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Tobias Kraft und Stefan Dumont

The Humboldt Code

On creating a hybrid digital scholarly edition of a 19th century globetrotter

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The Humboldt Code

On creating a hybrid digital scholarly edition of a 19th century globetrotter

- 1 Most people know a little about Alexander von Humboldt (1769–1859), the Prussian traveler, naturalist, prolific author and international science celebrity from Berlin. This was true during his lifetime, both in the years after his return from his acclaimed travels through the American Tropics in 1804 and during his Berlin years, starting in 1827 with his famous *Kosmos lectures*, which helped to foster public awareness of science as a part of urban bourgeois culture.¹ And it is true today, due to a renaissance of Humboldt awareness in the years leading up to 2019, the year of his 250th anniversary: academies, universities, museums, schools, libraries, research institutions and learned societies in Germany and around the world commemorated the life and work of a man who is seen as a “visionary of globalism”², “an obsessive networker, a daredevil and a marketing genius”³, and a symbol of a shared cultural heritage of Germany and Latin America.⁴
- 2 The (renewed, cf. Rebok 2018) cultural-political upgrading of Humboldt’s work as a significant expression of Germany’s cultural heritage in the world is also highly motivated by the opening of the Humboldt Forum in Berlin in 2020. The Forum’s guiding principle of a ‘Dialogue of Cultures’ has been adopted with the spirit of the Humboldt brothers, Wilhelm and Alexander, in mind.

The Acquisition of Humboldt’s American Travel Journals

- 3 It is the intellectual heritage of Humboldt’s understanding of science and the world, of humankind and nature in its intrinsic interdependency that continues to motivate new readings of his works and actions. Humboldt’s multi-volume American Travel Journals are among the most famous testimonies to this heritage. In 2013, the Berlin State Library (Staatsbibliothek zu Berlin, SBB) was commissioned by the Prussian Cultural Heritage Foundation to acquire the nine valuable journals for the public sector. A consortium of public and numerous private donors under the organisational coordination of the Cultural Foundation of the German Federal States (Kulturstiftung der Länder) was responsible for financial control. For a seven-figure sum, Humboldt’s American travel notes were transformed from a cultural object in private ownership into a prominent testimony to German cultural heritage.⁵ The newspapers were full of praise for this “coup of the century” (Wulff 2014). The German Federal Ministry of Education and Research (BMBF) had made the co-financed purchase subject to one condition: The nine manuscript volumes bound in leather were to be completely digitized and examined by researchers, as well as the extensive archive of Humboldt personal papers and manuscripts (*Nachlass*) that were already preserved at the SBB and, for complex historic reasons, at the Jagiellonian Library in Kraków (Biblioteka Jagiellońska, BJ).⁶ Berlin managed and operated the restoration, digitization and digital indexing of the manuscripts, provided several thousand new entries in the metadata catalogue *Kalliope* and showcased the high-resolution digital images at SBB’s *Digitized Collections*.⁷ In 2014, a major research project on the *Genealogy, Chronology, and Epistemology* of the travel journals started at the University of Potsdam and was concluded in 2017.⁸

edition humboldt – a next generation journey with Humboldt’s manuscripts

- 4 The image and metadata digitization of the cultural artefact *Humboldt’s American Travel Journal* and the *Humboldt Nachlass* is therefore now complete. Digital copies of the documents are available to the world under an open license (Public Domain Mark 1.0).⁹ However, this is only the first step in the next generation task of making Humboldt’s handwritten legacy digitally usable. The second step, the research-driven edition of the manuscripts itself – the essays, reflections and travelogues, the notes, tables and measurements, finally the sketches and drawings – has only just begun. It implies several tasks of textual scholarship, which go hand in hand: paleography (transcribing the historical handwriting), textual editing (identifying the character of the text’s creation and its materiality) and criticism (any kind of commentary ranging from identifying people, places, names, and works to providing historical context for the textual content). In 2015, the research project *Traveling Humboldt – Science on the Move* (AvH-R)¹⁰ at the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) began its work with this task in mind. As with all long-term research projects initiated by the Union of the German Academies,¹¹ AvH-R was given the necessary time frame for this extensive work. The Berlin based team of researchers and digital humanists in the Academy’s offices located at Gendarmenmarkt will work on the manuscripts for a total of 18 years (2015–2032).
- 5 The conceptual framework and overarching research topic of AvH-R is defined by the term *journey* in as much as it is a theoretical concept, a scientific practice and a specific historical reference. To put it more precisely: *Journey* refers to various levels of reading and interpretation of Humboldt’s work and can therefore be understood as
 - a) a key term for Humboldt’s model of an empirical science “à la vue même des objets” (Humboldt/Bonpland 1805: VII),
 - b) a chronological bracket to the major sections in Humboldt’s intellectual biography,
 - c) an epistemological cipher for research and writing “on the move” (Ette 2015),
 - d) a point of reference for exemplifying the complex intertextual and intermedial relationship between manuscript, travel narrative and research in Humboldt’s scholarly output, and as
 - e) a cultural-historical synonym for a practice of research on nature and culture at the dawn of modernity, with empirism, field research and reliable measurement techniques at its core (Michael Dettelbach 1999).
- 6 Since the beginning of the project, AvH-R has focused on the preparation and continuous elaboration of a hybrid scholarly edition under the series title *edition humboldt*. It was conceived from the start as a framework for rethinking the possibilities, limits, and ways of defining digital publications in the field of scholarly editions. Hybrid means: both a printed version (*edition humboldt print*) in a total of 16 volumes and an online edition (*edition humboldt digital*) of the transcribed and critically commented manuscripts will be produced.
- 7 The edition’s corpus comprises three mayor sections: a) the travel journals of the American (1799–1804) and b) of the Russian–Siberian Voyages (1829), a total of 12 bound manuscripts with more than 2500 handwritten folios to be deciphered. As context to and beyond the travel journals, the critical scholarly work of the project’s team covers c) the edition of selected correspondences and unpublished documents from

Alexander von Humboldt's *Nachlass*, mainly from the already mentioned manuscript collections of the SBB and the BJ – in most cases edited for the first time (see the following chapters for more details). The edition's corpus comprises a wide variety of material and textual forms, ranging from handwritten notes and working papers to literary and scientific essays, galley proofs, drawings and sketches, memos, excerpts of his readings, and correspondence letters, covering the wide intellectual horizon of Humboldtian Science.¹² These are not only testimonies of the intellectual biography of one man, but provide important insights into a crucial moment in the transformation of modern European Science and epistemic culture in the 19th century. Humboldt's multi-faceted documents are relevant to the fields of history of science, literature and culture, the earth and biosciences, geography and anthropology. As an early source for modern scientific practice, they provide historic data records of specimen findings and measurements, relevant for historic economic and climate impact research.

The corpus, part I: The American Travel Journals

- 8 Both due to their fame and content, Humboldt's American Travel Journals can be considered the focal point of *edition humboldt*. They contain records of all stages of the great American expedition (June 5, 1799–March 8, 1804) with visits to the Hispanic American vicerealties of New Granada, Peru and New Spain, the sugar and coffee island of Cuba and the United States of America. In addition, there are records of European trips before 1799 (e.g. to England, Dresden, Vienna, Salzburg) as well as immediately after his return, in 1805 to Rome.
- 9 A glance at the manuscripts soon shows that the generic term *travel journal* does not adequately describe the famous manuscripts. At times, the text complies with the decorum of its genre, presenting the reader a string of chronologically assembled notations along the itinerary of an expedition. More typical, however, are the numerous discontinuities, the new beginnings, corrections, additions and extensions, the frequent yet often failed attempts to create order through indexing and cross-referencing; attempts to provide a coherent framework for a complex body of texts that were created and re-organized, not only during the expedition, but over a period of five decades until the final binding of the journals in the shape and form that we know today (Erdmann/Weber 2015: 67). The peculiarity of their composition shows that the journals are more than Humboldt's notebooks of a specific expedition. Instead, they became a crucial testing ground for his writing. They stand paradigmatically for Humboldt's scientific model of intertwined research and knowledge, already evident in the functional variance of the journals themselves, uniting "such diverse functions as research book, measurement chart, sketchbook, logbook, travelogue and political diary" (Lenz 2015: 80, transl. T. K.).
- 10 Like almost no other testimony in Humboldt's work, they exemplify the dynamism of Humboldtian thinking and composition technique, for which Ottmar Ette has coined the notion of a *science on the move*, present in AvH-R's project title:

Everything is on the move in Humboldt's travel journals – the indigenous cultures who immigrated from Asia, the Iberian conquerors who invaded America from Europe, the slaves who were abducted from Africa, the captains and sailors who ventured on the Atlantic as well as on the Pacific, the European animals which settled in America's forests, the American crop plants, which have long been cultivated in Europe [...]. The American travel journals provide a glimpse of a new world consciousness, the consciousness of a world that has long since been connected and continues to connect; one that can only be adequately understood as movement and on the move. (Ette 2014: 22, transl. T. K.)



Travel journals in comparison

- 11 It is no wonder that Humboldt, despite his low inclination to tie himself to objects or manuscripts for a long time, wrote in 1853 in a letter to his friend, the astronomer Johann Franz Encke:

I now have my 6–8 large travel journals (written by my own hand on the spot) bound, containing many thousands of numbers, some of them unpublished. I cannot decide to burn them like so many others, they [remain] a memory of hard work and good will. (Humboldt/Encke 2013: 436, transl. T. K.)

- 12 Humboldt knew the epistemic, symbolic and personal value of his journals. It took him almost 40 years to publish the results of his two hemispheric voyages, starting with the *Essai sur la géographie des plantes* in 1805/1807 and ending with the 2-volume *Asie centrale* in 1843. Humboldt's American and Russian-Siberian journals constitute the connecting element in this monumental composition.
- 13 Already in the first edition of Humboldt's widely popular tropical landscape reader *Ansichten der Natur* (1808) and to a much larger extent in the three volumes of his famous travel narrative, the *Relation historique* (1814–1825[–1831]), there are direct borrowings from the American travel journals, a writer's workshop detail that the author himself frequently likes to point out to his readers.

Je me suis astreint, pendant tout mon voyage de San Fernando à San Carlos del Rio Negro, et de là à la ville de l'Angostura, à écrire jour par jour, soit dans le canot, soit au bivouac, ce qui me paroissoit digne de remarque. De fortes pluies, et la prodigieuse quantité de 'mosquitos' dont l'air est rempli sur les bords de l'Orénoque et du Cassiquiare, ont causé nécessairement des lacunes dans ce travail. J'y ai suppléé [sic] par des notes rédigées peu de jours plus tard. Les pages suivantes sont l'extrait de mon journal. Tout ce qui est écrit à la vue des objets que l'on dépeint, porte un caractère de vérité (j'oserois presque dire d'*individualité*) qui donne de l'attrait aux choses les moins importantes. Pour éviter les répétitions inutiles, j'ai quelquefois ajouté à ce journal les notions que me sont parvenues dans la suite, sur les objets que j'avois décrits. Plus la nature se montre grande et imposante dans les forêts traversées par d'immenses rivières, plus il faut conserver aux tableaux de la nature ce caractère de simplicité qui fait le mérite principal, et souvent le seul des premières ébauches. (Humboldt/Bonpland 1819[–1821]: 211–212)¹³

- 14 In fact, Humboldt's travel journals are present all over his American works: Much of the data Humboldt assembled during his American journey on astronomical-geographic positioning and barometric height measurements as well as the description of his instruments can also be found in the *Recueil d'Observations astronomiques* (1810 [1808–1811]). In the famous Atlas on American landscapes and Mesoamerican Cultures *Vues des Cordillères* ([1810–]1813) as well as in his political geography on Mexico, the *Essai politique sur le royaume de la Nouvelle-Espagne* (1811), it is primarily Humboldt's ethnological and socio-economic observations and judgments that he edits and transfers from his extensive journal entries.
- 15 The same applies for obvious reasons to the Russian-Siberian journals. They form the basis for the elaboration of the two-volume *Fragmens asiatiques* (1831), which Humboldt hastily publishes only three years after returning from his Russian-Siberian expedition. More than a decade later, his main accomplishment on Asian geography, climatology, and earth magnetism, the two-volume *Asie centrale* (1843), is completed, again including the Russian-Siberian travel journals as a key source (Honigmann 2014: 74–76). An extensive manuscript found in the SBB papers (Humboldt [1836]) shows that Humboldt had

made detailed excerpts from his journals for his travel companion, the Prussian geologist and mineralogist Gustav Rose. They were elaborated presumably in 1836 and provided helpful data for Rose's report on the Russian-Siberian Voyage (Rose 1837/1842).

- 16 Even beyond the American and Asian travel *opus*, Humboldt's journals stay present in his printed works, i.e. in the *Kleinere Schriften* (1853) as well as in all five volumes of the *Cosmos* (1845–1862), with excerpts on volcanism, astronomical observations or chemical experiments (Faak 2003: 25–27).
- 17 A second parallel between the American and the Russian-Siberian journals concerns their presence as objects introduced to the reader of his text. As shown in the *Ansichten* quote, Humboldt would regularly use his journals to aesthetically manage his readers' expectations, suggesting that he was about to literally extract the wording of his journals in the printed texts. In most cases, this turned out to be a "literary feint" (Suckow 2009: 8). Humboldt understood that his journals would help the argument of his published works, since the reference to the (supposed) self-quotation allowed him to point to the authentic content of the following passage and, incidentally, to recall the adventurous event of the journey itself. The frequent staging of the journals as ground truth of the published text also reveals that the travel manuscripts had already developed a media presence in their own right at the time.
- 18 In addition to the similarities, the clear differences between the two sets of travel journals must also be addressed. They differ as much as the journeys of which they bear witness (Ette 2009: 21–23). Humboldt financed the 'Voyage aux régions équinoxiales du Nouveau Continent' himself with the fortune he had inherited after the death of his mother Elisabeth in 1796. Humboldt's itinerary through the American tropics followed his personal and scientific intentions alone, including all the uncertainties of a journey, which was by no means linear or planned from the outset (Leitner 2016).

The corpus, part II: The Russian-Siberian Travel Journals

- 19 None of this can be said for his trip thirty years later: The Russian-Siberian journey (April 12 to December 28, 1829) took place at the expense and under the control of Emperor Nicholas I. The travel permission was accompanied by the obligation to refrain from criticising society, the economy or political rule in the Russian Empire in all written testimonies. During the trip, Humboldt was often subject to the official protocol of public receptions and had little time for more flexible travel arrangements or situational changes due to his own work assignments. The journey itself followed a strict schedule and left little room for detours or time-outs from the given route (which, nevertheless, Humboldt took the liberty to pursue at times). In eight months, a distance of at least 19,000 km was covered, leading from Berlin via Königsberg, St. Petersburg, Moscow, Kazan and Perm across the Urals and the Altai Mountains to the Chinese border, from whence he returned to Berlin via Minsk, Orenburg and Astrakhan on the Caspian Sea and finally again via Moscow and St. Petersburg back home to Berlin (Humboldt 2009: 52). Humboldt's room for manoeuvre was also restricted by an increased division of labour. The naturalists accompanying him, the mineralogist Gustav Rose and the botanist and zoologist Christian Gottfried Ehrenberg, were meant to do their share of the common research goals, present their own publications on the extensive trip and also – in the case of Rose – write the report of the journey.
- 20 For these reasons, the subject-matters of the travel journals are much narrower. The titles chosen by Humboldt already make this clear:



1. *Fragments of the Siberian Travel Journal 1829*
(*Fragmente des sibirischen Reise-Journals 1829*),
2. *Astronomical Observations made during the Journey to Siberia*
(*Observations astronomiques faites dans le Voyage de Sibérie*),
3. *Magnetic Observations*
(*Observations magnétiques*).

- 21 Whereas the *Fragments* are largely notes and comprehensive research data along the various stages of the journey, including short entries on economics, geography, ethnography and politics, as well as on the itinerary and various travel encounters, the *Astronomical Observations* (Volume 2) essentially contain extracts from Volume 1, mainly astronomical and geomagnetic measurement series and conversions. Volume 3, finally, is mainly devoted to geomagnetism research and compares measurements from several European cities over a longer period (1806–1836). Volumes 2 and 3 are also co-productions to a large extent, as Humboldt's notes and data were, at his request, first recalculated and reviewed by his assistant Jabbo Oltmann and later by the Director of the Berlin Observatory, the aforementioned Johann Franz Encke (Honigmann 2014: 73).

The corpus, part III: Curating the Humboldt *Nachlass*

- 22 Next to the two-fold corpus of Humboldt's travel journals, the scholarly hybrid edition series *edition humboldt* is preparing a carefully selected collection of manuscripts, correspondences and unpublished papers relevant to the research fields of Humboldtian Science. The collection is organized in five topics:
- 23 The first topic 'Plant Geography and Biosciences' is dedicated to Alexander von Humboldt's bioscientific research, primarily his records, studies and correspondence on plant geography. The scholarly edition of the documents related to this topic was published in several versions over a period of two years between 2017 and 2019 as part of *edition humboldt digital* (Päßler 2017–2019) and is currently being prepared to be released in print (Humboldt 2020). For the first time ever, these documents show Humboldt's continuous work on a planned second and revised edition of his famous *Essai sur la géographie des plantes*, which Humboldt wanted to finish in the 1820s. The volume's editor Ulrich Päßler writes: "The work in this discipline is one of Humboldt's most important research achievements. They contain reflections on the theory of plant geography and plant arithmetic, on landscape types, on the conditions for the migration of plants and their adaptation to climatic conditions." (Päßler 2017)
- 24 The second topic, 'Scientific Travels', concentrates on records and letters for planning, carrying out and evaluating the research trips and for supporting other explorers and artists, such as the Schlagintweit brothers, Carl Philipp Martius and Johann Moritz Rugendas. The section's corpus also contains the 300+ letter correspondence with his fellow travelmate Christian Gottfried Ehrenberg as well as Ehrenberg's own journal of the 1829 expedition. The documents, papers, and correspondences selected for this topic will shed a new light on the composition, culture, and economy of 19th century travel research collections in the Humboldt circle.¹⁴
- 25 The third topic 'Earth Science' focuses on publishing preliminary studies on his political-geographical writings as well as selected correspondence on questions of geology and mineralogy, physical geography, and paleontology.



- 26 The fourth topic covers the fields of astronomy, cartography, metrology, measuring instruments and Humboldt's studies on the history of discovery; in other words, texts that are of great relevance for understanding his late works *Examen critique* and *Cosmos*.
- 27 The concluding fifth topic concentrates on Humboldt's anthropological and cultural-historical research. For this purpose, the project will evaluate and edit recordings of Humboldt's studies on the global history of planetary consciousness, North and Mesoamerican language and cultural history, the archaeology of American antiquity, the migration and cultural history of indigenous people as well as the topic of slavery.

Data modelling and hybrid digital scholarly editing

- 28 The corpus of *edition humboldt* is encoded in XML according to the guidelines of the Text Encoding Initiative (TEI). The TEI has been developing uniform procedures for the structural and semantic mark-up of various text and document types since the late 1980s. Created by and for textual scholars around the world, TEI-XML allows not only to correctly capture character sequences in any kind of text, but also to integrate text structures as well as phenomena and contextual information (such as metadata and critical apparatus) in the same data set (Schöch 2016: 332–337). However, the TEI guidelines cover a wide range of different text types. This ensures that the guidelines are widely used in the philological community, but also means that the TEI Guidelines have become extremely comprehensive and the majority of features are not required by a single project. In addition, the TEI often allows multiple markup variants for the same text phenomenon. In the *edition humboldt digital*, both problems are overcome by using the Base format of the German Text Archive (DTABf). The DTABf is a TEI-XML subset optimized for early New High German prints and manuscripts (Haaf et al. 2014/2015; Haaf/Thomas 2016). The DTABf ensures standardization and interoperability beyond the project, which cannot be guaranteed by the TEI guidelines themselves.
- 29 Easy formal validation of the structure (by XML technologies) with simultaneous uniformity of the encoding (by TEI/DTABf) provides a high methodological coherence in the constitution of reliable text and text data for humanities projects. This allows projects such as *edition humboldt digital* to be perceived and used not as individual editions, but as part of an increasingly global corpus of digital editions with formally and methodologically comparable standards. At the level of individual documents, the TEI/DTABf encoding allows all relevant aspects of text constitution as well as text-critical analysis and contextualizing commentary to be recorded and stored as code in a single document. Through different technologies and processes of data transformation, the visualization of this information can lead to various output formats, such as – as in the case of *edition humboldt* – a downloadable XML source code, an HTML online edition and a printed book edition. In the concept of AvH-R, all three output formats function as complementary parts of the same edition.
- 30 The creation of the digital scholarly edition has been made possible by the editing and publication software *ediarum*, which has been developed since 2012 by the Digital Humanities working group TELOTA at the BBAW (Dumont/Fechner 2014/2015).¹⁵ *Ediarum* allows scholars to edit transcriptions of manuscripts (including the apparatus and metadata), introductory texts as well as indexes, in TEI-compliant XML, and then publish them in print and on the web, without any further effort. The editor does not work in an XML code view, but in a user-friendly, Word-like view, which also offers various markup and linking functions. A customized version of Oxygen XML Author software is used for the editing interface. The data is stored



in the Open Source XML database exist-db and displayed on the web using XQuery, XPath, and XSLT. The printed edition is created by the publisher on the basis of TEI XML files and with the help of common typesetting technologies.

edition humboldt print

- 31 The printed edition of the edition places a clear emphasis on legibility and coherence. The focus is on text continuity and critical commentary by the editors, not on the philological detail recording of all individual textual phenomena. The complexity of both the textual form and the discursive order of the American Travel Journals, for instance, also implies that the print edition attempts to reconstruct a specific textual order and chronology. All omissions and textual conjunctions resulting from the reconstruction of the journals' chronological order will be marked symbolically in the print type and refer to the complete text, accessible in the online edition. The associated approach of a *reader-text* on the one hand (print) and a critically elaborated *research-text* on the other hand (online) applies analogously to the text selection of the *Nachlass* corpus (see 'The corpus, part III'). The main goal of the print edition is not to present the manuscripts, personal papers, and correspondences in the full extent of their scholarly critique. Instead, *edition humboldt print* focuses on the careful curation of individual documents and letters in their specific context, supplemented by research contributions from specialists, who were given prior access to the newly edited source material. Nevertheless, all of these texts – both by Humboldt and from the scholarly community – are always published first in their (native) digital environment at <https://edition-humboldt.de>.

edition humboldt digital

- 32 While the print edition is primarily aimed at a general public interested in Humboldt with a desire for linear reading and concentrated text study, the online edition is a dynamic research tool optimised to the needs of research in terms of its demand for textual philological criticism and processing of data. *edition humboldt digital* realises this potential through a consistent use of standards, curation of past research results as well as re-use and integration of other Humboldt resources and web services.
- 33 *edition humboldt digital* is committed to the goals of Open Access and Open Science and therefore fully available for free – without even a 'moving wall'. Due to a clear Creative Commons licensing (CC BY-SA 4.0), the edition allows the most diverse scenarios of subsequent use and further adaptation to the needs of research.¹⁶
- 34 As most digital scholarly editions (in the sense of [Sahle 2013: 148–149](#)) do, the edition is flexible in the presentation of its material: the online interface allows viewing text-critical transcription and facsimile as well as a text view optimized for online reading. It is possible to change the view between the different presentations of the text at any time. The facsimile and the text transcription are linked to each other with page precision, whereby the readability of the text is given priority over the attempt to imitate the exact layout of the manuscript as comprehensively as possible. The conceptual principle of the edition thus follows a text-oriented rather than a document-oriented encoding.



35 *edition humboldt digital* uses existing Humboldt research resources and sees itself as a data curating and aggregating platform. This applies above all to the integration of (previously printed) name index data and (previously available as simple HTML) chronology research data. For the establishment of the place, person and institution name index, the indexes from 25 historic print editions of Alexander von Humboldt research published between 1973 and 2016 were integrated into the edition's data base (fig. 1).

Figure 1. Schematic illustration of retro-digitization using the example of a person entry.



36 The research data collected in these volumes is now available for the first time as TEI-XML compliant data sets. It has been editorially revised, linked and enriched with IDs from authority files (GND and VIAF) and geo-referenced data (GeoNames) for connection to external resources (e.g. other digital scholarly editions, Neue Deutsche Biographie, Wikipedia etc.). If an entry in the index of persons is provided with a GND-ID, not only the ID is used to link external offers. The GND data record is also retrieved and stored as an additional information layer in the *edition humboldt digital*. The dataset provides, among other things, family and other relations to a person. This enables automated links to index entries of relatives, e.g. father or wife, in a person entry (see fig. 2). Of course, data records in the GND can be incomplete or erroneous, but this work could only have been done manually with (too) much effort. Currently, more than 10,000 entries on people (fig. 2), places, and institutions related to Humboldt are available online.¹⁷


Figure 2. Person name index, entry 'Forster, Georg', <https://edition-humboldt.de/H0000177>.

edition humboldt digital
Reisetagebücher Themen Briefe Chronologie Register ? 🔍

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Georg Forster

1754–1794



Naturwissenschaftler, Schriftsteller und Weltreisender; ging 1766 mit seinem Vater nach London; 1772–1775 Teilnahme an der zweiten Weltumseglung Cooks; 1777 Veröffentlichung seiner Reisebeschreibung „A voyage round the world“; 1778–1784 Lehrer für Naturgeschichte am Collegium Carolinum in Kassel; 1784 Annahme eines Rufes nach Vilnius (Wilna) als Professor für Naturwissenschaften; 1785 Heirat mit Therese Heyne in Göttingen; 1790 Reise mit Humboldt durch das Rheinland, Brüssel, Den Haag, Amsterdam, London, Paris und anschließend Veröffentlichung der „Ansichten vom Niederhein“; 1792–1793 führende Beteiligung an der Revolution in Mainz, 25. März 1793 Abreise nach Paris als Deputierter des Mainzer Konvents

Alternative Namen bzw. Schreibungen: Georg Johann Adam Forster

Links zu externen Websites

- [Nachweise edierter Briefe zu dieser Person in correspSearch](#)
- [Hidden Kosmos](#)
- [Deutsches Textarchiv](#)
- [Allgemeine Deutsche Biographie \(ADB\)](#)
- [Neue Deutsche Biographie \(NDB\)](#)
- [Mitglieder der Königlich-preussischen Akademie der Wissenschaften](#)
- [Wikisource](#)
- [Wikipedia](#)

Beziehungen zu Personen

- Vater: [Johann Reinhold Forster](#)
- Ehefrau: [Therese Huber](#)

Erwähnt in Briefen

Datum	Korrespondent	Ort
28.01.1791–20.02.1791	An Samuel Thomas von Soemmerring	Hamburg
06.02.1794	An Samuel Thomas von Soemmerring	Bayreuth
21.02.1801	An Karl Ludwig Willdenow	Havanna
13.01.1849	Von Carl Sigismund Kunth	Berlin

Autor folgender Titel im Literaturregister

De plantis esculentis insularum oceani australis commentatio botanica

Erwähnungen in der Chronologie

24. September 1789
21. März 1790
Juni 1790

Nachweise in gedruckten Editionen

Jugendbriefe

Humboldt, Alexander von (1973): Die Jugendbriefe Alexander von Humboldts 1787-1799. Herausgegeben und erläutert von Ilse Jahn und Fritz G. Lange. Berlin: Akademie-Verlag (Beiträge zur Alexander-von-Humboldt-Forschung, 2).

Nr. 28, Nr. 10, Nr. 26, Nr. 30, Nr. 32, Nr. 33, Nr. 34, Nr. 38, Nr. 39, Nr. 43, Nr. 46, Nr. 48, Nr. 52, Nr. 54, Nr. 55, Nr. 56, Nr. 57, Nr. 58, Nr. 59, Nr. 61, Nr. 62, Nr. 65, Nr. 72, Nr. 84, Nr. 88, Nr. 92, Nr. 93, Nr. 96, Nr. 103, Nr. 164, Nr. 297, Nr. 350, Nr. 392, Nr. 411

Briefwechsel mit dem preußischen Kultusministerium

Briefe der Reise in die amerikanischen Tropen

Briefe Humboldt-USA

Humboldt-Bois-Reymond Briefwechsel

Tagebuch Reise mit van Geuns 1789

Humboldt-Spiker Briefwechsel

Humboldt-Cotta Briefwechsel

Humboldt-Ritter Briefwechsel

Briefe zur Steingutfertigung in Rheinsberg 1792

38 The data curation of the Alexander von Humboldt Chronology, finally, adopted a highly valuable information resource that has been highly relevant to the international Humboldt community since its first print publication in 1968 (Schwarz 2017). In order to integrate these important data sets into *edition humboldt digital*, the chronological entries of Humboldt's life were converted into more than 1,400 TEI-XML documents and have been successively indexed with the name entity database. As with the creation of data from printed indexes, saving the results of decades of research activity, the conversion of the Humboldt Chronology exemplifies the growing need of digital curation of research data previously only available in print.

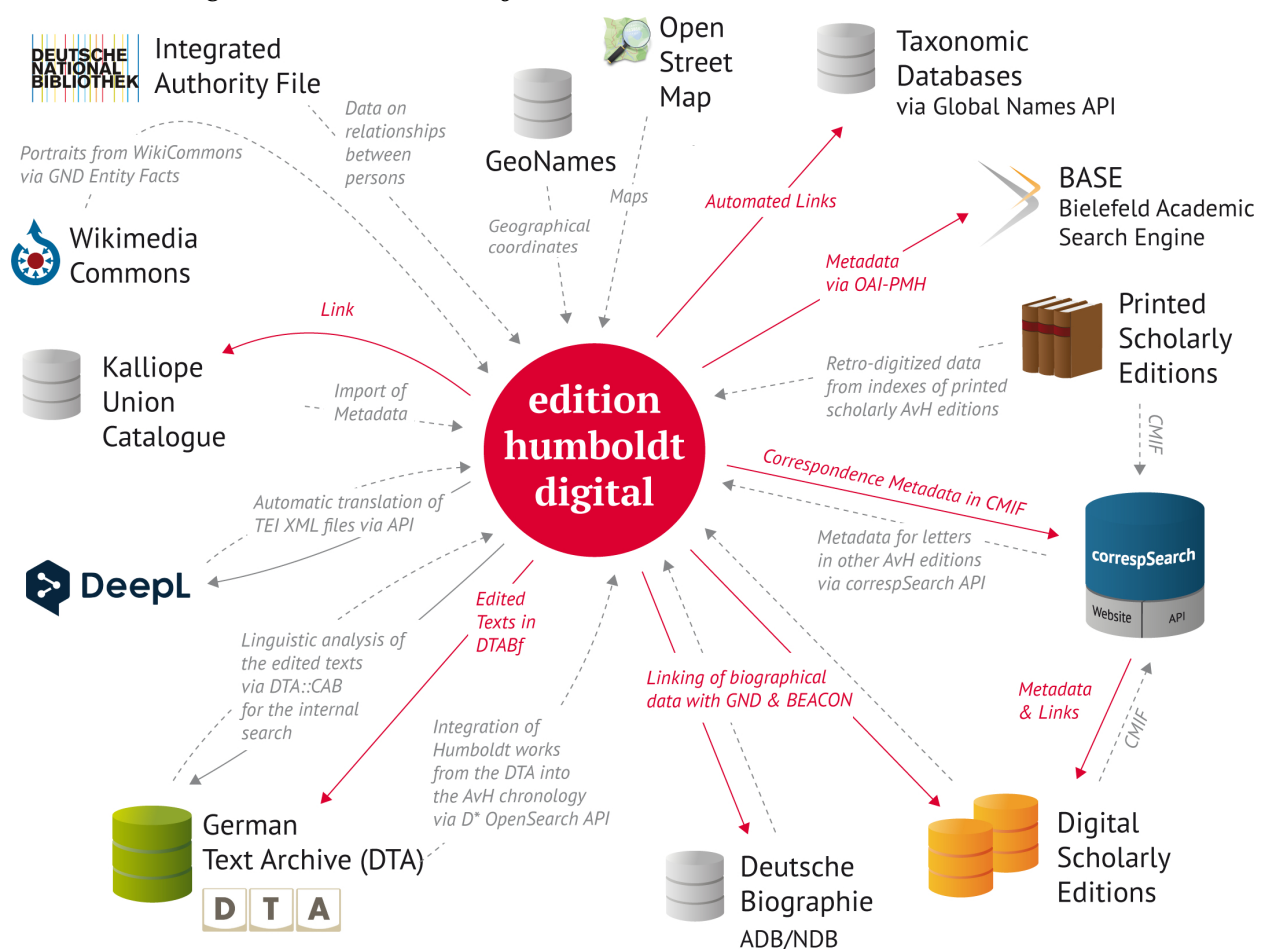
39 In the user interface of the *edition humboldt digital*, the data of the chronology is digitally supplemented with data from other resources. For example, not only the edited letters from the edition can be displayed, but also all hitherto edited letters from and to Alexander Humboldt. This is achieved by retrieving the records from the API of the web service *correspSearch* (Dumont 2016),¹⁸ which aggregates letter metadata from many different scholarly projects and makes them available for research. In addition, entries from the Calendar of the Prussian Court in which Alexander von Humboldt is mentioned can be displayed in the chronology, combining the research data of two neighbouring projects in one database through dynamic data assembling. The same can be said for all of Humboldt's publications listed in the German Text Archive¹⁹, including a full-text search function integrated into the functionality of the chronology search mask (fig. 3).

Figure 3. Screenshot of the Humboldt chronology with entries from secondary digital resources (in this case, the Prussian Royal Court Calendar, included in <https://actaborussica.bbaw.de>, <https://edition-humboldt.de/chronologie/index.xql?jahr=1848&hofkalendarium=on&l=en>).

The screenshot displays the 'Alexander von Humboldt chronology – 1848' page. At the top, there is a navigation bar with 'Chronology' selected. Below the title, it indicates the editor 'Ed. by Ingo Schwarz' and provides a link for further information. The main content area shows a list of 50 hits for the year 1848, with entries for January 7th, 12th, 16th, 17th, 18th, 22nd, and 26th. Each entry includes a date, time (where applicable), and a brief description of the event. For example, on January 17th, there is an 'Audienz' at 11:00 Uhr in Berlin. The sidebar on the right offers a 'Browse' section with a year dropdown set to 1848 and a 'Fulltext search' section with a note: 'Creating the data of the chronology is an ongoing process, the volume and accuracy of the data grows with the progress of the project. We are always grateful for any tips, additions, and corrections. Please write to edition.humboldt@bbaw.de.'

40 In addition to reusing and integrating digital resources created elsewhere, *edition humboldt digital* also uses external web services to enrich its own data or to prepare it for specific applications. The edited texts are sent to the web service *Cascaded Analyzes Broker* of the German Text Archiv (DTA::CAB, Jurish 2012), where they are linguistically analysed and then re-integrated into the edition as an *additional* data layer (this feature is currently limited to German texts). The documents annotated linguistically in this way enable a lemma-based search in the historical texts. Thus the search for ‘sammeln’ finds all word forms and historical spellings occurring in the edition, e.g. ‘gesammelt’. Currently under development is a second function that sends editorial as well as edited texts to the API of the translation web service *DeepL* and also saves them back as an (also additional) data layer. The aim is to make various contents of *edition humboldt digital* accessible in several languages in the future and thus to take the distinctly international Humboldt research community into account.

Figure 4. *edition humboldt digital* uses or links to external data and web services.



41 The *edition humboldt digital* works accumulatively and sees itself as a *work-in-progress publication*. While the publication of the printed volumes primarily marks the completion of individual parts of the editorial project as a whole, each new text or data set added to the online edition integrates itself into a network of already existing digital data and reference systems (fig. 4). In order to maintain traceability on the level of individual documents, *edition humboldt digital* delivers each update as a new version of the edition’s entire XML database. All versions of the edited documents and data sets stay available online at all times as

downloadable TEI-XML files, including the metadata set of each document.²⁰ Each version of a document or data record in the digital edition can be addressed via a permalink, e.g.: <https://edition-humboldt.de/v5/H0002657>. Apart from the domain, the version and the ID, the permalink does not contain any further information, so that it can remain valid even in the event of technology shifts or changes to the website structure. In addition to the permalink, there is a canonical URL that can be used to address the most current version of a document, in this case <https://edition-humboldt.de/H0002657>. In all cases, the TEI XML dataset can be obtained by attaching the file extension ‘.xml’. In addition, a couple of APIs makes the data available for automated download and offers various metadata formats for searchability in scholarly search engines such as the Bielefeld Academic Search Engine (BASE)²¹ or the correspSearch web service.

Closing remarks

- 42 The complementary approach of *edition humboldt* combines the strengths of a reader-friendly book edition with those of a digital full-text and facsimile edition based on a carefully curated data infrastructure. In addition to the advantages of the book for the concentrated study of longer texts, the online edition offers the complementary technological and methodological framework to provide a scholarly reliable basis for research into Humboldt’s work and life-long research activities. In addition, the digital publication makes his writings available beyond the text level as re-usable data sets. The *edition humboldt* approach therefore not only ensures that Humboldt’s journals from his two great hemispheric expeditions are for the first time fully published, but also provides access to the riches of the Berlin and Cracow archives of Humboldt’s *Nachlass*, his personal papers, documents, and correspondences, which was never possible before. The Humboldt research at BBAW is opening up new horizons for this endeavour – both in print and digital form.

Bibliography

- Cannon, Susan F. (1978): *Science in Culture: The Early Victorian Period*. New York: Dawson.
- Dettelbach, Michael (1996): *Humboldtian Science*, in: Nicholas Jardine/James A. Secord/Emma C. Spary (eds): *Cultures of natural history*. Cambridge: Cambridge University Press, pp. 287–304.
- Dettelbach, Michael (1999): *The Face of Nature: Precise Measurement, Mapping, and Sensibility in the Work of Alexander von Humboldt*, in: *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 30/4, pp. 473–504. DOI: 10.1016/S1369-8486(99)00011-4.
- Dumont, Stefan/Fechner, Martin (2014/2015): *Bridging the Gap: Greater Usability for TEI encoding*, in: *Journal of the Text Encoding Initiative* 8 (December 2014 - December 2015). DOI: 10.4000/jtei.1242.
- Dumont, Stefan (2016): *correspSearch – Connecting Scholarly Editions of Letters*, in: *Journal of the Text Encoding Initiative* 10 (December 2016 - July 2019). DOI: 10.4000/jtei.1742.
- Ehrenberg, Christian Gottfried (2019): *Tagebuch der russisch-sibirischen Reise 1829*. Ed. by Kerstin Aranda, Ulrich Päßler and Christian Thomas in collaboration with Lisa Poggel, in: Ottmar Ette (ed.): *edition humboldt digital*. Berlin-Brandenburgische Akademie der Wissenschaften. Retrieved from website edition-humboldt.de/v5/H0016785. Accessed on 17/09/2020.
- Erdmann, Dominik/Weber, Jutta (2015): *Nachlassgeschichten: Bemerkungen zu Humboldts nachgelassenen Papieren in der Berliner Staatsbibliothek und der Biblioteka Jagiellońska Krakau*, in: *HiN – Alexander von Humboldt im Netz. Internationale Zeitschrift für Humboldt-Studien* 16/31, pp. 58–77. DOI: 10.18443/223.
- Ette, Ottmar (2009): *Alexander von Humboldts Briefe aus Russland – Wissenschaft im Zeichen ihres Erlebens*, in: *Alexander von Humboldt: Briefe aus Russland 1829*. Ed. by Eberhard Knobloch, Ingo Schwarz and Christian Suckow. With a preface by Ottmar Ette. Berlin: Akademie Verlag, pp. 13–36.
- Ette, Ottmar (2014): *Wissen aus der Bewegung: Alexander von Humboldts Amerikanische Reisetagebücher kommen in die Staatsbibliothek zu Berlin*, in: *Arsprototo – Das Magazin der Kulturstiftung der Länder* 1, pp. 20–27.



- Ette, Ottmar (2015): Dem Leben auf der Spur: Das Akademievorhaben »Alexander von Humboldt auf Reisen – Wissenschaft aus der Bewegung« ediert Humboldts transdisziplinäre Aufzeichnungen, in: Die Akademie am Gendarmenmarkt 2015/2016, pp. 8–13.
- Ette, Ottmar (2018): Languages about Languages: Two Brothers and one Humboldtian Science, in: HiN – Alexander von Humboldt im Netz. Internationale Zeitschrift für Humboldt-Studien 19/36, pp. 47–62. DOI: 10.18443/270.
- Faak, Margot (2003): Einleitung, in: Alexander von Humboldt: Lateinamerika am Vorabend der Unabhängigkeitsrevolution: Eine Anthologie von Impressionen und Urteilen aus seinen Reisetagebüchern. Ed. by Margot Faak. With an introductory essay by Manfred Kossok. Berlin: Akademie Verlag, pp. 21–50.
- Haaf, Susanne/Geyken, Alexander/Wiegand, Frank (2014/2015): The DTA „Base Format“: A TEI Subset for the Compilation of a Large Reference Corpus of Printed Text from Multiple Sources, in: Journal of the Text Encoding Initiative 8 (December 2014 – December 2015). DOI: 10.4000/jtei.1114.
- Haaf, Susanne/Thomas, Christian (2016): Enabling the Encoding of Manuscripts within the DTABf: Extension and Modularization of the Format, in: Journal of the Text Encoding Initiative 10 (December 2016–July 2019). DOI: 10.4000/jtei.1650.
- Honigmann, Peter (2014): Alexander von Humboldts Journale seiner russisch-sibirischen Reise 1829 [1983], in: HiN – Alexander von Humboldt im Netz. Internationale Zeitschrift für Humboldt-Studien 15/28, pp. 68–77. DOI: 10.18443/192.
- Humboldt, Alexander von/Bonpland, Aimé (1805): Essai sur la Géographie des Plantes accompagné d'un tableau physique des régions équinoxiales: Fondé sur des mesures exécutées, depuis le dixième degré de latitude boréale jusqu'au dixième degré de latitude australe, pendant les années 1799, 1800 1801, 1802 et 1803. Paris/Tübingen: Schoell/Cotta.
- Humboldt, Alexander von/Bonpland, Aimé (1819): Personal Narrative of travels to the equinoctial regions of the new continent, during the years 1799–1804: With maps, plans & c., written in French by Alexander de Humboldt, and translated into English by Helen Maria Williams. London: Longman, Hurst, Rees, Orme, and Brown.
- Humboldt, Alexander von/Bonpland, Aimé (1819[–1821]): Voyage aux régions équinoxiales du Nouveau Continent, fait en 1799, 1800, 1801, 1802, 1803 et 1804: Relation historique. Tome second. Paris: J. Smith et Gide Fils.
- Humboldt, Alexander von ([1836]): Notizen sehr mannigfachen Inhalts. 161 Bl. Nachl. Alexander von Humboldt, gr. Kasten 4, Nr. 50a, Bl. 1–157. Retrieved from website kalliope-verbund.info/DE-611-HS-1023603. Accessed on 25/09/2019.
- Humboldt, Alexander von (2009): Briefe aus Russland 1829. Ed. by Eberhard Knobloch, Ingo Schwarz and Christian Suckow. With a preface by Ottmar Ette. Berlin: Akademie Verlag.
- Humboldt, Alexander von/Encke, Johann F. (2013): Briefwechsel. Ed. by Oliver Schwarz and Ingo Schwarz with the assistance of Eberhard Knobloch. Berlin: Akademie Verlag.
- Humboldt, Alexander von/Kohlrausch, Henriette (2019): Die Kosmos-Vorlesung an der Berliner Sing-Akademie. Berlin: Insel Verlag.
- Humboldt, Alexander von (2020): Geographie der Pflanzen: Unveröffentlichte Schriften. Ed. by Ulrich Päßler. With a preface by Ottmar Ette. München: J. B. Metzler.
- Jurish, Bryan (2012): Finite-state canonicalization techniques for historical German. Dissertation. Potsdam: Universitätsbibliothek der Universität Potsdam. Retrieved from website d-nb.info/1019033711/34. Accessed on 25/09/2019.
- Leitner, Ulrike (2016): Abreisen und Ankommen, in: Albrecht Buschmann/Julian Drews/Tobias Kraft/Anne Kraume/Markus Messling/Gesine Müller (Eds.): Literatur leben: Festschrift für Ottmar Ette. Frankfurt am Main/Madrid: Vervuert – Iberoamericana, pp. 281–302.
- Lenz, Markus A. (2015): Bewegung Systematik. Alexander von Humboldts *Amerikanische Reisetagebücher* als Problemfelder der Literaturgeschichte und historischen Epistemologie, in: HiN – Alexander von Humboldt im Netz. Internationale Zeitschrift für Humboldt-Studien 16/31, pp. 78–104. DOI: 10.18443/224.
- Päßler, Ulrich (2017): Dokumente zur Neuausgabe der Ideen zu einer Geographie der Pflanzen: Einführung, in: Ottmar Ette (ed.): edition humboldt digital. Berlin-Brandenburgische Akademie der Wissenschaften. Retrieved from website edition-humboldt.de/v4/H0016420. Accessed on 25/09/2019.
- Päßler, Ulrich (2017–2019): Themenschwerpunkt Pflanzengeographie und Biowissenschaften, in: Ottmar Ette (ed.): edition humboldt digital. Berlin-Brandenburgische Akademie der Wissenschaften. Retrieved from website edition-humboldt.de/X0000002. Accessed on 25/09/2019.
- Rebok, Sandra (2018): Humboldt-Ausstellungen, in: Ottmar Ette (ed.): Alexander von Humboldt-Handbuch: Leben – Werk – Wirkung. Stuttgart: J. B. Metzler, pp. 285–289.
- Rose, Gustav (1837/1842): Mineralogisch-geognostische Reise nach dem Ural, dem Altai und dem Kaspischen Meere. 2 volumes. Berlin: Sander.

- Sahle, Patrick (2013): Digitale Editionsformen - Teil 2: Befunde, Theorie und Methodik: Zum Umgang mit der Überlieferung unter den Bedingungen des Medienwandels. Norderstedt: Books on Demand. Retrieved from website kups.uni-koeln.de/5352/. Accessed on 25/09/2019.
- Schöch, Christof (2016): Ein digitales Textformat für die Literaturwissenschaften: Die Richtlinien der Text Encoding Initiative und ihr Einsatz bei Textkonstitution und Textanalyse, in: *romanische studien* 2/4, pp. 325–364. Retrieved from website www.romanischestudien.de/index.php/rst/article/view/58. Accessed on 25/09/2019.
- Schwarz, Ingo (2017): Alexander von Humboldt Chronologie: Basierend auf *Alexander von Humboldt. Chronologische Übersicht über wichtige Daten seines Lebens. Bearbeitet von Kurt-R. Biermann, Ilse Jahn und Fritz G. Lange*. Retrieved from website edition-humboldt.de/X0000001. Accessed on 25/09/2019.
- Suckow, Christian (2009): Ein vergessenes Konvolut: Alexander von Humboldts *Fragmente des Sibirischen Reise-Journals* 1829. Berliner Manuskripte zur Alexander-von-Humboldt-Forschung, 33. Berlin: Berlin-Brandenburgische Akademie der Wissenschaften.
- Wulff, Matthias (2014): Ein Jahrhundertcoup: Alexander von Humboldts Reisetagebücher werden der Öffentlichkeit gezeigt, in: *Die Welt kompakt* (online edition/05/03/2014). Retrieved from website www.welt.de/print/welt_kompakt/berlin/article125437593/Ein-Jahrhundertcoup.html. Accessed on 25/09/2019.

Notes

- 1 Recent research and efforts for providing a newly established textual foundation for these famous lectures has shed new light on the content and extent of Humboldt's public talks. Cf. [Humboldt/Kohlrausch 2019](#).
- 2 Cf. <https://avhumboldt250.de/en/>.
- 3 Cf. <https://humboldt-heute.de/en/stories/the-humboldt-code>.
- 4 Cf. <http://humboldtylasamericas.org> and <https://twitter.com/hashtag/humboldtylasamericas>.
- 5 For details of the "financing coalition" cf. <https://www.kulturstiftung.de/der-stiftung-preussischer-kulturbesitz/>.
- 6 This story is best summarized in [Erdmann/Weber 2015](#).
- 7 For a general introduction into this project, including very accessible resources for first encounters with the extensive material, cf. <https://humboldt.staatsbibliothek-berlin.de/?lang=en>.
- 8 For research results and activities of this group cf. <https://www.uni-potsdam.de/humboldtart/>.
- 9 Digital objects under Public Domain are identified as being free of known restrictions under copyright law, including all related and neighboring rights. For details cf. <https://creativecommons.org/publicdomain/mark/1.0/deed.en>.
- 10 The original German title of the project is *Alexander von Humboldt auf Reisen – Wissenschaft aus der Bewegung*.
- 11 AvH-R is part of the Academies Programme of the Union of the German Academies of Sciences and Humanities. The programme currently supports 140 long-term basic research projects at 196 locations in Germany, predominantly in the humanities but also in the social sciences, at eight Academies organized under the Union's umbrella, cf. <https://www.akademienunion.de/en/research/the-academies-programme/> and <https://agate.academy/diagrams-visualizations.html#c61>.
- 12 The term *Humboldtian Science* was introduced by Susan Faye Cannon ([Cannon 1978](#)) and has since been in constant use in the international research communities working on Humboldt's legacy and the history of (Western) science in the 18th and 19th centuries. The term was later taken under scrutiny for further precision (cf. [Dettelbach 1996](#)) and has recently been extended theoretically to articulate a conceptual matrix for defining the intellectual heritage linking the two brothers, Alexander and Wilhelm (cf. [Ette 2018](#)).
- 13 "During the whole of my voyage from San Fernando to San Carlos del Rio Negro, and thence to the town of Angostura, I confined myself to writing day by day, either in the boat, or where we disembarked at night, what appeared to me worthy of observation. Violent rains, and the prodigious quantity of moschetoes with which the air is filled on the banks of the Oroonoko and the Cassiquiare, necessarily occasioned some breaks in this labour; which I supplied by notes taken a few days after. The following pages are extracts from my journal. Whatever is written while the objects we describe are before our eyes bears a character of truth, I had almost said of individuality, which gives attraction to things the least important." ([Humboldt/Bonpland 1819](#): 418–419)
- 14 Some of the abovementioned documents – among them Ehrenberg's travel journal – can already be accessed at edition [humboldt digital](#), cf. [Ehrenberg 2019](#).
- 15 See <https://www.ediarum.org>.
- 16 CC BY-SA 4.0 stands for a Creative Commons Attribution -ShareAlike 4.0-License. For details cf. <https://creativecommons.org/licenses/by-sa/4.0/deed.en>.
- 17 <https://edition-humboldt.de/register/index.xql?l=en>.
- 18 <https://correspSearch.net>.



19 <http://www.deutschestextarchiv.de/search/metadata?corpus=avh>.

20 The download availability is granted for the data fileset, but not for the visual representation of the edition's respective version in its HTML rendering. Hence, there is data, but not webpage archiving and availability.

21 <https://www.base-search.net>.

Abstract

Tobias Kraft and Stefan Dumont report on the hybrid digital scholarly edition of Alexander von Humboldt. The complementary approach of *edition humboldt* combines the strengths of a reader-friendly book edition with those of a digital full-text and facsimile edition based on a carefully curated data infrastructure. In addition to the advantages of the book for the concentrated study of longer texts, the online edition offers the complementary technological and methodological framework to provide a scholarly reliable basis for research into Humboldt's work and life-long research activities.

Zusammenfassung

Tobias Kraft und Stefan Dumont geben einen Werkstattbericht zur Hybridedition von Humboldts Reisedokumenten im Rahmen des deutschen Akademieprogramms. Der Ansatz der *edition humboldt* verbindet die Stärken einer lesefreundlichen Buchedition mit denen einer digitalen Volltext- und Faksimile-Edition auf der Grundlage einer sorgfältig entwickelten Dateninfrastruktur.

Keywords: Alexander von Humboldt, digital scholarly edition, travel journals, digital humanities, hybrid edition

Schlagwörter: Alexander von Humboldt, Digitale historisch-kritische Edition, Reisetagebücher, Digital humanities, Hybridedition

Authors

Tobias Kraft

Berlin-Brandenburg Academy of Sciences and Humanities

Stefan Dumont

Berlin-Brandenburg Academy of Sciences and Humanities

