward, expressed, for example, in the increased width of plate rim, in the heavier less sharply angled lug, and in the thicker ring foot. Finally, the selection in Mexico of only a few of the hundreds of shapes available in the Faenza White repertoire must, in part, be a function of provincialism. The work force of the colony still was composed of many novices, and homes and their masters were not yet as sophisticated as in cultured Italy.

The restrained light-toned *compendiaro* mode had little appeal for colonial era decorators, whether of Spanish or Indian blood, who responded to strong color and bold flashing pattern. It apparently was not copied either in Sevilla or in Mexico City.

As represented in these materials, the period of greatest Italian impact on Mexican maiolica likely was the second half of the 16th century. Subsequently Italian trade by way of Sevilla steadily dwindled, resulting in fewer objects to inspire copies and less potent effect. The lingering Italian ceramic influence on Sevilla, Talavera, and later on Catalonia, may have continued to be felt indirectly by Mexican maiolists, but with the 17th century came a new industry, strongly motivated first by a widespread *mudejarismo,* and then by the example of Chinese porcelains.

CHINESE PORCELAINS

There are valid historical reasons associated with the ebb and flow of the Atlantic trade to explain why the imported Spanish and Italian wares recovered in Mexico City deposits and elsewhere in central Mexico primarily represent 16th century manufacture, with an emphasis on its latter half. Those were the peak years of commercial exchange with Spain. After that time there was a slackening of communication with Europe, counterbalanced by a new reorientation of commerce across the Pacific. The newly founded port of Manila became increasingly more important to Mexican maiolists, and for two and a half centuries thereafter uninterrupted transpacific trade brought literally hundreds of thousands of porcelain vessels into New World emporiums. In fact, just a year before construction started on the Metropolitan Cathedral, Englishman Henry Hawks wrote:

> They have in this port of Navidad [west coast of Mexico] ordinarily their ships, which goe to the Islands of China, which are certaine Islands which they have found within these 7 yeres. They have brought from thence gold, and much cinamon, and dishes of earth, and cups of the same, so fine that every man that may have a piece of them, will give the weight of silver for it (Hakluyt 1907, Vol. 6: 291).

Some of the porcelain is believed to have been shipped overland from Acapulco to Vera Cruz and then on to Spain. There is little surviving physical evidence of this Chinese

porcelain in Spain itself, but there are ships' manifests indicating it was sent, as well as the discovery of packed porcelain in at least one wrecked galleon originally bound from Vera Cruz to Spain (Fairbanks 1973: 170; Real Díaz 1959, Appendix 3). The great bulk of the shipments, however, appear to have remained in the colonies (Artes de México 1971; 1977; Lister and Lister 1975a: 43).

Rare and valuable in Europe, Oriental porcelain in New Spain no doubt was costly when it first reached that market. Finer and larger pieces remained luxury items throughout the colonial era. Nonetheless, in time pieces of lesser quality, particularly small tea cups and rice bowls, were so plentiful and apparently so inexpensive that they were taken in limited quantity, along with Mexican made maiolicas and other earthenwares, to all frontiers.

The deposits beneath the Mexico City Metropolitan Cathedral and Sagrario, as well as the debris through which the municipal subway route was driven, attest to an expected greater usage of porcelain objects at the heart of the colonial empire. Many sharp-edged porcelain fragments exhibiting three or four styles indicate several points of origin other than Canton. The Chinese porcelains were not analyzed in these studies devoted to earthenwares, but their presence is of significance in underscoring the cultural eclecticism of Mexican provincial life at the same time mother Spain was increasingly turning inward. Furthermore, their mass importation and overwhelming popularity underscore the threat they posed to the native maiolica industries. At Puebla early in the 17th century maiolica styling assumed many Chinese mannerisms that endured with muted echoes through much of the remainder of the colonial period. The desire for Chinese ceramics had little effect on the fine grade Mexico City maiolicas considered here because these maiolicas seem to have been discontinued not long after Pacific commerce reached large proportions. Lesser types that persisted were not in competition with the Chinese articles, and their makers did not attempt the more difficult unfamiliar Chinese motifs.

5. HISTORICAL AND CULTURAL CONSIDERATIONS CONCERNING 16TH CENTURY MAIOLICA INDUSTRIES IN THE VALLEY OF MEXICO

Even though wood and stone were not scarce in Mexico, as they were in Andalusia, large quantities of architectural terra cottas such as bricks and roof tiles were considered necessary for the building of Spanish Mexico City. That desire for customary construction materials presented few problems, as the Indians of the Valley of Mexico already were thoroughly familiar with the many useful properties of clay, including the making of bricks. In Cortés's letters to the Spanish Court, he wrote of the many bricks the Indians sold in their Tlatelolco market, and later of their skill in that regard that enabled the conquerors to rebuild a noble city within five years (Santiago Cruz 1960: 110; Valle-Arizpe 1939: 69, 139). He does not indicate whether the Indian bricks were fired or were sun dried adobes, but probably they were the latter. It is likely that the Spaniards set up workyards of the sort in common use in southern Spain for brick making near suitable clay deposits. Actually formal kiln structures may have been preceded by a spaced arrangement of unfired bricks that baked during firing to form their own heat chamber. The labor force undoubtedly was Indian. A documentary reference dating to the beginning of the 17th century indicates Indians from the *repartimiento* of Tacuba and Tacubaya were employed in brick yards operated for fifty years by a Spanish owner to meet the needs of masons in Mexico City and Puebla (Zavala 1939-1946, Vol. 5: 220-21), but Kubler (1948, Vol. 1: 169) doubts the extensive use of either brick or roof tile until the last quarter of the century.

The exact location of these early 16th century brick works has not been demonstrated, but they might well have been situated on the mainland to the west of the colonial capital in the vicinity of the village of Tacuba. Here in the modern era extensive blocks of the clay beds have been used by brick makers, revealing caches of fabulous Tlatilco pottery, probably formed of the local material, dating from the Middle Preclassic over two thousand years ago. Colonial brick kilns there might have led eventually to the 20th century industry.

Another possible location for 16th century brick works is beneath the congested lower class district of Mexico City along the northern limits of the thoroughfare now in some sections called San Juan de Letran. This street, formerly the colonial Calzada de Santa María, ran beside a canal that served as the western limit of the *traza*. The barrio of Santa María Cuepopan was in this sector of the city. Some three thousand Indians lived here and were served by a church called Santa María la Redonda, founded in 1525 by Father Pedro de Gante (Galindo y Villa 1925: 155). On these outskirts were some kilns, used for the manufacture of bricks, that were in operation up until the end of the 19th century according to Marroqui (1900, Vol. 3: 116), but he does not provide an estimate of the time of their establishment. A comparable location of brick and roof tile workyards and kilns is known for Sevilla, where such activities were situated outside the city gates (Torres Balbás 1947: 437-76).

CERAMIC TECHNOLOGY

With that kind of terra cotta operation under way, which in the Iberian artisan hierarchy was considered a part of construction work, it was but a short step to the establishment of workshops making coarse utilitarian earthenware for the storage, preparation, and consumption of various foodstuffs. The well known English student of pottery, Arthur Lane (1958: 25), called such workshops the ceramic underworld of Islam. A Muslim phase of the colonial pottery making craft thereby was introduced as a complex of interrelated traits evolved out of Middle Eastern antiquity, but it was not set down in a ceramically sterile environment. The Indians of central Mexico themselves had an acquaintance with pottery making extending over several millennia. Unquestionably at first Indian products had been employed almost exclusively by the Europeans, who found them reasonably satisfactory for activities related to the preparation of native foods by native servants. But because of the obvious physical drawbacks of unglazed wares and given the Spanish penchant for custom, it is likely that an overriding urge soon was felt by the colonists for dishes more integrated into their own background. With the casual competence at the typical kick wheel that resulted from years of apprenticeship and various sources of suitable red clay already well known, a few Spanish potters easily could have met these demands, supplemented from time to time by goods from Spain. In a short time, however, the steadily augmented European population must have led to the incorporation of Indian help in this low level potting activity. The native labor pool was large, talented, and receptive to instruction. It was this branch of the Spanish ceramic technology that was to exert the most lasting influence upon the native craft. By the 1530s, due to widespread interbreeding, there also was a first crop of mestizo youths who could have found employment in the dirty, tedious tasks of transporting raw materials to the workyards, preparing them for use, and eventually actually forming and firing the objects.

Present information is that the pre-Hispanic occupants of the Valley of Mexico had neither formally structured

kilns for the firing of pottery nor the potter's wheel. Primitive smelting furnaces and wheeled toys were as close as pre-Columbian civilizations came to these concepts. Actually no colonial examples of either kiln or wheel yet have been encountered in central Mexico. In the centuries between conquest and now the kilns are presumed to have been obliterated by urban sprawl, and crude wooden wheels have been burned or have decayed. Nevertheless, they both were such basic parts of Spanish technology that certainly they were introduced right at the outset of colonization.

Knowledge of the probable styles of kilns at the time of the Conquest suggests that those first put into service in New Spain were the typical *hornos árabes* – elliptical, two-chambered, updraft models made of brick and stone, lacking chimneys but with one or more ports in the domed roof to pull fumes out of the structure (Figs. 5.1*a, b,* 5.2; Gestoso y Pérez 1903: 61). Simpler models may have lacked a roof entirely, and may have had supporting devices composed of long clay rods laid across the top chamber to form shelving, although none have been observed among archaeological materials in Mexico. In Spain such rods are still in use in a Granada factory perpetuating Muslim practice (Fig. 5.3). They have been found archaeologically in Spain at Manises in a *mudéjar* dominated industry. From the Muslim sphere of the eastern Mediterranean, they have been noted at a scattering of sites including Nishapur, Siraf, and Takh-i-Sulaiman, and are described in a 14th century treatise on the manufacture of Persian maiolica (Allan 1973: 114, 119; Caiger-Smith 1973, Fig. 39; González Martí 1944, vol. 1: 28-29; Llorens Artigas and Corredor Matheos 1970: 148-51; Wilkinson 1973, Fig. 39). From such evidence one must conclude that the ceramic rods were characteristic furnishings of Muslim kilns and perhaps they represent one aspect of the Roman method assimilated by Middle Eastern potters. At least one first century Roman kiln utilized similar rods as a grill between the two firing boxes (E. M. Pope 1956, Fig. 282). Although lower walls were buttressed by the earth into which they were partially dug, during use the kilns likely were shored up with waster fragments. In the absence of olive trees or grape vines, common kiln fuels in Andalusia, the Mexicans burned brush, *ocote,* or small branches of trees once growing in thick stands around the Valley of Mexico.

The compound wheels in use were originally introduced to Spain by the Romans, and later they continued to be used by the Arab invaders of the 8th century who had absorbed the potting methods of even older Near Eastern civilizations. The wheels consisted of a heavy basal disk turned by a forward thrust of the potter's foot. The artisan sat on an attached forward tilted seat and the turning disk initiated movement of a vertical axle that turned a small upper wheelhead on which the clay rested. Probably the first potters' wheels in the Valley of Mexico were placed in trenches in the ground so that the small wooden upper wheels on which the pottery was thrown were at ground level and slightly to a potter's left side (Fig. 5.4; Foster 1960: 91; Frothingham 1944b: 90; Lister and Lister 1975b: 290; Llorens Artigas and Corredor Matheos 1970: 148-51; Wulff 1966: 155). This particular kiln configuration and the wheel orientation were traditional in Andalusia through the early decades of the 16th century, a legacy of the long Muslim occupation. Therefore, if these postulations concerning the first American kilns and wheels are correct, a Near Eastern flavor not surprisingly permeated the early Spanish colonial ceramic enterprises. Through selective assimilation, the idea of kiln firing of pottery came to be widely accepted by the Indians of central Mexico, but the use of the potter's wheel did not.

Lead Glaze

A further Muslim contribution to the ceramic technology that diffused to the Western Hemisphere as part of the cultural baggage of the Iberians was the use of lead-fluxed glaze on one or both surfaces of some utility vessels. Lead has several practical advantages: it fuses at a temperature as low as 327° C, it is easily worked, and it is a good solvent for coloring oxides. It is plentiful in central and northern Mexico, and is known to have been mined early in the colonial period, though not extensively. By 1568 Henry Hawks, an English trader, commented, "[there is] lead in great quantities, with which they cover the churches" (Mayer 1961: 31). Hawks referred specifically to lead tiles. Lead was also available as a by-product of silver smelting (Kubler 1948, Vol. 1: 176).

Perhaps at first the glazing of pottery was achieved by merely dusting powdered galena over the damp walls of leather-hard objects. During the single firing, the mineral melted to create a thin but relatively impervious coat. Such a rudimentary method of obtaining a glaze was common practice among rural Medieval European potters. From an early reference to procurement of *alcohol,* the Spanish term for galena, in the mountains of Oaxaca, it can be surmised that such a method was known to at least some 16th century potters in New Spain (Cervantes 1939, Vol. 1: 17; Frothingham 1944a: 21-22; Santiago Cruz 1960: 90). A more usual method was to grind, and then make into a thin solution, certain amounts of lead oxide and fine sand, or silica; when applied to green ware, only one firing was necessary. Small percentages of either copper or iron occasionally were added to color the bright transparent base glaze green or amber. Indians working apart from the Spanish shops appreciated the glossiness of the glaze, perhaps even its durability, and sometimes dipped their own traditionally formed vessels into such solutions. A superficial observation, as yet untested archaeologically, is that early use of the lead glaze by Indians decreased in direct ratio to distance from the capital.

In the excavations adjacent to the Plaza Mayor the major part of the ceramics recovered were fragments of the simple unglazed, or less frequently lead glazed, utility objects in service in all homes of the *traza,* whether rich or poor. They also were present in most businesses as receptacles for foodstuffs to be sold or used on the premises. Because the pottery uniformly was hurriedly mass produced and fired to only low temperatures, it was friable. And because vessels were subjected to careless daily handling, broken pieces quickly contributed to the growth of trash heaps such as those mounded at the northern edge

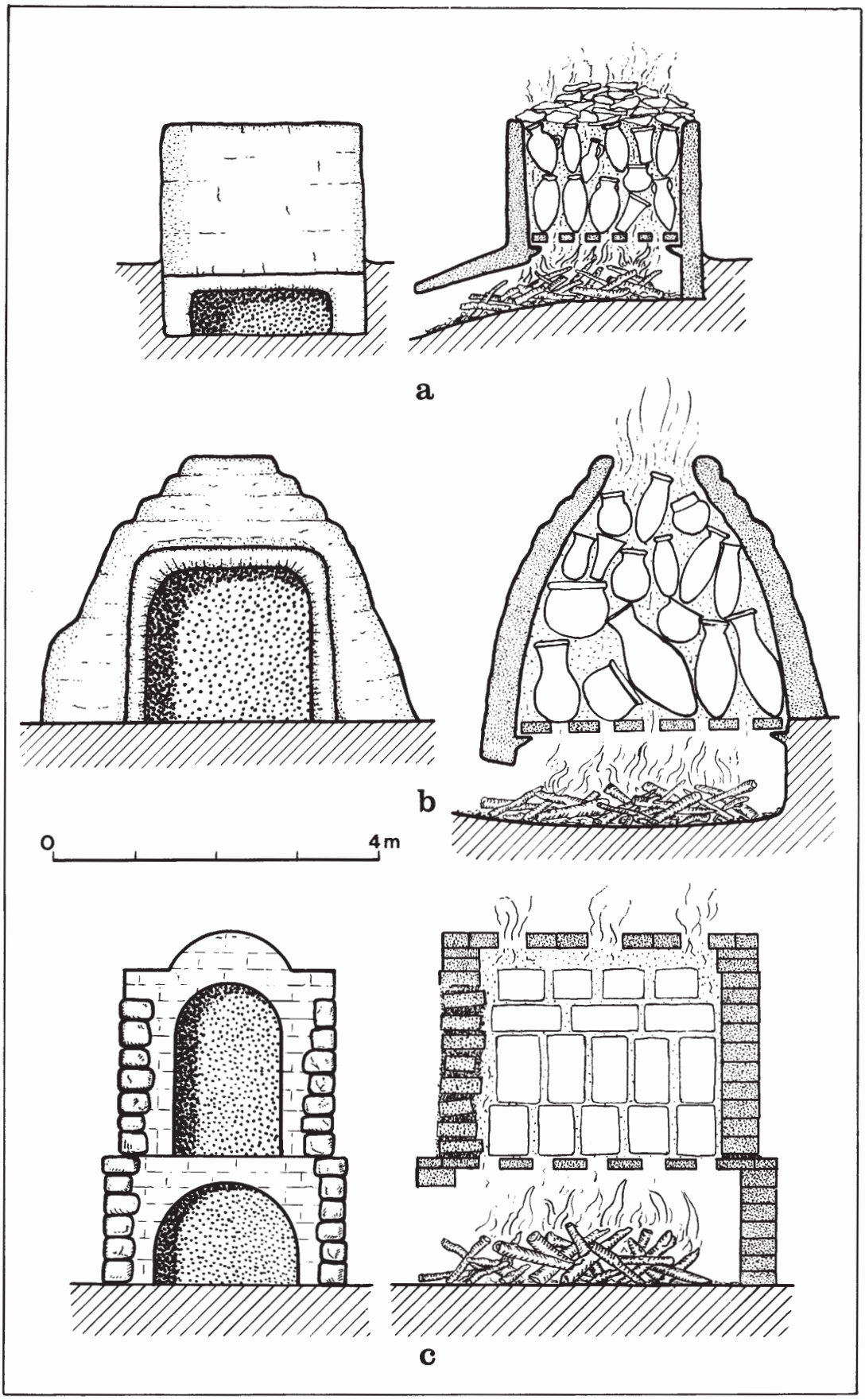


Fig. 5.1. Schematic representations of typical two-chambered, updraft kilns used by Spanish potters: *a, b,* variations of the ancient Spanish Muslim kiln type with the fuel chamber situated partially beneath the ground surface and separated from the firing chamber by either a grid or ceramic rods; the upper unit was irregularly fashioned into a circular or elliptical form; *c,* formalized masonry construction introduced in the second half of the 16th century from Italian sources with saggars (boxes of refractory fired clay) employed to contain objects to be glaze fired.

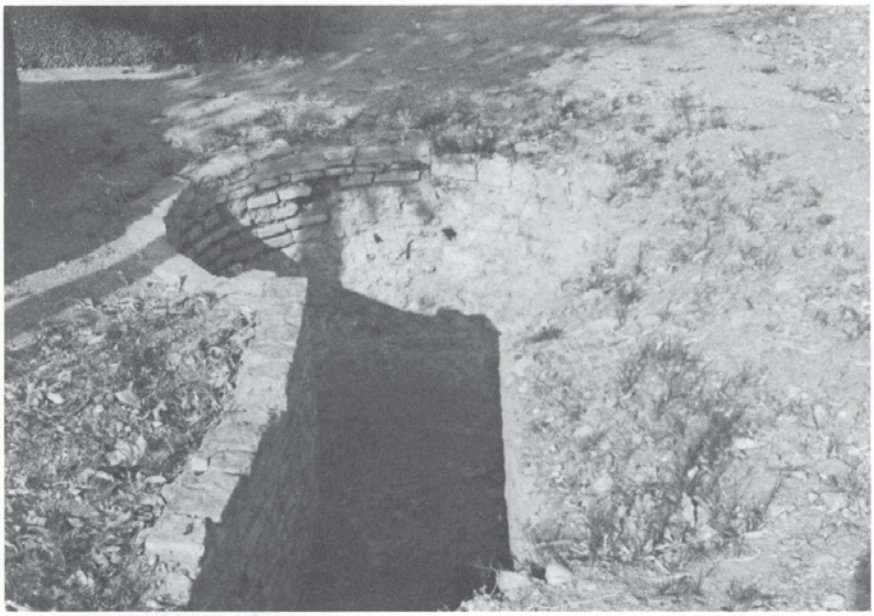


Fig. 5.2. One of a complex of excavated and partially reconstructed 16th century pottery kilns on the grounds of the Alhambra Palace in Granada, Spain. This view shows only the subterranean basal chamber of a round Muslim kiln (*horno árabe*). It is thought to have been used by *morisco* squatters who moved into the abandoned palace precinct and continued making domestic wares for local consumption. Early Mexican maiolica kilns probably were modeled after such Spanish Muslim prototypes.

of the main square. The uncomplicated styling of this pottery, which in general remained in harmony with the traditional Spanish repertoire while incorporating some Indian forms, persisted for centuries with only minor modifications through time. This stability of form now limits its usefulness as an archaeological time marker. It cannot be described as strictly Sevillian, but rather as a part of a broader Iberian tradition shared by all 16th century Spaniards.

Tin Glaze

An assortment of crude white maiolica tablewares, that is, earthenwares covered with lead glaze opacified with tin, was made in humble potteries located on the banks of the Guadalquivir River opposite Sevilla in the barrio known as Triana (Gestoso y Pérez 1903: 133; Munzer 1924: 204). Random finds beneath Sevilla's streets, and more recent discoveries from the subsoil of a Carthusian monastery erected on the outskirts of Jérez de la Frontera in the mid 15th century, indicate this tableware was present in that part of Spain for at least two centuries, centering on 1520. Just sixty miles from Jérez, Triana is the only regional ceramic industry believed to have customarily produced tin glazed wares. Stylistically identical maiolica has been recovered in the Canary Islands, where the outbound Spanish galleons were obliged to halt, and in the Caribbean islands that served as staging zones for the colonization of Mexico. Complex physical analyses have confirmed its Sevillian derivation (Fairbanks 1973; Goggin 1968; Hostos 1938; Lister and Lister 1974; 1975a; Olin, Harbottle, and Sayre 1978: 216; Ortega and Fondeur 1978). It can be expected, then, that in their gear the settlers in central Mexico had a few such vessels, primarily individual plates, drinking bowls, and porringers, which they had brought from the motherland or had acquired from stocks shipped from Sevilla to the West Indies. Probably it was their feeling that these white dishes were the proper utensils for white men, and that the local brown dishes were for the local brown men. To satisfy this deep rooted prejudice – or preference – maiolicas had to be supplied at first from Spain for a number of reasons, among them the probable scarcity of potters in Mexico. It has been estimated that artisans in general represented less than one percent of the initial colonization (Kubler 1944: 7-19). Put another way, *caballeros* outnumbered artisans by three to one (G. Menéndez Pidal 1941: 22), and potters are not likely to have been numerous among the artisan contingent.

Morisco Ware

Despite the lack of potters, the archaeological evidence, obtained first from the subway ceramic collections and then confirmed by complementary materials from the Metropolitan Cathedral project, convincingly indicates the early establishment of local workshops for producing crude white maiolica tablewares, termed Morisco Ware in this study. Furthermore, these enterprises were undertaken in or near the capital. From its introduction to Spain about the 10th century, maiolica always had been a male-produced urban product dependent on a more monied and sophisticated clientele than the country peasants. Lead glazes on occasion were used by coeval village potters, but never on a commercial basis were they opacified with tin. Mexico City was the most important city of New Spain for the entire 16th century, and the earliest demands of the market for better dishes must have been met by local craftsmen. Puebla, the leading manufacturer of fine grade maiolicas during the 17th and 18th centuries, was not founded until a decade after Mexico City was established. From present evidence, the known earliest wares at Puebla were not only stylistically different because of a probable time lapse, but were formed of a distinctive clay body decorated with a variant pigment.

The maiolica technique reached Mexico almost contemporaneously with its more well known spread to Belgium, France, and the Tyrol, and well before its introduction to England or Holland. Of all these farflung derivative industries, the Mexican activity was the only one owing its initiation to Spain and the only one having a direct linkage back to the original Islamic sources. Italian expertise and inspiration, long broken away from their Muslim roots, prompted the other developments (Charleston 1968: 156-66).

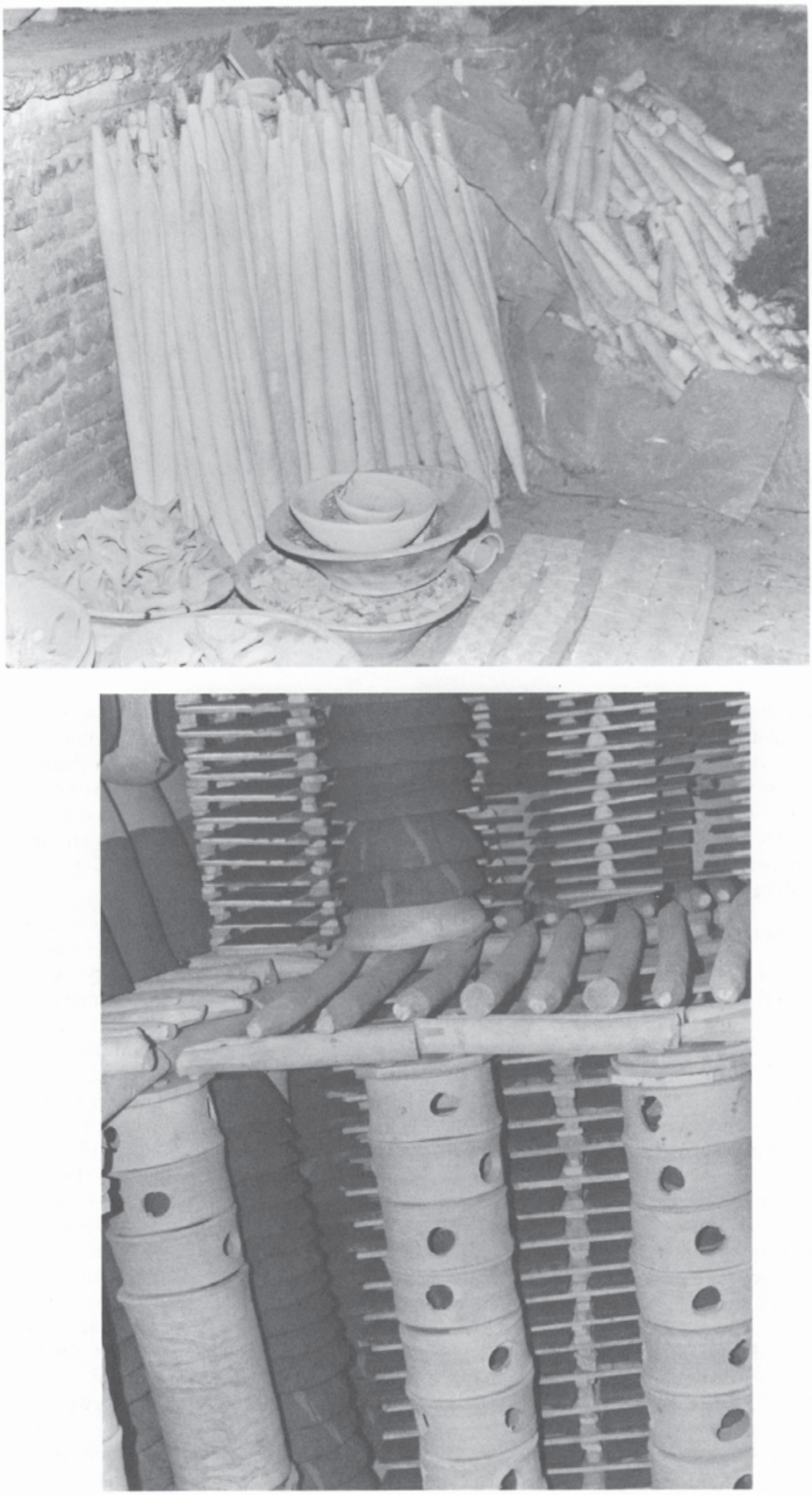


Fig. 5.3. Two views of fired clay rods used to separate and support objects stacked in a kiln. This aspect of Muslim technology probably diffused early in the 16th century to Nueva España. The use of clay rods in Mexico may have been of short duration but continues today in the area of Granada, Spain, where many aspects of the Moorish craft are perpetuated.

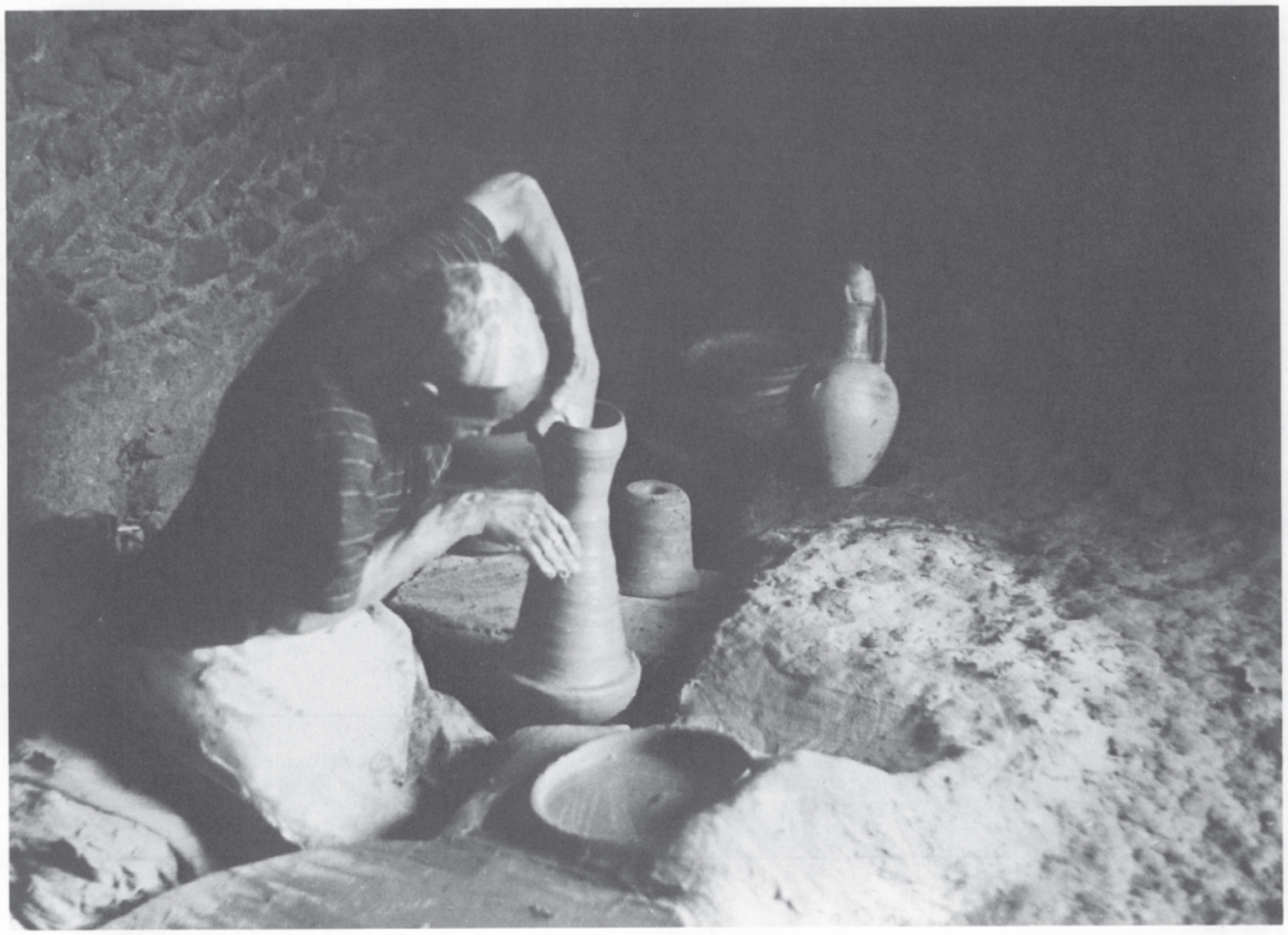
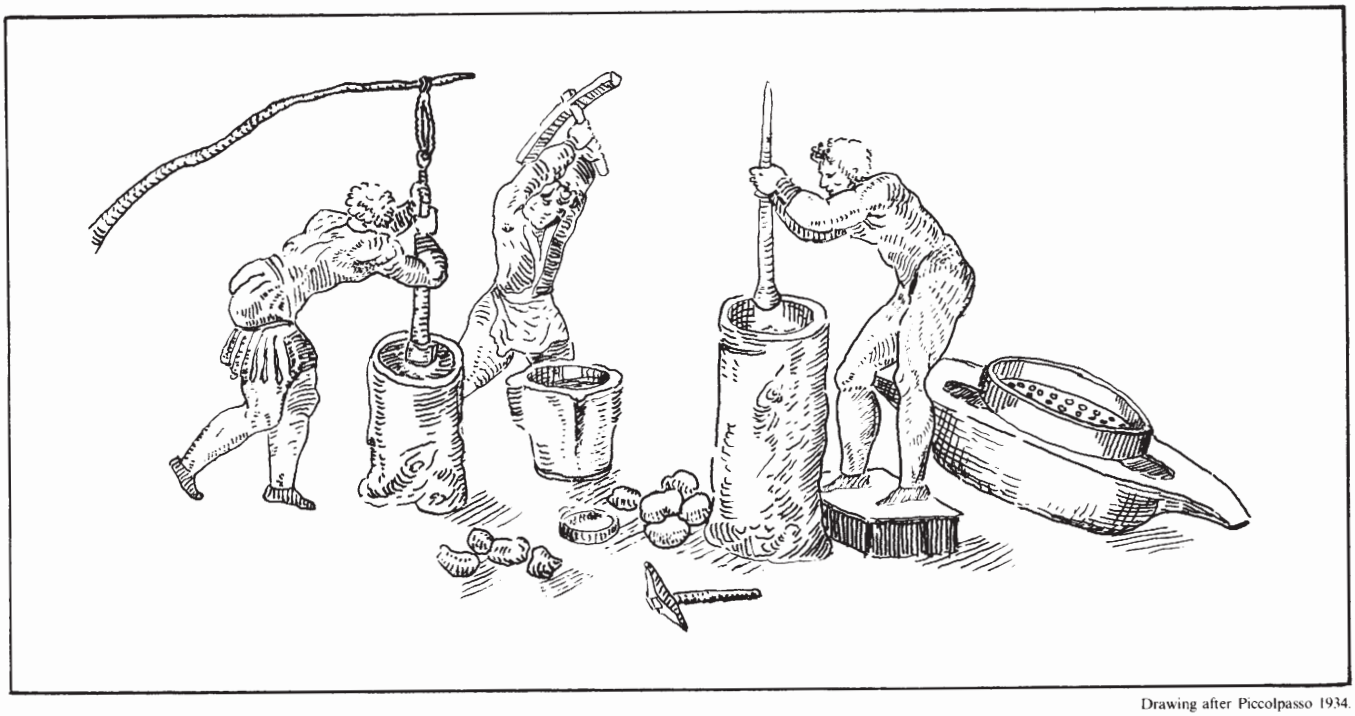


Fig. 5.4. Moroccan pottery workshop showing the potter's wheel placed in a trench in the dirt floor of the room so that the wheel head is level with the surrounding ground. This characteristic Muslim wheel placement was introduced to Spain during the Islamic occupation and it continues in various shops in the area of the ancient Nasrid Emirate of Granada. Wheel placement in the first Mexican pottery-making establishments was probably similar. The small throwing wheel is to the left of the potter rather than directly in front of him.

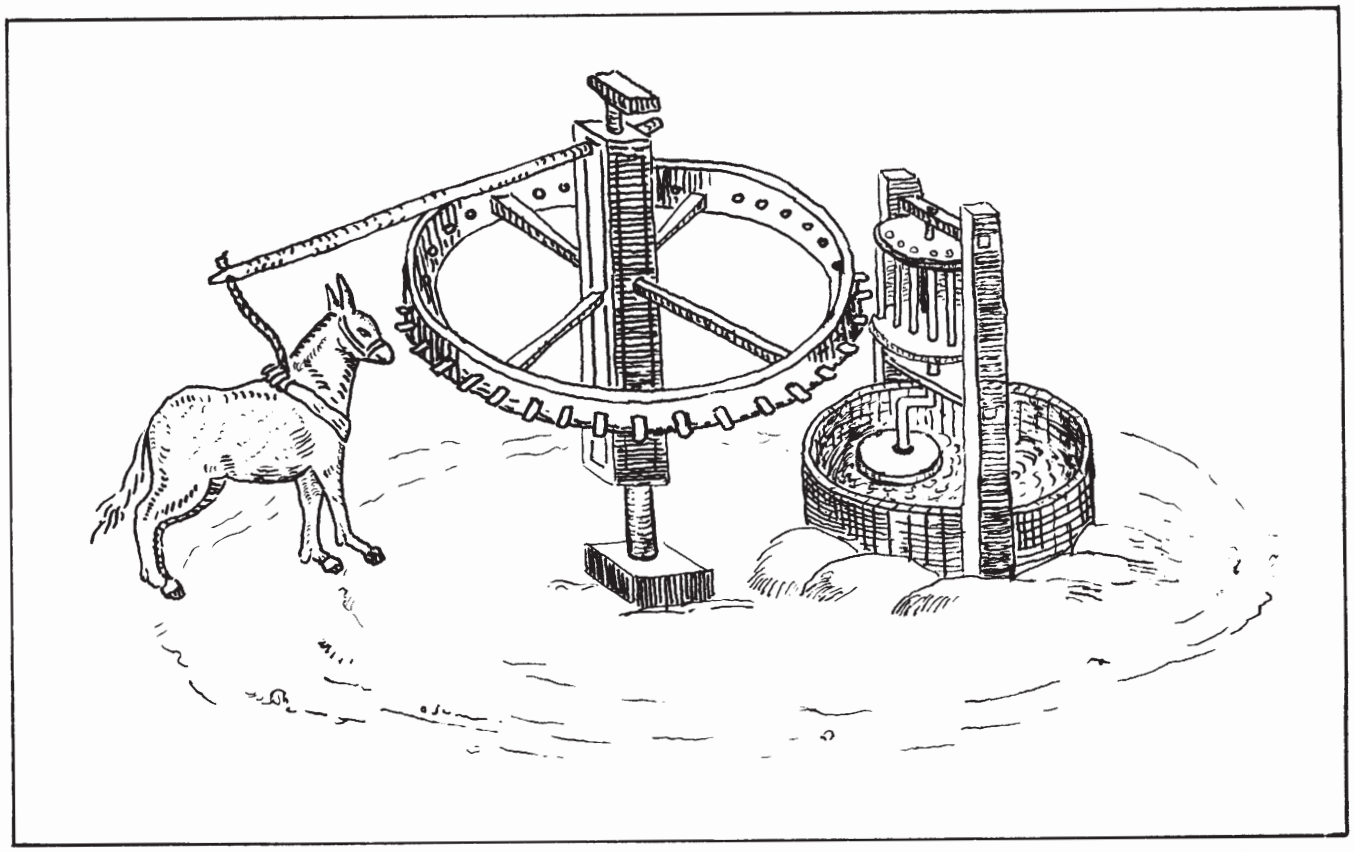
There were certain problems to be solved in setting up maiolica production in a new environment. (For a general impression of activities associated with clay and glaze preparation see Figs. 5.5 and 5.6.) The red clay used for the architectural and utilitarian ceramics, somewhat comparable to similar clays employed in Sevilla for the same purposes, was unsuitable in its natural state for this kind of earthenware. New beds of clay that fired to a lighter color, similar to Sevillian maiolica, had to be found. Potters also may have been motivated to achieve a clay body that did not require so much tin in suspension in the glaze in order to satisfactorily hide the core and one that did not promote the extensive crazing normally resulting from the combination of red clay and tin glaze. Undoubtedly in time light-firing clays were located that were mixed with the more common red clays. Whether such a blend of clays was customary in Andalusian workshops making maiolica remains unknown, although two kinds of clay typically were stored for specific purposes. Generally speaking, red clay supplies strength, a necessary degree of shrinkage to reduce crazing, and plasticity; the companion whiter clay produces a finer texture, a harder core at lower temperatures, a lightness in weight, and a fired color of bleached tone. As proven by recent physical tests (Olin, Harbottle, and Sayre 1978: 217), red clays similar to those used by aboriginal potters at Tlatilco and Teotihuacan in the Valley of Mexico were employed by the early Spanish Mexican maiolists, but they must have been toned down by dilution with other clays that had not been tapped earlier by local Indian craftsmen. The addition of clays from different sources would account for the greater concentrations of carbonates of calcium found in Mexico City maiolica than in pre-Columbian ceramics made at nearby Teotihuacan. Another factor to consider is the wet burial conditions beneath the colonial capital as compared to the dry Teotihuacan valley. There is no evidence that worked clays were stored for prolonged ripening.

Second, the manufacture of the glaze itself was somewhat more complicated than the simpler transparent lead coatings. For one thing, it required the addition of tin oxide to make the finished ground both white in color and opaque. Although at the dawn of the Christian Era Spain was famous in the Mediterranean for its drifts of alluvial tin, it is not a widely found metal, and the Spanish maiolica industries that arose after the 13th century had to use tin imported from Cornwall. In Mexico the conquerors were more fortunate because there were some native beds of the metal.



Drawing after Piccolpasso 1934.

Fig. 5.5. Initial preparation of the crude raw materials, chunks of clay or mineral oxides, to be used in the pottery manufacturing process. Such manual labors became the responsibility of the criollo or Indian workmen employed by Spanish masters in Mexico.



Drawing after Piccolpasso 1934.

Fig. 5.6. Pulverizing glaze ingredients. This method depended on careful grinding by animal propelled mills and cogwheels.

With a soldier's concern for the weaponry necessary to maintain control, soon after his arrival in the Valley of Mexico Cortés was alert to the sales of tin in the great market of Tlatelolco (Bargalló 1955: 26; Humboldt 1811, Vol. 3: 117). By 1524 he was able to write his sovereign that bronze for cannons could be made utilizing local copper and tin resources, and that a mine had been opened two years earlier (González Reyna 1956: 165; Prieto 1973: 21, 77). The Anonymous Conqueror, believed by some to have been Cortés's majordomo, also confirmed the presence of tin mines (Fuentes 1963: 167). Borah and Cook (1958, Table 11) include a 1546 price for tin in their economic study of 16th century central Mexico, certainly implying its ready availability by that time. Prior to the Conquest, sheets of tin served as a minor currency in Guerrero where the largest deposits were found, and it was made into various ornaments such as beads, earplugs, and decorative disks (Caley and Easby 1964: 507-17; Lothrop 1952: 14, 77; Peterson 1959: 177; Valle-Arizpe 1939: 68).

If the Mexican colonials followed homeland methods, they first melted lead and tin together in a small calcination kiln, ground down the cooled blend, and then prepared the glaze with this frit. In that way the toxic qualities of the poisonous lead were diminished, and the fritted material promoted smoother melting characteristics. This essential fritting step, the use of tin, the fact that tin opacified glaze had to be applied to bisqued vessels rather than to green ware, and that it had to be fired to a greater temperature in order to mature (from 1050°C to 1120°C, on an average), meant a higher cost for maiolica as compared to single fired utility or lead-glazed objects.

In addition to the usual lead-silica base, another ingredient needed for tin glaze was sodium in a massicot that aided in fluxing and toughened the surface. Long experience at Sevilla had shown the usefulness of a scrubby plant, *Salsola soda L.* (Singer et al. 1956, Vol. 2: 354), that grew in profusion in the sandy salt marshes of the lower Guadalquivir basin; when burned, it produced a crude soda ash. In 1621 an English traveler to the Mediterranean coast northeast of Sevilla described the plant and its preparation. As his letter indicates, the soda ash was used in making glass and soap. Both were important in Sevilla, especially the soap.

> I am now . . . come to Alicante, the chief rendevouz I aimed at in Spain; for I am now to send hence a commodity called barillia to Sir Robert Mansell for making of crystal glass, and I have treated with Signor Andriotti, a Genoa merchant, for a good round parcel of it, to the value of £2000, by letters of credit from Master Richant, and upon his credit, I might have taken many thousands of pounds more, he is so well known in the Kingdom of Valencia. This barillia is a strange kind of vegetable, and it grows nowhere upon the surface of the earth in that perfection as here. The Venetians have it hence, and it is a commodity whereby this maritime town doth partly subsist, for it is an ingredient that goes to the making of the best Castile soap. It grows thus: It is a round thick earthy shrub that bears berries like barberries, but 'twixt blue and green. It lies close to the ground, and when it is ripe they dig it up by the roots, and put it together in cocks, where they leave it to dry many days like hay; then they make a pit of a fathom deep in the earth, and with an instrument like one of our prongs, they take the tuffs and put fire to them, and when the flame comes to the berries, they melt and dissolve into an azure liquor, and fall down into the pit till it be full; then they dam it up, and some days after they open it and find this barillia juice turned to a blue stone, so hard, that it is scarce malleable; and it is sold at one hundred crowns a tun (Howell 1907, Vol. 1: 63-64; Frothingham 1963: 12).

The Muslim preparation of the soda ash, which undoubtedly was the same method as at Sevilla, was described by Abū'l-Qāsim, who in 1301 wrote the earliest account known of the maiolica manufacturing process. The same procedure continued to be followed in other Muslim realms (Wulff 1966: 160-61).

> This is done as follows: They take 105 parts of *shukar-i sang* [quartz] which has been powdered, beaten, ground [to the size of a split pea], sifted through silk, and 100 parts of *shakhār* [soda] in lumps the size of hazelnuts or almonds, and mix them and put them in a kiln, technically known as *bariz*. The pungency or weakness of the *shakhār* varies depending on the place.... This is cooked over a slow fire [for six hours], and is stirred from morning till night with an iron ladle made as large as the diameter of the kiln until it is well mixed [and becomes white] and is become one, like molten glaze, and this is the material for glass vessels. After eight hours they take out the brew by the ladleful. Below, in front of the oven, is a pit full of water, into which they put the glass frit. When water and fire meet there is a great noise and roaring like thunder, which for all the world could be real thunder and lightning [such that everyone who has not seen it and hears the noise falls on his knees shuddering and trembling]. The craftsmen call this mixture *jawhar* and store it, until the time comes to compound it, in a broken up, powdered and sifted form (Allan 1973: 113).

In the Valley of Mexico a search for the necessary maiolica glaze ingredients led to two possible sources of sodium. One was a native shrub, probably *Batis maritima L.* but called *barilla* as in Sevilla, which grew in the marshes around the interior lakes (Uphof 1968: 69). It may have been gathered and burned at some spot far out of town because of the strong fumes. Its ashes were retained for their crude carbonate of soda content. A 1617 archival notation concerns a prohibition against the unauthorized cutting of *barilla,* which is described as being used by makers of glaze and glass or refiners of silver and gold (México, Archivo General de la Nación 1940, Vol. 11, No. 2: 327; 1941, Vol. 12, No. 1: 165; 1943, Vol. 13: 183).

The second source of sodium available to early Mexican maiolists was a rocklike substance known by the name of *tequesquite,* a word derived from Nahuatl. It surrounds the many old saline lake beds or waterlogged areas of the central mesa (González Reyna 1956: 431; Humboldt 1811, Vol. 3: 16-17). Important in dye making and gunpowder, this material also prompted the early establishment of Indian-manned soap factories, principally at Xaltocan on Lake Zumpango north of the city and at Texcoco across the lake on which the capital was located (Gibson 1964: 339). An

interesting symbiotic relationship between two minor industries in Andalusia and in the colony dedicated to making pottery and soap is evident. Another possible correlation might be that of Genoa and Savona, which also were known for their soaps. These Italian cities had important secondary influences on both Sevillian and Mexican maiolicas. In Italy plentiful wine lees rather than saltworts supplied the necessary tartar, but the use of alcoholic beverages was not permissible in Islamic Spain and raising grapes was forbidden in New Spain by the Spanish Crown (Piccolpasso 1934, Fig. 30). *Tequesquite* continues to be used in the formulation of the usual maiolica glaze at Puebla (Cervantes 1939, Vol. 1: 11). Soap making is a regional business also.

Contemporary conventions dictated that the only decorative pigment needed in the initial Mexican industry for the making of Morisco Ware was the blue derived from cobalt. Blue was long regarded as a lucky color in the Muslim world (A. U. Pope 1964, Vol. 4: 1461). Although small cobalt veins now are known in Mexico, most likely in the early colonial period the mineral was imported from the Near Eastern Levant (Young 1960: 3). Its original source was farther east, as shown by the introduction of the blue pigment to Spanish ceramics through the 13th century movement to Spain of Persian artisans (Frothingham 1951: 21; Llubiá 1967: 86). In Persia the ore, valued not only for its high tinctorial power but also for its durability under a wide range of temperatures, had been tapped for a half millennium previously. Typically it was prepared by being ground with potash and borax, moistened with grape syrup, and rolled into cakes, which were stored until needed. When used the cakes were crushed with fine sand and the mixture was then applied to a vessel wall with a gum substance or a bit of the glaze solution as the medium (Allan 1973: 117; Schlindler 1896: 114). Being a strong colorant, only limited amounts of cobalt were required by the first Mexican maiolists, especially in view of the vastly more important production of plain white pottery. Whether the ultimate source of cobalt was in the Old World or the New, the substance was poorly refined, and in both hemispheres it fired to a dirty greyed or slate tone now considered characteristic of the 16th and earlier centuries. The purer brighter blues of the 17th century Puebla types may have owed their improved quality to refined cobalt, or zafre, then coming into Spain from Saxony (Young 1960: 283).

The suggested similarities of technical maiolica procedures between Sevilla and Mexico City perhaps are less convincing than the striking stylistic parallelism between the products of the two activities. The same vessel shapes occur, though with less variation in the colony. Of particular interest in the Muslim phase of Mexican production is the footless plate, with a contour associated with all Spanish Muslim maiolica potteries situated across Al Andalus and North Africa (for comparable 15th century forms from Valencia, see González Martí 1944, Vol. 1, Fig. 352 *6, 9;* and for coeval northern Moroccan forms, see Redman and Rubertone 1978). A pronounced circular ridging on the obverse of these plates indicates they were formed upside down over a mold attached to a wheelhead, with the reverse cut by a jigger. Such a method came into use in the 13th century Nasrid Kingdom of Granada (Frothingham 1951: 127), and a study of illustrations of museum collections reveals it was the standard contemporary Sevillian method for forming both red paste *cuerda seca* plates and light paste white maiolica plates (Martínez Caviró 1968, Figs. 88–89, 91–124). Other traditional Sevillian forms with equally widespread distribution in western Islam, such as the small carinated drinking bowl and the individual porringer with solid, lobed lug handles, also are present in the Mexican assemblage of maiolicas. Decorations, where applied, are executed in the same slate blue cobalt with a comparable disregard for planned layout of field or meticulous control of brush. Many of the elements are identical. Thus the ties of form and design in Mexico went directly back to Spanish Muslim Sevilla. For this there is a logical explanation.

It was the men of Andalusia who composed the largest contingent of early colonists. Estimates vary, but most authorities suggest that over half of the emigrants came from that part of southern Castile (Foster 1960: 31; Neasham 1939: 147–60; Pérez Bustamante 1941: 116–17). Boyd-Bowman (1963: 181; 1967: 51) states that 32.7 percent of the colonists arriving in Mexico City specifically between 1520 and 1539 were from Andalusia, and more of them listed Sevilla-Triana as their original homes than any other locality. Between 1540 and 1559 the percentage of Andalusians in Mexico City rose to 61.4. Unquestionably that regional background, where an active pottery making craft had flourished since the Roman period and where the Spanish Muslims had thoroughly grafted their own hybrid art onto that stock, was responsible for the Medieval version of the Old World maiolica technology first introduced to the Americas. In their new quarters in the shadow of Popocatépetl, craftsmen still under the influence of the Middle Ages and recently arrived from the dank workrooms of Triana faithfully copied either long remembered models or vessels transported with them (for a discussion of the Medieval spirit in culture that diffused to the Americas, see Weckmann 1951: 136). Foster's thesis of such geographic priorities in the diffusionary process of Spanish culture to Spain's overseas empire clearly is validated in the transmission of this craft (Foster 1954: 169; 1960: 234). To make even more explicit the diffusion to Mexico of Andalusian ceramic technology, there is an undeniable possibility that it was accomplished in part, if not completely, by Andalusian *morisco* artisans.

Potters were far down on the Spanish social scale because they worked with their hands in the dirt and because in Sevilla, when American colonization began, a fair number of them were from the Islamic sector of the populace (Gestoso y Pérez 1903: 103; 1919: 6). Some of these men were recognized for their skills in making the *alicatado* tile panels such as grace some of the walls of the Alcázar, and some specialized in the intricate wax resist, or *cuerda seca,* decorated hollow ware. Most of them probably were involved in the manufacture of the *tinajas* for wine and water and the massive lead glazed baptismal fonts that were brought to the Canaries and the Indies on the heels of colonization. Also, many were engaged in making the common low-priced maiolica tablewares that were dispersed in trade across southern Spain and the North African littoral. Because the potting industry had not yet evolved for making the brilliantly colored maiolica tile panels that were to bring Se-

villian potters fame and prosperity later on, the entire craft was in low public esteem. Few scribes in Mexico listed such an apparently distasteful, humble occupation beside names appearing in government records. There is a frustrating dearth of information in 16th century archives concerning potters in Mexico City. Rubió y Moreno's (1917, Vol. 1: 49) compilation of 16th century passengers to the Americas does not include a single potter in a listing of twenty-three crafts, though they may have been put into a miscellaneous category. Craft guild organizations, trade regulations, or even ordinances for participation in civic functions, such as the fiestas on San Hipólito's day in commemoration of the final fall of Tlatelolco, fail to mention potters. The earliest observations of local *olleros* thus far encountered are dated in 1537 and 1538, when two men so identified were granted lots in the *traza* (Mexico City, Actas de Cabildo 1871, Vol. 2: 61, 135). There is no hint of Muslim background in their names, given as Francisco de la Reyna and Francisco de Morales. At the time of the forced conversion during the reign of the Catholic Kings of Sevilla's *moro* population (about 1502–1505), however, a number of Christian potters served as godparents for their Muslim colleagues and christened them with Spanish names (Gestoso y Pérez 1903: 370, 378–79, 384). The Mexican duplication of the Sevillian maiolicas, which had evolved out of a Moorish heritage and were still being executed by a body of artisans incorporating some *morisco* elements, certainly points to the likelihood of those Moorish strains appearing in the young colonial industry. As stated earlier, their number need not have been large to produce the limited volume of those initial Mexican types so far indicated in archaeological deposits.

Although there were official restrictions against *moriscos* migrating to the Americas, infraction of the law is conceivable. Until the establishment in the 1570s of the Inquisition in Mexico, prejudice against the *moriscos* had not crystalized in the colony (see Fig. 5.7). Furthermore, their physical similarity to the southern Spaniards allowed them to blend easily into the population. Viceroy Mendoza himself was of mixed descent; his mother was Jewish and Moorish and a cousin of King Ferdinand. He and Bishop Zumárraga petitioned the Crown to send a group of *moriscos* to New Spain to aid in the cultivation of silk, at which they were so skilled (Borah 1943: 9; J. J. R. 1947: 467; Liss 1975: 57, 79, 101; Toussaint 1939: 605). There is no record that such a bold plan, although approved, was consummated. But that such a proposal came from the highest officials lends credence to the notion that *moriscos* were actively engaged in the first Spanish maiolica production in the New World. If that were true, not only the fundamentals of the transplanted craft were Muslim, but the practitioners as well. The Spanish households in Mexico for which the first Muslim-derived, perhaps Muslim-made, ceramics were intended were presided over most often by Indian ladies. Such was the cultural and racial kaleidoscope of colonial Mexico. Toussaint (1939: 603–8) goes further and suggests that the important *mudéjar* themes that emerged in the 17th century in many artistic expressions may have resulted from subversive *morisco* infiltration of the colony following their final expulsion from Spain. For example, in several Puebla maiolica styles of the 17th century there are notable overtones that can be correlated with important *mudejarismos*. Restrictions against Moorish rise in the craft guilds also suggest their presence (Santiago Cruz 1960: 36).

Drawing from Codex of Yanhuitlán, dated about 1530.

Fig. 5.7. A Codex drawing showing a 16th century resident of Nueva España in Muslim garb. Such clothing indicates a lack of prejudice among colonial Spaniards and they may have allowed the theoretically illegal participation of *moriscos* in some aspects of overseas life, possibly including pottery making.

Kilns used for the production of low caliber utility vessels would have been adequate for the firing of maiolicas. Up to that time in Spain the same structures served both purposes, and vessels to be bisque fired sometimes were tucked in the perimeters of the firing box, while the pottery to be glazed was stacked in the upper unit. The location of these colonial kilns and the workyards of which they would have been an integral part remain as much a mystery as the identities of the potters themselves.

Considering both Spanish and Muslim town plans, the Mexican workyards probably were concentrated in one district (R. Menéndez Pidal 1957, Vol. 5: 242; Torres Balbás 1947: 452; Von Grunebaum 1955: 147), but in Sevilla, for example, this localization was by no means absolute (Gestoso y Pérez 1919: 3). Although a number of colonial roadways through the *traza* bore the names of the particular crafts located on them (Romero 1973: 254), there is no known 16th century street name referring in any way to the pottery making process. Alleyways called Olla (jar) and Cazuela (bowl) are recorded as being sold in 1615, but any

relevance to pottery making is unclear (Marroqui 1900, Vol. 2: 105). Calle del Alfaro, a two-block-long section of the south end of modern Isabela la Católica, occurs on 18th century city plans, but a census of households there shows no potters as residents (Baéz Macías 1966: 460; Benítez 1929: 49). In this case, Alfaro was probably a proper name. Cervantes de Salazar in 1554 and Thomas Gage in 1648 described with care the makers of various kinds of goods whose shops lined Calle Tacuba, the roadway leading west from the Plaza Mayor (Cervantes de Salazar 1953: 40; 1963: 94; Gage 1958: 73). Noticeably absent is any mention of potters.

Most probably the workshops and kilns were placed within house compounds outside the *traza,* perhaps on the edge of the mainland where there was easier access to raw materials and water, and the inevitable smoke and clutter was less offensive to the citizenry (Fig. 5.8). For the same reasons, these shops typically were situated just inside or outside the city walls in Spain and in Muslim lands, including Morocco (Ardemans 1760: 80, 107-8; Lister and Lister 1975b: 289; R. Menéndez Pidal 1957, Vol. 5: 242). The locale of the Calzada de Santa María, mentioned by Marroqui as having brick kilns, fit those general requirements because the few existing old maps depict the area as rural with only scattered houses, yet it was close enough to the city to come under its jurisdiction. Marroqui does write of the presence there of kilns for firing *loza colorada* in the late 19th century. Taken literally, *loza colorada* refers to common utility vessels and not to maiolica; but the tin-glazed types attributed to late 19th century Mexico City production have red pastes. He adds, without supporting documentation, that the Calzada de Santa María was the potters' quarter of colonial Mexico City; whether of the 16th century or later is not specified (Marroqui 1900, Vol. 3: 116). Once operating, such installations often continued in the same spot for long periods of time, making it possible that 19th century shops there had their origin in the 16th century. Nevertheless, the barrio through which the road cut was Santa María Cuepopan, an Indian sector better known in the 16th century for painters, construction workers, and silversmiths (Cruz 1959: 91-95). Marroqui's theory of probable location of the colonial potteries has been cited as fact by subsequent writers who have added no specific data. Carrera Stampa in addition refers to a late 18th century author, but actually that author lists a few prominent colonial guilds, with the exception of potters, and does not discuss their barrios at all (Carrera Stampa 1954: 197; Villaseñor y Sánchez 1746-1748: 58). Perhaps the large numbers of cockspurs used in glaze firings recovered during subway excavations came from shops in this area, and the cockspurs may have been dumped with waste debris into the swampy land along the western edge of the district. A 16th century utilization of the location by potters also can be inferred from knowledge that in the 18th century all the citizens living west of the *traza* were put under a single *alcalde.* They used the parochial church of Santa Veracruz, one of the earliest churches founded in the capital (Valle-Arizpe 1939: 120). An 18th century version of the structure still stands across the north side of Alameda Park on an extension of Calle Tacuba (Baéz Macías 1966: 409-44). In the 18th century this church was the home of the *cofradía* of Mexico City's potters, whose patron saints were the same Santa Justa and Santa Rufina who watched over Sevilla's potters (Fig. 5.9). Thus, it is likely that the wealthy exclusive users of the church were replaced by humbler neighbors as the area filled with more common folk (Barrio Lorenzot 1920: 173; Carrera Stampa 1954: 90, 92; Gestoso y Pérez 1903: 101; Santiago Cruz 1960: 55; Toussaint 1967: 265).

A single maiolica kiln has been reported at the outlying district of Tizapán, but its products and age are totally unknown. Perhaps it was not used in the colonial period (Goggin 1968: 14).

Further study is needed to determine how long the complex of early 16th century Iberian ceramics, the Morisco and Guadalquivir Wares, was dominant in the earthenware assemblage at Mexico City. Ceramic seriation of the Metropolitan Cathedral deposits is deceptive because at present original Spanish vessels cannot be separated from close Mexican duplications, and both types were lumped together in the laboratory. Looking at the seriation charts, at the 4-5 m level, by the chronology suggested earlier about 1550-1560, a change in frequencies occurs, but actually the shift from Sevillian prototypes to Mexican copies of them likely took place at a much earlier time, probably in the decade and a half prior to 1540. Also some time before that date another, almost completely distinct, ceramic ware was being made—Mexico City Ware.

Mexico City Ware

With the rise of Mexico City Ware (see Chapter 3), which forsook Muslim styling for Italianate ideas, some aspects of Muslim technology also were abandoned. Presumably kilns were shaped in the Italian manner and became more standardized rectangular structures of brick, with a lower combustion chamber separated by a grate from an upper baking chamber (Fig. 5.1*c*). Roofs likely were arched but were still without a chimney. Kiln furniture no longer included Muslim-style clay supporting rods, but encompassed the use of Italian introduced saggars, clay boxes made with a heavy mixture of sand to increase refractoriness. Actually saggars were one part of the Muslim technology that Spanish Muslims did not use (Allan 1973: 114; Caiger-Smith 1973, Footnote 212; A. U. Pope 1964, Vol. 4: 1702). Potters' wheels no longer were positioned in the ground, a placement that always had been unhealthy and uncomfortable. By the mid 16th century wheels were at table height, with a work surface for tools and lubricating slurry at wheel level, and a seat for the artisan erected at an appropriate height and attached to the framing of the simple throwing device (Fig. 5.10). The lower wheel, which the potter kicked with a forward thrust of his right foot to set into motion the upper wheel connected to the vertical axle, still was constructed of heavy wood. Greater weight, providing added momentum and stability, could have been gained by a lower wheel of molded cement or shaped stone. The new above-ground wheel design, passed into Spanish shops via the Italians, may have caused the user to seek better light or even sunshine. However, to keep the clay moist and pliable, workers remained in dimly lit humid surroundings. This work environment surely added misery to occupational hazards such as lead poisoning.

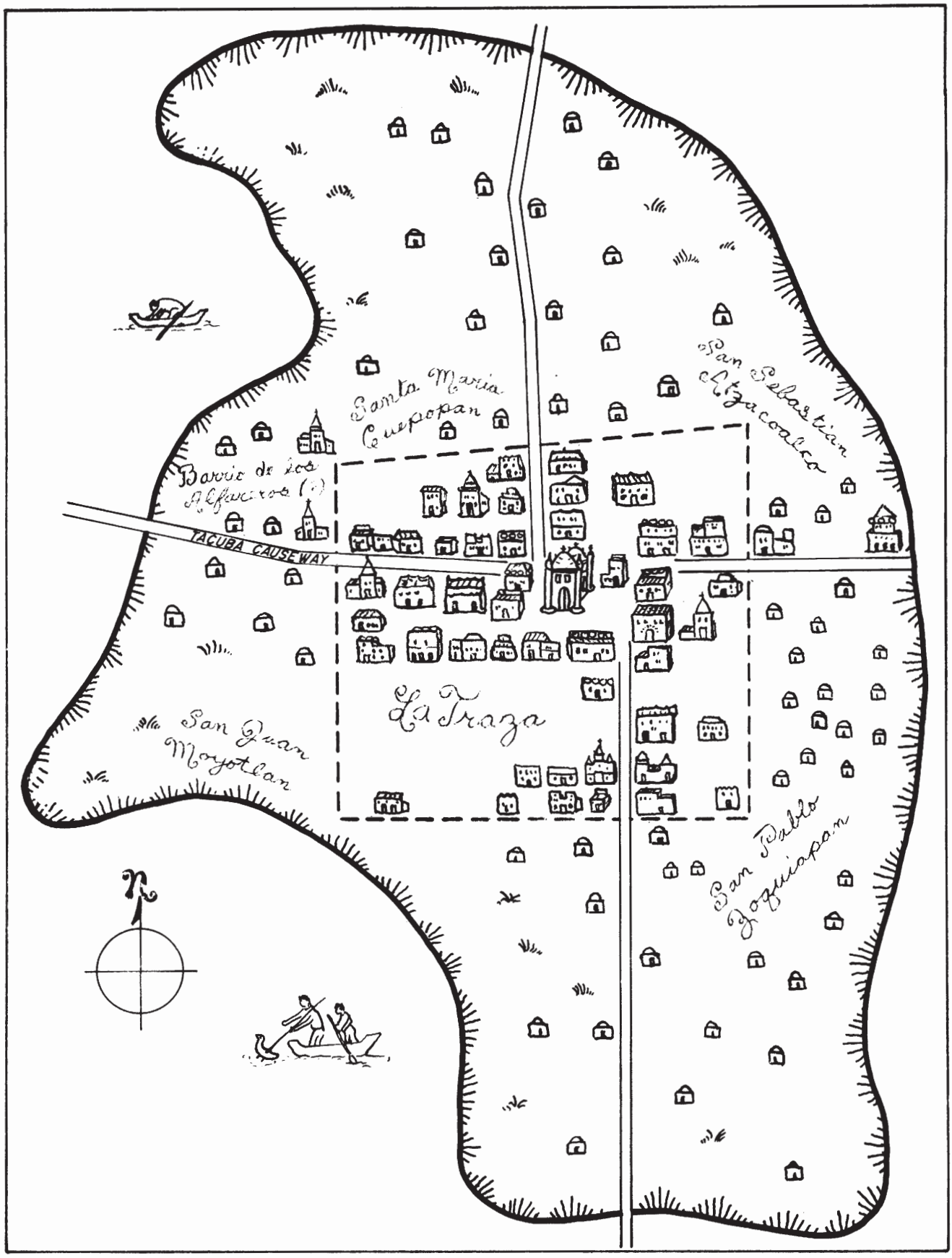
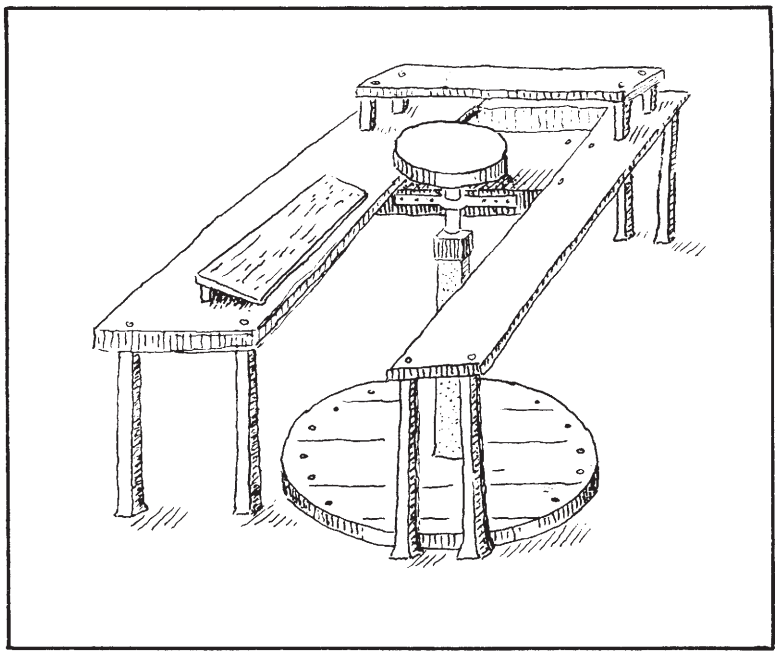


Fig. 5.8. Drawing of the *traza* of 16th century Mexico City surrounded by four Indian barrios. The potters' district (Barrio de los Alfareros) was probably located on the northwestern flanks of the island. By the 18th century the potters' guild (*cofradia*) was housed in the Santa Veracruz church structure located on the Tacuba causeway just outside the west limits of the *traza*.

Fig. 5.9. Justa and Rufina, patron saints of Sevillian and Mexico City potters, as shown in a mid 16th century Mannerist painting by Hernando Strum. These two potters were martyred by 3rd century Romans controlling Sevilla, or Hispalis as it was then known. The ladies are depicted flanking the city's hallmark, the 12th century Almohad minaret, which is now the cathedral's bell tower, or Giralda. Over their shoulders are the iconographic palm fronds of martyrdom, and in their hands are typical local white ceramics characteristic of the artist's 16th century. The sharing of these patron saints by Andalusian and Mexico City potters underscores the derivative nature of the industry at the colonial capital; neither Talaveran nor Pueblan potters held these saints in any special regard. The painting is now in the cathedral of Sevilla.



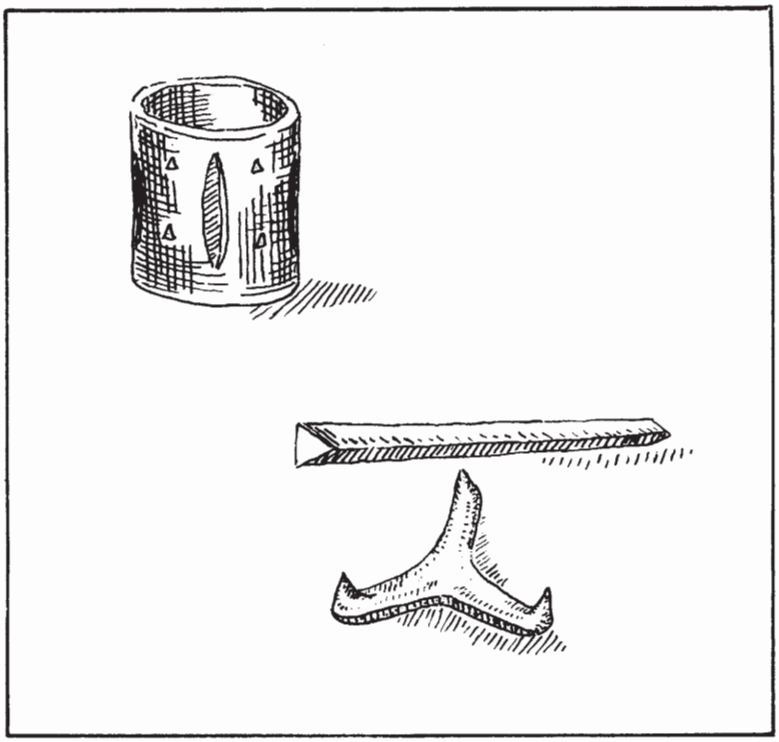
Drawing after Piccolpasso 1934.

Fig. 5.10. Typical compound, table high, kick wheel surrounded by wooden work space, probably introduced to southern Spain from Italian sources. By the mid 16th century this kind of wheel had supplanted the older Muslim models customarily located in trenches in the workroom floors, and it shortly diffused to overseas Spanish colonial shops.

The few hand tools in the revamped workshops were similar to those in use since the arrival of the Muslims to Andalusia in the 8th century – a bit of leather for smoothing and compacting rims, a pointed stick for cutting away excess clay at the base of a spinning pot, a bent sharpened iron for trimming, and a hank of cord to cut a finished vessel from the wheel.

White vessels of Mexico City Ware greatly outnumbered those with painted embellishments. The greater importance of white specimens in all the various pottery traditions present – Spanish, Italian, and Mexican – may be one of the unique, and heretofore unsuspected, characteristics of 16th century maiolica production. The Hispanic interest in such white pottery must have been a reflection of the considerable popularity of the 16th century white ware produced in Faenza and exported throughout Europe. At the Metropolitan Cathedral compound, for example, there were *five* times more white sherds of Mexico City Ware than companion decorated ones, and the ratio would have been greater had time permitted a complete sorting of all recovered white sherds. There also were several intermediate stages discernible between the older Spanish whites and what ultimately evolved into a norm for the Mexico City Ware type. With a sufficiently large sample from several controlled excavations, one day it may be possible to chart a more exact evolutionary course from early to late renditions.

Apparently continuing to use the same clay body as formerly, the new breed of maiolists seems to have made a concerted effort to improve the base glaze, which, on the



Drawing after Piccolpasso 1934.

Fig. 5.11. Kiln furniture used by Italian potters that was variously adopted by Spanish and Mexican maiolists: *top,* perforated saggar; *middle,* prism or headpin; *bottom,* cockspur.

Mexico City Whites, is a thickly applied, glossy, oyster white. The ratio of one pound of tin to six pounds of lead customary in Italian workshops may have been applied also in Mexico (Piccolpasso 1934: 37). There is no evidence that the Italian transparent lead top coat, or *coperta,* was used either by the Mexicans or the Spaniards, although such a covering would have helped minimize surface flaws. New attention was given to more controlled potting, thinner walls, ring feet, and a characteristic plate form with a broad rim angled away from the body at a slight upward tilt. This plate configuration, inspired by Faenza models copying Chinese form, may prove as indicative of the second half of the 16th century as the white vessels. Most revealing of its Italian inspiration was the way in which these characteristic plates were fired.

In the mid 16th century Piccolpasso described the maiolica methods at Castel Durante in central Italy. He illustrated saggars, boxes of fired clay in which vessels to be glaze fired were set. The sidewalls of the boxes had triangular holes through which prisms of fired clay were inserted (Figs. 5.11, 5.12; Piccolpasso 1934: 52). These pins projected into the interior of the saggar and served as supports on which the brims of vessels rested, thus allowing the pot to hang freely without touching either the saggar or other objects within the box. This supporting device, an Italian improvement upon the Muslim methodology they too had inherited, had the advantage of eliminating the need for tripod cockspurs, which on all Spanish maiolica left three telltale scars on vessel surfaces. The pins caused only inconspicuous radial blemishes beneath the rims, leaving obverses smooth. In Mexico, based on present evidence, only the five types composing the fine grade of Mexico City Ware were ever fired in this manner, and no pins have been recognized in archaeological deposits.

The small number of vessel shapes characteristic of Mexico City Ware reflects the unsophisticated, relatively homogeneous, level of the social advancement of the colony. Householders contented themselves with uncomplicated plates, bowls, and occasionally a handled jar. Yet to come was the complexity of life to inspire inkwells, chocolate servers, shaving bowls, and jardinieres. Although lack of competent command of the medium may have been partially responsible, future potters, influenced by Baroque excesses, produced three-foot-high tin glazed angels, massive lidded wine receptacles, and elaborately modeled holy water stoups.

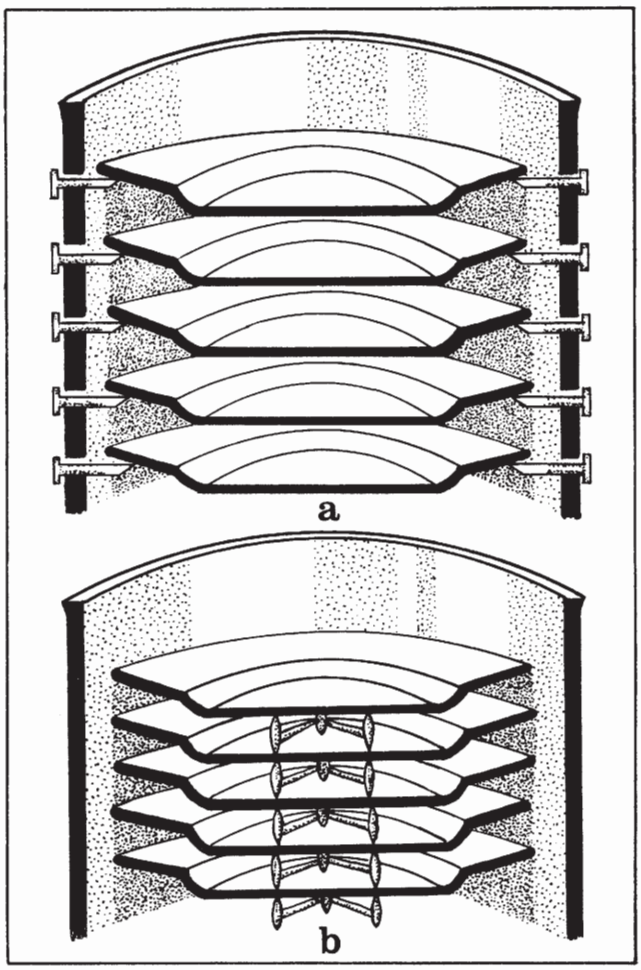


Fig. 5.12. Schematic section of saggars: *a,* plates supported beneath rims by headpins; *b,* plates supported by cockspurs. The headpin method devised by Italian potters was utilized in Mexico only for Mexico City Ware, Fine Grade types of the second half of the 16th century. In Spain the use of such prisms for glaze firing was sporadically employed through the 18th century. Cockspurs were the most common supporting device in both Spain and Mexico, often without the added protection afforded by saggars.

The four corollary decorated types of fine grade Mexico City Ware, comparatively inconsequential in terms of numbers, are extremely useful as key artifacts through which approximations of age and cultural associations may be inferred. In sharp contrast to the former Sevillian types, decorated vessels exhibit formalized design modes derived from a generalized Italian milieu, the most prominent ingredient of which is late 15th century Faenza influence. Execution is in the freely rendered, broad lined Spanish manner, with the first appearance of the yellow or orange pigments Italian craftsmen added to the usual Spanish palette. No use of pattern books is indicated. Other than San Juan Polychrome, too few examples are known to judge the overall appearance of the decorated pieces, but they are of a coarser quality than the Spanish models that were based on Italian prototypes. The Mexican renditions came third-hand and were third-rate, changed in the new environment by a number of factors, including the underlying impact of indigenous preference and ability. Chauvinistic descriptions by Mexican chroniclers to the contrary, colonial efforts in both technical and decorative facets of the local work never equalled the best of Spanish counterparts (Fernández Echeverría y Veytia 1931, Vol. 1: 318; Palacios 1917: 478), and neither compare favorably with the top caliber Italian products. Even more unfounded are statements in colonial accounts (Vetancurt 1945, Vol. 2: 305) that Mexican maiolicas excelled Chinese porcelains.

It is fruitless to speculate at this time on the division of labor in the potteries between those who threw the pots and those who painted them, but in any case, it is certain that women still had no role in the decorative part of production. Future research may demonstrate that the Mexican vessels faithfully duplicated mid to late 16th century Sevilla models just as earlier efforts had copied the vessels brought by the *conquistadores,* but neither of them accurately emulated Italian models. There is no Chinese flavor to these ceramics other than simple oriental tendencies absorbed earlier, filtered through the Mediterranean, and reworked by Muslim or other artisans of that region.

A few examples of polychrome tiles in these and other collections suggest that their manufacture may have started in the Valley of Mexico concurrent with the development of the fine grade Mexico City Ware. Colors and patterns on the tiles indicate a possible relationship, along with the pervading Italianization of the local craft and the quick reproduction of Sevillian vogues. As yet the sample is too limited, however, to establish a definite linkage. It is known that by the last third of the 16th century Sevilla was exporting to the overseas colonies quantities of the so-called *pisanos,* smooth-surfaced polychrome tiles decorated in full blown Renaissance devices or *mudéjar* interlacements. Exact shipments to New Spain have not been documented, other than some in the early 17th century (Frothingham 1969: 145). It is probable that the tiles in the elaborate Santo Domingo church of Mexico City, described in the late 1500s by Fray Hernando de Ojea, came from that source (Valle-Arizpe 1939: 231). The building sank so far below street level that it had to be rebuilt in the 18th century, and the tiles unfortunately disappeared at that time (Kubler 1948, Vol. 2: 528-29).

Mexican society was never classless, but the maiolicas used at the beginning of the colonial period were of one low caliber – the utensils of common folk. Because of that, their ready duplication was assured. Cortés, his foot soldier of least rank, and the man who made his boots ate from the same kind of heavy walled, poorly formed dishes. Even though at this time *cuerda seca* decorated vessels served the rich back home in Sevilla, in New Spain such hollow wares were absent. Within possibly twenty years, however, that democratic ceramic situation changed. The growing tide of returns from ranches, mines, and businesses created a class of *nouveaux riches* with a passion for the finest display of precapitalistic material goods available anywhere. This prevailing attitude quickly was reflected on the pottery market, for suddenly two distinct grades of maiolicas were made locally for different social classes. A similar dichotomy in maiolica grades is suspected in Spain but, in the absence of archaeology, evolutionary sequences are based on museum holdings and calibers of different wares have not been distinguished. In the colony the rich set their tables with fine grade Mexico City Wares and, if possible, acquired some pieces of Italian or Spanish pottery, or even a rare example of the famous lusterware of Manises. In the last quarter of the century they collected the best Chinese porcelains that were then beginning to appear in the capital as a result of the yearly galleon trade from Manila, and, of course, there were silver services for the elite. The lower class bought a common grade of Mexico City Ware; even though mass produced with simplified or degraded loosely executed patterns and few shapes, it was of a higher caliber than the first products of the Mexican sequence. Because enormous quantities of presumably inexpensive porcelain rice bowls and tea cups were packed snugly together in crates and used as ballast in the Manila galleons, the less affluent also enjoyed a few pieces of Chinese ware.

Different groups of artisans must have been involved in the manufacture of the two grades of local maiolica, but they probably lived and worked side by side. Potters dealing with the common quality were greater in number, were of less ability, borrowed liberally from the less demanding details of style evolved for the contemporary finer grade, and clung to those modes so long they became stereotyped, and in the end, perhaps, their business survived longer.

The same raw materials were available to both branches of ceramic production, but potters turning out lesser grades chose to modify their materials for the sake of economy. In one alteration less tin was added to the glaze solution; usually this appears to have been a reduction of about one-half. At first they imitated blue cobalt through use of a cheaper blend of copper dioxide and zinc, which, in the glaze made slightly alkaline by *tequesquite* and fired under oxidizing atmospheres, produced a reasonable facsimile. After 1556 copper was extensively mined in the modern states of Puebla and Jalisco (Bargalló 1955: 213). Later zinc was omitted in the decorative pigment, leaving deep copper green patterns sometimes enlivened by strokes of yellow-orange and defining lines in brown-black. For the sake of the buying public, some interpretations of form and of pattern paralleled those of the fine grade, but with much less

Fig. 5.13. An assortment of fired clay cockspurs recovered during the excavations for a subway system beneath Mexico City.

variety. The few shapes and decorations created through the highly repetitious, almost mechanical, activities of the work crew approached mass production in a preindustrial society. In keeping with this haste, firing procedures reverted back to those of former days, which meant the abandonment of saggars and their headpins, or *clavos*. Triads of familiar cockspur scars returned to the faces of most vessels in the common grade (Fig. 5.13).

These particular manifestations of the fine grade of Mexico City Ware began their demise in central Mexico near the end of the 16th century. They do not resemble fine types described in the Mexico City potters' guild ordinances of 1677 (Barrio Lorenzot 1920: 74), a clue that they had receded from memory by then. It is only speculation thus far, but probably this maiolica was put out of competition by a combination of factors: the newly established Puebla industry that rapidly captured the market for better earthenware, the continuing floods that drove the Spanish residents from the capital and perhaps forced potters to move elsewhere, the rising availability of porcelains, and the opportunity through increasing wealth to eat and drink from silver. The two most commonly noted Mexico City Ware, fine grade, decorated types of the first phase of the continuum – San Juan Polychrome and San Luis Blue on White – are found in New Mexico and Florida Spanish sites in early to mid 17th century contexts. This late date suggests that (1) there was a significant time lag involved in shipments out to the frontiers when suppliers might have purchased out-of-style goods at a lower cost, (2) less important factories clung to styles that had become outdated in the shops of more aggressive, innovative competitors, or (3) dating of the frontier sites may be earlier than previously thought. It may be significant that the glaze and decorative pigments on specimens recovered outside of central Mexico are of lesser quality than on vessels at the capital. In any case, the distribution of these two types was not nearly as extensive as the later Puebla wares, which are found throughout Mexico, Guatemala, the Spanish Caribbean, Venezuela, Florida, and the American Southwest. La Traza Polychrome was so specialized and uncommon that its primary distribution probably did not extend beyond the Valley of Mexico. Tacuba Polychrome may have had the same destiny, but its less complex design inspired much of the contemporary blue on cream and green on cream common grade developments that apparently continued into the 17th century. Their distribution in Mexico outside of the city remains undetermined pending future excavations, but a few sherds of these common grade types have been noted in 17th century associations in the central corridor from Chihuahua to New Mexico.

Meanwhile, at the end of the 16th century, a third major phase in the local ceramic developments was beginning. It is not represented among the Metropolitan Cathedral remains, but may be present in the undatable subway collections from locations away from the Plaza Mayor. It can be hypothesized that as the colonial era unfolded, some better quality maiolicas thought to have been made in the Valley of Mexico continued to be decorated in blue but were modified on occasion by prominent passages of yellow outlined in brown. In part some of the later Mexico City inventory stemmed from simpler renditions of the more popular concurrent Puebla types and in part settled on a local theme that was repeated extensively (Lister and Lister 1974, Fig. 10; 1975a, Fig. 18*c–e*). Most of these fine grade variations also appeared on the common grade types, with green usually substituted for blue in the color scheme. Only in the weakest way did Mexico City maiolicas reflect the adoption of Chinese mannerisms that came to dominate Puebla output in the 17th and 18th centuries.

Valle Ware

A subordinate kind of lesser quality maiolica called Valle Ware (see Chapter 3) is present at the Metropolitan Cathedral complex, but it was not noticed during analysis of the subway ceramics. The clay employed was a brick red color when fired and it contained coarse inclusions that caused increased friability, suggesting that the makers were not concerned with the higher standards of the producers of contemporary Mexico City Ware. The glaze was a glossy white, rather than cream, flawed with pinholes, blisters, and patches where the viscuous coating crawled. Frequently a greenish hue indicates contamination by copper, a substance doubtless in the same shops intended for use in coloring some lead glazes. As observed in the Mexico City Ware, plain white vessels dominated the Valle Ware output. For example, at the Sagrario there were a mere 68 decorated sherds of Valle Ware compared to 826 white sherds. The obvious focus was on a serviceable table product and not on display items. Vessel forms reflected the updating of Mexico City Ware counterparts with thinner body walls, ring feet, and the broad, relatively horizontal, brim popular in plates at the time. More often than in the case of the urban product, plates of Valle Ware have the central obverse ridging that must be viewed as a lingering of the ancient Sevillian Muslim form.

When applied, decorations were most often just several encircling lines in the dark slate blue usual for the period. It is tempting to see in the decorations an imitation of the design convention of the earlier Sevillian type of Yayal Blue on White, but that comparison may not be correct. Encircling lines are the most elemental kind of decoration because they are applied by holding a brush against a vessel as it revolves on the wheel. In the case of the Valle Ware examples, the draftsmanship is poor. Width of lines is irregular and ends overlap inexactly. Other designs show the same casual unplanned application, occasionally just a splattering of pigment. Design relationships generally are with the older styles expressed on the first Mexican blue on whites and not with the coeval Mexico City Ware. However, one example exhibits a rendition of the same Holy Monogram found on another vessel in the collection that is probably a Sevillian product of the second half of the 16th century (Fig. 4.24, *bottom center*).

There is a feeling about these specimens of the journeyman rather than the master potter. In a comparative rating of skill, the makers of Valle Ware would rank third among the postulated 16th century Mexican producers of tin glazed pottery, the artisans devoted to creating Mexico City Ware fine and common grades placing first and second respectively. Some designs in the sample of Valle Ware hint at a *morisco* background. Perhaps such workers moved out of the orbit of the city potting activities as others moved in with more advanced skills.

Valle Ware is the least commonly represented of the three wares in the Metropolitan Cathedral collection. The Plaza Mayor may have been outside of the customary distribution range of Valle Ware but, in addition, it probably was never made in large quantity. It does have the same temporal position as the other wares, occurring in all levels of the Metropolitan Cathedral compound excavations from surface to 10 m, with the most pronounced concentration at the 5–6 m horizon, or possibly dating about 1540–1550. It continues strong to the 3 m level, after which a sizable decrease is noted (see Table 2.1).

Indígena Ware

The third Mexican ware found in the Metropolitan Cathedral precinct from the lowest levels through the entire sequence is the most important in terms of diffusion from a donor culture (Spanish) to a new fusion of Spanish and Indian traits that Foster (1954: 164; 1960: 12) terms a conquest culture. As such it represents the first commercially significant ceramic blend of the Conquest (see Chapter 3).

The most visible surfaces of this kind of earthenware are white, but not because of opacity induced by tin oxide suspended in a glaze as in the case of maiolica. In Indígena Ware a thin white slip (engobe) coats body walls, over which rests a transparent lead glaze. The local pre-Hispanic Indians were familiar with the technique of slipping. The tendency of the glaze to flake away from the core, its splotchy irridescence, and the absence of cockspur scars or headpin blemishes indicate probable dusting of powdered galena on damp vessels rather than dipping them into a solution. Such a method, the simplest of all glazing procedures, was the sort of information rural Spanish potters or even untrained priests might have possessed, and its application was a routine most apt to have been accepted by the novice Indian artisans. Of further appeal was the fact that in this method the pottery vessels needed only a single firing at lower temperatures than did the vessels with solution compounds. The lack of firing clouds or other discolorations suggest an enclosed kiln was used rather than pit firing. If so, the makers of Indígena Ware, like a number of other native potters of Mexico, must have adopted that part of European technology.

Indígena Ware was formed by either coiling or molding. Indications that it was handmade are the absence of throwing rings and the presence of smoothing striations faintly marking the surfaces in many opposing directions. Handmade pottery had not been made in Andalusia as a regular practice since the Iron Age, making it improbable that Spanish settlers were responsible for Indígena Ware. Had the makers adopted the potter's wheel, it would have released new artistic impulses that inevitably would have altered an ingrained past tradition; this did not occur. Furthermore, the use of a dense but well sieved clay that fired to a dark red points to a continued utilization of pre-Conquest natural resources.

The forms of Indígena Ware derive mainly from two vessel shapes that would have been most conspicuous to native craftsmen living on the fringes of Spanish society. During the 16th century, these forms were made by Spanish potters in lead glazed versions for the most ordinary users. One was a flat-bottomed, vertically walled *lebrillo,* or basin, with a prominent horizontal rim. In the Spanish ceramic assemblage of the time, such vessels generally had a deep copper green lead glaze on one or both surfaces and most typically were used in kitchens during the preparation of bread doughs or sausages. The second form was a small individual bowl, or *escudilla,* often outfitted with pairs of small, solid, lobed lug handles attached just below the rim and extend-

ing out from the vessel horizontally. Identical appendages are in these collections on contemporary Spanish and Italian examples, as well as on specimens of Mexico City and Valle wares. The forms had a longer history in Spanish ceramics, reaching back for at least another century. Both these basic shapes had faintly comparable counterparts in the Valley of Mexico Indian repertoire, which facilitated their 16th century adoption (Vega Sosa 1975: 26-27). As if determined not to completely forsake their heritage, on a few lug handled *escudillas* the makers unexpectedly fastened stubby tripod feet, a common feature of aboriginal pottery made in central Mexico.

Indígena Ware overwhelmingly was plain white, and sometimes the white slip occurred only on the most visible surfaces. Pieces burned in trash deposits are now darkened. At the Sagrario the ratio of whites to decorated companion examples was more than 12.5 to 1 (see Table 2.1). With this concentration on basically white ceramics, the Indígena Ware potters were emulating all of their 16th century colleagues in the Valley of Mexico who worked in the Spanish image. Obviously they were not concerned with making pottery for show but were merely fashioning utilitarian vessels acceptable in the usual Spanish homes.

Even though decorated specimens of Indígena Ware are relatively few, they offer deeper insight to the background of the makers of this ware and to some of the artistic cross-currents to which they may have been subjected. The motifs themselves are principally Amerindic, and furthermore, they arose from what most closely resemble Aztec IV conventions (Aztec Tardio, about 1507-1519 by the Vaillant, 1941, chronology). In the 14th century the Aztecs arrived in the Valley of Mexico without pottery making skills but, as with the bulk of their material culture, they quickly absorbed the accumulated knowledge of their neighbors. Passing through several principal developmental stages at Tenochtitlán and Tlatelolco, the potters ultimately evolved a distinctive decorative style that was strongly curvilinear and naturalistic, though not to the exclusion of geometrics. Aztec division of the field consisted of an encircling rim band defined by framing lines and a distinct central zone, a layout similar to the usual Sevillian or Italian approach to decoration. The motifs of the two decorative areas differed.

Shortly before the disruptions initiated by the arrival of the Spaniards, the most common Aztec border motifs were seemingly endless variations of a few basic themes. According to some researchers these basic motifs numbered no more than eight: encircling chains composed of crossed undulating lines; short parallel lines suspended from a frame line (a pattern known as *zacate*); repeated circles with central dots; frets; stepped or hooked terraces; S-scrolls; waves; and spirals. These elements often were divided or separated by zigzags. Many were built on a religious theme of calligraphic representations of the ubiquitous serpent head motif (Brenner 1931: 49-50). Center fields were halved, quartered, or contained large single centerpieces treated as framed pictures adapted to a circular space and featuring birds, deer, fish, and plants (Franco 1945, Figs. 1, 2, 4, 6, 8, 10, 11; 1949: 162-208; Franco and Peterson 1957, Figs. 4, 5, 8, 10; Griffin and Espejo 1947-1950: 118-69; Noguera 1965: 114, Fig. 33*b*; 1967: 10; Vaillant 1941, Fig. 32; Vega Sosa 1975: 37, 42, 60, 67, 71-72, 80). None were executed with absolute realism or precise draftsmanship, although Noguera maintains it is possible to identify species from some renditions. Open flowers and a four petal unit radiating around a circle coincidentally had duplicates in Spanish Muslim decorative art. Generally a weak relationship with the much admired contemporary Mixteca-Puebla design can be detected, but it lacked the consummate finesse of Cholula craftsmanship.

Some students of this Aztec pottery have felt that in spite of the trauma of conquest, the late mode persisted for a time after 1519, as evidenced by the incorporation of such assimilated elements as bifaced eagles, royal crowns, and human figures. The combination of pre- and post-Conquest patterns has been observed most often in remains at Tlatelolco, giving rise to the name for the Aztec IV type of Tlatelolco Black on Orange (Griffin and Espejo 1947-1950: 118-69; Noguera 1965: 115). Perhaps future study will prove the suitability of a name such as Tlatelolco II for the later 16th century variations.

The designs on the Indígena Ware examples from the Plaza Mayor area are strongly reminiscent of these late Aztec motifs, which underscores their continuity (see Fig. 3.38). The flat everted rims on the adopted basin form invited decoration, with the angle between body and marli satisfactorily framing the field of design. Interestingly, the most frequent border pattern is some version of a corn motif with cobs, kernels, leaves, and tassels, as though the makers were remembering some of their former repressed religion and indicating it in a manner not likely to offend their European masters as the formerly dominant snake pattern did. Figural devices – whether the gamut of animal forms executed in pre-Hispanic days or the newly adopted human figures suggested by Spanish Renaissance pottery – frequently were filled with random dots. Such fillers had long usage in some portions of the Islamic realms, one of which was the 10th century Cordoban Caliphate of Andalusia (Allan 1971, Fig. 19; Charleston 1968: 72; Cooper 1972: 115, 125; R. Menéndez Pidal 1957, Vol. 5, Fig. 651), and fillers reappeared as a dominant vogue in a 17th century Puebla style called Abó Polychrome (Cervantes 1939, Vol. 1: 93, 99; Goggin 1968: 169-73).

For all its Indian mannerisms, the way in which design was achieved was largely European. On occasion the Aztecs made use of white slip to prepare a suitable decorative field, and they sometimes outlined painted figures with engraved lines. But the combination of slip, sgraffito or *a stecca* patterns, yellow and green mineral pigment fillers in particular areas, and a coating of clear lead glaze was a European package of ceramic traits. It was a package that was attractive to the recipient group because of familiarity with certain of its parts. The complex of ideas was ancient in the Mediterranean in both Christian and Muslim communities. It appeared first in Mesopotamia, where it had been developed by the 9th century, contemporaneously with true maiolica, in an attempt to reproduce T'ang splashed ware (Cooper 1972: 110). From there it spread to Byzantium and into Italian repertoires. Curiously, this earthenware variation, called mezza maiolica in Italy, seems to have had no Spanish or Moroccan expression. Why these western reaches of Islam failed to experiment with a vogue so common in the rest of the

Muslim world remains puzzling. Perhaps this lack of information is due only to scanty archaeological digging. At present that gap in the distribution of mezza maiolica poses a special question about its diffusion to 16th century New Spain. One explanation may be that an Italian example exists without Spanish intermediaries, and the 16th and 17th century red-based pottery of Pisa is a prime candidate for that example. However, comparable wares of both Faenza and Liguria, centers that were responsible for the authentic maiolicas exported to the Americas, should not be overlooked (Barile 1975: 215). In the district of the former, flat bottomed basins with horizontal brims and etched decorations of large naturalistic centerpieces and cross hatched rims were especially characteristic through the 15th century (Modena 1971, Figs. 1-9). Pisan pottery so far has not been identified at the Plaza Mayor, but it has been found in colonial Hispaniola debris (Lister and Lister 1976c, Fig. 4*a*). Another explanation may be that sgraffito was a technique so widely practiced that priests in charge of bringing Western civilization to their neophytes likely were cognizant of it. In either case, it was an acceptable substitute for customary Aztec painted decoration because, had they followed their former usual methods while using lead glaze, the patterns would have fluxed and blurred during firing. Underglaze painting is a tricky art, one not apt to have been successfully pursued by beginners. The same decorative effects could be gained by engraving, with the lines scratched down to the base clay and enhanced by the lead overcoat. Colors not current in former Indian work but able to withstand the kiln temperatures were used as fillers. The frequent blurring of colors highlights the problems inherent in the technique. Two firings were usual in Italian sgraffito methods (Rackham 1952: 5) and two may have been necessary for the decorated Romita Sgraffito.

A simplistic explanation for rapid acceptance of these introduced methodological ideas can be found in economic necessity when, in order to survive, the Indians found it expedient to manufacture for the Spanish markets. Tomson in 1556 reported some 300,000 Indians living at the capital, as opposed to only 1500 Spanish families (Mayer 1961: 11). Those figures may be exaggerated but a great imbalance is known to have existed, and the economic problems were many. A deeper motivation was the underlying Aztec appreciation for superior craftsmanship, which placed no stigma on manual efforts to achieve it, and, as Kubler has observed, they acquired some peer prestige by exceling in the skills of their conquerors (Kubler 1948, Vol. 1: 156). That viewpoint, and the mendicant policy of shifting the Indians into an urban environment, where Spanish workers also were concentrated, must have hastened acculturation processes. Within a generation indigenous artisans were producing Spanish style goods, ranging from gloves to guns, with such proficiency that they began to pose a serious threat to the white practitioners of those same craft skills (Gibson 1964: 397-402; Kubler 1948, Vol. 1: 155). In 1568 Henry Hawks notes:

> The people are given to learn all manner of occupations, which for the most part they acquired since the coming of the Spaniards. They are expert in making all kinds of images with feathers and of the greatest excellence. There are goldsmiths, blacksmiths, and coppersmiths, carpenters, masons, shoemakers, tailors, saddlers, and embroiders, and they will do work so cheap that poor young men who come out from Spain are not able to work, which is the occasion of there being many idle people in the country, for the Indians will live all week with less than one groat, which the Spaniards nor anyone else can do (Hakluyt 1907, Vol. 6: 287; Mayer 1961: 30-31).

That pottery making was among the native crafts quickly remodeled for a European clientele was indicated by Cortés, who wrote that glazed dishes made by the Indians were for sale in the capital (Valle-Arizpe 1939: 69). Sahagún (1956, Vol. 3: 146) recorded that many Spanish vessel forms were fashioned by the colonial period natives of the Valley of Mexico. Some of the shapes may have served pre-Columbian households, but such items as chamber pots and candleholders have unquestionable non-Indian implications. Furthermore, *tetizatl* is defined as a kind of rocky material found north of the valley near Tula that indigenous artisans used in the formulation of glaze (Sahagún 1956, Vol. 3: 343). Father Alonso de Zorita, famous as the *oidor* of New Spain from 1556 to 1566, wrote the most revealing account of Indian efforts to learn Spanish ceramic methods, in spite of Spanish attempts to keep some of the craft secrets inviolate. He tells how some Indians hid on roof tops over Spanish workshops, bored a hole through the ceiling so they could spy on the activities below, obtained an idea of how the glaze was concocted, and dashed off to duplicate the vessels of the conquerors, which they sold through the streets and plazas of the capital (Zorita 1909: 299). One assumes the price of the Indian copies was less than that of the Spanish originals. As the Anonymous Conqueror said, "The natives of this city and its surroundings are very skillful in everything, and the most clever and industrious people in the world. Among them are masters of all kinds of trades, and they need see a thing made only once to be able to make it themselves" (Fuentes 1963: 180-81).

Angry Spanish craftsmen sought the protection of the Ayuntamiento to keep from being so undersold. They sequestered themselves into guild bodies that restricted membership to Spaniards. In turn the Indians, who may have had similar craft guilds prior to Spanish arrival (Calnek 1974: 194; Castillo Mêndez 1973: 8; Sanders 1971: 27), organized themselves to fight back, and indigenous guilds were permitted to take part in the periodic parades on feast days. Spanish resistance was hopeless and self-defeating, and in time guild exclusiveness broke down. So far as is known, Mexico City potters did not form a guild until approximately a century after the Metropolitan Cathedral foundation was laid. At that time Indians were not excluded from participation, and such restrictions applied only to Negroes or mulattos (Barrio Lorenzot 1920: 174). The late formation of a guild is responsible for the complete lack of maker's marks (usually specified in guild ordinances) on 16th century maiolicas recovered at the Plaza Mayor. As a group the Spanish potters must have had substantial competition throughout the 16th century from the Indian makers of the plain Indígena Ware, a ware highly competitive with Mexico City White (see Table 2.1).

Disregarding possible disturbance of deposits, at the Sagrario Indígena Ware declines rapidly after the 3-4 m level of about 1560-1570. We speculate that the fearful epidemic of the 1570s, particularly the typhus outbreak from 1576 to 1581 that killed thousands of Indians, may have virtually ended this particular ceramic effort (Gerhard 1972: 23, Table D).

The locale of the shops where Indígena Ware was produced has not been determined, but if the ware association with the Aztecs is correct, it probably is close to the Valley of Mexico. Considering that the ware was made for Spanish users and that so much of it was recovered beneath Mexico City, the source likely was fairly nearby. The villages of Huitzilopochco and Xochimilco to the south of the capital, Azcapotzalco to the west, and Cuauhtitlán to the north remained important valley pottery centers during the colonial period, apparently making articles for Indian homes. In the case of Indígena Ware, strongly oriented toward Spanish taste and usage, the barrio of Santa María Cuepopan cannot be dismissed. It may be that 16th century Spanish and Indian competitors for the market in decorated ceramics found themselves working side by side there, just as those producing lesser ceramic merchandise also likely shared an uneasy alliance. The divisions between them can be expected to have diminished as conquest culture, which was neither wholly Spanish nor wholly Indian, ultimately prevailed.

Fig. 5.14. Modern Mexican workshop where ancient potting procedures are followed in the manufacture of low level lead glazed wares. Decorators are using a hand-turned banding wheel for rapid volume production.

REFERENCES

Ainaud de Lasarte, Juan
1952 *Ars Hispániae. Historia Universal del Arte Hispánico. Cerámica y Vidrio,* Vol. 10. Madrid: Editorial Plus Ulta.

Albi Romero, Guadalupe
1970 La Sociedad de Puebla de los Angeles en el Siglo XVI. *Jahrbuch für Geschichte von Staat, Wirtschaft und Gesellschaft Lateinamerikas* 7: 76–145. Vienna.

Allan, J. W.
1971 *Medieval Middle Eastern Pottery.* Oxford: Ashmolean Museum.
1973 Abū'l-Qāsim's Treatise on Ceramics. *Iran* 11: 111–120. Oxford.

Almagro Basch, Martín, and Luis M. Llubiá Munné
1952 *C.E.R.A.M.I.C.A. Aragón-Muel.* Barcelona.

Alvaro Zamora, Isabel
1976 *Cerámica Aragonesa.* Zaragoza: Libreria General.

Angulo Iñiguez, Diego
1955 *Historia del Arte Hispano-Americano,* Vol. 1. Barcelona: Salvat Editores.

Arce, Francisco de los Ríos
1910 *Puebla de los Angeles y la Orden Dominicana.* Puebla: Imprente El Escritorio.

Ardemans, Teodoro
1760 *Ordenanzas de Madrid, y Otros Diferentes, que se Practican en las Ciudades de Toledo, y Sevilla con Algunas Advertencias a los Alarifes, y Particulares y Otros Capítulos Añadidos a la Perfecta Inteligencia de la Materia, que Todo se Cifra en el Govierno Político de las Fábricas.* Madrid: Antonio Pérez de Soto.

Artes de México
1964 *La Ciudad de México,* I. 11(49–50). México.
1971 *El Galeon de Manila.* 18(143). México.
1975 *La Catedral de México.* 21(182–183). México.
1977 *El Arte en el Comercio con Asia.* 22(190). México.

Baéz Macías, Eduardo
1966 Planos y Censos de la Ciudad de México, 1753. *Archivo General de la Nación, Boletín* 7(1): 409–444 (second series). México.
1967 Planos y Censos de la Ciudad de México, 1753, II. *Archivo General de la Nación, Boletín* 8(3–4): 485–1156 (second series). México.

Barber, Edwin Atlee
1908 *The Maiolica of Mexico.* Art Handbook of the Pennsylvania Museum. Philadelphia.
1911 *Catalogue of Mexican Maiolica Belonging to Mrs. Robert W. DeForest.* New York: Hispanic Society of America.
1915 *Mexican Maiolica in the Collection of the Hispanic Society of America.* New York: Hispanic Society of America.

Bargalló, Modesto
1955 *La Minería y la Metalurgia en la América Española Durante la Epoca Colonial.* México: Fondo de Cultura Económica.

Barile, Costantino
1975 *Antiche Ceramiche Liguri. Maioliche di Genova e Savona.* Savona: Cassa di Risparmio de Savona.

Barrio Lorenzot, Francisco del
1920 *Ordenanzas de Gremios de la Nueva España.* México: Tallares Gráficos.

Batlloti Munné, Andrés, and Luis M. Llubiá Munné
1949 *Cerámica Catalana Decorada.* Barcelona: Sanz.

Benítez, Fernando
1965 *The Century after Cortés.* Chicago: University of Chicago Press.

Benítez, José R.
1929 *Historia Gráfica de la Nueva España.* Cámara Oficial Española de Comercio en los Estados Unidos Mexicanos. México.

Borah, Woodrow
1943 Silk Raising in Colonial Mexico. *Ibero-Americana* 20. Berkeley.

Borah, Woodrow, and Sherburne F. Cook
1958 Price Trends of Some Basic Commodities in Central Mexico, 1531–1570. *Ibero-Americana* 4. Berkeley.

Bourry, Emile
1926 *A Treatise on Ceramic Industries.* London: Scott, Greenwood, and Son.

Boyd-Bowman, Peter
1963 La Emigración Peninsular a América: 1520 a 1539. *Historia Mexicana* 13: 165–192. México.
1967 La Procedencia de los Españoles de América: 1540–1599. *Historia Mexicana* 17: 37–71. México.

Brenner, Anita
1931 *The Influence of Technique on the Decorative Style in the Domestic Pottery of Culhuacan.* New York: Columbia University Press.

Caiger-Smith, Alan
1973 *Tin-glaze Pottery, In Europe and the Islamic World. The Tradition of 1000 Years in Maiolica, Faience, and Delftware.* London: Faber and Faber.

Caley, Earle R., and Dudley T. Easby
1964 New Evidence of Tin Smelting and the Use of Metallic Tin in Pre-Conquest Mexico. 35th Congreso Internacional de Americanistas, *Actas y Memorias* 1: 505–517. México.

Calnek, Edward E.
1972 Settlement Pattern and Chinampa Agriculture at Tenochtitlán. *American Antiquity* 37(1): 104–115.
1974 The Sahagún Texts as a Source of Sociological Information. In *Sixteenth-century Mexico, The Work of Sahagún,* pp. 189–204. Edited by Munro S. Edmonson. Albuquerque: University of New Mexico Press.

Cameirana, Arrigo
1969 Contributo per una Topografia delle Antiche Fornaci Ceramiche Savonese. Convegno Internazionale della Ceramica, *Atti* 9(2): 63–72. Albisola.

Carande, Ramón
1925 Sevilla, Fortaleza y Mercado. *Anuario de Historia del Derecho Español* 2: 233–391. Madrid.

Carrera Stampa, Manuel
1954 *Los Gremios Mexicanos.* México: Edición y Distribución Ibero Americana de Publicaciones.
Castillo Méndez, Laura Elena
1973 *Historia del Comercio en la Ciudad de México.* México: Departamento del Districto Federal.
Cervantes, Enrique A.
1939 *Loza Blanca y Azulejo de Puebla* (2 vols.). México.
Cervantes de Salazar, Francisco
1953 *Life in the Imperial and Loyal City of Mexico in New Spain and the Royal and Pontifical University of Mexico as Described in the Dialogues for the Study of the Latin Language Prepared by Francisco Cervantes de Salazar for Use in his Classes and Printed in 1554 by Juan Pablos.* Translated by Minnie Shepard. Austin: University of Texas Press.
1963 *México en 1554 y Túmulo Imperial.* Prologo y Notas por Edmundo O'Gorman. México: Editorial Porrúa.
Charleston, Robert J.
1968 *World Ceramics.* London: Paul Hamlyn.
Comune di Montelupo Fiorentino
1977 *La Maiolica di Montelupo. Scavo de Una Scarico di Fornace.* Montelupo.
Comune di Sesto Fiorentino
1973 *Ceramiche Antiche di Montelupo.* Montelupo.
Cooper, Emmanuel
1972 *A History of Pottery.* New York: St. Martin's Press.
Cruz, Salvador
1959 Algunos Artistas y Artesanos del México de Cervantes de Salazar (1550–1560). Instituto de Investigaciones Estéticas, *Anales* 7(28): 91–95. México.
Davillier, Baron Charles
1949 *Viaje por España.* Madrid: Ediciones Castilla.
Domínguez Ortiz, Antonio
1956 *Orto y Ocaso de Sevilla.* Sevilla: Imprenta de la Diputación Provincial.
Fairbanks, Charles H.
1973 The Cultural Significance of Spanish Ceramics. In *Ceramics in America,* pp. 141–174. Charlottesville: University of Virginia Press.
Farris, Guido, and V. A. Ferrarese
1969a Metodi di Produzione della Ceramica en Liguria del XVI Secolo. Convegno Internazionale della Ceramica, *Atti* 9(2): 99–110. Albisola.
1969b Contributo alla Conoscenza della Tipologia e della Stilistica della Maiolica Ligure del XVI Secolo. Convegno Internazionale della Ceramica, *Atti* 9(2): 9–45. Albisola.
Fernández Echeverría y Veytia, Mariano
1931 *Historia de la Fundación de la Ciudad de la Puebla de los Angeles* (2 vols.). México.
Foster, George M.
1954 Aspectos Antropológicos de la Conquista Española de América. *Estudios Americanos* 8(35–36): 115–171. México.
1960 Culture and Conquest: America's Spanish Heritage. *Viking Fund Publications in Anthropology* 27. New York.
Fowst, Giovanni
1971 Ceramisti Liguri in Messico nei Secoli XVI e XVII. Convegno Internazionale della Ceramica, *Atti* 9(4): 177–180. Albisola.
Franco, José Luis
1945 Comentarios Sobre Tipología y Filogenía de la Decoración Negra Sobre Color Natural del Barro en la Cerámica "Azteca II." *Revista Mexicana de Estudios Antropológicos* 7(1–3): 163–186. México.
1949 Algunos Problemas Relativos a la Cerámica Azteca. *El México Antiguo* 7: 162–208. México.
Franco, José Luis, and Frederick A. Peterson
1957 Motivos Decorativos en la Cerámica Azteca. Museo Nacional de Antropología, *Serie Científica* 5. México.
Frothingham, Alice Wilson
1944a *Talavera Pottery, with a Catalogue of the Collection of the Hispanic Society of America.* New York: Hispanic Society of America.
1944b Aragonese Lustreware from Muel. *Notes Hispanic:* 78–91. New York: Hispanic Society of America.
1951 *Lustreware of Spain.* New York: Hispanic Society of America.
1963 *Spanish Glass.* London: Faber and Faber.
1969 *Tile Panels of Spain, 1500–1650.* New York: Hispanic Society of America.
1974 Spanish Pottery and its Exportation to the New World. In *Europe in Colonial America,* pp. 5–7. Williamsburg.
Fuentes, Patricia de
1963 *The Conquistadores. First-Person Accounts of the Conquest of Mexico.* New York: Orion Press.
Gage, Thomas
1958 *Thomas Gage's Travels in the New World.* Edited and with Introduction by J. Eric S. Thompson. Norman: University of Oklahoma Press.
Galindo y Villa, Jesús
1925 *Historia Sumaria de la Ciudad de México.* México: Editorial Cultura.
García Cortés, Adrián
1974 *Historia de la Plaza de la Constitución.* México: Departamento del Districto Federal.
Gerhard, Peter
1972 *A Guide to the Historical Geography of New Spain.* Cambridge: Cambridge University Press.
Gestoso y Pérez, José
1903 *Historia de los Barros Vidriados Sevillanos Desde sus Origenes Hasta Nuestros Días.* Sevilla: Tipografía la Andalucía Moderna.
1919 Cerámica Sevillana. Sociedad Española de Excursiones, *Boletín* 27: 2–19. Sevilla.
Gibson, Charles
1964 *The Aztecs under Spanish Rule, 1519–1810.* Palo Alto: Stanford University Press.
Goggin, John M.
1968 Spanish Majolica in the New World. Types of the Sixteenth to Eighteenth Centuries. *Yale University Publications in Anthropology* 72. New Haven.
Gómez de Cervantes, Gonzalo
1944 La Vida Económica y Social de la Nueva España al Finalizar del Siglo XVI. México: Carreno.
Gómez de Orozco, Federico
1949 Italianos Conquistadores, Exploradores y Pobladores de México en el Siglo XVI. Academia Mexicana de la Historia, *Memorias* 8(3): 189–212. México.
Gómez Moreno, Manuel
1924 *Cerámica Medieval Española.* Barcelona: Universidad de Barcelona.
González, Julio
1951 *Repartimiento de Sevilla.* Madrid.
González Martí, Manuel
1944 *Cerámica del Levante Español, Siglos Medievales* (3 vols.). Barcelona: Editorial Labor.
González Reyna, Jenaro
1956 *Riqueza Minera y Yacimientos Minerales de México.* 20th Congreso Geológico Internacional. México.
Gottschalk, A. M.
1907 Mexican Pottery. U.S. Department of Commerce and Labor–Bureau of Manfuactures, *Daily Consular and Trade Reports* 2976: 15. Washington.

Griffin, James B., and Antonieta Espejo
1947–1950 La Alfarería Correspondiente al Ultimo Período de Occupación Nahua del Valle de México. Academia Mexicana de la Historia, *Memorias* 6(2): 137–147; 9(1): 118–169. México.

Hakluyt, Richard
1907 *The Principal Navigations, Voyages, Traffiques, and Discoveries of the English Nation, Made by Sea or Overland to the Remote and Farthest Distant Quarters of the Earth at any Time Within the Compasse of These 1600 Yeres,* Vol. 6. London: J. M. Dent.

Highfield, Roger
1972 *Spain in the Fifteenth Century, 1369–1516.* New York: Macmillan.

Honey, William Bowyer
1963 *European Ceramic Art, from the End of the Middle Ages to About 1815.* London: Faber and Faber.

Hostos, Adolfo de
1938 *Investigaciones Históricas.* I, *Las Excavaciones de Caparra;* II, *El Fondeadero de Colón en Puerto Rico.* San Juan.

Howell, James
1907 *Espistolae Ho-Elianae. The Familiar Letters of James Howell,* Vol. 1. Boston: Houghton Mifflin.

Humboldt, Alexander, *Freiherr* von
1811 *Political Essays on the Kingdom of New Spain* (4 vols.). London: Longman, Hurit, Rees, Orme, and Brown.

Israel, J. I.
1975 *Race, Class, and Politics in Colonial Mexico, 1610–1670.* London: Oxford University Press.

J. J. R.
1947 Una Morisca en el Santo Oficio de México. Archivo General de la Nación, *Boletín* 18(4): 461–516. México.

Kubler, George
1944 Architects and Builders in Mexico: 1521–1550. *Journal of the Warburg and Courtault Institutes* 7: 7–19. London.
1948 *Mexican Architecture of the Sixteenth Century* (2 vols.). Westport: Greenwood Press.
1962 *The Shape of Time.* New Haven: Yale University Press.

Ladero Quesada, Miguel Angel
1976 *La Ciudad Medieval (1248–1492). Historia de Sevilla,* II. Publicaciones de la Universidad de Sevilla, Colección de Bolsillo 49. Sevilla.

Lane, Arthur
1958 *Early Islamic Pottery.* London: Faber and Faber.

Liss, Peggy K.
1975 *Mexico Under Spain, 1521–1556.* Chicago: University of Chicago Press.

Lister, Florence C., and Robert H. Lister
1974 Maiolica in Colonial Spanish America. *Historical Archaeology* 8: 17–52. Columbia.
1975a Non-Indian Ceramics from the Mexico City Subway. *El Palacio* 81(2): 25–48. Santa Fe.
1975b An Overview of Moroccan Maiolica. *Papers of the Archaeological Society of New Mexico* 2: 272–295. Santa Fe.
1976a Distribution of Mexican Maiolica Along the Northern Borderlands. *Papers of the Archaeological Society of New Mexico* 3: 113–140. Santa Fe.
1976b *A Descriptive Dictionary for 500 Years of Spanish-Tradition Ceramics, 13th Through 18th Centuries.* Society for Historical Archaeology, Special Publication Series 1. Columbia.
1976c Italian Presence in Tin Glazed Ceramics in Spanish America. *Historical Archaeology* 10: 28–41. Ottawa.
1976d Ligurian Maiolica in Spanish America. Convegno Internazionale della Ceramica, *Atti* 9: 311–320. Albisola.
1978 The First Mexican Maiolicas: Imported and Locally Produced. *Historical Archaeology* 12: 1–24.

Liverani, Francesco, and Robert Bosi
1974 *Maioliche di Faenza.* Faenza: Galeati.

Liverani, Giuseppe
1957 Bianco de Faenza: The Development of White Maiolica. *The Connoisseur* CXL(565): 160–163.
1960 *Five Centuries of Italian Majolica.* New York: McGraw Hill.

Llorens Artigas, José, and José Corredor Matheos
1970 *Cerámica Popular Española Actual.* Barcelona: Editorial Blume.

Llubiá, Luis M.
1967 *Cerámica Medieval Española.* Barcelona: Editorial Labor.

Lothrop, Samuel Kirkland
1952 Metals from the Cenote of Sacrifice, Chichen Itza, Yucatan. *Memoirs of the Peabody Museum of Archaeology and Ethnology* 10(2). Cambridge.

Mannoni, Tiziano
1969 Gli Scarti di Fornace e la Cava del XVI Secolo en Via S. Vincenzo a Genova. Convego Internazionale della Ceramica, *Atti* 9(2): 75–96. Albisola.

Mariejol, Jean Hippolyte
1961 *The Spain of Ferdinand and Isabella.* New Brunswick: Rutgers University Press.

Marroqui, José María
1900 *La Ciudad de México* (3 vols.). México.

Martínez Caviró, Balbina
1968 *Catalogo de Cerámica Española.* Madrid: Instituto Valencia de Don Juan.
1969 *Cerámica de Talavera.* Madrid: Instituto Diego Velázquez del Consejo Superior de Investigaciones Cientificos.

Mayer, William
1961 *Early Travellers in Mexico, 1534 to 1816.* Mexico.

Maza, Francisco de la
1968 *La Ciudad de México en el Siglo XVII.* México: Fondo de Cultura Económica.

McAndrew, John
1965 *The Open-Air Churches of Sixteenth-Century Mexico.* Cambridge: Harvard University Press.

Menéndez Pidal, Gonzalo
1941 *Atlas Histórico Español.* Barcelona: Editora Nacional.

Menéndez Pidal, Ramón
1957 *Historia de España.* Vol. 2, *España Romana, 218 A. de J.C.–414 de J.C.*; Vol. 3, *España Visigoda, 414–711 de J.C.*; Vol. 5, *España Musulmana, 711–1031 de J.C.* Madrid: Calpe.

México, Archivo General de la Nación
1940–1943 Indice del Ramo de Ordenanzas, Archivo General de la Nación, *Boletín* 11(2): 303–344; 12(1): 141–175; 12(2): 297–375; 13(1): 161–192. México.

México, Instituto Indigenista Interamericano
1947 *Codice Osuna. Reproducción Facsimilar de la Obra del Mismo Título, Editada en Madrid, 1878.* México.

México, Ministerio de Educación y Ciencia. Dirección General de Archivos y Bibliotecas
1973 *Pintura del Gobernador, Alcaldes, y Regidores de México, "Codice Osuna."* México.

México, Secretaria de Educación Pública
1939 *Una Casa Habitación del Siglo XVIII en la Ciudad de México.* México: Instituto Nacional de Antropología e Historia.
1940 *Codice de Yanhuitlán.* México: Instituto Nacional de Antropología e Historia.

Mexico City, Cabildo
1871–1919 *Actas de Cabildo de la Ciudad de México.* Paleography by Ignacio Bejerano. México.

Modena, Museo Civico
1971 *La Ceramica Graffita in Emilia-Romagna del Secolo XIV al Secolo XIX.* Modena.

Morales Padrón, Francisco
1955 *El Comercio Canario-Americano, Siglos XVI, XVII, XVIII.* Publicaciones de la Escuela de Estudios Hispano-Americanos de Sevilla 91. Sevilla.

Munzer, Jeronimo
1924 Viaje por España y Portugal en los Años 1494 y 1495. Real Academia de la Historia, *Boletín* 84: 32–119, 197–279. Madrid.

Navarrete, Martín Fernández de
1945 *Colección de los Viajes y Descubrimientos que Hicieron por Mar los Españoles Desde Fines del Siglo XV.* Vol. 1, *Viajes de Colón: Almirantazgo de Castilla.* Buenos Aires: Editorial Guarania.

Neasham, V. Aubrey
1939 Spain's Emigrants to the New World, 1492–1592. *Hispanic American Historical Review* 19: 147–160.

Noguera, Eduardo
1934 Estudio de la Cerámica Encontrada en el Sitio Donde Estaba el Templo Mayor de México. Museo Nacional de Arqueología, Historia, y Ethnografía, *Anales* 1(5): 267–281. México.
1965 *La Cerámica Arqueológica de Mesoamerica.* México: Universidad Nacional Autónoma de México.
1967 Motivos Naturalistas de la Cerámica Azteca IV. Ministerio de Hacienda y Crédito Público, *Boletín Bibliográfico* 13(377): 7–11. México.

O'Gorman, Edmundo
1938 Reflexiones Sobre la Distribución Urbana Colonial de la Ciudad de México. Archivo General de la Nación. *Boletín* 9(4): 787–815. México.

Olavarría, Roberto, ed.
1945 *México en el Tiempo, Fisonomía de una Ciudad.* México: Impreso Excelsior.

Olin, Jacqueline A., and Edward V. Sayre
1975a Identification of the Provenience of Maiolica from Sites in the Caribbean Using Neutron Activation Analysis. Paper presented at the University of California Conference on Analytical Studies to Ceramics, March 1975.
1975b Neutron Activation Analysis of Majolica from Spanish Colonial Sites in Meso-America. American Institute for Conservation of Historic and Artistic Works, *Bulletin* 15(2): 57–61.

Olin, Jacqueline A., Garman Harbottle, and Edward V. Sayre
1978 Elemental Compositions of Spanish and Spanish-Colonial Majolica Ceramics and Their Use in the Identification of Provenience. *Advances in Chemistry Series* 171: 200–229.

Ortega, Elpidio, and Carmen Fondeur
1978 *Arqueología de los Monumentos Históricos de Santo Domingo.* Dominican Republic: Universidad Central del Este, San Pedro de Macorís.

Otté, Enrique
1964 La Flota de Diego Colón, Españoles y Genoveses en el Comercio Trans-Atlantico de 1509. *Revista de Indias* 24(97–98): 475–503. Madrid.

Palacios, Enrique Juan
1917 *Puebla, su Territorio y sus Inhabitantes.* México: Secretaría de Fomento.

Pérez Bustamante, C.
1941 Las Regiones Españoles y la Población de América (1509–1534). *Revista de Indias* 2(6): 81–120. Madrid.

Pesce, Giovanni
1968 *Mostra Retrospettiva della Ceramica Ligure.* Albisola: Azienda Autonoma di Soggiorne e Turismo di Albisola.

Peterson, Frederick A.
1959 *Ancient Mexico.* London: George Allen and Unwin.

Piccolpasso, Cipriano Cavaliere
1934 *The Three Books of the Potter's Art.* Introduction and translation by Bernard Rackham and Albert Van de Put. London: Victoria and Albert Museum.

Pike, Ruth
1966 *Enterprise and Adventure. The Genoese in Sevilla and the Opening of the New World.* Ithaca: Cornell University Press.
1972 *Aristocrats and Traders. Sevillian Society in the Sixteenth Century.* Ithaca: Cornell University Press.

Pope, Arthur Upham
1964 *A Survey of Persian Art.* Vol. 4, *The Ceramic Arts;* Vol. 10, *Plates, Pottery, and Faience.* Oxford: Oxford University Press.

Pope, E. M.
1956 Ceramics: Medieval. In *A History of Technology,* by C. Singer, E. J. Holmyard, A. R. Hall, and T. I. Williams, Vol. 2, pp. 284–310. Oxford: Clarendon.

Prescott, William H.
1936 *History of the Conquest of Mexico.* New York: Modern Library.

Prieto, Carlos
1973 *Mining in the New World.* New York: McGraw Hill.

Procacci, Giuliano
1968 *History of the Italian People.* New York: Harper and Row.

Rackham, Bernard
1952 *Italian Maiolica.* London: Faber and Faber.

Real Díaz, José Joaquin
1959 *Las Ferias de Jalapa.* Sevilla.

Redman, Charles L.
1978 Qsar Es-Seghir, an Islamic Port and Portuguese Fortress. *Archaeology* 31(5): 12–23.

Redman, Charles L., and Patricia E. Rubertone
1976 Preliminary Report on the Qsar Es-Seghir Ceramic Analysis. Unpublished ms., Department of Anthropology, State University of New York at Binghamton.
1978 15th and 16th Century Ceramics from a North African Portuguese Colony. Paper presented at the Society for Historical Archaeology Annual Meeting, San Antonio, 1978.

Ricci, Seymour de
1927 *A Catalogue of Early Italian Majolica in the Collection of Mortimer L. Schiff.* New York.

Romero, Héctor Manuel
1973 *Anatomía de la Ciudad de México* 2(1). México.

Rubió Mañé, J. Ignacio
1956 Ordenanzas para la Limpieza de la Ciudad de México, 1598. Archivo General de la Nación, *Boletín* 27(1): 19–27. México.

Rubió y Moreno, Luis
1917 *Pasajeros a Indias. Catalogo Metodológico de las Informaciones y Licencias de los Allí Pasaron, Existentes en el Archivo General de Indias. Siglo Primero de la Colonización de América, 1492–1592.* Colección de Documentos Inéditos para la Historia de Hispano-América 8–9. Madrid: Compañía Ibero-Americana de Publicaciones.

Sahagún, Bernardino de
1956 *Historia General de las Cosas de Nueva España.* México: Porrúa.

Sancho Corbacho, Antonio
1948 *La Cerámica Andaluza.* Laboratorio de Arte. Sevilla: Universidad de Sevilla.

Sancho de Sopranis, Hipólito
1948 Los Genoveses en la Región Gaditano-Xericiense de 1460 a 1800. *Hispania* 8: 355–402. Madrid.

Sanders, William T.
1971 Settlement Patterns in Central Mexico. *Handbook of Middle American Indians* 10: 3–44. Austin: University of Texas Press.
Santiago Cruz, Francisco
1960 *Las Artes y Los Gremios en la Nueva España.* México: Editorial Jus.
Scavizzi, Giuseppe
1966 *Maioliche dell'Islam e del Medioeve Occidentale.* Milano: Fratelli Fabbri.
Schlindler, A. H.
1896 *Eastern Persian Irak.* London: Royal Geographical Society.
Singer, Charles, E. J. Holmyard, A. R. Hall, and T. I. Williams
1956 *A History of Technology.* Vol. 2, *The Mediterranean Civilizations and the Middle Ages, c. 700 B.C. to c. A.D. 1500.* Oxford: Clarendon.
Sotheby Parke Bernet Italia
1977 *Catalogo di Maiolica Italiana.* Programma della Aste October 18–20. Firenze: Palazzo Capponi.
Spain, Consejo Superior de Investigaciones Cientificas
1944 Untitled Account of Sevilla by Pedro de Medina, Written in 1548 for 300th Anniversary of Capture of Sevilla from Moors by Ferdinand III. In *Libro de Grandezas y Cosas Memorables de España.* Madrid.
Spain, Ministerio de Educación y Ciencia, Dirección General de Bellas Artes
1972 *Nuevas Instalaciones de Artes Suntuarias de los Siglos XVII, XVIII, y XIX.* Madrid: Museo Arqueológico Nacional.
Torquemada, Juan de
1943 *Monarquia Indiana* (2 vols.). México: Salvador Chávez Haydoe.
Torre Revello, José
1943 Merchandise Brought to America by the Spaniards (1534–1586). *Hispanic American Historical Review* 23(4): 773–780.
Torres Balbás, Leopoldo
1935 Cerámica Domestica de la Alhambra. *Al Andalus* 2: 387–388. Granada.
1947 Plazas, Zocos, y Tiendas de las Ciudades Hispanomusulmanas. *Al Andalus* 12(2): 437–476. Granada.
Toulouse, J. H.
1949 The Mission of San Gregorio de Abó. School of American Research, *Monograph* 13. Santa Fe.
Toussaint, Manuel
1924 *Iglesias de México.* Vol. 12, *La Catedral de México.* México: Editorial Cultura.
1938 Estudio Histórico y Analítico. In *Planos de la Ciudad de México,* pp. 93–105. México: Instituto de Investigaciones Estéticas.
1939 Arte Mudéjar en América. 27th Congreso Internacional de Americanistas, *Actas* 2: 603–608. México.
1967 *Colonial Art in Mexico.* Austin: University of Texas Press.
1973 *La Catedral y el Sagrario Metropolitano. Su Historia, su Tesoro, su Arte.* México: Porrúa.
Uphof, J. C. Th.
1968 *Dictionary of Economic Plants.* Lehre: J. Cramer.
Vaillant, George C.
1941 *Aztecs of Mexico.* Garden City: Doubleday, Doran.
Valle-Arizpe, Artemio de
1937 *Por la Vieja Calzada de Tlacópan.* México.
1939 *Historia de la Ciudad de México, Según los Relatos de sus Cronistas.* México: Editorial Pedro Robredo.
Vega Sosa, Constanza
1975 Forma y Decoración en las Vasijas de Tradición Azteca. *Instituto Nacional de Antropologia e Historia, Colección Científica* 23. México.
Verlinden, Charles
1953 Italian Influence in Iberian Colonization. *Hispanic American Historical Review* 33(2): 199–211.
Vetancurt, Agustín de
1945 *Teatro Mexicano. Descripción Breve de los Sucesos Examplares de la Nueva España en el Nuevo Mundo Occidental de las Indias* (4 vols.). Madrid: Turanzas.
Villaseñor y Sánchez, José Antonio
1746–1748 *Theatro Americano, Descripción General de los Reynos y Provincias de la Nueva España y Sus Jurisdicciones.* México.
Von Grunebaum, G. E.
1955 Islam, Essays in the Nature and Growth of a Cultural Tradition. *Memoirs of the American Anthropological Association* 81.
Wallis, Henry
1904 *Italian Ceramic Art.* London: Bernard Quaritch.
Weckmann, Luis
1951 The Middle Ages in the Conquest of America. *Speculum* 26: 130–141. Cambridge.
Whitehouse, David
1978 The Origin of Italian Maiolica. *Archaeology* 31(2): 42–49.
Wilkinson, Charles K.
1973 *Nishapur: Pottery of the Early Islamic Period.* New York: Metropolitan Museum of Art.
Wulff, Hans E.
1966 *The Traditional Crafts of Persia.* Cambridge: Massachusetts Institute of Technology.
Young, Roland S.
1960 *Cobalt, Its Chemistry, Metallurgy, and Uses.* New York: Reinhold.
Zavala, Silvio, and María Castelo
1939–1946 *Fuentes Para la Historia del Trabajo en Nueva España* (8 vols.). México: Fondo de Cultura Económica.
Zorita, Alonso de
1909 *Historia de la Nueva España,* Vol. 1. Madrid: Fortanet.

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