# THE MOCHE BOTANICAL FROG

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ABSTRACT. Plants and animals with features which identify them as supernaturals characterize the art of the Precolumbian Moche culture of northern Peru. Among these animals is a frog with feline attributes and a consistent association with manioc tubers, stalks, and plants, the Botanical Frog. The Botanical Frog appears to have been patterned on Leptodactylus pentadactylus. It is shown copulating with felines. Fine line painted vessels and ones with low relief decoration show the Botanical Frog performing as part of a ritual involving other animals and cultivated crops, suggesting that the Botanical Frog was associated with agriculture.

**KEYWORDS**. Peru, Moche, agricultural rituals, supernatural animals, frogs, manioc.

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**TÍTULO**. La rana botánica mochica.

RESUMEN. El arte de la cultura mochica de la costa norte del Perú presenta plantas y animales mostrando rasgos sobrenaturales. Uno de los animales es una rana con elementos felinos y asociada con tubérculos, ramas y plantas de yuca. La Rana Botánica probablemente tiene su origen en Leptodactylus pentadactylus, una rana carnívora de la selva amazónica. La Rana Botánica copula con felinos y, en vasijas pintadas con líneas finas o con escenarios representados en bajorrelieve, toma parte en ceremonias involucrando a otros animales y cosechas domésticas. Parece ser que la Rana Botánica era un ser sobrenatural asociado con la agricultura.

PALABRAS CLAVE. Perú, mochica, ritos agrícolas, animales sobrenaturales, ranas, yuca.

HE MOCHE PEOPLE OF THE NORTH COAST OF PERU (CA. AD 200-800) are noted for realism in their art. They are also noted for their portrayal of a complex supernatural world inhabited by anthropomorphic and zoomorphic mythical beings. Although the mythical

beings seem alien, they are created with elements taken from humans, animals, and plants. One of these composite creatures is the Botanical Frog. The elements that compose this supernatural creature were identified by studying three-dimensional ceramic sculptures portraying the creature. Using these elements, the Botanical Frog can be identified in two different scenes portrayed in fine line drawing and low relief. There are 24 modeled Botanical Frogs in the sample. The Archive of Moche Art at the University of California, Los Angeles is the primary data source used in this study.

## **IDENTIFYING THE BOTANICAL FROG**

The Botanical Frog is a composite of different animals and plants (fig. 1). Although many Moche deities are combinations of a single animal and a fruit—e.g., owl/gourd, bird/squash, crab/manioc, and snake/corn or snake/gourd—only the Botanical Frog is a combination of multiple plants and animals. The morphological features of frogs and plants are the most prominent. All frogs and toads belong to the order Anura and are called Anurans. Toads are members of the family *Bufondae*, but may be called frogs in a broad sense. Although all toads are frogs, not all frogs are toads (Duellman & Trueb 1986: 2). I use the general term, frog, to refer to Moche depictions of Anurans.

When the Botanical Frog is compared with a Moche naturalistic frog (fig. 2), it is evident that some features, such as the nose, are feline (fig. 3). The Botanical Frog's front legs are straight and frequently striped (fig. 1), suggesting that they are also feline. Curved feline ears are often added. Some modeled Botanical Frogs (Kutscher 1954: fig. 43 D; Lehmann 1975: plate 62)—this Botanical Frog was identified as a tortoise by Lehmann (1975: 61), probably because of its clawed feet and the carapace appearance of the manioc fruit covering its back—have pelage markings on their bodies and claws on their feet, further showing the frog-feline blend of this mythical creature. Rafael Larco Herrera (1948: 44) noted the plant/frog/feline blend of the Botanical Frog in his description, "... la divinidad agrícola —el sapo jaguar..." (the



Fig. 1. A Botanical Frog combines many natural and supernatural attributes. Museo de Arqueología, Universidad Nacional de Trujillo. Photograph by Christopher B. Donnan.

agricultural deity—the toad-jaguar). The broad-banded mouth of the Botanical Frog is distinctive and is a primary identifier of the creature. Sometimes it is unnaturally filled with teeth (fig. 4), and in a few rare examples they are fanged like those of other supernatural beings (fig. 5).

The Botanical Frog's body incorporates or is adorned with a composite of plants. All representations have elongated tubers of manioc (*Manihot esculenta*), the other primary identifier, hanging from the rear of the frog. A stalk of manioc frequently forms the frog's spine on modeled pieces (figs. 1, 5). They are similar to those on the manioc deity (see Donnan 1978: fig. 234). Not all Moche representations of frogs can be identified because

some are too stylized and some are without markings. Occasionally, the Botanical Frog has manioc stalk "horns" projecting from the top of its head (fig. 5). Tubers sometimes appear out of the corner of its mouth (fig. 6).

A variety of plants and fruits can adorn the sides of the Botanical Frog, including stalks or ears of corn (figs. 1, 6). Although it is difficult to identify some of the plants, those we can identify are food plants. As early as 1916 Seler (192, fig. 16) noted the frog/agriculture aspects of a modeled Botanical Frog, "... procurador de los alimentos..." (procurer of foodstuffs). This is a common association since frogs are related to agriculture in cultures all over the world. The reproduction of most frogs is related to temperature, humidity, and the availability of water



Fig. 2. A Moche naturalistic frog. Private Collection. Photograph by Donald H. McClelland.

(Duellman & Trueb 1986: 19-21)—the same factors critical to farming. The loud mating calls of frogs often foretell the arrival of favorable planting conditions. Because frogs are so closely related to water and are so prolific, they are associated with the growth of crops and fertility (Mattison 1987: 142). Often the upper eyelid of the Botanical Frog extends down into a spiral to form what appears to be an "ear" (figs. 1, 5, 6). This curious "ear" is unique to this mythical creature. As noted above, the Botanical Frog often has rounded feline ears. Interestingly, some modeled Botanical Frogs have both spiral "ears" and feline ears (Kutscher 1955: 47), and a few have no ears (fig. 4). It is difficult to generalize about frog behavior because the thousands of species (Duellman & Trueb 1986: 313) are so remarkably adapted to their varied environments. Therefore, it is important to identify the naturalistic frogs portrayed in Moche art in order to identify the attributes and behavior that the Moche might have given to the Botanical Frog.

William E. Duellman, a specialist in the biology of amphibians at the University of Kansas, identified several frog species from the realistic Moche representations of natural frogs (Duellman & Trueb 1986). The most frequently depicted frog is the *Bufo marinus* (fig. 2), a large poisonous toad common on the north coast of Peru today. Another modeled frog portrays *Rana bwana* (fig.

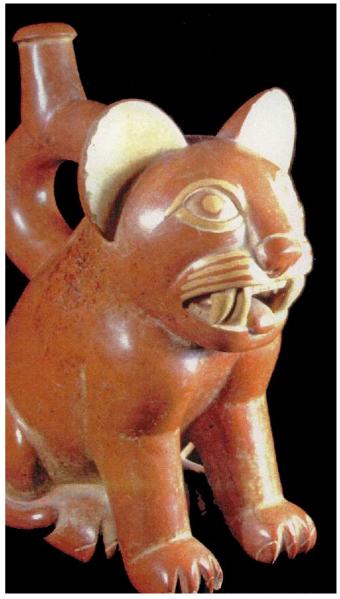


Fig. 3. Botanical frogs show some feline characteristics as exemplified in this naturalistic puma. Private Collection. Photograph by Christopher B. Donnan.

7), a frog that lives only in the Piura area. Professor Duellman was able to identify the frogs in a pepino (*Solanum muricatum*) bush in a fine line drawing (fig. 8) as a tree frog, *Ololyon quinquefosciata*. None of these frogs had any traits that could be related to those of the Botanical Frog.

An example has been found of a Moche modeled naturalistic frog with a wide-banded mouth (fig. 9), a primary identifier of the Botanical Frog. It has stripes on top of its head, like the Botanical Frog. Professor Duellman identified it as *Leptodactylus pentadactylus* (fig. 10), a frog that lives in the eastern Andean forest, but not on the north coast of Peru. This frog is common throughout the Amazon basin. It has been noted in many departments of Peru, e.g., Ayacucho, Huánuco, Loreto, San Martín, and Ucayali (Heyer 1979: 29). It is very aggressive. The



Fig. 4. A Botanical Frog often has a mouth filled with teeth. Private Collection. Photograph by Christopher B. Donnan.



Fig. 5. Rare examples have fangs, a common supernatural indicator in Moche art. Duke University Museum of Art.

males have spines on their thumbs which they use in bouts with other males (Duellman & Trueb 1986: 55). Even the tadpoles are aggressive and eat other tadpoles (*ibid*.: 273). The frogs have a lumbar gland, between the rib cage and the pelvis, from which they exude poison to protect themselves (*ibid*.: 370). This large frog has several interesting characteristics that may relate directly to the Botanical Frog.

The structure of a frog ear is hidden beneath the skin, but in some species an external ear-drum, the tympanum, can be seen behind the eye as a circle (Mattison 1987: 22). *L. pentadactylus* has a fold that extends from above the tympanum to part way down the side of the body (Heyer 1979: 26). This is strikingly like the spiral "ears", unique to the Botanical Frog. The stripes on top of the head of the real frog (fig. 10) were painted on the head of the modeled Moche frog (fig. 9).

Feline-like markings are notable on *L. pentadactylus*. Its legs have white and black stripes (fig. 10) similar to the striping on the Botanical Frog (fig. 1). Markings on the sides of *L. pentadactylus* resemble pelage markings. The slender digits have the appearance of claws. Perhaps the most vivid feline characteristic is described by Duellman and Trueb (1986: 103): "Upon being seized, these large frogs sometimes emit a loud scream reminiscent of that given by a cat in distress". Considering the feline

characteristics of this frog which the Moche imitated, it is not surprising that the Botanical Frog has a feline nose and ears.

The Botanical Frog is often depicted with a white circle on its throat. This marking is also displayed on a variety of Moche modeled frogs, but it is not visible on the real frogs they portray. This suggests that it is not an identifying feature. Perhaps the Moche wanted simply to note the vocal sac, which is not visible until it is inflated.

# THE BOTANICAL FROG AND THE FELINE

There is more of a relationship between the Botanical Frog and the feline than just shared markings and features. In two modeled examples (figs. 11, 12), the Botanical Frog and the feline are face-to-face holding fast to one another. Curiously, the two are the same size. Male frogs are usually smaller than females (Duellman & Trueb 1986: 54), a fact that the Moche recognized. The position suggests sexual activity, but not that practiced by either frogs or felines. The only time we see this intertwining of legs in Moche art is in human copulation. Moche artists depicted naturalistic frogs mating (Larco 1966: 76), but always in the amplectic position—a male

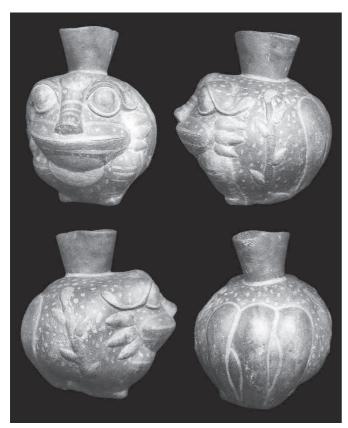


Fig. 6. Tubers sometimes hang from the corners of the mouth of the Botanical Frog as well as off his back. Museo Nacional de Antropología y Arqueológico, Lima. Photograph by Luis Jaime Castillo Butters.

frog standing on the back of the female frog. Moreover, they certainly would have been aware of the rear mount-



Fig. 7. A Moche modeled depiction of *Rana bwana*, a native of the far northern Piura Valley. Private Collection. Photograph by Christopher B. Donnan.

ing position of felines. Perhaps by showing the Botanical Frog and feline in a human copulation position, they are suggesting that they have some human characteristics. It should be noted that the feline is under the frog in fig. 11 and on top in fig. 12. When the feline is on top, its body rather than the frog's is covered with fruits; however, some pelage markings remain on its legs and shoulders. This suggests a metamorphosis or exchange of traits during this activity.

One bottle (Larco 1966: 141) illustrates a feline on the back of the Botanical Frog, suggesting a more natural animal copulation position. In this position the feline maintains its pelage markings. Again the animals are the same size. In contrast, the Moche realistically portrayed the relative sizes of a naturalistic frog and feline in fig. 13. The behavior of the feline—covering its eyes with its front paws—further demonstrates a bizarre relationship between frogs and felines.

## MANIOC AND THE BOTANICAL FROG

The Botanical Frog shares many characteristics with the manioc plant. As noted earlier, a stalk of manioc frequent-



Fig. 8. Tree frogs, *Ololyon quinquefosciata*, shown here in a pepino bush. Private Collection. Photograph by Christopher B. Donnan.

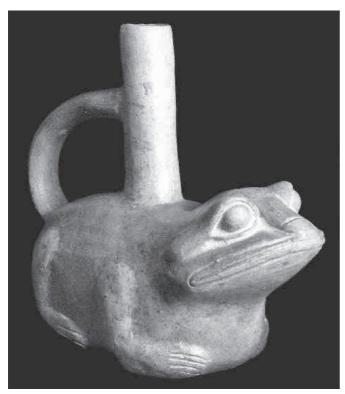


Fig. 9. A naturalistic modeled depiction of *Leptodactylus pentadactylus*, a carnivorous Amazonian frog. Private Collection. Photograph by Donald H. McClelland.

ly forms the spine or the horns of the creature. Manioc is propagated by a cutting from a stalk of the bush. It is set in the ground horizontally and then covered with soil. The stalk of the new bush grows up at a right angle from one end of the cutting, and the clustered tubers grow down from the buried stalk (fig. 14). In this configuration, the

manioc plant resembles the Botanical Frog, without the frog's body.

The manioc tubers that hang from the rear of the Botanical Frog are the other primary identifier of the Botanical Frog. Like the frog *L. pentadactylus*, manioc tubers are poisonous. There are several hundred known varieties of manioc, but they all belong to the same species, *Manihot esculenta* (Nye 1991: 48-49). All varieties contain hydrocyanic acid in varying concentrations from high to low, but they cannot be classified according to their relative

Fig. 10. *Leptodactylus pentadactylus*. Photograph by William E. Duellman.

toxicity. Manioc (*Manihot esculenta* Krantz) is also known as cassava, tapioca, and yucca. Although manioc has been classified as either bitter (toxic) or sweet (nontoxic), current research indicates that this is an unsupported classification or division (Nye 1991: 48-49).

Although the tubers deteriorate rapidly once they are harvested, they can be left in the ground for three to four years (*ibid*.: 51) and can be harvested throughout the year. In hot as well as arid climates many frogs retreat during the day to conserve their moisture. They hide in moist places, and some burrow in the soil (Duellman & Trueb 1986: 198-199). Many frogs remain underground during dry seasons or drought to prevent loss of body fluids. Like manioc tubers they are capable of remaining underground for long periods (Duellman & Trueb 1986: 207). Since the Botanical Frog always displays manioc tubers on its rear, the Moche may have associated the ability of frogs and tubers to remain underground for long periods.

## THE BOTANICAL FROG IN CONTEXT

Analysis of the depictions of the Botanical Frog in three dimensional sculpture provide abundant information about its identification and combination of frog, feline, and plant features, but it is only when the Botanical Frog is seen in complex depictions with other objects and individuals that we can begin to appreciate its status and role in the Moche supernatural realm. Fortunately, there is one depiction of the Botanical Frog in a complex fine line drawing (fig. 15), and several others that show it in





Figs. 11. Botanical frog-feline copulation scenes. The animals are shown copulating like humans (figs. 11-12). Field Museum of Natural History, Chicago. Photograph by Christopher B. Donnan.

two of them. The chronological sequence, Phases I-V, for Moche ceramics was also developed by Rafael Larco

Hoyle (1948).

In the fine line drawing, the Botanical Frog appears in a procession featuring a supernatural figure carried in a pod-shaped litter. The supernatural figure is surrounded by anthropomorphized animal warriors wielding clubs and shields. Each of the anthropomor-

mal, e.g., an owl, a dragonfly, and a fox. The Botanical Frog is one of the anthro-

phized warriors represents a single ani-

pomorphized warriors. Although it is anthropomorphized, it is readily identified by its broad-banded mouth, the manioc stalk and three tubers that extend down its back, and the many other food plants that adorn it. The supernatural figure in the litter is the uppermost figure on one side of the chamber. The Botanical Frog occupies the

an unusual scene depicted in low relief. Rafael Larco Hoyle (1966: figs. 59-60) published two photographs of one of these bottles; however, the photographic coverage of the low-relief scene that encircled the chamber was incomplete. Recently, I photographed the bottle in the Museo Arqueológico "Rafael Larco Herrera" and subsequently produced a rollout drawing of the scene. The museum has three more spout and handle bottles and one Phase V stirrup spout bottle portraying the same scene. Thanks to the generosity of Director Isabel Larco, I was able to study these bottles in detail, and to photograph

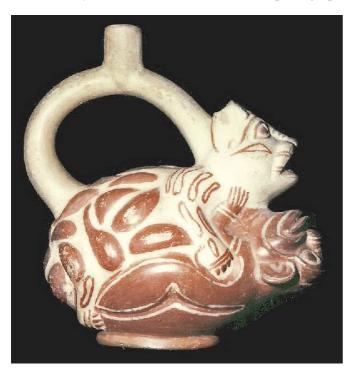


Fig. 12. The Art Institute of Chicago. Photograph by Christopher B. Donnan.



Fig. 13. Realistic representation of the relative sizes of feline and frog. Museo Nacional de Antropología y Arqueológico, Lima. Photograph by Christopher B. Donnan.



Fig. 14. Manioc plant showing stalk and tubers still in the ground. Source unknown

pears on six Moche bottles: five spout and handle bottles (figs. 17, 18), and one Phase V stirrup spout bottle (fig. 19). This is an interesting sample since spout and handle bottles comprise less than two per cent of Moche ceramics, and complex low-relief scenes also comprise less than two per cent.

No two of the bottles appear to be from the same mold, but there are only minor variations in the scene (compare, for example,

figs. 17 and 18). On all the bottles the figures appear on two levels, and the scene can be divided into three activities, two on the upper level and one on the lower level. One upper level activity includes the Botanical Frog with its broad banded mouth and manioc tubers. Beans form the body joints and rounded ears. There are two round fruits hanging from its lower jaw. Each appears to be tipped with remnants of calyx lobes, a distinctive feature of guava fruits (Neal 1984: 632) illustrated in fig. 20.

The Botanical Frog faces a supernatural figure who holds eared snakes that form a U-shape (figs. 17, 18). Within the U-shape the deity stands among ears of corn and perhaps another type of fruit. More corn and other objects that may be fruits rest on the ground between the Botanical Frog and the deity. An unidentified object ap-

same position on the opposite side, suggesting that it was the second most important figure in the scene.

Although the Moche anthropomorphized many food plants, such as ears of corn (fig. 16), manioc (Donnan 1978: fig. 234), squash, potatoes (Towle 1961: plate XI, fig. A), and peanuts (*ibid.*: plate VIII, fig. B), no anthropomorphized plants are present in this scene. Even anthropomorphized beans, which are frequently depicted as warriors in Moche art (Donnan 1978: figs. 62-64), are absent. Perhaps in this warrior procession the Botanical Frog, with its multiple plant appendages, is meant to represent all food plants.

All the depictions of the Botanical Frog in low relief are similar to one another. They show it as a major participant in a complex supernatural scene. The scene ap-



Fig. 15. Anthropomorphized birds, animals, sea creatures and plants populated the Moche mythological universe, as seen in this fine line painting of the Rayed God travelling with his warrior cortege. Museum für Völkerkunde, Berlin, Staatliche Museen Preussischer Kulturbesitz. Drawing by the author.

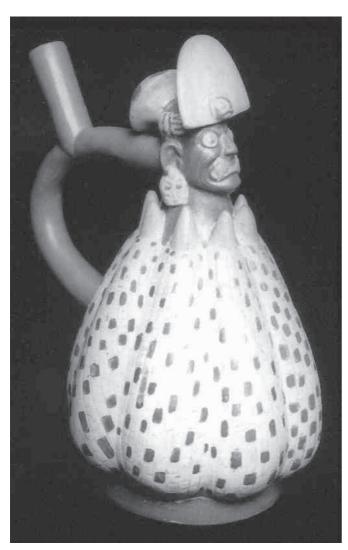


Fig. 16. An anthropomorphized squash. Private Collection. Photograph by Christopher B. Donnan.

pears below the U-shape in some examples of this scene (fig. 17) but not in others (fig. 18). The object looks like a container with handles. On each bottle two anthropomorphized bird attendants and a seated animal stand behind the deity facing the Botanical Frog.

The second activity on the upper level occurs behind the Botanical Frog and is directed away from it. An anthropomorphized iguana stands behind a supernatural figure. This iguana has the same bird headdress, sash-like



Fig. 17a and b. Single spout and handle bottle with relief designs of the Botanical Frog in context. Mint Museum of Art Collection. Lent by Mrs. William Barnes. Charlotte, North Carolina. Photograph by Donald H. McClelland. Drawing by the author.

bag tied around his waist, and reptilian features as the figure identified as Iguana in the Burial Theme (Donnan & McClelland 1979: 6). Iguana holds a spout and handle bottle in one hand and a penis-shaped object in the other. This object has not been found elsewhere in Moche art. The supernatural figure in front of Iguana points to a stack of corn and holds an ulluchu fruit (the fruit of a number of species of the genus Guarea [Meliaceae], Bussman & Sharon 2009, McClelland 1979: 435-452). He is dressed identically to the deity in the U-shape except that his belt has two ties, instead of one, each terminating in an eared serpent. This suggests that the same deity participates in both activities. The focus of this second activity appears to be the stack of corn, although beans conspicuously fill the space between Iguana and the deity. In four of the six representations a dog stands in the pile of corn facing the supernatural figure and Iguana (fig. 18). In Moche art a dog is frequently associated with a supernatural figure



Fig. 17b.



Fig. 18. Another single spout and bridge bottle with the same scene as in figs. 17 a & b. Museo Arqueológico "Rafael Larco Herrera", Lima. Photograph by Luis Jaime Castillo Butters.

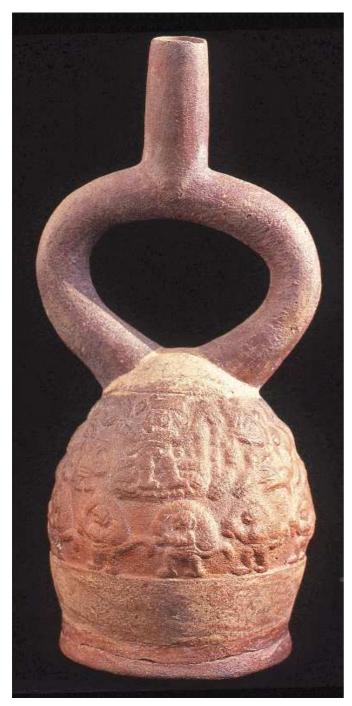


Fig. 19. A stirrup bottle with a relief depiction of the ceremony in which the Botanical Frog performs. Photograph by Donald H. Mc-Clelland.

and Iguana, but the presence or absence of a dog from a scene does not appear to change it.

Within this small sample of low-relief bottles, the unidentified object under the U-shaped structure is absent when the dog is present. A row of monkeys, each carrying a large net bag, appears on the lower level. They face an anthropomorphized animal holding a staff with one hand and raising his other hand. He always wears the same headdress and stands in the same position. At the other end of the line a figure, holding a whip in front of him, escorts the monkey. He holds the lash of his whip against the handle in one hand. Like the staff holders, the whip holders always wear the same headdress and stand in the same position.

Activity on the lower level of the Botanical Frog scene focuses on the row of burdened monkeys. In Moche art monkeys are frequently associated with a variety of net bags. Some wear net bags suspended from their necks; often, pairs of monkeys are modeled with bags slung in this manner (Donnan 1978: figs. 95-96). Monkeys are also associated with fruits. Modeled bottles show them holding fruit (fig. 21) and they are the only animals shown picking fruit, climbing among the limbs of the ulluchu plant where they pick ulluchus (McClelland 1979: fig. 4). Some fine line drawings show that the Moche kept monkeys tethered (Donnan 1979: 41). It is possible that these monkeys were a part of a ceremonial harvest. In the Botanical Frog scene it is not evident what their bags contain. They may be carrying corn to add to the stack in front of the deity, or removing corn as part of a planting ceremony. Since the deity holds an *ulluchu* he could just as well be receiving bags of ulluchus from the monkeys, as these animals are shown in Moche art picking this specific fruit. In the Botanical Frog scene the number of monkeys does not seem to be relevant; there can be seven, eight, or nine. The size of the bottle does not determine the number because the smallest bottle known has eight monkeys. No musicians accompany the procession of monkeys, suggesting that dance was not a part of the ceremony. Like L. pentadactylus, monkeys may be native to the eastern tropical forest.



Fig. 20. Guava fruits. Photograph by Donald H. McClelland.

The diversity of plant material in the Botanical Frog scene indicates that this ritual did not center on a single plant. All these plants must have been important since the plants were carefully portrayed by different artists in



Fig. 21. Modeled bottle showing a monkey holding a pepino fruit. Private Collection. Photograph by Christopher B. Donnan.

the same place on all six bottles. Since the plants that we can identify on the Botanical Frog's body and in the scene are food plants, the Botanical Frog may embody the Moche's concept of agriculture. The abundance of food plants coupled with the penis-shaped object held by Iguana suggest fertility. Perhaps this represents a planting ritual to insure a successful crop, or the celebration of a bountiful harvest.

Colonial chroniclers' accounts of Inca food plant rituals demonstrate that using "fertility" to describe a scene may be a simplistic explanation of a very complex activity. The use of corn as money emphasizes its value to the Inca (Cobo 1979: 34-35). Divination (Arriaga 1968: 34), curing, sacrifices to bring good crops (ibid.: 77), and foretelling the future (ibid.: 184) were rituals associated with corn. Arriaga noted that some huacas (sacred sites or shrines) were worshiped to benefit the corn and potato fields (ibid.: 118). There was a corn festival to keep the corn from drying out (ibid.: 49), and a celebration of the corn harvest in which a dance was performed with stalks of corn (ibid.: 176). In addition there was a festival to aid the ripening of avocados (ibid.: 58) demonstrating that each phase of the agricultural cycle was recognized and celebrated.

John Murra's article (1960), *Rite and Crop in the Inca State*, describes even more rituals associated with corn that were reported by the chroniclers. This is not to suggest that an interpretation of this Moche scene can be found in the Inca culture, which postdated the Moche by almost 1,000 years. However, the sixteenth century doc-

uments demonstrate a complex tradition of agricultural rituals in the Andean area.

## **SUMMARY**

Although the Botanical Frog is a mythical creature, this study demonstrates that it is composed of parts from real animals and plants. Because these elements are so realistically depicted, it has been possible to identify them with some precision. The large sample of Moche ceramics used in this study made it possible to see the varied ways in which this creature was depicted and to demonstrate that certain features, such as the broad-banded mouth and rear manioc tubers, are always present, while others are not. The "spiral" ear, for example, is unique to the Botanical Frog, but it is not always added. Other features that may or may not be depicted include a manioc spine and horns; feline ears, leg striping, and pelage markings; and a variety of food plants.

The Botanical Frog is associated so consistently with Moche food plants that it seems clearly related to agriculture. The animals and plants that comprise the Botanical Frog have interconnecting characteristics; for example, the toxic nature of the frog, *L. pentadactylus* and manioc; the analogous form of the Botanical Frog to the configuration of the manioc plant underground; and the markings and behavior of *L. pentadactylus* to those of a feline. These interconnecting characteristics suggest more than a simple explanation of the frog as a fertility symbol

The identification of the Botanical Frog in the modeled pieces led to its identification in a complex fine line drawing of anthropomorphized warriors and an agricultural ritual rendered in a low-relief scene in which it is a major participant. The Botanical Frog may appear in another complex fine line drawing: the Animated Objects Theme (Lyon 1989: 63). A small animal faces a figure seated under a "bush". The small size of the figure makes its identification as a Botanical Frog uncertain, but manioc tubers are present at the rear of the animal. However, the modeled Botanical Frogs and those portrayed in the complex scenes clearly are encoded with the same information. The identification of the frog as a L. pentadactylus, a poisonous cat-like frog that lives in the tropical forest, poses questions about the relationship of the Moche to this region. For example, the ritual in the low-relief scene may observe the origin of food plants from the tropics instead of celebrating a single agricultural event such as harvest or signifying only fertility. The study of the Botanical Frog shows the complexity of Moche art and the many levels of meaning that can be attributed to a single modeled piece.

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## About the author

† The late Donna McClelland was, for more than thirty five years, a student of the Moche culture of northern Peru. Working with Christopher Donnan at the University of California, Los Angeles, she helped with the establishment and formation of the Moche Archive, a photographic record of Moche artifacts based on the Corpus Vasorum Antiquorum. Ms. McClelland developed a technique to reproduce the intricate narrative paintings of late Moche vessels and produced almost 800 of these drawings, a boon to scholars of Moche art and culture. Her drawings have been widely reproduced in books, journals, exhibitions, and television documentaries. Out of her careful observations of Moche art, combined with her experience from participating in Moche archaeological excavations, she developed a number of important insights into the Moche mythical world of plants and animals.

### REFERENCES CITED

Arriaga, Father P.J. de. 1968. *The extirpation of idolatry in Peru* (1621). Translated and edited by L. Clark

- Keating. Lexington: University of Kentucky Press.
- Bussman, R.W. & D. Sharon. 2009. Naming a Phantom—the quest to find the identity of ulluchu, an unidentified ceremonial plant of the Moche culture of northern Peru. *Journal of Ethnobiology and Ethnomedicine* 5(8). <a href="http://www.ethnobiomed.com/content/5/1/8">http://www.ethnobiomed.com/content/5/1/8</a>>.
- Cobo, Father B. 1979. *History of the Inca empire* (1653). Translated and edited by R. Hamilton. Austin & London: University of Texas Press.
- Domingo, M. Cuesta. 1980. *Cultura y cerámica mochica*. Madrid: Ministerio de Cultura, Dirección General de Patrimonio Artístico, Archivos y Museos.

#### DONNAN, C.B.

- 1978. Moche art of Peru, Pre-Columbian symbolic communication. Los Angeles: Museum of Cultural History, University of California.
- 1982. Dance in Moche art. *Ñawpa Pacha* 20: 97-120. Berkeley: Institute of Andean Studies.
- Donnan, C.B. & D. McClelland. 1979. *The burial theme in Moche iconography*. Studies in Pre-Columbian Art & Archaeology, no. 21. Dumbarton Oaks, Washington, D.C.
- Duellman, W.E. & L. Trueb. 1986. *Biology of amphibians*. New York, St. Louis, San Francisco: McGraw Hill Book Company.
- HEYER, W.R. 1979. Systematics of the pentadactylus species group to the frog genus Leptodactylus (Amphibia: Leptodactylidae), *Smithsonian Contributions to Zoology* 301: 1-43.
- Krochmal, A. & C. Krochmal. 1990. Tapioca. *The Bulletin* 20(2): 25-30. Lawai, Hawaii: National Tropical Botanical Garden.

### Kutscher, G.

- 1954. Nordperuanische keramik: figurlich verzierte gefasse der Fruh-Chimu. Cerámica del Perú septentrional; figuras ornamentales en vasijas de los chimúes antiguos. Monumenta Americana I. Berlin: Gebr. Mann Verlag.
- 1955. Ancient art of the Peruvian north coast. Translated by Walter Hermann Bell. Berlin: Gebr. Mann.

## LARCO HOYLE, R.

- 1948. *Cronología arqueología del norte del Perú*. Buenos Aires: Sociedad Geográfica Americana.
- 1966a. Checan. Geneva: Nagel.
- 1966b. *Peru*. Archaeologia Mundi Series. Translated by J. Hogarth. Cleveland & New York: World Publishing Company.
- Lehmann, W. 1975. *The art of old Peru*. Assisted by H. Doering. New York: Hacker Art Books, Inc. [First published in 1924 by the Ethnological Institute, Berlin.]
- Lyon, P.J. 1989. Archaeology and mythology II: A re-consideration of the animated objects theme in Moche art. In *Cultures in conflict: Current archaeological perspec-*

- tives. Edited by D.C. Tkaczuk & B.C. Vivian. Proceedings of the Twentieth Annual Chacmool Conference. Calgary: The Archaeological Association of the University of Calgary.
- Mattison, C. 1987. *Frogs and toads of the world.* New York: Facts on File, Inc.

#### McClelland, D.D.

- 1979. The ulluchu: a Moche symbolic fruit. In *Pre-Columbian art history, selected readings*, edited by A. Cordy-Collins & J. Stern, pp. 435-452. Palo Alto, California: Peek Publication.
- 2009. Ulluchu: an illusive fruit. In *The art and archaeology of the Moche: An ancient Andean society of the Peruvian North Coast*, edited by S. Bourget & K.L. Jones, pp. 43-65. Austin: University of Texas Press.
- MS. The Muscovy duck in Moche Art.
- Murra, J.V. 1960. Rite and crop in the Inca state. In *Culture in history, essays in honor of Paul Radin*, edited by S. Diamond, pp. 393-407. New York: Published for Brandeis University by Columbia Press.
- NEAL, M. C. 1984. *In Gardens of Hawaii*. Special Publication 50. Honolulu: Bishop Museum Press.
- Nye, M.M. 1991. The mis-measure of manioc (Manihot esculenta). *Economic Botany* 45(1): 47-57. Published for The Society for Economic Botany by the New York Botanical Garden.
- Seler, E. 1916. Ein altperuanisches besticktes Gewebe. Jahrbuch der preussischen Kunstsammlungen 37: 181-201. Berlin.
- Towle, M.A. 1961. *The ethnobotany of pre-Columbian Peru*. Chicago: Aldine Publishing Company.