



## The Jaguar in North America

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5. Publicize the same in archaeological publications read by businessmen.

6. Set up clearing-houses, at publications and professional society headquarters, for those interested in hiring or serving as administrators.

As to using a qualified manager—try it; you'll like it.

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R. G. Vivian; R. Wauchope; G. R. Willey. The expressions are my own.

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## THE JAGUAR IN NORTH AMERICA

PIERRE M. DAGGETT

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*The occurrence of the jaguar in the arts and myths of North American cultures has been attributed to influence from Mesoamerica. A brief review of available zoogeographic and cultural data suggests greater integration between the physical and mythological presence of the jaguar in North America than previously thought.*

The occurrence of the jaguar (*Felis onca* or *Panthera onca*) in the arts and myths of North American cultures has been attributed to influence from Mesoamerica, where the jaguar is currently distributed and is traditionally important. Not precluding influence from Mesoamerica, a brief review of zoogeographic and cultural data suggests a greater integration than has been previously thought. From Pleistocene times, the distributional range of *Felis onca* has regressed from a once-expanded northern range. This range overlaps with the appearance of the jaguar in archaeological and paleontological loci. Careful identification of faunal remains from archaeological sites within this range should, in the future, reveal a more extensive

association of *F. onca* with man in North America.

*Pleistocene 10,000-2,500,000* (Fig. 1): Fossil remains of *F. onca* have not been discovered in large numbers. Most Pleistocene specimens are considered to belong to the extinct race *F. onca augusta* (Simpson 1941b:1-27). *F. onca augusta* is distinguished from *F. onca* in that the average size of reported specimens is larger than the average size of living races (Simpson 1941b:1-27). *F. onca augusta* closely resembles the most southern living race *F. onca palustris*.

What remains have been found are widely distributed across North America. The northernmost remains are from Whitman County,

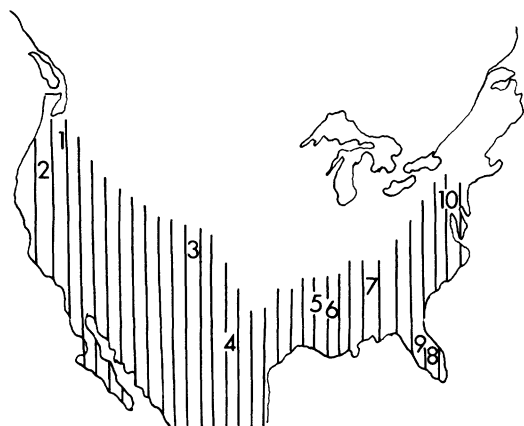


Fig. 1. Pleistocene distribution of *Felis onca*. 1—Whitman County, Washington (Simpson 1941b); 2—Fossil Lake, Oregon (Simpson 1941b); 3—Niobrara, Nebraska (Simpson 1941b); 4—Schulze Cave, Edwards County, Texas (Dalquest 1969); 5—Little Salt River Cave, Franklin County, Tennessee (McCardy 1951); 6—Craighead Caverns, Tennessee (Simpson 1941a); 7—Vero, Florida (Simpson 1941b); 8—Melbourne, Florida (Simpson 1941b); 9—Melbourne, Florida (Simpson 1941b); 10—Port Kennedy, Pennsylvania (Simpson 1941b).

Washington, and Fossil Lake, Oregon (Simpson 1941b:1-27). The Washington and Oregon skeletal remains were so fragmented that a positive identification could not be made, but Simpson felt they were representatives of *F. onca augusta*. The only other northern specimen of *F. onca* was a jaw attributed to Miocene deposits of Niobrara, Nebraska (Simpson 1941b:1-27). Simpson (1941b:1-27) reclassified deposits as Pleistocene in his review of North American Pleistocene felines.

Eastern and southern North American fossil discoveries of *F. onca* are more extensive. A questionable find was made at Port Kennedy, Pennsylvania, in a Pleistocene deposit (Simpson 1941b:1-27). Two finds, about 20 miles apart, have also been made at Vero and at Melbourne in eastern Florida, in the Pleistocene Melbourne stratum (Simpson 1941b:1-27).

In addition to the above, four cave finds have been made in southeastern North America. The first was made in Craighead Caverns, Tennessee (Simpson 1941a:1-12). The cave is composed of Paleozoic limestone with a red clay and sand mixture covering the floor. Most of a skeleton of *F. onca* was found in one part of the cave and feline pug marks were found in

another part of the cave, which were comparable to those of a living *F. onca*. Indian artifacts have been found at the cave entrance, but no direct relationship can be demonstrated. The second cave find was in Little Salt River Cave in Franklin County, Tennessee, located near the Alabama border (McCardy 1951:487-511). Both of the latter finds were subfossil, but thought to date in the Pleistocene. The fourth find, at Schulze Cave, Edwards County, Texas, is perhaps the most interesting (Dalquest and others 1969:205-276). The remains of *F. onca* and *Homo sapiens* were found in two layers of the cave. The more recent of the two layers, 7000-3800 B.P. (Dalquest and others 1969:206), contained the remains of six *H. sapiens* skulls, and the remains of one *F. onca*. The lower jaw of *F. onca* and *H. sapiens* teeth were found in the next layer, dated at 11,000-8000 B.P. (Dalquest and others 1969:206). Although some charcoal and one flint artifact were found, there is no definite evidence that the jaguars had been preyed upon by man. The human remains were mixed with those of the jaguar; however, they do not appear to have been purposely buried together.

*A.D. 500* (Fig. 2): Covarrubias (1954:257) includes two cat designs from unspecified Hopewell burial mounds in Ohio, which may be the first representation of *F. onca* in a cultural context in North America. The first design is a cat-bird-serpent composite engraved on a disk of human parietal bone. The spotted cat could be considered representative of *F. onca*. The second design is incised onto unspecified bone and is offered by Covarrubias (1954:257) as representative of an ocelot. However, the design might also be interpreted as representative of a jaguar.

*A.D. 1000-1700* (Fig. 2): Art work using cat motifs is most extensive in eastern North America (Holmes 1899; Fundaburk 1956:1-232). Most of these zoomorphic forms are so crude that classification is limited to the family level, yet among the many examples are some that might represent *F. onca*. Holmes (1899:124-125), in his study of Florida mortuary pottery from the Moore collection, includes two types of cat figurines (Holmes 1899, Figs. xcvi and xcvi). The larger examples, about 12 inches long, according to Holmes, are perforated to prevent cracking in

the baking process. These perforations may indeed have been necessary to prevent cracking, but they may represent spotting. A further examination of the figurines suggests sufficient differences that they may be representations of two different types of Felidae. The larger is possibly *F. onca*, due to its size and the orientation of perforations.

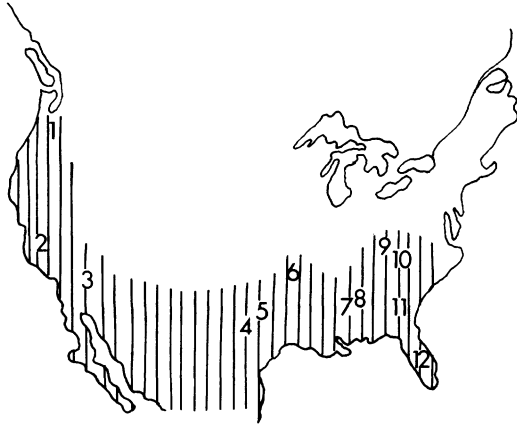


Fig. 2. Cultural distribution of *Felis onca* in North America. 1—Northwest Coast (Covarrubias 1954); 2—California Indians (Seton 1919); 3—Zuni-Coronado 1540 (Seton 1925); 4, 5—Commanche-Tale, Quivers (Cannonge 1958; Sage in Warren 1942); 6—Shell gorget, Benton County, Missouri (Wood 1961); 7, 8—Moundville, Alabama, A.D. 1400 (Fundaburk 1956); 9, 10—Hopewell burial mound Ohio, 500 B.C. (Covarrubias 1954); 11—Creek, Natchez tales (Swanton 1929); 12—Florida mortuary pottery, Moore collection (Holmes 1899).

Two examples included by Fundaburk (1956) from Moundville, Alabama, may also represent *F. onca*. The first is a crude effigy pipe (Fundaburk 1956:155) described as a feline representation. It is quite distinct from other cat pipes: the facial features are crudely similar to Olmec representations of the jaguar. The second possibility (Fundaburk 1956:78) is on a shell gorget. The motif is that of a kneeling man with animal features. The claws and circles on the body may indicate a representation of an anthropomorphic jaguar.

The most dramatic example of a jaguar as an art motif in North America is an engraved conch shell gorget found in Benton County, Missouri (Wood 1961:1-182). The gorget appeared in the fill around a skull in a burial mound centrally located among other mounds.

Wood describes it as follows: "The gorget, 104 mm wide and 98 mm high, has one large central hole and two smaller perforations drilled into one edge. The evenly-engraved lines depict a jaguar, only the exaggerated length of the body marring the realism of the figure. A three-lobed 'speech symbol' issues from the mouth" (Wood 1961:37). Although from an historic site, it is probable that this gorget is an heirloom. Furthermore, whether the shell was carved before or after it was traded to Missouri cannot be determined.

The motif again appears in Northwest Coast art (Covarrubias 1954:40). The double design flanks a human figure on two sides of a wooden spindle-whorl. It does not appear to be a design of an animal currently distributed in the area. Considering the artistic style of the area, the design is strikingly similar to the western Missouri find. The age of this example was not established, but it is probably historic.

*Historic Accounts* (Fig. 2): Ernest Thompson Seton (1929:13-14), a noted naturalist and popular writer, notes that Coronado reported in 1540 that the Cibola Zuni knew and used the jaguar. Cabot's 1544 map of North America has a drawing of *F. onca* spreading over the Pennsylvania and Ohio Valleys (Seton 1929:13-14; Simpson 1941b:1-27). Although an excellent representation, it is rather doubtful that he saw the animal, but he may have been shown a skin and told where it was to be found.

The jaguar may also occur in some myths and tales (Swanton 1929:21-22, 234-239; Cannonge 1958:93-94). There is a problem of interpretation of myths for zoological information because often a common name will be given while the animal distinctly demonstrates the behavioral characteristics of another. Such may be the situation with Creek, Natchez, and Comanche myths about a panther. There are behavioral differences between *F. concolor* (panther) and *F. onca* which are distinctive enough to allow the identification of one from the other. *F. onca* is known to have a particular fondness for water, which *F. concolor* does not. The jaguar's diet includes alligators, fish, and turtles, but they have not been reported as part of the diet of the panther (Hall and Kelson 1959:955; Walker 1964:1279). The Comanche tale is about two warriors coming upon a "panther" fighting an alligator (Cannonge 1958:93-94). The Creek and Natchez tales

associate the "panther" with water (Swanton 1929:21-22, 234-239). Swanton's (1929:21) Creek informant chose a picture of the leopard, an old world feline, as being the animal in the myth. To the untrained eye there would be no immediate physical difference between the jaguar and a leopard.

A.D. 1700-1960 (Fig. 3): The earliest known zoological work on the distribution of *F. onca* placed it among the fauna of western Virginia, which included part of the Ohio Valley (Jefferson 1799:246-260). Although descriptions in the original reports are not detailed, one of the three sightings was by a person who was familiar with *F. concolor*. He was certain that it was not that animal because the cat was much larger. *F. onca* is much larger than *F. concolor*. No other written reports of *F. onca* occurring in eastern North America have been made.

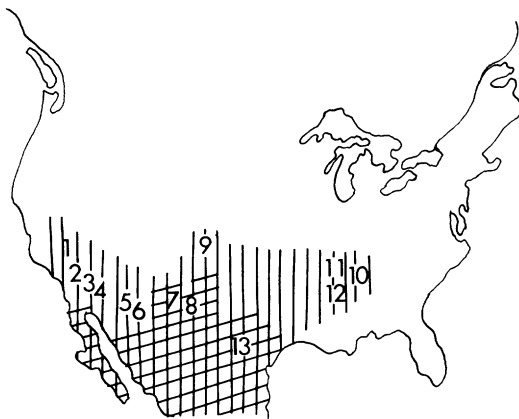


Fig. 3. Distribution of *Felis onca* 1700-1960 based upon zoological reports. 1-6—California (Seton 1919; Hall 1959); 7—Arizona (Lange 1960); 8—New Mexico (Mearns 1901; Hall 1959); 9—Colorado (Warren 1942); 10, 11, 12—Ohio Valley (Jefferson 1799); 13—Texas (Mearns 1901; Hall 1959).

Enough mention is made of *F. onca* by early travelers to California that it is considered part of the fauna prior to 1860 (Seton 1919:38-40; Hall and Kelson 1959:955). Seton (1919:38-40) recorded the finding of the only known North American active den and the use by California Indians of prey buried by jaguars. *F. onca* was reported by Sage in 1843 some 30 to 50 miles north of Long's Peak, Colorado (Warren 1942:307-308). Sage, quite familiar

with panthers and bobcats, identified the cat as being a "leopard." He further added that the "leopard," which was more frequently found in southern latitudes, was prized by the Comanches to make quivers. The Comanche ranged into the current jaguar range (Newcomb 1961:156-157). No other reports of *F. onca* in Colorado have been made.

Currently the jaguar, apparently in small, nonbreeding populations, can be found in three states—Arizona, New Mexico, and Texas (Mearns 1910:137-143; Lange 1960:96-101; Hall and Kelson 1959:955). Its range historically included the far eastern part of Texas, north to the Red River, and into northern New Mexico and northern Arizona. However, since the 1940s, *F. onca* has been limited to the southern portions of these states.

A summary of available information suggests the following. (1) During part of the Pleistocene *F. onca* occupied a range which extended further than its current range into North America. As a result, the first contact by man with the jaguar may have been in North America. (2) A large part of this distribution was apparently maintained until about A.D. 1700. (3) The use of *F. onca* representations in art, myths, and other aspects of North American culture may have been more extensive than previously thought. (4) There is a close relationship between artistic motifs employing *F. onca* and its actual range.

Careful comparative examination of cat bones from archaeological sites should result in more jaguar remains being discovered. Cat bones from archaeological sites could have been lumped together and presumed to be *F. concolor* (panther) or *Lynx rufus* (bobcat). This brief review of available zoogeographic information suggests that a closer examination of available faunal remains might more clearly reflect the relationship between cultural zoomorphic forms and the composition of animal fauna at specific points in time. Hoffstetter's (1950:3-52) comparison of *F. concolor* and *F. onca* should aid in identification.

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## A PRESERVATIVE COMPOUND FOR ARCHAEOLOGICAL MATERIALS

MARGARET KIMBALL BROWN

*A compound is described which has been used in the field for consolidation of bone, shell, stone, pottery, fabric, and so forth. It has also been used in the laboratory with satisfactory results. This preparation can be applied to damp materials in the ground and allows for the preservation of otherwise nonrecoverable items. The ease of preparation and application makes it useful without requiring special training. The compound is water soluble and, importantly, the treatment is reversible, so that if different treatment is desired in the future the compound can be removed.*

Most archaeologists are employed at institutions which can offer little advice or assistance in techniques of conservation and preservation. Even those with active museums rarely have access to personnel trained in conservation work or, if they are present, their training may be in areas such as painting restoration, which is of little relevance to archaeology. This article is aimed toward the archaeologist who has no trained conservation personnel available but who is faced with the problems of removing fragile materials from the ground and preserving them for later study. Depending on local conditions, items of this nature may include a

wide variety of materials ranging from poorly preserved bone and shell artifacts to porous and disintegrating stone objects and pottery. Crumbling skeletal remains are frequently encountered and, especially on historic sites, fabrics may provide additional problems.

Numerous types of preservatives are currently being used in the field, but most have definite drawbacks. A compound with an acetone base cannot be applied to damp items or a white film will be produced on the surface. Dampness in later storage will also produce this harmless but disfiguring white film. In addition, if good penetration is not achieved on the