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Research paper

Identifying of a bird figure of the Nazca pampas of southern coast of Peru: a discussion post

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Abstract

Nazca is a city and system of valleys on the southern coast of Peru. The name is derived from the Nazca culture, which flourished in the area between 100 BC and 800 AD. Nazca Lines contain over 800 straight lines, 300 geometric figures and 70 biomorphic designs. Some of the straight lines are 30 miles long, while the largest bio morphs stretch up to 1200 feet. Among the zoomorphic figures are the famous Nazca condor, hummingbird, pelican, shark, bird, fish, spider, lizard, parrot, flamingo, iguana, dog, llamas, jaguar, fox, whale and monkey. We have identified a studied figure of Nazca Pampas as a species of umbrella birds (*Cephalopterus*) and this geoglyph has more resemblances with the short-lobed parasol (*Cephalopterus ornatus*) than any other species.

Keywords: *Nazca lines, Biomorph, Bird figure, Identification.*

1. Introduction

Nazca is a city and system of valleys on the southern coast of Peru. It is also the name of the largest existing town in the Nazca Province of Peru. The name is derived from the Nazca culture, which flourished in the area between 100 BC and 800 AD. The Nazca Lines are a group of series of geoglyphs sketched into the ground located in the Peruvian pampas of southern coast of Peru, also known as the Pampa Colorada (Red Plain). There are a series of enormous geoglyphs etched into a roughly 200 sq. miles stretch of the desert, created by pre-Inca people. The Nazca geoglyphs represent one of the most attractive ancient mysteries in the world. They were created from the Late Paracas to the Middle Horizon (c. 4th century BCE to 10th century CE) (Lambers, 2004).

However, the themes and purposes of the objects depicted remain unclear. This is mainly because the Pre-Inca cultures (e.g., the Paracas, Nazca, Wari, and Ica) had no writing systems. However, several hypotheses have been proposed regarding the geoglyphs. For example, some scholars posit that they served as pre-Columbian roads, while others indicate that they were performance stages, part of an agricultural rite, a labyrinth for ceremonial progressions, or expressions of astronomical phenomena (Mejía-Xesspe, 1942; Reinhard, 1988; Aveni, 1990a; Reiche, 1993; Lambers, 2004; Ruggles and Saunders, 2012; Eda et al., 2019).

These Nazca Lines contain over 800 straight lines, 300 geometric figures and 70 biomorph designs. Some of the straight lines are 30 miles long, while the largest biomorphs stretch up to 1200 feet. Among the zoomorphic figures are the famous Nazca condor, hummingbird, pelican, shark, bird, fish, spider, lizard, parrot, flamingo, iguana, dog, llamas, jaguar, fox, whale and monkey. There are 16 geoglyphs that depict birds. The bird geoglyphs mainly created during the Late Paracas and the Nazca Period (c. 2400 to 1300 years ago) (Lumbreras, 2000; Lambers, 2004; Sakai et al., 2014; Sakai et al., 2018; Eda et al., 2019; Karl & Tichy, 2020). These bird geoglyphs are identified using general impressions or a few notable morphological traits. However, little consideration has been given to whether bird geoglyphs contain traits similar to those of other taxa or if the traits depicted by each figure match the taxon to which they have been attributed.

The Nasca lines are preserved naturally by the dry climate and by winds of that region that sweep sand out of their grooves. UNESCO added the Nazca site to its World Heritage List in 1994.

In the current study, we identified a Nasca bird geoglyph as an umbrella bird, the short-lobed parasol (Cephalopterus ornatus) from an ornithological perspective. In doing so, we revealed several discrepancies between their geoglyphic characteristics and those of the taxonomic groups to which they were attributed by previous researchers.

Eda et al. (2019) described all the 16 figures of Nasca birds, they stated that these geoglyphs mainly created during the Late Paracas and the Nasca Period (c. 2400 to 1300 years ago) and account for the largest number of geoglyphs in the Nasca pampas that depict plants and animals. Furthermore these bird geoglyphs are identified using general impressions or a few notable morphological traits. However, so Eda et al. (2019): "little consideration has been given to whether bird geoglyphs contain traits similar to those of other taxa or if the traits depicted by each figure match the taxon to which they have been attributed." This geoglype was judged differently by various authors, Gallinácea or Gallinaceous: Faisán or pheasant (Iglesias 1995), term of a fertility cult (Reinhard, 1988), mixed creatures of insect and

pelican according to Aveni (2000) as parrot nestling according Lumbreras 2000: PV68A-DF4 and not parrot according Eda et al. 2019: fig. 4a.

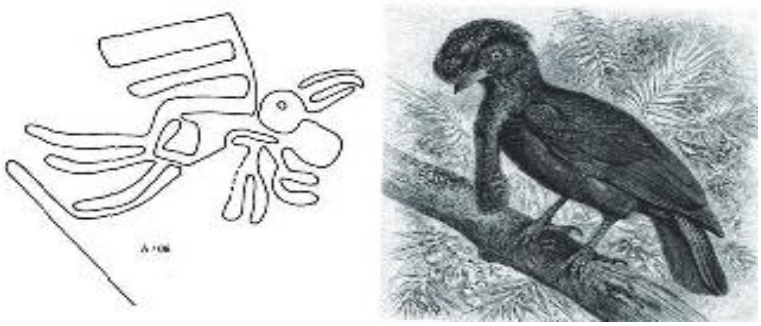

Fig. 1: Comparison Between the Drawing of the Nazca Geoglyph and A Historical Brehm Figure.

Fig. 2: Photo of the Modern Days Umbrella Bird Species, the Short-Lobed Parasol (Cephalopterus Ornatus; É. Geoffroy Saint-Hilaire, 1809); Courtesy by; Karl & Tichy (2020) and Rights from Alfred Edmund Brehm: Die Vögel. Erster Band: Baumvögel (1891) © Kurt Stüber, 2007. This Book Is Protected Under the GNU Free Document License. This License Allows Personal and Commercial Use Under the Terms of the GNU Free Document License. Source: www.biolib.de.

2. Discussion

According to Eda, et al. (2019), we are unable to identify12 of the 16 bird geoglyphs in ornithological perspectives. In 10 of them, we were unable to obtain sufficient information because the geoglyphs were incomplete, drawn abstractly, or had been partially destroyed by recent human activity. The remaining two geoglyphs were well-drawn, but their morphological characteristics were not shared with birds in modern Peru. There are three possibilities that these well-drawn geoglyphs did not share such characteristics, as follows:

1) the object existed, but it is now absent from modern Peru;
2) the object exists in modern Peru, but conflicts arose due to an incomplete knowledge of birds; and 3) the object never existed but was present in the imagination of the Nasca people.

Karl & Tichy (2020) identified this Nasca bird geoglyph (Code A/08) as an umbrella bird from an ornithological perspective. The 40 meter long flying bird figure shows short legs with two toes each. The medium-length tail shows three elements, one of the wings shows three elements, and the inner one forms the back line at the same time. A structural element arches over the strong beak with curved upper hook to almost the length of the beak. There is a bulge at the throat. The main arguments for this are the indicated umbrella over the beak, the swollen crop region and the feathering ratios on the wings and tail. The gular pouch contracts during flight. In present study we identify this bird code A/08 as an umbrella bird species, The short-lobed parasol (Cephalopterus ornatus; É. Geoffroy Saint-Hilaire, 1809).

The genus of umbrella birds (Cephalopterus) belongs systematically to the family of ornamental birds (Cotingidae), which is distributed from Costa Rica to Bolivia, where they are inhabited, for example, in the tall trees of the rainforests. Its entire length is adorned with a canopy-like plume of shiny metal that extends beyond the tip of its powerful beak. An apron-like skin structure, which is up to 40 centimeters long and has feathers, hangs down from their breasts. It is an inflatable throat pouch that allows the bird to make a loud, low-pitched courtship call.

They are named for their distinct umbrella-like hoods. Three species of Umbrella birds are extant in the genus Cephalopterus and all of these three species are confined only to south America:

1) The short-lobed parasol (Cephalopterus ornatus É. Geoffroy Saint-Hilaire, 1809): This species is distributed in the Amazon from the Andean slopes of Colombia, Ecuador, Peru and Bolivia eastward to S-Venezuela, locally in SW Guyana and Brazil. The birds are 41 to 50 centimeters long and weigh about 500 grams.
2) The long-lobed parasol (Cephalopterus penduliger P. L. Sclater, 1859): This species attains a total length of only 36 to 41 cm and a weight of about 340 grams. It comes from northwestern South America, the Pacific Andean slopes of SW Colombia (south of Valle) and W-Ecuador (southbound to El Oro).
3) The bare-throated parasol (Cephalopterus glabricollis Gould, 1851): This species is normally found at intermediate altitudes. The rooster is characterized by a bare red throat pouch even when not inflated. The hen lacks the gular pouch and the puffy, umbrella-like crest, but is still strikingly large. The bare-throated parasol is rare and only distributed locally in Central America (Del Hoyo et al., 2016; Chesser et al., 2021).

We agree with the conclusion of Karl & Tichy (2020) and re-identified this studied figure of Nasca Pampas as a texa of umbrella birds (Cephalopterus) of South America and this geoglyph has more resemblances with the short-lobed parasol (Cephalopterus ornatus) than any other species.

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