

## TECHNICAL NOTE

John W. Verano,<sup>1</sup> Ph.D.

# Mummified Trophy Heads from Peru: Diagnostic Features and Medicolegal Significance\*

**ABSTRACT:** Several forms of mummified human trophy heads were produced by prehistoric and historic native groups in South America. This paper describes the diagnostic features of trophy heads produced by the Nasca culture of ancient Peru. A growing interest in these mummified heads among collectors of Pre-Columbian art and antiquities has led to their illegal exportation from Peru, in violation of national and international antiquities laws. Requests from the Peruvian government to protect its cultural patrimony led the United States in 1997 to declare these heads as items subject to U.S. import restriction, along with six other categories of human remains. Despite such restrictions, Nasca trophy heads continue to reach private collectors outside of Peru and thus may be encountered by local, state, or federal law enforcement officials unfamiliar with their characteristic features and origin. The objective of this paper is to describe the features that allow Nasca trophy heads to be identified and distinguished from other archaeological and forensic specimens that may be submitted to a forensic anthropologist for identification.

**KEYWORDS:** forensic science, forensic anthropology, human identification, trophy skulls, shrunken heads, cultural property, Peru

Trophy skulls brought home by U.S. soldiers following World War II and the Vietnam conflict have occasionally been encountered by law enforcement personnel and submitted to forensic anthropologists for identification (1–3). The principal issues in these cases are the medicolegal significance of the remains and the circumstances under which they were discovered. Historically, the practice of collecting skulls or other human remains from victims of armed conflict is widespread across time and space and not limited to recent wars (4–6). Human trophies of diverse cultural and geographic origins can be found in museums as well as private collections worldwide. Some of the best-known examples of trophies collected by New World cultures are human scalps and shrunken heads (7–10). Less widely known are mummified trophy heads produced by two South American groups, the historic Mundurucú of tropical Brazil and the prehistoric Nasca of southern coastal Peru (11). Unlike Jívaro shrunken heads, these are full-size mummified human heads with desiccated skin and hair overlying the skull. Mundurucú trophy heads are extremely rare, and only a few examples have been described and published (12). Nasca trophy heads are more numerous and are well known to specialists in South American prehistory and physical anthropology (13,14). More importantly, Nasca trophy heads continue to be discovered—both

by archaeologists and by grave robbers (15,16)—and in some cases have been exported from Peru for sale to antiquities collectors despite Peruvian laws that prohibit the unlicensed export of antiquities.

This article first considers the medicolegal significance of Nasca trophy heads, outlining recent international agreements and import restrictions that attempt to control the illegal trafficking of these and other ancient human remains. It then describes the diagnostic features of Nasca trophy heads that allow them to be specifically identified. Finally, Nasca trophy heads are situated within the larger context of recent trends in the collection and sale of human remains.

### Medicolegal Significance of Nasca Trophy Heads

On June 9, 1997, the United States and the Republic of Peru signed a Memorandum of Understanding that imposes import restrictions on specific categories of Pre-Columbian archaeological materials and Colonial ethnological material, pursuant to the provisions of the Convention on Cultural Property Implementation Act (Public Law 97-446, 19 U.S. C. 2601 et seq.) (17). The Memorandum of Understanding includes a designated list of archaeological and ethnological material that may not be imported into the United States unless accompanied by an export certificate issued by the Government of Peru. Although previous agreements, most notably the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (18), have been adopted by various countries to control international antiquities trade, the 1997 Memorandum of Understanding between the United States and Peru goes further in listing specific categories of human remains as subject to import restriction. The categories of remains listed under

<sup>1</sup> Department of Anthropology, Tulane University, 1021 Audubon Street, New Orleans, LA.

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Section VI of the Designated List include: “Mummified Human Remains,” “Deformed Human Skulls,” “Skulls Displaying Trepanation,” “Pre-Columbian Trophy Heads,” “Shrunken Trophy Heads from the Amazon,” “Tattoos,” and “False Shrunken Heads.” The list, along with photographs of representative specimens, can be found on the U.S. State Department International Cultural Property Protection Web Site (18). The category “Pre-Columbian Trophy Heads” refers specifically to Nasca mummified trophy heads, which are described as follows on the web site:

Trophy heads can be identified by the hole made in the forehead to accommodate a carrying cord. When the skin is intact, the eyes and the mouth are held shut with cactus thorns. Finally, the occiput is missing since that is how the brain was removed when the trophy head was prepared (18).

The 1997 Memorandum of Understanding grew out of an increasing concern among Peruvian museum and customs officials over the illegal exportation of ancient human remains from archaeological sites in Peru, despite the fact that as cultural property their export was prohibited by the 1970 UNESCO Convention. A collection of Nasca trophy heads bound for the international art market was intercepted and confiscated by customs officials at Lima’s Jorge Chavez International Airport in the 1980s (19). Other Nasca trophy heads are known to be in private collections in the United States and elsewhere, as indicated by collectors’ inquiries to museums describing specimens and requesting information on them. It is likely, given the continuing problem of the illegal exportation of cultural patrimony from countries like Peru, that U.S. customs officers and other law enforcement personnel may encounter Nasca trophy heads and have the need to properly identify them. Diagnostic features described below should make such identification relatively straightforward.

### Diagnostic Features of Nasca Trophy Heads

Nasca trophy heads can be recognized by the presence of two principal features: (1) damage to the base of the skull, which can vary from slight enlargement of the foramen magnum to the complete removal of the base and posterior portion of the skull, and (2) a perforation through the frontal bone at or near the midline (Fig. 1). These two features are important because they are recognizable even in fragmentary or poorly preserved specimens.

In Nasca trophy heads with preserved skin and hair, other features such as cactus spines through the lips and a carrying cord emerging from the perforation in the frontal bone are typically found. These heads were intentionally mummified in order to preserve the skin, scalp, and hair, and well-preserved examples are quite life-like in appearance (Fig. 2). The specific means by which the heads were prepared is unknown, since the ancient Nasca (c. 200 B.C.–A.D. 600) left no written record, but the general steps involved can be reconstructed based on a physical examination of numerous specimens. The head was first separated from the body by severing it at the neck, and the remaining cervical vertebrae, as well as soft tissue structures of upper neck and the base of the skull (muscles, throat structures, the tongue), were removed. The base of the skull was broken open and the brain and supporting membranes extracted through the opening. A hole was then punched or cut through the frontal bone in the approximate center of the forehead for the attachment of a suspensory cord. Typically the lips were pinned shut with two cactus spines, and occasionally the eyelids were pinned shut as well. The temporalis and masseter muscles frequently were dissected away and the lower jaw disarticulated by cutting through the temporomandibular joint capsule. The jaw was then rearticulated and tied to the zygomatic arches with cloth strips to retain it in proper articulation with the mouth closed (11,16). Wads of textile or raw cotton were commonly stuffed in the cheeks



FIG. 1—Skeletonized Nasca trophy head (frontal and basal view) showing the diagnostic features of a perforation through the frontal and damage to the base of the skull. From Cerro Carapo, Palpa, Rio Grande de Nasca.



FIG. 2—Well-preserved Nasca trophy head with preservation of skin, hair, and suspensory cord. Museo Nacional de Antropología, Arqueología, y Historia, Lima.



FIG. 3—Nasca trophy head showing spine through the lips and textile used to fill orbits and tie mandible to cranium (visible around right zygomatic arch). Museo Nacional de Antropología, Arqueología, y Historia, Lima.

and eye sockets, presumably to maintain a full and life-like appearance of the face (Fig. 3).

A study by the author of 85 Nasca trophy heads housed in various museums in the United States and Peru (11) and a review of other published descriptions of trophy heads (16,20,21) has confirmed this general pattern, as well as revealing some minor variations. For example, the degree of damage to the base of the skull is variable, ranging from minor enlargement of the foramen magnum to removal of most of the skull base and posterior portion of the skull vault. The suspensory cord can be constructed of a variety of

materials, including twined vegetable fiber, cotton textile, or hair cut from the victim's head. The cord may be very simple, or it may have tassels or other objects attached to it. In two cases I have examined, a desiccated tongue (presumably that of the victim) was tied to the suspensory cord (Fig. 4).

While the extremely arid environment of southern coastal Peru tends to preserve organic remains, not all Nasca trophy heads are equally well preserved due to local variations in groundwater and soil characteristics. Many show some deterioration of soft tissue, and in some cases heads are skeletonized with only traces of desiccated tissue remaining (Fig. 1). Poorly preserved trophy heads are still identifiable, however, by the frontal perforation and damaged base. These skulls also reveal some additional details of the preparation process normally obscured in well-preserved specimens by overlying soft tissue. Details of the frontal perforation are more easily examined and reveal that most were produced by repeated percussion with a pointed object, probably a chipped stone. Some frontal perforations show enlargement of the margins by grooving or cutting, and wear polish from contact with the suspensory cord is present in some specimens (16). The frontal perforations of Nasca trophy heads superficially resemble gunshot exit wounds due to their externally beveled margins, but careful examination of these margins reveals multiple percussion pits or cut marks that rule out such an interpretation (Fig. 5). Damage to the base of the skull might also be mistaken for gunshot injury, but a similar pattern of multiple percussion scars is found here as well. The Nasca had neither firearms nor metal tools, hence bullet wipe or other metal residue should not be observed in radiographs of trophy heads.

Nasca trophy heads commonly show numerous cut marks on exposed bone surfaces. These tend to be concentrated around the attachment sites of the major neck and chewing muscles (Fig. 6), but are also found on other areas of the vault and facial skeleton. They



FIG. 4—Trophy head with desiccated tongue tied to suspensory cord. Museo Nacional de Antropología, Arqueología, y Historia, Lima.



A



B

FIG. 5—Detailed views of two examples of frontal perforations, showing their superficial resemblance to gunshot injury. From Cerro Carapo, Palpa, Rio Grande de Nasca.



FIG. 6—Skeletonized trophy head showing numerous cut marks on the cranium and mandible. From Cerro Carapo, Palpa, Rio Grande de Nasca.

appear to have been made during preparation of the fleshed head prior to drying it and suggest that the skin of the face and scalp was retracted to facilitate dissection of muscles and insertion of cloth in the eye sockets and cheek areas (11,16).

Additional features may be useful for evaluating the authenticity of a suspected Nasca trophy head. Nasca trophy heads should be prehistoric in date and be of individuals of indigenous southern Peruvian ancestry. A majority, but not all, Nasca trophy heads show artificial cranial deformation of an anterior-posterior form that was produced during infancy using cloth bands and cotton pads (16). A skull showing cranial deformation would therefore be consistent with—although not strictly diagnostic of—Nasca origin. If authentication of antiquity is necessary, radiocarbon dating of a small sample of dried tissue or bone can be performed by the accelerator mass spectrometry (AMS) method with minimal damage to the specimen. Nasca trophy heads should date between approximately 200 B.C. and A.D. 600 (13); a substantially more recent date would suggest that the specimen is not authentic. While I am not aware of any falsified Nasca trophy heads being sold to antiquities collectors, the sale of falsified artifacts on the international art market is a common practice (22), and it would not be difficult for an enterprising individual to modify a head from a mummy in an attempt to create a more marketable “trophy head.” The production and marketing of false Jívaro shrunken heads was a well-known practice in Ecuador and Panama in the late 19th and early 20th centuries, and crude falsifications continue to be made up to the present day (9,10). Curiously, the 1997 U.S.-Peru memorandum designates as restricted items not only genuine Amazonian shrunken heads but also “false” shrunken heads. Presumably this blanket restriction is not intended to claim fakes as Peruvian national patrimony, but instead to assist customs officials uncertain about the authenticity of a questioned item by placing the burden of proof on the individual possessing such an object.

### Conclusion

A recent report of the private sale of human skeletal remains through internet auction sites (23) raises renewed concerns about

uncontrolled domestic and international commerce in human remains. Although not specifically mentioned in the 1970 UNESCO Convention, Nasca trophy heads and other human remains from archaeological sites fall under the category of national cultural property, and any such material imported into the United States after 1970 is subject to seizure and repatriation to its country of origin. The 1997 Memorandum of Understanding between the United States and Peru goes further in specifically identifying human remains as material subject to import restriction. Given the evidence of increasing commerce in human remains of undocumented origin (23), forensic anthropologists can anticipate more frequent requests from customs and law enforcement officials to identify such material. Familiarity with the diagnostic features of Nasca trophy heads is essential for their proper identification and for distinguishing them from other archaeological and forensic specimens.

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## Additional information and reprint requests:

John W. Verano, Ph.D.  
 Department of Anthropology  
 Tulane University  
 1021 Audubon Street  
 New Orleans, LA 70118  
 E-mail: verano@tulane.edu