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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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 Bufonidae, 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
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...” (procuer 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. 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 quinquefasciata*. 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
The Botanical Frog and the Feline

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.

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 amplexic position—a male

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.

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

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.

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-
toxicity. Manioc (Manihot esculenta Krantz) is also known as cassava, tapioca, and yucca. Although manioc has been classified as either bitter (toxic) or sweet (non-toxic), 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
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 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 anthropomorphized warriors represents a single animal, e.g., an owl, a dragonfly, and a fox. The Botanical Frog is one of the anthropomorphized 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
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 anthro-
pomorphized plants are present in this scene. Even an-
thropomorphized 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 re-
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 par-
ticipant in a complex supernatural scene. The scene ap-
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 ce-
ramics, 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 activ-
ities, 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-

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

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.
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 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.
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.
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 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 forecasting 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-
models 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.

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