

The geological-paleontological collections of the Natural History Museum Vienna. An exhaustive evaluation of provenance context (1807 to 1918)

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(with 10 figures)

Manuscript submitted on May 4th 2022,
the revised manuscript on July 5th 2022.

Abstract

We present an exhaustive survey of the geological-paleontological collection of the Natural History Museum Vienna (Austria) based on 268,755 objects acquired from 1807 to 1918. The database encompasses information on geographic origin, provenance, stakeholders, and mode of acquisition. The resulting patterns record boom phases and periods of declining acquisitions, which are discussed in context of political and economical developments of the Austrian-Hungarian Empire. The role and dimension of Habsburg colonialism within the borders of the Austrian-Hungarian Empire can be deciphered and defined in absolute numbers. Although the Austrian-Hungarian Empire did not have colonies on its own, we trace several cases of scientific and economic contacts with colonial powers, which led to the acquisition of objects from various colonies in America, Africa, and Asia. Thus, we present the first complete census of geological-paleontological objects with colonial context in a state collection of a ‘non-colonial’ power.

Key words: Paleontological collections, historical inventory, Natural History Museum Vienna, Austrian-Hungarian Empire, provenance, colonialism.

Introduction

Research on the provenance of museum objects can already look back on a longer tradition for the time of the National Socialist regime in Germany and Austria (*e.g.*, BLIMLINGER 2009). The starting point of a systematic examination of Nazi provenances at the Austrian federal museums can be seen in the Austrian Art Restitution Act (‘Kunst-rückgabegesetz’) of 1998 and the Commission for Provenance Research working in this

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context (see the introductory articles in ANDERL *et al.* 2009). Since then, there has also been institutionally anchored Nazi provenance research at the Natural History Museum Vienna (as an overview RIEDL-DORN 2009 and 2011a, as well as CARUSO *et al.* 2018). From a methodological point of view, this also opens up a wide range of possibilities for connecting historical periods apart from National Socialism, in particular for researching the provenance history of objects from colonial acquisition contexts. Irrespective of the necessary disciplinary differentiations, the statement made by Ingo Zechner in 2009 can still claim validity: *“Provenance research is [...] nothing else than origin research”* (*“Provenienzforschung ist [...] nichts anderes als Herkunftsforschung”*; ZECHNER 2009: p. 70). This was reaffirmed recently by Jonathan Fine and Hilke Thode-Arora in their contribution to the German Museum Association’s guideline on “Care of Collections from Colonial Contexts”: *“Researching the provenance of collection items from colonial contexts [...] does not differ fundamentally from researching those from other contexts”* (*“Im Wesentlichen unterscheidet sich die Provenienzforschung zu Sammlungsgut aus kolonialen Kontexten [...] nicht von der Provenienzforschung zu Sammlungsgut aus anderen Kontexten”*; FINE & THODE-ARORA 2021: p. 153). In the context of this study, Jürgen Osterhammel’s definition of colonialism as a hierarchical-asymmetrical *“relationship of domination”* with *“priority to external interests”* (*“Herrschaftsbeziehung [...] unter vorrangiger Berücksichtigung externer Interessen”*; OSTERHAMMEL 2006: p. 21) is used as a methodological basis. This does not exclusively have to mean direct colonial rule, as the expression “colonial context” points out. From a museum-specific point of view, this can be understood to mean *“structures of great political power imbalance”* that *“may have arisen both between and within states or other political entities”* creating *“networks and practices that also supported the collection and procurement practices of European museums”* (*“Strukturen mit großem machtpolitischem Ungleichgewicht sowohl zwischen, als auch innerhalb von Staaten bzw. anderen politischen Einheiten [...] aus denen Netzwerke und Praktiken hervorgegangen sind, die auch die Sammel- und Beschaffungspraktiken für europäische Museen unterstützt haben”*) (DEUTSCHER MUSEUMSBUND 2021: p. 27).

In Austria, the discussion about colonial acquisition contexts started a little late, which is undoubtedly due to the fact that the Austrian Habsburg Monarchy or, since 1867, the Austrian-Hungarian Dual Monarchy, is not a “classic” colonial power compared to other European states such as Great Britain, France, or Germany. However, despite efforts to the contrary and short-lived colonial projects in the 18th century (Delagoa/Mozambique, Nicobar Islands/India), Austria was never able to achieve the status of a colonial power but has made manifold contacts with colonial rulership practices in the course of the last three hundred years. The research done by Walter Sauer (exemplarily SAUER 2007a, 2007b, 2012) or Hermann Mückler (for instance MÜCKLER 2014a, 2014b) objectively justifies the talk of a *“colonial history of Austria”* (*“österreichische Kolonialgeschichte”*; SAUER 2011). In addition to other works that deal with questions of Austrian colonial propaganda in the 19th century (LOIDL 2017), Austrian colonial enterprises in eastern Africa (KOTRBA 2015) or the general positioning of “power structures and collective

memory” from a “postcolonial” perspective on the Austrian History (FEICHTINGER *et al.* 2003), Pia Schölnberger recently presented an extensive anthology on “Museum in the Colonial Context”, which brings together the results of a conference from 2019 and includes a comprehensive analysis of various aspects of colonial appropriation (SCHÖLNBERGER 2021).

Against this background it becomes clear that Austria acted as a (indirect or direct) beneficiary of colonial ventures, also in a scientific-historical context (see the articles in KLEMUN 2009 and SAUER 2021). In this regard, the large Austrian expeditions of the 19th century in particular were responsible for bringing in museum-specific objects from colonial-dominated contexts. This is evident from the Austrian expedition to Brazil from 1817–1821 (in the case of Johann Natterer continued until 1835/1836) or the circumnavigation of the Novara 1857–1859, one of the most prestigious projects of Austrian science policy in the 19th century (for the Brazil expedition SCHMUTZER 2011 and AUGUSTAT 2021; for the Novara as a first overview BASCH-RITTER 2008 and WEISS & SCHILDDORFER 2010). In the academic reception of these ventures, however, questions of provenance were primarily raised with regard to art historical and ethnographic objects, with outstanding objects such as Montezuma’s feather headdress from the collections of armour, artifacts, and natural wonders at Ambras Castle, now kept by the Weltmuseum Wien, being the subject of regular public debates (*e. g.*, FLIEDL 2001; HAAG *et al.* 2012; VON ZINNENBURG CARROLL 2022).

During the last years, an intense discussion on the provenance of items in natural history collections has started with focus on provenance and colonial context. The controversies are often centered around iconic objects like the huge dinosaur skeletons in the Museum für Naturkunde Berlin. These have been collected in Tanzania in 1909, which was then part of the German colony Deutsch-Ostafrika (HEUMANN *et al.* 2018; VOGEL 2019). In Austria, this paradigm shift arrived with a delay. The history of scientific work carried out at the Natural History Museum Vienna (NHMW) in the past was for the most part dedicated to a “*paradigm of the history of discovery*” (“*entdeckungsgeschichtliches Paradigma*”; SAUER 2021: p. 63) and dealt only peripherally with the problem of colonial acquisition contexts (see, for example, generally RIEDL-DORN 1998 and specifically the articles of RIEDL-DORN in SEIPEL 2001 and RIEDL-DORN 2004, 2011b). Even a commendable work such as Christa Riedl-Dorn’s history of the first (living) giraffe in Vienna, which draws on a large number of original historical sources, did not arouse any special interest in the specific acquisition circumstances of the giraffe in colonial Africa in 1827, but rather the transport logistics of the animal to Austria, its accommodation in the imperial menagerie (today’s Schönbrunn Zoo) or the veterinary care (RIEDL-DORN 2008).

Various research projects in the Department of Anthropology of the Natural History Museum Vienna though (see for example TESCHLER-NICOLA 2006/2007 and 2013 or most recently on the Māori human remains EGGERS *et al.* 2021) take an exceptional position because of the special, international focus on human remains. Therefore, scientists at the Department of Anthropology began to deal with “*sensitive collections*” early on

(“*sensible Sammlungen*”, the title of an anthology by BERNER *et al.* 2011). Large-scale empirical studies, however, have remained a desideratum, as has a large-scale study on Austrian museum and natural history collections in the age of colonialism in general (as a first approach recently RIEDL-DORN 2021 and the specific sections in STEINER 2021).

In the light of this discussion, we started a survey of the collections of the Geological-Paleontological Department of the Natural History Museum Vienna. The aim is to try to make the postulate of a critical history of science “*beyond the history of discovery*” (“*jenseits der Entdeckungsgeschichte*”) formulated by Sauer in 2007 (SAUER 2007c) fruitful. This, on the other hand, is to be done without making theses such as those of an “*epistemological imperialism*” (“*epistemologischer Imperialismus*”, SAUER 2021: p. 72) or demanding a general “*reallocation of knowledge resources from north to south [...] as part of the reorganization of scientific and cultural relations between the former colonial powers or their allies and the former colonies*” (“*Umschichtung von Wissensressourcen von Nord nach Süd [...] als Teil der Neugestaltung der Wissenschafts- und Kulturbeziehungen zwischen den früheren Kolonialmächten bzw. ihren Verbündeten und den ehemaligen Kolonien*”, SAUER 2021: p. 71 ff.).

Our approach is exhaustive and attempts to gather information on the entire acquisitions over a 111-years-long period spanning from 1807 to 1918. Based on these data, we try to elucidate the acquisition-history of the material and to check for potential colonial context. This approach allows also estimating the role of “colonial” aggression of the Austrian-Hungarian Empire within its own borders (paraphrased as “internal colonialism” [‘*Binnenkolonialismus*’]), e. g., after the occupation of Bosnia and Herzegovina in 1878, where “*military conquest, administration and cultural policy had a colonial character*” (“*militärische Eroberung, Verwaltung und Kulturpolitik koloniale Züge trugen*”; PRUTSCH 2003: p. 42; see further RUTHNER 2020 and KRONENBITTER 2020). In addition, the role of dealers, scientists, and collectors, the amount of purchases versus donations, and the role of patronage can be precisely described in context with the economic development of the Habsburg Monarchy.

This paper aims for presenting a solid data base for further discussions but will not take a position on lawfulness and ethical justifiability of the acquisitions. No recommendations or even a comprehensive strategy with regard to the further handling of the collections should be derived from this investigation. This discussion has to be conducted in a different context, including the question of the specific character of natural history collections from colonial contexts as opposed to art historical or ethnographic collections (as a first approach GLAUBRECHT 2021).

Material and Methods

The time frame of this study is defined by the foundation of the ‘*Vereinigte k.k. Naturalien Cabinete*’ in 1806 (as institutional predecessors of today’s NHMW), under its first director Carl von Schreibers (1775–1852) and the end of the First World War in

1918. The data source are eight bound, handwritten inventory books that are physically stored in the Geological-Paleontological Department of the NHMW: *Volume 1876–1878* including an ‘*Excerpt from the acquisition protocols of the k.k. Hof-Mineralien-Kabinets, 1806–1878*’, *Volume 1879–1883*, *Volume 1884–1885*, *Volume 1886–1889*, *Volume 1890–1897*, *Volume 1898–1904*, *Volume 1905–1912*, and *Volume 1913–1928*. These inventory books have been digitized as scans and access will be provided on demand for scientific purposes.

The break in the first volume resulted from the establishment of the ‘*k.k. Naturhistorisches Hofmuseum*’ by Emperor Franz Joseph I on April 29, 1876, with Ferdinand von Hochstetter (1829–1884) as the museum’s first Superintendent (RIEDL-DORN 1998, 2003). The existing zoological, botanical, and mineralogical cabinets were restructured and the ‘*k.k. Mineralogische Hof-Cabinet*’ was split into the ‘*k.k. Mineralogisch-Petrographische Abteilung*’ and the ‘*k.k. Geologisch-Paläontologische Abteilung*’. This step also required separating the written inventory, which had been a single inventory until then. In fact, there was still an overlap period from 1876 to 1878 in which an inventory A, which was the continuation of the ‘*Inventare des k.k. Hof Mineralien-Kabinets*’ and an inventory B with the acquisitions of the new department existed in parallel. Starting from 1878, each year starts with an overview of the acquisitions for the geological-paleontological collection in which new acquisitions are listed as lots (‘Konvolute’) in order of receipt. The entries consist of a brief description of the object(s), usually followed by a reference to the person through whom the objects came into the collection and a note about the context of the acquisition, e. g., “1876 *Moa-Reste von Neu-Seeland, Provinz Canterbury. Gesammelt von Dr. Julius Ritt. v. Haast, Geschenk von Karl Fischer in Sydney*” (“1876 *Moa remnants from New Zealand, Canterbury Province. Collected by Dr. Julius Ritt. v. Haast, donation by Karl Fischer in Sydney*”). This information on provenance is followed by information on the number of specimens, inventory number(s), as well as price or value. In accordance with the four-eyes principle, this inventory overview was signed by the respective department director and one of the curators (Fig. 1). This annual overview is followed by an exhaustive listing of the individual objects and lots, with assignment of the inventory numbers for each year. From 1884 onwards, a distinction was made between the number of objects and a ‘number of numbers’ and ‘number of pieces’. The ‘number of numbers’ means the number of assigned inventory numbers and the ‘number of pieces’ states the number of objects. In many cases, larger lots are listed as ‘pl.’ (= pluralis). In this compilation, these positions are rated as 1, which means that the actual number of objects is underestimated. Each annual overview also includes a position ‘Varia’, which comprises individual objects or small lots of different origins. In the analysis presented herein, only lots with potentially colonial context and those from professional dealers were listed separately, while the remaining lots are listed as ‘Varia’. The list of acquisitions is provided as supplementary material (HARZHAUSER & KRENN 2022).

Our analyses are based on a compilation of data structured into year, object type, country, person, acquisition, number of inventory numbers, and number of objects.

*Übersicht der Acquisitionen
für die Geologisch-palaeontologische Sammlung
des k. k. naturhistorischen Hofmuseums im Jahre 1876.*

<i>Post- nummer.</i>		<i>Stück- Zahl</i>	<i>Inventar- Nummern.</i>	<i>Preis oder Worth.</i>
I.	<i>Gesteine aus dem Sudan und aus Kordofan, gesamt nach im Jahre 1875. Geschenk von Ernst Maano.</i>	27	1-24	20' -
II.	<i>Sammlung von Phosphoriten. Geschenk von Herrn L. Giesefeld in Hamburg.</i>	11	25-35	20' -
III.	<i>Sorten von Peru-Guano. Geschenk von Ohlendorff & Cie in Hamburg.</i>	11	36-46	20' -
IV.	<i>Skelet von Dinornis didiformis aus der Hochstetter- Höhle im Aorere-Thale, Provinz Nelson, Neu-Seeland. Geschenk von Hofrath Dr. F. v. Hochstetter.</i>	57	47-55	50' -
XII	<i>Varia.</i>	8	1567-1569	24' -
		9.693	1-1569	
	<i>1260 Stück. Geschenke: Worth: 25.469' -</i>			
	<i>Dr. Frombaldy 29 " Tausch: Worth: 200' -</i>			
	<i>H. W. Assistent. 280 " Ankäufe: Preis: 5.020' -</i>			
	<i>Th. Fuchs. Custos. 1569</i>		<i>Summe</i>	<i>30.689' -</i>
	<i>F. Hochstetter</i>			
	<i>19 Nov. 1876</i>			

Fig. 1. Example of an annual overview of acquisitions in 1876 signed by Ferdinand von Hochstetter as department director and by Theodor Fuchs as curator ('Custos') following the four-eyes principle.

Year ('Jahr'): The year in which an object or lot is listed as entry in the inventory. This year does not always correspond to the year of acquisition and in several cases some years may have passed between acquisition and inventory. This difference was not considered in this study and in most cases is not evident from the available inventory data.

Object type ('Objekt Typ'): A distinction is made here only between systematic groups: fossil vertebrates, fossil invertebrates, paleobotany (fossil plants), micropaleontology (e. g., fossil unicellular organisms), rocks, and 'various'. Mixed lots are listed in the last category (note that many of the objects listed as rocks were handed over to the Mineralogical-Petrographical Department during the 20th century).

Country ('Land'): The assignment of the localities to countries corresponds to their location in modern states. For example, sites from the formerly Austrian 'Galizien' are listed under Ukraine, as the fossil-bearing sites are now on Ukrainian territory (the western part of 'Galizien' is now part of Poland). Similarly, 'Slavonien' is listed as Croatia, but was historically a separate political entity within the Habsburg Monarchy before being united to form the Kingdom of Croatia-Slavonia in the mid-19th century. 'Dalmatien' is also listed as Croatia but has been part of Austria from 1797 to 1918. Italian localities are divided into 'Italy' and 'Italy (Südtirol)' because South Tyrol has been part of Austria until 1919.

Person and role ('Person und Rolle'): The objects came to the NHMW by different groups of stakeholders. It is beyond the scope of this study to clarify the biographies of the numerous persons appearing in the inventory but in many cases the names can be reliably identified. Basically, the persons acting are scientists and colleagues from other national and international institutions but also employees of the NHMW. In total, 108,485 objects (40.4 %) have been purchased from, collected or donated by, and exchanged with scientists. In many cases it was common practice to list material collected by staff members as 'donation' rather than as 'own collection'.

A second group is represented by collectors, in which we place amateurs and semi-professional collectors as well as people who collected objects by chance and sold or donated these to the museum. In total, 102,988 objects (38.3 %) have been provided by collectors. An outstanding and somewhat unexpected person, listed here as collector, is Johann Wolfgang von Goethe (1749–1832), who sent rock samples from the Czech Karlovy Vary (= 'Karlsbad') to the NHMW in 1820. This is because Goethe was also working as geologist and had collected more than 18,000 rocks, minerals, and fossils (VON ENGELHARDT 2000, 2003).

The third important category of stakeholders are professional dealers who began to supply the major European collections early in the 19th century. A total of around 25 people act as dealers between 1807 and 1918, although it is not always possible to clearly distinguish between dealers and professional collectors, who regularly sold their finds to the NHMW. Internationally known names of professional dealers who supplied the NHMW include: Louis Parreyss (1796–1879, Vienna), Lois Saemann (?–1866, Paris), Adam August Krantz (1808–1872, Bonn), Robert Damon (1814–1889, Weymouth), Friedrich Ludwig Robert Krantz (1859–1926, Bonn), Alexandre Stuer (1890ies–1920, Paris), Bernhard Stürtz (1845–1928, Bonn), and James Lomax (1857–1934, Radcliffe). A total of 43,617 objects (16.3 %) came into the NHMW collection through dealers. Of these, 96.5 % have been purchased. The remaining objects have been exchanged or are donations.

In some cases, only institutions are listed in the inventory, which consequently are listed herein as “institutions”. These encompass scientific bodies, such as the k.k. Geologische Reichsanstalt (‘Geological Survey of Austria’), the k.k. Akademie der Wissenschaften (‘Austrian Academy of Sciences’), and the k.k. Ackerbauministerium (‘Ministry of Agriculture’) and various national and international museums. In addition, we have listed here military organizations of the Habsburg Monarchy such as, the k.k. Grenzregiment Kommando (‘border regiment command’). An outstanding object within this category is the cast of a complete skeleton on an *Iguanodon* which came in 1908 from the Musée royale d’histoire naturelle de Belgique. With only 6,790 objects (2.5%), this category is of minor importance in total numbers.

A subordinate but interesting category are diplomats and politicians. This group of stakeholders includes representatives of the Habsburg Monarchy such as Emperor Franz I (1768–1835), Emperor Ferdinand I (1793–1875), Emperor Franz Josef I (1830–1916), Archduke Johann of Austria (1782–1859), and Crown Prince Rudolf (1858–1889). Among the diplomats, the list includes the French consul Nathaniel Adler (?–?) in Port Elizabeth in South Africa and the Swedish consul Johannes Hedenborg (1786–1865) in Rhodes. An outstanding object within this category is the cast of a complete *Diplodocus* skeleton, which was a gift of the US tycoon Andrew Carnegie (1835–1919) to Emperor Franz Josef I in 1909. In rare cases, the categorization is ambiguous. A suite of Eocene fish from Monte Bolca in Italy was sent in 1853 by the Italian paleontologist Achille De Zigno (1813–1892) as donation along with a get-well note to Emperor Franz Josef I, who had to recover from an attempt of assassination on the 18th February 1853. The collection was handed over to the Natural History Museum. In this case the lot is listed as donation from a scientist. With only 1,661 objects (0.6%), however, this category is negligible in total numbers.

Acquisition (‘Akquisition’): For 98.8% of the objects, the inventory mentions circumstances of acquisition, which are categorized herein as purchase (‘Erwerb’) (123,858 objects, 46.1%), exchange (‘Tausch’) (33,091 objects, 12.3%), and donations (‘Schenkung’) (including own collections) (108,640 objects, 40.4%). More detailed information on the exact historical acquisition circumstances of the individual objects can (naturally) not be found in the inventory books. The historical context in which a purchase process took place, for example, cannot be deduced from the inventory book and has to be the subject of further investigations.

The inventory in the light of politics and economy – the ‘first and second boom phases’

In total, 268,755 objects are recorded in our survey for the years 1807 to 1918. This results in an average acquisition of 2,400 objects per year. The total number of objects in the annual inventories, however, is far from stable (Fig. 2). From 1807 to the mid-1830ies only low amounts of material were acquired with several interruptions by years without new entries. Starting with the late 1830ies a rather constant increase in inventoried objects started, peaking during the 1850ies and early 1860ies. This period is termed

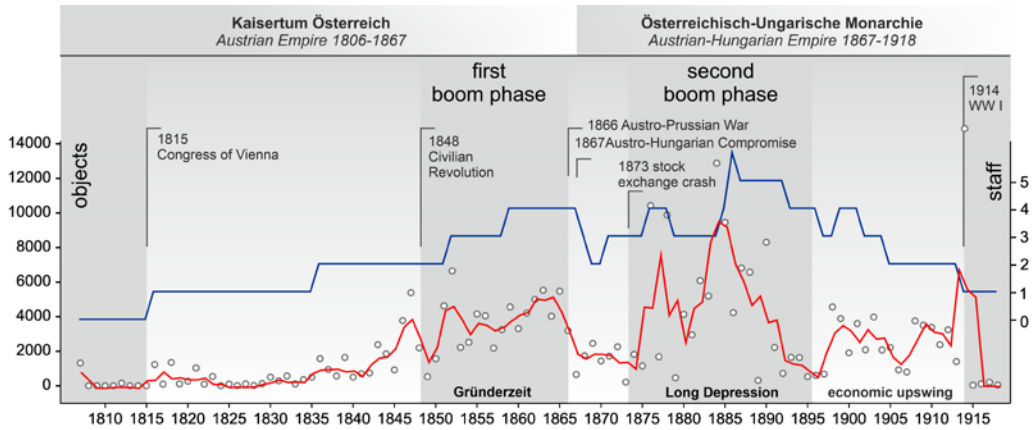


Fig. 2. Acquisition history of the geological-paleontological collection of the Natural History Museum from 1807 to 1918 and number of scientific staff members of the Geological-Paleontological Department and its precursors. Major political and economical events are indicated. Dots represent annual values; red line represents 3-years running mean.

herein ‘first boom phase’. The positive trend is interrupted by a severe drop in 1866, which was followed by a decade of strongly reduced acquisitions until 1876. This drop is reflected by a decline of the mean annual object numbers from 3,957 (1850–1865) down to 1,664 (1866–1875). Afterwards an upswing phase sets in that lasted from 1876 to 1890, with a mean of 5,969 objects per year, which is termed herein ‘second boom phase’ (Fig. 2). This heyday passed into a moderately stable phase of acquisitions from 1891 to 1913 ranging around 2,249 objects per year. The year 1914 forms an outlier due to the donation of a huge collection of invertebrates from France, containing more than 13,000 objects. During the years of World War I the inventory reflects a near breakdown with a mean of 39 objects during 1915 to 1918, which is a relative drop of 98 % relative to the mean acquisition in all years before World War I.

Comparing this pattern with the political and economic history of the Habsburg Empire, respectively the Austrian-Hungarian Empire, results in interesting co-incidences and unexpected contradictions (Fig. 2). The first rise of inventory numbers in the 1840ies heralds the economically prospering ‘Gründerzeit’ (‘founders period’), which coincides with the high plateau in the 1850ies and 1860ies. Thus, we assume that the economic upswing of the Gründerzeit provided the economic frame for the first boom phase of the acquisitions.

The upheaval of the Civilian Revolution in 1848 is reflected by a short negative excursion within this period, coinciding with lower numbers in 1849. The abrupt end of the first boom phase coincides strikingly with the Austrian-Prussian War and the defeat of the Austrian troops at Königgrätz in 1866 (today Hradec Králové, Czech Republic). This battle resulted in a severe political crisis for the Austrian Empire and led to the Austrian-Hungarian ‘Ausgleich’ (‘Compromise’), which brought large autonomy for Hungary. This political crisis was soon followed by the stock exchange crash in 1873. It was the

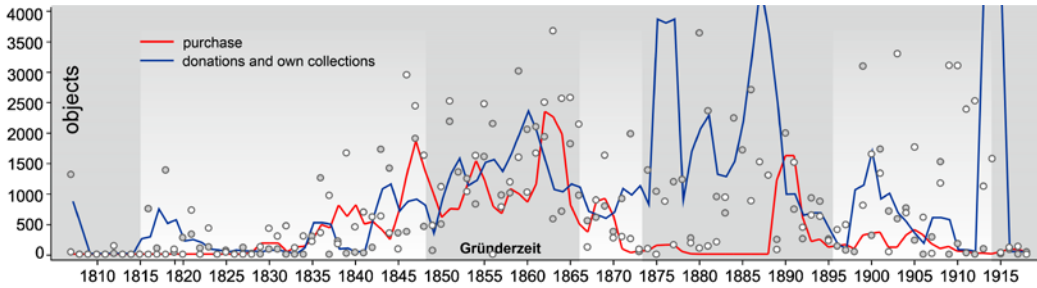


Fig. 3. Relation between purchases and donations (including own collecting campaigns). Note the dichotomy which starts after the Austrian-Prussian war in 1866. Dots represent annual values (grey: donations, white: purchase); lines represent 3-years running mean.

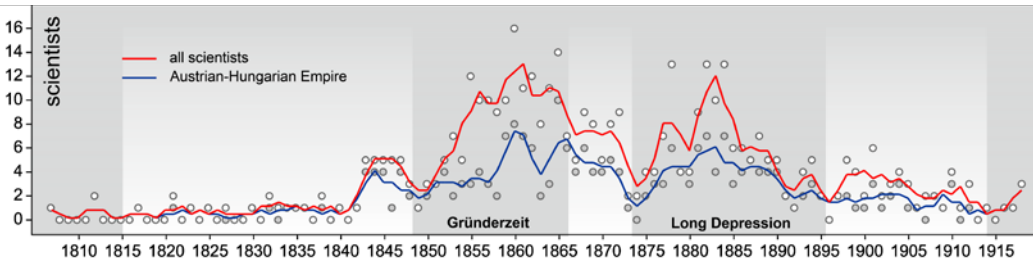


Fig. 4. Number of scientists, who donated, sold or exchanged geological and paleontological material with the NHMW. The two boom phases of acquisition are clearly supported by intense networking resulting in increased contacts with international scientists. Dots represent annual values; lines represent 3-years running mean.

starting point for the ‘Long Depression’, which lasted until 1896 (Fig. 2). Surprisingly, this economically stagnant phase correlates with a unique inventory rally expressed as second boom phase. This apparent contradiction is solved if purchases are compared to donations and own collections (Fig. 3), revealing a clear cut in the acquisition policy after 1866. Whilst both categories are positively correlated during the first, economically backed, boom phase, a clear negative correlation exists for the second boom phase. The unfavorable economic frame is reflected in very low purchases. This low, however, was overcompensated by own collections and donations from friendly and associated scientists (Fig. 4). The striking dichotomy narrows during the late 1890ies, but purchases remained at low levels until 1918.

Staff and inventory

During the early period of the ‘*Vereinigte k.k. Naturalien Cabinete*’ from 1806 to 1815, no trained paleontologists has been employed (Fig. 2). This is not surprising because Paleontology as a science was just developing during the early 19th century. The word

‘palæontologie’ was coined not before 1822 by the French natural scientist Henri Marie Ducrotay de Blainville (1877–1850) on page 54 of his article in the *Journal de Physique, de Chimie et d’Histoire Naturelle* (DE BLAINVILLE 1822). In 1816, Paul Maria Partsch (1791–1856) started to work at the Natural History Museum and was the first scientist with strong interests in paleontology (FLÜGEL 1978; FLÜGEL & HÖFLECHNER 2015). Consequently, the numbers of acquisitions started to rise abruptly after 1816. In 1836, Moriz Hörnes (1815–1868) – husband of Partsch’s niece Aloisia (called Louise; see HUBMANN & WAGMEIER 2017: p. 6) – was employed at the museum and started to inventorize and rearrange the paleontological collections together with Partsch (STEININGER *et al.* 2018). Since 1871 he was supported by the clerk Mathias Auinger (1810–1890), who could be compared to a collection manager in modern sense. The fruitful cooperation between these colleagues is reflected by a further slight increase of acquisitions.

During the 1850ies, the paleontological staff experienced a strong reinforcement starting with the recruitment of Eduard Suess (1831–1914) in 1852 (as a first approach SEIDL 2015), followed by Friedrich Rolle (1827–1887) in 1857 (MARTIN 1988), Felix Karrer (1825–1903) in 1859 (ANONYMOUS 1965a) and Theodor Fuchs (1842–1925) in 1863 (ANONYMOUS 1957). This first wave of well-educated paleontologists correlated clearly with the prospering Gründerzeit and the first boom phase of acquisitions (Fig. 2). These scientists started intensifying the stratigraphical and paleontological research in the entire empire and initiated a vivid exchange policy with international colleagues. The second wave, bringing a new generation of earth scientists, set in with the appointment of Ferdinand von Hochstetter as first superintendent of the Natural History Museum in 1876. Franz von Hauer (1822–1899), Hochstetter’s successor as superintendent of the NHMW from 1885 to 1896 (RIEDL-DORN 1998: p. 203 ff.), and Franz Wähner (1865–1932; SEIDL 2018) started to work in the department in 1885, followed by Ernst Kittl (1854–1913) (ANONYMOUS 1965b) and Julius Dreger (1861–1945) in 1886 (SVOJKA 2018). The second wave is framed by the formation of the new ‘*k.k. Geologisch-Paläontologische Abteilung*’ in 1876, which strengthened paleontological and stratigraphic research enormously. The activity of this second wave of scientists strikingly coincides with the second boom phase of acquisitions. During the early 20th century, the staff number constantly declined and Franz X. Schaffer (1876–1953), who became employed in 1900, was the last important paleontologist of the department during World War I (TRAUTH 1952). Dreger, Karrer, and Rolle worked as volunteers without fixed positions. As these scientists have actively contributed to the acquisition of new material, we do not distinguish between employees and scientific volunteers herein.

The successive employment of the first wave of paleontologists is also reflected in a change in collection strategy (Fig. 5). Under the influence of the predominantly mineralogically oriented staff, rock samples have been frequently collected and stored in the collection until 1850. From 1820 to 1850, however, the ratio of paleontological objects steadily increased and reached a stable plateau with 1855. Since then, paleontological objects account for 98.8% of the acquisitions on average.

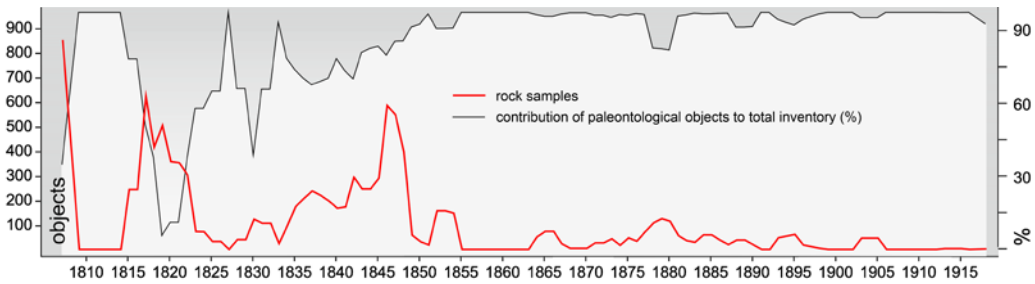


Fig. 5. The change on collection policy is expressed in the decline of rock samples and the reciprocal increase of paleontological objects during the first half of the 19th century. Lines represent 3-years running mean.

Donations and bequests

Only a single person, mentioned in the inventory books, qualifies as patron: Heinrich Drasche Edler von Wartinberg (1811–1889), who was an Austrian industrial magnate (MERK 1966). Drasche supplied Vienna during the booming building period of the Gründerzeit with bricks and became the richest man in Vienna. Drasche donated several important Miocene vertebrate fossils from his clay pits in the south of Vienna and a complete skeleton of a fossil Irish Elk from Ireland. His son, Richard von Drasche-Wartinberg (1850–1923) brought fossil invertebrates from Spitzbergen and foraminifers from the Philippines, which he collected during his privately funded expeditions. Overall, however, donations from patrons, such as Drasche did not play a role for the development of the geological-paleontological collections of the Natural History Museum Vienna in total numbers.

Similarly, legacies are subordinate and account only for 1.7% of the total inventory (4,578 objects). Even this number, however, does not reliably reflect dedicated bequests to the museum. E. g., a lot of 2,001 fossils from the upper Cretaceous of Germany, collected by the amateur paleontologist Ernst von Otto (1799–1863) is listed as ‘Nachlass’ (‘legacy’) in the inventory but, in fact, was sold by the widow. Similarly, lots collected by the Austrian paleontologist Leopold von Fichtel (1770–1810) and the Austrian zoologist Johann Jakob Heckel (1790–1857) have been purchased from the heirs. The low number of objects listed as bequests from the Austrian paleontologists Gustav Schwartz von Mohrenstern (1809–1890), August Emanuel von Reuss (1811–1873), and Felix Karrer as well as the Bohemian paleobotanist Joachim Barrande (1799–1883) indicates that these entries have been only small parts of the legacies, which have been given to the museum without formal background.

Concluding, there existed no tradition of patronage and bequeathing concerning paleontological objects in the society of the Austrian-Hungarian Empire.

Purchasing strategy

The share of purchases in the annual inventory is far from constant (Fig. 3). The purchase of collection items did not start before 1829 and reached a peak in the early 1860ies. After that, the proportion of purchased objects fell rapidly around 1869 and hovered around zero in the 1880ies. In 1890, a lively purchasing policy resumed for a short time, but it stagnated at a low level in the 1890ies, which persisted until 1918. Therefore, purchase was a relevant strategy for expanding the collection only from the late 1830ies to 1869. The strong fluctuations, even in the high phase of purchases by dealers, suggest, however, that purchase was rather a reaction to arising offers than a targeted, constantly pursued strategy. In this phase from 1829 to 1869, purchases from dealers accounted for an average of 38.4% of annual inventories. In the second phase from 1890 to 1918 this proportion only reached 20.1%.

Colonialism of a non-colonial power

The role of the Habsburg Monarchy – patterns and the question of ‘internal colonialism’ (‘Binnenkolonialismus’)

Despite its self-perception as international collection, the geological-paleontological collections of the NHMW always had a strong focus on the territory of the Habsburg Monarchy. This is expressed by a high number of objects, accounting for 48% (130,367 objects) of the total inventory from 1807 to 1918. Consequently, the graph of acquired objects from the territory of the Austrian-Hungarian Empire (Fig. 6) is roughly parallel to that of the total inventory (Fig. 2) but differs in a stronger peak during the second boom phase. During this phase, contributions of material from the empire reached highest values per year in relation to the total annual acquisitions, emphasizing the importance of own collecting efforts during this period. In addition, the acquisitions from the territory of the empire experienced a third moderate rise during the early 20th century with a peak around 1910.

Referring to modern country borders, most of this material derives from Austria (65,251 objects, 50.1%) and the Czech Republic (31,823 objects, 24.4%) (Fig. 7). The second group comprises Romania (8,281 objects, 6.4%), South Tyrol (8,067 objects, 6.2%), Slovenia (6,108 objects, 4.7%), Croatia (5,663 objects, 4.3%), Hungary (2,907 objects, 2.2%), and Serbia (1,247 objects, 1.0%), followed by Slovakia (435 objects, 0.3%), Ukraine (323 objects, 0.3%), and Bosnia and Herzegovina (262 objects, 0.2%) (Fig. 7). Thus, these countries contribute in very different amounts to the total inventory. Moreover, each country has its own history of acquisitions. **Austria** and the **Czech Republic** follow largely the general pattern with two boom phases and are also responsible for the minor 20th century rise (Fig. 8).

An exceptional object from the Czech Republic is the nearly complete skeleton of the Miocene proboscidean *Prodeinotherium bavaricum*. The fossil was found in 1883 in

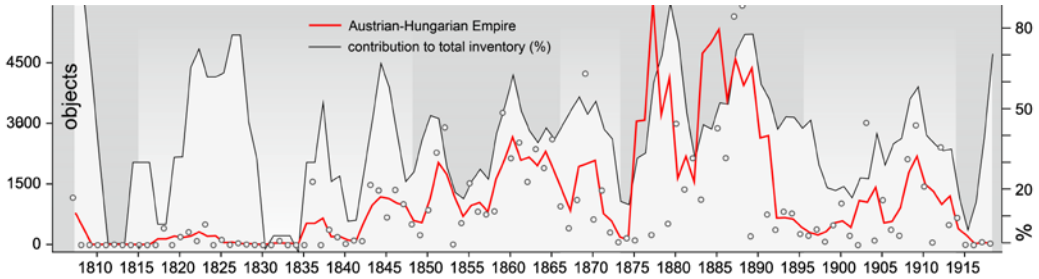


Fig. 6. Acquisition history of material from the territory of the Austrian Empire and the Austrian-Hungarian Empire and its relative contribution to the total inventory. The second boom phase of acquisition was sparked by collecting activities within the empire. Dots represent annual values; lines represent 3-years running mean.

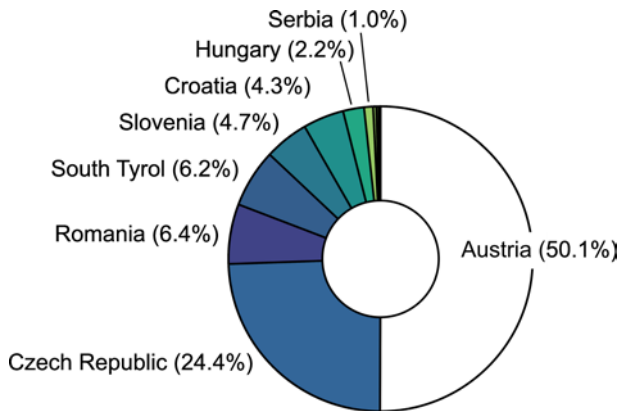


Fig. 7. Relation between the contributions of acquisitions from the different countries of the Austrian-Hungarian Empire.

Františkovy Lázně ('Franzensbad') and was donated in 1885 by its owner, the Austrian-Bohemian industrial magnate Heinrich Kaspar Edler von Mattoni (1830–1910), to the Natural History Museum in Vienna. This acquisition was not noted in the inventory and no inventory number has been applied. The acquisition history, however, was clarified by KITTL (1908) and HUTTUNEN (2004).

Parts of **Romania**, such as Transylvania (Siebenbürgen), have become part of the Austrian-Hungarian Empire after a complex history during the 18th and the first part of the 19th centuries. From 1849 to 1854, Transylvania has been forced under Austrian military administration. With the Austrian-Hungarian Compromise in 1867, Transylvania became part of Hungary. Other parts of Romania have been under the suzerainty of the Ottoman Empire, which ended after the Russo-Turkish War (1877–1878). In consequence, the Kingdom of Romania was established in 1881 but was still strongly attached economically to the Austrian-Hungarian Empire. The acquisition of objects from Romania,

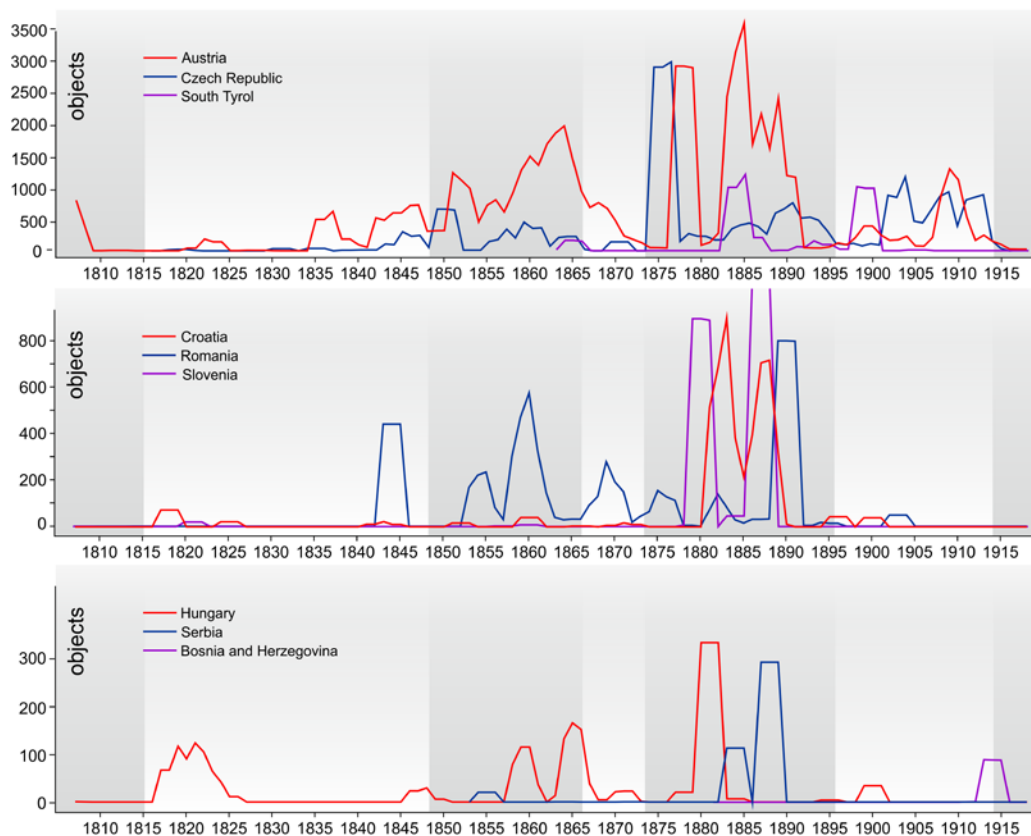


Fig. 8. Acquisition history of material from various parts within the Austrian-Hungarian Empire, showing that peaks correlate largely with the two boom phases of acquisition. Lines represent 3-years running mean.

however, does not mirror much of these political developments but rather follows largely the pattern of incoming Austrian material (Fig. 8).

Objects from **South Tyrol** basically arrived during two short phases in the early 1880ies and around 1900 (Fig. 8).

Objects from today's **Croatia** (a connection of the historical Kingdom of Croatia-Slavonia with Istria und Dalmatia) have only occasionally been acquired in low numbers until 1881, although Croatia has been part of the Habsburg Monarchy since 1527 (but associated with the Kingdom of Hungary in terms of constitutional law). Most of the Croatian material, in large parts from the region Slavonia, was collected between 1882 and 1889 during the second boom phase (Fig. 8). A comparable pattern is seen for Slovenian objects. Present-day **Slovenia** – the Duchy of Carniola ('Herzogtum Krain') as its historical "nucleus" – has been part of the Habsburg Monarchy Empire since the Middle Ages but most material was acquired in a short period between 1887 and 1897.

Surprisingly little material was acquired from **Hungary** (Fig. 8), which is explained by the strong autonomy of Hungary (before and especially after 1867) and the high scientific reputation of institutions in Budapest, such as the Imperial Hungarian Geological Survey ('Magyar Királyi Földtani Intézet') and the Hungarian National History Museum ('Magyar Természettudományi Múzeum'). For example, a complete Miocene whale skeleton, found at Walbersdorf (= Borbolya) in 1899, was sent to the Geological Survey in Budapest, although this village is much closer to Vienna (41 km) than to Budapest (180 km), because it was part of Hungary. In Budapest, the skeleton was even visited by Franz Josef I in 1900, in his role as King of Hungary (KADIC 1907). Since 1921, the village Walbersdorf belongs to Austria, because parts of Western Hungary – the later Austrian province Burgenland – were split from Hungary in the Treaties of St. Germain-en-Laye (1919) and Trianon (1920) and annexed to the Austrian Republic in 1921 (so-called 'burgenländische Landnahme', 'Land grab of Burgenland').

Bosnia and Herzegovina has been occupied in 1878 by Austrian-Hungarian troops, following the contract signed at the Congress of Berlin in 1878. This potential act of colonialism is not immediately reflected by the inventory of the Geological-Paleontological Department and Bosnia and Herzegovina forms the least amount of the material from the Austrian-Hungarian Empire with only 262 objects. The few specimens were acquired only between 1912 and 1914. Despite the negligible numbers, two of these objects are of outstanding scientific value. Two fossils of the primitive snake *Pachyophis woodwardiana* have been collected by the k.k. Militär Bauoberwerkmeister (= a so-called 'Gag-ist', a professional soldier of the k.k. Army) Wenzeslaus Paderta (?–?) from Vienna and Hauptmann ('Captain') Georg Veith (?–?) from Sarajevo at Bileća. Paderta served in a 'Genietruppe' ('pioneers'). One specimen was sold by Paderta to the NHMW, the second specimen was donated by Veith. Obviously, both were members of stationed troops in the region and collected these fossils during their term of service.

Serbia has not been occupied by the Austrian-Hungarian Empire but had to sign a trade agreement and a treaty of alliance with the Austrian-Hungarian Empire in 1881. This resulted in a close economic affiliation and reliance of Serbia. The 1,185 objects, which arrived in Vienna in 1884 and 1888 after this turning point (Fig. 8), have been collected and donated by Austrian and Serbian scientists. An interesting entry predating the year 1881 is the donation of a jaw fragment of a Woolly Mammoth in 1864, collected by the 'k.k. Peterwardeiner Grenzregiment Nr. 9' (a border regiment at Petrovaradin near Novi Sad).

Beneficiary of colonialism

The research activities of the staff members have been clearly focused on the Mesozoic and Cenozoic of the Austrian-Hungarian Empire. Nevertheless, the collection was not restricted to the empire and 52 % of the objects acquired between 1807 and 1918 derived from countries outside the Austrian-Hungarian Empire. Large quantities were purchased, exchanged or donated from France (41,748 objects), Germany (32,217 objects), Italy

(15,871 objects), England (8,110 objects), the United States (4,456 objects), Sweden (2,186 objects), and Russia (2,040 objects). The provenance context of these objects is not discussed herein, because no information is available from the inventory books.

In addition, 7,964 objects from non-European countries have potentially been acquired in colonial context. These objects account for 2.9% of the total inventory (Fig. 9). During the herein studied period, the most important colonial powers were the British Empire, the French Empire, the Ottoman Empire, the Dutch Empire, and the German Empire. Although Austria does not have a significant history of direct colonial rule, scientific and economic exchange with these imperial powers resulted in acquisitions of material from colonies. The most outstanding initiative within this context was the Austrian Novara circumnavigation from 1857 to 1859. This endeavor was initiated by Archduke Ferdinand Maximilian (1832–1867), the commander-in-chief of the Austrian Navy and later ‘short-term’ Emperor of Mexico, with the task to conduct scientific research and collections in addition to nautical, military, or naval, and commercial objectives. Ferdinand von Hochstetter, who started as scientific staff member of the Novara circumnavigation, left the frigate in Auckland to study the geology and to map the mineral resources of New Zealand for nine months. Consequently, all objects from New Zealand (528 objects) have arrived in Vienna due to own collecting efforts or personal contacts with local scientists. Moreover, all material from Shanghai (31 objects), 50% of the objects from Australia (159 objects), 22% from South Africa (341 objects), and 19% of the material from Indonesia (1,047 objects) have been acquired within the frame of the Novara expedition. The most outstanding paleontological objects of the Novara collections are the skeletons of the giant Moas from New Zealand, collected by the German geologist Julius Ritter von Haast (1822–1887). The skeletons have been partly handed over directly by Hochstetter in 1876, exchanged with the Canterbury Museum in Australia in 1876 and donated by Haast in 1878 and 1884. All bones, however, have originally been collected by Haast.

Another case of direct relation with a colonial power, is the Viennese geologist Ferdinand Stoliczka (1838–1874), who has been poached from the ‘k.k. Geological Reichsanstalt’ by the Geological Survey of India, where he was employed in 1862 by the British Empire. About 7% of the 799 objects from India in the 1807–1918 collections of the NHMW have been donated by Stoliczka in 1876.

In the following, we give an overview of objects with potentially colonial context according to geographic regions, being aware that a case-by-case examination is always needed to discuss the questions of the specific (proto-)colonial practice and the form of political domination.

Pacific: 2,180 objects derive from the Pacific region. Material from Indonesia (1,047 objects), Borneo (25 objects), Sumatra (11 objects), and Timor (64 objects) was collected under Dutch supremacy and arrived in Vienna by donations and exchange. The largest lot from Indonesia comprises 526 invertebrates, which were sent as exchange by the Dutch paleontologist Johann Karl Ludwig Martin (1851–1942) as employee at

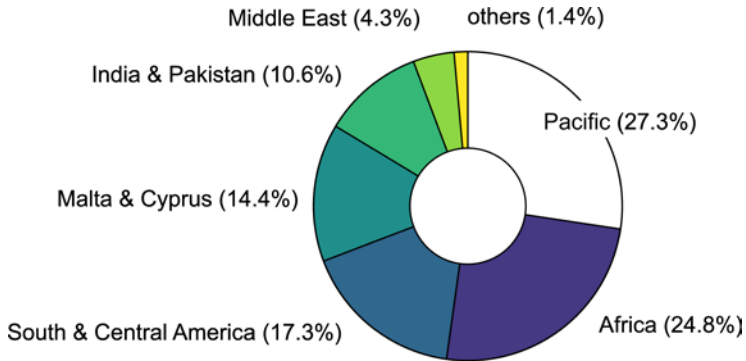


Fig. 9. Relation between the contributions of acquisitions from countries under colonial powers.

the Rijksmuseum voor Geologie en Mineralogie in Leiden. An important stakeholder was also the physician and collector Leo Moskovics (?–?) in Batavia, who donated 122 rocks from Indonesia in 1879 and 11 fossil vertebrates from Sumatra in 1882. The same collector had also given several human skulls from Indonesia and Malaysia in 1879 to the museum (SZILVÁSSY & KENTNER 1978). As outlined above, the 687 objects from New Zealand and Australia, have been acquired mainly within the frame of the Novara circumnavigation. The few remaining objects from the Philippines and the Marshall Islands have been collected during scientific expeditions, such as the Pacific expedition by the German natural scientist and ethnographer Friedrich Hermann Otto Finsch (1839–1917).

Africa: 1,978 objects have been collected in various African countries (Fig. 9). The majority of these derive from Egypt (885 objects). Although Egypt was under British administration, no direct relation with British institutions is obvious for the objects in the NHMW collection. A large part was collected by the NHMW-based paleontologist Theodor Fuchs, the NHMW-based zoologist Franz Steindachner (1834–1919), the Austrian geologist Joseph Ritter von Russegger (1802–1863), the Austrian botanist Karl Georg Theodor Kotschy (1813–1866), and the German botanist and paleontologist Georg Schweinfurt (1836–1925). This suggests that collections took place during research trips, partly with touristic aspects, as documented by rock samples from the Great Pyramid of Giza collected by Steindachner in 1892.

The second important African collection comprises more than 200 fossil bones from South Africa. The fossils have been collected during the 1870ies by the British amateur paleontologist Alfred ‘Gogga’ Brown (1834–1920) in South Africa. Brown had already sent material to the museums in London and Paris but had not received the positive response which he considered appropriate. In the meanwhile, the Austrian Consul in Port Elizabeth “*had been dangling various baits in order to land Brown’s collection in the Imperial Mineralogical and Geological Museum in Vienna*” (DRENNAN 1938: p. 50). Consequently, Ferdinand von Hochstetter initiated the election of Brown as a

corresponding member of the ‘k.k. Geographische Gesellschaft’ (‘k.k. Geographical Society’). This was accepted by Brown as compensation and recognition for his collection (DRENNAN 1938). The shipping of the collection in 1876 was obviously arranged by the consul Nathaniel Adler (?–?) in Port Elizabeth, who is mentioned in the inventory.

Whilst material from British colonies in Africa is well represented in the collections, only 11 geological objects came from the German colony in Namibia, purchased as part of a larger lot from the dealer Friedrich Ludwig Robert Krantz (1859–1926). Obviously, no exchange concerning paleontological objects from German colonies was established between German institutions and the NHMW.

In addition, some specimens of recent corals and fossil wood from the Red Sea and New Zealand have been acquired during the circumnavigation expedition of the *Corvette Saida* (1884–1886) and of the *S.M.S. Frundsberg* (1884–1887). This material is mentioned in the annual reports for 1886 and 1887 by HAUER (1887, 1888) but has not been listed in the inventory books of the Geological-Paleontological Department. Similarly, sediment samples, which have been collected by the *Saida* (1886–1887) around Africa and by the Austrian-Hungarian Deep-Sea Expedition of the *SMS Pola* (1890–1898) in the Mediterranean Sea and the Red Sea, have been listed in the acquisition books (1887, 1892, 1897) but have not been recorded in the inventory books.

South and Central America: 1,355 objects have been collected in Argentina (237 objects), Bolivia (130 objects), Brazil (817 objects), Chile (14 objects), Peru (119 objects), and Nicaragua (2 objects). Already in 1835, the Brazilian National Museum in Rio de Janeiro sent 289 rock samples to Vienna as donation. Most other objects were provided by European scientists, such as Franz Steindachner, the Austrian botanist Richard von Wettstein (1863–1931), the German paleontologist Oskar Böttger (1844–1910), and the Chilean paleontologist Rudolph Amadeus Philippi (1808–1904). An exception are skeletons of Pleistocene vertebrates from Argentina. These have been purchased in 1906 from Sofonias Krucsék (?–?), a headmaster in Mercedes in the province Corrientes (STEINDACHNER 1907).

Middle East: 343 objects have been acquired from Iraq (1 object), Lebanon (70 objects), and Syria (6 objects), which have been part of the Ottoman Empire, and from Iran (266 objects). Important collectors of these objects were the Austrian geologist Emil Tietze (1845–1831) and the Austrian botanist Karl Georg Theodor Kotschy. The most important contribution from Iran are rich assemblages of Miocene vertebrates from Maragheh, which have been collected by the Austrian physician and ethnographer Jakob Eduard Polak (1818–1891). Polak moved to Teheran in 1851, where he was among the founders of modern medicine in Persia and became personal physician of Shah Nāser ad-Din Schāh Qadschar (1831–1896) (GÄCHTER 2019).

India and Pakistan: 845 objects derived from these British colonies. As outlined above, parts of the collections from India have been donated by the Austrian geologist Ferdinand Stoliczka, during his employment at the Indian Geological Survey. The larger part of objects (74%), however, was purchased in 1905 and 1910 from the German dealer

Bernhard Stürtz (1845–1928), who was based in Bonn. The remaining part of these collections have been purchased from the Austrian diplomat and natural scientist Carl Alexander Anselm Freiherr von Hügel (1795–1870).

Malta: 866 objects have been collected by the NHMW-based paleontologist Theodor Fuchs on that British controlled island in 1875.

Cyprus: 283 objects were collected in Cyprus, which was then part of the Ottoman Empire. Parts of these objects were donated in 1861 and 1863 by the Austrian Consul Josef (Guiseppe) Pascotini (1823–1911) in Larnaka and in 1852 by Hermann Freiherr von Gödel-Lannoy (1820–1892), who was Consul-General of Syria & Palestine in Beirut.

Material from the **Arctic region** was acquired mainly during the first Isbjørn expedition in 1871, which was designed as test cruise by Julius von Payer (1841–1915) and Carl Weyprecht (1838–1881) for the Austrian-Hungarian North Pole Expedition of the S/X Admiral Tegetthoff (1872–1874) (WEYPRECHT & PAYER 1872) and during an expedition funded by Richard von Drasche-Wartinberg in 1873 (DRASCHE 1873).

Conclusions

We document two boom phases of acquisitions in the geological-paleontological collections of the Natural History Museum Vienna. The first one coincides with the economic and cultural upswing phase of the Gründerzeit during the 1850ies and early 1860ies. It was the time when the first wave of paleontologists started to shape the scientific orientation of the paleontological collections. This first boom phase ended with the defeat of Austrian Troops at Königgrätz in 1866 and the subsequent political rearrangement of the empire. The second boom phase lasted from the mid-1870ies to the late 1890ies. This phase coincides with the ‘Long Depression’, which is reflected by very low amounts of purchases, which, however, is overcompensated by enormous collecting activities of NHMW-based scientists within the Austrian-Hungarian Empire. This heyday was also stimulated by the employment of the second wave of educated earth scientists, such as Ferdinand von Hochstetter, at the Geological-Paleontological Department. Thus, the development of acquisitions correlates positively with the number of staff members (Fig. 2), suggesting that many donations by international scientists were initiated and encouraged by the active networking of the staff scientists. Whilst this networking greatly influenced the collections, our data survey also documents that no tradition of patronage and bequeathing was established in the society of the Austrian-Hungarian Empire concerning paleontological collections.

About half of the collection derived from the territory of the Austrian-Hungarian Empire. Most of this material was collected in Austria, the Czech Republic, and South Tyrol. Only a minor percentage of the material from the sphere of influence of the Austrian-Hungarian Empire was collected in Serbia and Bosnia and Herzegovina (Fig. 7). These countries have been occupied and/or economically dominated by the empire but the acquisitions do not reflect any systematic attempts of exploiting and plundering

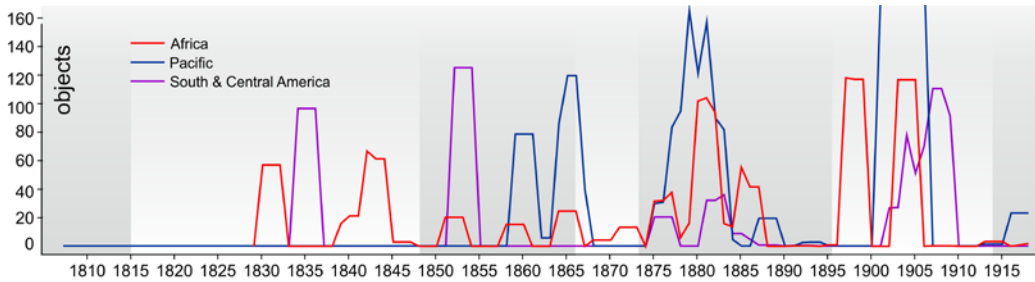


Fig. 10. Acquisitions of material with colonial context. Note the two peaks in the 1880ies and the early 20th century; lines represent 3-years running mean.

localities or institutions in Serbia and in Bosnia and Herzegovina. Among these objects, representing potential cases of ‘Habsburg colonialism’, only the skeleton of a primitive snake from the Cretaceous of Bosnia and Herzegovina is of outstanding scientific and cultural value and can clearly be linked to the occupational troops of the Austrian-Hungarian Empire.

2.9% of the objects derive from countries, which have been under British, French, Dutch, and Ottoman colonial power. The acquisitions with potentially colonial context had two clear peaks: the first one correlates with the second boom phase of acquisitions and the second peak occurred during the first decade of the 20th century (Fig. 10). From these countries, 48% of the objects, have been collected by European Scientists during expeditions and research journeys. About 9% have been purchased from professional dealers. Only the material, which was acquired in connection with the Novara, Saida, Tegetthoff and Pola expeditions has been collected within an official, governmental expedition of the Austrian-Hungarian Empire. All other objects were acquired upon individual initiatives and have not been acquired during ‘trans-colonial’ co-operations on institutional level. Many, though not all, of the objects with colonial provenance are of scientific value but only the Moa skeletons from New-Zealand, collected by Julius Ritter von Haast, and probably the Mesozoic reptiles from South Africa, collected by Alfred ‘Gogga’ Brown, qualify as outstanding, iconic objects.

In our opinion, the colonial heritage in the collections of the Geological-Paleontological Department of the Natural History Museum does not contain outstanding, or even hidden, treasures, comparable in importance with the Tanzanian dinosaurs in Berlin. Nevertheless, we consider our exhaustive and fully transparent data base an ideal starting point to study and clarify the networks between local authorities, dealers, collectors and scientists involved in the acquisition of collections with colonial context. The comprehensive historical contextualization based on the various archival sources appears particularly worthwhile, which in the case of the Austrian State Archives can certainly take on the character of archival ‘voyages of discovery’ (*‘Entdeckungsreisen’*, SAUER 2009). Thus, all future discussions on ethical and legal issues can be based for the first time on quantified data.

Acknowledgments

We are grateful to Erik Gornik (Heeresgeschichtliches Museum, Militärhistorisches Institut, Vienna), for his help in identifying units and regiments of the Austrian Army mentioned in the inventory books.

This paper contributes to the project *Kolonialer Erwerbskontext* (KolText), funded by the Federal Ministry of Arts and Culture, Civil Service and Sport (BMKOES).

We thank Pia Schölnberger (Commission for Provenance Research, BMKOES) and Bernhard Hubmann (Institute for Earth Sciences, University of Graz) for their constructive reviews. Anna Weinmann (NHMW) is acknowledged for the careful editorial work.

Supplementary material

The supplementary material to this article has been deposited in the NHMW Data Repository: <https://doi.org/10.57756/pdywy6>.

File 1: List of acquisitions of the Geological-Paleontological Department of the Natural History Museum Vienna from 1807 to 1918. [Microsoft Excel, 346 KB]

File 2: List of acquisitions of the Geological-Paleontological Department of the Natural History Museum Vienna from 1807 to 1918. [same as File 1, in CSV format, 346 KB]

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Annalen des Naturhistorischen Museums in Wien](#)

Jahr/Year: 2023

Band/Volume: [124A](#)

Autor(en)/Author(s): Harzhauser Mathias, Krenn Martin

Artikel/Article: [The geological-paleontological collections of the Natural History Museum Vienna. An exhaustive evaluation of provenance context \(1807 to 1918\) 73-99](#)