Beyond borders. The mineralogical collecting between the Grand Duchy of Tuscany and the Habsburg territories at the end of the 18th century

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In his interesting analysis of mineral collections in 18th-century France, Simon (2002) stated how history of science has reserved to 18th-century mineralogy the uncomfortable status of a "latter-day dark ages that bridges the gap between the enchanted, mystical world view of the Renaissance and the objective analytical sciences of the 19th-century", which often[1] tends to be absorbed into larger narratives such as the development of geology and the emerging branch of crystallography (e.g., Laudan 1987; Rappaport 1997; Salvia 2013). However, 18th-century mineralogy had a pivotal role in the history of natural sciences, following the debate over the nature of minerals and their taxonomy, and was also of great economic importance in the development of mining science (e.g., Dym 2008; Malaquias and Pinto 2011). According to Simon (2002), another important aspect of eighteenth-century mineralogy, which represents the core of this chapter, is mineral collecting. In this regard, Klemun *et al.* (2018) highlighted how naturalistic collections and museums, along with botanical gardens (Klemun 2008), can be considered as multi-coded spaces of knowledge, in which epistemes are represented by cognitive elements as well as by diverse practices and visual forms. This view is supported by Vogel (2015) who underlined how mineral collections are markers of social, cultural, and political spaces in 18th-century European societies. The act of collecting minerals is not only a scholarly practice but also a tool of state knowledge through which to exhibit a country's natural resources and economic development. In this setting, the investiga-

[1] As stated by Simon (2002), one of the few exceptions avoiding this tendency are the studies that focus on the contribution of 18th-century mineralogy to Antoine-Laurent de Lavoisier's chemical revolution (e.g., Rappaport 1967; Oldroyd 1998). A complete survey of the connections between mineralogy and chemistry in the 18th-century is beyond the scope of this chapter, nonetheless it is noteworthy to mention the work of the English naturalist John Walker (1731–1803) (Eddy 2008).

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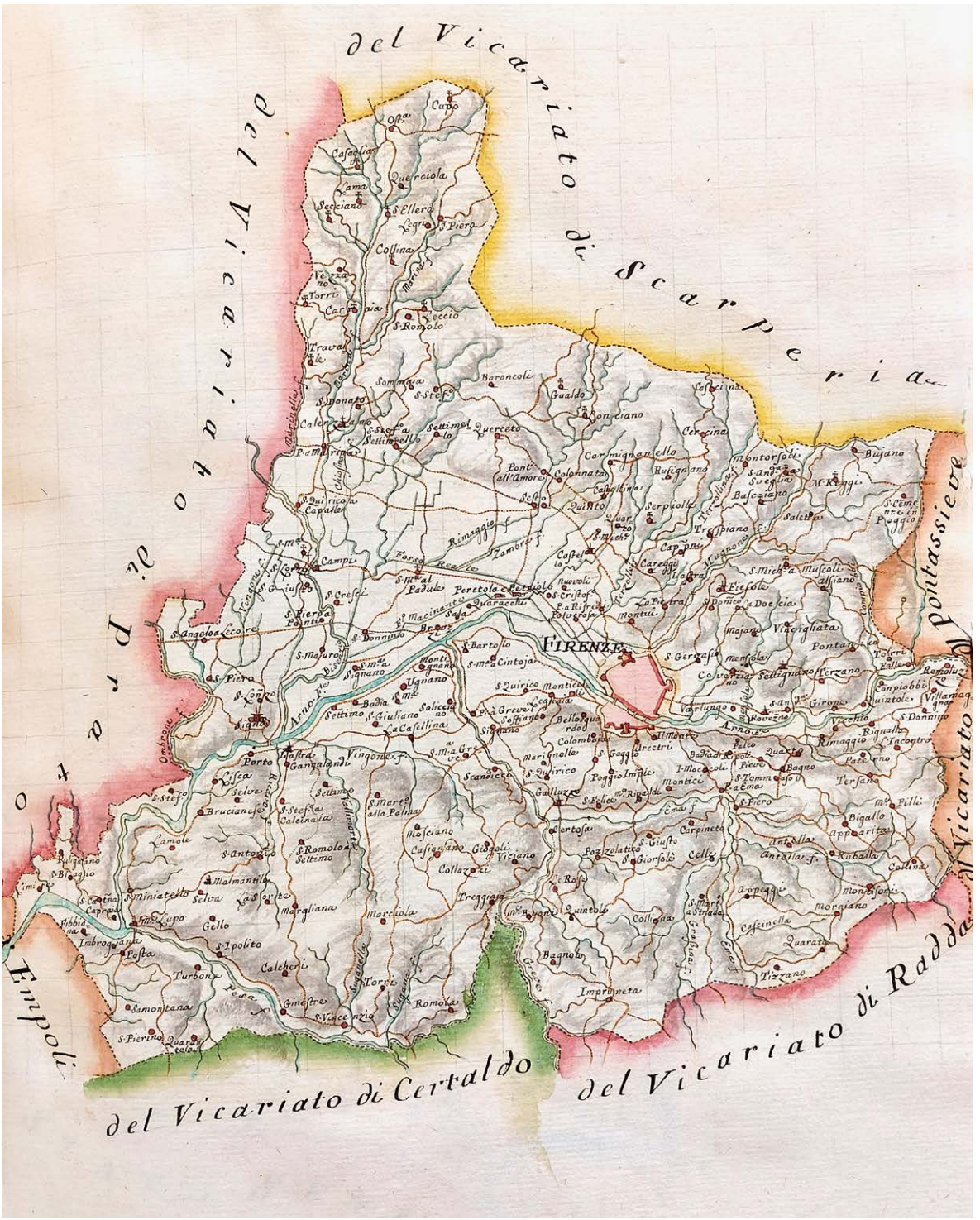

Figure 1 – Map of the Supreme Court of Justice of Firenze. In: Luigi Giachi, Descrizione Geografica dello Stato Fiorentino nel Granducato di Toscana diviso nelle sue vere Giurisdizioni di ciascun Vicariato. 1782, Tomo Primo, n. 29. Courtesy of Ministero della Cultura/ Biblioteca Nazionale Centrale Firenze, Palatino 1093.

tion of the notion of "motion" in reference to the specimens and their circulation become of great importance for an in-depth understanding of the multifaceted spatial and heuristic interconnections that characterized 18th-century mineral collecting. On this subject, Klemun (2012) showed how natural history cabinets and museums represent "scientific spaces", where the specimens became scientific and culturally determined objects. However, before entering a museum display, they physically crossed what Klemun (2012) defined as a "space in between", i.e., the route that encompasses the different spaces of knowledge (the place where a specimen was recovered and the museum location), spatial entities (e.g., means of transportation), and all the ephemeral phenomena (such as gaining, preserving, and documenting) that are involved in the acquisition and circulation of the specimens. The "space in between" is thus an analytical category that comprises scholars, mineral dealers, collectors, the practices of packing, transport, and transformation, as well as all the different forms of documentation (letters, notes, labels, and inventories) that were part of a specimen's journey.

Based on the concept of the "space in between", this chapter examines the way in which the mineralogical specimens from the mining territories of the House of the Habsburg became collector's items within the Florentine Imperial and Royal Museum of Physics and Natural History between 1771 and 1790.[2] Data for this study were gathered analyzing the 18th-century inventories and catalogs currently preserved at the Historical Archive of the University Museum System in Firenze. In addition, this study has investigated the documents relative to the museum's administration that are kept in other local research institutions such as the Archive of the Galileo Museum, and the Firenze State Archive.

One of the first collections coming from a German-speaking country that was acquired by the Imperial and Royal Museum of Physics and Natural History belonging to the Hamburg merchant Peter von Spreckelsen (d. 1771). The purchase, which was made by the museum director Felice Fontana (1730–1805) between 4 and 7 October 1771, is well-described in a report he wrote from Livorno—where von Spreckelsen lived and died—to the Grand Ducal Secretariat of Finance. Here, Fontana stated that he had bought all von Spreckelsen's collection (including showcases and shelves), which he had personally packed in 20 wooden boxes. The latter were loaded onto a river ship departing from Pisa, which would have reached Firenze in one day.[3] Van Spreckelsen's collection encompassed ca. 220 mineralogical specimens, for the greater part metallic minerals coming from the German territories, but samples from the Hungarian min-

[2] This timespan indicates the beginning of the relocation (1771) of the naturalist collections that were housed in the Royal Gallery (today the Uffizi Galleries) to Palazzo Torrigiani, i.e., the building where the Imperial and Royal Museum of Physics and Natural History would have been accommodated. The year 1790 can be considered as the date that marked the drawing up of the museum inventory. The inventory of the naturalistic and anatomical collections was proposed by Giovanni Fabbroni (1752–1822), who was the museum's vice-director at that time, and approved by the Grand Ducal Secretariat on 9–13 January 1790. The writer in charge of the inventory of the mineralogical and anatomical collections was the "Maestro di scritto" (Master of the Writing) Giovacchino Frosini (dates uncertain). Attilio Zuccagni (1754–1807), who was a professor of natural sciences, physician, explorer, and Superintendent at Botanical Garden, inventoried the specimens that were part of the museum exhibition. Archivio Museo Galileo (AMG), ARMU Affari 004, aff. 6, c. 70. On the origin of the naturalistic collections that were preserved at the Royal Gallery, which were arranged by the members of the Medici family, see Barocchi and Ragionieri (1983), Tongiorgi Tomasi (1988), Barocchi and Bertalà (1993), Vaccari (1996), Filetti Mazza and Tomasello (1999), Cipriani *et al.* (2004), Cipriani and Scarpellini (2007).

[3] Archivio di Stato Firenze (AS-FI), *Segreteria di Finanze,* f. 480.

Figure 2 – Portrait of Felice Fontana (1730–1785). In: Giulio Provenzal, Profili bio-bibliografici di chimici italiani: sec. XV- sec. XIX. Roma, Istituto nazionale medico farmacologico Serono, 1930, Tav. VIII. Museo Galileo, Cons. Biografie F003.

ing districts were also present.[4] Six specimens have actually been identified in the collections of the Florentine Museum of Natural History.[5]

In his seminal work of 2011, Cipriani found that the acquisitions made to increase the mineralogical collections kept in the new-established Imperial and Royal Museum of Physics and Natural History were described in detail in the *Cataloghi di produzioni naturali passate al Real Museo di Firenze prima dell'anno 1792*,[6] i.e., a volume comprising diverse catalogs[7] relative to the museum acquisitions that were made between 1771 and 1792. Among these, there was the mineralogical collection that Baron Friedrich Samuel von Rossan Schmidt (1737–1794)[8] proposing for acquisition in 1787; a list of minerals that were acquired by a German merchant[9] including diverse specimens from the Habsburg territories;[10] and a brief inventory (both in German and in Italian) of six minerals[11] coming from Vienna which were sent to the Grand Duke Leopold by Count

4 Cipriani (2011) stated that the inventory of von Spreckelsen's collection is reported in an undated register entitled *Cataloghi e Fogli relativi ai prodotti naturali esistenti nel R. Museo; ed ad alcune macchine o Istrumenti pervenuti al medesimo,* which is currently preserved at the Historical Archive of the Galileo Museum. Here the specimens belonging to von Spreckelsen's collection are listed under the capital letter V.

5 These are a copper specimen from Bad Lauterberg im Harz (Inv. No. G38), two samples of chalcopyrite from Blankenburg and Hohegeiss (Inv. Nos. G1379 and G1444), a clinochlore from Brocken (Inv. n. G11768), a tetrahedrite from Ruis in Switzerland (Inv. No. G1516), and a malachite from Naila in Upper Franconia, Germany (Inv. No. G7992).

6 Archivio Storico–Sistema Museale di Ateneo (AS-SMA), *Cataloghi di produzioni naturali passate al Real Museo di Firenze prima dell'anno 1792*. A copy of this document can be found in the Galileo Digital Library.

7 The volume contains 24 catalogs and inventories of naturalistic collections that were acquired by the Imperial and Royal Museum of Physics and Natural History at the end of the 18th-century. Some of them belonged to Italian naturalists such as Ermenegildo Pini (1739–1825), Giovanni Mariti (1736–1806), Giovanni Fabbroni (1752–1822), Pietro Rossi (1738–1804), and Stefano Andrea Renier (1759–1830). Others belonged to foreign scholars as Déodat de Dolomieu (1750–1801), Adolf Modéer (1739–1799), and Abraham Gevers (1712–1780).

8 The catalog reported a list of 17 minerals (e.g., lead and antimony samples) that Schmidt von Rossan sent to Luigi Dithmar Schmidweiller (dates uncertain) on 3 September 1787. This inventory represents the second part of a mineralogical collection (the first part was sold in 1786) that von Rossan tried to sell to the Imperial and Royal Museum of Physics and Natural History without succeeding. AS-FI, Imperiale e Reale Corte Lorenese, f. 399.

9 The inventory was entitled *Nota di alcune Pietre e Minerali acquistati da un mercante tedesco per questo R: Museo di Firenze*. The merchant's name was unspecified, but the minerals the museum acquired on this occasion were marked with a capital letter "O" that was crossed twice by the copyist. The collection was purchased for 1007 French lire and most of the 103 specimens were ore minerals. Among them, there was a "heavy and calcareous spar", and a specimen of "colorful Icelandic chalcedony" which should have been remarkable judging by their price (60 French lire). Another note, which was written in Latin, mentioned the acquisition of samples from an anonymous German merchant. It referred to 39 minerals without any data on their monetary value. Among them there was a specimen of native gold from Transylvania. Finally, a third list reported the purchase from a German dealer named Dolmar (dates uncertain) of 25 specimens that came from diverse European areas.

10 Among these, seven minerals came from the Hungarian areas (e.g., a spat specimen from Banská Štiavnica), six from Carinthia, three from Ischl in Upper Austria, while a lead specimen and a pseudo-galena came from Bohemia and Transylvania.

11 The specimens were extracted from the caves located in Obervellach as well as from the quarries situated in *Bleiberg* ("Montagna di Piombo"). They were a specimen of iridescent yellow ore ("miniera di rame gialla a guisa di coda di pavone"); a copper silica stone ("pietra silicea di rame" – *Kupfer Kies*); a red and yellow sulfur from the copper mines in Obervellach ("zolfo rosso e giallo come nasce dalle miniere di rame di Obervellach"); a molybdenum with white crystallized lead spatum from Bleiberg ("molybdena con lo spato bianco di Piombo cristallizzato di Bleyberg"); a yellow lead spathum from Bleiberg ("spato di piombo giallo di Bleiberg"); molybdenum with transparent lead spathum crystals ("molybdena con cristalli di spato di piombo trasparenti"). The specimens were placed in the museum exhibition according to their mineralogical classes together with a copy of their original paper labels.

Figure 3 – Chalcopyrite, Blankenburg, Germany, Inv. n. G1379 (size 6x3x4 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 4 – Chalcopyrite, Hohegeiss, Germany, Inv. n. G1444 (size 6x9x6 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 5 – Clinochlore, Brocken, Germany, Inv. n. G11768 (size 4x2x2 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Amedeo di Stampfer (dates uncertain), who was the Vice-President of the Aulic Chamber for the Monetary and Mountain Affairs.[12] The register also contains the catalog[13] of the mineralogical collection belonging to Christoph Traugott Delius (1728–1779), and two catalogs illustrating the mineralogical collections that were acquired with the mediation of Ignaz von Born (1742–1791) on Leopold's order.

Around November 1780, the Imperial and Royal Museum of Physics and Natural History acquired the mineralogical collection belonged to Christoph Traugott Delius (1728–1779), who was a professor at the Bergakademie in Schemnitz (today Banská Štiavnica, Slovakia) and the author of one of the first academic mining handbooks (Delius 1773; Battek 2015). The acquisition of Delius' collection was formalized on 20 December 1780 and approved by the Viennese authorities eight days later for a prize of 2000 "zecchini". However, there is no further news of the acquisition until 13 September 1783 when Luigi Dithmar Schmidweiller (dates uncertain), who was the Director of the Finance Secretariat of the Grand Duchy of Tuscany (1780–1794), wrote a letter to Albrecht Meyer (dates uncertain), an Imperial Councilor in Vienna (1783–1785), stating that—by order of the Grand Duke Leopold—Delius' heirs would have received their

[12] *Camera Aulica per gli Affari Monetari e Montanistici*. Cf. *Il Mentore Perfetto de' Negozianti, ovvero guida ed istruzione per rendere più agevoli le loro speculazioni*, vol. 2, 1793: 12. On the scientific activity of Amedeo Stampfer, who was also in contact with Giovanni Antonio Scopoli (1723–1788), see *Opuscoli scelti sulle scienze e sulle arti tratti dagli atti delle accademie, e dalle altre collezioni filosofiche e letterarie, dalle opere più recenti inglesi, tedesche, francesi, latine, e italiane, e da manoscritti originali, e inediti*. Presso G. Marelli, Milano: 226; *Archeologia Romana,* vol. 5 (1779): 269–71; *Gazzetta Universale* (1793): 431.

[13] This catalog was entitled *Catalogo originale di una copiosa Raccolta di Minerali posseduta dal Consigl:re Delius e passata dopo la sua morte a questo R: Museo di Firenze.*

payment when all the minerals had been formally delivered to Ignaz von Born.[14] A document dated ten days later reported the payments that had been done for the transport of the minerals by sea from Trieste to Livorno, and then by river from Pisa to Firenze.[15]

The catalog of Delius' collection was written in German and translated into Italian[16] by Leopoldo de Lagusi (dates uncertain) with the scientific collaboration of Giovanni Fabbroni. On the front cover, a note informed that all the minerals were numbered and provided with chemical signs showing their qualities. The specimens were listed according to their mineralogical class,[17] order, genre, and species. The Italian copy of Delius' catalog is written in very clear handwriting up to the section *Genre 6 – Lead* ("Genere 6 – Piombo"). Subsequently, different handwriting—more difficult to decipher—can be discerned. Alchemical symbols are reported for some metals (e.g., the Moon for silver, Venus for copper, Mars for iron). The total number of the specimens listed by 'genres' is 2708, including some of considerable economic value and 36 precious stones. A complete survey of Delius' collection is out of scope here; however, it has to be noted that almost all the minerals described in the catalog came from the Habsburg territories. Currently, 21 specimens have been found in the collections of the Natural History Museum of Firenze.[18]

The mineralogical collections that were acquired with Born's mediation were delivered in two shipments and described in two different catalogs. The first one was entitled *Catalogue des Mineraux achetés pour Son Altesse Royale le Grand Duc de Toscane*, and was written in German despite the French title. This register, which was followed by an Italian translation,[19] encompassed 1066 specimens, whose greater part came from the Habsburg mining districts. The minerals were listed in a progressive numerical order, grouped according to a systematic criterion, and briefly described.[20] A note on the title page of the Italian translation informed that all the specimens were labeled with a printed number with a tiny red line. The second shipment encompassed ca. 920 minerals, which were listed in a Latin inventory.[21] The total number of the minerals purchased by von Born was about 2000 specimens, the majority of which came from the Habsburg mining territories, especially from areas such as today Austria, Hungary, Transylvania, and Slovakia.

[14] On Born's scientific works and his relationships with the House of Habsburg see, for example, Seidler (2019). For the acquisition of Delius' collection on behalf of Leopold, Born was rewarded by Leopold with a snuffbox that was made by Persian lapis lazuli. It was very precious (its value was estimated at over 100 "zecchini") because the gemstones were of a "very good" color. Furthermore, it was carved from a single stone and manufactured in Rome. AMG, ARMU Affari 001, aff. 168, c. 150.

[15] AMG, Filze negozi, 1789B.

[16] *Introduzione Italiana del precedente Catalogo di Minerali di Delius, fatta in Pisa dal Sig: Leopoldo de Lagusi con l'assistenza del Sig:re Gio' Fabbroni.*

[17] The mineralogical classes reported in the catalog of Delius' collection are Earths ("Terre"), which included the rocks, Salts ("Sali"), Flammable ores ("Corpi Infiammabili)", Metals and Semi-metals ("Metalli e Semimetalli").

[18] Eight marble specimens (Inv. Nos. M831, M837, M842, M846, M851, M870, M901, M921), three quartz specimens (Inv. Nos. G4690 comprising two specimens and G4695), two calcite specimens (Inv. Nos. G7089, G7175), a specimen of opal (Inv. No. G1151), fluorite (Inv. No. G3204), actinolite (Inv. No. G11118), biotite (Inv. No. G11619), and amber (four specimens, Inv. No. G12718).

[19] *Introduzione Italiana del preced:e Catalogo di minerali spediti al R: Museo dal Cav:e De Born.*

[20] The catalog reported basic information such as a mineral's identification and its geographical provenance. No taxonomic data were listed.

[21] *Catalogus Fossilium quae Florentine Museum transmittuntur ab Equite Born Musei Caesarei Vindobonensis Praeside.*

Figure 6 – Tetrahedrite, Ruis, Switzerland, Inv. n. G1516 (size 3x5x3 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 7 – Malachite, Naila, Germany, Inv. n. G7992 (size 4x6x4 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

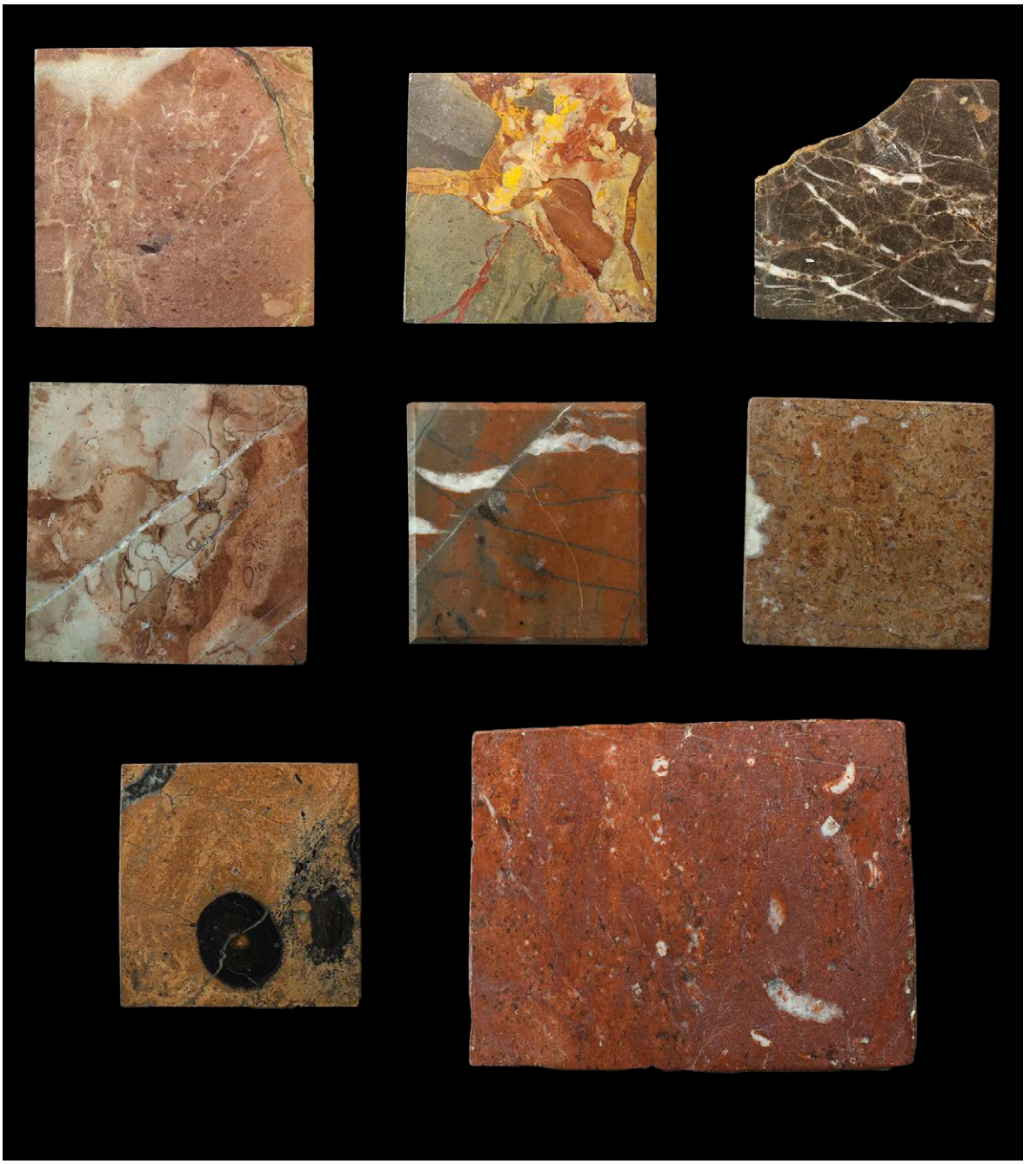

Figure 8 – Group of marble tiles belonging to the Delius Collection. From left-right, top to bottom: pink marble, Seravezza, Apuane Alps, Tuscany, Italy, Inv. n. M901 (size 8x8x0.5 cm); red-brown marble with red and yellow spots, Transylvania, Romania, Inv. n. M851 (size 7x7x0.5 cm); gray-black marble with white veins, Tyrol, Austria, Inv. n. M842 (size 7x7x0.5 cm); red and white marble, Sicily, Italy, Inv. n. M846 (size 8x8x0.5 cm); red marble with green veins and fractures filled with white calcite, Moravia, Czech Republic, Inv n. M921 (size 7x7x0.5 cm); yellow-green marble with red and white spots, unknown provenance, Inv. n. M837 (size 7x7x0.5 cm); green-brown marble with black spots, Tyrol, Austria, Inv. n. M831 (size 7x7x0.5 cm); red marble with white spots, Bohemia, Czech Republic Inv. n. M870 (size 13x10x0.5 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 9 – Quartz, Unknown provenance, Inv. n. G4690 (size 12x8x3 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Another interesting source of information regarding the topic of this study is the museum's General Catalog that reported the mineralogical specimens kept in the Imperial and Royal Museum of Natural History over the time. On 21 February 1775, i.e. when the museum was open to the public, Leopold ordered with a *motuproprio* a complete inventory of all the specimens preserved in the museum at that time. The inventory was organized according to the diverse species and reported the number of the shelves where the specimens were on display, and how many samples of each species were owned. Giuseppe Pigri (d. 1804), a professor of mechanics and an expert in mathematics (Pigri 1758) as well as the assistant of the museum's director, and Giuseppe Panzanini (dates uncertain), Minister of the Audit Office and Unions of the Grand Duchy of Tuscany (1775–1777), were appointed to compile the inventory, while Alessandro Cerchi (dates uncertain) and Bartolomeo Coppini (dates uncertain) oversaw writing the text under dictation and then copied it into the inventory.[22] Its drafting was completed in a very short time (July 1775) and turned out to be a topographical inventory, which described a specimen's exact location and how many samples encompassed the museum collections.[23] The volume reported that the geo-mineralogical collections comprised ca. 24284 specimens. Since it was completed quickly, several specimens were not inventoried. To fill these gaps, a new survey was carried out.[24] In

[22] AMG, ARMU Affari 002, aff. 36, c. 168. Alessandro Cerchi and Bartolomeo Coppini were two copyists who were assigned by the Grand Ducal administration to the Imperial and Royal Museum of Physics and Natural History. Cerchi was at the museum from 1775 to 1784, while Coppini worked just for the compilation of the first museum inventories (1774–1777).

[23] AS-SMA, *Inventario generale del Real Museo, 1775*.

[24] AS-FI, Imperiale e Real Corte Lorenese, f. 5257. The new inventory was entitled *Aumento all'Inventario generale del Real Gabinetto. Nota dei generi che appartenevano al Real Gabinetto prima del 13 luglio mille-settecento-settanta-cinque*. A copy of this inventory is preserved at the Historical Archive of the Firenze University Museum System.

Figure 10 – Quartz (*var. ferruginous*), Unknown provenance, Inv. n. G4695 (size 13x8x1 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

a further book[25] are listed the so-called "appendices" ("appendici"), which contained all the items that had been acquired or received by other cabinets (e.g., the Royal Cabinet) from 13 July 1775 until December 1777.

On 19 November 1789, Leopold ordered that a catalog of all the specimens held in the museum—whether in storage or on display—was compiled.[26] The cataloging of the mineralogical collection began between May and June 1793[27] and resulted in 8 volumes that corresponded to the rooms in which the collections were displayed.[28] The specimens were listed following a topographical criterion, starting from those on the top shelves. The descriptions, which sometimes were also very detailed, concerned the specimens' external features, but did not give information about their collecting history apart from the specimens acquired before 1792 (e.g., Delius' and von Spreckelsen's collections). The total number of the cataloged specimens was 25243, to which had to be added the artifacts realized with semi-precious stones (e.g., tables) as well as the carved rocks representing the various activities that were performed in the Habsburg silver mines. With respect to the research question, the analysis of these catalogs showed that most of the samples came from Central Europe, i.e., from Saxony to Transylvania, from Bohemia to Slovakia. A comparative study between these specimens and those that are preserved at the Firenze University Museum System, showed that 4200 specimens described in the 18th-century catalogs are still kept in the museum collections (Tab. 1).

Table 1 – Number of the specimens listed in 1793 catalogue that are still preserved in the Firenze University Museum System grouped by continent.

Continent	Nos. of specimens
Africa	59
Asia	100
Europe	3302
Americas	60
Oceania (New Zealand)	3
Unknown	676
TOTAL	4200

[25] AS-FI, Imperiale e Real Corte Lorenese, f. 5258. This further inventory was entitled *Continuazione dell'Inventario del Real Gabinetto e sua Biblioteca a tutto il Dicembre 1777. Prima parte nella quale sono descritti tutti i generi pervenutili tanto dalla Real Guardaroba che da qualunque altra parte alla riserva dei Generi provvisti dal medesimo Gabinetto (dopo il 13 luglio mille-settecento-settanta-cinque a tutto dicembre mille-settecento-settanta-sette)*. A copy of the inventory is preserved at the Historical Archive of the Firenze University Museum System. Differently from the aforementioned inventory, which was just a list of samples sorted by numbers, the latter described the specimens according to the date of their acquisition and geographical provenance. A capital letter (A, B or C) was assigned to the specimens to indicate in which room they were displayed.

[26] More information about this new catalog can be found in Endnote No. 2.

[27] AS-SMA, *Continuazione dell'Inventario generale del R. Museo. Nota delle Produzioni acquistate in aumento della Raccolta di Storia naturale dentro questi – Anno 1793*.

[28] The rooms that were devoted to the exhibition of the mineralogical collections (i.e. rooms from IX to XVI) were located on the second floor of Palazzo Torrigiani.

Figure 11 – Calcite, Unknown provenance, Inv. n. G7089 (size 10x8x5 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 12 – Calcite, Unknown provenance, Inv. n. G7175 (size 7x12x5 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 13 – Fluorite, Saxony, Germany, Inv. n. G3204 (size 5x5x5 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 14 – Actinolite (Amphibole supergroup), Banat, Romania, Inv. n. G11118 (size 5x12x7 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

A significant contribution to the collection was given by specimens coming from Germany, mainly from Saxony and Harz, but also from Romania, with Transylvania and Banat as main places of origin. These are followed by the specimens coming from Slovak Republic, with the region of Banská Štiavnica as prevalent area, Austria (Tyrol, Carinthia, Styria) and Czech Republic (the Bohemian territories included between Příbram and the Joachimsthal, today Jáchymov). It should be also noted that few minerals that are today part of the mineralogical collections came from the Hungarian areas. This inconsistency may be due to the geopolitical changes that occurred during the centuries that have brought to reassign the localities of provenience according to the new spatial organization of politics.

The high incidence of minerals from the Habsburg domains listed in the 1793 catalog is not surprising, considering that many of these mining localities were already present in the *Collectio Mineralium*, the catalog of Leopold's mineralogical collection that is preserved in the Historical Archives of the Firenze University Museum System. These localities are mostly mining basins located along the Carpathian Mountains, extending from Central to Eastern Europe across the territories of present-day Czech Republic, Slovakia, Poland, Hungary, Ukraine, and Romania (Tab. 2).

Table 2 – Localities listed in the *Collectio Mineralium* corresponding to the localities reported in the 18th-century catalogs present at the Firenze University Museum System. Ancient names of the localities are reported with the modern names in brackets.

Locality	Mineralogical species
Eisenerz, Styria, Austria	Pyrite
Joachimstal (Jáchymov), Bohemia, Czech Republic	Acanthite, Arsenic, Bismuth, Bismuthinite, Cobaltite, Gold, Hematite, Erythrite, Pyrargyrite, Realgar, Silver, Wad
Schlaggenwald (Horní Slavkov), Bohemia, Czech Republic	Andradite, Cassiterite, Scheelite, Wolframite
Annaberg, Lower Austria, Austria	Galena, Silver, Wulfenite
Idria (Idrija), Carniola, Slovenia	Calcite, Cinnabar, Epsomite, Melanterite, Mercury, Pyrite
Schemnitz (Banská Štiavnica), Slovak Republic	Mainly: Acanthite, Barite, Calcite, Chalcopyrite, Chalk, Cerussite, Cinnabar, Dolomite, Hematite, Fluorite, Galena, Limonite, Melanterite, Miargyrite, Pyrargyrite, Pyrite, Quartz, Siderite, Silver, Sphalerite, Stibnite, Tetrahedrite
Kremnitz (Kremnica), Slovak Republic	Acanthite, Barite, Dyscrasite, Galena, Pyrargyrite, Pyrite, Quartz, Silver, Sphalerite, Stibnite, Tetrahedrite
Magurka, Slovak Republic	Gold
Spišská Nová Ves, Slovak Republic	Tetrahedrite
Štós, Slovak Republic	Limonite
Oravicza (Oravița), Banat, Romania	Cuprite, Tennantite, Tremolite
Moldova (Moldoua Nouă), Banat, Romany	Azurite, Cuprite, Malachite

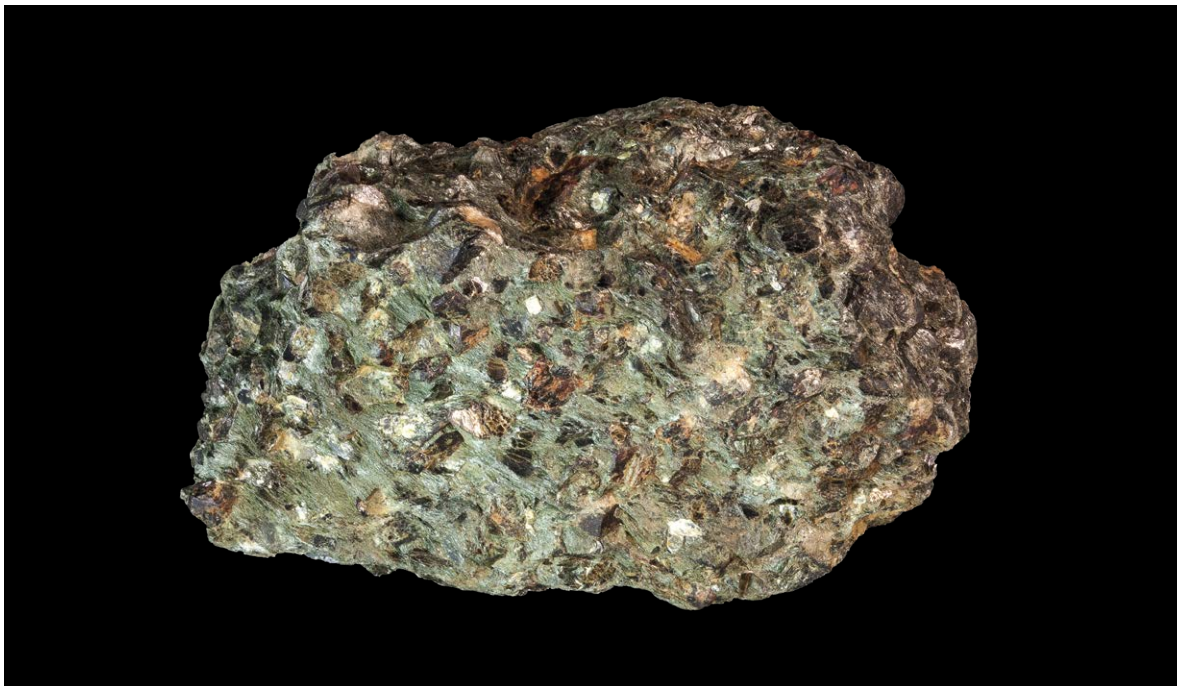

Figure 15 – Biotite (Mica group), Bohemia, Czech Republic, Inv. n. G11619 (size 4x9x7 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

Figure 16 – Amber, Unknown provenance, Inv. n. G12718 (various sizes; max. 2x1x1 cm). Natural History Museum – Museums System, University of Firenze. Photo by Stefano Dominici.

These findings, while preliminary, may help us to understand how the material and cultural dimensions of mineralogical museum collections represent a precious source of data not only to investigate the history of mineralogy and mineral collecting, but also to reconstruct the knowledge development processes. As Klemun (2012) stated: "collections are no longer seen as immutable entities, but rather as things and their meaning in flux." These historiographical changes are well represented by the social, cultural, administrative, and economic perspectives emerging from the analysis of the circulation of the mineralogical specimens between the House of the Habsburg and the Imperial and Royal Museum of Physics and Natural History.

Another marked observation to emerge from the data is the correlation between mineralogical collecting and the advancements of mining science in the 18th-century. As noted by Wilson (1994), mines are historically the preferred places for acquiring new specimens for mineral collections. However, as pointed out by Rudwick (1996) and Klemun (2004), in the 1770s a new trend aroused in the German-speaking countries that saw collectors and scholars becoming interested in samples coming from mines to increase the geological knowledge of the territories. In this context, the collections that were sent to the Imperial and Royal Museum of Physics and Natural History and arranged by Ignaz von Born are paradigmatic of how mining played a pivotal role in both mineralogy and collecting.

As put forward by Vogel (2015), the evidence found in this study also confirms the emergence of an enlightened practice of mineral collecting throughout Europe that was associated with both scientific interests and utilitarian goals as the development of a country's economic power. Investigating the making of the mineralogical collections, which contained specimens coming from the Habsburg territories, opens new doors not only for understanding the wide array of practices involved in the 18th-century collecting, but also for comprehending the processes of communication that link collectors, collections, and institutions. In this casestudy, the specimens whose place of origins can be traced in the Habsburg dominions, can therefore be considered as a key element of the identity-building of the Imperial and Royal Museums of Physics and Natural History in Firenze.

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