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Rediscovery of a Mesoamerican greenstone sculpture from the collection of Ulisse Aldrovandi

Davide Domenici

Abstract

This article presents a pre-Hispanic Mesoamerican greenstone sculpture, formerly held in the collection of Ulisse Aldrovandi (1522–1605) and recently rediscovered by the author in the storerooms of the Museo Civico Medievale in Bologna. After a discussion of Aldrovandi's general attitude towards natural and Cultural specimens from the New World, the article explores the ways in which the Bolognese polymath Described and illustrated the sculpture in his *Musaeum metallicum* (1648), where he named it as 'Idolum pileatum'. It is argued here that Aldrovandi's main interest was not so much proto-anthropological as of a taxonomic kind, in line with his interest in material culture as both an antiquary and a natural historian. The last section of the article explores the sculpture's cultural biography, reconstructing its collection history and also putting forward a hypothesis for the circumstances of its arrival in Bologna.

In memory of Laura Laurencich Minelli

While I was browsing in the storerooms of the Museo Civico Medievale in Bologna on 30 January 2020, my attention was caught by a small greenstone sculpture in the form of a human head, lying unassumingly in an old glass case amid an array of mostly Bolognese objects. In the dim light of the underground room, a diagnostic curled incision on its cheek immediately called to mind the illustration of the *Idolum pileatum* ('capped idol') published in the *Musaeum metallicum*, the volume into which the Bolognese savant Ulisse Aldrovandi (1522–1605) poured his encyclopedic knowledge of metals, earths and stones. Justly famous among Mesoamericanists, the book (published posthumously in 1648) contains woodcuts of a number of Mesoamerican artefacts – namely, a long-nosed mosaic mask, which is today at the Museo della Civiltà in Rome, a sacrificial knife with a carved wooden ornithomorphic handle, a knife with an obsidian prismatic blade, and eight small stone sculptures, or 'idols' in Aldrovandi's lexicon. Deemed to be irreparably lost, like the knives and all the other sculptures, the *Idolum pileatum* was now re-emerging from more than four centuries of oblivion to meet my astonished gaze. After providing a formal description of the greenstone sculpture and putting forward a hypothesis as to its possible provenience¹ and dating, this article explores the artefact's biography, with a special focus on its early modern phase, when it was collected, described, visually reproduced and named by Ulisse Aldrovandi. The figure of the Bolognese polymath is then introduced and his attitude to the New World's natural and cultural manifestations is discussed; the ways in which he treated Mesoamerican artefacts in the *Musaeum metallicum* are examined, followed by a more specific analysis of the textual descriptions and visual representations of the *Idolum pileatum* and other Mesoamerican stone 'idols'. The provenance of the greenstone sculpture is then investigated and its whole collection history is reviewed; a hypothesis is offered as to how it could have reached Bologna in the early sixteenth century. The concluding section concentrates on the ways in which exploration of the cultural biography of the newly rediscovered sculpture reveals how experiential, sensory engagement with material culture – a trait common to both antiquarian and naturalistic mindsets – constituted a key aspect of early modern Italian reception of Mesoamerican material.

The sculpture

The sculpture, made from dark, mottled greenstone and 8.8 cm high, is carved into an oval slab-like shape, in the form of a male(?) human head (Fig. 1); it was most probably meant to be worn as the central pendant of a necklace. At the time of writing, no mineralogical analysis has been conducted, so that no precise identification of the stone is available; nevertheless, simple visual inspection suggests that it could

be a type of serpentine, as also stated by Aldrovandi himself (see below); in colour it is dark green, mottled with darker green and coppery stains.



Fig. 1. Greenstone sculpture, Museo Civico Medievale, Bologna. 8.8 × 5.3 × 2.2 cm. Photograph: Luca Sgamellotti. © Museo Civico Medievale di Bologna.

A biconical perforation (maximum diameter 1 cm; minimum diameter 0.4 cm) pierces the central area. The protruding mouth and broad, triangular nose are carved over one edge, with coffeebean eyes set to either side of it, surmounted by a thick brow-ridge which descends between the eyes; over the brow, another thick ridge runs across the forehead, ending in a downward 'hook' on the left side of the face. A curvilinear incision crosses the cheeks, delineating the jaw in a quite unnatural way. The head wears a cap-like headdress, whose lower edge is decorated by three incisions in the form of an inverted U with a drilled dot in the centre: one of these motifs occurs on either side of the head, and the third lies over the forehead. The upper part of the cap shows a topknot-like protuberance; on both sides of the head, the ears, set far back behind the pierced hole, are executed in low relief, with drilled perforations representing ear ornaments. The back and the bottom of the head are plain. The sculpture's surface is highly polished; linear marks visible in raking light probably represent traces left by the polishing process and by subsequent wear; these are especially visible around the central perforation – that is, in the areas most exposed to wear, both when the object was originally worn as a pendant (when it would have rubbed against adjacent beads) and when it was lying on a flat surface (in which position it was arguably preserved for more than 400 years). Unfortunately, the lack of clearly diagnostic traits hinders a precise dating and cultural attribution of the pendant. Previous tentative identifications of the illustration in the *Musaeum metallicum* as the Central Mexican rain god Tlaloc (Detlef Heikamp) or as an Olmec artwork (Laura Laurencich Minelli) are, in my opinion, untenable, since the sculpture lacks the distinguishing features of the god (goggle eyes, fanged mouth) as well as any clear Olmec stylistic trait.² The dark, mottled serpentine recalls stone sculptures from the Mexican states of Guerrero and Oaxaca, as do the coffee-bean eyes.³ Indeed, coffee-beans eyes are often seen on the Late Postclassic Mixtec greenstone figurines commonly termed penates, many of which display broad triangular noses and, at times, thick eyebrows; ear ornaments are also commonly represented in those pieces by means of drilled holes. Even if the headdress of the pendant is unique, its central topknot mirrors those occasionally seen on Mixtec figurines, and while Mixtec penates are usually full-body figures, simple greenstone heads are also known. As far as the object's function is concerned, a penates-like greenstone sculpture employed as a necklace pendant has been found in Yagul, Oaxaca.⁴ In light of these observations, I would tentatively assign the greenstone pendant of the Museo Civico Medievale to the Mixtec (or, more broadly, Mixtec-related Otomanguan) indigenous groups, which inhabited the territories of modern-day Oaxaca and parts of the adjoining states of Puebla and Guerrero. As far as chronology is concerned, a dating to the Late Postclassic period (c. ad 1250–1521) is reasonable, even if far from secure. These admittedly broad hypotheses on the object's cultural affiliation and dating are also compatible with its collection history as reconstructed below.

Ulisse Aldrovandi and the New World

As already mentioned, the pendant was once owned by Ulisse Aldrovandi, one of the most important naturalists and polymaths of late Renaissance Italy, whose multiple interests led him also to collect and study materials from the Americas and other non-European regions.⁵ Aldrovandi assembled in his Bolognese home a huge collection, which at his death comprised almost 20,000 natural and artificial items. Aldrovandi's literary output was also massive: the thirteen published volumes (most of them posthumous) of his *Historia naturalis* represent only a fraction of his literary production, which covered almost the entire range of what was then known as 'natural history', especially in the fields of botany, zoology and geology. Aldrovandi's research was – like that of most late Renaissance natural historians – based on Aristotle's empiricist and classificatory principles, employed by early modern scholars to classify systematically an ever expanding 'book of nature'. The novelties brought by geographical discoveries and new experimental research – which caused the philosophical re-evaluation of an intellectual tradition going back to Theophrastus, Dioscorides, Pliny and Galen, and extending to a host of Renaissance physicians and natural historians following in their footsteps – combined to amend, enrich and complement Aristotelian natural philosophy. In Aldrovandi's mind, the perception that modern scholars could equal or exceed the ancients in terms of quantity of observed natural phenomena – a conviction that led him to claim that in this field he had 'long surpassed' Aristotle⁶ – had not yet brought about a sense of their qualitative and methodological obsolescence. Accordingly, Aldrovandi's confidence in the paradigms and classificatory principles inherited from antiquity had not been dented by the apparently infinite diversity of the world that was unfolding before his eyes, and which was made material in the huge collection he had assembled: 'There is nothing under the sun that cannot be reduced to one of the three genera, that is, inanimate things and fossils extracted from the bowels of the earth, plants or animals.'⁷ The task of early modern scholars was, then, to update and expand the body of knowledge received from the past in light of the opportunities provided by the Renaissance 'discovery of the world'. The collection that Aldrovandi assembled in his house from 1549 onwards, as well as the botanical garden he founded in Bologna in 1568, served precisely this purpose, being conceived as a tangible 'theatre of nature' in which a novel experiential knowledge of the diversity of worldly phenomena could be gained. Aldrovandi's experience of the world depended not only on direct observation but also on books and images. In his collection, in fact, there were around 3,600 volumes, and 8,000 tempera and watercolour images of 'natural things' painted by a large group of artists. Images, indeed, played a key role in Aldrovandi's own publications, lavishly illustrated as they were with hundreds of woodcuts. In this way, as Giuseppe Olmi has aptly observed, the image 'ceased to be a simple ornament of the book to become an integral part of scientific discourse'.⁸ The relevance of images in Aldrovandi's scientific enterprise represents one of the clearest early modern examples of that 'visual epistemology' which was common to 'European natural history in general and to the domestication of foreign nature in particular'.⁹ It is within this approach to experiencing the multiple novelties of an expanding world that we must perceive Aldrovandi's interest in flora and fauna from the Americas, which led him to envision in 1559 a multidisciplinary scientific expedition to the New World in order to study, collect and depict unknown plants and animals;¹⁰ unfortunately, he never managed to persuade the Iberian monarchs to fund such an expedition. However, a letter he sent to Philip II through the mediation of Archbishop Giambattista Castagna (then Papal nuncio in Spain and afterwards pontiff as Urban VII) induced the Spanish king – at least according to Aldrovandi himself – to organize the famous expedition to New Spain led by Francisco Hernández in 1571–7.¹¹ Despite the failure of his attempt personally to experience the multitude of American natural novelties by means of a transatlantic voyage, Aldrovandi managed to collect several botanical, zoological and mineralogical specimens from the Americas, as well as indigenous artefacts and paintings of 'natural things'.¹² His rich library also provided him with the opportunity to investigate the recently discovered lands, since he was familiar – either directly or indirectly – with the works of authors such as Christopher Columbus, Amerigo Vespucci, Hernán Cortés, Peter Martyr, Gonzalo Fernández de Oviedo, Francisco López de Gómara, Pedro Cieza de León, Girolamo Benzoni, Francisco Hernández, André

Thevet, José de Acosta and Giovanni Battista Ramusio. In line with his predominant interests in nature, Aldrovandi used these sources mostly to gather botanical and zoological information.¹³ For instance, the primary interest of his readings in the field of natural history are clearly witnessed by the complaint, expressed in his 'Discurso naturale' (1572–3), that authors such as Gómara and Oviedo had described plants and animals in a merely 'incidental' way, neither describing them in detail nor properly assessing their 'nature', their 'temperature', or the genera in which they were to be classified.¹⁴ The earliest published work in which Aldrovandi addressed indigenous American cultural phenomena is the *Ornithologiae*, the first volume – planned from 1587 and ultimately published in 1599 – of a series of works that was intended to culminate in a massive, multivolume *Historia naturalis*. In Book xi, after describing the names, anatomy and habits of parrots, Aldrovandi reviewed the uses that various peoples of the world had made of these birds.¹⁵ After mentioning Latin authors such as Varro, Macrobius, Cato and Oppianus, he introduced the use of feathers in the Indies, initially treating the East and West Indies as a generic unit but soon focusing his attention on ancient Mexico. Mainly drawing data from André Thevet and José de Acosta, Aldrovandi provided information on the sale of feathers in the markets of Tenochtitlan and on the feathered costumes worn in battle, in ceremonies held in honour of the Aztec gods Huitzilopochtli, Tezcatlipoca and Topiltzin, and given as presents to Cortés by Motecuhzoma II. He then described the techniques employed in the creation of featherwork mosaics, indulging in the then common comparison between featherwork and painted images. He also provided his personal opinion on the vexata quaestio of the meaning of the phrase 'opere plumario' in the book of Exodus, a veritable trope in sixteenth-century texts on Mexican featherworks.¹⁶ Aldrovandi's synthesis of textual sources is intermingled with mentions of actual objects, such as the featherwork image of St Jerome that he had received from the Bolognese cardinal Gabriele Paleotti; or the 'very elegant' featherwork shields he had seen in the Roman house of Tommaso de' Cavalieri, the famous friend of Michelangelo. In the same vein, the paragraph ends with the detailed description of two feather headdresses that Aldrovandi observed in the museum of the Bolognese collector and poet Antonio Giganti: these were illustrated in two well-known woodcuts, where they are worn by a *Homo sylvestris* and by a *Regina insulae Floridae*; both characters are flanked by a more detailed image showing – with considerable precision – the technique of manufacture.¹⁷ The way in which Aldrovandi went back and forth between textual information and direct, experiential observation of actual objects and images, besides instantiating an investigative method that has been masterfully described by Michel Foucault,¹⁸ is also revelatory of a typically antiquarian mindset. Indeed, Aldrovandi had pursued antiquarian interests earlier in his life, as witnessed by the catalogue of classical statues in Roman collections he compiled in 1550, later published as an appendix to *Le antichità della città di Roma* (1556) by the famed antiquary Lucio Mauro.¹⁹ Nevertheless, over the course of his life, Aldrovandi's antiquarian knowledge was increasingly used in the service of his decided aims as a naturalist. For example, when he later commented on the same Roman statues, Aldrovandi mainly considered them as examples of types of marble rather than as ancient works of art, as did Michele Mercati in his *Metalloteca*.²⁰ As Olmi has put it, 'Archaeological research "tout court" at the beginning, natural history studies for the rest of his life.'²¹ The increasing dominance of the mindset of the natural historian is also evident in the aforementioned passages from the *Ornithologiae*. Aldrovandi's readings of Thevet and Acosta were never aimed at systematically describing indigenous ways of life and beliefs, but were, rather, part of a strategy to 'cherry-pick' data about birds and featherwork techniques, which gave an obvious pre-eminence to issues such as the varieties and habits of Mexican hummingbirds.²² The only linguistic information he recorded concerned the meaning of Huitzilopochtli's name as 'senestram resplendentis pennae' (a literal translation of Acosta's 'siniestra de plumas resplendentes'), mentioned – clearly – only for its 'ornithological' relevance. Even more significantly, in his description of one of the headdresses he had examined in Giganti's museum, Aldrovandi – plainly inspired by Thevet's words on the use of toucan's feathers to create headdresses – attempted an identification of its yellow feathers with those from the breast of the *Rhamphastos* or *Pica Bressilica* (or *Bresilica* – that is, the toucan), a bird that was twice illustrated in the *Ornithologiae* (pp. 802–3). The double illustration reflects the diversity of Aldrovandi's sources: while the first one is drawn from an

al vivo painting from his own collection, the second is a copy from Thevet's *Cosmographie universelle* (1575). Aldrovandi also had the opportunity to examine toucans directly, since he owned a Pica's head and he saw parts of the bird in other collections: a head in Giganti's museum, another head in the Venetian house of Bernardo dall'Orso, a beak in the collection of Teodoro Ghisi and a whole specimen in that of Tommaso de' Cavalieri.²³ Again, the interplay between texts, printed images, al vivo depictions and actual specimens graphically manifests the multiplicity of Aldrovandi's methodological procedures.

Material matters: Mesoamerican artefacts in Aldrovandi's *Musaeum metallicum*

The increasing tendency to subsume antiquarian knowledge to the aims of natural history is even more evident in the *Musaeum metallicum*, the later treatise on metals, earths and stones, which was edited for publication by Bartolomeo Ambrosini in 1648, forty-three years after Aldrovandi's death. The whole treatise follows Aldrovandi's usual systematic structure, where the description of each mineral is discussed in a series of paragraphs devoted to topics such as naming, etymology, nature and properties, provenience, moral and mystical values, and uses in a variety of fields such as medicine, art and religion.

When mentioning American artificialia in the *Musaeum metallicum*, Aldrovandi mostly focused on their materiality. For instance, in a chapter devoted to iron and its uses, he alluded – as was customary in sixteenth-century texts – to the Amerindian lack of this metal. Then, after enumerating a long series of agricultural and carpentry iron tools employed by Old World populations, he suddenly brought America back into the picture:

*But in the Indian province of Themistitan, since they have no iron and steel, they produce knives with an emerald green or dark stone (which some call Ethiopic stone), with very elegant handles, of which we place before the reader's eyes two images. The first one shows a larger knife, with a finely sculpted wooden handle. The second image shows a longer and narrower knife, with the handle made of jade [lapide renali]. In the third place is shown the image of a stone axe used by Indians in sacrifices which Antonio Giganti, famous and diligent collector of natural items, gave to Ulisse Aldrovandi.*²⁴

Even though he illustrated them in three beautiful woodcuts (Fig. 2), the objects (two Mesoamerican knives, now lost, and an Amazonian axe, which is today in the Museo della Civiltà in Rome) did not induce Aldrovandi to expand on topics such as human sacrifice or (presumed) circumcision, as contemporary Italian texts dealing with sacrificial knives and obsidian prismatic blades often did.²⁵ Neither did the ornithomorphic handle of the larger knife elicit any kind of interpretative attempt. Rather, Aldrovandi's attention was caught principally by the materials from which the objects were made, thus providing an interesting early mention of both green and black obsidian – 'an emerald green or dark stone (which some call Ethiopic stone)'. The former, mined from the deposits of the Sierra de las Navajas (Hidalgo, Mexico), was clearly the constituent material of the 'longer and narrower knife', whose illustration and textual description offer unique information about the way in which obsidian prismatic blades were provided with greenstone handles, a practice never attested by archaeological finds. A similar attitude is evident in the case of Aldrovandi's treatment of the beautiful mosaic-crusted wooden mask of the Nahua merchants' god Yacatecuhtli ('Nose Lord'), today at the Museo della Civiltà in Rome (Fig. 3).²⁶ Describing in Book iv ('On stones') the use of stone in architecture on the basis of a mix of experiential knowledge and textual references to authors such as Pliny, Leon Battista Alberti and Giovanni Botero, Aldrovandi dealt with the use of certain stones to create roof tiles and with the meaning of the term *pavonacea* in Pliny's architectural lexicon. Dissenting from those who interpreted it as an allusion to the iridescence of peacock feathers, Aldrovandi asserted that it referred to mosaic, or *lithostroton*. Then, discussing the meaning of the related Greek term *asoraton*, he stated:

*in our opinion they rather created mosaics [lithostrota], which we call tessellate, that is various fragments, or pieces of stone, or small stones of various colours, as we said before. And it is worth considering what Gomara records in the *Historia Indica*, that is, that in the Indies masks or faces are made out of wood and*

then decorated with small stones of various colours, so that they resemble lithostroton. Thus, for the benefit of the reader, we show an image of such a mask.²⁷

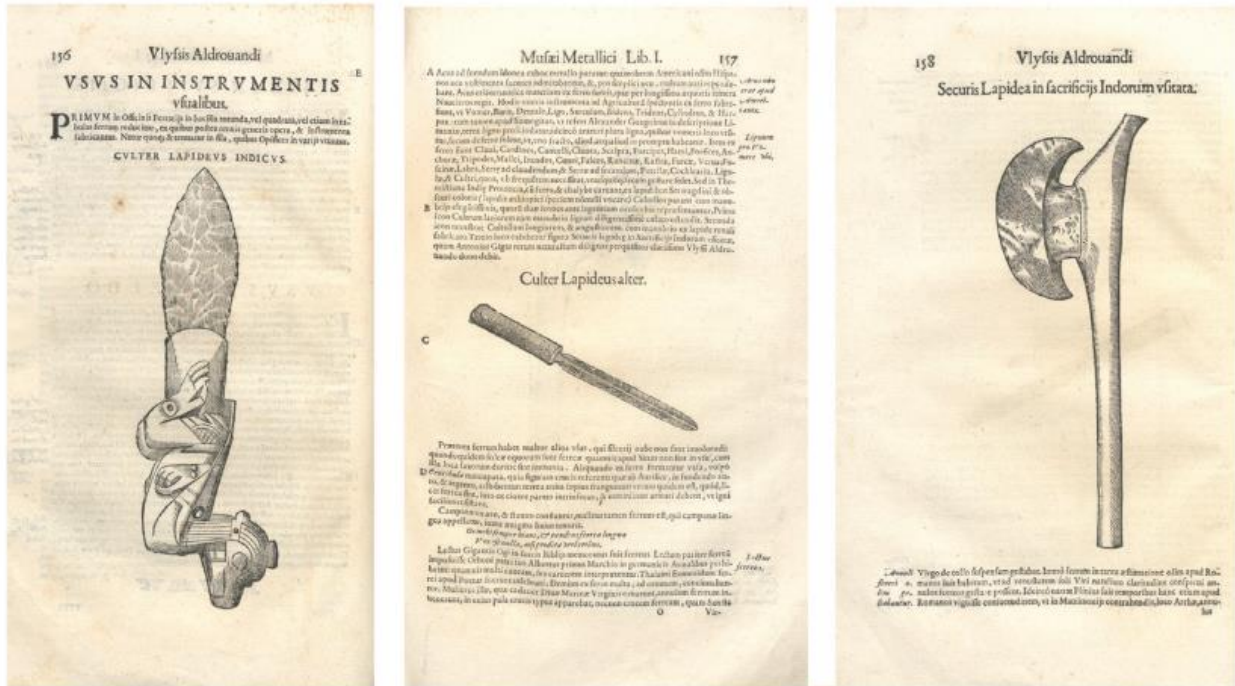


Fig. 2. Two Mesoamerican knives and an Amazonian axe in *Musaeum metallicum*, Book 1, woodcuts. © Biblioteca Universitaria di Bologna.



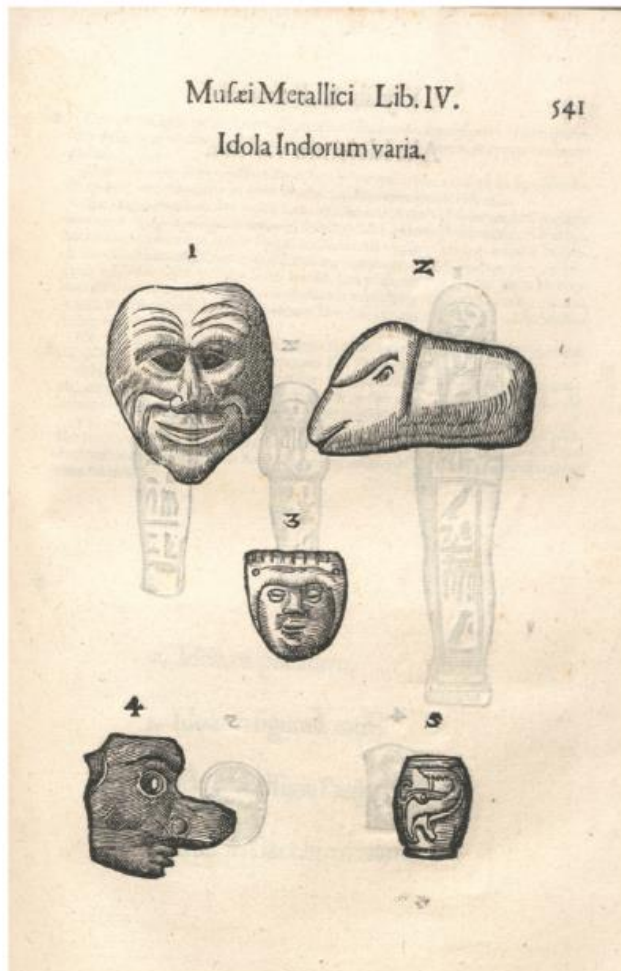
Fig. 3. Long-nosed mask of the Nahuatl merchant god Yacatecutli (*left*), and its representation in *Musaeum metallicum*, Book IV, woodcut (*right*). Mask, photograph: Davide Domenici. © Museo della Civiltà, Rome. Woodcut, © Biblioteca Universitaria di Bologna.

Again, Aldrovandi made no attempt to investigate the iconography of the mask, beautifully reproduced in a plate titled 'Indian mask adorned by various little stones, as a mosaic' ('Larva Indica varijs lapillis exornata instar Lithostroti') (Fig. 3). Brought to the attention of the reader as an example of a specific stone-working technique, the mask strictly adhered to this function, with no room for intellectual detours.²⁸ Neither Gómara's *Historia* nor other texts rich in ethnographic information about Mesoamerican peoples were employed by Aldrovandi to expand on indigenous customs. And even when he borrowed cultural-specific information from those texts, he did it in a way strictly linked to his material-focused interests: for instance,

returning a few lines below to the locus communis of the Amerindians' lack of iron, and describing how, according to Thevet and Hernández, they felled trees with stone axes and created arrowheads and many tools and implements out of stone, the only cultural-specific information that Aldrovandi borrowed from Hernández's work was the Nahuatl term 'Yiztl' (iztli), 'obsidian' – that is, the indigenous name of the 'stone' (actually, a volcanic glass) that they employed.²⁹

The stone 'idols': a universal taxonomic genus

It is within the general framework sketched so far that we can now read the passages of *Musaeum metallicum* Book iv where Aldrovandi described the Mesoamerican stone sculptures, also illustrated in two woodcuts, whose printing blocks – like those of other Mesoamerican objects – are preserved in the collections of the University of Bologna.³⁰ Aldrovandi dealt with Mesoamerican stone sculptures a few pages before writing about the mask mentioned above, in a paragraph devoted to the use of stones in religious cults and images ('*Usus in cultu et simulacris*'). After reviewing a long series of religious uses and conceptions of stone images among a variety of peoples (Arabs, Thracians, Romans, Greeks, Phrygians, Goa Indians, etc.) – based not only on classical sources, such as Plutarch, Pausanias and Cicero, but also on Renaissance authors, such as Vincenzo Cartari and Cesare Ripa – Aldrovandi introduced and illustrated the first artefacts from his own collection (Fig. 4):



We could review infinite images of this kind, which we deliberately avoid doing in order to start examining some idols of the Indians, who worship them as gods or Cemi. I recall having seen a greenstone idol, in the shape of a scarab and as big as a walnut, with blackish spots and some whitish ones near its base. We offer here a plate with the images of various idols of the Indians. In the first position is illustrated an idol in the shape of an old man, sculpted in marble, marked by various wrinkles on the maxilla and near the chin. In the second position is represented an idol with the head of an aquatic animal or, in our opinion, with a dolphin's head; it was sculpted in a dark green stone, with darker spots. In the third position is shown the image of another Indian idol made in a certain grey stone, in which [can be seen] some motifs like tendrils [capreolos], or vine shoots, so that this idol, or Cemus, will be called Cemus Capreolites. In the fourth position is represented the image of a Cemi, or Indian idol, with a non-round head, almost flat, with big eyes, a very large and long nose, although to be fair this idol represents an animal's snout, as the reader will carefully observe.³¹

Fig. 4. The first plate showing Mesoamerican idols in *Musaeum Metallicum*, Book iv, woodcut. © Biblioteca Universitaria di Bologna.

Before discussing Aldrovandi's words, it is worth noticing that at least four (nos. 1–4) of the five stone objects illustrated in the plate titled 'Idola Indorum varia' were most probably of Mesoamerican origin. Indeed, the first could be interpreted, as already proposed by Laura Laurencich Minelli, as an image of Huehuetotl, the 'Old God' of fire.³² The second and third images (interpreted by Detlef Heikamp as an 'Aztec or Mixtec labret' and 'Mixtec head', respectively)³³ lack in my view any diagnostic trait that could support a solid identification, while the fourth may be, as proposed by Heikamp, a representation of Yacatecuhtli, the 'Nose Lord'³⁴ or – as suggested by the presence of a nose plug – of a Huastec man (the enlarged noses of Huastec men, resulting from the use of nose plugs, were almost proverbial in the Nahuatl world); the fifth object, illustrated but not described in the text, is hard to decipher but is probably a spindle whorl of unknown provenience.³⁵ Without any clear conceptual separation from the previous paragraphs, Aldrovandi then continues with his description of the 'Idols' in the following plate ('Alia idolorum varietas'), four of them Egyptian (nos. 1–3, 5). His comment on a fifth (no. 4), apparently a classical image of a putto playing a cymbal, is noteworthy: 'Since Indians varied greatly in imagining and sculpting their Cemi, in the fourth position is shown an idol in the shape of a child, with curly hair, holding a cymbal in the hand.'³⁶ He continues with a description of the following plate, showing unidentified idols (Fig. 5):

The Indians were very superstitious, for which reason they shaped various idols and kinds of Cemi using a variety of stones. Four of them are represented in this table. The first idol was sculpted in a stone similar to serpentine [lapide Ophiti], green, with various spots. The idol, drawn almost in chiaroscuro, seems to be roughly sculpted [bozato, in Italian in the text] with a cap [cum pileo], on which are various lines; for this reason, this idol is named pileatum. In the second place is an idol, also sculpted in a green stone, which represents a mask that men used in time of bacchanals. This mask has descending grooves on both sides of the jawbone. In the third place is an idol in a form representing piety: it is indeed a young human figure, with the hands toward the chest, sitting on a double quadrangular base. In the fourth place can be seen an idol, also sculpted in a lighter green stone, with a large head, and hands and feet also enlarged, so that it resembles Bacchus, who in antiquity was always represented as very fat.³⁷

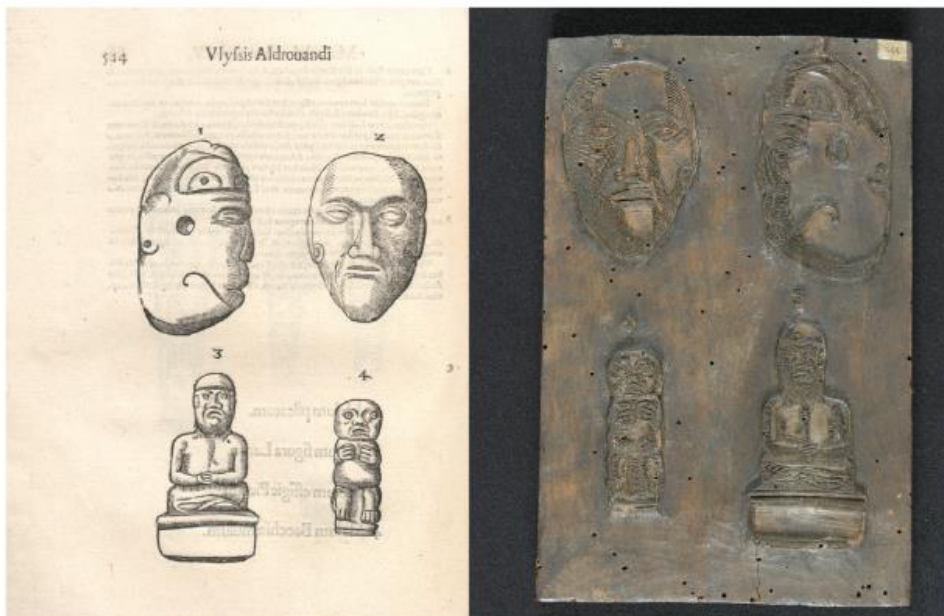


Fig. 5. The second plate showing Mesoamerican idols in *Musaeum Metallicum*, Book IV, woodcut, and the corresponding woodblock, Museo di Palazzo Poggi, Bologna. Woodcut, © Biblioteca Universitaria di Bologna. Woodblock, © Università di Bologna – Sistema Museale di Ateneo – Museo di Palazzo Poggi. Photograph: Fulvio Simoni.

Again, all four 'idols' illustrated in this third plate seem to be of Mesoamerican origin. The first is 'our' pendant (Fig. 6), whose possible dating and cultural attribution have already been discussed. Now that we are able to compare the illustration in the *Musaeum metallicum* with the actual object, we are obliged definitively to reject Heikamp's statement regarding the presumed difficulties that the unfamiliar shapes

and proportions of the Mexican idols posed to the illustrator, causing him to employ a ‘rather crude simplification’, changing the ‘hieratic forms of an exotic culture’ into ‘vague and clumsy’ images and ‘grimacing caricatures’, ultimately betraying the ‘strict stylization of the originals’.³⁸



Fig. 6. Comparison between the sculpture at the Museo Civico Medievale, Bologna, the *Idolum pileatum* in *Musaeum metallicum*, Book IV, and the corresponding woodblock at the Museo di Palazzo Poggi, Bologna.

Very much to the contrary, the comparison with the actual specimen shows that, despite the complex process of reducing the three-dimensional object to a reproducible image in two dimensions – involving first a drawing, its transfer to the wooden block, the carving of the block, and finally the print – the artists managed to create quite an accurate reproduction of the original; the same is true of the mosaic mask discussed above (see Fig. 3), which was a very difficult object to reproduce. Heikamp’s debatable statement (in an otherwise excellent article) seems to have been prompted by a sort of idealization of Mesoamerican material culture, based on the masterpieces usually shown in books and museums, rather than on the highly variable forms of specimens recovered by archaeology. The second image in this plate lacks diagnostic traits that might have helped with an accurate identification. The third and fourth, on the other hand, are identifiable and of the utmost interest. The former, which Aldrovandi described as representing a ‘piety’, is most probably an Olmec greenstone figurine, as already proposed by Heikamp.³⁹ Indeed, the downward curving corners of the mouth are the ‘hallmark’ of Olmec Preclassic style; moreover, the image shows a strong resemblance, especially in the position of the arms and in the treatment of the crossed legs, to the famous Middle Preclassic jadeite figurine found in Tomb A, Mound A-2, at the Olmec site of La Venta (Tabasco, Mexico), dated to c.700–600 bc, which is today in the Museo Nacional de Antropología in Mexico City;⁴⁰ finally, the quadrangular base with jutting upper edge recalls the seats of Olmec enthroned figurines especially common in Chiapas and Guatemala, as can be seen, for example, in a specimen at the Cleveland Museum of Art.⁴¹ In sum, the formal traits of the *Idolum forma pietatis* suggest that it could be identified with a Middle Preclassic Olmec greenstone figurine; if so, the illustration of the *Idolum forma pietatis* would be the earliest image of an Olmec artefact ever produced after the Spanish conquest. The fourth ‘idol’, on the other hand, displays bodily features – short, squatting legs, hands on the chest, and fingers represented by sets of parallel lines – which, even if also seen in some Olmec specimens, are mostly typical of the already mentioned Mixtec penates; the circular eyes with central dot are also seen on penates,

though more rarely than the typical coffee-bean variety.⁴² Passing now to Aldrovandi's descriptions of these same objects, the usual pre-eminence he accorded to the constituent materials of the objects is again evident in the several descriptions of the stones' colour, hues and mottled aspects. At times, the stones are specifically identified as marble and serpentine. This is the case with the *Idolum pileatum*, described as sculpted in a green, mottled lapide Ophiti, that is, literally, serpentine. In a previous section of his work, Aldrovandi had already mentioned this stone when drawing from Georgius Agricola a classification of stones in four genera: common stones, gems, 'great stones' such as marbles that can be polished as gems, and sandstones or limestones; the polishable stones of the third group were named either according to their colour or to their origin, with some described as 'Porphyrites or Ophites, others Parium, Laconicum, and similar'.⁴³ However, Aldrovandi did not limit his observations to the constituent materials of the 'idols'. He also tried to describe what, in his opinion, they represented (an 'old man', a 'dolphin's head', an 'animal's snout'), at times even providing what at first sight seems like a cultural interpretation, as in the case of the sculpture said to represent 'a mask that men used in time of bacchanals', or when the 'very fat' idol is said to resemble Bacchus. Actually, Aldrovandi was more interested in naming than in interpreting the meaning of the 'idols', so that his reading of their iconography allowed him to call them, in the captions to the illustrations, *Idolum figurae Larvae* and *Idolum Bacchi aemulum*. This aim emerges even more clearly in the rather disconcerting reading of the signs on a human face as 'tendrils [capreolos], or vine shoots, so that this idol, or Cemus, will be called Cemus Capreolites'. The same process is at work in the case of the pendant, sculpted with a cap [cum pileo], so that 'for this reason, this idol is named pileatum'. Hence, rather than being interpretative, comparative or (even less) proto-ethnographic in its aims, Aldrovandi's treatment of the idols in the *Musaeum metallicum* was notably classificatory. Not especially interested in the idiographic description of specific cultural habits, he was rather looking for labels that could help to fit the diversity of human creations within the overarching classificatory architecture of his work. The use of the term 'idol' to refer to classical artefacts, as well as to those of the indigenous Americans and Egyptians, is in this sense significant. Referring to an event that occurred in the vicinity of Bologna, he wrote: 'In the Savena river was found a sandstone elegantly representing a human figure or, more accurately, an idol such as those the Indians worship in their idolatry. In this [form of idolatry] too, idols are made out of stone with great artifice, as we show at the end of the chapter.'⁴⁴ It is clear here that Aldrovandi was neither comparing Bologna with the Indies, nor building – as others were attempting to do in the late Renaissance – a general, comparative theory of idolatry; at most, he was drawing from their lexicon some useful general classificatory labels. And these labels could also be used as universal categories independently from their specific cultural origin, as shown by Aldrovandi's use of Cemi / Cemo / Cemus (that is, zemí): borrowed from the Arawak languages of the Caribbean islands – and made popular in Europe by the works of Ramón Pané, Peter Martyr, Gonzalo Fernández de Oviedo and Bartolomé de Las Casas – the term is employed not only to refer to Mesoamerican 'idols' but also to an Egyptian scarab and even to a classical putto playing a cymbal, thus simply becoming a universal synonym for 'idol'.⁴⁵ In Aldrovandi's texts, terms such as 'Cemi' or 'idol' elicited neither religious scandal nor moral condemnation, but only a reassuring taxonomic order.

On the idol's trail: provenance and Provenience

Descriptions of Aldrovandi's collection while it was still exhibited in his house are unfortunately too scanty to enable us to identify any American artefact and hence to shed light either on the location of items within the museum or on its organizational criteria.⁴⁶ With his last will, signed on 10 November 1603, Aldrovandi bestowed the whole of his collection of objects, books, manuscripts, paintings and woodblocks to the Bolognese senate, in order that it might be preserved for the public good; the agreement implied that the senate would appoint custodians who, apart from caring for the collection, would also have a duty to publish the outstanding residue of Aldrovandi's unpublished works.⁴⁷ The astonishingly rich Aldrovandian legacy was displayed in five rooms at the Palazzo Pubblico from 1617 to 1742; the object collection was held in the first room, or gallery, while the other spaces housed books, manuscripts, woodblocks and paintings; a sixth room was used by the museum's custodians, who were sequentially appointed by the

senate. American specimens were housed in various locations within the gallery. A cabinet (Cimiliarchion) located just inside the entry to the gallery, on the right-hand side, may have contained some of them, since Aldrovandi himself had previously recorded that the two cabinets in his house (only one of them passed to the Palazzo Pubblico) contained, arranged in an orderly manner in 4,500 little boxes, 'seven thousand subterranean things, and some fruits, gums and very beautiful things from the Indies, with their names, so that they can be easily found'.⁴⁸ An undated, seventeenth-century printed inventory of the same cabinet lists (in entry nos. 230, 231, 232, 233, 456) various idols (at least one of them Egyptian),⁴⁹ but it is unlikely that these entries include the American items. Indeed, another inventory, probably compiled between 1633 and 1657 by the custodian Bartolomeo Ambrosini (who edited the *Musaeum metallicum*), describes the 'marbles' displayed on the second shelf to the left of the gallery's entrance, as including 'An idol in form of a piety', 'An Indian mask made of mosaic', an 'Indian idol in shape of a mask', 'Another, similar one of a green stone in the shape of a dolphin', 'Another, similar one of a multicoloured stone with a cap on the head' (that is, our *Idolum pileatum*), and 'Another, similar one with big eyes and long nose no. 4'.⁵⁰ Since the inventory clearly employs descriptive phrasing identical with that of the *Musaeum metallicum*, Ambrosini must have compiled it after the volume's publication in 1648, or perhaps while he was editing it. It is also interesting to note that the American 'idols' and other stone artefacts were exhibited on a shelf that also held unworked 'marbles', so employing the same classificatory principle as seen in the *Musaeum metallicum*.⁵¹ On the other hand, the featherwork image depicting St Jerome was displayed in the library in the third room, the paintings of natural things in the fourth room and the woodblocks in the fifth.⁵² The record of a total of four idols, plus the 'piety', recorded a few lines above, implies that three of the eight Mesoamerican 'idols' described in the *Museum metallicum* were probably already lost, perhaps during the long period in which the museum had remained without a custodian (1619–33). During Ambrosini's curatorship (1633–57), the museum was properly cared for and inventoried, but when Ovidio Montalbani and Giovan Battista Capponi were appointed custodians (1657–71 and 1671–5, respectively) the museum – flanked since 1660 by the Cospi collection displayed in two contiguous rooms⁵³ – experienced a serious decline, and also suffered transformations and losses. Notwithstanding the care of subsequent custodians, the museum progressively lost its function as a place of scholarly activity. In the inventory recorded on 25 May 1742, while the objects were being packed for the imminent removal of the museum, most of the Mesoamerican objects went unrecorded, with the exception of the mosaic mask and the featherwork image of St Jerome.⁵⁴ In 1742 Aldrovandi's museum was transferred to the Istituto delle Scienze in Palazzo Poggi in Bologna (where it was joined in 1743 by a selection of objects from the Cospi collection); a second group of mostly natural specimens from the Aldrovandi collection was given to the same institution in 1749.⁵⁵ The two collections were publicly displayed, probably from 1750 onwards.⁵⁶ However, in light of emerging Enlightenment scientific sensibilities and the museographic principles that emerged from them, the Aldrovandi and Cospi museums appeared irredeemably obsolete.⁵⁷ Consequently, naturalia and artificialia from the two old collections were split among six different thematic rooms in the Istituto. The mosaic mask and the greenstone pendant (together with other Mesoamerican idols, if any still survived) must have ended up in the Stanza delle Antichità, together with archaeological and ethnographic materials from other regions of the world. Unfortunately, the description of the exhibition rooms provided by Gaetano Bolletti in 1751 is so scanty that it is not possible securely to identify any of the Mesoamerican items. Nevertheless, they must have been included among the things generically described as those 'belonging to this part [the Stanza delle Antichità] that were added from the abovedescribed [Aldrovandi and Cospi] museums, bringing no small accretion and dignity'.⁵⁸ In 1803 the museum and library of the Istituto delle Scienze passed to the University of Bologna, whose main seat had been transferred to Palazzo Poggi.⁵⁹ With this change of ownership, the specimens from the Stanza delle Antichità entered the collection of the newly founded Museo delle Antichità della Regia Università di Bologna, described by the professor of archaeology Filippo Schiassi in his *Guida del forestiere* (1814). Again, the Mesoamerican 'idols' from the Aldrovandi collection escaped the attention of the author, but they were surely displayed in Room vi, devoted to exotic things, where the walls were adorned (according to Schiassi's description) with 'two

American mats made with Indian reeds' and four 'hanging beds' or hammocks. The stone sculptures were probably preserved in the third cabinet which, even though it was described as containing 'things from China, Japan, and other oriental parts', included 'a wooden mask inlaid with coloured matters, of barbarian manufacture' (that is, the Yacatecuhtli mask from the Aldrovandi collection), as well as 'two mosaic sphinxes of barbarian manufacture' (two Mesoamerican knife handles from the Cospi collection). Indeed, a manuscript inventory compiled by the same Filippo Schiassi in 1735 records in the third cabinet 'two male statuettes of jade or another stone' and 'two idols of stone or paste, of uncertain name'; unfortunately, the entries are so scanty that it is difficult to say whether any one of the objects referred to could have been greenstone American 'idols'.⁶⁰ Alternatively, the Mesoamerican stone sculptures could have been in the fourth cabinet, together with the Amazonian axe and the featherwork from the Aldrovandi collection, a Mexican gilded spear-thrower from the Cospi collection, and a Mesoamerican musical instrument made from a human femur, which Benedict XIV had gifted to the Istituto delle Scienze in 1745.⁶¹ The lack of specific mention in the guide and the ambiguous inventory entries make it impossible to know how many 'idols' besides the *Idolum pileatum* were still preserved in the first decades of the nineteenth century. However, it is very likely that most of them – together with the two knives from the Aldrovandi collection – had already been lost. Between 1878 and 1881 the collection of the Museo delle Antichità della Regia Università di Bologna was merged with those of the new municipal Museo Civico Archeologico. Before the amalgamation, between April and May 1878, the mosaic mask was moved, together with the gilded spear-thrower and knife handles from the Cospi collection, to the Museo Preistorico ed Etnografico founded by the palaeoethnologist Luigi Pigorini in Rome (now the Museo della Civiltà).⁶² As was also the case with the Codex Cospi – today held in the University Library in Bologna – the *Idolum pileatum* escaped the transfer to Rome. I have been unable to ascertain where it was preserved, but it is safe to assume that it was most probably held in storage, given that it was unsuited to the mission of the Museo Civico Archeologico to display the prehistory of Bologna. In 1985, when the Museo Civico Medievale was opened in Palazzo Ghisilardi, the *Idolum pileatum* – the only remnant of the original group of 'idols' – was transferred to storage at the new museum, where it now remains; at the moment of its entry into the Museo Civico Medievale it was inventoried as no. 1263, a number that was written on the back of the head with a white paint.⁶³ So far, I have attempted to reconstruct the trajectory of the pendant from the Aldrovandi collection to its present location. But how did Aldrovandi come into possession of the Mesoamerican artefacts of his collection, including the *Idolum pileatum*? Laura Laurencich Minelli made an important contribution to the clarification of this issue with her study of the inventory (1586) of the collection of Antonio Giganti (1535–1597), the collector whom Aldrovandi himself recorded as the donor of the aforementioned Amazonian axe.⁶⁴ She was able to identify in Giganti's inventory both the knives represented in the *Musaeum metallicum*: they are listed in the inventory as 'stone knife with wooden handle from the New World which they used to sacrifice, one foot long' and 'Stone razor'.⁶⁵ She also recognized nine 'idols': eight of these are listed as 'Stone idols of the New World in various shapes' among the objects hanging on a wall, while a ninth, on a shelf, is described as 'A stone idol of the New World, with human head and torso'.⁶⁶ Laurencich Minelli identified the latter with the 'piety' figurine owing to the fact that it is the only one (given its quadrangular base) that was capable of standing on a shelf, so that the eight New World 'idols' of the Giganti collection could correspond to the eight objects reproduced in Aldrovandi's illustrations. Even if this interpretation has some weaknesses (the 'piety' figure could hardly be described as a 'head and torso', and the interpretation of object no. 5 in Aldrovandi's first table as an Ecuadorian *pintadera* is extremely doubtful), it shows sufficiently clearly that the idols of the Aldrovandi collection were originally owned by Giganti, as were also the two Mesoamerican knives.⁶⁷ According to Laurencich Minelli, the materials from the Giganti collection could have entered the Aldrovandi museum in 1597–8. Regarding the provenance of the American objects in Giganti's collection, Laurencich Minelli argued that most of them could have been bestowed by Monsignor Ludovico Beccadelli, in whose Florentine house (where Beccadelli kept his own collection) Giganti had lived between 1563 and 1572 when he was employed as the prelate's personal secretary. The fact that Beccadelli gave some gifts to Giganti is indeed witnessed by Beccadelli's

correspondence and last will.⁶⁸ Nevertheless, it is clear that Giganti also obtained objects from other donors, such as the featherwork mitre he received from Cardinal Poggio.⁶⁹ From 1580 Giganti worked as secretary to the Bolognese cardinal Gabriele Paleotti, who donated the featherwork St Jerome to Aldrovandi and in whose family library there was a Mesoamerican manuscript.⁷⁰ In an attempt to explain how the American objects could have reached the Beccadelli and Giganti collections, Laurencich Minelli put forward the hypothesis that they could have been obtained as gifts from one or other of the cardinals they encountered during the sessions of the first period of the Council of Trent (1545–9).⁷¹ Beccadelli's trip to Spain with Cardinal Reginald Pole in 1539 can also be considered as a possible occasion for collecting American artefacts, since it is known that even after his return to Italy, Beccadelli maintained his contacts with Spain in order to obtain some terra sigillata and natural specimens.⁷² However, recent research into the early arrival of Mesoamerican artefacts in Bologna and other Italian cities has shed light on a previously unknown event, which has a far more convincing potential to explain the presence of most of the Mesoamerican objects in early modern Bolognese collections, including those in the Giganti and Aldrovandi collections. According to the Bolognese Dominican historian Leandro Alberti, on 3 March 1533 an anonymous Dominican friar coming from the 'New Indies' (whom I have identified elsewhere as Domingo de Betanzos) met Pope Clement VII in Bologna, and offered him a rich gift, including Mesoamerican featherwork, painted manuscripts, mosaic masks, sacrificial knives, obsidian blades and many other unspecified objects.⁷³ As stated by Alberti, several of these objects remained in Bologna and ended up in local collections.⁷⁴ What is relevant for our purposes is that Betanzos's gift seems to have included objects that mainly came from the Nahua region of Puebla–Tlaxcala and the Mixtec region of Oaxaca, both within the Dominican sphere of missionary activity.⁷⁵ Such provenience would perfectly fit most of the pre-Hispanic objects in the Giganti and Aldrovandi collections, including the *Idolum forma pietatis* (Olmec-style materials are common in the Puebla valley) as well as the *Idolum Bacchi aemulum* and the *Idolum pileatum*, here identified as Late Postclassic Mixtec (or, more broadly, Otomanguan) productions. Since Pope Clement VII was in fact Giulio de' Medici, it is interesting to note that the Medici collections in Florence also included a Mixtec greenstone figurine of the penates kind, an almost perfect 'companion' for the Bolognese greenstone pendant.⁷⁶ The subsequent, specific movements of the objects brought by Betanzos to Bologna are mostly unknown, but it is clear that the gift of the Dominican friar was the origin of the presence of Mesoamerican artefacts in local collections, such as those amassed in the following decades by Giovanni Achillini, the Paleotti family, Antonio Giganti, Ulisse Aldrovandi, the Zani family and Ferdinando Cospi. If this hypothesis is correct, the images and descriptions of Mesoamerican 'idols' in the *Musaeum metallicum* provide an important addition to our knowledge of Betanzos's gift. Indeed, if the identification of the *Idolum forma pietatis* as a Middle Preclassic Olmec figurine is correct, it would mean that the Dominicans had assembled a group of objects in Mexico including not only Late Postclassic items (that is, approximately coeval with the moment in which they were gathered) but also others of much more ancient origin. It is impossible to know whether such ancient objects were found in ritual deposits accumulated over the millennia – for example, in the ritual caves often described in Dominican chronicles as being discovered and destroyed by 'extirpators of idolatry' – or whether they were kept as relics by the native peoples themselves, a common practice exemplified, for example, by the Olmec mask found in a Late Postclassic ritual deposit excavated in the Aztec Templo Mayor in Mexico City.⁷⁷

Conclusions

The rediscovery of a long-lost greenstone pendant in the reserve collections of the Museo Civico Medievale in Bologna prompted a research programme carried out along the double axis of the object's provenience and provenance. The former started with the object's physical description, which led to tentatively tracing it back to the Late Postclassic Mixtec–Otomanguan cultural sphere (c. ad 1250–1521). The latter led to the reconstruction of its multi-secular Bolognese cultural biography, arguably initiated by the arrival of Domingo de Betanzos in Bologna on 3 March 1533. Transferred by unknown means to the collection of Antonio Giganti, the piece later ended up, probably around 1597–8, in the museum of Ulisse Aldrovandi;

there it passed the most significant phase of its early modern life, being treasured, observed, described, classified and depicted in a (lost) painting, incised on a woodblock and printed as a plate of the *Musaeum metallicum*, a work that had to wait almost half a century to see the light of day. From that time, the object itself fell into a long oblivion, following the movements and transformations of Aldrovandi's museum in an almost undetectable way; in the meantime, the *Idolum pileatum* – that is, its replicable, textual and visual alter ego – experienced a much more visible social life, often noted and commented on by scholars in the following centuries. Finally, the recent rediscovery of the actual artefact has allowed the restoration of unity among its multiple manifestations, bringing together the greenstone object, the woodblock, the printed illustration and the textual description. In order to properly understand how and why Aldrovandi classified the object as an *Idolum pileatum*, it has been necessary to investigate more broadly the attitude of the Bolognese scholar toward both *naturalia* and *artificialia* from the New World. Laura Laurencich Minelli argued that 'Aldrovandi's ethnographical research as well as his zoological and botanical interests were characterized by a very precise, practical, almost utilitarian aim in terms of *speziale*.'⁷⁸ Even if this statement is to a great extent correct, it might usefully be rephrased for two main reasons. On the one hand, I would refrain from using terms such as 'ethnographic' or 'anthropological' to define Aldrovandi's research,⁷⁹ since it is quite clear that he had no specific interest in scrutinizing the habits and beliefs of faraway peoples; similarly – and despite claims to the contrary – his employment of a classical lexicon to name Mesoamerican objects fostered no allochronic analogy or comparison between the American natives and the pagans of antiquity, of the kind common in sixteenth-century ethnographic texts.⁸⁰ On the other hand, Aldrovandi's interest in practical medicine – whose undeniable relevance is witnessed by his office as *protomedico* of Bologna and by the famous polemic on *theriaca* in which he engaged with the city's apothecaries⁸¹ – can hardly encompass the breadth of his work as a natural historian. In my view, the *Ornithologiae* reveals the coexistence of two attitudes that – rather than 'ethnographical' and 'medical' – can be read as 'antiquarian' and 'naturalistic', with a clearly increasing pre-eminence of the latter over the former. In the later *Musaeum metallicum*, the references to indigenous customs were further reduced, while the text is mostly focused on the material dimension of the objects. Taxonomy progressively became the major aim of Aldrovandi's observations, so that in the *Musaeum metallicum* stone sculptures from different cultural contexts were subsumed within a hierarchical arrangement of genera, that was marked by specific naming patterns. At a higher level, they were organized according to their constituent materials, accurately described and named. For this reason, the Mesoamerican idols fell into the category of those 'great stones' that, like marble, 'can be polished as gems'. Within this general category, their material was further specified with names as 'marble stone' or 'serpentine' (*lapide Ophiti*). In this way, Aldrovandi was strictly adhering to the tenet he had explicitly expressed when, after stating that 'there is nothing under the sun' that could not have been included in the three genera of inanimate things, plants and animals, he added that 'Even artificial things may be included in one of these three genera according to the materials [of their composition].'⁸² As mentioned above, this same principle also determined the display of the 'idols' on the second shelf in Aldrovandi's museum. Within the general category of 'marbles', artefacts were then distinguished from minerals in their natural state by their inclusion in the universal genus of 'idols', while their specific taxonomic identity was further specified by names such as *capreolus*, *pileatum*, etc., thus often attaining a dual naming pattern similar to the one employed in the classification of animals and plants. Aldrovandi's behaviour confirms that, as expressed by Paula Findlen, 'identification was one of the most important goals in the collecting of specimens; to be ordered, they had to be named'.⁸³ If assembling a 'theatre of nature' meant building a total encyclopedia,⁸⁴ to name and classify its specimens accurately was the proper way to attain a truly universal knowledge. It would nevertheless be misleading to associate Aldrovandi's antiquarian and naturalistic / classificatory attitudes dichotomously with the two faces of a Janus-like scholar, often portrayed as caught between diverging epistemological paradigms – that is, the traditional deference to ancient erudition and the innovative, intimately modern confidence in the novel principles of natural sciences. Very much to the contrary, and notwithstanding the increasing focus of his work on the natural world, at a methodological level the two orientations were to a great extent

overlapping. In a perceptive and ground-breaking contribution, Olmi wrote of a 'symbiosis' between antiquarianism and natural history, stressing how the two disciplines shared a similar set of philological and linguistic tools, as well as the ample use of visual sources.⁸⁵ I would also add that both attitudes were based on the valorization of an experiential, sensory engagement with actual things (both artificial and natural), thus sharing a fundamental trust in material objects as sources of evidential learning.⁸⁶ The relevance that empirical research had in the work of Aldrovandi, who boasted that he had avoided writing of things 'not seen with my eyes, not touched with my hands',⁸⁷ was aptly paraphrased by Paula Findlen when she wrote that he 'opened up Aristotelianism to a world of heightened sensory experience'.⁸⁸ As observed by Arnaldo Momigliano in a pathbreaking essay, the empirical study of material culture allowed antiquaries to test the validity of textual traditions, paving the way for the birth of social sciences.⁸⁹ Similarly, the observation and classification of actual natural specimens in the late Renaissance fostered not only the updating but also the critique of the body of knowledge received from ancient natural philosophy. Rather than representing a still embryonic overcoming of time-worn epistemological paradigms, the trajectory of Aldrovandi's research on the New World's material culture reveals that the valorization of experiential knowledge typical of early modern antiquarianism was a manifestation of that same empiricist stance that underpinned the development of modern natural sciences. To a great extent, the collection of objects, images and books that Aldrovandi accrued over his lifetime was the materialization of the inextricable entanglement between the two empiricist attitudes.⁹⁰ The long-lasting relevance of an antiquarian mindset during the subsequent seventeenth century is a well-known fact. With specific regard to indigenous American phenomena, the role that antiquarianism played in the work that Lorenzo Pignoria devoted to Indian idolatry has been recently observed.⁹¹ At the same time, medical information was progressively marginalized from the activity of collecting, now a leisurely pastime for nobles and courtiers.⁹² However, such processes were neither linear nor absolute: the sustained entanglement between antiquarian and medical empirical methods is clearly shown, by the study that Lorenzo Legati made of pottery vessels modelled from 'medicinal clays' in the Cospi collection, to remain in the early modern Bolognese context.⁹³ Within this wider framework, Aldrovandi's approach to the *Idolum pileatum* and its Mesoamerican 'fellows' stands as an early and highly particular forerunner. Given the significance that direct, sensory interactions with material culture had for both early modern antiquaries and natural historians, it is to be hoped that the physical reappearance of a small greenstone sculpture in the Museo Civico Medievale in Bologna will offer new possibilities for further knowledge-fostering engagements.

Notes and references

1. Following a now common usage, I use 'provenience' to refer to the original context where an object was produced, used and/or archaeologically recovered; 'provenance', on the other hand, refers to the history of its movements up to the place where it is currently held or, in other words, to its collection history.
2. D. Heikamp, 'American objects in Italian collections of the Renaissance and Baroque: a survey', in *First Images of America: The impact of the New World on the Old*, ed. Fredi Chiappelli (Berkeley, 1976), p. 460; L. Laurencich Minelli, 'Oggetti americani studiati da Ulisse Aldrovandi', *Archivio per l'Antropologia e l'Etnologia* 113 (1983), pp. 187–206.
3. I thank Leonardo López Luján for first pointing my attention to the Guerrero–Oaxaca region.
4. I. Bernal and M. Gamio, *Yagul: el Palacio de los Seis Patios* (Mexico, 1974), pl. 39.
5. The best monographic studies on Ulisse Aldrovandi are G. Olmi, *Ulisse Aldrovandi: scienza e natura nel secondo Cinquecento* (Trento, 1976); G. Olmi, *L'inventario del mondo: catalogazione della natura e luoghi del sapere nella prima età moderna* (Bologna, 1992); S. Tugnoli Pattaro, *Metodo e sistema delle scienze nel pensiero di Ulisse Aldrovandi* (Bologna, 1981); P. Findlen, *Possessing Nature: Museums, collecting and scientific culture in early modern Italy* (Berkeley and Los Angeles, 1994).

6. U. Aldrovandi, 'Discorso naturale', 1572–3, Bologna, Biblioteca Universitaria, ms Aldrov. 91, c. 510r, published in Tugnoli Pattaro, op. cit. (note 5), p. 181.
7. Biblioteca Apostolica Vaticana, Vat. lat. 6192, vol. ii, fol. 656v, quoted in Findlen, op. cit. (note 5), p. 62.
8. G. Olmi, 'Ulisse Aldrovandi', FMR 7 (1982), p. 52. On images of natural things in Aldrovandi's work, see G. Olmi, 'Osservazione della natura e raffigurazione in Ulisse Aldrovandi', *Annali dell'Istituto Storico Italo-Germanico in Trento* 3 (1977), pp. 150–51; Olmi, op. cit. [1992] (note 5), pt. 1; G. Olmi, 'Il collezionismo scientifico', in *Il teatro di natura di Ulisse Aldrovandi*, ed. R. Simili (Bologna, 2001); G. Olmi and L. Tongiorgi Tomasi, *De piscibus: la bottega artistica di Ulisse Aldrovandi e l'immagine naturalistica* (Rome, 1993); G. Olmi and F. Simoni (eds.), *Ulisse Aldrovandi: libri e immagini di storia naturale nella prima età moderna* (Bologna, 2018). On images of American things, see G. Olmi, "'Things of nature" from the New World in early modern Bologna', in *Images Take Flight: Feather art in Mexico and Europe, 1400–1700*, ed. A. Russo, G. Wolf and D. Fane (Munich, 2015), pp. 229–40; L. Markey, 'Aldrovandi's New World natives in Bologna (or how to draw the unseen *al vivo*)', in *The New World in Early Modern Italy, 1492–1750*, ed. E. Horodowich and L. Markey (Cambridge, 2017), pp. 225–47. On Aldrovandi's books, see M. C. Bacchi, 'Ulisse Aldrovandi e i suoi libri', *Archiginnasio* 100 (2005), pp. 255–66; M. C. Bacchi, 'Libri di viaggi nella biblioteca di Ulisse Aldrovandi', in *Il viaggio: mito e scienza*, ed. W. Tega (Bologna, 2007), pp. 169–81.
9. D. Bleichmar, *Visible Empire: Botanical expeditions & visual culture in the Hispanic Enlightenment* (Chicago and London, 2012); Bleichmar's phrase has been applied to Aldrovandi's work by Markey, op. cit. (note 8), p. 226.
10. On the project for a scientific expedition in the Americas, see Aldrovandi, op. cit. (note 6), cc. 537v–540r, published in Tugnoli Pattaro, op. cit. (note 5), pp. 208–11 (see also pp. 86–88); S. Tugnoli Pattaro, 'La filosofia naturale di Ulisse Aldrovandi: l'America', in *Bologna e il Mondo Nuovo*, ed. L. Laurencich Minelli (Bologna 1992), pp. 31–6.
11. U. Aldrovandi, 'Trattato naturale', 1595, Bologna, Biblioteca Universitaria, ms Aldrov. 21, iv, cc. 36r–72v, 79r–82v; Tugnoli Pattaro, op. cit. [1992] (note 10), p. 34. On Aldrovandi, Hernández and the Italian circulation of botanical data deriving from Hernández's work, see G. Olmi and O. Trabucco, 'I nuovi mondi da Aldrovandi ai Linnei: viaggi reali e viaggi nello studio', in Tega, op. cit. (note 8), pp. 149–67.
12. On Aldrovandi and the New World, see M. Cermenati, 'Ulisse Aldrovandi e l'America', *Annali di Botanica* 4 (1906), pp. 313–66; L. Laurencich Minelli, 'L'interesse americanistico a Bologna attraverso i secoli', *Il Carrobbio: Rivista di Studi Bolognesi* 6 (1980), pp. 236–7; L. Laurencich Minelli, "'De Orbe Novo", visto dal naturalista Ulisse Aldrovandi', in *Pietro Martire d'Anghiera nella storia e nella cultura. Atti del secondo convegno internazionale di studi americanistici, Genova–Arona 16–19 ottobre 1978* (Genoa, 1980), pp. 501–5; Laurencich Minelli, op. cit. (note 2); L. Laurencich Minelli, 'Museography and ethnographical collections in Bologna during the sixteenth and seventeenth centuries', in *The Origins of Museums: The cabinet of curiosities in sixteenth- and seventeenth-century Europe*, ed. O. Impey and A. MacGregor (Oxford, 1985), pp. 17–23; L. Laurencich Minelli and M. Serra, 'Tra museo e biblioteca: un esempio del metodo di lavoro di U. Aldrovandi "americanista"', *Museologia Scientifica* 4 (1987), pp. 101–10; L. Laurencich Minelli, 'Bologna e il Mondo Nuovo', in Laurencich Minelli, op. cit. (note 10), pp. 9–23; Olmi, op. cit. [1992] (note 5), pp. 211–51; M. C. Tagliaferri, 'L'America nel "gran libro di natura" di Ulisse Aldrovandi', in Laurencich Minelli, op. cit. (note 10), pp. 25–30; Tugnoli Pattaro, op. cit. [1992] (note 10); A. Ubrizsy Savoia, 'La biodiversità americana nell'opera di Aldrovandi', in *L'erbario dipinto di Ulisse Aldrovandi: un capolavoro del Rinascimento*, ed. A. Maiarino, M. Minelli, A. L. Monti and B. Negrone (Lecco, 1995), pp. 75–104; R. Stasi, 'L'interesse di Ulisse Aldrovandi verso la Mesoamerica: collezioni e fonti', Master's dissertation, University of Bologna (1997–8); L. Laurencich Minelli, 'Le culture del Nuovo Mondo', in Simili, op. cit. (note 8), pp. 90–94; L. Laurencich Minelli, 'Bologna e gli Aztechi fra i secoli xvi e xvii', in *Gli Aztechi tra passato e presente. Grandezza e vitalità di una civiltà messicana*, ed. A. Lupo, L. López

Luján and L. Migliorati (Rome, 2006), pp. 117–29; Olmi, op. cit. [2015] (note 8); G. Olmi, 'Ulisse Aldrovandi e la natura del Nuovo Mondo', in *Tesoro mexicano: visioni della natura fra Vecchio e Nuovo Mondo*, ed. G. Antei (Parma, 2015); Markey, op. cit. (note 8).

13. Bologna, Biblioteca Universitaria, ms Aldrov. 66, c. 367r; see Tagliaferri, op. cit. (note 12), p. 30; Laurencich Minelli, op. cit. [1980] (note 12); Laurencich Minelli and Serra, op. cit. (note 12); Olmi, op. cit. [1992] (note 5), pp. 226–8; Stasi, op. cit. (note 12), pp. 39–62.

14. Aldrovandi, op. cit. (note 6), cc. 538r–539r, published in Tugnoli Pattaro, op. cit. (note 5), p. 209.

15. U. Aldrovandi, *Ornithologiae: hoc est de avibus historiae libri xii* (Bologna, 1599), vol. i, pp. 655–9.

16. 'Et in introitu ejus opere plumario fecit tentorium ex hyacintho, purpura, vermiculo, ac bysso retorta' (Exodus 38:18). Several references to sources dealing with Mexican featherwork can also be found in Aldrovandi's manuscript works; Stasi, op. cit. (note 12), pp. 210–15.

17. The woodcuts of the *Homo sylvestris* and the *Regina insulae Floridae* published in the *Ornithologiae* were based on two watercolours in the Aldrovandi collection, now Bologna, Biblioteca Universitaria, *Tavole di animali*, i, cc. 74r, 75r; Simili, op. cit. (note 8), pp. 98–9. The same woodcuts were later reproduced in U. Aldrovandi, *Monstrorum historia* (Bologna, 1642), pp. 106–7. The two headdresses are described in the *Ornithologiae* (Aldrovandi, op. cit. (note 15), p. 657), where both of them are explicitly mentioned as part of Antonio Giganti's collection; a description of the one worn by the *Homo sylvestris* is also found in Bologna, Biblioteca Universitaria, ms Aldrov. 21, iv cc. 9r–10r; Laurencich Minelli, op. cit. (note 2), p. 204. On the images of the *Homo sylvestris* and the *Regina insulae Floridae*, see Laurencich Minelli, op. cit. (note 2); Markey, op. cit. (note 8)

18. M. Foucault, *The Order of Things: An archaeology of human sciences* (London and New York, 2002), pp. 43–4.

19. U. Aldrovandi, 'Delle statue romane antiche, che per tutta Roma, in diversi luoghi, et case si veggono', appendix to L. Mauro, *Le antichità della città di Roma* (Rome, 1556); see Olmi, op. cit. [1976] (note 5), p. 59–60; A. M. Brizzolara, 'Lo studio delle antichità', in Simili, op. cit. (note 8), pp. 95–115.

20. Olmi, op. cit. [1976] (note 5), pp. 59–60; D. Gallo, 'Ulisse Aldrovandi: le statue di Roma e i marmi romani', *Mélanges de l'École Française de Rome: Italie et Méditerranée* 104 (1992), pp. 489–90.

21. Olmi, op. cit. [1976] (note 5), p. 60.

22. Despite Stasi's claims to the contrary, a similar approach, mostly focused on recording data regarding animals, plants and minerals, emerges from the interesting work that Stasi herself did on Aldrovandi's manuscript notes, in which the Bolognese naturalist recorded excerpts from the books he was reading; Stasi, op. cit. (note 12), pp. 204–39.

23. Aldrovandi, op. cit. (note 15), pp. 801–3. The toucan was illustrated in two of Thevet's works, *Les singularitez de la France antarctique* (Paris, 1558), p. 91, and *Cosmographie universelle* (Paris, 1575), p. 938v. Aldrovandi had access to both of them: in fact, he recorded excerpts from the former (Bologna, Biblioteca Universitaria, ms Aldr. 136/08), but the image in the *Ornithologiae* is clearly copied from the latter, as shown by the lack of nostrils (erroneously added in *Les singularitez* but accurately absent in the *Cosmographie*) and by the leaves and berries of the vegetal branch on which the bird is standing. The toucan's head in Aldrovandi's collection, brought from Flanders by Nicolaus Espiletus, is mentioned in the *Ornithologiae* itself (Aldrovandi, op. cit. (note 15), p. 81), as well as in the inventory of Aldrovandi's studio, penned by Giuseppe Monti in 1750 and titled 'Naturalium rerum catalogus que ex Museo Ulyssis Aldrovandi in Scientiarum Institutum translata sunt Anno mdccxlix singulis hac Scheda annexa', Bologna, Archivio di Stato, Assunteria di Istituto, *Diversorum*, b. 12, n. 4, fol. 2v. For the partial specimen of a *Pica* in

the Giganti museum, see G. Fragnito, “‘Compositio memoriae’: il museo di Antonio Giganti”, in G. Fragnito, *In museo e in villa: saggi sul Rinascimento perduto* (Venice, 1988), p. 199. On the Pica’s beak in the collections of Teodoro Ghisi and Bernardo dall’Orso and the whole specimen in the collection of Tommaso de’ Cavalieri (who also owned various Mesoamerican artefacts), see Olmi, *op. cit.* [1992] (note 5), pp. 239 n. 64, 245 n. 80; Stasi, *op. cit.* (note 12), p. 95.

24. ‘Sed in Themistiana Indiae Provincia, cum ferro, & chalybe careant, ex lapidibus Smaragdini & obscuri coloris (lapidis aethiopici speciem nonnulli vocant). Cultellos parant cum manubriis elegantissimis, quorum duae icones ante legentium oculos hic repraesentantur. Prima icon Cultrum latiore cum manubrio ligneo diligentissime caelato ostendit. Secunda icon monstrat Cultellum longiorem, & angustiore, cum manubrio ex lapide renali fabricato. Tertio loco exhibetur figura Securis lapidee in Sacrificiis Indorum usitatae, quam Antonius Gigas rerum naturalium diligens requisitor clarissimo Ulyssi Adrovando dono debet.’ U. Aldrovandi, *Musaeum metallicum* (Bologna, 1648), p. 157. All translations from Latin are mine. The reference to Aldrovandi in the third person suggests that the curator of the volume, Bartolomeo Ambrosini, intervened in the formulation of the phrase; unfortunately, the degree of Ambrosini’s intervention in the texts of the *Musaeum metallicum* is unknown.

25. See D. Domenici, ‘Missionary gift records of Mexican objects in early modern Italy’, in Horodowich and Markey, *op. cit.* (note 8); D. Domenici, ‘Handling sacrifice: reception and perception of Mesoamerican knives in early modern Italy’, in *Oggetti, collezioni e musei missionari (xvi-xx secolo)* (forthcoming) [Quaderni Storici, special issue].

26. In interpreting the mask as a representation of the long-nosed Nahua deity Yacatecutli (‘Nose Lord’), the merchant god, I am following E. Thompson, ‘Merchant gods of Middle America’, in *Summa anthropologica en homenaje a Roberto J. Weitlaner* (Mexico, 1966), pp. 1–34. On the other hand, I disagree with those who interpreted the mask as a representation of the dog god Xolotl or the wind god Ehécatl (e.g. Laurencich Minelli, *op. cit.* (note 2), p. 192; Laurencich Minelli, *op. cit.* [1992] (note 12), pp. 119–20). None of the distinguishing traits of the two gods is visible, while both the upturned, pointed nose and the extended, curved chin of the mask are typical of the merchant god as represented on central Mexican manuscripts of the Borgia Group and in Maya iconography (e.g. the Madrid Codex, and the murals of Santa Rita Corozal, Belize). My attribution of the mask to the Nahua cultural sphere, rather than to the Mixtec one, is based on stylistic elements; see D. Domenici, ‘Mesoamerican mosaics from early European collections: style, provenance and provenience’, *Estudios de Cultura Náhuatl* 59 (2020), pp. 7–65.

27. ‘sed ad rem nostram magis faciunt lithostrota, quae a nostris fere tessellata vocantur, nempe variis crustis, et lapidum segmentis, seu potius lapillis variorum colorum constructa, ut paulo ante fuit declaratum. Sed mirandum est, quod Gomara in *Historijs Indicis*, recitat, nimirum ab Indis larvas, seu personas ex ligno fabreferi, deinde lapillis variorum colorum exornari, ut perbelle lithostroton aemulentur. Quamobrem in gratiam Lectoris iconem huius Larvae exhibemus.’ Aldrovandi, *op. cit.* (note 24), p. 551.

28. Alessandra Russo reads in this passage an allusion to ‘the Lithostrotos, the pavement where Christ was reputedly condemned by Pilate’; A. Russo, ‘An artistic humanity: new positions on art and freedom in the context of Iberian expansion, 1500–1600’, *RES: Anthropology and Aesthetics* 65–6 (2014–15), pp. 355–6. However, the strictly technical line of reasoning of the passage and the previous explicit reference to Pliny (who mentions Lithostrota when describing the Roman Temple of Fortune; *Historia naturalis*, Book xxxvi) make it unlikely.

29. ‘Sed maiori admiratione tenemur; dum olim Americani, Theveto affirmante in *historijs*, lapidibus arbores caederente, sed post adventum Hispaniorum in illas regiones, ferrum postea adhibuerunt. Solebant etiam sagittas ex ligno solido formare, & pro cuspide ferrea, lapidem durissimum adhibere. Item Franciscus Hernandus de hoc novo orbe recitat, quod enses, novaculas pugiones, & alia quamplurima ad scindendem instrumenta, nondum repertum ferro, ex lapide patria lingua Yiztl noncupato, fabricabant. At de huiusmodi

lapidibus verba fecimus in capite de ferro: ubi icon etiam gladij lapidei ostenditur.' Aldrovandi, op. cit. (note 24), pp. 551–2.

30. The blocks of pearwood were painted by various artists and then incised, most of them by the German woodcutter Christoph Lederlein (Italianized as Cristoforo Coriolano); to complete the posthumous publication of Aldrovandi's books, some curators also employed other carvers. Since Aldrovandi probably received the Mesoamerican artefacts around 1597–8 (see below), it is feasible that the drawings of the objects on the wooden blocks were done by Cornelius Schwindt, while Cristoforo Coriolano most probably cut them. On Aldrovandi's *legno: la collezione di matrici xilografiche di Ulisse Aldrovandi conservata all'Università di Bologna*, Studi di Memofonte 17 (2016), pp. 129–44; F. Simoni, 'Dal disegno al libro a stampa: la rappresentazione del mondo naturale nelle matrici xilografiche di Ulisse Aldrovandi', in Olmi and Simoni, op. cit. (note 8), pp. 59–70.

31. 'Infinita huius generis simulacra recensere possemus, quae consulto omittimus, ut accedamus ad examinanda Indorum varia Idola, quae por Dijs, seu Cemis colunt. Meminimus vidisse Idolum ex lapide virescente, figura Scarabei, magnitudine nucis Iuglandis, maculis nigricantibus, & aliis juxta partem inferiorem albicantibus: hoc in loco damus tabellam variis Indorum Idolis figuratam.

- 'Primo loco delineatur Idolum figura Vetulae, caelatum in petra marmoreae, hoc in variis rugis circa maxillas, & prope mentum erat insignitum.

- 'Secundo loco figuratur Idolum habens caput animalis aquatici, vel, ut nostra fert opinio, caput Delphini; sculptum erat in lapide viridi, & obscuro, cum maculis longe obscurioribus.

- 'Tertio loco monstratur effigies alterius Idoli Indici parati ex quodam lapide leucophaei coloris, in qua nonnulla lineamenta conspiciuntur, aemulantia capreolos, vel sarmenta vitium; ideoq. hoc Idolum, vel Cemus Capreolites erit appellandus.

- 'Quarto loco representatur icon Cemi, seu Idoli Indici, capite non rotundo, sed quasi plano, oculis magnis, naso valde crasso, & longo, quinimo, ut veritatem fereamur, ab hoc Idolo rictus belluinus repraesentatur, quemadmodum Lector poterit diligenter intueri.' Aldrovandi, op. cit. (note 24), p. 540.

32. Laurencich Minelli, op. cit. (note 2), p. 192.

33. Heikamp, op. cit. (note 2), p. 460.

34. Ibid.; Laurencich Minelli's interpretation of the sculpture as an image of the wind god Ehécatl is unlikely given the shape of the nasal protruberance; see Laurencich Minelli, op. cit. (note 2), p. 192.

35. Heikamp, op. cit. (note 2), p. 460; see also Laurencich Minelli, op. cit. (note 2), p. 192. Their tentative attributions to Mexico (Heikamp) and the Andean region (Laurencich Minelli) are too weak to be accepted, as is Laurencich Minelli's interpretation of the object as a pintadera.

36. 'Cum autem Indi in suis Cemis fingendis, et sculpendis summopere variant, quarto loco designatur idolum figura Pusionis, capillis cincinnatis, et cymbalum manu gestantis.' Aldrovandi, op. cit. (note 24), p. 543.

37. 'Quoniam autem Indi sunt valde superstitiosi; idcirco varias Idolorum, & Cemorum species ex varijs lapidibus formarunt. In hac tabella quattuor delineantur.

- Primum Idolum caelatum erat in lapide Ophiti simile coloris virescentis, varijs maculis insignito. Hoc Idolum quasi Sciographicè delineatum apparet vulgo bozato cum pileo, in quo varie sunt lineae; quamobrem libuit hoc Idolum pileatum indigitare.

- Secundo loco conspicitur Idolum pariter ex petra virescente confectum referens Larvam, qua homines, Bacchanaliorum tempore utuntur. Haec larva rimam deorsum tendentem in utraque maxilla habet.

- 'Tertio loco est Idolum forma pietatis: est enim figura umana imberbis manibus ad thoracem complexis, duplice tetragonae basi innitens.

- 'Quarto loco conspicitur Idolum similiter sculptum in lapide viridi coloris dilutioris, cum capite crasso, manibus etiam, & pedibus ita crassis, ut figuram Bacchi aemuletur, quem crassissimum Antiquitas semper pinxit.' Aldrovandi, op. cit. (note 24), p. 543.

38. Heikamp, op. cit. (note 2), p. 460.

39. Ibid. Aldrovandi's caption to the figure is in the form 'Idolum effigie Pietatis'.

40. Mexico City, Museo Nacional de Antropología, inv. no. 10-9652; P. Drucker, *La Venta, Tabasco: A study of Olmec ceramics and art*, Bureau of American Ethnology, Bulletin 153 (Washington, dc, 1952), pls. 46 (left), 47 (top left).

41. Cleveland Museum of Art, inv. no. 1941.390; <https://www.clevelandart.org/art/1941.390>. Similar figurines were published in C. Navarrete, 'Algunas piezas olmecas de Chiapas y Guatemala', *Anales de Antropología* 8 (1971), pp. 69–82.

42. Heikamp pointed, more generically, to a green stone statuette 'of the Mixtec–Puebla culture'; Heikamp, op. cit. (note 2), p. 460.

43. Aldrovandi, op. cit. (note 24), p. 442. Aldrovandi wrote of the same fourfold classification of stones in his 'Discorso naturale', op. cit. (note 6), cc. 526r–527v, published in Tugnoli Pattaro, op. cit. (note 5), pp. 197–8.

44. 'Reliquum est, ut aliquid praecipuum de praedictis Lapidibus differamus. Inventum fuit saxum arenarium in fluvio Sapenae, quod perbelle figuram humanam exprimebat, vel potius Idolum, quod Indi Idolatriae colere solent. Illa autem Idola magno artificio in saxis sunt caelata, ut in fine huius capituli exponemus.' Aldrovandi, op. cit. (note 24), p. 449.

45. On the 'slippery notion' of 'idol' in early modern times, see A. Chastel, 'Les "idoles" à la Renaissance', in *Roma centro ideale dell'antico nei secoli xv e xvi*, ed. S. Danesi Squarzina (Milan, 1989), pp. 468–76; C. L. Johnson, 'Idolatrous cultures and the practice of religion', *Journal of the History of Ideas* 67 (2006), pp. 597–622; J. P. Rubiés, 'Theology, ethnography, and the historicization of idolatry', *Journal of the History of Ideas* 67 (2006), pp. 571–96; J. Sheehan, 'Thinking about idols in early modern Europe', *Journal of the History of Ideas* 67 (2006), pp. 561–70; M. W. Cole and R. Zorach (eds.), *The Idol in the Age of Art: Objects, devotions and the early modern world* (Farnham, 2009); B. E. Hamann, 'Producing idols', *Latin American and Latinx Visual Culture* 1 no. 1 (2019), pp. 23–47. On the categorization of indigenous American practices as idolatry, see C. Bernand and S. Gruzinski, *De l'idolâtrie: une archéologie des sciences religieuses* (Paris, 1988); M. Gaudio, 'The space of idolatry: reformation, incarnation, and the ethnographic image', *RES: Anthropology and Aesthetics* 41 (2002), pp. 72–91; T. Cummins, 'The golden calf in America', in Cole and Zorach, op. cit., pp. 77–104; C. Farago and C. Komandina Parenteau, 'The grotesque idol: imaginary, symbolic and real', in Cole and Zorach, op. cit., pp. 105–31. S. Botta, 'Towards a missionary theory of polytheism: the Franciscans in the face of the indigenous religions of New Spain', in *Manufacturing Otherness: Missions and indigenous cultures in Latin America*, ed. S. Botta (Newcastle upon Tyne, 2013), pp. 1–26. On the term 'Cemi' and its early use in the Western religious lexicon, see S. Botta, 'La ausencia de los dioses taínos: sobre el fracaso hermenéutico de la obra de Ramón Pané', *Latinoamérica: Revista de Estudios Latinoamericanos* 57 (2013), pp. 161–87.

46. 'Index alphabeticum rerum omnium naturalium in Musaeo appensarum incipiendo à trabe prima prope armarium primum', 1587, Bologna, Biblioteca Universitaria, ms Aldr. 26; 'Inventario e descrizione sommaria dello Studio et Museo del già eccell. mo sig.re Ulisse Aldrovandi', 1610, Bologna, Archivio di Stato, Sen., Instr., c, b. 33, n. 48, written before the museum's transfer, and published in C. Scappini and M. P. Torricelli, *Lo Studio Aldrovandi in Palazzo Pubblico (1617–1742)* (Bologna, 1993), pp. 93–4. I searched, with no success, the inventory in Bologna, Biblioteca Universitaria, ms Aldr. 116.

- 47.** Aldrovandi's will was published in G. Fantuzzi, *Memorie della vita di Ulisse Aldrovandi medico e filosofo bolognese* (Bologna, 1774), pp. 67–85. On the Aldrovandi collection and its wider context, see G. Olmi, 'Science–honour–metaphor: Italian cabinets of the sixteenth and seventeenth centuries', in Impey and MacGregor, *op. cit.* (note 12), pp. 5–16; Olmi, *op. cit.* [1992] (note 5), pts. 2, 3; Olmi, *op. cit.* [2001] (note 8); A. M. Brizzolara, 'Il museo di Ulisse Aldrovandi', in *Dalla Stanza delle Antichità al Museo Civico: storia della formazione del Museo Civico Archeologico di Bologna*, ed. C. Morigi Govi and G. Sassatelli (Bologna, 1984), pp. 119–24; A. Lugli, *Il laboratorio di Ulisse Aldrovandi: iconografia e cultura antiquaria*, in *Palazzo Poggi da dimora aristocratica a sede dell'Università di Bologna*, ed. A. Ottani Cavina (Bologna, 1988), pp. 160–75.
- 48.** Aldrovandi, *op. cit.* (note 11), c. 51r; Tugnoli Pattaro, *op. cit.* (note 5), p. 134. On the Aldrovandi collection in Palazzo Pubblico, see Scappini and Torricelli, *op. cit.* (note 46).
- 49.** *Index Chimeliarchiae Excell. & Illustriss. Olim Ulissis Aldrovandi*, Bologna, Archivio di Stato, Assunteria di Studio, *Diversorum*, b. 100, n. 6, published in Scappini and Torricelli, *op. cit.* (note 46), pp. 99–109.
- 50.** 'Inventario dello Studio dell'Aldrovandi', Bologna, Archivio di Stato, Assunteria di Studio, *Diversorum*, b. 100, n. 6, partly published in Scappini and Torricelli, *op. cit.* (note 46), pp. 37, 115. On the possible date of this inventory, see Scappini and Torricelli, *op. cit.* (note 46), pp. 32, 69, n. 55. The original Italian entries recording the American artefacts are: 'Idolo in forma di pietà', 'Una maschera indiana fatta di mosaico', 'Idolo indiano in forma di maschera', 'Un altro simile di pietra verde in figura di delfino', 'Un altro simile di pietra di varii colori con bereta in capo', 'Un altro simile con occhi grandi et naso longo n.ro 4'.
- 51.** I do not concur with the opinion of Scappini and Torricelli (uncritically repeated by M. Haxhiraj) that the second shelf hosted only a few unworked stones, the great part of its objects being artefacts; very much to the contrary, the reading of the 'Inventario dello Studio dell'Aldrovandi' (*op. cit.*, note 50) makes clear that most of the specimens were minerals in their natural state, as also attested in later descriptions. See Scappini and Torricelli, *op. cit.* (note 46), p. 37; M. Haxhiraj, *Ulisse Aldrovandi il museografo* (Bologna, 2016), p. 94.
- 52.** Scappini and Torricelli, *op. cit.* (note 46), pp. 42–3.
- 53.** The hypothesis put forward by Haxhiraj, who stated that the Cospì collection was mixed with the Aldrovandi one (the latter, consequently, being purportedly also illustrated in a famous print of the Museo Cospiano by Giuseppe Maria Mitelli), is untenable because the two collections were still clearly separate when they were moved to the Istituto delle Scienze between 1742 and 1749, as attested by their manuscript inventories (Bologna, Archivio di Stato, Assunteria di Istituto, *Diversorum*, b. 12, n. 4, b. 13, n. 35). Haxhiraj's 'identification' of Amerindian objects from the Aldrovandi collection (a mosaic mask and Giganti's Amazonian axe) in Mitelli's print is fanciful, at best; see Haxhiraj, *op. cit.* (note 51), p. 98–9.
- 54.** Bologna, Biblioteca Universitaria, cod. 595, y, 1, cc. 11r, 132v, partly published in Scappini and Torricelli, *op. cit.* (note 46), p. 132.
- 55.** 'Naturalium rerum catalogus quae ex museo Ulyssis Aldrovandi in Scientiarum Institutum translata sunt anno 1749', Bologna, Archivio di Stato, Assunteria di Istituto, *Diversorum*, b. 12, n. 4.
- 56.** Scappini and Torricelli, *op. cit.* (note 46), p. 87. The collection of the Istituto delle Scienze was described in G. G. Bolletti, *Dell'origine e dei progressi dell'Istituto delle Scienze di Bologna* (Bologna, 1751). On the Aldrovandi collection when it was in the Istituto delle Scienze, see C. Gentili, 'I musei Aldrovandi e Cospì e la loro sistemazione all'Istituto', in *I materiali dell'Istituto delle scienze* (Bologna, 1979), pp. 90–99; A. Angelini (ed.), *Anatomie accademiche*, vol. iii: *L'Istituto delle Scienze e l'accademia* (Bologna, 1993). On the history of the Istituto delle Scienze, see M. Zini, *Tre secoli di scienza: lineamenti della storia dell'Accademia*

delle Scienze dell'Istituto di Bologna attraverso gli studi e le vicende dei suoi membri più celebri (Bologna, 2011).

57. Findlen, op. cit. (note 5), pp. 400–404.

58. 'A tutto questo si aggiunse quanto de' due già descritti Musei a questa parte spettava che non poco accrescimento le recò, e decoro.' Bolletti, op. cit. (note 56), p. 59.

59. On the later display of part of Aldrovandi's collections in Palazzo Poggi in the first half of the twentieth century, see F. Rodriguez, 'Il museo aldrovandiano della Biblioteca Universitaria di Bologna', *L'Archiginnasio* 49–50 (1954–5), pp. 207–23.

60. 'Due statuette virili di isiada o d'altra pietra Due idoli di pietra o pasta di nome incerto.' 'Inventario degli oggetti del Gabinetto Archeologico della Pontificia Università di Bologna diretto dal Professore Filippo Schiassi. Museo dell'università. 14 marzo 1835', Bologna, Archivio Storico del Museo Archeologico, fol. 16.

61. F. Schiassi, *Guida del forestiere al Museo delle Antichità della Regia Università di Bologna* (Bologna, 1814), pp. 140–44. On the Mesoamerican musical instrument, now at the Museo della Civiltà in Rome, see D. Domenici, 'The wandering "leg of an Indian king": the cultural biography of a friction idiophone now in the Pigorini Museum in Rome, Italy', *Journal de la Société des Américanistes* 102 (2016), pp. 79–104.

62. L. Pigorini, 'Gli antichi oggetti messicani incrostati di mosaico esistenti nel Museo Preistorico ed Etnografico di Roma', *Atti della Reale Accademia dei Lincei*, 3rd ser.: *Memorie della Classe di Scienze Morali, Storiche e Filosofiche* 12 (1885), pp. 3–10.

63. The object is described in the accession records of the Museo Civico Medievale (vol. 1, p. 331) as follows: 'Pendaglio a protome umana di giada chiazzata in nero ed in rame, in buono stato. Si tratta di una tavoletta rettangolare dello spessore di circa cm. 2.5. Su di un lato maggiore è incisa la protome di un essere umano, ed incisioni lunate con punteggiatura. Sec. x–xvi. h. cm. 8.9 × 5.5.'

64. L. Laurencich Minelli, 'L'indice del museo di Antonio Giganti: interessi etnografici e ordinamento di un museo cinquecentesco', *Museologia Scientifica* 1 nos. 3–4 (1984), pp. 191–242. See also Laurencich Minelli, op. cit. [1992] (note 12).

65. Laurencich Minelli, op. cit. [1984] (note 64), pp. 211, 229, 233.

66. 'Idoli di pietra del Mondo Nuovo di diverse forme', 'Un idolo del Mondo Nuovo di pietra, testa et busto umano'. Laurencich Minelli, op. cit. [1984] (note 64), pp. 212, 229, 234.

67. Besides Giganti, Aldrovandi also had other sources for Mesoamerican objects. Cardinal Gabriele Paleotti, for example, gave him a featherwork mosaic with the image of St Jerome that he had received from the cardinal of Burgos; see Heikamp, op. cit. (note 2), pp. 461–2, n. 26. Luigi Pigorini, followed by various scholars, guessed that Aldrovandi could have obtained the Yacatecuhtli mosaic mask and other Mesamerican artefacts from Francesco I de' Medici; E. S. Tiberini, 'The acquisition of a Mixtec–Puebla mosaic mask: unpublished data from the Pigorini Museum archives', *Museologia Scientifica* 6 (1989), 145–54; L. Markey, *Imagining the Americas in Medici Florence* (University Park, pa, 2016), p. 13. However, this hypothesis – unsupported by documentary evidence – is now undermined by newly available data on the arrival of Mesoamerican objects in Bologna (see below). On Aldrovandi's reception of American natural things (both actual specimens and depictions), see Cermenati, op. cit. (note 12); E. Sallent Del Colombo and José Pardo-Tomás, 'Materiali aldrovandiani in Spagna: l'enigmatico caso del Códice Pomar', in Olmi and Simoni, op. cit. (note 8), pp. 37–48.

68. Laurencich Minelli, op. cit. [1984] (note 64), pp. 193–202.

69. *Ibid.*, pp. 199 n. 26.

70. M. Donattini, 'Il mondo portato a Bologna: viaggiatori, collezionisti, missionari', in *Storia di Bologna*, vol. iii, *Bologna nell'età moderna (secoli xvi–xviii)*, pt. ii: *Cultura, istituzioni culturali: Chiesa e vita religiosa*, ed. A. Prosperi (Bologna, 2008), pp. 537–682; D. Domenici and L. Laurencich Minelli, 'Domingo de Betanzos' gifts to Pope Clement VII in 1532–1533: tracking the early history of some Mexican objects and codices in Italy', *Estudios de Cultura Náhuatl* 47 (2014), pp. 188–9.
71. Laurencich Minelli, op. cit. [2006] (note 12), p. 119.
72. G. Olmi, 'Bologna nel secolo xvi: una capitale europea della ricerca naturalistica', in *Crocevia e capitale della migrazione artistica: forestieri a Bologna e bolognesi nel mondo (secoli xv–xvi)*, ed. S. Frommel (Bologna, 2010), p. 66.
73. Leandro Alberti, *Historie di Bologna, 1479–1543* (Bologna, 2006), pp. 629–30; Donattini, op. cit. (note 70); D. Domenici, 'Cose dell'altro mondo: nuovi dati sul collezionismo italiano di oggetti messicani tra xvi e xvii secolo', in *L'impero e le Hispaniae, da Traiano a Carlo V: classicismo e potere nell'arte spagnola*, ed. S. de Maria and M. Parada López de Corselas (Bologna, 2014), pp. 471–83; Domenici, op. cit. [2017] (note 25); D. Domenici, *Il senso delle cose: materialità ed estetica nell'arte mesoamericana* (Bologna, 2017); D. Domenici, 'Códices mesoamericanos en la Italia de la primera edad moderna: historia y recepción', in *Códices y cultura indígena en México: homenaje a Alfonso Lacadena García-Gallo*, ed. J. J. Batalla Rosado, J. Luis de Rojas and L. Pérez Lugones (Madrid, 2018), pp. 351–75; D. Domenici, 'Otros ingenios: propiedades materiales de artefactos mesoamericanos en textos dominicos del siglo xvi', in *Arte y globalización en el mundo hispánico de los siglos xv al xvii*, ed. M. Parada López de Corselas and L. M. Palacios Méndez (Granada, 2020), pp. 390–406; Domenici and Laurencich Minelli, op. cit. (note 70).
74. Domenici and Laurencich Minelli, op. cit. (note 70).
75. *Ibid.*, p. 179; Domenici, op. cit. (note 26).
76. D. Heikamp, *Mexico and the Medici* (Florence, 1972), pls. 58–9.
77. E. Matos Moctezuma, 'Una máscara olmeca en el Templo Mayor de Tenochtitlan', *Anales de Antropología* 16 (1979), pp. 11–19.
78. Laurencich Minelli, op. cit. [1985] (note 12), p. 20; see also Laurencich Minelli, op. cit. (note 2); Laurencich Minelli, op. cit. [1980, "De Orbe Novo"] (note 12); Laurencich Minelli, op. cit. [2006] (note 12).
79. Stasi, op. cit. (note 12), is especially prone to this kind of interpretation, to the point that Aldrovandi is defined as an 'anthropologist ante litteram'.
80. M. T. Ryan, 'Assimilating new worlds in the sixteenth and seventeenth centuries', *Comparative Studies in Society and History* 23 (1981), pp. 519–38. Regarding the presumed comparison between American natives and Old World antiquity, see Laurencich Minelli, op. cit. [2001] (note 12), pp. 90–91.
81. G. Olmi, 'Farmacopea antica e medicina moderna: la disputa sulla teriaca nel Cinquecento bolognese', *Physis* 19 (1977), pp. 197–246.
82. Biblioteca Apostolica Vaticana, Vat. lat. 6192, vol. ii, fol. 656v, quoted in Findlen, op. cit. (note 5), p. 62.
83. Findlen, op. cit. (note 5), p. 172.
84. Olmi, op. cit. [1976] (note 5), p. 80.
85. G. Olmi, 'Ordine e fama: il museo naturalistico in Italia nei secoli xvi e xvii', *Annali dell'Istituto Storico Italo-Germanico in Trento* 8 (1982), pp. 225–74, repr. in Olmi, op. cit. [1992] (note 5), esp pp. 300–13. On the relevance of images in the antiquarian mindset, see P. Burke, 'Images as evidence in seventeenth-century Europe', *Journal of the History of Ideas* 64 (2003), pp. 273–96.

- 86.** On an interesting late Renaissance Italian instance of interaction between texts and objects, see D. Domenici, 'The Descrittione dell'India occidentale, a sixteenth-century source on the Italian reception of Mesoamerican material culture', *Ethnohistory* 64 (2017), pp. 497–527.
- 87.** Aldrovandi, *op. cit.* (note 6), c. 508v, published in Tugnoli Pattaro, *op. cit.* (note 5), p. 180. On the notion of 'experience' in Aldrovandi, see Tugnoli Pattaro, *op. cit.* (note 5), pp. 75–94. More generally, on the relevance of experience in the early modern culture of collecting, see Findlen, *op. cit.* (note 5), ch. 5.
- 88.** Findlen, *op. cit.* (note 5), p. 51.
- 89.** A. Momigliano, 'Ancient history and the antiquarian', *Journal of the Warburg and Courtauld Institutes* 13 (1950), pp. 285–315. See also A. Schnapp, *The Discovery of the Past* (London, 1996); P. N. Miller (ed.), *Momigliano and Antiquarianism: Foundations of the modern cultural sciences* (Toronto, 2007); P. N. Miller, *History and its Objects: Antiquarianism and material culture since 1500* (Ithaca, ny, and London, 2017). On antiquarianism and the New World, see A. Schnapp, 'Ancient Europe and Native Americans: a comparative reflection on the roots of antiquarianism', in *Collecting Across Cultures: Material exchanges in the early modern Atlantic*, ed. D. Bleichmar and P. Mancall (Philadelphia, 2011), pp. 58–80; A. Schnapp, 'European antiquarianism and the discovery of the New World', in *Past Presented: Archaeological illustration and the ancient Americas*, ed. J. Pillsbury (Washington, dc, 2012), pp. 49–68.
- 90.** For the same reasons stated with regard to Aldrovandi's presumed proto-anthropological stance, I would also avoid defining his collection as a 'naturalistic–ethnographic' museum (e.g. Laurencich Minelli, *op. cit.* [1992] (note 12), p. 9; Laurencich Minelli, *op. cit.* [2006] (note 12), p. 118).
- 91.** S. Botta, 'Incorporating Mesoamerican cosmology within a global history of religion', in *Reshaping the World: Debates on Mesoamerican cosmologies*, ed. A. Díaz (Louisville, 2020), pp. 70–99; P. von Wyss-Giacosa, 'Through the eyes of idolatry: Lorenzo Pignoria's argument on the conformité of ethnographic objects from the West and the East Indies with Egyptian idols', in *Through Your Eyes: Debating religious alterities (sixteenth to eighteenth centuries)*, ed. G. Tarantino and P. von Wyss-Giacosa, with G. Marocci (Leiden, forthcoming); see also P. Miller, 'Taking paganism seriously: anthropology and antiquarianism in early seventeenth-century histories of religions', *Archiv für Religionsgeschichte* 3 (2001), pp. 183–209; M. Mulsow, 'Antiquarianism and idolatry: the historia of religions in the seventeenth century', in *Historia, Empiricism and Erudition in Early Modern Europe*, ed. G. Pomata and N. Siralsi (Cambridge, 2005), pp. 181–209.
- 92.** Findlen, *op. cit.* (note 5), p. 43.
- 93.** D. Domenici, 'Tasting clay, testing clay: medicinal earths, bucarophagy and experiential knowledge in Lorenzo Legati's Museo Cospiano, 1677', *Cromohs* 22 (2019), pp. 1–16. For another example of the interplay between antiquarianism and natural sciences in the seventeenth century, see Paula Findlen's reading of the frontispiece of Athanasius Kircher's *Mundus subterraneus*; Findlen, *op. cit.* (note 5), p. 188.