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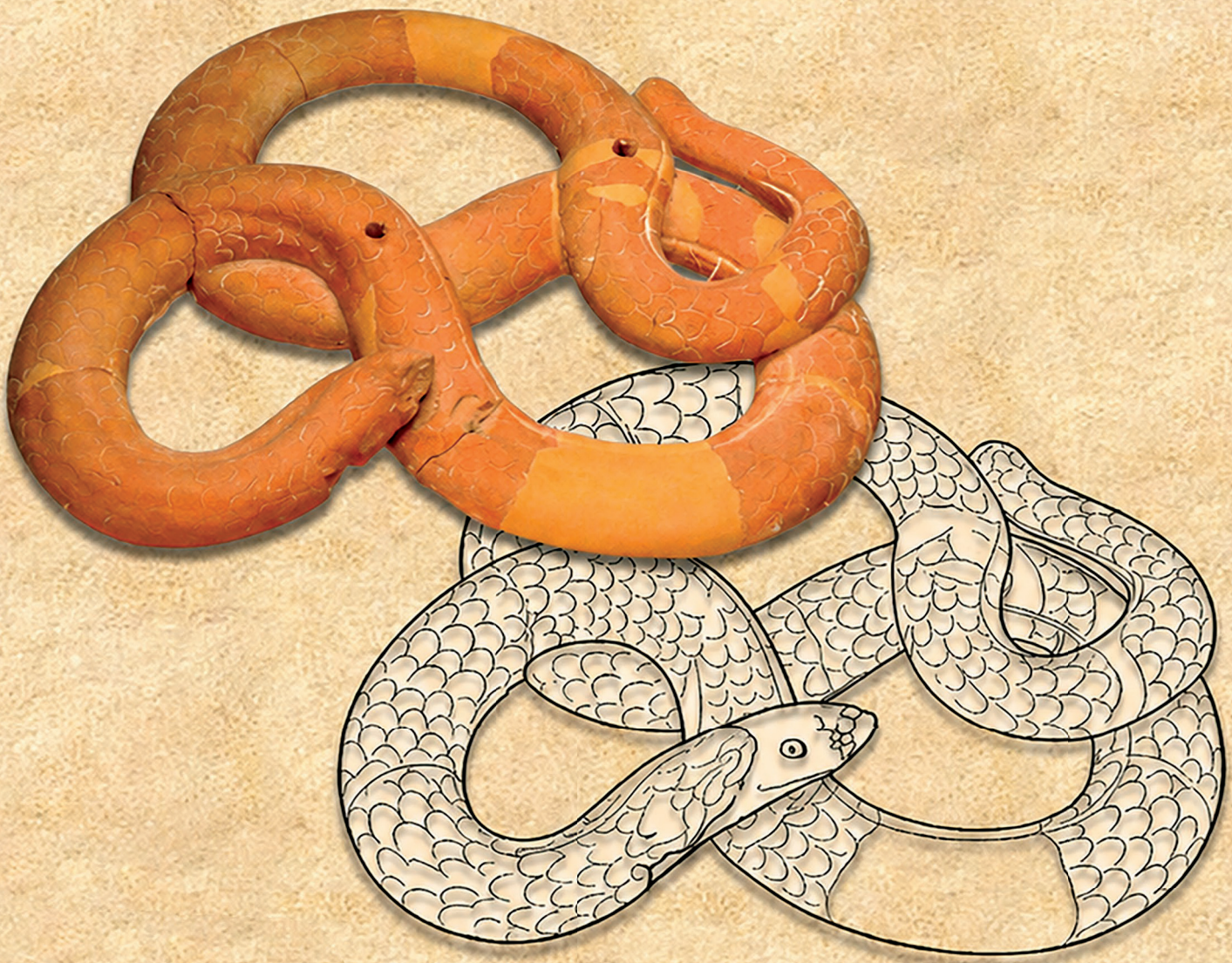
Apostolos CHRISTOPOULOS & Taxiarchis DANELIS



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Couverture / *Cover:*
*The Late Classical terracotta applique of coiled snake from Eretria and the proposed hypothetical reconstruction. Photo & drawing credit: Apostolos Christopoulos.*

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# A 2400-year-old terracotta Javelin sand boa *Eryx jaculus* (Linnaeus, 1758): herpetological approach to an ancient Greek clay artifact from Late Classical Euboea with ethnozoological insights

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**ABSTRACT**
Zoomorphic representations are common in antiquity, in every expression of art, for every social and cultural situation. This study focuses on the species identification of a snake represented in a rare terracotta applique unearthed in the "House of the Mosaics" in the ancient city of Eretria (Euboea, Greece), dated to the Late Classical period. The item exhibits morphological traits closely resembling those of the genus *Eryx*, a distinctive group of boid snakes. A comparative morphological assessment was conducted, using the local history, modern zoological references and knowledge of the local or adjacent herpetofauna. Our work demonstrates that overcoming the challenges inherent in identification of represented animals in ancient art requires a close collaboration between archaeology and zoology. This terracotta species, that we identified as Javelin sand boa (*Eryx jaculus* (Linnaeus, 1758)), is now recognized to inhabit various regions of Euboea. It is thus not only archaeologically attested but also historically contextualized as part of the local biodiversity most likely known to ancient observers. Further discussion for other species presence in ancient Greek literature has also been undertaken.

**KEY WORDS**
Eretria,
House of the Mosaics,
ethnobiology,
ancient Greece,
snake,
*Eryx*,
species identification.

**RÉSUMÉ**
*Un boa de sable* Eryx jaculus *(Linnaeus, 1758) en terre cuite datant de 2400 ans : approche herpétologique d'un artefact en argile de la Grèce antique provenant de l'Eubée de la fin de l'époque classique, avec des perspectives ethnozoologiques.*
Les représentations zoomorphes sont courantes dans l'Antiquité, dans toutes les formes d'expression artistique, pour toutes les situations sociales et culturelles. Cette étude se concentre sur l'identification de l'espèce d'un serpent représenté dans une rare applique en terre cuite découverte dans la « Maison des mosaïques » de l'ancienne ville d'Érétrie (Eubée, Grèce), datant de l'époque classique tardive. Cet objet présente des caractéristiques morphologiques très proches de celles du genre *Eryx*, un groupe distinctif de serpents de la famille des Boidae. Une évaluation morphologique comparative a été réalisée à partir de l'histoire locale, de références zoologiques modernes et des connaissances sur l'herpétofaune locale ou des régions adjacentes.

**MOTS CLÉS**
Érétrie,
Maison aux Mosaïques,
ethnobiologie,
Grèce antique,
serpent,
*Eryx*,
identification des
espèces.

Nos travaux démontrent que pour surmonter les difficultés inhérentes à l'identification des animaux représentés dans l'art antique, une collaboration étroite entre l'archéologie et la zoologie est nécessaire. Nous avons identifié le serpent de cette représentation en terre cuite comme étant un Eryx javelot (*Eryx jaculus* (Linnaeus, 1758)), serpent désormais reconnu comme habitant diverses régions d'Eubée. Cette espèce est donc non seulement attestée archéologiquement, mais également contextualisée historiquement comme faisant partie de la biodiversité locale très probablement connue des observateurs de l'Antiquité. D'autres discussions ont également été menées sur la présence d'autres espèces dans la littérature grecque antique.

## INTRODUCTION

The identification of animal species in ancient art is a complex interdisciplinary field that requires collaboration between archaeology, zoology, ecology, art history, anthropology and natural sciences (Binnberg 2017; Evans *et al.* 2020; Ferronato & Georges 2023). Accurate identifications rely on such interdisciplinarity, as they involve not only the recognition of morphological characteristics but also the interpretation of the animals' relationship with human societies that depicted or described them (Lonsdale 1979; Werness 2006; Ferronato & Georges 2023; Sanchez *et al.* 2024). Ancient zoomorphic objects and their depictions provide valuable insights into how ancient peoples perceived local and transregional fauna, the role of animals in daily life and their broader cultural significance (Tidemann & Gosler 2010; Kostuch 2017; Ferronato & Georges 2023). The prominence of animals in antiquity is evident through their widespread appearance in literature and and art, where they served not only as literal depictions but often as symbols connected to religious, mythological or practical uses (Whitley 2001; Robinson 2002; Hurwit 2006; Neer 2012; García 2014; Sagiv 2018; Andreozzi 2020; Dosoo & Galoppin 2022; Faeza & Zahra 2024). Studying these representations sheds light on ancient human understanding of biodiversity and the evolution of human-animal cohabitation in the same ecosystem.

From a zoological perspective, animals depicted in ancient art can be systematically categorized into taxonomic groups based on distinct morphological and anatomical features characteristic of each order or family (Veth *et al.* 2018; Andreozzi 2020; Evans *et al.* 2020). However, species-level identification remains challenging and is not widely encountered. Despite this, there are several well-documented cases of successful species identification and classification through ancient iconographic and literary evidence (Böhme & De Haan 2002; Voultsiadou & Tatolas 2005; Johansson 2012; Trinquier 2012; Kitchell 2014; Binnberg 2017; Sidiropoulos *et al.* 2017; Pareja *et al.* 2020; Urbani & Youlatos 2020; Böhme & Koppetsch 2021; Guasparri 2022; Sanchez *et al.* 2024). In Greece, despite its rich ancient culture, there are few contemporary studies employing zooarchaeological data to investigate faunal representation in art, worship or social relations (Bodson 1981; Alexandridou 2022; Mylona 2022).

Among all animal groups, reptiles, particularly snakes, occupy a special place in the history of ancient civilizations, since in many societies they were considered animals with powerful symbolism and were important in ancient mystery cults (Morgan 2008; Håland 2011; Kitchell 2014; Pieraccini 2016). Their depictions range from ancient Egypt to Greek mythology and Eastern traditions to the New World, reflecting their cultural significance as seen in various artifacts (Egli 1982; Walker 2010; Meier & Vidale 2013; Tabarev 2017; Rodríguez Pérez 2020). However, due to the underrepresentation of zoological approaches and the limited knowledge about ancient fauna despite abundant preserved material, understanding how ancient people perceived and interpreted snakes remains challenging (Kostuch 2024).

While depictions of other reptiles and amphibians are generally underrepresented in ancient classical culture, compared to other taxonomic groups (MacKinnon 2014), snakes occupy a prominent place in art and mythology, constituting one of the most recurring and symbolically rich motifs in both art and literary contexts (Bodson & Orr 2002; Salapata 2006; Hawtree 2014; Kitchell 2014). They appear in a wide range of artistic forms, including reliefs on funerary stelae, sculptures, pottery, frescoes, amulets, seals, figurines and decorative elements on various objects used in everyday life or ritual practices. The presence of snakes in ancient Greek and Latin traditions goes beyond decorative or narrative function, they are symbols deeply embedded in the religious and cultural fabric of ancient societies. Their frequent and almost obsessive representation in artistic and mythological scenes attests to the respect and awe they inspired, acting as conveyors of many symbolic associations, as wisdom, rebirth, transformation, afterlife, preservation of beauty, healing, fertility, death, protection, as well as danger, evil or mystery (Sinha 1999; Håland 2011; Philippa-Touchais 2014; Boze 2016; Pieraccini 2016; Rodríguez Pérez 2020; Tsatsou 2024). These attributes resonate not only within the Greek world but also across the broader Mediterranean and global cultural spheres, as the symbolism of the snake demonstrates remarkable diachronic persistence and diffusion, shifting in meaning according to the religious and philosophical worldviews of each era (Håland 2011; Lenders & Janssen 2014; Tabarev 2017; Wright-Carr 2018; Tzirakis 2019). Particularly in early cultic practices and mystery rites, snakes were elevated to sacred beings, often portrayed with supernatural characteristics and interpreted as intermediaries between humans and the divine (Robertson 1983; Morenz 2004; Stothers 2004; Ogden 2014; Pieraccini 2016; Tzirakis 2019).

Despite their clear cultural and religious significance, the scholarly study of snakes in ancient Greek art and literature remains limited, as detailed taxonomic, iconographic analyses identifying the species depicted or referred respectively, are rarely undertaken (Bodson 1981; Kitchell 2014; Böhme &

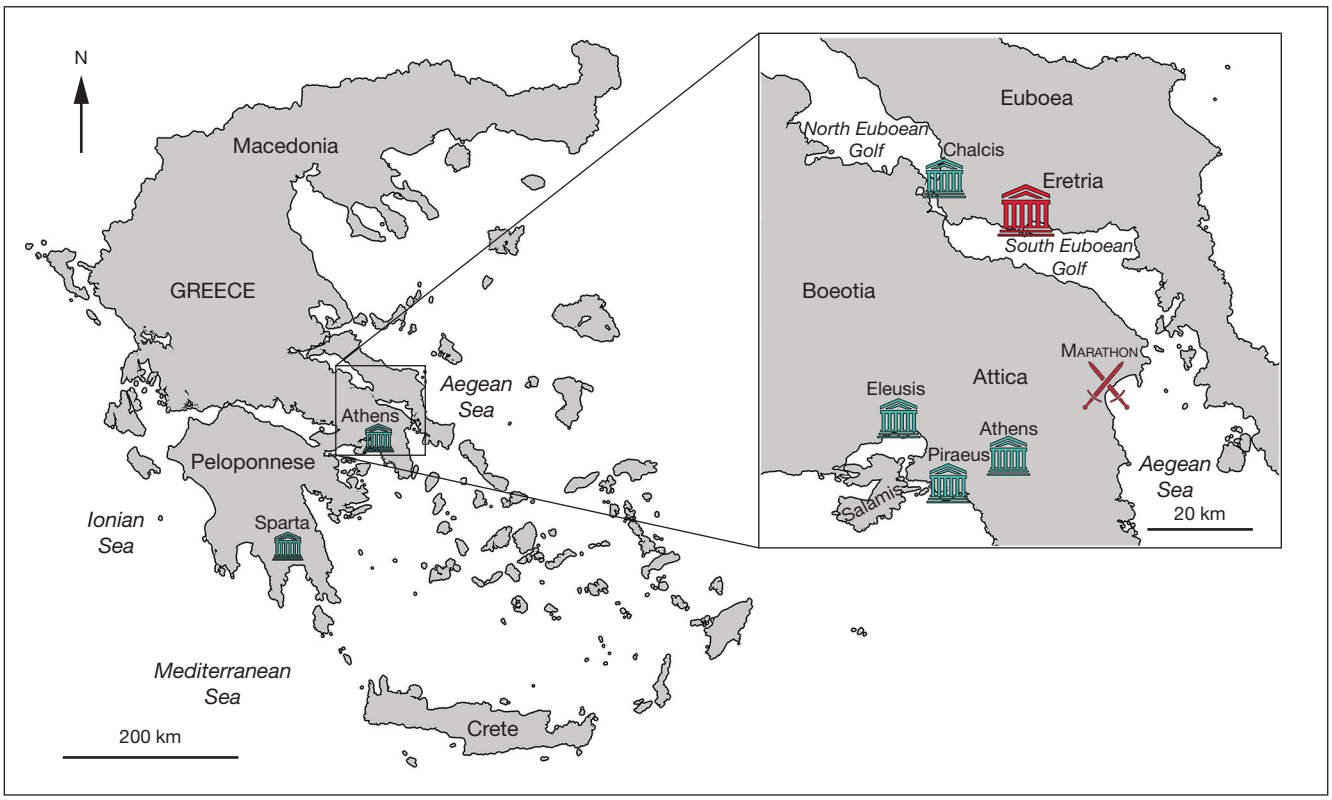


Fig. 1. — Map of Greece with a zoomed-in view of the area of interest. Important ancient cities and locations are indicated. Credit: Taxiarchis Danelis.

Koppetsch 2021; Danelis 2025). This lack of systematic investigation reveals a significant research gap, which calls for an interdisciplinary approach, combining archaeology, herpetology and art history, to achieve a more comprehensive understanding of the identity and role of reptiles in antiquity.

## The ancient city of Eretria

Ancient Eretria, situated on the western coast of Euboea opposite Attica (Fig. 1), was one of the most prominent city-states of antiquity, with sustained political, military, commercial and cultural activity dating back to the Geometric and Archaic periods (Boardman 1980: 65, 177; Mazarakis Ainian 1987). In the context of the Persian Wars, Eretria allied with Athens and participated in the Ionian Revolt against the Persian Empire. As retribution, the Persians destroyed the city in 490 BC, shortly before the Battle of Marathon (McGregor 1987: 16; Martinez Vazquez 2019). Following its destruction, the city was rebuilt with Athenian support and gradually regained a portion of its former prosperity (Francis & Vickers 1991).

During the Peloponnesian War, Eretria often adopted a pro-Spartan stance, striving to assert its independence from Athenian hegemony—an objective it achieved in 411 BC following a successful revolt (Richardson 1891; Reber 2007). Following this development, Eretria remained autonomous, its urban architecture began to evolve and the city maintained diplomatic relations with Macedonia (Cawkwell 1978). Eretria possessed democratic institutions and a vibrant cultural life (Walker 2004: 228; Verdan 2012). The city's architectural and urban organization included major public buildings, such as the large theater, the Temples of Apollo, Artemis and Dionysos, necropolises and luxurious private residences adorned with mosaics (Richardson 1891; Ducrey & Metzger 1979a; Reber 1998, 2007; Verdan 2012). Ancient Eretria stands as a vivid example of a regional power with international ties and cultural prestige (Richardson 1891, 1896; Heermance 1896; Ducrey & Metzger 1979a; Mazarakis Ainian 1987; Reber 2007; Ackermann *et al.* 2021).

## The House of the Mosaics

During the 1970s, archaeological fieldwork in Eretria, carried out by the Swiss School of Archaeology in Greece, brought to light significant remains of the ancient city. Pierre Ducrey and Christiane Dunant led excavations of several luxurious residences. Among all of them, the House of the Mosaics may not be the largest, but it is certainly the most richly decorated, occupying a prime location, on the lower slopes of the city's acropolis. This building was constructed in *c.* 370 BC, likely by a prominent individual, reflecting the cultural and economic prosperity that Eretria experienced during the Late Classical and Hellenistic period, before the house was destroyed by fire in the first third of the third century BC (Ducrey *et al.* 1993: 48; Reber 2007). The House is an almost perfect square (25 × 26 m) and consists of 15 rooms and courtyards, for private and social use (Ducrey & Metzger 1979a). The most important rooms are Androns 7 and 9; banqueting halls for symposia where the most significant findings were located. In Andron 9, unique mosaics

were discovered, giving the house its conventional name, while Andron 7 yielded a wealth of terracotta figurines, including an intricately arranged decorative ensemble (Ducrey & Metzger 1979a, b).

The decoration of Andron 7 features, among other elements, large wall-mounted appliques depicting a Satyr, Pan, a Gorgoneion (Medusa's Head), three Maenads, a snake and rosettes. Together, these form a cohesive Dionysian-themed composition that was directly affixed to the walls (Ducrey & Metzger 1979b; Mekacher 2003). While the subject matter suggests that the decoration may have been inspired by mystical or religious background, it was more likely an expression of refined aesthetic luxury in line with the tastes of the time (Metzger 1980; Ducrey *et al.* 1993: 179). Likewise, it functioned as a cultural instrument through which the owner projected an image of himself as both wealthy and sophisticated. The choice of such symbolic motifs during a symposium setting underlines the importance of displaying power, knowledge and spiritual protection (Reber 1998: 117; 2007).

The aim of this study is to identify the snake species depicted in the terracotta snake figurine from Andron 7, through a multidisciplinary approach combining archaeological context, zoological analysis and modern herpetological taxonomy. By establishing a more precise identification, this research contributes to the broader understanding of the representation of the candidate species in ancient art and its symbolic significance.

## Material and methods

The taxonomic identification of the animal species represented in the terracotta applique was based on a systematic morphological and ethological analysis of its features, combined with comparative study of known related species occurring locally and nationally (Masseti 2003; Binnberg 2017; Evans *et al.* 2020; Guasparri 2022). The proposed methodology integrates the description of the archaeological item with the use of scientific identification keys, as well as photographic and illustrated sources from the field of herpetology. A comparable methodological approach has been adopted by Böhme & De Haan (2002) for the identification of a bronze sculpture of a Western Montpellier snake *Malpolon monspessulanus* (Hermann, 1804), from the Rabat Archaeological Museum (Morocco), originating from the Roman city Volubilis and dating between the first century BC and the third century AD.

The item under study is a terracotta applique (Inv. no. ME 16584) made of clay with white priming layer, representing a limbless reptile in a loosely coiled posture and intertwined multiple times, with morphological features indicating a Squamata Reptile, specifically a snake (Fig. 2). The figurine bears details such as the imprint of scales on the body, as well as a characteristic curvature and posture of the snakes' body. Its dimensions are 30 × 24.5 cm (Ducrey & Metzger 1979b). Despite the stylized and simplified artistic rendering, which limits the completeness of certain morphological elements, sufficient morphological information is retained for accurate identification of the species. During excavation, the item was found in a fragmented state, with the head and some body parts completely missing (Ducrey & Metzger 1979b). During the conservation phase, only the lost body parts were restored using appropriate clay, while the head was not reconstructed, preserving its documented loss and, consequently, the authenticity of the find.

For our description, following Youlatos *et al.* (2023), the applique was reexamined at the Archaeological Museum of Eretria, where additional measurements and photographs were taken, in collaboration and under permission of the Ephorate of Antiquities of Euboea, Ministry of Culture, Greece (Fig. 2). The length of the terracotta snake-body is 142 cm with 4 cm diameter. While no cloacal plate was visible, we considered the tapering end of the clay snake-body to be the tail, whose length is 10 cm, with 2.3 cm diameter.

The identification was based on the comparison of the morphological features of the figurine with descriptions of reptile species identification keys, through specialized scientific herpetological manuals (Arnold & Ovenden 2002; Speybroeck *et al.* 2016) and published authoritative photographs (Valakos *et al.* 2008; Insacco *et al.* 2015; Christopoulos *et al.* 2019, 2022; Christopoulos & Kotselis 2021), focusing mainly on the features that distinguish the families of the suborder Serpentes. Particular attention should be paid to the analysis of posture, shape and body parts such as head and tail, as animal depictions typically bear key characteristics that are distinctive of the species they represent (Bodson 1981).

The main identification criteria included the shape and manner of the curled posture of the body, the morphology and texture of the scales, the shape and size of the tail and the body length to thickness ratios. In addition, the absence of features attributed to other snake species with different morphology was examined. The specific morphological features indicate with high accuracy that the figurine belongs to a species of the snake family Boidae. Furthermore, a comparison with other snake species, which show similar characteristics and a common geographical distribution, was carried out in order to lead to a more reliable identification of the species represented by the figurine. In particular, species whose geographical distribution includes Euboea, the wider Greek territory and adjacent countries were examined.

The absence of a head limits identification, as the head and its scale plates provide the most critical features for differentiation between related species. In addition, stylized elements and damage to the specimen affect the accuracy of conclusions. Nevertheless, distinct morphological and habitus in combination with ethological features and the geographical distribution data are sufficient to support our species identification.

## RESULTS

The systematic comparative study of the morphological features of the terracotta figurine led to the identification of the represented species as a member of the family Boidae Gray, 1825, and more specifically of the subfamily Erycinae Bonaparte, 1831. Despite the wear and the loss of the head, the figurine retains sufficient morphological traits to allow for a reliable

Fig. 2. — The Late Classical terracotta applique of semi-coiled snake from Andron 7 of the House of the Mosaics, Eretria, Euboea Island, Greece. The rights to the depicted monument (Inv. no. ME 16584) belong to the Greek State and the Ministry of Culture (Law 4858/2021). The monument is under the jurisdiction of the Ephorate of Antiquities of Euboea © Ephorate of Antiquities of Euboea. Hellenic Ministry of Culture. Scale bars: 10 cm. Photo credit: Taxiarchis Danelis.

identification. Furthermore, ethological evidence reinforces our conclusions as to the identification of the species.

One of the most distinctive morphological traits supporting the attribution to Erycinae is the tail structure. The figurine clearly depicts a short, thick tail with a rounded tip, a defining characteristic of Erycinae snakes (Vitt & Caldwell 2013: 609, 610; Speybroeck *et al.* 2016: 355, 356). This trait strongly differentiates them from other snake families in the same biogeographical zone, in which the tails tend to be thinner, pointed, tapering and often elongated (Vitt & Caldwell 2013: 609, 610). In Erycinae, the tail is so abbreviated and robust that it can even be mistaken for the head, an adaptation linked both to their burrowing habits and to their defensive behaviour intended to deceiving predators (Greene 1973; Baha El Din 2006: 235, 240; O'Shea 2018: 117).

Furthermore, the texture and depiction of the scales, although artistically simplified, are rendered with a smooth texture (no keels) and rounded shape, characteristics typical of the Erycinae subfamily (Tokar & Obst 1993). Although the snake applique should be considered oversized in comparison to natural snake dimensions (which reach generally only up to 80 cm total length), the body proportions, featuring a large diameter relative to length, further support the identification by distinguishing the figurine from thinner snakes, such as those of the Colubridae family (Speybroeck *et al.* 2016). Additionally, the figurine portrays a robust, muscular body consistent with the stout build characteristic of erycine boa species (Baha El Din 2006). The absence of a head impedes the identification of specific features but does not prevent a broader classification.

Regarding ethological features, such as posture and behaviour, the snake's body is depicted in a loosely coiled posture, a common motif associated with resting or defensive readiness and one that is frequently observed among members of the Erycinae species. When erycine boa species feel threatened, they coil into a ball and expose their tail as a head mimic (Greene 1973; Vitt & Caldwell 2013: 610). Particularly noteworthy, however, is the inflation of the body, a feature that suggests a defensive behavioural response, most likely intended to deter a potential threat by visually enhancing the animal's apparent size (Young *et al.* 2000; specific on *Eryx jaculus*, Christopoulos *et al.* 2026).

Fig. 3. — The Javelin sand boa, *Eryx jaculus* (Linnaeus, 1758). Photos credit: Apostolos Christopoulos.

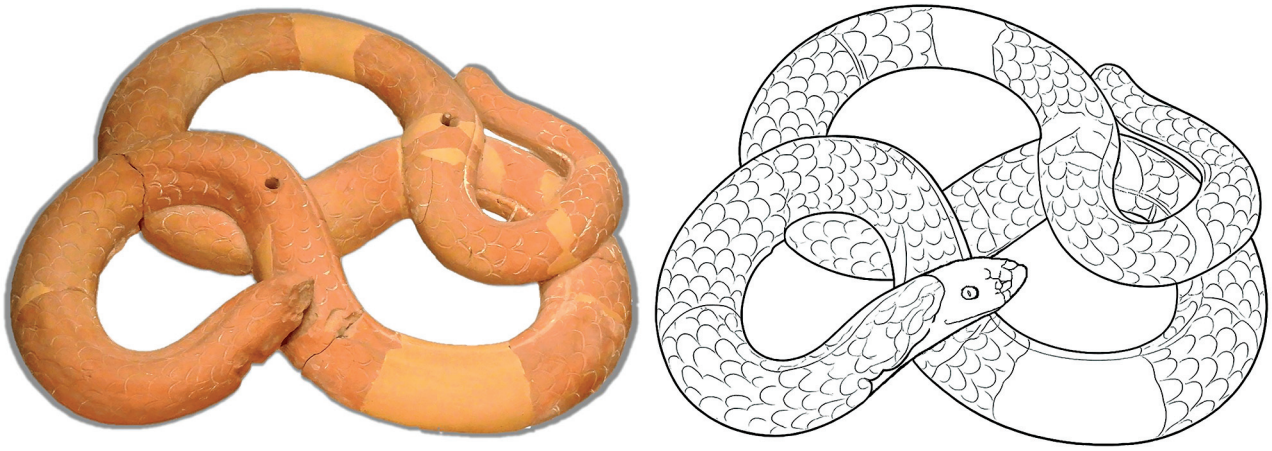

Fig. 4. — The Late Classical terracotta applique of coiled snake from Eretria and the proposed hypothetical reconstruction. Photo & drawing credit: Apostolos Christopoulos.

Comparison with photographic and illustrated modern sources (Arnold & Ovenden 2002: pl. 42; Valakos *et al.* 2008: 334, 335; Speybroeck *et al.* 2016: 356; O'Shea 2018: 117) as well as with taxonomically verified specimens in the literature (Anderson 1898: pl. 33, 33.A) and personal archive, confirms that the above morphological features are consistent with snakes of the genus *Eryx*. Considering the known geographical distribution of *Eryx* species, the depicted species can be reliably attributed to the Javelin sand boa *Eryx jaculus* (Linnaeus, 1758) (Fig. 3), which occurs in the area. This species is included in the herpetofauna of Euboea, as well as several other regions across mainland Greece (Valakos *et al.* 2008: 333-336; Christopoulos *et al.* 2019, 2022; Pafilis & Maragou 2020: 178, 179; Christopoulos & Kotselis 2021), which further supports the taxonomy of the species. Its depiction in the figurine may reflect iconographic influence derived from established prototypes, or potentially even direct observation of the animal itself in the wild or in captivity by the artist (Thomas 2021), given that ethological elements appear to be represented.

This defensive depiction, combined with the particular posture, gives the figurine a symbolism that may be associated with protective or deterrent roles, probably in the context of cult or magical-religious practices.

## DISCUSSION

### The Javelin sand boa in ancient Greek art

Based on our analysis, the terracotta figurine from the House of the Mosaics in Eretria represents a Javelin sand boa, *Eryx jaculus*. This depiction seems to be the first confirmed representation of this species in ancient Greek culture (Fig. 4). Other representations of the sand boa in ancient Greek material may exist but remain unrecognized. Until now, most artistic snake depictions in the ancient Greek world were of elongated creatures, often shown as bearded, governed by strong iconographic conventions rather than anatomical accuracy (Rodríguez Pérez 2020). These forms dominated serpent iconography during the Classical period emphasizing the symbolic or mythological character of the serpents rather than their zoological identity (Fig. 5A, B). However, with the transition to the Hellenistic period, artistic realism became more common driven by naturalism (Hanfmann 1963; Ogden 2013; Murdoch 2015; Thomas 2021) and natural traits of snakes seemed to begin to appear more clearly, such as the detailed snake heads of unique gold jewelry or the more recognizable forms of snakes in statues of Asclepius and Hygeia (Fig. 5C, D). Still, none of these examples match the habitus of the terracotta snake applique from Eretria.


Fig. 5. —Representative serpent depictions from the Classical and Hellenistic period: **A**, Oikouros ophis (guardian serpent) as bearded-snake from statue of Varvakeion Athena, roman-era copy of the Classical chryselephantine statue of Athena Parthenos (National Archaeological Museum, Greece); **B**, Statue of Asclepius, with his divine snake "drakon" wrapped around his rod, roman-era copy of Classical god's statue from Epidaurus (National Archaeological Museum, Greece); **C**, Statue of Asclepius, with his divine snake (Aesculapian snake, *Zamenis longissimus* (Laurenti, 1768)) wrapped around his rod, roman-era copy of Hellenistic god's statue (Palazzo Altemps, Italy); **D**, gold bracelets with snakes, popular motif during Hellenistic Period (Benaki Museum, Greece). Photos credits: A, B, D, Taxiarchis Danelis; C, Carole Raddato, CC BY-SA 2.0: "Statue of Asclepius, Roman copy from the 2nd century AD of an original Greek statue from the Hellenistic period, from the Ludovisi Collection, Palazzo Altemps, Rome" https://flickr.com/photos/41523983@N08/31963763014, last consultation on 18 June 2026.

Even though the Javelin sand boa seems to be not well represented in ancient Greek art, it could have been an ideal model: a harmless, shy and easily handled snake (Speybroeck *et al.* 2016: 355). The realism in natural elements of the figurine witnesses a possible direct observation of a live Javelin sand boa for the creation of the applique. The combination of relaxed coiling and defensive posture (flattened-out body) indicate a striking familiarity with the animal's natural behaviour on the part of the artist. In fact, the species is distributed in Attica (Valakos *et al.* 2008: 333; Annousis *et al.* 2021) which supports the prevailing hypothesis that the snake, together with the rest of the terracotta artifacts from Andron 7, has been proposed as part of a unified decorative set imported from a single Attic workshop (Ducrey & Metzger 1979b; Ducrey *et al.* 1993: 123; Mekacher 2003).

However, we cannot exclude the possibility that decoration was a special order from the House's owner, made by a local artist with Attic technique influences (Saggini 2024: 121). The uniqueness of this figurine could support the idea of a unique Eretrian atelier. Although no archaeological evidence is provided (Mekacher 2003), this hypothesis could be supported by the economic growth of Eretria during that period, as well as the local presence of the Javelin sand boa. Despite the fact that this species has a fragmented distribution across the island of Euboea, due to the presence of scattered suitable habitats (dry, arid, semi-desert areas), it has already been recorded very close to the city of Eretria (Christopoulos *et al.* 2019).

## The ancient identity of the Javelin sand boa

Understanding the role of an animal in ancient Greek culture requires first clarifying its identity (Bodson 1981). In the case of the Javelin sand boa, this remains debatable. Although identifying ancient snake-names with modern taxonomic names is often complex, the opportunity presented by this case warrants closer examination.

The Javelin sand boa has been incorrectly associated with the ancient snake "Jaculus" due to its scientific name. About the Javelin sand boa, Boulenger (1913: 149, 150) states: "Notwithstanding its rather heavy form, it is […] darting like an arrow upon its prey". In Latin, *jaculus* (from *iacere*, "to throw") denotes a dart and appears similar to the ancient Greek snake "Acontias" a term etymologically linked to the *javelin* (ἀκόντιον, *akontion*). A notable cross-linguistic semantic pattern is observed in the naming of certain snake species renowned for their speed and sudden, dart-like movements (Böhme & Koppetsch 2021).

In the 16th century, Pierre Belon (1553: 88), during his travels in the Aegean Sea, made a connection between the names "Acontias", "Jaculus" and the Greek name "Saeta/Sagittari" (Σαΐτα/Σαϊττάρι), as well as the Turkish "Ochilanne" (*Ok yılanı*), both referring to the Dahl's whip snake, *Platyceps najadum* (Eichwald, 1831). These names share a similar semantic origin, derived from the word *arrow*, due to the snake's speed, as *sagitta* in Latin and *ok* in Turkish both mean "arrow". In Modern Greek, the name "Saeta" refers to the same species, while in Italian, "Saettone" denotes the Aesculapian snake, *Zamenis longissimus* (Laurenti, 1768). Notably, in English, the term "whip-snake" is commonly used for colubrid snakes, characterized by their slender bodies and rapid movements.

According to Böhme & Koppetsch (2021), Acontias and Jaculus likely referred to species within the genera *Dolichophis* or *Psammophis*, based on ancient descriptions of these snakes as tree climbers. Since ancient sources describe them as arboreal, it is plausible to include the Balkan whip snake, *Hierophis gemonensis* (Laurenti, 1768), within this semantic field. In Modern Greek, it is known as "Dentrogalia" (Δενδρογαλιά, "tree-cat", loosely translated as "tree-snake"), as *dendron* (δένδρο) means "tree", possibly referencing its possible arboreal behaviour.

Although these terms refer to different snake species, they fall within the same semantic field and express, through conceptual metaphor, shared characteristics: speed, linearity and sudden, darting motion (Barbara 2012). This trend reveals a universal cognitive strategy of interpreting physical traits and behaviours through zoological metaphors, wherein linguistic communities assign meaning based on sensory perception and form. The Javelin sand boa, however, does not conform to this pattern and thus represents a taxonomic misnomer—an erroneous classical allusion in Linnaean nomenclature. Hence, following the comprehensive linguistic work of Charlesworth (2004), the species is more appropriately associated with the ancient Greek name "Scytale" (Σκυτάλη, "baton"), referring to a snake similar to a round stick, meaning head and tail can be easily mistaken.

Within this same incorrect context, the species has been mentioned as a "biological weapon" allegedly used by ancient Greeks, who were said to have introduced the snake into Sicily (Insacco *et al.* 2015)[1]. This conjecture is unsupported. Ancient sources indicate that it was the Bithynians – not the Greeks – who used snakes in pots, under the command of the Carthaginian general Hannibal, during the naval battle of Pergamon against King Eumenes II (Masseti & Zuffi 2011; Mayor 2014). In any case, the Dice snake, *Natrix tessellata*, and not the Javelin sand boa, has been proposed as the species involved in this historical event (Burton 2021)[2]. On the other hand, if Hannibal had ever used such a tactic earlier during the Carthaginian Wars, it could be supported by the presence of the introduced population of Javelin sand boa in Sicily that shows similarity to the North African subspecies *Eryx jaculus jaculus* (Linnaeus, 1758), in contrast to *E. j. turcicus* (Olivier, 1801), which is native to the Eastern Mediterranean and Balkan Peninsula (Valakos *et al.* 2008; Faraone *et al.* 2019).

Besides "Scytale", considering that common name of herpetofauna species can be varied across different regions (Crother 2012: 1; Davranoglou & Embirikos 2023), we cannot exclude a possible alternative ancient zoonym of the Javelin sand boa, linked to the "Amphisbaena" (Ἀμφίσβαινα),

1. Even popular news networks reproduced this information, e.g. Squires (2015).
2. Similarly, the Dice snake have been proposed to be introduced to Serifos Island, Greece, as resulted from human-mediated translocation, based on molecular analysis of Kornilios & Thanou (2024).

the mythical "two-headed snake"[3]. This should not be confused with the genus *Amphisbaena*, a modern taxonomic group of legless lizards bearing the same name (Böhme & Koppetsch 2021). On the other hand, we should not consider the medieval, monstrous version of the creature, called "Amphisbaena", discussed by Berggren (2022). We should consider ancient names, known as morphonyms, were reflecting observable physical peculiarities (Humar 2024). Indeed, excluded literary exaggeration, Greco-Roman zoonym of Amphisbaena has been linked to "two-headed snakes" in the deserts of Egypt and Arabia, where species of *Eryx* occur (West 2006; Barbara 2012; Kitchell 2014: 2). Also, Nicander's description of the creature (Nicander, *Ther.* 375, 376) and the lemma ἀμφίσβαινα from Hesychius' *Lexicon* may resemble the appearance of the Javelin sand boa. Similarly, Belon may have identified the Javelin sand boa as Amphisbaena during his visit to Lemnos (Danelis 2025).

Most beliefs about Amphisbaena snake revolve around myth and fantasy. By recognizing the Amphisbaena in the Javelin sand boa, the artist or the owners of the House of the Mosaics could raise the figurine from a naturalistic depiction to a mythical representation, thereby reflecting a worldview in which such creatures were perceived as real. The decorative motif may have been intended to convey protection and might be associated with protection during pregnancy, as noted by Pliny the Elder (Druce 1910; Cunningham 1933; Böhme & Koppetsch 2021), or with other forms of spiritual safeguarding (protection of health or knowledge), not cited for this creature specifically, but most plausibly connected with the oikouros ophis—the guardian serpent (Pafilis 2010; Rodríguez Pérez 2020). Even the coiled posture of the figurine resembles the defensive posture of the Javelin sand boa. However, the association between posture and symbolism should not be assumed automatically. The position of the figurine may simply reproduce the attitude of the animal as it appeared during observation or handling at the time of its depiction.

Regarding the thematic synthesis of decoration, besides the obvious association with Dionysian worship (Ducrey & Metzger 1979b; Metzger 1980; Mekacher 2003), the Amphisbaena hypothesis also may clarify the connection between the terracotta snake figurine and the terracotta Medusa head found in the same room, since, according to the myth, Amphisbaena was born from the blood of Gorgo Medusa (Leigh 2000). Last but not least, even though the archaeologists have already stated that the association of the clay wings with the snake applique found together is probably uncertain (Ducrey *et al.* 1993: 118), the flying snakes of Arabia mentioned by Herodotus (Mayor 2022) cannot be entirely disregarded as a potential source of creative inspiration. Considering the owner's social standing and cultural ambitions (Metzger 1980; Ducrey *et al.* 1993: 179), the choice of exotic animal motifs can be understood as a deliberate component of the decoration.

3. In antiquity, narratives that we might now label as mythical were often perceived as factual, which makes it difficult to draw a clear boundary between myth and scientific reality from a modern perspective (Barbara 2012; Kitchell 2015).

## CONCLUSION

The zoological study of archaeological artifacts depicting fauna offers valuable insights into biodiversity and ecological awareness in antiquity. Such representations serve not only as evidence for the presence of specific species in the historical environment but also as indicators of first-hand knowledge about animal morphology and behaviour, as well as their perceived ecological roles, considering that humans lived in a less disturbed natural environment being curious and observing (Bodson 1981; Kitchell 2015).

By examining morphological and behavioural traits, distributional data and the symbolic and artistic conventions of the period, we conclude that the terracotta semi-coiled snake from Andron 7 of the House of the Mosaics in Eretria most likely represents a boid erycine snake, the Javelin sand boa, *Eryx jaculus*. Admittedly, the absence of the head remains a notable limitation, as species of *Eryx* exhibit a distinctive cranial morphology that normally provides important diagnostic information. This interdisciplinary framework offers the most reliable path for species identification in ancient representation, helping to avoid common misinterpretations (Binnberg 2017; Binnberg *et al.* 2021).

Nevertheless, both zoological and archaeological perspectives should be maintained in an open dialogue, enriching our understanding of how ancient people observed, interpreted and artistically represented the natural world. This multiscale approach deepens our understanding of the historical relationship between humans and nature. The scientific analysis of faunal depictions thus extends beyond their archaeological value, informing current debates in conservation biology and environmental history.

**Credits**
– Conceptualization: A.C., T.D.;
– data curation: A.C., T.D.;
– formal analysis: A.C., T.D.;
– investigation: A.C., T.D.;
– methodology: A.C., T.D.;
– project administration: T.D.;
– resources: A.C.;
– validation: A.C., T.D.;
– visualization: A.C., T.D.;
– writing – original draft: A.C., T.D.;
– writing – review & editing: A.C., T.D.

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Antiquities of Euboea ©Ephorate of Antiquities of Euboea. Hellenic Ministry of Culture. We would like to express our sincere gratitude to the personnel of the Ephorate of Antiquities of Euboea, and in particular to its Head, Dr. Dimitrios N. Christodoulou, Archaeologist, for granting permission to study the finding. We also wish to thank the staff of the Archaeological Museum of Eretria, especially Chief Guard Ms. Stavroula Parissi and Conservator Ms. Fotini Popoli, for facilitating access to, handling of, and the photographic documentation of the finding. Furthermore, we are thankful for the initial guidance regarding administrative information provided by Dr. Alexandra Kostarelli (Archaeologist, Ephorate of Antiquities of Euboea) and Dr. Ioannis Chouliaras, Archaeologist (Head, Ephorate of Antiquities of Thesprotia and Ioannina). Lastly, we would like to thank the three anonymous reviewers for their insightful comments and suggestions on our manuscript.

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