

ARIZONA STATE MUSEUM
THE UNIVERSITY OF ARIZONA
TUCSON, AZ 85721

DATE: February 1, 2018
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CONSERVATION TECHNICAL REPORT

CAT. NO(s): A-13994ab,
A-13994-X-1, A-13994-X-2, A-13994-X-3, A-13994-X-4, A-13994-X-5

OBJECT: Flute
CULTURE: Basketmaker
PROVENIENCE: AZ E:8:1 (ASM)
Broken Flute Cave

DATES: 620-630 CE
STORAGE LOCATION: 110 Cab6:Drawer11

MEASUREMENTS:

	Flute A	Flute B
Length:	73.5 cm	72.0 cm
Diameter:	2.3	2.6 cm

PROBABLE MATERIALS: (VISUAL, MICROSCOPE, ANALYTICAL)

The feathers were identified c. 1959 by J.T. Marshall of the Department of Zoology at the University of Arizona. He found the feathers came from nine stellar jays, six red shafted flickers, one pinyon jay and three to four naped sapsuckers (Morris 1959:406). The wood was identified by the U.S. Department of Agriculture Forest Products Lab in Madison, also c. 1959 (Morris 1959:407).

Plants: Box elder maple (*Acer negundo*); Yucca sp; Corn cob (*Zea mays*)

Feathers: Red Shafted Flicker (*Colaptes cafer*); Piñon Jay (*Cyanocephalus cyanocephalus*); Stellar Jay (*Cyanocitta stelleri*); Red naped sapsucker (*Sphyrapicus nuchalis*)



Stellar Jay (*Cyanocitta stelleri*)



Piñon Jay (*Cyanocephalus cyanocephalus*)



Red naped sapsucker (*Sphyrapicus nuchalis*)



Red Shafted Flicker (*Colaptes cafer*)

- X-1: container of black feathers (Stellar Jay - *Cyanocitta stelleri*)
- X-2: two red feathers (flicker or sapsucker? *Colaptes cafer* or *Sphyrapicus nuchalis*)
- X-3: two black feathers (Stellar Jay - *Cyanocitta stelleri*)
- X-4: one blue feather Piñon Jay (*Cyanocephalus cyanocephalus*)
- X-5: eight very small red feathers (flicker *Colaptes cafer*)

FABRICATION TECHNOLOGY AND DESCRIPTION:

The flute is made in two parts. Both flutes are made of carved box elder maple and are hollowed out in the center. The exterior surfaces are smoothed and polished. Each flute has six holes bored in two sets of three down the top center. The proximal ends above the feathered section are slightly tapered. The flutes are joined with two sections of yucca ties. The photo in Morris's article shows two ties, one located below the cordage near the top and one between the 5th and 6th holes at the bottom. The hand drawn illustration of the flute made in 1960 shows the one tie located between the two sets of holes and the second tie is located below the second sets of holes near the bottom. The same illustration shows another tie of unknown material wrapped below the cordage section of the flutes near the top. The tie system is now missing. It may have been attached by ASM staff to hold flutes together. At the distal ends of both flutes small wads of shredded but otherwise unprocessed yucca fiber are stuffed inside, a few centimeters from the end. A section of corn cob is inserted into the proximal end of Flute A.

Description of feather bundles:

Flute A) Black crown feathers of Stellar jay are laid down against barrel of flute; strips of skin with dark feathers are laid down on the sides and underneath with red and gray flicker feathers on top of those. The resulting bundle is secured with multiple wrappings of yucca cordage around the feathers and the flute. The feathers cover approximately 90% of the flute barrel, with only a small section of wood visible on the verso.

Flute B) Black crown feathers of Stellar jay are laid down against barrel of flute; blue feathers laid on top of the black feathers at the top of the barrel; strips of skin with red feathers of both the sapsucker and flicker laid overlapping the bottom of the blue feathers. The resulting bundle is secured with multiple wrappings of yucca cordage in two sections, one at the base of the bundle and one at the midsection. These feathers cover approximately 50% of the flute barrel, covering the top half.

PIGMENT IDENTIFICATION STUDY

MUNSELL:

<i>COLOR</i>	<i>HUE</i>	<i>VALUE</i>	<i>CHROMA</i>
Black (Stellar Jay)	5R	3	1
Blue (Piñon Jay)	5PB	6	8
Red (Red Shafted Flicker)	7.5R	5	10
Red (Red naped sapsucker)	5R	4	10

CONDITION:

The wooden barrels of the two flutes are stable and intact. On Flute A there are vertical microfractures through the top three finger holes, approximately 4 mm long each. There is also a small chip (0.8 x 1.8 cm) missing from the wood near on the left side of the fifth hole and another small chip (1 cm x 4 mm) to the left of the sixth hole. There is use wear around all the holes on both flutes, as well as localized minor surface abrasion.

The feathers are brittle, worn and faded on both flutes A and B. The feathers on Flute B appear stable and seem to be secured in position under the cordage. The feathers on Flute A appear to have suffered losses, particularly on the left side. The longer black feathers are distorted and out of alignment there, some appearing to be loose and in danger of detaching. The gray and red feathers above the black feathers seem to have suffered some losses and appear to be out of alignment. They seem disheveled on the one side. The feathers on the underside are less faded and more stably attached under the cordage. The cordage is stable, but somewhat frayed at the ends. The yucca fiber and corn inserts inside the flute appear stable, though brittle.

PREVIOUS CONSERVATION:

In 1993 N. Odegaard and A. Kuklinski applied methyl cellulose paste and Japanese tissue to repair one of the yucca ties. Small dots of PVA-AYAF 20% in acetone were used to secure loose feathers on flute A. This treatment was in preparation for the Centennial Exhibit. In 1998 Audry Harrison documented condition in preparation for the ASM Sandals Exhibit, but no treatment was performed.

PREVENTIVE CONSERVATION:

Removed loose feathers numbered X-2 through X-5 that were housed in acidic paper envelopes and rehoused them in polyethylene bags with the envelopes stored in the heat -sealed section of the bags in order to retain the written information. These feathers were cataloged in 1960 at the same time as the flutes. The Flute will be rehoused in a custom-made rigid acid free board box with a lid modified with Mylar film, in order to see the flutes without removing the lid. The see-through lid is to not only restrict handling of the flutes, but to restrict the amount of air movement around the feathers.

ACCOMPANYING DOCUMENTATION

x PHOTOGRAPHS: Digital Detail images of feathers

January 31, 2018





REFERENCES:

Morris, E.A., 1959. Basketmaker Flutes from the Prayer Rock District, Arizona. *American Antiquity*, 24(4Part1), pp.406-411.

Munsell Color. 1976. Munsell Book of Color. Macbeth: Baltimore, Maryland.