Supplemental Document 1. Detailed Description of *Chaînes Opératoires*

**NABÓN (Azuay, Ecuador) (Catherine Lara)**

Collection and transformation of clay materials

In Nabón, the clay is composed of two types of earth: a clay black earth and a sandy white earth. The black earth predominates in the mixture, while the sandy components of the white earth act as a temper. The different materials come from two different mines: Jatunrumi (black clay) and Ayaloma (white). The mines appear in the form of caves to which the potters walk. They detach the blocks with spikes before placing them in six to eight sacks transported to the workshop by truck.

There, the clay blocks dry for one or two (sunny) days. They are then crushed with a wooden tool called *pisón*. Both types of earth are sifted through a metal sieve. They are spread on a plastic sheet. Water is poured over them before starting the wedging, which lasts for about 30 minutes. When the clay reaches a sticky texture, the potters know it is ready. This has changed over the last few decades. “Before”, materials were pounded with a coarse stick. Then they were left to soak in a hole dug in the ground. The mixture was then wedged on pieces of leather, and the inclusions were removed by hand.

Manufacturing (base/body/neck/rim)

*Roughing out*

Base

The potter forms a clay ball. He places it on his left palm and hollows it with the fist by hammering. This form is laid on a wooden board, where it is modeled by drawing upward. The bottom is lightly scraped with the index finger.

Body/neck

The roughout is placed on a forming support (neck of a broken pot). The potter closes the rim slightly inward. For a medium size pot, two coils are placed and thinned by drawing to form the upper body and neck. Each coil is formed between both palms. The coil joints are beveled (internal bevel for the first coil, and external for the second one).

Rim

The rim is roughed out between the thumb and the index finger, by discontinuous pressure. Bits of clay are eventually added to fill gaps.

*Shaping*

Body (humid clay)

A first slight beating is carried out, while the clay is still humid. This operation is performed with clay percussion tools locally known as *golpeadores*. The internal walls of the body are smoothed with the inner *golpeador*. The outside of the pot is slightly scraped with the nails.

Rim (humid clay)

The rim is shaped by discontinuous pressure applied with the inner *golpeador*. It is then smoothed with the index finger, the inner *golpeador* and the wet hand.

Body/base (leather-hard clay)

After a one or two days pause for drying, the potter beats the whole pot. He then smooths the inside with the inner *golpeador* and the wet hand. The bottom is struck with the outer *golpeador* and shaved with a knife and the fingernails. The outside of the pot is struck again with the outer *golpeador*. The inside is smoothed with hand. Any gaps are filled with little pieces of clay.

Handles manufacturing

The handles are made after the pot has been left to dry for one to three hours. Each handle is made from a coil slightly flattened with the finger, which takes the shape of a strip. It is then affixed to the outer body with the wet inner *golpeador*. The potter makes a decorative vertical depression in the middle of the handle. He then smooths the whole body with the wet hand.

Decoration

The pots dry for one week in the shade and for another week in the sun. The paint used to decorate them is applied on the firing day. This paint is made from a red clay from Cochapata mixed with water. The pots are painted with a cloth wrapped in a stick. The decorations consist of simple geometric designs.

Firing

In Nabón, vessels are pre-fired with straw and wood. The technique is open firing. The pots are laid on a firing structure composed of tree trunks (alder *–Alnus glutinosa*). Agave leaves are placed on the top of the pile. During the firing, the structure is fueled with wood and agave, to prevent the pots from blackening. After one hour and a half to two hours, the large trunks are removed from the structure. The pots are also removed from the structure with sticks.

**CONOPA (Ancash, Perú) (Gabriel Ramón, José Luis Pino, Elvis Crisóstomo & Martha Bell)**

Collection and transformation of clay materials

Potters from Conopa mix clay and black slate, *shilla*, to make their pots. The common source of clay is Patzipampa, one to two hours distant, according to the location of the potters’ house. *Shilla* is obtained from Tinyacocha (three hours) or Shiullá (two hours) at the *jallga* (extraction pit). The sources belong to the community, and their use is free. The whole trip with the digging tools and the beasts of burden, including collection time, involves a complete working day, from 5am to 6pm. One potter (F. Vega) distinguishes two types of temper: black, that must be soaked for four days, and grey, for one day, both from Shiullá (one hour and a half away). Another potter, M. Martínez, agrees with these names and treatments, but he collects temper from a different quarry (Tinyacocha), mentioning another variety, referred to as “greyer”, that is soaked for one day.

Once at home, both materials (clay and temper) are submitted to opposite processes: the clay, which is wet, dries for a week, while the temper, that is dry at the source, is soaked for one to three days. This stage is in female hands. The clay and temper are ground on a large flat stone with a rock tied to a stick.

The proportion of material to make vessels is typically one part clay to two parts temper. It is mixed in a metal cylinder with some hot water and wedged over a goat’s pelt. The big lump of mixture is then covered with a piece of cloth, ready to be used.

Manufacturing

Here we focus on potter J. Bolo. Other potters have slightly different routines (e.g., adding more coils, repeating some procedures, etc.), but the four general steps and its main features are shared among those artisans observed at work. Depending on the weather, J. Bolo makes pots under a roof or outdoors. He works in front of his house surrounded by his tools and a lump of mixture already prepared.

*Roughing out*

Base/body (lower part)

J. Bolo selects a lump of clay and presses it with his fingers to obtain a thick circular slab (modeling by drawing). The slab is placed on a wooden forming support called *mulde*, where the potter presses it with the thumbs, from its centre to the extremes, and vertically from the bottom to the top to form the wall. When the wall is high enough, J. Bolo punches the roughout from the inside with the right fist, while the left palm supports the outer wall (hammering technique). This first section is named *pullanraj*, since the result is half (*pullan*) of the final pot, which dries in the shade.

Body (upper part)/neck

The second step (*ushanan*) involves the final addition of clay (apart from the occasional bits used for final details). Two coils (each one-half of the diameter of the future vessel) are attached to the rim by pinching (thumb outside, other fingers inside) while moving the forming support clockwise. Occasionally –when the vessel is bigger than a medium-sized *manka*—another coil will be added, following the same procedure.

*Shaping*

Neck/rim

Shaping is carried out by discontinuous pressure, which is first applied with both hands to form the rim (thumbs outside, other fingers inside), and then with a piece of gourd to shape the neck (using a vertical gesture). The rim is worked again, this time with a small piece of wet leather, which is passed over the entire circumference using a continuous pressure gesture.

Body

After a second pause for drying, the *tableanan* or paddling stage is carried out using a wooden paddle (*tablejo, tableador*) applied to the outer wall and a *choungo,* or clay anvil, used inside. This shaping operation is concluded by rubbing the internal lower part of the body and its exterior upper part with a second type of gourd. The external lower part is smoothed with the hand. Finally, J. Bolo smooths the surface (internal and external) and regularizes the neck’s form with the hands.

Base

After a third drying pause, the *tikray* (“to turn it round”) stage ensues. J. Bolo separates the vessel from the forming support and paddles the bottom with the *tableador* and the *choungo*, making it spherical. The inner walls are smoothed with the *pachan jajrash* and the outer surface with the palms.

Manufacturing the handles

Handles are made after the vessel has dried for an hour or two. Small coils are flattened with the fingers shaping a strip. The specific area of the neck of the vessel where the handles will be placed is marked with a knife to strengthen the bond. In contrast to Nabón, in Copona handles are placed vertically. Besides the occasional use of the knife, this step is performed with the fingers.

Decoration

Just before the firing, the vessels can be decorated with red pigment.

Firing

Generally, the firing location selected is a flat surface with one side against a wall or the mountain hillside to prevent excessive wind. Some potters have standing poles at the four corners of the firing structure to be able to cover the pots if it starts to rain while firing. The fuel is cow’s manure and a highland grass, both collected from the *jallga*. The *ichu* must be a special one, since the other is too thin, and is used only for the roofs. The manure is placed around the base of the firing structure. Six to seven rows of pots are then piled on top, and all are then covered with highland grass. There is no fixed time for firing, but it is preferably done with calm wind. The fire is lit from the top. After one hour the “antimony” of the pots appears, it is a blue flame that marks the combustion-climax. The potters observe that in that moment the “soul” or the “dead man” emerges from the pot (Isaías Silvestre). Faustino Vega said that he waits until the polychrome fire, like a rainbow appears. The next day the firing place is dismantled with the help of the family and occasionally neighbors. The number of pots fired varies, according to the needs of the potter and the quantity of firings that he has programmed for the year.