



Object analysis and species identification of an Asháninka hood from the Rio Ene valley, Peru

Caroline Fernandes Caromano^{1,3*} , Walid Dani Kaki^{1,2}, Tinde van Andel^{1,2},
Max Kockelkorn^{1,3}

ABSTRACT

A cotton headdress ornamented with several botanical and faunal elements (TM-5074-2) is kept in the depot of the Wereldmuseum in Amsterdam. There is little information about the provenance of the object or its context of use. Identified by the museum as a ‘shaman hood’, is said to have been obtained from an Asháninka indigenous community along the Ene River, Peruvian Amazon. The unusual composition of the hood, with 16 bundles of bird fragments, 39 bundles of mammal parts, and 3332 seeds, raises several questions. Is the object a traditional Asháninka ornament? Is the combination of so many distinct elements a result of later additions? Is it possible that the hood was manufactured for sale? In addition to literature research, this study aimed to identify the plant and animal species linked to the hood, to verify whether the object in its current composition (covered with plant and animal ornaments) could have been made in the same region inhabited by the Asháninka communities. Through the morphological comparison of the plant and animal parts attached to the hood with the botanical and zoological collections of Naturalis Biodiversity Center, we could identify the species and trace their geographical occurrence. Eight different plant species, eight bird taxa, and at least eight mammal taxa attached to the object were identified, most of them native to the Peruvian Amazon. Finally, with the identification of the species, we proposed possible interpretations for the selection of plants and animals added to the shaman hood based on the historical context and the Asháninka worldview.

Keywords: Museum objects; Amazon; Provenance Research; Seed beads.

1 Naturalis Biodiversity Center, Darwinweg 2, 2333 CR Leiden, the Netherlands.

2 Institute for Biology, Leiden University, Sylviusweg 72, 2333 BE Leiden, the Netherlands.

3 Faculty of Archeology, Leiden University, Einsteinweg 2, 2333 CC, Leiden, the Netherlands.

* Corresponding author ✉. E-mail address: CFC (carolcaromano@gmail.com), WDK (danny.kaaki@gmail.com), TvA (tinde.vanandel@naturalis.nl), MK (mkmkockelkorn@gmail.com)

SIGNIFICANCE STATEMENT

This paper presents the comparison of natural raw materials present in ethnographic objects with poor information of origin with botanical and zoological collections as an effective and non-destructive tool for provenance research. The identification of species in combination with literature research can provide clues for the interpretation of the cultural significance of the selected species. Finally, the (re)connection between Natural History and Ethnographic collections can be an important step for decolonial studies.

INTRODUCTION

Neatly stacked or pleasingly showcased, ethnographic museums are sensible environments where objects representing countless cultures from all over the world are brought together under one roof (Hopkins 2021; Schorsh 2020). These objects were once the witnesses and agents of feasts, gatherings, exchanges and rituals. Their visual appeal in combination with sounds, smells, colours and music impressed, scared and offered consolation, inspired and instigated creativity. Removed from their contexts of manufacture and use, these objects then began to be accumulated over centuries, classified and divided according to a supposed Western scientific objectivity, filling showcases with “beautiful” and “exotic” objects that are a constant reminder of the conquest of distant territories, in colonial and neocolonial endeavours. Today this drive for collecting, organising and exhibiting the world does not seem sufficient as a justification for the existence of museums, although the profound colonial systems in which museums are established defy the attempts to challenge and change them (Kassim 2017).

In the current moment of critical museology, committed to actively working towards decolonisation, through its own “deconstruction, reconstruction and redistribution” (Brulon Soares 2021), it is increasingly important that these institutions recognise their past and seek to investigate in depth the stories of the provenance of their collections. Many artefacts stored in museum depots have little or no associated information, making it urgent that research dedicated to the direct analysis of the objects be realised to reveal untold stories. Knowing the provenance of these objects should not be seen as an end in itself when we think about the decolonisation of museums, but it is an essential step towards it.

The identification of the provenance of isolated objects and collections housed in museums in the Global North allows the existence of these objects to be known to the peoples of origin. In this way, they can be included as new actors in the interpretation and recontextualization of museums and collections, as well as in eventual restitution requests. The co-creation of knowledge about museum objects with traditional peoples can shift the center of intellectual production, subverting research practices, and highlight the knowledge and role of Indigenous peoples and traditional communities.

Although modern museums are divided according to disciplines, separated, for example, as ethnographic, natural history, arts, and science collections,

for the in-depth study of their collections, it is often necessary to break down these disciplinary barriers and reconnect materials separated for a long time. Ethnographic collections challenge the Western division between Nature and Culture. The artefactual repertoire present in these collections is made of fibres, skins, wood, bones, dyes, seeds, feathers, beads, and an infinity of materials selected for practical reasons but also because they carry memories and substances with meaning in the aesthetic, ecological, and cultural systems in which they are agents.

In this paper, we have studied an object from the collection of the Wereldmuseum (former Tropenmuseum) in Amsterdam, the Netherlands: a cotton head-dress ornamented with various plant and animal parts (TM-5074-2). The object, identified by the museum as a ‘shaman hood’ is said to have been obtained from an Asháninka indigenous community in the Peruvian Amazon.

Nowadays, the majority of the Asháninka live in Peru and their numbers vary from 50,000 to 100,000. A small number (2000 to 2500) of this indigenous group lives in the Brazilian state of Acre near the border with Peru (Corrêa Fortes 2021). The Asháninka make up 26% of the indigenous population in the Peruvian Amazon and are the largest group of the Arawak language family, which in Peru also includes several other indigenous groups (Santos and Barclay 2005). A total of 65,000 Asháninka live in the department of Junín (INEI, 2009), through which the Ene River flows at c. 400 m above sea level (Figure 1).

There is little information about the provenance of the object or its context of use in the museum. The online collection database describes the object as “a shaman hood from a village of c. 100 Campa Indians¹ along the Rio Ene in eastern Peru. The hood is not old and was used by a shaman for several rituals performed by the entire village, such as festivities around Mother Earth, or to chase away evil spirits”². The origin of these descriptions, however, is not clear. Two literature sources are cited by the museum, of which the first (Biebuyck and Van den Abeele 1984) is a general study about headdresses worldwide, including one picture of a hood less adorned than the object of this study, and which the authors describe as an “Amuesha Campa cap” (...) “made with woven cotton (...) [and a] bottom rim completely trimmed with green, yellow, multicoloured feathers” (Biebuyck and Van den Abeele 1984: 258). The second reference (Tessmann 1930) describes several elements of the Asháninka material culture but does not mention hoods.

¹Campa is a term previously used to designate indigenous peoples of the Arawak language family in the Peruvian Amazon, including the Asháninka. Nowadays, these peoples prefer to be referred to by their auto denominations as Asháninka, Ashéninka, Kakinte, Matsiguenga, and Nomatsiguenga.

²Extracted from the Wereldmuseum database: <https://hdl.handle.net/20.500.11840/155519>

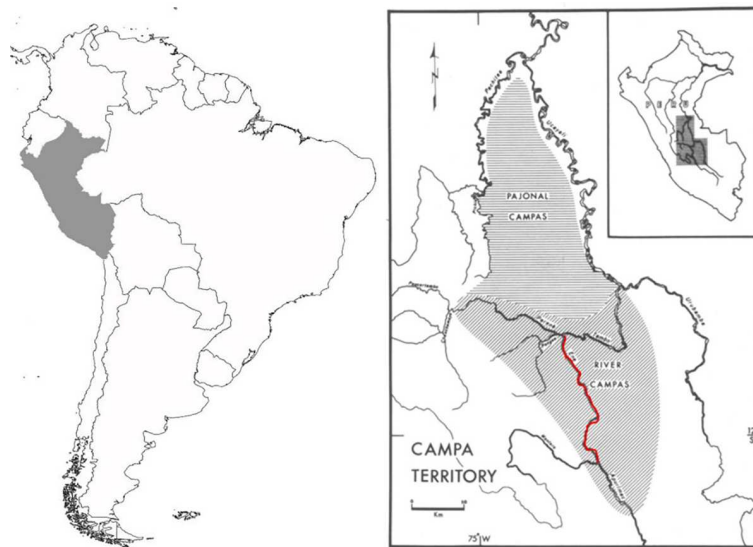


Figure 1. Map of the Ashaninka (Campa) territory with emphasis (red) on the Ene River (modified by D. Kaki from Weiss 1975: 230).

The Asháninka are mostly known for their traditional robes, known as *kushma* or *kitharentsi*, made from homegrown cotton that is spun, dyed, and woven by women on looms. The shoulders of these garments are commonly ornamented with seeds (Corrêa Fortes 2021). The use of seeds and animals is also seen on other Asháninka body ornaments and clothing, such as hats (*amathayrentsi*), slings (*kayenthawōtsi*), and hoods (*txowinya*) (Pinhanta 2019). Certain objects of personal use are made entirely with seeds, such as the *txoshiki* bandolier, worn exclusively by men, which can be complemented with a *thatane*, an additional ornament made with seeds and feathers (Pinhanta 2019). The various plant and animal species attached to the TM-5074-2 hood have never been identified, and the cultural significance of this specific hood for the Asháninka or the meaning of the flora and fauna attached has not been studied. There is no information on whether the object was a traditional Asháninka ornament, traded with other indigenous peoples, or manufactured for sale.

This study aimed to identify the plant and animal species linked to the hood, to verify whether the object in its current composition (covered with plant and animal ornaments) could have been made in the region of the Asháninka communities, or whether any of the ornaments were added in another moment. Therefore, the following research questions were proposed:

- 1) What plant and animal species are present on the Asháninka hood?;
- 2) Do these species also occur in the area where the Asháninka live?

- 3) Has a similar hood been reported among the Asháninka before?
- 4) Have the species attached to it been previously documented for the use of body ornaments by the Asháninka?

We hope that our systematic identification of species, alongside the images here provided of the object, can serve as an example for provenance research on similar objects from the Amazon that are housed in museums in the Global North.

MATERIAL AND METHODS

To answer our research questions, we used multidisciplinary methods: a detailed description of the artifact, botanical identification of the plant parts, zoological identification of the animal parts, a study of the museum documentation of the object, a search for similar objects in Asháninka material culture in museum databases worldwide and a review of the anthropological literature on the meaning of plants and animals in Asháninka culture.

On-hand analysis of the object was conducted during four visits to the depot of the Wereldmuseum in Amsterdam, during which we photographed the Asháninka hood in its entirety and produced close-up pictures of each animal and plant species attached to it, positioning the object in the same way as it would have been worn. Plant and animal parts were carefully measured. No destructive sampling was carried out. To find out more about the origin and the history of the hood, we studied the information on this object

available in the online database of the Wereldmuseum and in the archives of the museum.

The identification of plant and animal parts was done through morphological observation and comparison with specialised literature and the museum collections at Naturalis Biodiversity Center, Leiden, the Netherlands. For occurrence data of those species, we consulted the Global Biodiversity Information Facility database (www.gbif.org). Bird parts sown to the hood were identified by their distinct plumage patterns and the size and shape of their feathers, wings, and beaks, using illustrated field guides about bird species in the Peruvian Amazon (e.g., Schulenberg *et al.* 2010). In addition, ornithologists at Naturalis and elsewhere were consulted to help with the identification. To validate our identifications, we consulted the Amazonian bird specimens in the Naturalis collection. Mammals present on the hood were represented by pieces of fur, skin, tails, hoof, nails, and bones, which we identified by using literature on the mammals of Peru and South America (Emmons 1997). Specialists on mammal taxonomy at Naturalis were asked for their help, and the Naturalis mammal collection was consulted to validate our identifications.

In addition to the cotton in the fabric and the threads, plants present on the Asháninka artifact were represented by seeds and endocarps. We first identified the plant parts by family, using the Kew Tropical Plant Families Identification Handbook (Utteridge and Bramley (2015)). By focusing on the colour and morphometric characteristics of these botanical fragments, we further identified them using the herbarium, the carpological and economic botany collections of Naturalis, and literature on Amazonian seeds, such as Maas-van de Kamer and Maas (2008) and Cornejo and Janovec (2010). To view the plant parts in more detail, we used a handheld digital microscope, model Dino-Lite AM4113ZT, with optical magnification from 10x up to 200x.

We consulted the literature on the ethnobiology of the Asháninka and neighbouring Arawak groups (Kujawska *et al.* 2020, 2023; Lenaerts 2006; Sosnowska *et al.* 2010, 2015; Sosnowska and Kujawska 2014) to evaluate whether the same species of plants and animals had previously been reported as used by this indigenous group and to retrieve information on local names, economic, social and spiritual values of the separate species, and their possible significance in a headdress or other body ornaments.

A search for Ashaninka body ornaments was car-

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museudoindio.tainacan.org,

britishmuseum.org/collection,

americanindian.si.edu/explore/collections/object-collections

ried out in specialized anthropological literature (e.g., Pinhanta 2019; Viana 2019; Weiss 2005). In addition, searches were carried out in online museum databases with large collections of objects and photographs from Indigenous peoples of western Amazonia, such as the National Museum of Indigenous Peoples (Brazil), the British Museum (United Kingdom), and the National Museum of the American Indian (Smithsonian Institution, United States)³ Finally, a combined search for keywords as “Ashaninka”, “Campa”, and “hood” was conducted in Google images, for photographs of Asháninka people with body ornaments, and images of museum objects that resembled the studied shaman hood.

RESULTS AND DISCUSSION

Object description

The base of the Asháninka shamanistic hood is a rectangular, handwoven cotton cloth, 160 cm long and 50 cm wide, with vertical bands of darker cotton. The cloth is folded and stitched up on one side, leaving an opening on the other side (Figure 2). The hood has been adorned with 16 bundles of birds (feathers, wings, a beak, and sometimes an entire bird), 17 bundles of mammals, 22 mammal tails, and 3332 seeds of different plant species in strings, fringes, and bundles. Detailed images of all plant and animal parts present on the hood are provided in the Supplementary File.

There is a certain degree of symmetry in the assemblage of the hood. The upper part contains 54 parallel long cotton strings to which globose black seeds are attached (Figure 2, detail in Additional File 2). On the sides, 109 similar cotton strings with the same seeds are suspended. The length of the strings on the lowest row increases towards the back. As they are only attached at the top end, the strings can swing freely and make a rattling sound when the hood is turned.

Botanical identification: plant parts

A total of eight different seed species are found on the hood (Table 1). Based on their shiny black colour and globose shape, we identified the seeds on the strings on the top of the hood as *Canna indica* (Additional File 1). On the lower edge of the hood, shorter strings with somewhat smaller and more elongated *Canna* seeds (probably *C. paniculata*) are seen (Additional File 2). In the middle section of the hood,



Figure 2. The Asháninka shaman hood (Wereldmuseum collection nr. TM-5074-2), with the back- and right side (left), front opening and right side (middle) and left side (right). Photographs: Caroline Fernandes Caromano.

we find short strings of even smaller and more narrowly ellipsoid *Canna* seeds, probably *C. jaegeriana* (Additional File 3). The seeds of almost all Neotropical *Canna* species are used as beads in body ornaments and rosaries wherever they grow (Maas-van de Kamer and Maas 2008), so this use is not specific to the Asháninka.

The shorter strings with *Canna* cf. *jaegeriana* seeds end with other, larger endocarps that were cut in half (Additional File 4). This assemblage is used 26 times and makes up a bundle that is attached to the left front side of the hood. The bundle reminds of ear ornaments (Additional File 3 and 4). We identified the bead as a modified endocarp of a palm seed of the genus *Astrocaryum*. Species within this genus are widely used in body ornaments across the Amazon (González-Peres *et al.* 2013; Shanley and Medina 2005; Van Andel 2000). The only species of *Astrocaryum* documented as being used for body ornaments by the Asháninka is *A. perangustatum* (Sosnowska *et al.* 2015). This palm species, however, is very rare, and its distribution is strictly limited to the sub-Andean region, including the watershed of the Ene River (Kahn *et al.* 2011).

Along the lower edge of the hood there are two c. 30 cm long cords from which 75 strings are suspended on the left side and 64 on the right, each holding three *Canna* cf. *paniculata* seeds and two seeds of a species that we were unable to identify (Additional File 5). When the hood is turned, the bundles dangle about and make a rattling noise. Slightly above those bundles, a string with 81 seeds of *Adenanthera pavonina* runs along the entire bottom part of the hood from left to right (Additional File 6). This pantropical tree is of Asian origin and cultivated widely in the tropics

as an urban ornamental and for its bright red seeds, which are often used in body ornaments (Rojo, 1998).

On the right part of the hood, in the middle, we find a bundle of endocarps from *Cascabela thevetia*. Each endocarp is attached to the end of a cotton string which is also laced with red and blue glass beads (Additional File 7). Because the endocarps are woody, hollow, and have a linear opening at the bottom, they make a rattling noise when the bundle shakes. The seeds have been slightly modified by perforating the top to attach them to a cotton thread. These endocarps are widely used by indigenous peoples and African descendants in South America in body ornaments and musical instruments, often with a spiritual connotation (Alcantara Rodriguez 2023). These bundles are also placed roughly at the position of the right ear, almost at the exact opposite of the bundles with the *Astrocaryum* seeds.

On the string of *Adenanthera pavonina* seeds at the right side, closest to the seam in the middle (located at the back of the head), two strings are attached with pendulums made with perforated seeds of *Canna* cf. *paniculata* and *Aiphanes horrida*. The bottom of the seeds of *A. horrida* has been cut off to reveal a small cavity in which the knot of the string is visible (Additional File 8).

Zoological identification: birds

A total of eight bird taxa were attached to the Asháninka shaman hood, of which we could identify six to the species level (Table 2).

The black and white wing feathers attached to the right side of the hood were identified as those of the blue-throated piping guan (Table 2, Additional

Table 1. Plant taxa attached to the Asháninka shaman hood.

Family	Species	Plant part	Number	Modification
Apocynaceae	<i>Cascabela thevetia</i> (L.) Lippold	endocarps	23	perforated at the top
Arecaceae	<i>Aiphanes horrida</i> (Jacq.) Burret	endocarps	2	bottom cut off, top perforated
Arecaceae	<i>Astrocaryum</i> cf. <i>perangustatum</i> F.Kahn & B.Millán	endocarps	26	top and bottom removed, exterior partly scraped off
Cannaceae	<i>Canna indica</i> L.	seeds	2480	perforated at bottom and top
Cannaceae	<i>Canna</i> cf. <i>paniculata</i> Ruiz & Pav.	seeds	422	perforated at both sides, top end removed
Cannaceae	<i>Canna</i> cf. <i>jaegeriana</i> Urb.	seeds	16	perforated at both sides, top end removed
Leguminosae	<i>Adenantha pavonina</i> L.	seeds	81	perforated longitudinally and vertically
Unidentified	Unidentified	seeds	282	bottom part removed, top perforated

File 9), but it cannot be distinguished whether they come from a male or female bird. A specimen of a round-tailed manakin (*Pipra chloromeros*) is connected with its head and shoulders to the hood (Additional File 10). This identification is supported by the long and bright red neck feathers, and the fact that this manakin mainly occurs east of the Andes in Peru. The similar-looking red-headed manakin *Ceratopipra rubrocapilla* has shorter red neck feathers and occurs only in smaller parts of the Peruvian Amazon (Ridgely and Tudor 2009: 497).

Another bird that is attached to the hood with its entire head and shoulders is *Pseudopipra pipra* (Additional File 11). While the male of this species is distinctive black with white feath-

ers on the top of its head, the female is green with an entirely grey head (Ridgely and Tudor 2009). It is abundantly observed in eastern Peru (<https://www.gbif.org/species/9226874>). A third bird attached to the hood with its upper body has black and yellow feathers on its shoulders and orange and red plumage on its throat and chest (Additional File 12). Although the specimen is not in good shape, the colour of the feathers and their placement on its body are similar to a male golden barbet (*Capito auratus*). This bird occurs in lowland forests in the western Amazon (<https://ebird.org/species/gilbar1>). The fourth bird attached with its head and upper body to the hood is a chick, still covered in down feathers and with a wide beak (Additional File 13). According

Table 2. Bird taxa present on the Asháninka shaman hood.

Bird species	Sex	English name	Body parts	Nr
<i>Pipile cumanensis</i>	unknown	blue-throated piping guan	wings	3
<i>Pipra chloromeros</i>	♂	round-tailed manakin	head and shoulders	1
<i>Pseudopipra pipra</i>	♀	white-crowned manakin	head and shoulders	1
<i>Capito auratus</i>	♂	golden barbet	upper body	1
cf. <i>Tityra semifasciata</i>	unknown	masked tytira	upper body	1
<i>Pteroglossus beauharnaesii</i>	unknown	curl-crested aracari	breast feathers	1
<i>Amazona</i> sp.	unknown	amazon parrot	tail feathers	1-2
<i>Ara choleopterus</i>	unknown	red-and-green macaw	beak, feathers	1

to the size and shape of its beak, it was tentatively identified as a masked tytira (*Tityra semifasciata*).

A tuft of fragile feathers, attached to the hood, is coloured red, black, and pale yellow (Additional File 14 left). They are quite downy and seem to be part of breast feathers, and not of wings. They resemble those of the curl-crested aracari (*Pteroglossus beauharnaesii*), because the red and the yellow merge within the feathers, which is similar to the breast feathers of this species in the Naturalis collection (Additional File 14 middle). Males and females have the same plumage (Short and Horne, 2001: 400). A similar-looking toucan (*P. bitorquatus*) has the same feather colours (Additional File 14 right), but in the plumage of this species, the red, black and yellow parts are strictly separated and the species occurs only in Central Brazil to the mouth of the Amazon.

Another tuft of feathers is attached right above the aracari feathers (Additional File 15). They are partly cut, but still show the separate pale green, bright green, and yellow colours that are characteristic of the tail feathers of Amazon parrots of the genus *Amazona*. Several species with similar-looking plumage occur in eastern Peru, so we cannot identify this feather to species level. Males and females are mostly similar in appearance (Forshaw 2006).

Finally, a beak and brightly coloured blue, green and red feathers of a macaw are tied to the hood (Additional File 16). Two macaw species with blue, green and red wings occur in the Peruvian Amazon, the red-and-green macaw (*Ara chloropterus*) and the scarlet macaw (*A. macao*) (Forshaw 2006). The latter also has yellow wing feathers, which are lacking on the hood (Forshaw 2006: 97). *A. chloropterus* has a larger beak than *A. macao*, which matches the size of the beak on the hood. There is not much difference between males and females in these macaw species.

Zoological identification: mammals

At least eight different mammal taxa are present on the Asháninka shaman hood, in the form of fur, bones, nails, or entire body parts (Table 3). These were much more difficult to identify, as distinct morphological features were missing. We managed to identify five taxa at the species level, one at the genus level, while the rest of the taxa remained unidentified. As there is little sexual dimorphism among the mammals in question, we could not identify whether any of the mammal fragments came from male or female individuals.

The hood displays two bundles with armadillo remains; two pieces of tail ends (Additional File 17), three patches of skin, 13 nails, and two bones. The size of the tail end coincides with the commonest

of the armadillos in eastern Peru, the nine-banded long-nosed armadillo (*Dasypus novemcinctus*). The scales of the skin and the bones are also those of an armadillo, but the species cannot be distinguished. They probably come from the same species, as the other armadillos are quite rare in the region. A piece of porcupine skin is attached to the hood with long, 5–6 cm long spines coloured in bands of white and dark brown (Additional File 18). Based on the brown and white bands on the spines, we identified the porcupine skin as the Brazilian porcupine (*Coendou prehensilis*).

The hood is adorned with several squirrel parts: nine pieces of tail and two bundles of three lower jaws. Given the bright orange and red hairs (Additional File 19), the tails could belong to the widely distributed northern Amazon red squirrel (*Sciurus igniventris*), the southern Amazon red squirrel (*S. spadiceus*) or possibly to the very rare Junín red squirrel (*S. pyrrhinus*), which only occurs in montane forests of the Peruvian Junín province (Emmons 1997). According to Prof. J. Koprowski (pers. comm.), the jawbones are quite similar within all three species, so it is not possible to distinguish between these species without using molecular genetics.

Just below the chain of *Adenanthera pavonina* seeds, there is a tapir (*Tapirus terrestris*) hoof attached to the hood (Additional File 20). At the bottom part of the hood, there is a c. 12 cm-long monkey tail attached, with yellow fur at the base and long black hairs at the bottom end (Additional File 21). A piece of fur with a similar yellow colour is connected to the bundle of two armadillo tails on the right side of the hood. Both belong to the common squirrel monkey (*Saimiri sciureus*), a widespread and common monkey with yellow fur (Emmons, 1997).

Along the bottom rim of the hood, 13 tails of 10 to 15 cm are attached. The tails are non-prehensile and covered with long black hairs (Additional File 22). They could be from several species of tamarins (*Saguinus* spp.) or night monkeys (*Aotus* spp.) that occur in the area and have similar, black-tufted long tails. A piece of pale brown fur with a black line is attached to the hood that bears similarity with the breast pattern of a southern tamandua (*Tamandua tetradactyla*) which commonly occurs throughout northern South America (Additional File 23). Finally, a piece of grey-brown, thick fur is attached to the hood that was not possible to identify with certainty (Additional File 24). A possible candidate would be a crab-eating raccoon (*Procyon cancrivorus*), which is a quite common animal in the Amazon near watercourses.

Museum documentation of the object

The shaman hood was sold to the Tropenmuseum in Amsterdam on 26 November 1986 by a

Table 3. Mammal taxa attached to the Asháninka shaman hood.

Mammal species	English name	Body parts	Nr
<i>Dasyopus novemcinctus</i>	nine-banded armadillo	tails	2
cf. <i>Dasyopus novemcinctus</i> ?	armadillo	skin, nails, bones	18
<i>Coendou</i> cf. <i>prehensilis</i>	Brazilian porcupine	skin with spines	1
<i>Sciurus</i> sp.	squirrel	tails	9
<i>Sciurus</i> sp.	squirrel	lower jaws	3
<i>Tapirus terrestris</i>	South American tapir	hoof	1
<i>Saimiri sciureus</i>	common squirrel monkey	fur, tail	1
<i>Saguinus</i> sp. or <i>Aotus</i> sp.	tamarin or night monkey	fur	13
cf. <i>Tamandua tetradactyla</i>	southern tamandua	fur	1
<i>unidentified mammal</i>	-	fur	1

woman named M. van Garrel, from the Swiss city of Solothurn⁴. Her nationality remains unknown, but her last name appears to be Dutch unless her German-Swiss name ‘von Garrel’ was misspelt by the Dutch museum personnel. The Swiss Document Server Education Archive mentions a document by Monika van Garrel from Solothurn (EduDoc.ch), but no further information is provided. Dr Alexander Brust from the Museum der Kulturen in Basel mentioned that during the 20th century, there were multiple religious missions in Peru organized by the Swiss. To contribute to the financial situation of these mission posts, the personnel were known to trade and sell indigenous crafts (Brust, personal communication).

No further information about the hood is available, apart from that it came from a small, unnamed indigenous village along the Ene River in eastern Peru. The time of purchase or the exact location along the 181 km-long Ene River is not known. Although the hood was ‘not old’, according to the object information of the Wereldmuseum, it must have been made in different phases, as some of the cotton strings are more worn than others, and some of the animal parts and seeds may have had other, previous functions. If the hood was purchased shortly before being sold to the Tropenmuseum, it must have been made in the 1980s. This specific period may go unnoticed at first reading, but it marks a historical context that deeply impacted the Asháninka people in Peru. In the 1950s, a migratory movement of settlers began to occupy the Asháninka area on the Ene River. In 1969, the Franciscan Friar Mariano Gagnon founded the Cutivireni

mission, welcoming the Asháninka who were losing their lands to settlers. At the beginning of the 1980s, the guerrilla organisation Sendero Luminoso (Shining Path) began its actions in the Ene Valley. The region was difficult to access and coca production was already well established among the settlers. Sendero Luminoso then came to dominate the area, controlling the network established between coca producers and drug traffickers. Part of the Asháninka was co-opted by the militia, while part joined a resistance pole in the Cutivireni mission. Indigenous people were forced to work for the guerrillas and many were murdered, enslaved, and kidnapped. Government forces also responded with violence in the region, inflicted especially on the most vulnerable populations like the Asháninka, including arbitrary arrests, abductions, and executions (Amnesty International 2004; Bianchi 2018; Mealy and Austad 2012; Varese 2004).

Similar objects in Asháninka material culture

Hoods receive little attention in the literature about the Asháninka. Still, it was possible to find some remarks about them in texts focused on other elements of Asháninka and Arawak peoples of western Amazonia material culture. Santos-Granero (2009: 491) mentioned how the adoption of cotton hoods by the Yanéscha people of Peru was inspired by the Franciscan hoods worn by missionaries, dating back to the XVIII century. Veber (1996: 167) reported feathered hoods among Ashéninka valuable objects of

⁴Also from the city of Solothurn is the famous family Barbier-Mueller of art collectors. Although the lack of documentation makes it impossible to establish a direct connection between M. van Garrel and the Barbier-Mueller collectors, we cannot rule out the possibility that van Garrel was part of a network of collectors in that city.

trade. Pinhanta (2019), an Asháninka scholar, studied the art of Asháninka weaving with a special focus on the *kitharentsi*, including descriptions of other cotton products, such as hoods (*txowinya*). The researcher explained that “the *txowinya* was used very frequently among Asháninka men, both when carrying out domestic activities and during leisure time. Today, it is more commonly used by women” (Pinhanta 2021: 24). Literature and museum databases also contain some photographs of striped cotton hoods being used by Asháninka and other Arawak peoples of Western Amazonia, but the general composition of these is much simpler, with applications of feathers or seeds only on their lower edges, leaving the rest of the hood fabric unadorned, which allows it to be superposed by a crown (*amatsairentsi*) used by men.

The studied hood, covered by a myriad of plants and animals is distinct from other known hoods, but its species composition can be found in other Asháninka ornaments and clothing. Two *kushmas* (13.4.118 and 13.4.120) housed in the National Museum of Indigenous Peoples in Rio de Janeiro and studied previously by the first author, also contained the endocarps of *Astrocaryum* sp., *Aiphanes horrida*, and *Cascabela thevetia* as well as the unidentified elongated beige seeds that were also present in the hood TM-5074-2 in the Wereldmuseum.

Although Asháninka hoods usually do not present complex decorative elements, a similar group of seeds and animal species identified in the studied hood can be found in other types of Asháninka body ornaments. According to Corrêa Fortes (2021), a prominent masculine adornment, a large bandolier (*txoshki*) worn diagonally across the body over the *kushma*, is made of seeds and in some cases with feathers. The Museum of Anthropology at the University of British Columbia in Vancouver (Canada) houses a *txoshki* that was studied using avian forensic morphology techniques (Szabo 2017), similar to our method. The bandolier, made with *Canna* sp. and *Coix lacryma-jobi* seeds is adorned with at least five distinct bird species, including *Tityra semifasciata* and *Pipra chloromeros*, also present in the hood here discussed.

Our search in museum databases and websites also resulted in the identification of one “Campa” hood at the Houston Museum of Natural Science (US) (Wells 2017) with several animal and plant decorations similar to those found on the TM-5074-2 hood⁵. These various pieces of evidence of corresponding faunal and botanical elements used in the manufacture of Asháninka material culture reinforce the cultural identification of the studied hood, but they do not explain the reason for the hyperbolization of the decorative elements found in the object.

⁵Unfortunately, there is no additional information about the provenance of the object in the museum website.

The meaning of plants and animals in Asháninka culture

The shaman hood in the Wereldmuseum contains widespread South American species of plants and animals, such as the seeds of *Canna indica* and *Cascabela thevetia* and a tapir hoof and the tails of nine-banded armadillos. There were also botanical and faunal remains present on the hood that only occur in the Peruvian Amazon, such as the bird *Pipra chloromeros* and, if our identification is correct, the seeds of *Astrocaryum perangustatum*, a palm that is endemic to the Ene River watershed. In their review of palm-related traditional ecological knowledge of the Asháninka, Sosnowska *et al.* (2015) mention the wild *A. perangustatum* as the only *Astrocaryum* species present in the forest transects and home gardens, which was used for a myriad of purposes. The database of GBIF, however, lists collections and observations of *A. jauari* all along the Ene River (gbif.org/species/2738136) and *A. chambira* in several locations along this river (gbif.org/species/2738064). The *Astrocaryum* seeds on the shaman hood are heavily modified. Still, if they indeed belong to *A. perangustatum*, then the hood can only have been made along the Ene River and most likely by a member of the Asháninka community, although we cannot exclude the possibility that some plant and animal parts were acquired from other areas through trade.

The uniqueness of this hood, with several plants and animals normally not all found together in other Asháninka objects (neither in quantity nor diversity), can lead us to suggest that the object was made to order for missionaries or non-indigenous visitors. The modification of indigenous material culture, sometimes hyperbolised, with the addition of more decorative elements, or an increase or decrease in size, in objects made for sale is reported in several Amazonian contexts and for diverse materials such as figurines (Andrade and Duarte Campos 2022), plait work and ceramics (Rodrigues and Gaspar 2020) and hammocks (Caromano and Cascon 2020). However, such uniqueness may rise not to satisfy an aesthetic aimed at potential buyers, but as something of necessity for their community.

The Asháninka believe that personhood is not exclusive to humans but an experience shared by other living beings. Such belief, commonly seen by many indigenous peoples of the Amazon (Taylor 1996, Viveiros de Castro 1998), is frequently referred to as Amerindian Perspectivism and consists of a system of thought that “would suppose a spiritual unity and a corporeal diversity” (Viveiros de Castro 1998: 470). For the Asháninka, not only plants and animals but also rivers and mountains have personhood

(Corrêa Fortes 2021: 26). An important component of Amerindian Perspectivism is the figure of the shaman, for it is he who “administers the relations between humans and the spiritual component of the extra-humans” (Viveiros de Castro 1998: 472). A shaman can achieve a transitory state, mediating the relationship between humans and more-than-humans, particularly those invisible to most people. The preparation of the shaman for this mediation involves its metamorphosis, which by putting on clothing, is activating the powers of a different body (Viveiros de Castro 1998: 482). In addition, tobacco, ayahuasca, and coca help to expand the consciousness and perception of the shaman (Corrêa Fortes 2021). This ability to transform their body makes the *sheripiari* (Asháninka shamans) admirable and dangerous (Sarmiento Barletti 2022).

Different animals and plants present in the hood are connected to diverse narratives and beliefs and are thought to have specific powers. The Asháninka categorize living beings between those who can move (animals and humans) and those who are static (plants). The moving category is further divided according to the way they transport themselves: on four legs, on their stomach, by jumping, leaping in trees, and moving through water (Rojas Zolezzi 2006: 256). The areas that are explored by each animal also have importance in the classification system. Some animals, such as birds and monkeys, symbolize the connection between high and low dimensions, being connected to the Asháninka myth about the acquisition of cassava (Viana 2019:56). The red squirrel, which is also represented on the hood by tails and jaws, is to the Asháninka the owner of fire (Rojas Zolezzi 2006: 270).

The domesticated peach palm (*Bactris gasipaes*) is connected to several myths (Sosnowska and Kujawska 2014), and the Asháninka use several species of Acanthaceae (Kujawska *et al.* 2023) and Cyperaceae (Kujawska *et al.* 2020) for ritual purposes. The seeds of these species, however, are not present on the shaman hood. Seeds can also represent more than plants. According to the descriptions in the database of the Brazilian National Museum of Indigenous Peoples, bundles of seeds present on the shoulders of Asháninka *kushmas* are representations of the jaguar fur. In fact, in more than one version of the story on the origin of weaving, told by the Asháninka of the Ene River, Korinto a giant jaguar, was the owner of this knowledge (Viana 2019).

In the specific case here explored, the uniqueness of the hood may have a parallel to the unique situation that the Asháninka were undergoing in the 1980s with the rising conflict, violence, and social dismemberment. Considering the role of clothing and body ornaments in preparing the shaman’s body for their mediation with the ‘extra-human world’, the large va-

riety and amount of animal and plant parts found on this hood may have been an attempt to create a super-artifact, of increased agency for a critical moment where violence and social changes had also seen a large increase. The answer about the life history of the hood and the choices that led to its composition as we see it today in the museum cannot be obtained just from the object. This requires a dialogue with the Asháninka of the Ene River and a more in-depth discussion about their recent history and a possible interpretation of the hood. A future investment in thorough provenance research, investigating missionary archives, and connections between collectors in Switzerland and Asháninka peoples can also help us to better understand the history of the hood.

CONCLUSION

The plant and animal parts of the shaman hood analysed in this research have likely been sourced in the Peruvian Amazon, as the species involved occur in that area. Some plants and animals though, have a much wider distribution. The hand-woven and dyed cotton fabric, however, is very likely made by the Asháninka, as their traditional *kushma* dresses have a similar fabric and design. We have, however, not seen similar hoods in the literature, museum databases, or online information on the Asháninka. The only exception is the hood exhibited at the Houston Museum of Natural Science, but it was not possible to access further information about its origin. Although the species identification alone cannot point to the Asháninka region as the only possible area of origin, this result in combination with the striped hand-woven cotton fabric, commonly associated with the Asháninka, and the presence of the same species of plants and animals on other Asháninka objects, as seen in the bandolier housed in Museum of Anthropology in Vancouver and the hood in Houston, reinforces the cultural connection of the hood housed in the Wereldmuseum with the Asháninka people. As there are indications that missionaries traded craft objects with the Asháninka and sold these to European museums, there is a possibility that the hood was specifically made or modified to be sold to the Europeans. Another possibility is that the complex composition of the hood was a response to the historic period of violence against the Asháninka in the region, being an important element for shamanistic activities.

The hood was most likely not assembled at a single point in time but has been modified somewhere during its life. The bundles of *Astrocaryum* and *Cascabella thevetia* seeds may have been manufactured and used earlier as ear ornaments and could have been added to the hood at a later stage. The two strings at the bot-

tom of the hood with the unidentified seeds together with the three *Canna* seeds may not have been made for decorating the hood, since they do not have the same measurements as the width of the hood. Possibly these were used in necklaces that later have been added to the hood. The same could be true for the string with seeds of *Adenanthera pavonina*. Some of the hand-spun cotton threads are more worn and discoloured than others, which points towards age differences.

The provenance-related questions about this object could be improved with additional laboratory analysis (such as isotopic and genetic analysis) of its plant and animal components and, most importantly, through collaborative research with members of the Asháninka communities in the Peruvian Amazon. The identification of the origin and the producing group of the hood, therefore, was an essential step for future actions that can promote the Asháninka's leading role in the production of knowledge that is of interest to them about their material culture. We hope that our systematic method of species identification and our images of the object will spark the interest of people knowledgeable of the existence of similar objects and stimulate provenance research on other Amazonian body ornaments housed in museums in the Global North.

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DATA AVAILABILITY

The data used to support the findings of this study are available from the corresponding author upon reasonable request. To view the Asháninka hood the collection management of the Wereldmuseum (Location Amsterdam) should be contacted.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

CONTRIBUTION STATEMENT

Conceived of the presented idea: CFC, MK.

Carried out the experiment: CFC, MK.

Carried out the data analysis: CFC, MK, WDK, TVA.

Wrote the first draft of the manuscript: MK, CFC.

Review and final write of the manuscript: CFC, TVA.

Supervision: CFC, TVA.

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Additional Files

Botanical components

Fragments of plant and animal species attached to the Asháninka hood in the collection of the Wereldmuseum, Amsterdam, the Netherlands. Object nr. TM-5074-2. Local Asháninka names are retrieved from Weiss (2005); Sosnowska *et al.* (2015); Rojas Zolezzi (2006); Pedrós Caballero (2023); Casanto Shingari (2022), and González (1998). Photographs: Caroline Fernandes Caromano, unless mentioned otherwise.

Cannaceae, *Canna* spp. Asháninka name: Antsíriki (for *Canna indica*, according to Weiss 2005, 55)



Add File 1. Strings with seeds of *Canna indica* L.

The globose, black seeds of *Canna indica* L. are c. 5 mm in diameter, and attached to the many cotton strings on the top of the hood. Of all *Canna* species, *C. indica* is the most widespread and abundant species in Central and South America. These are the largest *Canna* seeds on the hood.

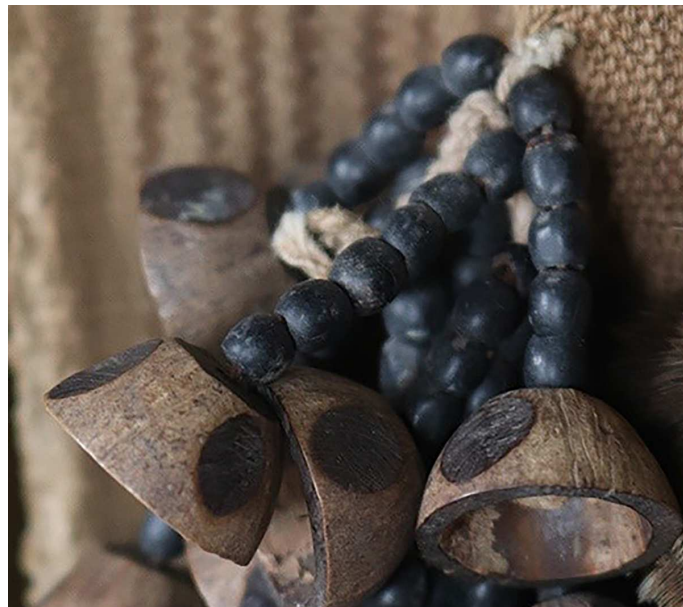
Cannaceae, *Canna* cf. *paniculata* Ruiz & Pav. Local name unknown.



Add File 2. Strings with seeds of *Canna* cf. *paniculata* Ruiz Pav.

The middle-sized seeds of *Canna* cf. *paniculata* Ruiz Pav. are located on strings on the bottom part of the hood. The seeds are broadly ellipsoid, ca. 3-4 x 2-3 mm, and the top ends are removed during perforation. This species is narrowly distributed in Peru but does occur in the area of the lower Ene River. The seeds are used for rosaries in Brazil (Maas-van de Kamer and Maas 2008).

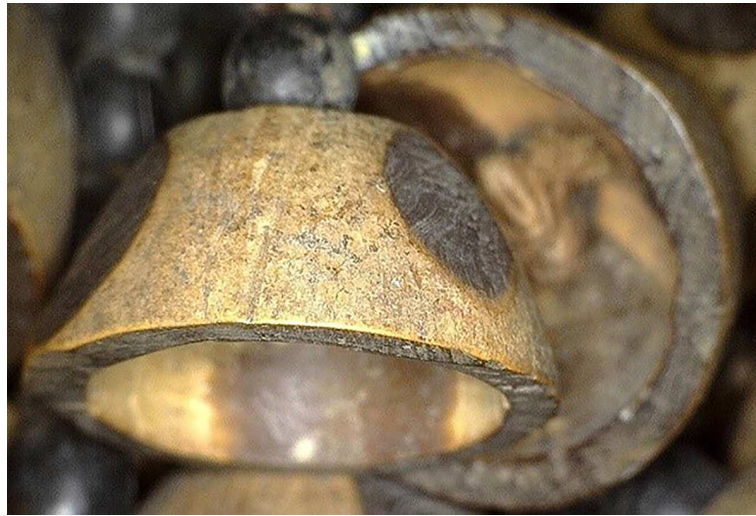
Cannaceae, *Canna* cf. *jaegeriana* Urb. Local name unknown.



Add File 3. Seeds of *Canna* cf. *jaegeriana* Urb. and *Astrocaryum* attached to short strings.

The smallest of the *Canna* seeds are attached to the middle part of the hood, probably obtained from *Canna* cf. *jaegeriana*. This species occurs in the wild in Colombia, Peru and Ecuador and is also cultivated for its starchy rhizomes and the use of its seeds in necklaces (Maas-van de Kamer and Maas 2008). The larger seed at the end of the string is discussed below (Additional File 4).

Areaceae, *Astrocaryum* cf. *perangustatum* F.Kahn & B.Millán. Asháninka name: Tiroti (Sosnowska *et al.* 2015: 456)



Add File 4. Detail of modified seed of *Astrocaryum* cf. *perangustatum*

Heavily modified palm seeds are attached to a bundle of strings with *Canna* cf. *jaegeriana* seeds on the middle part of the left side of the hood (see main paper, Figure 1). They are likely made from the seeds of the palm genus *Astrocaryum*. The seeds are difficult to identify at the species level, as the top end and the bottom half of the endocarps have been cut off. Each endocarp has been decorated with three darker circular spots, created by scraping or cutting off a controlled section of the pale brown exterior. According to Kahn (2008) and herbarium specimens listed on GBIF, the species *Astrocaryum jauari* Mart., *A. chambira* Burret, *A. perangustatum* and *A. faranae* F.Kahn E.Ferreira occur along the Ene River.

While the first two species are very widely distributed in the Amazon, the latter two species are quite restricted to the Ene River watershed. In their ethnobotanical survey of the palm species used by the Asháninka along the Tambo River (of which the Ene River is a major tributary), Sosnowska *et al.* (2015) only mention the species *A. perangustatum* within the genus *Astrocaryum* as being used. This rare palm is only known from a few specimens in the region near the Ene and Tambo Rivers (gbif.org/species/2738121). For the Asháninka, this wild palm is one of the most useful species, of which the fruits are eaten, the leaves are woven into mats, fans and baskets, the wood for house posts and the seeds for ‘ornaments’, although no further details are given by Sosnowska *et al.* (2015).

Unidentified seeds. Local name unknown.



Add File 5. Unidentified seeds.

These elongated woody seeds (13 x 10 x 7 mm), with specific ridges along the sides, have been hollowed out, perforated at the top, and c. one half cut off.

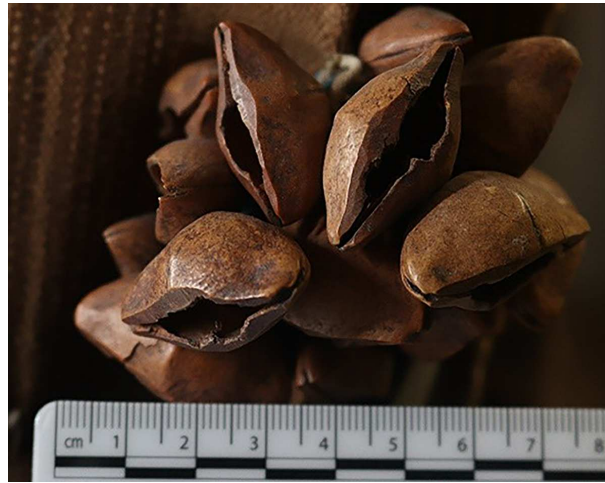
Leguminosae, *Adenanthera pavonina* L. Local name unknown.



Add File 6. String with perforated seeds of *Adenanthera pavonina* L.

Adenanthera pavonina is a tree that was introduced fairly recently to South America. Its bright red seeds are often used for (tourist) crafts and ornaments. This species is native to southeast Asia and was introduced to the Americas as an ornamental tree in urban gardens. This tree is often planted in home gardens and agroforestry systems but it can also escape cultivation. It has become invasive on several Caribbean islands (Rojas-Sandoval and Acevedo-Rodríguez 2013).

Apocynaceae, *Cascabella thevetia*(L.) Lippold. Asháninka name: Tánoki (Weiss 2005: 55)



Add File 7. Endocarps of *Cascabella thevetia* (L.) Lippold

This small tree is endemic to South America but often planted elsewhere in the tropics for its large yellow flowers. All parts of this plant are poisonous. The green fruit turns black when it ripens and contains a woody seed that is triangular. Many people of indigenous and African descent use these endocarps in body ornaments, often with a spiritual connotation (Alcantara Rodriguez 2023).

Areaceae, *Aiphanes horrida* (Jacq.) Burret. Asháninka name: Panataroki (Sosnowska *et al.* 2015: 460)



Add File 8. Seeds of *Aiphanes horrida*

This spiny palm bears bundles of red fruits with black endocarps (Bernal and Borchsenius 2010: 123). *A. horrida* occurs widely in Colombia and Peru (gbif.org/species/2738639). The species was mentioned as the only palm that was used for ornament production by the Asháninka, a very common source of seeds used to decorate the female traditional *kushma* (Sosnowska *et al.* 2015). For the adornment of the hood, only two seeds have been used. The seeds were slightly modified by cutting off the bottom and perforating the top for the insertion of the cotton thread. Each cotton thread was also laced with three *Canna* seeds. This cord is attached to the bottom edge of the hood on the left side.

Zoological components: birds

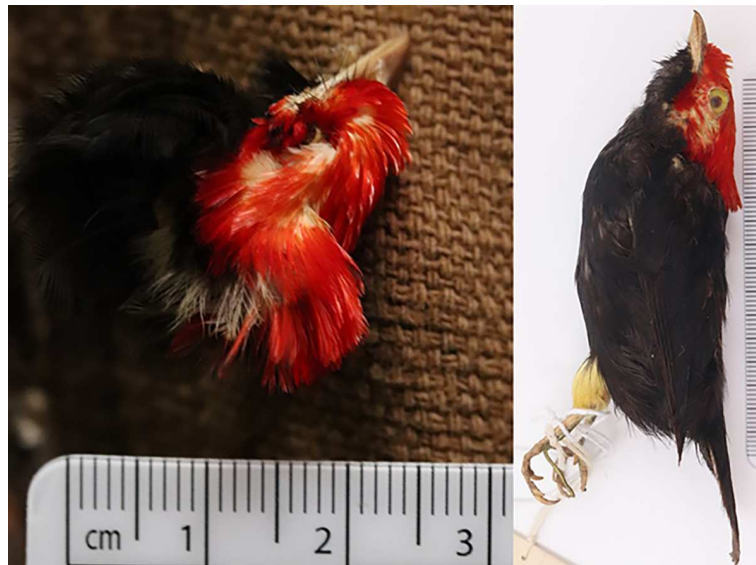
Pipile cumanensis (Jacquin, 1784), blue-throated piping guan. Asháninka name: Kanari (Rojas Zolezzi 2006: 200)



Add File 9. Two feathers of *Pipile cumanensis* on the hood (left and middle) and the bird itself in the Naturalis collection (right).

This black-and-white-feathered bird occurs in forested areas of the Western Amazon (gbif.org/species/2482310) and feeds mostly on fruits. It is often seen close to rivers and is rather common (Schulenberg *et al.* 2010). Our comparison of the three feathers on the hood to specimens of the blue-throated piping guan in the bird collection of Naturalis showed a similar feather length, pattern and colour on a female specimen of *Pipile cumanensis*. The feathers on the hood belong to the left wing of the bird.

Pipra chloromeros (Tschudi, 1844), round-tailed manakin. Asháninka name: Unknown



Add File 10. Left: Head and shoulders of a round-tailed manakin (*Pipra chloromeros*) attached to the hood. *P. chloromeros* with characteristic red head and long neck feathers in the Naturalis collection (right).

There are two species of manakin in the Peruvian Amazon that are very much alike. The males of the round-tailed manakin (*Pipra chloromeros*) and the red-headed manakin (*Ceratopipra rubrocapilla*) both have a mainly black body and a characteristic red head. The females of the two species are similar in shape and size, but their feathers are in different shades of brown and green. The bird specimen on the hood had quite long neck feathers (Additional File 10. left). The red feathers of *P. chloromeros* are longer in the neck than those of *C. rubrocapilla*. The two species also differ in the colour of their iris and leg feathers, but these were not visible on our specimen. Also, *P. chloromeros* occurs mainly in Peru east of the Andes, covering the Rio Ene basin, but also in the western part of Acre (Brazil) and in northern Bolivia (gbif.org/fr/species/2487620). *C. rubrocapilla* has a much more limited occurrence in southeast and northeast Peru and is found mostly in Central Brazil and in Northern Bolivia (Ridgely and Tudor 2009: 497).

Pseudopipra pipra (Linnaeus, 1758), white-crowned manakin. Local name: Unknown



Add File 11. *Pseudopipra pipra* (Linnaeus, 1758). Specimen on the hood (left), female of this species in the Naturalis collection (right).

This bird, attached with its head and shoulders to the hood, resembles a female *Pipra chloromeros* for its green colour and its similarity in size and shape to the male of this species also present on the object. However, the grey head of this specimen has a different colour than the rest of the body, which is not the case for female individuals of *P. chloromeros*. We identified this specimen is a female or juvenile *Pseudopipra pipra*, they can be distinguished by their grey head and green body. *P. pipra* occurs widely in the Amazon and the Brazilian Atlantic Forest and has 13 subspecies (Ridgely Tudor, 2009). When mature, it reaches a length of 9-10 cm. It is most common in forested habitats with an elevation between 800 and 1600 m, although they also occur in lower elevation levels. This bird feeds on fruits and insects and occurs within the Asháninka territory.

Capito auratus (Dumont, 1805), golden barbet. Asháninka name: Pitororoti (for *Capito* sp. Rojas Zolezzi 2003: 201).



Add File 12. Specimen of *Capito auratus* on the hood (left), male and female golden barbet (right). Photograph (right): Roger Ahlman (<https://ebird.org/species/gilbar1>)

A specimen of a bird with distinct black, yellow, and orange to red feathers is attached to the hood. We identified this bird as a male *Capito auratus*, as it matches the orange to red throat feathers, the yellow ones on the belly and the black ones on its back. The females of this species have similar feather colours, but more black patches in between the yellow feathers (Additional File 12 right). The bird occurs mainly in lowland rainforest from Bolivia to Venezuela but can also be found at the margins of rainforests and higher altitudes up to 1600 m.

cf. *Tityra semifasciata* (Spix, 1825), masked tytira. Asháninka name: Pachakitzi (González 1998: 51).



Add File 13. Chick covered in downy feathers, attached to the hood (left), specimen of the masked tytira in the Naturalis collection (right).

The specimen attached to the hood is still covered in down feathers and has a wide beak. These features suggest that this specimen is a chick, which makes it quite difficult to identify the species. It has not yet developed the distinctive features characteristic of this species, such as a red beak and eyelids. but based on the measurements and shape of the beak, we tentatively identified it as Cf. *Tityra semifasciata*. This bird is found from Mexico to Paraguay, including the Amazonian part of Peru (Mobley and de Juana 2020).

Pteroglossus beauharnaisii (Wagler, 1831), curl-crested aracari. Asháninka name: Tairinkari (Asháninka) (González 1998: 50)



Add File 14. Feathers of the curl-crested aracari attached to the hood (left), specimen *Pteroglossus beauharnaisii* (middle) and specimen of *P. bitorquatus* (right) in the Naturalis collection.

A few distinctively coloured feathers are attached to the hood, whose black, red and pale yellow colour point towards a small toucan species known as aracari (Additional File 14 left). Two species of Amazonian aracari have similarly coloured feathers, but the *Pteroglossus beauharnaisii* (Additional File 14 middle) occurs in the Asháninka area and further east (gbif.org/species/10733411), while *P. bitorquatus* (Additional File 14 right) occurs in Central Brazil to the mouth of the Amazon (gbif.org/species/2478834). The feathers on the hood are not long and do not seem fit to withstand aerial force, so they likely belong to the chest or back part of the plumage. Comparison with the Naturalis collections *P. beauharnaisii* and *P. bitorquatus* shows that the feathers on the hood are more similar to those of *P. beauharnaisii* as the red, black and yellow merge in the feathers of this species, while in *Pteroglossus bitorquatus* the colours are strictly separated.

***Amazona* sp., Amazon parrot.**

Asháninka names (according to Weiss 2005, 59): Teróri (for *A. mercenaria*), Tsiráka (for *A. amazonica*), Váonti (for *A. festiva*). Asháninka names (according to González (1998): Erotzi (for *A. amazonica*), Kintavo (for *A. ochrocephala*).



Add File 15. Tail feathers of and Amazon parrot, attached to the hood (left). *Amazona ochrocephala* (middle) and *A. farinosa* (right) in the Naturalis collection.

Several species of Amazon parrots occur in the Peruvian Amazon (Forshaw, 2006). Potential candidates for these feathers are the mealy parrot, *Amazona farinosa* (Boddaert, 1783), the yellow-crowned amazon, *A. ochrocephala* (Gmelin, 1788) and the the orange-winged parrot, *A. amazona* (Linnaeus, 1766), although the latter only occurs in the middle and northern stretches of the Ene River.

Ara chloropterus (G.R.Gray, 1859), red-and-green macaw. Asháninka name: Sahuaho (González 1998: 48)



Add File 16. Beak and feathers of the red-and-green macaw, attached to the hood (far left and middle left). Beak of *Ara chloropterus* in the Naturalis collection (middle right) and beak of *A. macao* (far right) in the same collection.

Both the red-and-green macaw (*Ara chloropterus*) and the scarlet macaw, *Ara macao* (Linnaeus 1758) occur in the Peruvian Amazon (Forshaw 2006, plate 71). Both large birds have brightly coloured red, blue and green feathers, but in contrast to the red-and-green macaw, the scarlet macaw also has yellow wing feathers, which are not present on the hood. The beak of the scarlet macaw is white to pale yellow and black at the bottom with a sharp point. The red-and-green macaw is larger and can reach a length of 90-95 cm. Its beak is similar in colour to the scarlet macaw, but also larger. On the hood, we see an upper beak that measures 6 cm, but it is broken at the base and the tip has been cut off, so it was originally slightly longer. The beak of the *A. chloroptera* specimen in the Naturalis collection (Additional File 16 middle right) was 7 cm long, while the beak of *A. macao* was only 4,5 cm long. The feathers on the hood were also similar to those of *A. chloroptera*. Therefore, we identified both macaw fragments as *A. chloroptera*. We could not verify whether the beak and feathers belonged to the same individual.

Zoological components: mammals

Dasypus novemcinctus, nine-banded long-nosed armadillo. Local name (Asháninka): Etzi (Pedrós Caballero 2023, annex 2, 546; Casanto Shingari 2022: 39) Eténi (Weiss 2005: 57).



Add File 17. The tail ends of the nine-banded long-nosed armadillo (*Dasypus novemcinctus*) attached to the hood (left), the same species in the Naturalis collection (*RMNH.MAM.24362₆*), with its scaled tail (right). Photograph (right): Naturalis.

The scaled tails (Additional File 17) represent the end of armadillo tails. They show most similarities in size and shape of the tail of a nine-banded long-nosed armadillo. The other South American armadillos either do not occur in the area (yellow armadillo, seven-banded long-nosed armadillo), hardly have scales on their tail (*Cabassous* spp., naked-tailed armadillos), are quite rare (great long-nosed armadillo) or very large, like the giant armadillo (Emmons 1997). The skin and the bones are more difficult to identify at the species level, but they likely belonged to the same individuals as the tails. At least two individuals have been used to adorn the hood. Armadillos are hunted extensively for their meat, especially the nine-banded long-nosed armadillo (Emmons 1997).

Coendou prehensilis, Brazilian porcupine. Asháninka name: Tontóri (Weiss 2005: 57)



Add File 18. Piece of porcupine skin with spines attached to the hood (left), Brazilian porcupine in the Naturalis collection (right, RMNH.MAM.19643.b). Photograph (right): Naturalis.

Two species of porcupine occur in the Peruvian Amazon. The widespread Brazilian porcupine (*Coendou prehensilis*) has spines that are white at the base and brown at the distal part, with sometimes white tips. The bicolor-spined porcupine (*C. bicolor*), with a more restricted range in the Andean foothills, has spines that are often partly yellow (Emmons 1997). Based on the colours of the spines, we identified the porcupine skin as *Coendou cf. prehensilis*, but the identification remains tentative because of the lack of other morphological features.

Sciurus sp., red squirrel. Local name (Asháninka): Meiri (Rojas Zolezzi 2003: 200); Méyiri (Pedrós Caballero 2023: 521); Méiri or Patáro (Weiss 2005: 58)



Add File 19. Squirrel tail (left) and jawbone (right) attached to the hood.

The hood is adorned with several squirrel parts: nine pieces of tail with long, bright orange and dark brown hairs and two bundles, each with three lower jaws (Additional File 19). The tails could belong to several species with orange-brown tails: the northern Amazon red squirrel (*Sciurus igniventris*) or the southern Amazon red squirrel (*S. spadiceus*), both widely distributed in respectively the northwestern and southwestern Amazon. Another possibility is the very rare Junín red squirrel (*S. pyrrhinus*), which only occurs in montane forests between 600 and 2500 m in the Peruvian Junín province, through which the Ene River flows. Prof. J. Koprowski (pers. comm.), squirrel specialist of the University of Wyoming (US), mentioned that the jawbones were quite similar within all three species, so it was not possible to distinguish between these three species without using molecular genetics.

Tapirus terrestris, Brazilian tapir, Asháninka name: Kemári (Weiss 2005: 58)



Add File 20. Tapir hoof attached to the hood (left). Detail of tapir paw from Naturalis collection (right). Photograph (right): Max Kockelkorn.

On the hood, a tapir hoof, of which the tip is cut off, is attached at the back. There is only one species of tapir that occurs in Peru, which is *Tapirus terrestris*, the Brazilian tapir (Emmons, 1997).

Saimiri sciureus, common squirrel monkey. Asháninka name: Tsiyéri (for *Saimiri* spp., Weiss 2005: 57)



Add File 21. Tail (left) and piece of fur (middle) of a common squirrel monkey attached to the hood, common squirrel monkey in the Naturalis collection (right, RMNH.MAM.60169). Photograph (right): Naturalis.

A long, non-prehensile, furry tail with a black tip and some yellowish fur at the base is attached to the hood. A piece of fur with a similar yellow colour is attached close to the armadillo tails (Additional File 21). The yellow fur and the long black tail point towards a squirrel monkey (Nowak, 1999). Taxonomists disagree on the number of species in South America (Hershkovitz 1984; Schuler and Abee 2005), but Emmons (1997) lists only one species (*Saimiri sciureus*), which varies in fur colour on the body, legs and head. It has a wide distribution, is fairly common, and occurs in groups of 25 to more than 100 individuals.

Unidentified monkey.



Add File 22. Tails of an unidentified monkey hanging from the bottom of the hood.

The hood contains 13 black tails with lengths between 10cm and 15cm. Considering the length and the diameter of these tails they probably belong to a primate. Potential candidates with long, black, non-prehensile tails that occur in the Peruvian Amazon are the saddleback tamarin (*Saguinus fuscicollis*), several species of moustached tamarins (*Saguinus* spp.) or night monkeys (*Aotus* spp). Taxonomists disagree about the number of subspecies in both genera, as there is variation in fur colour (Emmons 1997).

cf. *Tamandua tetradactyla*, southern tamandua, Local name: unknown



Add File 23. Piece of fur, attached to the hood (left). Southern tamandua in the Naturalis collection (right, ZMA.MAM.26409). Photograph (right) Naturalis.

The pale-brown, long-haired fur with a distinct black line possibly belongs to the breast fur of a southern tamandua (*Tamandua tetradactyla*) which commonly occurs throughout northern South America. Another, more unlikely candidate with a similar fur pattern is the black-shouldered opossum (*Caluromysiops irrupta*), a marsupial that is extremely rare and only known from a few observations in southeast Peru and adjacent Brazil (Emmons 1997; gbif.org/species/2439937).

Unidentified mammal.



Add File 24. Piece of fur from an unidentified mammal attached to the hood.

The hood contains a patch of thick fur, approximately 10 x 6 cm, with a grey brown-colour and woolly appearance. Considering the size and the thickness of the fur it probably belongs to a mammal that is larger than a squirrel. This patch does not contain any other morphological features that allow for a more accurate identification. A possible candidate is a crab-eating raccoon (*Procyon cancrivorus*), as it has a similar fur colour, a wide distribution and commonly occurs along watersides.