

# BIRDS, BEASTS, AND BOTANICALS: ORGANIC BEADS AND PENDANTS FROM THE AMAZON BASIN

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*The people of the Amazon Basin have an incredible array of organic materials available to them, which they use to make beads and pendants. The Carnegie Museum of Natural History in Pittsburgh, Pennsylvania, has extensive recent collections from the Amazon Basin, with hundreds of necklaces, belts, aprons, and ear and arm ornaments which contain beads made from organic materials. These collections are used to illustrate a variety of the beads and their materials.*

## INTRODUCTION

The majority of beads and pendants used in the Amazon Basin today, other than those of introduced European materials, are organic in nature. The huge area of the Amazon Basin has a varied topography with different habitats, which are intimately known and used by their inhabitants (Fig. 1). Organic beads come from all the animal families, as well as from plants. Often the materials for beads come from an animal that was killed for food, and the collecting of beadmaking materials is incidental. Certain birds are often kept as pets and as providers of wing and tail feathers, which are plucked each time they grow in. Although much beadwork is worn strictly for ornamental purposes, some also has protective or ritual significance. The most common beaded items are necklaces, ear and upper arm ornaments, aprons and belts, and the occasional hair tube or bracelet.

When this paper was proposed to the now-late Pete Francis, Jr., in March of 2002, he asked that the plants and animals that provided the bead materials be identified to genus and species (Table 1). That request has been complied with as much as possible, and gathering that data comprised most of the research focus and a preponderance of the time. Pete also encouraged the author to interpret “bead” rather loosely so that some of the spectacular feathered items could be included. Even then much had to be left out, to the author’s great regret.

The Amazon Basin collection of the Carnegie Museum of Natural History (CMNH) has been accumulated over a period of more than one hundred years. The majority was

collected in Brazil specifically for the museum in the last 25 years. Three tribes in particular are particularly well represented: the Yanomamo of northwestern Brazil and southwestern Venezuela (Dr. Giovanni Saffirio, collector); the Kayapo of central Brazil (the late Dr. Darrell A. Posey); and the Kuikuru of the Xingu River valley in south central Brazil (Dr. Michael J. Heckenberger). Sixty-eight other tribes are represented in the collection as well. This figure represents less than half the tribes extant in the Amazon Basin today. All tribes listed in the following pages are Brazilian, except for the Shuar (Jivaro), who live in eastern Ecuador and Peru.

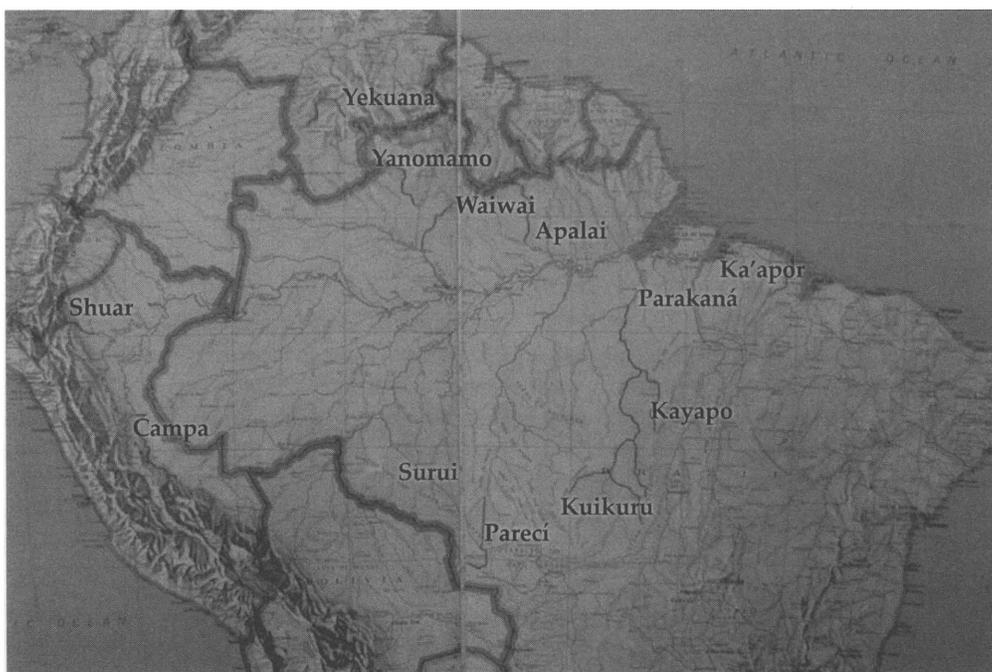
Given that there are hundreds of necklaces alone in the CMNH collection, it is not possible to include images of all the beads that are discussed here. Beads that are not illustrated have their identifying CMNH catalog number in parentheses as a reference for those who wish to pursue the subject further.

## ORGANIC BEAD SOURCES

### Botanicals

Most beaded items contain botanicals—seeds, nuts, and beans, and the occasional bamboo tube. It has been very difficult to identify the plant origins for many of the seeds and nuts, mostly because botanists do not consider them important in the classification and identification of the plants, and may collect in the wrong season for fruit (Bonnie Isaac 2004:pers. comm.). A couple of beads are found almost everywhere in the Amazon, and are readily recognizable: *Ormosia*, also known as the “bead” or “necklace” tree; and Job’s tears (Pl. IVB top). There are at least 50 species of ormosia, but the red-and-black variant is primarily seen in the CMNH collection.

The author has grown Job’s tears, and finds that the dried seed is readily converted into a bead by pulling the dried blossom from one end. The blossom is attached inside to the other end of the seed and removing it creates a hole for stringing. Although most often used just strung as



**Figure 1.** Northern South America showing the location of several tribes (drawing by K. Karklins).

necklaces, the seed can also be further modified for other uses. The Waiwai in northern Brazil cut them in half at the circumference and weave them into women's pubic aprons (CMNH #34544-156). The cut seed is bell-shaped, and the makers alternate the direction of the open end from row to row to keep the weaving square.

The Waiwai also pierce small, flat, brown seeds across their width and weave them into rectangular strips for men's belts. Some of the beads are dyed black or red-brown to create patterns of plants and birds (CMNH #35751-171). They use the same seed for women's belts, but in a completely different form and technique. The belts consist of two strands of seeds connecting two rectangular panels placed at the center, front and back. The panels are woven in an open, looped mesh, with an edging of small macaw feathers (CMNH #34856-59).

Of unknown species are small tubers often worn by Yanomamo men as protection against evil spells and spirits. The necklace (called *aroariki* by the Yanomamo) in Fig. 2 was made by Puuxim of Wakathautheri village, in the Catrimani River drainage (Couture-Brunette 1986:91). Another unidentifiable tuber (called *marasik*) is used to make a necklace worn by men to increase their sexual desirability (CMNH #32735-44-b). A man wearing these beads is said to be irresistible to women (Giovanni Saffirio 2001:pers. comm.). The necklace arrived at CMNH smeared with red body paint, so presumably it had been used.

The kernel in various palm fruits is carved into ring-shapes, flat discs, rectangular plaques, and animal-effigy beads (Fig. 3; Pl. IVB bottom). The Kayapo carve little turtles, the Arauete carve birds (CMNH #34988-63), and the Urubu-Ka'apor make things that look like feet (CMNH 34544-149). The star nut, or tucum, palm is a common tree that provides wood for building and weapons, leaves for thatching houses and weaving baskets and mats, an edible fruit, and the hard kernel for beads (Anderson 1978:39; Cavalcante 1991:218-220). The tucum palm kernel is used so much by the Kayapo in a particular pendant configuration that it has become emblematic of Kayapo identity. In fact, Kayapo dolls are made by affixing the pendant to a Brazil nut pod (Fig. 4). Only human beings (i.e., the Kayapo) wear this pendant, hence anything with this pendant represents a person (Darrell A. Posey 1993:pers. comm.).

### Fish

Fish are represented by the extensive use of vertebrae, which make exceptionally good beads—they are sturdy, need little shaping or drilling, and come in interesting forms. Unfortunately, vertebrae are particularly difficult to identify as to species, and often even as far as genus. Three scientists were consulted regarding the Pareci necklace in Fig. 5, and their best identification was "bony fish." One, who will remain unnamed to protect his reputation, commented that he hated fish vertebrae.

**Table 1. Species Providing Parts for Amazon Basin Organic Beads and Pendants.**

<p><b>Botanicals:</b>  <i>Astrocaryum aculeatum</i> Tucum palm  <i>Bixa orellana</i> Achiote or urucu  <i>Caryocar</i> sp. Piquia  <i>Cocos nucifera</i> L. Coconut Palm  <i>Coix lacryma-jobi</i> Job's tears  <i>Lagenaria</i> sp. Gourd  <i>Ormosia</i> sp. "Lady bug," "necklace," or "bead" tree</p> <p><b>Fish:</b>  <i>Arapaima gigas</i> Pirarucu or paiche</p> <p><b>Reptiles:</b>  <i>Geocheone</i> sp. (possibly <i>carbonaria</i>)  South American Red-footed Tortoise  <i>Melanosuchus niger</i> (Spix) Black Caiman</p> <p><b>Mollusks:</b>  <i>Anodontites</i> sp.  <i>Castalia ecarinata</i>  <i>Castalia stevensi</i> (H.B. Baker)  <i>Corona regalis</i> (Hupe) Crown Snail  <i>Doryssa</i> sp.  <i>Ecuadores</i> sp.  <i>Strophocheilus oblongus</i> (Mueller)</p> <p><b>Insects:</b>  <i>Chrysophora chrysochlora</i> (Latreille)  Rough Andean Jewel Beetle  <i>Euchroma gigantea</i> (Linnaeus)  Giant Metallic Wood-borer</p>	<p><b>Mammals:</b>  <i>Agouti paca</i> Paca  <i>Alouatta seniculus</i> Red Howler Monkey  <i>Aotus azarai</i> Azara's Night Monkey  <i>Blastocerus dichotomus</i> Marsh Deer  <i>Cabassous unicinctus unicinctus</i>  Naked-tailed Armadillo  <i>Cebus apella</i> Brown Capuchin  <i>Coendou prehensilis</i> Brazilian Porcupine  <i>Dasyypus novemcinctus</i> Nine-banded Armadillo  <i>Herpailurus haguaroundi</i> Jaguarundi  <i>Leopardus pardalis</i> Ocelot  <i>Myrmecophaga tridactyla</i> Giant Anteater  <i>Panthera onca</i> Jaguar  <i>Priodontes maximus</i> Giant Armadillo  <i>Pteronura braziliensis</i> Giant Otter  <i>Tapirus</i> sp. Tapir</p> <p><b>Birds:</b>  <i>Ara ararauna</i> Blue-and-yellow Macaw  <i>Ara</i> sp. Macaw (various)  <i>Chloroiphanes spize</i> Green Honeycreeper  <i>Cochlearius cochlearius</i> Boat-billed Heron  <i>Cotinga cayana</i> Spangled Cotinga  <i>Cotinga cotinga</i> Purple-breasted Cotinga  <i>Dacnis lineata</i> Black-faced Dacnis  <i>Pasrocolius</i> sp. Oropendola  <i>Pteroglossus</i> spp. various aracarís  <i>Ramphastos</i> spp. various toucans  <i>Ramphastos vitellius ariel</i> Channel-billed Toucan  <i>Tangara callophrys</i> Opal-crowned Tanager  <i>Tangara gyrola</i> Bay-headed Tanager  <i>Tangara schrankii</i> Green-and-gold Tanager  <i>Xipholena lamellipennis</i> White-tailed Cotinga</p>
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Easily recognized, on the other hand, are the scales of the Pirarucu or Paiche (*Arapaima gigas*) (Pl. IVB top). These fish can weigh over 1000 kg, and reach 3.0 m in length (James Albert 2004:pers. comm.). The necklace is Yanomamo, from northeastern Brazil, and also includes Job's tears and ormosia beads.

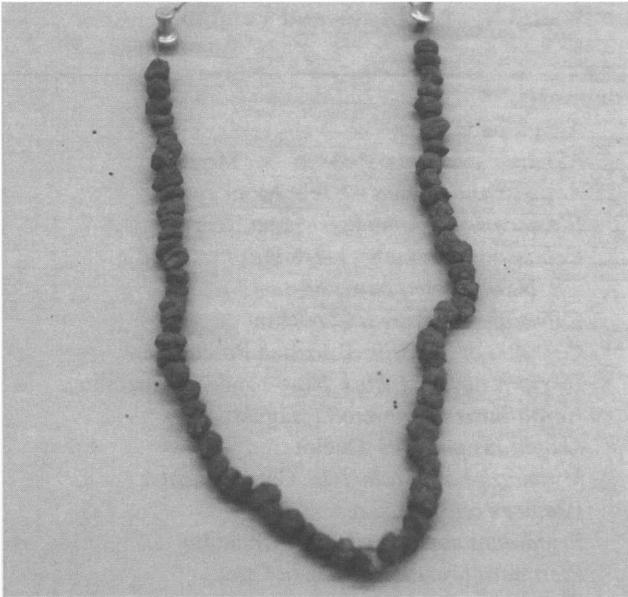
### Reptiles

Beads derived from reptiles are less common. Particularly interesting are necklaces made by the Aguaruna Shuar from the bony plates (osteoderms) found under the skin of the Black Caiman (Fig. 6). The only alteration was to drill the holes for stringing; the small patterned holes

occur naturally, and allowed blood vessels to pass through to feed the skin. Caiman, like a number of other vertebrates, contribute teeth for beads, as well as meat, to the Indians (Fig. 7). Teeth are usually arranged on a necklace in the order they appear in the mouth, with the incisors and canines in the center. Whole tortoise shells (CMNH #33339-310) and individual scutes from the carapace, in this case the South American Red-footed Tortoise, are also used (Pl. IVC top).

### Invertebrates

Certain beetles provide iridescent wing cases for both native and Neo-Brazilian jewelry. In the latter case, entire beetles are often used to make pins. Among the Shuar,



**Figure 2.** Yanomamo necklace. These tubers protect the wearer from evil spells and spirits (all photos by author).

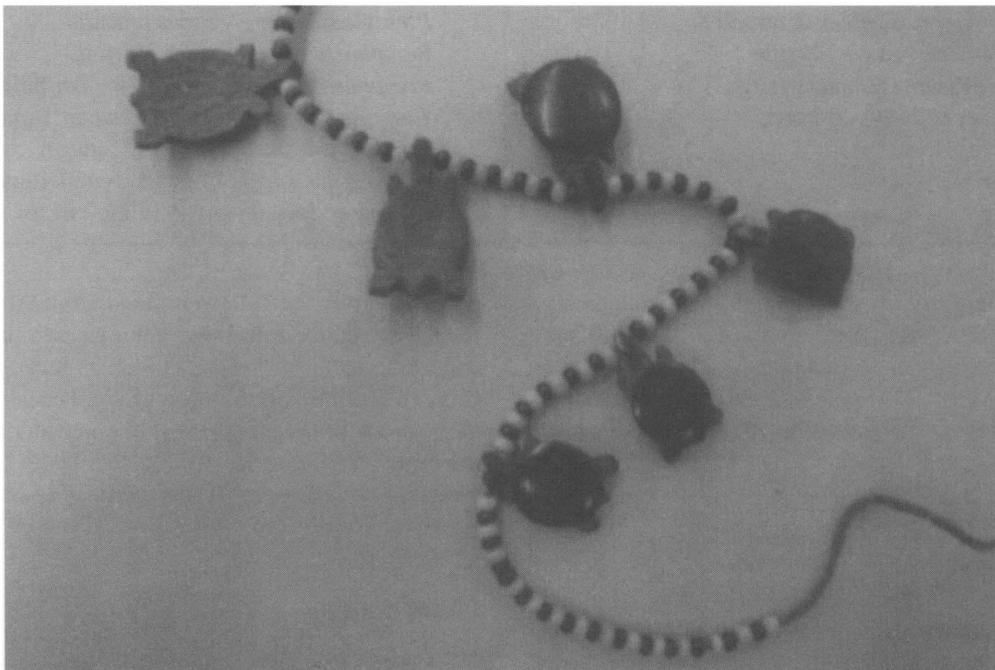
wing-case earrings are worn by men in dances (Roe 1995:94-95) (Pl. IVC bottom). The wing cases serve both as decoration and as rattles, sounding each time the wearer moves his head.

Mollusks, both aquatic and terrestrial, provide another source of material. Land and tree snails in South America

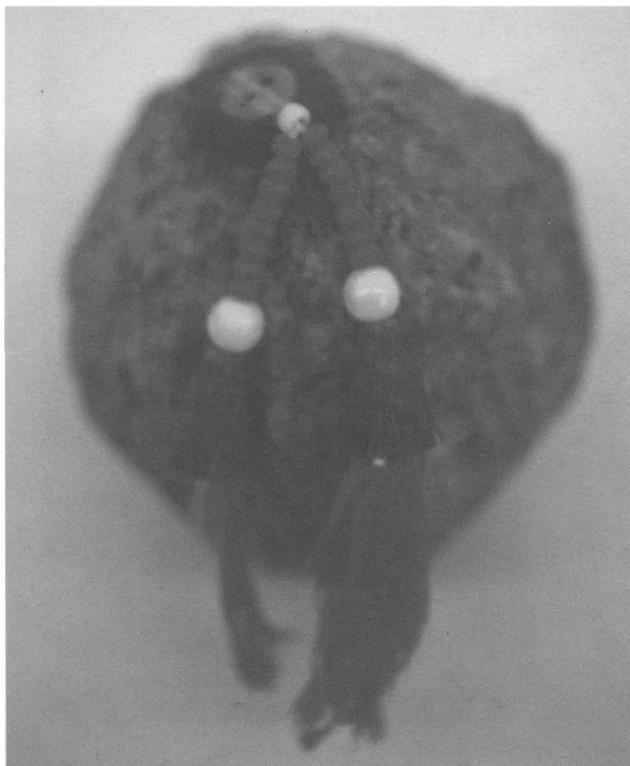
are often large and colorful, and the uncommon ones may be traded for hundreds of miles. The owner of the Piraha necklace in Pl. IVB (bottom) was very reluctant to part with it, because of the difficulty in obtaining the snail shell, and the other “exotic” trade goods—the plastic bead and clear rubber tubing (Dan Everett 1991). There are also cat and monkey teeth, and palm-kernel rings on the necklace.

Yanomamo women pierce small mussels in the hinge area and hang them, along with toucan feathers, glass beads, and *tirimoku* seeds, at both hips of their aprons (CMNH #32735-298) (Couture-Brunette 1986:69, Table 1). The Kayapo also use a whole mussel shell, but pierce both long edges and hang tucum palm pendants from the lower edge (CMNH #32689-260) as part of a necklace.

Besides being used whole, shells are also cut into shapes, usually very simple ones. Kayapo men make the stiff *ngapokredje* (mussel-shell necklace) to be worn daily by male children and by men of particular age classes (Pl. VA). The color of the string pendants on the back indicates the level of the wearer’s ritual privilege (Verswijver 1992:143). The Kuikuru cut tree-snail shells into similar shapes, only pierced and strung at both ends, and make a more flexible, almost sinuous, necklace (CMNH #35751-96). The Rikbaktsa notch the edges of mussel shells to make fish shapes, and hang them on the ends of long pendant strings of seeds and macaw feathers on men’s back ornaments (CMNH #34544-1) (Roe 1995:42-43, Fig. 65).



**Figure 3.** Kuikuru necklace with carved palm-kernel turtles. Glass seed beads are becoming more available in the area, although it is still a two-week boat trip to the nearest landing strip.



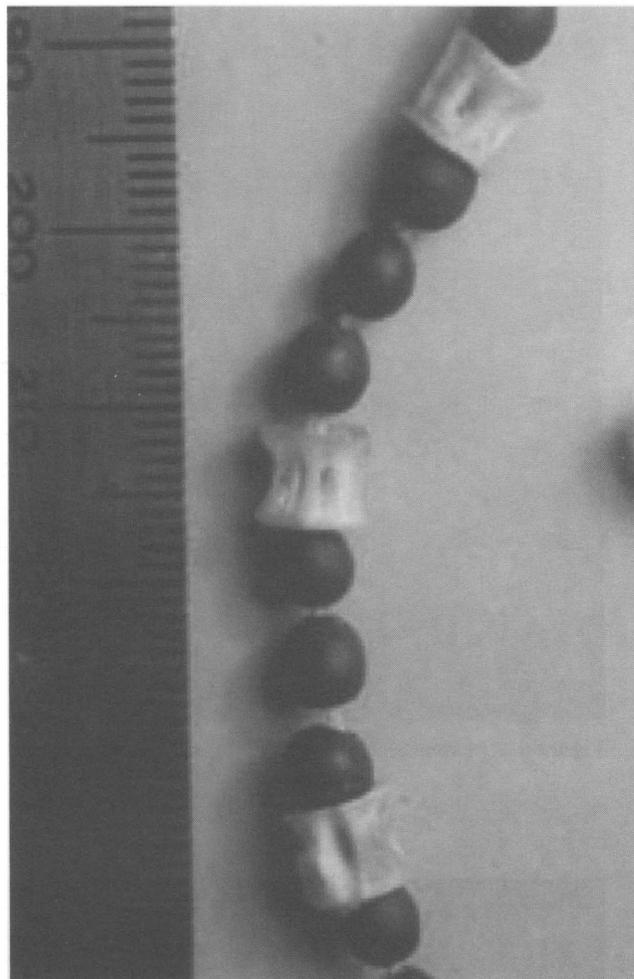
**Figure 4.** Kayapo doll with pendants of glass beads, tucum palm fruit kernels, and macaw feathers. Smooth *inaja* palm nuts are also made into dolls by applying body paint in intricate patterns.

### Mammals

When the average person thinks of beads made by “primitive” people, they often imagine necklaces made of bones and large predator teeth. Cut bone tubes and plates are common, but with no remaining distinguishing features, they cannot even be identified as to animal type, let alone genus or species. The Campa of eastern Peru sew carved bone plaques along one edge of their woven cotton baby carriers; the plaques give the baby something to play with while the mother is busy (CMNH #35068-1).

Teeth are one of the most commonly used mammal materials, but are often small and come from herbivores. The teeth of a variety of different monkeys are used, as well as the Paca (a large rodent) and the Giant Otter (CMNH #450-12). Among the Kayapo, the type of monkey teeth used indicates the person’s level of ritual privilege (Verswijver 1992:142-143). When predator teeth are used, they are not necessarily in impressive clusters of large teeth, but often as a single pendant in the center of a necklace of simple round black seeds (CMNH #34544-104).

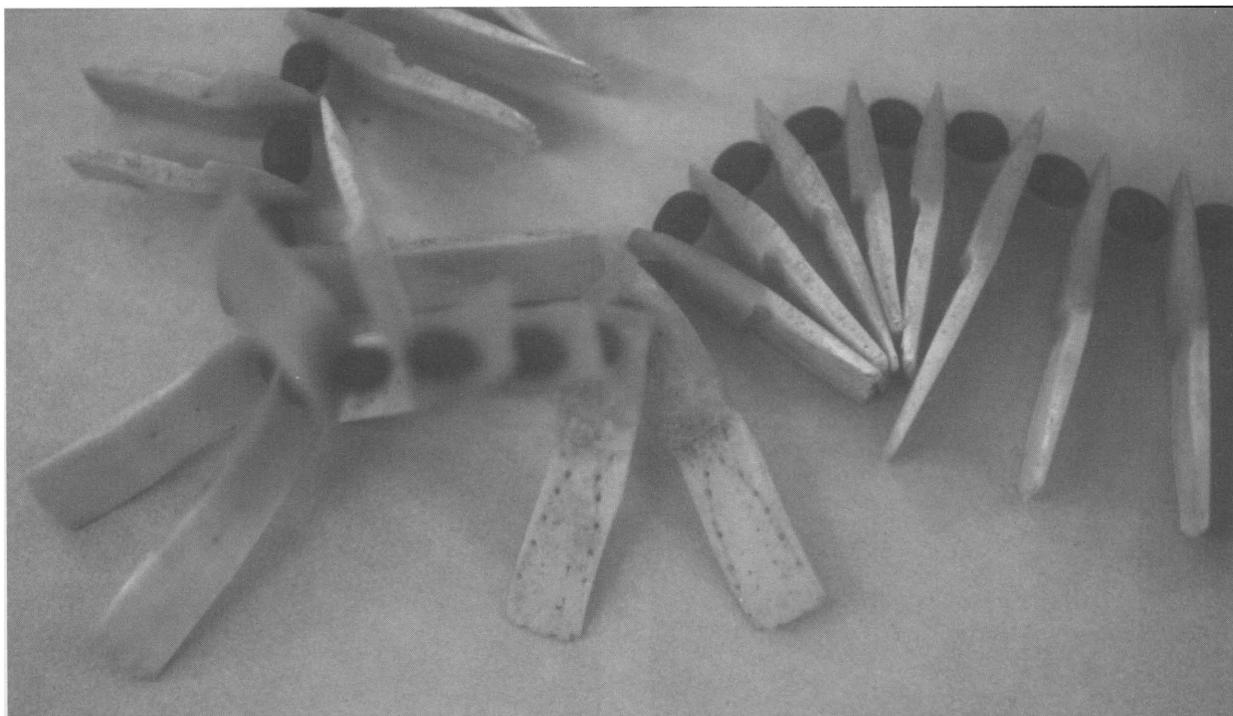
One of the earliest pieces from the Amazon collection came from an explorer in the upper reaches of the river in 1897. The bracelet, cut from the wrist of a child, has



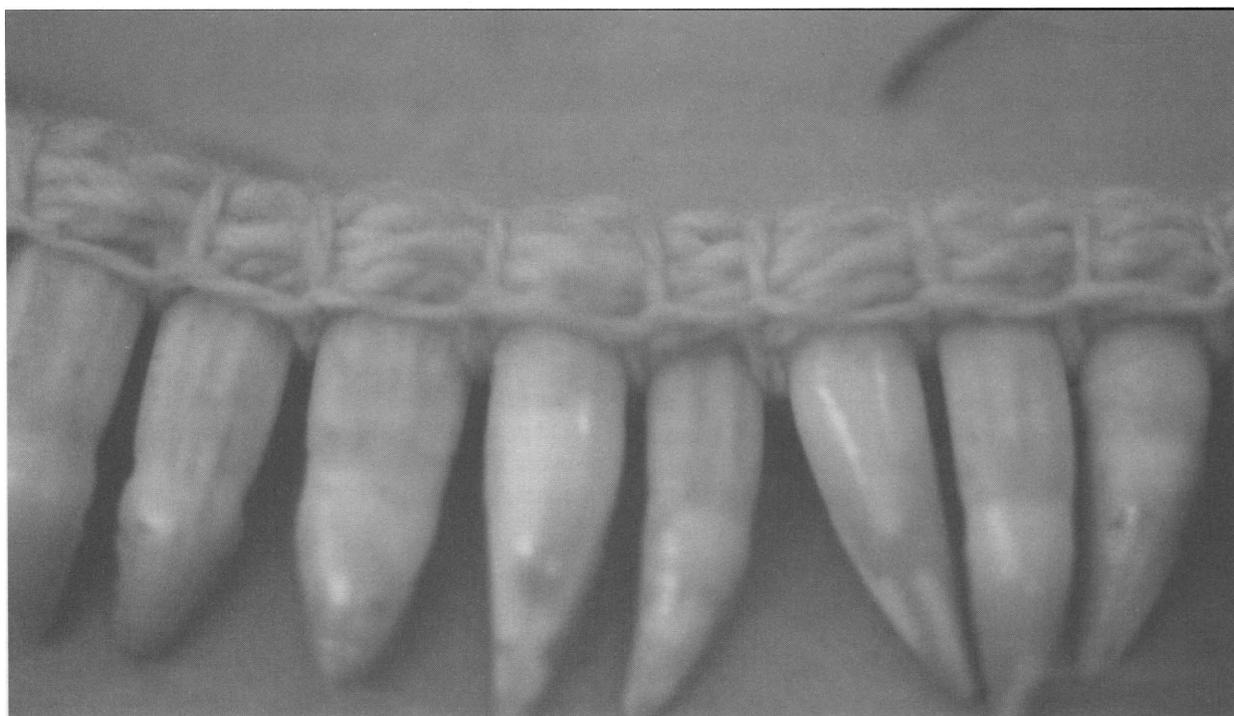
**Figure 5.** Pareci necklace with unidentifiable fish vertebrae and black seeds (the scale is in millimeters).

Azara’s Night Monkey teeth, ground flat and sewn to a native cotton woven strip (Kerbey 1897) (Fig. 8). The same collector also acquired a necklace containing the incisors and canine teeth of five jaguars (CMNH #450-11). In the days before the introduction of firearms, a man who killed that many dangerous cats with a spear or bow and arrows would proudly wear the evidence of his bravery and hunting prowess. Even with modern weapons, it would still be a feat of courage and skill.

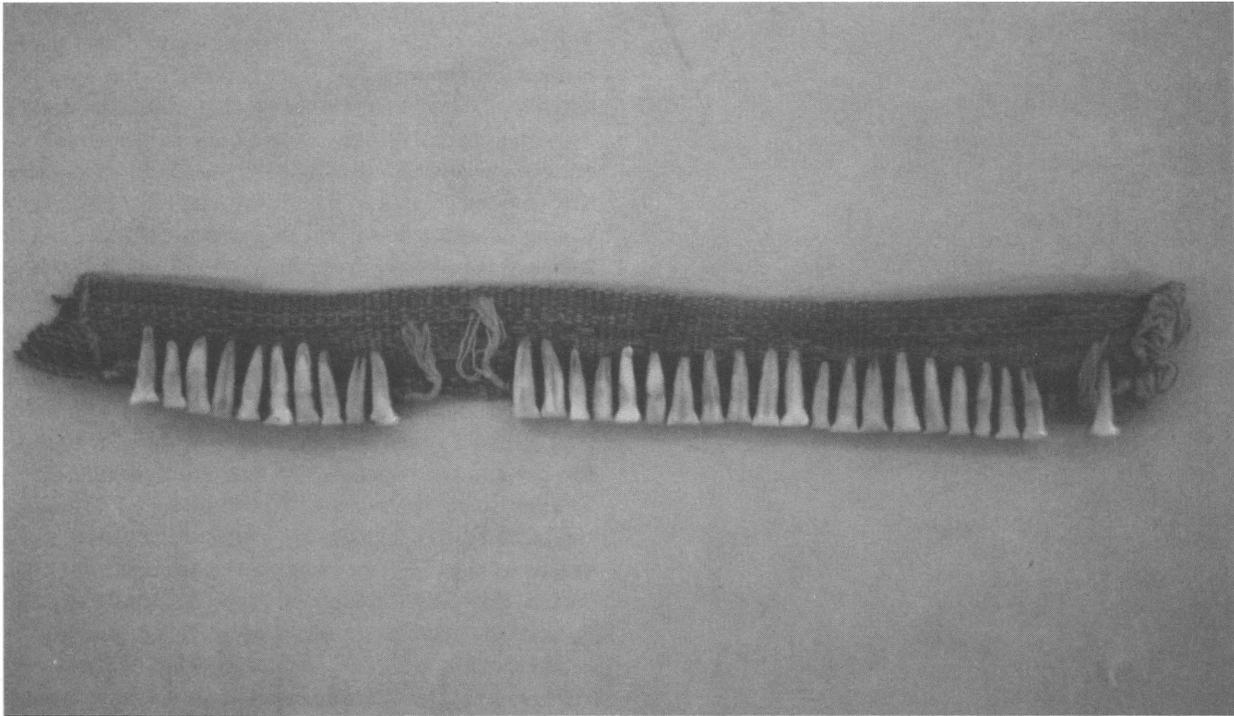
Claws are also used, but there are none in the CMNH collection from large cats. This might be a result of the Endangered Species Act preventing them from coming to the museum, or it might be a choice of the native beadmakers. Most common are the front claws of the Giant Armadillo (Pl. VB) and Giant Anteater. The tucum palm kernel pendants indicate their Kayapo origin. Hooves are also used to make cap-like beads—the necklace in Fig. 9 with juvenile Marsh Deer hooves, coupled with wing feathers of the Blue-and-



**Figure 6.** Aguaruna Shuar necklace with Black Caiman osteoderms and the ubiquitous, unidentified black seeds.



**Figure 7.** Close-up of Black Caiman teeth. They have a lens-shaped cross-section and sharp edges. The bases are pierced and strung before being lashed among strands of handspun native cotton.



**Figure 8.** Child's bracelet of Azara's Night Monkey teeth. Among some groups, such bracelets are worn until outgrown, then replaced with larger ones. The old bands are saved as a record of the child's growth.

yellow Macaw, was purchased from the Karaja tribe. In another necklace, the Shuar used the split hooves from three legs of a Tapir, as well as bone tubes, a rodent tooth, and the ear bones (petrosals) of a Paca (Fig. 10; Pl. VC).

Less frequently encountered are jawbones. Easily identified is the mandible of the Giant Anteater (Fig. 11). Although it has no teeth, it does serve to keep the anteater's long snout from collapsing. Despite the lack of tucum palm kernels, the pendants are readily recognizable as made by the Kayapo. The Waiwai cut the lower jaw of a Jaguar behind the first bicuspids to use it as a pendant at the center of a seed necklace. They put red and black feathers on either side of the jaw, with one of the upper fangs at one side, but no tooth on the other side (CMNH #34856-57). One wonders whether the contributing jaguar had lost a fang, or if not, what happened to that other impressive tooth?

A rather uncommon item is the tail tip of the Nine-banded Armadillo, used in a simple necklace called *opoxina* by the Yanomamo (Fig. 12). Because the necklace is made from animal parts, it is worn only by men (Couture-Brunette 1986:74).

Porcupines are not usually associated in the average person's mind with South America, but there are three species of prehensile-tailed porcupines in Brazil alone. The Kayapo use the quills of the Brazilian Porcupine in necklaces,

with the sharp tips cut off (Pl. VD). Porcupine quills were also used by the Bororo to create composite beads (Pl. VIA top). A bamboo tube forms the bead foundation, and the porcupine quills are lashed on with native cotton coated with blackened beeswax. Alternating on the same necklace are beads made of a bamboo wrapped with palm leaf strips and waxed cotton. The alternate leaf strip is dyed orange, probably with *urucu* seeds (*Bixa orellana*).

### Birds

Birds provide a major portion of the ornamentation in the Amazon Basin. While most of the spectacular featherwork does not qualify as beadwork, some of it does. Other bird parts are used as well.

The Aguaruna Shuar make a necklace with two strands. One strand has tubes cut from the bones, and the other stripped feather shafts, all from unidentified birds (Fig. 13). Once cut, identifying the species from which a bone came is usually impossible. In one instance, it is reasonably sure that the bones are cut bird ulnas (Pl. VIA). The curve and roundness of the bones had the author convinced that they might be snake ribs, but consultation with a herpetologist and an ornithologist indicated otherwise. The only snake big enough to have that gentle a curve would be a very



**Figure 9.** Karaja necklace strung with small, unidentifiable white seeds. The juvenile Marsh Deer hooves cap Blue-and-yellow Macaw wing feathers. The feathers are blue on the upper surface, and yellow on the underside.

large anaconda, and the bones would then be much more robust. Bird ribs are flat, and these bones correspond much better to the ulna. Since there are only two ulnas per bird, the necklace represents about 35 individuals (Steven Rogers and Robin Panza 2004:pers. comm.). The Urubu-Ka'apor, who created the necklace, make extensive use of bird parts, especially feathers, in their ornamentation.

Instantly recognizable to the trained eye, the bill of the Boat-billed Heron has been used by the Kayapo as the main feature of a necklace pendant (Pl. VIB top). The opaque white-glass beads were an exotic trade good when the necklace was made in the mid-1980s, a time when a trip into their area necessitated a week or more in a boat. Air travel came to the region in the last decade, and foreign goods are now more readily available.

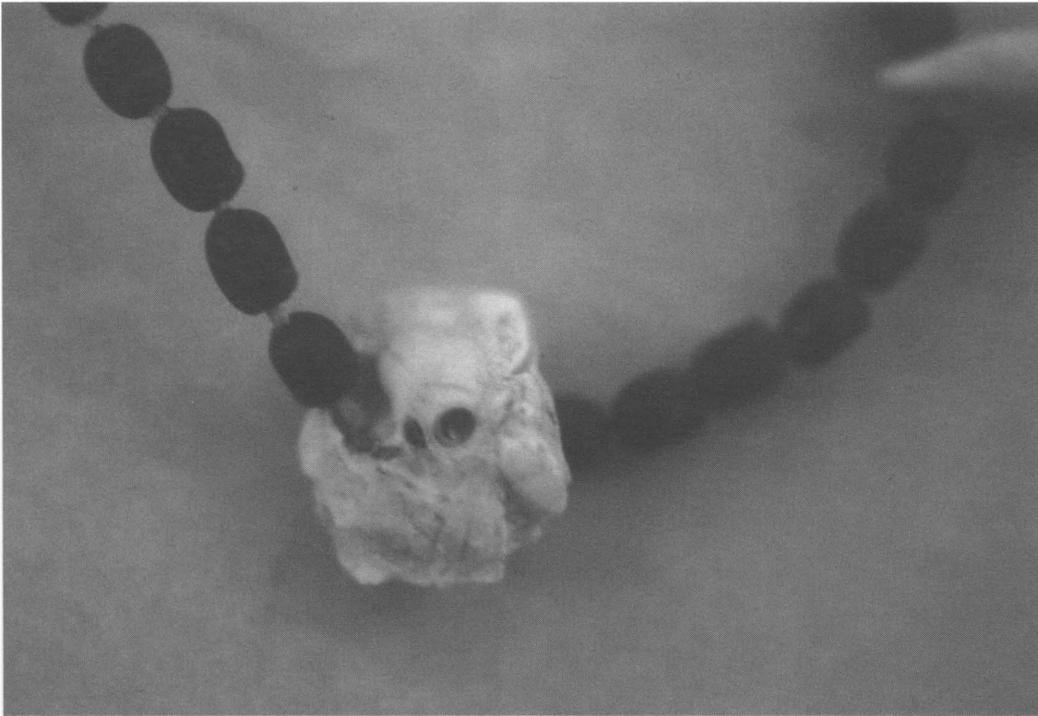
As well as using selected bits of the bird, whole birds are used as well. A 19th-century necklace, one of the oldest artifacts in the Amazon Basin collection, has five pairs of small birds tied to multiple strands of black seeds (Fig. 14). The Oiampi still use entire birds as pendants on their *akaneta* headbands (Braun 1995:14-15)(Pl. VIB bottom). The septum between the nostrils of the Plum-throated Cotinga is pierced and tied to a cotton cord, to hang down a man's back from his headband of toucan feathers. Other species of cotinga are used for headband pendants as well.

The use of feathers is only lightly touched on here, but is typified in the Urubu-Ka'apor *tukaniwar* necklace illustrated in Pl. VIC. It represents at least four different bird species. A red macaw feather forms the backing of the pendant, to which breast feathers from the Spangled Cotinga, wing feathers of the White-tailed Cotinga, and red macaw body feathers are attached with plant sap. The yellow-orange feathers on the neck cord come from toucan breasts, probably the Channel-billed Toucan. The necklace is worn by women during name-giving ceremonies, and is made with only one smaller pendant at the top (Roe 1995:66-67). The men have a different version for the same ceremony, using longer feathers and a Harpy Eagle bone pendant (CMNH #35655-19). Among many tribes, birds and their feathers have considerable significance, indicating social and cultural affiliations, and degree of ritual privilege (Verswijver 1992:49-50, 65-66).

The ultimate "bead" in this collection is the composite pendant on an Urubu-Ka'apor arm ornament (Fig. 15). Long, red macaw tail feathers are lashed to strips of split bamboo, and inserted behind a tight band on a man's upper arm. One feather in perhaps 10-20 has a pendant tied to its end (Pl. VID). The pendant starts at the top with a thin bamboo tube covered with black monkey fur. Short red and blue macaw feathers and longer trimmed yellow and black feathers are lashed to the top. The yellow feathers are from an oropendola species, but there are a number of possibilities for the black feathers. Below the tube is a triangular bark plaque covered with purple feathers, probably Purple-breasted Cotinga. A pair of split cane hoops hang from handspun native cotton, and below them depend the pierced wing cases of Giant Metallic Wood-borers. The whole affair bobs and rustles as the man dances. Truly a wonderful creation.

## CONCLUSION

Humans throughout the world spend a considerable amount of time creating means of adorning their persons, to make themselves beautiful, and to indicate their social and religious status. The people of the Amazon Basin are



**Figure 10.** Close-up of Paca petrosal. Minimal drilling is required for stringing; all other features are natural.

no exception. The vast majority of the sources for their beads and pendants are organic—plants, fish, reptiles, shells, insects, mammals, and birds. Some beads are highly modified forms, barely recognizable as to origin, while others are hardly altered. Although these tribal peoples are not working in the more permanent or “precious” materials of metal, stone, or glass, their beads and pendants are as beautiful and important as those of the broader world.

#### ACKNOWLEDGEMENTS

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Environmental Archaeology Laboratory, Florida Museum of Natural History; John R. Wible, Section of Mammals, Carnegie Museum of Natural History.

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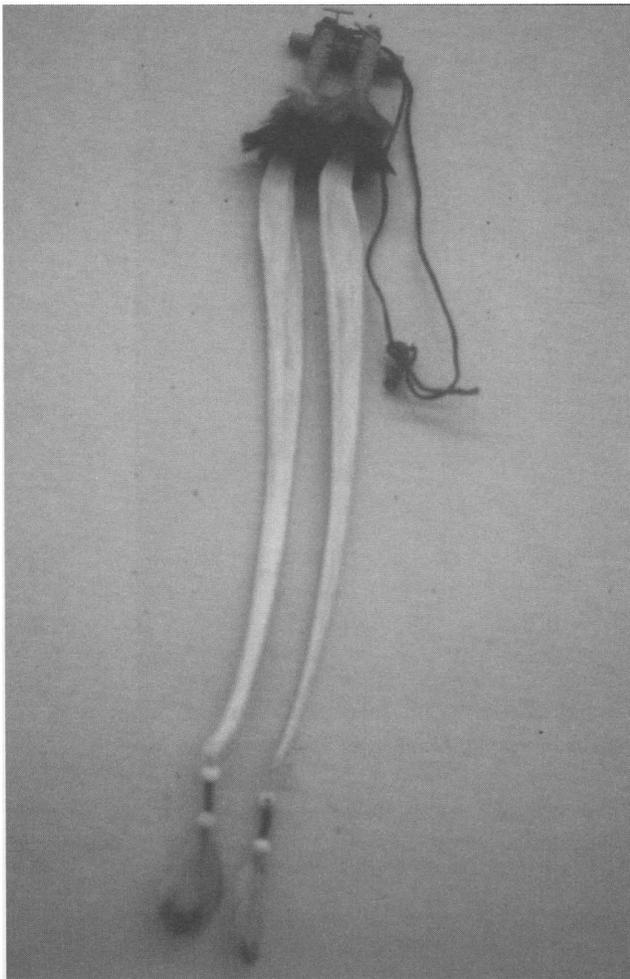
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**Figure 11.** Kayapo neck ornament of the mandible of a Giant Anteater. The tops are lashed to a bamboo crossbar, and wrapped with commercial pink cotton cord. The upper feathers are red and black, probably macaw and toucan, respectively. The tip pendants are white and blue glass beads and macaw feathers.

**Kerbey, J. Orton**

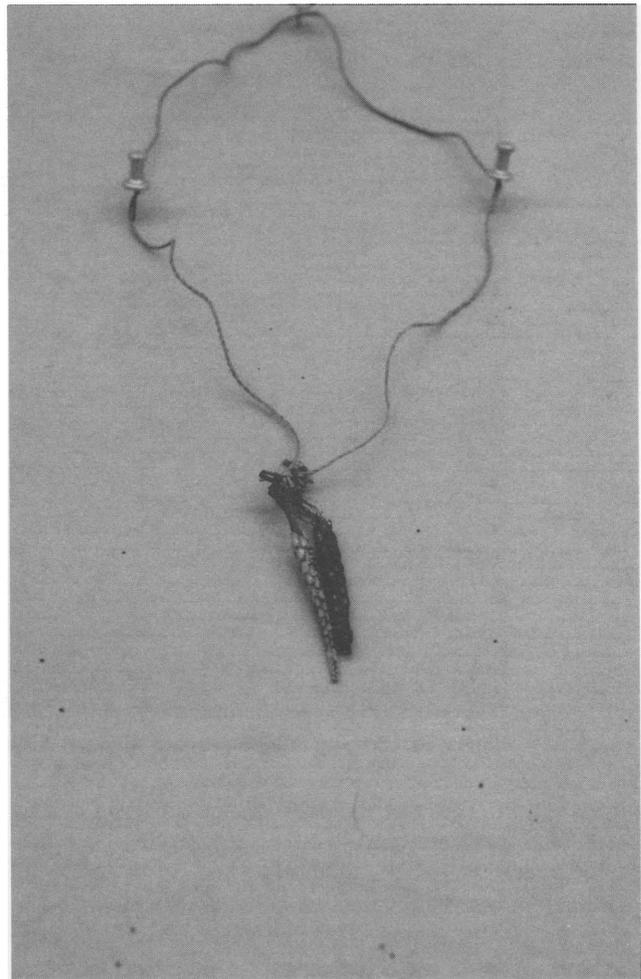
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**Figure 12.** *Opoxina* necklace from the Yanomamo with armadillo tail tips. Only men may wear parts of game animals. Women may wear feathers, which can come from pet birds as well as hunted ones.

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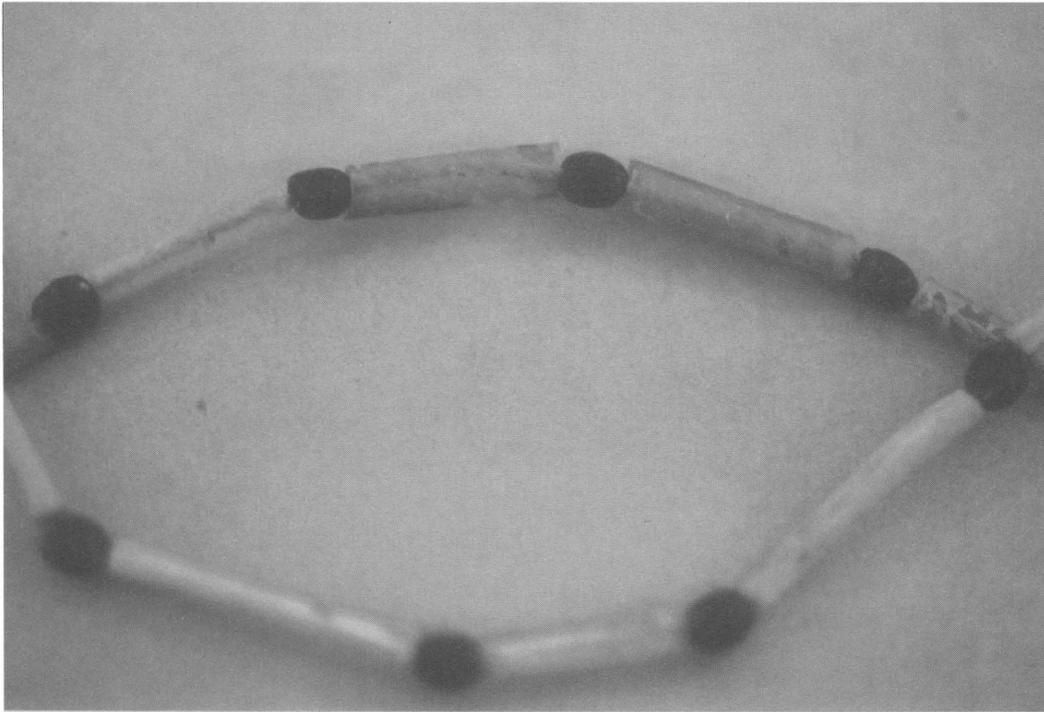
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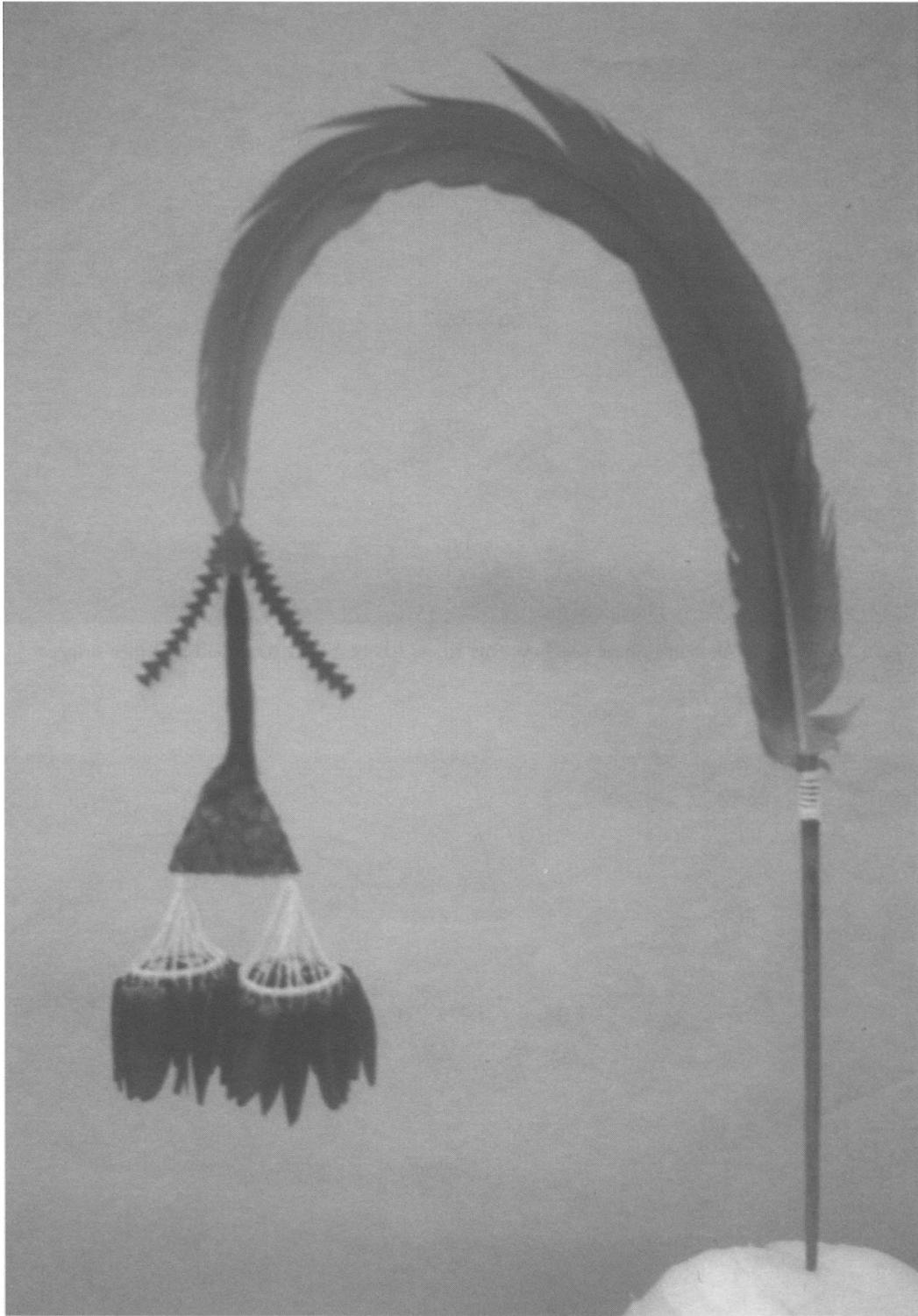
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**Figure 13.** Detail of Aguaruna Shuar necklace. One strand has bird bone tubes and the other stripped feather shafts.



**Figure 14.** Campa(?) necklace of multiple strands of unidentifiable black seeds and whole birds. There are three species of tanager, a dacnis, and a honeycreeper tied through the septum of the upper beak, in pairs. Several have become detached at the neck.



**Figure 15.** Urubu-Ka'apor man's arm ornament. Only men may use the larger feathers from the wings and tail.