Ceramics/Kilns

Ceramic objects are the most abundant artifacts found in Near Eastern excavations and include clay pots, bricks, figurines, ovens, jewelry, and crucibles. Clay can be made into permanent shapes, large or small, which when fired to a relatively low temperature become as durable as rock. Clay occurs naturally as a product of the geological weathering and disintegration of rocks, an ongoing process everywhere, thereby making clay readily available.

Variations in clays account for the different uses to which they are put. Primary clays derive from a single rock type, unlike secondary clays, which are composed of more than one parent rock. The former are cleaner and can result in fine, thin-walled pottery. Since secondary clays often travel some distance from their place of origin due to water or wind action, they contain extraneous materials or impurities that impose restrictions on the potter. The different qualities of clays impacted international trade in antiquity. From Greece and Cyprus, where one finds a full range of clay types, beautiful, thin-walled, painted fine wares were exported throughout the Middle East. In contrast, most clays of the Levant are secondary clays well suited for utilitarian containers such as the jars containing agricultural products, which were shipped to the Mediterranean world. Potters could produce fine wares in the Levant, but only when the society would support an industry requiring a lengthy production process to clean the clay, after which it was suitable for fine, thin-walled wares.

Making pottery, or ceramic containers, requires locating and mining the clay, transporting it to a work space, preparing it, shaping the pot, rendering the surface treatment, drying, firing, and distributing the finished product. Since clay is available in many places, potters have a choice between learning to work with a locally available clay or importing clay from a more distant source. The heavy weight of clay encourages the use of local deposits. Clay preparation involves simple pounding and/or a more elaborate alteration of its composition by adding or removing components. Large rocks are always removed, after which a potter uses the clay as is or adds organic material (dung, straw, cattails, and so forth) or small rocks to the cleaned clay. Additives to clays are known as nonplastics or tempering materials. Unlike the clay, whose plasticity allows it to be shaped and change its form, the rock and mineral additives are a-plastic and change minimally throughout the firing. It is difficult to determine, even microscopically, whether the nonplastics are added or native to the clay. Ethnoarchaeological studies demonstrate that many potters add water exclusively to clay. Potters might mix two clays to benefit from qualities inherent in each, especially if they present problems when used individually.

Pottery-making appears deceptively easy. Considerable skill is required, however, for all stages of the work, including the shaping, which traditionally involves:
pinching; mold support; building in segments, coils, or slabs; wheel throwing; rotating on a turntable; or a combination of these techniques. The choice of clay and the degree to which the potter is able and willing to alter it determine the manufacturing technique and every subsequent stage from surface treatment to firing. Clay containing abundant stones is difficult to paint, slip, burnish, and incise. While clay absorbs paint and slip, stones in the clay cannot. Slip is a watery mixture of the finest clay particles covering the surface. Paint is a clay slip containing a small amount of pigment and then arranged in a pattern rather than applied to the entire surface. A pot whose surface is rubbed with a hard object, such as a shell, can have a burnish or shiny surface, if fired correctly. The sheen disappears if pottery has been fired too high. Clays containing abundant and large stones present problems for incised patterns; as the potter moves a tool across the surface, there is a risk that it will drag stones, thereby marring the pattern.

Pottery must dry before firing and is thus never drier than the surrounding air. Dried but unfired pots can reabsorb moisture from the air. Therefore pottery production is often seasonal work, restricted to the dry months. (Other weather-related difficulties include mining wet clay, wet fuel, and wet kilns.) Fine clays with few nonplastics require the greatest care during the drying phase. A slow, steady drying period in a protected place is preferable for all wares. Once dry, a handful of pots or even several hundred can be stacked and fired in a kiln or laid in a pit for one to twelve hours (figs. 33–34). Traditional kilns are built of stone, brick, and/or organic materials. Pit kilns, especially suitable for large containers, are holes dug into the ground, then lined and covered with organic materials. Fuels include wood, coconuts, palm fronds, dung, and so forth.

Fig. 33. After stacking 100–400 pots in the square-shaped kiln in Kornos, Anthoulla constructs a temporary door of bricks. Pots can touch each other in the kiln, but care is taken to avoid contact with the kiln floor and walls. Jugs, cooking pots, goat-milking pots, and lids discernible here are occasionally separated or supported by reused sherds and broken bricks. Since the brick door is built without mortar, the potters add small incense burners behind the bricks to maximize kiln space and heat. Kornos, Cyprus. G. London 2000.
Little is known about the organization of the ancient ceramics industry. It was a multifaceted industry with both male and female potters and assistants working in production locations ranging from small household courtyards, modest assembly line productions to larger factory settings normally located away from the main population centers. Small workshops producing figurines near temples in urban centers suggest that certain ceramic artifacts were highly valued in antiquity.

Pottery helps to determine the date and function of the deposit in which it is found. Because clay pots break and crack easily if they are dropped or if water splashes on them when they are hot, utilitarian pottery was replaced rapidly. As the pots were replaced, styles changed through time. Therefore, most sherds (or shards, pieces of a broken pot) and pots are datable to a specific archaeological period. Pottery made in contemporaneous communities within one region will vary, as does pottery made in different countries during the same time period. In addition to chronological concerns, ceramic containers reflect local, regional, and international trade, as well as social interaction among neighbors. Pottery informs us about diet, social conditions, economics, religion, mortuary practices, and technology.

Bibliography

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