Dis-robing the Guardaroba: The Arctic as viewed from Florence

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In the *Guardaroba* of Palazzo Vecchio, Cosimo I de Medici commissioned maps of the known world on doors opening onto *Wunderkammers* containing artefacts from those regions. The four "Polar Lands" maps depicted areas inhabited by Indigenous cultures before Arctic exploration. They represent the earliest evidence of Arctic cartography and recognition at the Medici court of Boreal worlds that thrived prior European colonialism. This study draws on early modern cartography, Arctic exploration, pre-modern race and Indigenous studies, anthropology and material culture. It examines the myth of the North Pole, geographical depictions made before formal exploration, and the exchange of information among cartographers and explorers who relied on earlier sources to map regions with limited data. The paper traces the journey of Arctic animal skin artefacts from Alaska, Canada, Greenland, and Siberia to Florence. Although these objects arrived after the *Guardaroba* project ended, they could have been displayed behind the doors of the "Polar Lands". Considering relations between Arctic Native communities and the natural world informs discussion about these lands and seas, now under climate pressure, globalisation, and resource exploitation.

1. The cartographic representation of the North during the Renaissance

To the ancient Greeks, the Arctic was more of a cosmological concept than a physical place. The term *artici* identified by Ptolemy referred to

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regions beneath the stars in the *arktos* constellation (meaning "near the bear"). The Ursa Major signalled an area where stars moved in tight circles around a fixed point in the sky. Euclid described these "ever-visible" bodies, distinct from constellations that moved across the horizon over weeks and months[1].

During the Renaissance, the Arctic remained a largely mysterious region, but it was present on maps inspiring new experiments in navigation, and cartography[2]. As one of the last frontiers to be reached, the knowledge gap spurred the growth of cartographic imagery, the search for the Northwest and Northeast Passages, and the conquest of land in the Arctic Ocean.

1.1 Arctic explorations

Arctic exploration dates back to the voyage of the Greek Pytheas to Thule around 2,400 years ago. By the year 1000, Vikings had already established settlements along the coasts of Greenland and Canada, although Native Peoples had long inhabited these regions[3]. Prior to Mercator's 1595 map, numerous cartographers, including Contarini and Rosselli (1506), Waldseemüller (1507), and Ortelius (1570), had produced maps depicting the northern margins beyond the known continents. The Renaissance idea of an ice-free and navigable Arctic Ocean was reinforced by maps such as Forlani's (1565) and Barents' (1598).

The ancient frozen sea concept, described by Pliny as *mare concretum*, was echoed by later writers who referred to the Arctic as *mare glaciale* or *mare congelatum*. Fridtjof Nansen in 1897 verified that the northernmost part of the Arctic Ocean was covered in floating ice. The navigability of the

1 Christopher Heuer, *Into the White: The Renaissance Arctic and the End of the Image*, Brooklyn, Zone Books, 2019.

2 Djoeke Van Netten, *Known unknowns in the North. Uncertain maps of the Arctic in early modern times*, «International Journal of Cartography», 11, 4, 2025, pp.489-508.

3 Patrick Plumet, *Peuples du Grand Nord*, Paris: Éditions Errance, 2004; Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, Québec: Editions du Septentrion, 2013.

passage between Asia and America was later confirmed by the Danish explorer Vitus Bering in the 18th century and was named the Bering Strait[4].

2. Gerard Mercator

Gerardus Mercator (1512-1594), a Flemish cartographer and mathematician, lived during a period of significant discoveries, alongside figures like Leonardo da Vinci, Michelangelo, and Shakespeare. He was orphaned at sixteen but benefited from the support of his uncle Gisbert, a priest. His early education in Hertogenbosch (fig. 1), under the progressive Brethren of the Common Life, exposed him to influential figures like Erasmus, Albrecht Dürer, the visionary painter Hieronymus Bosch and the Dutch explorer Jacobus Cnoyen, known for his accounts of Arctic explorations[5]. He was introduced to cartography in Louvain and began his career under the reign of Emperor Charles V, whose empire spanned much of Europe and the Americas.

Fig. 1 Georg Braun; Frans Hogenberg: *Civitates Orbis Terrarum*, Band 1, 1572. Panorama of 's-Hertogenbosch. Archived in the Library of Congress Web Archives at www.loc.gov.

He is renowned for his Mercator projection, a system that revolutionised navigation and is still in use today. Facilitated by the advent of typography, map producers and distributors, he created maps, globes

4 *Ibidem*.

5 John Cloud, Elisa Palomino, *Mercator, the Medici and the past and future of the Arctic, Smithsonian Institution National Museum of natural History*, in «Arctic Studies Center Newsletter», May N.30, 2023, pp. 68-69.

and astronomical instruments, earning a reputation as one of history's greatest cartographers. He is also considered the father of the modern globe-making industry. Under the mentorship of cartographer Gemma Frisius, he produced his first terrestrial globe in 1541, dedicating it to Charles V[6].

2.1 Mercator maps the Arctic

Mercator (fig. 2) studied the possibility of a northern sea passage through North America to Asia, and his azimuthal projection of the North Pole (fig. 3) indicates his belief in its existence. His *Septentrionalium Terrarum Descriptio* (Description of the Northern Lands) (fig. 3) is considered the earliest map of the polar regions. It places the North at the centre, representing the extremities of Europe, Asia, and America, with the Arctic Ocean and a central circular area. The term "*Terrarum*" refers to the planet as a universe and "*Septentrionalium*" refers to the Ursa Major constellation and the Arctic as the region beneath it. The map highlights the Arctic, as "*terra-aqua-glacia*": a land, sea and ice area[7]. Virtually all portraits of Mercator (fig. 2) show him, not with a map, but with one of his globes, always tilted to emphasize the Arctic lands.

His projection drew from ancient texts from Strabo, Pliny and from Ptolemy's *Geography*[8]; accounts from explorers such as Martin Frobisher and John Davis; correspondence with scholars like Richard Hakluyt[9]

6 Joe Bouchard, *The Mercator Project: Innovative Enhancement of a Founding Document for Polar Studies*, 25th Polar Libraries Colloquy, Cambridge: Scott Polar Research Institute, 2016, pp. 12-21; Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

7 *Ibidem*.

8 Gerard Mercator, *Tabulae geographicae Cl. Ptolemei ad mentem autoris reftitutae et emendate*, 1578.

9 Gerard Mercator, *A letter of Gerardus Mercator, written to M. Richard Hakluyt of Oxford, touching the intended discouery of the Northeast passage*, 1580.

Fig. 2 Mercator with his globe noting the Arctic lands, *Atlas*, 1574. Library of Congress, Rare Book and Special Collections Division. Archived in the Library of Congress Web Archives at www.loc.gov.

Fig. 3 Mercator's Arctic Map. 1595. *Septentrionalium Terrarum Descriptio*. Library of Congress, Rare Book and Special Collections. Archived in the Library of Congress Web Archives at www.loc.gov.

and John Dee[10]; the work of cartographers like Abraham Ortelius (1570); and information from sailors, travellers, churchmen, and emissaries[11]. He followed the work of Giacomo Gastaldi (1561), clearly separating the New World from Asia using the Strait of Anian. He also drew on medieval sources, including the *Itinarium* of Jacques Cnoyen, whose sources were the *Inventio Fortunata* by Nicholas of Lynn, an English mathematician from Oxford who used a map and astrolabe to chart the Arctic

10 Eva Germaine Rimington Taylor, *A Letter Dated 1577 from Mercator to John Dee*, *Imago Mundi*, v.13, 1956, pp. 56-68.

11 Joe Bouchard, *The Mercator Project: Innovative Enhancement of a Founding Document for Polar Studies*, cit.; Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

coast. Mercator translated these ideas in his 1569 world map (fig. 4). After his death, his partner Hondius (1607) published a revised version of this polar map in 1595 (fig. 3).

2.2 Mercator's Polar Lands and the Medieval Warm Period

There was an ancient cosmology behind the concept of the polar lands and rivers, but what Mercator was mapping was the historic extent of the polar ice cap centuries before his lifetime. The explorations described in *Inventio Fortunata* were made at the end of the Medieval Warm Period, when many ocean passages were at least seasonally ice-free. Mercator lived in the depths of the Little Ice Age (circa 1300-1850), a very different climate regime[12]. But the traces of *Inventio Fortunata* allowed Mercator to map the four major indigenous circum-polar concentrations, a major contribution to northern ethnography. Hence, Mercator's Polar Lands is a synthesis of the state of the Arctic Ocean from centuries earlier, during the end of what is now called the Medieval Climate Anomaly. By Mercator's era, Europe and the Atlantic and Arctic were in the middle of the Little Ice Age. The top part of the polar ice cap in the Arctic Ocean is frozen fresh water, as the original salt in the water migrated down lower. Hence, all explorers of this era thought there must be "land" underneath the polar ice cap, although there is not. Hence, Mercator's mapping of the polar lands is a mapping of the extent of the polar ice cap, at a given climactic era.

2.3 Inventio fortunata

Mercator became close friends with the English polymath John Dee (1527-1609) when they were both living in Leuven in 1548 and corresponded with him for the rest of his life. When Dee wrote to Mercator

12 Brian Fagan, *The Little Ice Age: How Climate Made History, 1300–1850*, New York, Basic Books, 2000.

in 1577 asking for his sources for the North Pole projection, Mercator returned a letter[13] with information for the entire part of the world within 12 degrees of the North Pole:

> In the midst of the four countries is a Whirlpool, into which there empty these four indrawing Seas which divide the North. And the water rushes round and descends into the Earth just as if one were pouring it through a filter funnel. It is four degrees wide on every side of the Pole, that is to say eight degrees altogether. Except that right under the Pole there lies a bare Rock in the midst of the Sea. Its circumference is almost 33 French miles, and it is all of magnetic Stone.

Mercator mentions that this is what he copied out of Jacobus Cnoyen van Herzogenbusch's *Inventio Fortunata*, an account of his travels around 1360 in northern lands such as Iceland, Greenland, Norway and possibly even Labrador. This volume, completed in the 14th century and now unfortunately lost, was a notorious resource for 15th and 16th century cartographers. The author of this work, Nicholas of Lynn, was a Carmelite friar at Merton College, of Oxford when Merton was a major centre for mathematics and science. The *Inventio* itself refers to a much older and also lost work, the *Gestae Arthuri*, which adds further chapter to the King Arthur tradition, claiming that his army conquered Iceland, Greenland, the Faroe Islands and parts of Norway[14]. On the back of his polar map of 1569, Mercator wrote: «having produced the document according to the information collected by an English mathematician monk from Oxford who, with a map and an astrolabe, is believed to have measured the areas circling the pole»[15].

A Norwegian priest informed James Cnoyen that in 1360 an English Carmelite came to the northern island. He then departed, and moving

13 Eva Germaine Rimington Taylor, *A Letter Dated 1577 from Mercator to John Dee, Imago Mundi*, cit.

14 *Ibidem*; Thomas Green, *John Dee, King Arthur, and the Conquest of the Arctic*, in «The Heroic Age», 15, 2012.

15 Joe Bouchard, *The Mercator Project: Innovative Enhancement of a Founding Document for Polar Studies*, cit.

forward with his 'magical arts'[16] described all the places he saw and took their heights with his astrolabe. The friar wrote the *Inventio Fortunata,* and he presented it to King Edward III of England[17]. Nicholas of Lynn received his information, most likely from the priest Ivar Bárdarson, a clergyman from Trondheim, who administered the church from Garðar in Greenland, acquiring much information about the Arctic. Ivar returned to Norway in 1364, and it is possible that there the Oxford friar met him personally and wrote the *Inventio Fortunata*.

Nicholas of Lynn was also a contemporary of Geoffrey Chaucer, who, after being sent as a representative to Italy in 1372 by King Edward III, became acquainted in Florence with the writings of Dante, Petrarch and Bocaccio, author of the Decameron. On his return to England, Chaucer wrote the *Canterbury Tales*. The hero of Chaucer's "*The Miller's Tale*" was Nicholas of Lynn, a Carmelite friar, mathematician and astronomer from Oxford with his astrolabe.

2.4 The waters

There are two different projections on Mercator's 1569 world map (fig. 4). The small map on the bottom left, centered on the North Pole, is a polar azimuthal projection, which allows the northern polar regions of ocean, ice, and land to be presented with minimal distortion. The larger projection, which fills most of the map, is a great advance in mapmaking of the era. It is based on Mercator's cylindrical projection, which can be considered like a piece of enormous paper wrapped around the earth. Details from the earth's features are projected out-

16 The term "magical arts", used by Mercator and his contemporaries, has often led to misunderstandings. The concept of *arte magica* was, and remains, ambiguous due to its blend of scientific and mystical elements. For some, the term emphasizes purely magical or astrological practices, while for others, it marks the early stages of empirical knowledge (Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.).

17 Tryggvi Julius Oleson, *Early Voyages and Northern Approaches, 1000-1632*, Toronto, McClelland and Stewart, 1963.

Fig. 4 Mercator's 1569 World Map. Library of Congress Geography and Map Division. Archived in the Library of Congress Web Archives at www.loc.gov.

wards on to the paper. If the paper cylinder is cut anywhere, north to south, the paper cylinder can be unrolled to form a flat map. The map projection is conformal, which means everywhere an east-west line of latitude crosses a north-west line of longitude, the two lines cross at precisely right angles. On a globe, all intersections of latitude and longitude cross at right angles. This is one of several reasons why Mercator and his colleagues were generally pictured with their globes, not their maps (fig.2)[18]. In the Mercator's Arctic Map (fig. 3), the North Pole features the Rupes Nigra, a great black rock of magnetized iron, which accounted for the behaviour of compasses. The rock is surrounded by a whirlpool into which four mighty rivers flow, dividing a continental landmass into four distinct islands. Mercator envisioned the waters of the Earth flowing towards the pole, where they seemingly disappear

18 Stephan Halikowski Smith, *Cartography. Encyclopedia of Western Colonialism since 1450*, Ed. Thomas Benjamin, vol. 1, Detroit, Macmillan Reference USA, 2007, pp. 185-191.

into the Earth's central fire, a path to hell, with water evaporating upon contact with magma inside the Earth[19]. He believed that the flow of water between the Earth's four solid fields rushed toward the pole, making the true North Sea the globe's hydrographic tomb. These discharges into the Arctic Ocean were thought to be essential for maintaining eustatic equilibrium, given the vast amounts of marine and freshwater moving northward. This idea resonates with Ecclesiastes: «All the rivers flow towards the sea, yet the sea is not full»[20].

Mercator's 1569 map (fig.4) features the main water networks flowing north: the Dwina, Petzora, Oby, and Oechardes on the Russian side, and the Yukon, Cogib, Obila, and Hic Mare (Hudson Bay) on the American side. Each arm's upstream section fans out into multiple channels, resembling delta formations. Unlike modern cartographic conventions, Mercator's depiction reversed the direction of these channels. Contemporary knowledge has identified seasonal ice-free clearings (polynyas) in these areas[21]. The ocean rivers begin at boreal latitudes and flow north, then are cut off. But since the map is conformal before it cuts off, it means that the four "deltas" of ocean rivers are directly north of four important regions to the south.

2.5 Indigenous Lands

Mercator's 1595 Arctic map (fig.3) is rich with details about Russia, Scandinavia, Iceland and the North Atlantic. A number of occupations like Lappia (Sápmi) in the northern part of the Finnish-Scandinavian peninsulas, Island (Iceland), and Russia are indicated on the map. There is also specific mention of Indigenous nomadic inhabitants including

19 Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

20 École Biblique De Jerusalem, *La Bible de Jérusalem*, Paris, Les éditions du Cerf, p. 1101, 1998.

21 Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

Lapps (Sámi), Samogedi (Nenets), Screlingers (hunters) in Greenland, Canadenses and Saguenaiensium (Indians) at Hic mare (Hudson Bay).

Mercator already considered the presence of Native Peoples, who existed long before classical antiquity. Greek and Latin authors like Herodotus and Pliny wrote extensively about the northern regions and Pytheas travelled to Thule, the northernmost known region. The navigation of Native Peoples in the American North's icy channels is evidenced by symbols of small settlements on Mercator's map[22].

The Mercator Projection map, published in 1569, shows at the very top of the map (fig. 6) the southern entrances of four rivers – each presented as flowing north from places of high human cultural salience, as had been recognized two centuries earlier by Cnoyen's sources. The four maps reference: 'the lands above: Greenland, the Bay of Hudson, the Bering Strait, and Siberia'. These four southern regions are areas of great ecological and cultural significance, which we argue preserve the knowledge and history of life during the Medieval Climate Anomaly, as recalled by Mercator with the use of the resources available to him in-s Hertogenbosch, through cultural legacies preserved for centuries.

Hence, the 'lands above' had to involve European communications with Native Boreal/Polar Peoples all the way around the Arctic about what was up there[23].

All of this was condensed on Mercator's 1569 map (fig.4), created the same year Cosimo I was crowned Grand Duke of Florence, and the start of the *Guardaroba* project.

3. Cosimo I and the *Guardaroba*

Cosimo I (fig. 5) wished to convey the image of his power, so he undertook a comprehensive restoration of the former Palazzo dei Priori,

22 *Ibidem*.

23 Elisa Palomino, John Cloud, *The Arctic as viewed from Florence*, in «Arctic Studies Center Newsletter», Washington, DC, Smithsonian National Museum of Natural History, May, N.29, 2022, pp. 51-53.

Fig. 5 Bronzino, Portrait of Cosimo I de' Medici in Armour, c. 1545, Uffizi Galleries, Florence.

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Fig. 6 Sala delle Carte Geografiche, Palazzo Vecchio, Florence. Image free of copyright under commons.wikimedia.org

known as Palazzo Vecchio in Florence. All the artworks and diplomatic gifts that the family had collected in the Medici palace on Via Larga[24], were to be brought together in a chamber of the Palazzo Vecchio. Cosimo commissioned Giorgio Vasari, author of the *Lives of the Artists* and the leading architect, artist and art historian of the Medici court, to create the Sala delle Carte Geografiche. Playing on the words 'Cosimo/Kosmos', Vasari celebrated Cosimo's identity through a grandiose cartography arrangement that reproduced on the walls of the room the pages of the Geography, also called Cosmography from the Alexandrian cartographer Claudius Ptolemy (2nd century AD)[25].

24 San, *Guardaroba medicea*, Sistema Informatico dell'Archivio di Stato di Firenze, 2022.

25 Mara Miniati, *Birth and life of Scientific Collections in Florence*, in «Museologia & Interdisciplinaridade», 5 (9), 2017, pp. 14-41.

Fig. 7 Domenico Remps, The cabinet of curiosities. By permission of the Opificio delle Pietre Dure, Florence.

The geography of the late Renaissance was represented in different formats. While manuscripts and printed maps were easily carried, wall atlases were fixed in confined spaces and accessible only to very select, illustrious visitors[26]. At Palazzo Vecchio, depending on their position, guests were welcomed at the top of the steps, or at the *Guardaroba* a chamber reflecting both contemporary cosmographic knowledge and Cosimo's position of power[27].

Humanists, mathematicians, geographers, and artists wonderfully qualified to portray the cosmography of the known world were called

26 Andrea M. Galdy, *Con Bellissimo Ordine: Antiquities in the Collection of Cosimo I De' Medici and Renaissance Archaeology*, Manchester, 2002.

27 Id., *Che Sopra Queste Ossa Con Nuovo Ordine Si Vadiano Accommodanto in Più Luoghi Appartamenti: Thoughts on the Organisation of the Florentine Ducal Apartments in the Palazzo Vecchio in 1553*, Firenze, Edizioni Tassinari, 2002.

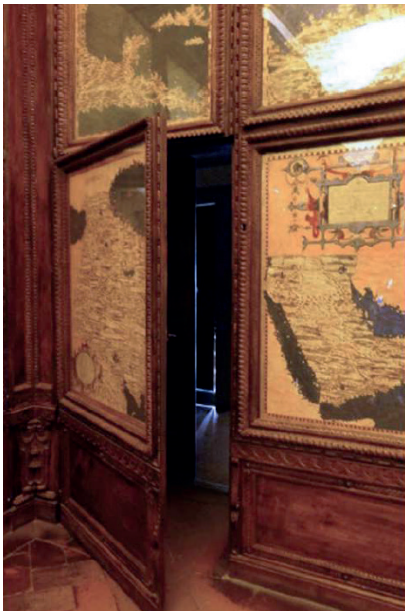

Fig. 8 Cabinet door at the Guardaroba, Palazzo Vecchio, Florence. Image free of copyright under commons.wikimedia.org.

upon to create the Guardaroba (fig. 6)[28]. As a testament to the Medici's geographical knowledge and as a theatre for displaying their dynastic power and their finest treasures, a set of painted maps was created and hung on cabinet doors. Each door opened to reveal both hidden passages (fig. 8) and cupboards containing objects, plants, animals and minerals[29] related to the lands painted on the panels and collected from around the world beyond Florence[30].

28 Mark Rosen, *The Mapping of Power in Renaissance Italy: Painted Cartographic Cycles in Social and Intellectual Context*, New York, NY, Cambridge University Press, 2015.

29 Anna Guarducci, *Egnazio Danti and the maps of Theatrum Mundi in the Guardaroba nuova in Palazzo Vecchio (Florence). Le fonti geocartografiche*, in «Geostorie, Bollettino e Notiziario del Centro Italiano per gli Studi Storico-Geografici», Roma, vol. 27 (1) 2019, pp. 5-30.

30 Gemma Levi-Donati, *Le trentacinque cartelle della Guardaroba Medicea di Palazzo Vecchio*, Perugia, Grafiche Benucci, 2002.

Vasari in his *Life* of Egnazio Danti describes how under Cosimo's orders, Danti executed, on the basis of Ptolemy's *Geography*, maps of all the then known regions of the world on the doors of the *Guardaroba*[31]:

[…] sua eccellenzia con l'ordine del Vasari, sul secondo piano delle stanze del suo palazzo ducale, ha di nuovo murato a posta et aggiunto alla guardaroba una sala assai grande, et intorno a quella ha accomodata di armari alti braccia sette con ricchi intagli di legnami di noce, per riporvi dentro le più importanti cose e di pregio e di bellezza che abbi sua eccellenzia; questi ha nelle porte di detti armari spartito dentro agl'ornamenti di quegli cinquantasette quadri d'altezza di braccia due incirca e larghi a proporzione, dentro a' quali sono con grandissima diligenzia fatte in sul legname a uso di minii dipinte a olio le tavole di Tolomeo misurate perfettamente tutte, e ricorrette secondo gli autori nuovi e con le carte giuste delle navigazioni, con somma diligenzia fatte le scale loro da misurare, et i gradi dove sono in quelle, e' nomi antichi e moderni.

3.1 The *Guardaroba* maps

Cosimo's passion for the natural sciences flourished in this room. The maps offered depictions of animals and plants indigenous to the countries represented on the charts. Vasari mentions that the aim of the room was to «place together simultaneously [all] these things of heaven and earth» in a coherent space and in an orderly fashion[32]. As the owner of the treasures in this *Wunderkammer* (fig. 7), Cosimo perceived to be the master of all things, places and the destiny of mankind in the name of God to perfect the original creation and to organise it according to modern science[33].

31 Giorgio Vasari, *Le vite dei più eccellenti pittori, scultori e architetti*, Roma, Newton Compton, 1991.

32 Mark Rosen, *The Mapping of Power in Renaissance Italy: Painted Cartographic Cycles in Social and Intellectual Context*, cit.

33 Andrea M. Galdy, *Con Bellissimo Ordine: Antiquities in the Collection of Cosimo I De' Medici and Renaissance Archaeology*, cit.; Fausto Barbagli, *Natura Collecta Natura*

Between 1560 and 1563, the Florentine monk Miniato Pitti, abbot of San Miniato al Monte, cosmographer at the Medici court, drew up the project for the *Guardaroba*[34]. The maps were not all based on the same sources or on a single book, or atlas, and the original maps from Ptolemy were expanded to include the newly discovered Americas[35]. Thirty of the maps were painted by Fra Egnazio Danti, a Perugian Dominican monk, astronomer and cosmographer[36] between 1563 and 1575. The remaining twenty-three of Europe and Africa were executed by the Olivetan Stefano Bonsignori (1575-86) based on Ortelius' *Theatrum orbis terrarum*[37].

In addition to Ptolemy's original maps, there are nine maps of America, fifteen of Asia, four of the Polar Lands, one of Greenland and twelve of Europe and Africa from more recent sources. Antarctica does not appear in the *Guardaroba*.

3.2 The four Polar Region Maps

The unique set of four maps of 'Polar Lands' (fig. 10 – 13) dated between 1586 and 1589 were made later and separately[38]. It is uncertain whether these maps are attributed to Danti or Bonsignori, and possibly they were added at the end of the 16th century by Antonio Santucci, who

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Exhibita: Il collezionismo naturalistico a Firenze dai Medici al Museo di Storia Naturale, «Collana scienze naturali», 3, 2021.

34 Anna Guarducci, *Egnazio Danti and the maps of Theatrum Mundi in the Guardaroba nuova in Palazzo Vecchio (Florence). Le fonti geocartografiche*, cit.

35 Ettori Allegri, Alessandro Cecchi, *Palazzo Vecchio e i Medici: guida storica*, S.P.E.S, 1980.

36 Gemma Levi-Donati, *Le trentacinque cartelle della Guardaroba Medicea di Palazzo Vecchio*, cit.

37 Mark Rosen, *Charismatic Cosmography in Late Cinquecento Florence*, in «Archives Internationales d'Histoire des Sciences», 59 (163), pp. 575-590, 2009.

38 Francesco Vosilla, *Il duca della repubblica e la prima Guardaroba di palazzo*, in Carlo Francini (ed.), *Palazzo Vecchio: Officina di opere e di ingegni*, Cinisello Balsamo, Florence, Silvana Banca Toscana, 2006, pp. 149-69.

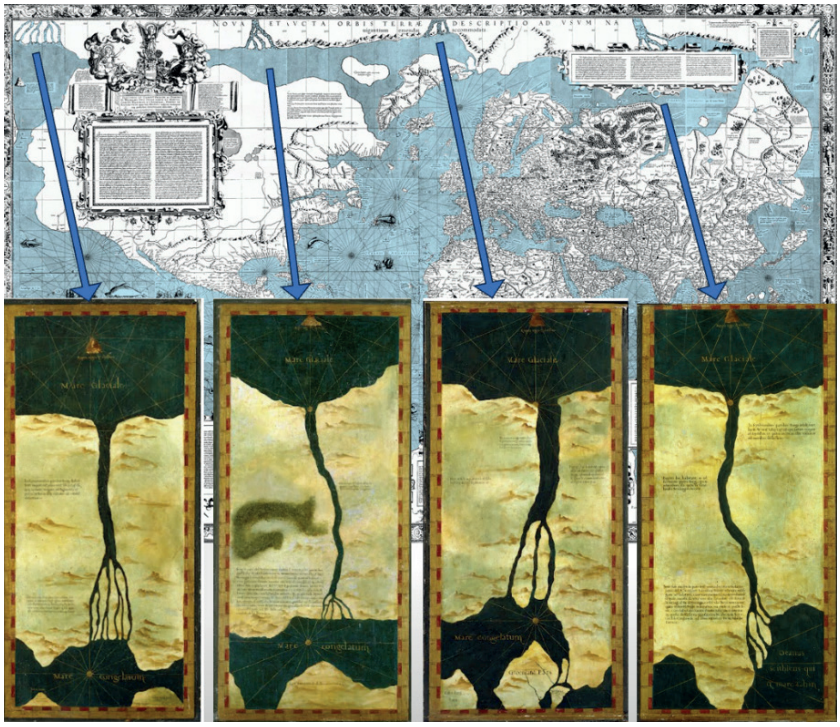

Fig. 9 Mercator's 1569 World Map. Library of Congress Geography and Map Division. Archived in the Library of Congress Web Archives at www.loc.gov.
Fig. 10 Sala delle Carte Geografiche, Palazzo Vecchio, Florence. Polar lands above the Bering Strait. Image free of copyright under commons.wikimedia.org.
Fig. 11 Sala delle Carte Geografiche, Palazzo Vecchio, Florence. Polar lands above Hudson Bay. Image free of copyright under commons.wikimedia.org.
Fig. 12 Sala delle Carte Geografiche, Palazzo Vecchio, Florence. Polar lands above Greenland. Image free of copyright under commons.wikimedia.org.
Fig. 13 Sala delle Carte Geografiche, Palazzo Vecchio, Florence. Polar lands above Siberia. Image free of copyright under commons.wikimedia.org.

also restored Dantis's globe, although these maps were not part of the original plan as Vasari does not mention them[39]. According to Pog-

39 Francesca Fiorani, *The Marvel of Maps: Art, Cartography and Politics in Renaissance Italy*, New Haven, Yale University Press, 2005.

gi (2009) they were made by inexperienced hands or by Bonsignori's assistants as he was engaged in other cartographic work from 1584. Rosen (2015) claims that in order to complete the room and fill the narrow cupboard spaces on the east and west walls, Buonsignori painted four almost identical maps, each representing a quarter of the Arctic surrounding the North Pole. This is not the case; the four 'Polar Lands' were inspired by Mercator's polar regions in his 1569 world map (fig. 9), but in the *Guardaroba* they were divided into four distinctive panels. As we have already explained above, they are not by any means identical but rather they depict specific lands above Greenland, the Bay of Hudson, the Bering Strait and Siberia. Details of the four lands are suitably vague, but the maps' text notes indicate that the lands were north of very real places from four of the most important areas of Indigenous Arctic cultures.

All four maps have inscriptions about the sites. The scroll of the polar lands above the Bering Strait mentions (fig. 10): «In the northern parts there are the islands of Bargu that Marco Polo states are looking north so much that the pole star is seen to go down towards the south». The map refers to the area between Asia and America, the Anian Strait (Bering Strait) on Mercator's *map*. An offshore island on the Asian side corresponds to today's Wrangel Island[40].

The lands above Hudson Bay (fig. 11) state: «This channel has five accesses and due to its narrowness and the rapidity of its flow it never freezes» and «The Northern parts are so far from us that few are those who wrote about them. They say the King of Norway having heard about it, sent people there to live». The text refers to Ivar Bárdarson, the Norwegian priest that served in Garðar, Greenland, from around 1340 to 1360. He travelled widely, and later returned to Norway with information about the eastern Canadian Arctic[41].

40 Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

41 Jared Diamond, *Collapse How Societies Choose to Fail or Succeed*, Penguin Publishing Group, 2011.

For lands above the Greenland (fig. 12) reads: «This channel has three accesses, every year it remains frozen for about three months» and «Here are the Pygmy who are four feet tall, as those that in Greenland are called *Screlirgi*». The text refers to Mercator's Arctic map description of the northern Pygmies, similar to the *Screlingers* of Greenland, who fished and hunted from skin boats around *chorbacks* (ice openings) and *aglous* (seal breathing holes), most likely referencing the Inuit.

For the lands above Siberia (fig. 13) «The Ocean, entering these islands with 19 accesses, creates four channels flowing north without interruption and here it gets absorbed by the bowels of the earth». Here the text refers to Mercator's mapping of the main Russian water networks flowing northwards: the Dwina, the Petzora, the Ob and the Oechardes[42].

4. Accuracy of Mercator's and Medici's Arctic cartographic knowledge

The geography of the Arctic was not clear until the 19th century, however, the geographic features represented by Mercator are only slightly shifted to the south (about one degree). While the northern limits of the continents depicted by Mercator were not exact, areas like the Finnish-Scandinavian peninsulas, northern Russia, the Davis Strait between Greenland and present-day Nunavut and Alaskan shorelines were impressively accurate[43]. The persistence of place names since 1595 varies; regions like Greenland, Siberia, and Russia remain, while names like Anian, Obila, and Tabin have disappeared. Later names like Spitzbergen, Laptev, and Alaska emerged[44].

42 Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

43 Raymond Fisher, *The Early Cartography of the Bering Strait Region*, in «Arctic», vol. 37, no 4, 1984, p. 574.

44 Louis-Edmond Hamelin, Stefano Biondo, Joe Bouchard, *L'Apparition Du Nord Selon Gérard Mercator*, cit.

Mercator and the Medici cartographers used compasses and astrolabes, mathematical methods, logic, and deduction. They may have had more knowledge of the North than is commonly believed. Their work might reflect not just the cooling of the 1500s but a warmer medieval period that enabled European voyages to Greenland and eastern North America. Despite gaps in documentation, and the ideological restrictions of the Inquisition, Mercator's and the Medici's maps were far from unrecognizable. Their work reflected a sophisticated understanding of geography and offered significant contributions to the 16th-century Polar knowledge.

5. The Medici Wunderkammer or *Guardaroba*

Considered the first museum collection of the 16th century, the compilation of valuables of the Medici family followed the medieval tradition of collecting treasures[45], an important strategy, where scientific knowledge and technological control of nature would confer political power. The Medici designed womb-like studios for aesthetic contemplation of their collections[46] and the *Guardaroba* became a sort of *Kunst- und Wunderkammer* (fig.7)[47]. These "*cabinets of curiosities*" constituted a room or cabinet full of artefacts - natural and artificial. They were arranged according to the epistemic codes of "The Four Elements", "The Four Continents" or "The Seven Virtues"[48]. A "museum" containing small

45 Tiffany Jenkins, *Keeping Their Marbles. How the Treasures of the Past ended up in Museums – and why they should stay there*, Oxford, Oxford University Press, 2016.

46 Fausto Barbagli, *Natura Collecta Natura Exhibita: Il collezionismo naturalistico a Firenze dai Medici al Museo di Storia Naturale*, cit.

47 Juergen Schulz *Maps as metaphors: Mural map cycles of the Italian Renaissance*, in David Woodward (ed.), *Art and Geography: Six Historical Essays*, Chicago, University of Chicago Press, 1987, pp. 97-122.

48 Tiffany Jenkins, *Keeping Their Marbles. How the Treasures of the Past ended up in Museums – and why they should stay there*, cit.

precious objects classified as *sacralia, naturalia* and *mirabilia*[49]. The recording of the geographical origin of an object by placing it behind a cabinet with a map of the corresponding place reflects the interest in documenting its rare and valuable provenance, helping to describe the Medici as prominent art collectors.

5.1 The *Guardaroba* meets America

The Medici did not physically participate in the conquest of America. For the Italians, the institutional laws of Spain and Portugal made it impossible to undertake journeys there. However, Cosimo I, Eleonora di Toledo, and their offspring Francesco I and Ferdinando I were fascinated by these new lands, plants, animals and precious materials and they became both documenters and producers of culture by commissioning explorers to search for treasures such as masks, plumage and codices, constituting the largest collection of New World artefacts of their time. The prominence given to exotic objects in the *Guardaroba* was groundbreaking[50], where Aztec masks and feather works shared space with masterpieces of painting, changing forever the approach to the exhibition of the collections[51]. Vasari marked the evolution of museum culture with such proto museology and the *Guardaroba* paved the way for the first national museums, which emerged a few centuries later, exhibiting modern works alongside ancient ones[52].

Cosimo's heir, Ferdinand I, entertained the idea of venturing to the Americas and founding a commercial emporium there. The project

49 Andrea M. Galdy, *Con Bellissimo Ordine: Antiquities in the Collection of Cosimo I De' Medici and Renaissance Archaeology*, cit.

50 Francesca Fiorani, *The Marvel of Maps: Art, Cartography and Politics in Renaissance Italy*, cit.

51 Lia Markey, *Imagining the Americas in Medici Florence*, The Pennsylvania State University Press, 2016.

52 Maia Wellington Gathan, *Giorgio Vasari and the Birth of the Museum*, Routledge, 2016.

failed with his death, but in this very room, he could fantasize about this newly discovered continent, which produced marvellous items, most of which are preserved today in the Museum of Natural History, Anthropology and Ethnology in Florence. Florence has never been the capital of colonial empires, but the collecting zeal of the Medici family, resulted in the collection of North America's Arctic artefacts since the 16th century.

6. Mantegazza's first Museum of Anthropology and Ethnology

The Galleria degli Uffizi was also founded by Francesco I, where the Medici family stood out as private collectors. The idea of gathering together in one place the "natural productions" present in the Uffizzi dates back to 1763, when the Florentine naturalist and scientist Giovanni Targioni Tozzetti, on behalf of the Grand Ducal government, drew up the first catalogue of all the naturalistic exhibits in the Galleria degli Uffizi. At the end of the Medici era, the Lorraine dynasty inaugurated the new Imperial and Royal Museum of Physics and Natural History in 1775 (one of the world's first scientific museums). The new institution reorganised the collections, regrouping scientific artefacts, permanently separating them from artistic ones, embodying the novel appreciation of scientific material[53]. The rise of disciplinary specialists in botany, geology and ethnology led eventually to the fission of the mega-collections, into more focused thematic assemblages. In the following years, the collections of Palazzo Torrigiani, were moved to different Florentine palaces.

6.1 Arctic Artefacts reach Florence

Leopold of Lorraine, then Grand Duke of Tuscany and a fervent supporter of the Natural Sciences sent in the mid-19th century Felice Fon-

53 Mara Miniati, *Birth and life of Scientific Collections in Florence*, cit.

tana, the Royal Museum of Physics' director, and Giovanni Fabbroni, his assistant, to visit the main European cities in search of scientific instruments and artefacts to enrich the new institution[54]. In 1780 they arrived in London and, thanks to the friendship between Fabbroni and Joseph Banks, some objects collected by British naval Capt. James Cook during his third voyage to the Pacific were transferred to the Florentine Museum[55]. Sir Joseph Banks had accompanied Cook on his first voyage and was also a keen collector of "natural and artificial curiosities". Other artefacts purchased for the Florentine Museum came from the sale of the Leverian museum in London in 1806 through Atkinson, a dealer working with Banks. The acquisitions were taken to Florence, deposited in a small room at the Royal Museum of Physics next to the custodian's door and listed as "various Indian things".

In the 1860s Italy was conceived as a nation-state and, at the same time, specialised museums were opened in Florence, including the museum created by Paolo Mantegazza in 1869, the first in the world to refer to its domain as "anthropology". The bulk of this museum was the ethnographic collection kept in the former Museum of Physics and Natural History. The collection was moved to the galleries of the new Museum in Via Gino Capponi and then to Via Proconsolo in 1924[56] where they remained on display in wooden and glass showcases. The exhibits are extensive and sophisticated and remain a marvel of the variety of human cultures and their arts.

54 Adrienne Kaeppler, *Cook voyage artifacts in Leningrad, Berne, and Florence museums*, Honolulu, Hawaii, Bishop Museum Press, 1978.

55 Monica Zavattaro, *Gli oggetti americani della raccolta James Cook*, in Jacopo Moggi Cecchi, Stanyon Roscoe (eds.), *Il Museo di Storia Naturale dell'Università degli Studi di Firenze*, v: Le Collezioni Antropologiche ed Etnologiche, Firenze, University Press, pp. 148-151, 2014b.

56 Adrienne Kaeppler, *Cook voyage artifacts in Leningrad, Berne, and Florence museums*, cit.

Fig. 14 Polar lands above Greenland. Image free of copyright under commons. wikimedia.org.

Fig. 15 Pair of Inuit Greenlandic shoes. Museum of Anthropology, Florence. By permission of the Sistema Museale dell'Università degli Studi di Firenze.

6.2 Arctic indigenous material culture represented in the *Guardaroba*

Centuries after the creation of the four maps of the Polar Lands in the *Guardaroba*, the Florentine collections of the Museum of Anthropology and Ethnology would display the rich Native material culture of the Arctic regions represented in the *Guardaroba*. The collections documenting the Arctic regions of North America include some 30 objects collected among the Native Peoples of the west coast of Canada and Alaska during the third voyage to the Pacific by captain Cook, providing evidence of the interest that they aroused in European cultural circles[57].

57 Monica Zavattaro, *Gli oggetti americani della raccolta James Cook*, cit.

Fig. 16 Polar lands above Hudson Bay. Image free of copyright under commons. wikimedia.org

Fig. 17 Wood and copper Ulu. Coppermine Region, Northwest Hudson Bay, Canada. Museum of Anthropology, Florence. By permission of the Sistema Museale dell'Università degli Studi di Firenze.

Adrienne Kaeppler, anthropologist at the Smithsonian Institution, in her anthology of *Cook Voyage artifacts* of 1978, states that among the objects from Cook's collection is a pair of Inuit shoes (fig. 15) collected during his four-day stay in Norton Sound, an inlet of the Bering Sea on the west coast of Alaska, home to Yup'ik and Inupiat Peoples. The shoes are made from seal skin. They have a front and back cut, with stitching at the toe and heel and a lace around the edge made of plant fibre[58]. Judging by their size, they could have been made for a woman. However, in the general inventory of the Royal Museum, Vol. XIX, p. 5, they are listed as slippers from Greenland made before 1791. Its shape closely resembles that of Icelandic wolffish skin shoes preserved

58 Adrienne Kaeppler, *Cook voyage artifacts in Leningrad, Berne, and Florence museums*, cit.

Fig. 18 Polar lands above the Bering Strait. Image free of copyright under commons. wikimedia.org

Fig. 19 Walrus gutskin parka from the Aleutian Islands. Alaska. Museum of Anthropology, Florence. By permission of the Sistema Museale dell'Università degli Studi di Firenze.

in many Icelandic museums[59], suggesting a Greenlandic provenance. These shoes, although they arrived in Florence long after the *Guardaroba* project was abandoned, could have been exhibited behind the doors of the map of the Polar Lands over Greenland.

In the Museum's collections can be found an Ulu (fig. 17), donated to the Museum by Borg de Balzan in 1894. Ulus are traditional knifes used by Arctic women for cutting and scraping skins, for making fur

59 Elisa Palomino, *Indigenous Arctic Fish Skin Heritage: Sustainability, Craft and Material Innovation*, PhD Thesis, University of the Arts, London, 2022.

Fig. 20 Polar lands above Siberia. Image free of copyright under commons. wikimedia.org

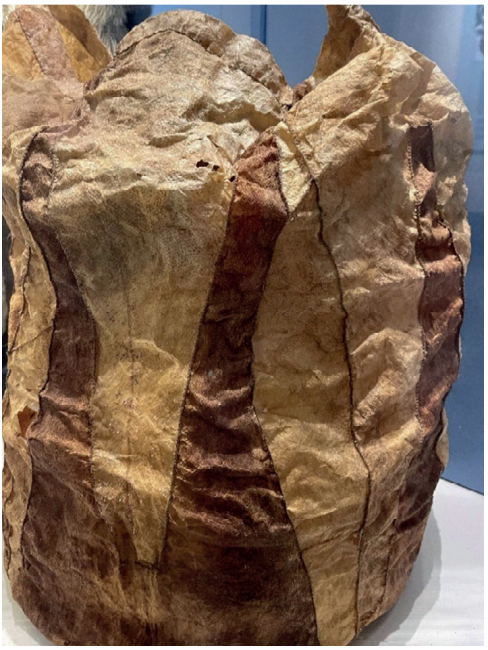

Fig. 21 Siberian Fish skin bag from the Ob River. Museum of Anthropology, Florence. By permission of the Sistema Museale dell'Università degli Studi di Firenze.

garments and for food preparation. This Ulu from the Coppermine region of northwestern Hudson Bay, Canada, has a wooden handle and a copper blade curved at the bottom, with a bevelled edge and straight edges. Men made ulus with great attention to detail, sometimes with beautiful carvings, to give to women as wedding gifts. They were passed down from generation to generation, and mothers taught their daughters to produce food and make clothes using them. The Ulu may have been displayed in the Polar Lands above the Hudson's Bay cabinet.

In addition to the objects collected during Cook's third voyage, the earliest Arctic artefacts at the Museum are three gutskin parkas (fig. 19) made from walrus intestine by the Unangaxˆ and Sugpiaq inhabit-

ants of the Aleutian Islands, an archipelago that separates the Bering Sea from the main portion of the Pacific Ocean from southern Alaska. The lightness, strength and impermeability of the intestine, an inner membrane, becomes an outer skin, making these parkas ideal for protecting the body from the elements[60]. The parka is decorated along the seams with short wool tufts, musk ox hair and Arctic loon feathers. The parkas were purchased in 1871 by Giuseppe Bellenghi, a Tuscan musician from the late 1800s[61]. This gutskin parka could have been placed behind the door of the polar land above the Bering Strait map.

The fish skin bag (fig. 21) in the Museum was most probably brought by anthropologist Stefano Sommier and Mantegazza during their travels across the Siberian plateau along the Ob River. According to Hatt[62], a Danish ethnologist and the first to inventory Arctic clothing in Eurasia and America, the Ostyak peoples along the Ob River wore clothing sewn from the skins of pike and burbot. In addition to clothing, Sommier and Mantegazza collected shamanism specimens from the Sámi, Khanty (Ostyak), Nenets (Samoyed) and Tartar Peoples[63]. The fish skin bag could have been displayed behind the Polar Lands map above Siberia.

6.3 Provenance of Arctic artefacts held in Western museums

Museums of Natural History, Ethnography, and Anthropology have long curated collections of Arctic artefacts, including ritual objects, cloth-

60 Pat Hickman, *Innerskins/Outerskins, gut and fishskin*, San Francisco, San Francisco Craft and Folk Art Museum, 1987.

61 Monica Zavattaro, *Inuit*, in Jacopo Moggi Cecchi, Stanyon Roscoe (eds.), *Il Museo di Storia Naturale dell'Università degli Studi di Firenze*, v: Le Collezioni Antropologiche ed Etnologiche vol. v, Firenze, University Press, pp. 145-147, 2014.

62 Gudmund Hatt, Kirsten Taylor, *Arctic Skin Clothing in Eurasia and America an Ethnographic Study*, in «Arctic Anthropology», University of Wisconsin Press, vol. 5, No. 2. 1969, pp. 3-132.

63 Paolo Mantegazza, *Un Viaggio in Lapponia, coll'Amico Stephen Sommier*, Milano, G. Brigola, 1881; Stefano Sommier, *Un'estate in Siberia, Tra Ostiacci, Samoiedi, Sirièni, Tartari, Kirghisi e Baskiri*, Firenze, 1885.

ing, and tools from Native communities, aimed to document what was wrongly believed to be vanishing cultures. Over time, the focus of these museums has evolved from categorisation to environmental awareness while facilitating Natives access to their cultural heritage. The provenance of Arctic artefacts in Western museums is linked to colonial legacies, exploitation and raw material extraction[64]. These artefacts were collected by explorers and missionaries, resulting in a disconnect between Native communities and their material heritage.

The practice of inter-museum trade, such as those noted in this paper, further dispersed these items, severing links to their original contexts. In recent years, there has been a growing need to reassess museum collections and undertake the decolonisation of these institutions. This involves examining the acquisition processes, display methods, and the intended audience for these artefacts, reimagining them while honouring the cultures they represent[65].

These artefacts also highlight the rich cultural ecologies of Indigenous groups, and their interactions with nature. Despite the common perception of the Arctic as a place of mere survival, the abundance of archaeological material recently unearthed in Alaska suggests the historical wealth of the region and the flourishing of transcontinental trade among Arctic Native Nations long before European contact in Alaska in the 18th century[66].

64 Adrienne Kaeppler, L. Sarah Stone, *Holophusicon-the Leverian Museum: An Eighteenth-Century English Institution of Science, Curiosity, and Art*, Altenstadt, Germany, Honolulu, HI: ZKF Publishers; Distributed in the United States by Bishop Museum Press, 2011.

65 Vera-Simon Schutz, *Decentering the Renaissance: Afro-Eurasian Itineraries of Mamluk Metalwork*, in Stephen Campbell, Stephanie Porras (eds.), *The Routledge Companion to Global Renaissance Art*, Routledge, pp.190-206, 2024.

66 Bart Pushaw, *Otter offerings Indigenous Art History and Extractive Ecologies in the Circumpolar North,* in Stephen Campbell, Stephanie Porras (eds.), *The Routledge Companion to Global Renaissance* Art, New York: Routledge, 2024.

7. Conclusions

The paper is based on personal observations made in the *Sala delle Carte Geografiche* and in the Museum of Anthropology in Florence, while drawing on existing literature. The *Guardaroba* is a masterpiece of Renaissance geographical knowledge placed on the doors of specific cabinets containing objects related to the regions of the maps. The four 'Polar Land' maps represent Cosimo's interest in Nordic curiosities. The maps are the definitive linkage between the Medici and Mercator, and a signal step in western conceptions of the Arctic. The research has identified Mercator's "construction of the Arctic" through his 1569 World Map, its reception in the Cosmographica of the Medici collections and the evolution of scientific museums in Florence.

The four 'Polar Lands' maps illuminate the migration from the south to the north where Europeans realised further expansion into Arctic climates recognising that the Peoples of the North's cultures, were much more complex than they had been perceived in medieval times. Explorers noted the superb adaptations that Arctic Natives had made with clothes designed for Nordic climates. At the same time, the success of any polar exploration was contingent on the relations developed with Native Peoples—or the lack of them. And it is not coincidental that the very specific longitudes of the four ocean rivers mapped by Mercator were north of four areas of great salience to Indigenous Peoples of the pan-boreal arc. Mercator's major guide to the North of the ocean rivers was a cluster of narratives culminating in the *Inventio Fortunata*, written in the 14th century, and recopied later. Not a single copy of most of these documents has survived intact. Yet Mercator references them, and his Arctic map present his synthesis of their contents. The sources were a chain of very real and very salient people from the late medieval period, who played roles in constructing an Arctic, linking Mercator to the Medici, to the world.

Centuries after the creation of the *Guardaroba*, the Florentine collections would hold rich Indigenous material culture from the Arctic regions of the four oceanic rivers flowing: north of the strait between Greenland and Nunavut; north of Hudson Bay; north of the Bering Sea;

and north of the Ob River. This paper has also analysed that much can be experienced and learned about "the Arctic" from the evolution of museum collections in Florence and the system of contemporary museums of Anthropology and Ethnology, thematically defined.

There has been substantial recent work on the Cosmography of the *Guardaroba*, but our research is the first to acknowledge the subject of the evocative Polar Rivers Maps in its full range and complexity. Their seemingly stark and simple appearance points to the maelstrom of the geographical and cultural frontiers in the age of Mercator and the Medici, on the cusp between Arctic projections and discoveries.

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Elisa Palomino, John Cloud

Riassunto Questo studio esamina le mappe delle "Terre Polari" della Guardaroba di Palazzo Vecchio come primi esempi di cartografie artiche, riconoscendo i mondi boreali indigeni precedenti all'esplorazione europea. Ripercorre lo scambio di conoscenze cartografiche sotto Cosimo I e i manufatti in pelle di animali artici nei musei fiorentini, collegando l'immaginario rinascimentale alle ecologie indigene sottoposte attualmente a pressione ambientali.

Abstract This study examines the "Polar Lands" maps of the Guardaroba of Palazzo Vecchio as early Arctic cartography, recognising Indigenous Boreal worlds before European exploration. It traces cartographic knowledge exchange under Cosimo I and Arctic animal skin artefacts in Florentine museums, linking early modern imaginaries to Indigenous ecologies currently under environmental pressure.