THE INFLUENCE OF BERNHARD VARENIUS IN THE GEOGRAPHICAL WORKS OF THOMAS JEFFERSON AND ALEXANDER VON HUMBOLDT[1]

Sandra Rebok

Abstract

Der Einfluss von Bernhard Varenius auf die geographischen Werke von Thomas Jefferson und Alexander von Humboldt

Varenius' *Geographia Generalis* war das erste Textbuch in der allgemeinen Geographie, das in einem amerikanischen College nachweislich benutzt wurde. Daher wird in diesem Beitrag der Frage nachgegangen, in welchem Ausmaß die in diesem Buch vermittelte Geographiekonzeption zwei seiner berühmten Nachfolger auf diesem Gebiet beeinflusst haben könnte: den Staatsmann und Wissenschaftler Thomas Jefferson (1743–1826) und den preußischen Forschungsreisenden und Naturwissenschaftler Alexander von Humboldt (1769–1859). Jeffersons *Notes on the State of Virginia* sind ein denkwürdiges Zeugnis der amerikanischen Aufklärung, und sein geographisches Interesse bewog ihn, Humboldt nach seiner Expedition in Spanisch-Amerika in die Vereinigten Staaten einzuladen. Ihre Begegnung 1804 und die wachsende Freundschaft beförderte gemeinsame Forschungsinteressen. In den einschlägigen Indizes, die sowohl Jeffersons wie auch Humboldts Schriften (leider nicht umfassend) erschließen, findet sich allerdings kein direkter Beleg für ihren Bezug auf Varenius, und Humboldts ausführliche Würdigung von Varenius in seinem großen Alterswerk *Kosmos* liegt sehr viel später als der Amerikaaufenthalt. Er sieht sich in der Nachfolge von Varenius sowie der des spanischen Jesuiten José de Acosta; auf Acosta (*Historia Natural y Moral de las Indias*) beziehen sich Humboldt und auch Jefferson mehrfach. Obwohl bislang kein unmittelbarer Einfluss von Varenius auf Jefferson und Humboldt nachzuweisen ist, zeigt sich jedoch deutlich die Ähnlichkeit des Geographieverständnisses in dem, was Varenius ‚geographia specialis' nennt, wenn Varenius wie Jefferson oder Humboldt sich etwa mit einer bloßen Aufzählung von Beschreibungen nicht zufrieden geben mögen, sondern immer nach Auswirkungen und Erklärungen fragen und humangeographische Belange einbeziehen.

[1] This article is the result of my fellowship undertaken at the *Robert H. Smith International Center for Jefferson Studies* at Monticello, Virginia, awarded by the Thomas Jefferson Foundation.—John Maciuika from the Baruch College of CUNY very kindly read the first draft of this paper.

Introduction

Bernhard Varenius' *Geographia Generalis* (1650) is considered one of the first works to introduce a more disciplined approach to the subject of geography. It was also the first textbook on record to be used in general geography in an American college.[2] Therefore, it is interesting to note the extent to which the ideas, as well as the conception of geography expressed in this book, might have influenced two of his famous successors in this field: the Virginian politician and scientist Thomas Jefferson (1743–1826) and the Prussian explorer and scientist Alexander von Humboldt (1769–1859).

Both men are considered the founders of modern geography. But whereas Humboldt—who, along with Carl Ritter (1779–1859), established the *Berlin Geographical Society* in 1828 and turned geography into a formal academic discipline—is recognized as the originator of modern physical and biological geography, Jefferson's case is different. Due to Jefferson's numerous achievements as a politician, especially as the third president of the United States (1801–1809), relatively few scholars have dealt explicitly with him as a geographer.[3] Nevertheless, especially with his geographical study *Notes on the State of Virginia*,[4] the Virginian contributed greatly to science in general and to American geography in particular. This book, upon which much of his fame as a scientist-philosopher was based,[5] is regarded as the most important scientific and political work written by an American before 1785. These notes constitute a memorable expression of the ideas of the Enlightenment in a wider sense, but are also, and more particularly, an expression of the American Enlightenment. Providing much data about Virginia specifically, the *Notes* also develop Jefferson's ideas concerning religious freedom, the separation of church and state, an analysis of representative government versus dictatorship, theories on art and education, his attitude toward slavery, as well as his interest in science generally.

---

[2] Georg Kish, ed., *A Source Book in Geography*, Cambridge, Mass. 1978, 364.

[3] Albert Ellerly Bergh, ed., *The Writings of Thomas Jefferson*, 20 vols., Washington 1907, vol. 8, i–vii; John Logan Allen, "Imagining the West: The View from Monticello," *Thomas Jefferson and the Changing West: From Conquest to Conservation*, ed. James P. Ronda, St. Louis 1997.

[4] Thomas Jefferson, *Notes on the State of Virginia*, ed. William Peden, Chapel Hill 1982.

[5] Peden in Jefferson 1982, xi.

For many years, Jefferson would be especially interested in the scientific exploration of the unknown western regions of the North-American continent, until in 1803 he finally dispatched the famous Lewis and Clark expedition to the Pacific (1803–1806).[6] In this context it must also be mentioned that geographical interest was the primary reason Jefferson invited Humboldt to Washington DC in spring 1804. After the Louisiana Purchase in 1803, Jefferson was particularly interested in Humboldt's materials and maps from the Spanish colonial archives, which contained hitherto unknown data on the disputed establishment of borders between the U.S. and New Spain. The Prussian generously complied with Jefferson's request and gave the American president the latest geographic and statistical information on Mexico, which was of great value to the U.S. government.

Humboldt, for his part, had just finished his world-famous expedition through Spanish America (1799–1804) and was on his way back to Europe. He was very interested in getting to know the enlightened president of the first American republic and therefore was delighted to visit the United States from 20 May to 30 June 1804.[7] From this brief meeting, a lifelong friendship and a lively exchange of ideas ensued.[8] This is expressed clearly in the correspondence between the two men (extant letters from 1804–1825), as well as in their mutual exchange of books from their areas of common interest (among others, Humboldt sent him his *Mexico* work as well as the *Tablaux de la nature*, and asked Jefferson for a signed copy of *Notes on the State of Virginia*, which he already had in his possession before the expedition). Geographical questions were the motivation for the initial as well as continuing mutual interest of the two correspondents, as is evident throughout their communications.[9]

---

[6] Hartmut Wasser, *Die große Vision: Thomas Jefferson und der amerikanische Westen*, Wiesbaden 2004.

[7] Hermann R. Friis, "Baron Alexander von Humboldt's Visit to Washington," *Records of the Columbia Historical Society* 44 (1963): 1–35; Ingo Schwarz, "Alexander von Humboldt's Visit to Washington and Philadelphia: His Friendship with Jefferson, and His Fascination with the United States," *Alexander von Humboldt's Natural History Legacy and Its Relevance for Today*, in: *Northeastern Naturalist* 8, special issue no. 1 (2001): 43–56.

[8] Sandra Rebok, "Two Exponents of the Enlightenment: Transatlantic Communication by Thomas Jefferson and Alexander von Humboldt," *The Southern Quarterly*, *Imagining the Atlantic World*, 43:4 (2006): 126–152.

[9] Schwarz, "From Alexander von Humboldt's Correspondence with Thomas Jefferson and Albert Gallatin," *Berliner Manuskripte zur Alexander-von-Humboldt-Forschung* 2 (1991): 1–20; Schwarz, *Alexander von Humboldt und die Vereinigten Staaten von Amerika*, Berlin 2004;

On account of their respective importance for the further development of geography, and possibly also as a result of their personal contact, there are several references that, in one way or another, link both Jefferson and Humboldt to Bernhard Varenius. These references should be explored, because both men appear to be explicitly or implicitly inspired by Varenius, as the following quotations make clear:

> However Jefferson, 1781, may be said to stand in geographical tendencies between Bernhard Varenius, who in "Geographia generalis", 1650, essayed the interpretation of the climatic conditions and the physical changes of the earth's surface, and Humboldt's "Kosmos", 1845. The latter supplemented Varenius by pointing out the connection of climate and soil formations with the distribution of plant and animal life, and even more important the relation of geographic environment to the development of mankind, especially as to colonization, commerce and industry. Jefferson's "Notes on Virginia", fifty years in advance of Humboldt, is along lines definitely formulated by the latter in scientific geography.[10]

And a second example:

> Jefferson was himself an amateur scientist who must stand with the foremost men of his time. *Notes on the State of Virginia*, his only book, was one of the first examples of Scientific Geography, preceding the work of Humboldt by fifty years, and drawing upon Bernhard Varenius' *Geographia generalis* (1650). By 1803, Jefferson was probably the most informed American on the totality of the geography of the American West, and had the largest library anywhere on this subject.[11]

Although connections among these men are evoked in quotations such as these, no broader study of this question or an analysis of these links has to my knowledge been conducted. Filling this gap has been the motivation for the present contribution.

Explicit Reference to Varenius

The first step in an analysis of possible influence, or at least in the establishment of conceptual similarities, consists in searching for direct

---

Helmut de Terra, "Alexander von Humboldt's Correspondence with Thomas Jefferson," *Proceedings of the American Philosophical Society* 103 (1959): 783–806.

[10] Schwarz 1991; Schwarz 2004; Terra.

[11] http://www.nps.gov/jeff/LewisClark2/TheJourney/ScienceofExpedition.htm.

references to Varenius in Humboldt's and Jefferson's works. With regard to the famous representative of the New World, this research produced no positive evidence. Specifically, consulting the different editions of Jefferson's papers[12] and their indexes revealed no reference to the German geographer.[13] Similarly, an analysis of Jefferson documents at the Library of Congress, of different data bases and transcripts at the *Robert H. Smith International Center for Jefferson Studies* at Monticello,[14] and of other sources such as the Jeffersonian Cyclopedia,[15] yielded the same result. It must be mentioned, however, that since the Jefferson papers are still not all published,[16] there might yet be a chance of finding comments about Varenius' work.

These results correspond with an analysis of all the references to previous works that could be found in Jefferson's only book-length study, his *Notes on the State of Virginia*. In this work, Jefferson demonstrates that he had conducted major research on geographical questions, and that he knew numerous works from all over the world in different languages, which he quoted, mentioned, or commented upon. Among authorities cited in the text and footnotes the most varied personalities[17] emerged, but again, there is not a single mention of Varenius.

Finally, the catalogue of books purchased from Jefferson by the Library of Congress was consulted to see if he owned *Geographia*

---

[12] Bergh; Julian P. Boyd, ed., *The Papers of Thomas Jefferson*, 31 vols., Princeton 1952–2004; Paul Leicester Ford, ed. *The Writings of Thomas Jefferson*, 10 vols., New York and London 1892–1999.

[13] Since these indexes usually only list Jefferson's correspondents, not the themes discussed or the persons mentioned in the letters, references to Varenius may actually exist.

[14] At this point I want to express my gratitude towards the staff of the ICJS for all their help, particularly to Lisa Francavilla.

[15] http://etext.lib.virginia.edu/jefferson/quotations/foley/.

[16] Two edition projects are in progress: The "Presidential Papers Project" (1801–1809) at Princeton and the "Retirement Paper Project" (1809–1826) at the Robert H. Smith International Center for Jefferson Studies.

[17] Jefferson refers to the Italian scholar and traveller Giambattista Ramusio (c. 1485–1557), the Latin historian Caius Plinius Segundus, Pliny the Elder (23–79 AD), the classical historian Herodotus (c. 484–425 BC), the Spanish naval officer and scientist Antonio Ulloa (1716–1795), the Mexican historian Francisco Javier Clavijero (Clavigero) (1731–1787), the Italian navigator Amerigo Vespucci (1451–1512), the French traveller and mathematical geographer Charles Marie de La Condamine (1701–1774), the Spanish Jesuit missionary and author of *Historia Natural y Moral de las Indias* (1590) José de Acosta (1539–1600), and he makes it clear whose works he definitely refuted—the French authors and scientists Guillaume Thomas Francois Raynal (1713–1796) and particularly George-Louis Leclerc, the famous Comte de Buffon (1707–1788).

Generalis. Once again, in a very large list of different books on geography,[18] surprisingly, this work did not appear.

The situation was not much different in regard to Humboldt: in all his works only one reference to Varenius could be found;[19] this appears in his last synthesis of his life-long studies, the five-volume work, *Cosmos*.[20] Since this reference to Varenius is very extensive and interesting, besides being the only one, it is instructive to take a closer look at it. In the first volume of this famous work, in the chapter on the "physical description of the world" ("Begrenzung und wissenschaftliche Behandlung einer physischen Weltbeschreibung"), Humboldt writes about the great geographer Bernhard Varenius:

> Er unterscheidet sehr scharfsinnig *allgemeine* und *specielle* Erdbeschreibung, und theilt die erstere wieder in die absolut *tellurische* und die *planetarische* ein, je nachdem man betrachtet die Verhältnisse der Erdoberfläche in den verschiedenen Zonen, oder das solarisch-lunare Leben der Erde, die Beziehung unseres Planeten zu Sonne und Mond. Ein bleibender Ruhm für Varenius ist es, daß die Ausführung eines solchen Entwurfes der *allgemeinen* und *vergleichenden* Erdkunde *Newton's* Aufmerksamkeit in einem hohen Grade auf sich gezogen hatte; aber bei dem mangelnden Zustande der Hülfswissenschaften, aus denen Varenius schöpfte, konnte die Bearbeitung nicht der Größe des Unternehmens entsprechen. Es war unserer Zeit vorbehalten, die *vergleichende Erdkunde* in ihrem weitesten Umfange, ja in ihrem Reflex auf die Geschichte der Menschheit, auf die Beziehung der Erdgestaltung zu der Richtung der Völkerzüge und der Fortschritte der Gesittung, meisterhaft bearbeitet,[21] zu sehen.[22]

Thus, after a short explanation of Varenius' basic concept and a reference to the importance of Newton in the diffusion of these ideas, Humboldt writes that his predecessor laid the foundation for a new focus on geography, though it could not be performed comprehensively during his time. In this way Humboldt sees his own work as a continuation of that of Varenius.

---

[18] E. Millicent Sowerby, ed., *Catalogue of the Library of Thomas Jefferson*, Charlottesville 1983, vol. 4: 85–356.

[19] Since the indexes are selective, references may well exist.

[20] First edition 1845–1862. The version used here is: Alexander von Humboldt, *Kosmos: Entwurf einer physischen Weltbeschreibung*, eds. Ottmar Ette and Oliver Lubrich, Frankfurt a. M. 2004.

[21] Here Humboldt adds a note to refer to Carl Ritter and his work on geography.

[22] *Cosmos* 1, 32.

In a long footnote Humboldt adds to this comment a more detailed view on the importance as well as the limits he observes in Varenius' work:

> […] Das überaus wichtige Werk des Varenius ist im eigentlichen Sinne des Wortes eine *physische Erdbeschreibung*. Seit der vortrefflichen Naturbeschreibung des Neuen Continentes, die der Jesuit Joseph de Acosta (*Historia natural de las Indias* 1590) entwarf, waren die tellurischen Phänomene nie in solcher Allgemeinheit aufgefaßt worden. Acosta ist reicher an eigenen Beobachtungen; Varenius umfaßt einen größeren Ideenkreis, da ihn sein Aufenthalt in Holland, als dem Mittelpunkt eines großen Welthandels, in Berührung mit vielen wohlunterrichteten Reisenden gesetzt hatte. *"Generalis sive universalis Geographia dicitur, quae tellurem in genere considerat atque affectiones explicat, non habita particularium regionum ratione"*. Die *allgemeine Erdbeschreibung* des Varenius (pars absoluta cap. 1–22.) ist in ihrem ganzen Umfange eine *vergleichende*, wenn gleich der Verfasser das Wort Geographia comparativa (cap. 33–40.) in einer viel eingeschränkteren Bedeutung gebraucht. Merkwürdig sind die Aufzählung der Gebirgssysteme und die Betrachtung der Verhältnisse ihrer Richtungen zu der Gestalt der ganzen Continente (p. 66–76. ed. Cantabr. 1681); die Liste der brennenden und ausgebrannten Vulkane; die Zusammenstellung der Resultate über die Vertheilung der Inseln und Inselgruppen (p. 220), über die Tiefe des Oceans in Vergleich mit der Höhe naher Küsten (p. 103), über den gleich hohen Stand der Oberfläche aller offenen Meere (p. 97), über die Strömungen in ihrer Abhängigkeit von den herrschenden Winden, die ungleiche Salzigkeit des Meeres und die Configuration der Küsten (p. 139), die Windrichtungen als Folge der Temperatur-Verschiedenheit u.s.f. Auch die Betrachtungen über die allgemeine Aequinoctial-Strömung von Osten nach Westen als Ursache des, schon am Cap San Augustin anfangenden und zwischen Cuba und Florida ausbrechenden Golf-Stromes (p. 140) sind vortrefflich. Die Richtungen der Strömung längs der west-afrikanischen Küste zwischen dem Grünen Vorgebirge und der Insel Fernando Po im Golf von Guinea werden äußerst genau beschrieben. Die sporadischen Inseln hält Varenius für "gehobenen Meeresgrund": *magna spirituum inclusorum vi, sicut aliquando montes e terra protrusos esse quidam scribunt* (p. 215)". […][23]

Here, Humboldt discusses Varenius alongside José de Acosta, whom he considers to be a clear predecessor of his own ideas on the physical description of the earth, which he calls "Physique du monde"—as expressed several times in different works, and which can be deduced

[23] *Cosmos* 1, 32f.

from Humboldt's specific approach to geographical questions.[24] Humboldt clearly states his conviction that Varenius' work, like that of Acosta, represented a physical description of the earth, according to his understanding of the term, and furthermore, that since Acosta no such good and general description of the telluric phenomena of the earth had yet been written.

At this point the following question arises: Why, in the cases of both Jefferson and Humboldt, were the Jesuit José de Acosta and his *Historia Natural y Moral de las Indias* taken into account far more than Bernhard Varenius and his *Geographia Generalis*?[25] In addition to Humboldt, Jefferson also used Acosta as a point of orientation and referred to the Spanish Jesuit in his *Notes on the State of Virginia* several times.[26] We also know that Jefferson possessed his own copy of de Acosta's famous work.[27] Although these references may not be very rich in content, they demonstrate Jefferson's occupation with Acosta and indicate that he considered his work important enough to cite.

Nevertheless, the citation above also reveals some general statements Humboldt makes about *Geographia Generalis*, along with particular evaluations and critical considerations of its content. The exact references to specific chapters show that Humboldt really had dealt with this text and proves his abiding interest in Varenius. Further in the footnote, he considers Varenius to be an astute geographer and contrasts biographical details found in different sources with specific indications he localized in Varenius' writings.

Similarities in the Scientific Concepts

Besides Humboldt's long and explicit reference to Varenius, implicit parallels between their respective descriptive models can be detected (in spite of the lack of direct reference, and to a lesser degree, this is also the case with Jefferson). At this point the primary question is not

---

[24] A more detailed analysis of this question can be found in: Sandra Rebok, "Alejandro de Humboldt y el modelo de la *Historia Natural y Moral*". *Humboldt im Netz* II, 3 (2001): http://www.uni-potsdam.de/u/romanistik/humboldt/hin/rebok-HIN3.htm.

[25] Unfortunately, this question cannot be answered in the frame of this article, but should be an inspiration for future studies.

[26] Jefferson 1982, ed. Peden: 267, 272.

[27] Apparently he possessed it in two different editions, because Sowerby lists them as nos. 4096 [1590] and 4097 [1608], vol. 4: 254f.

whether this might prove a particular influence of Varenius on Jefferson, but if it demonstrates a similarity in their ideas and concepts.

From the beginning of his scientific activities, the Prussian scientist clearly expressed how he defined the aim of his research: to understand and describe the New World, as well as to develop his idea of the *Physical Geography*. His holistic concept of science envisaged the Earth as an inseparable organic whole, all parts of which were mutually interdependent. He regarded this synthesis as a harmonious unity and derived satisfaction through the scientific analysis of the ways in which things and phenomena on the Earth depend upon each other, an idea which he had clearly in mind as early as 1797 and developed further in his final work, of *Cosmos*, in the first volume:

> Was mir den Hauptantrieb gewährte, war das Bestreben, die Erscheinungen der körperlichen Dinge in ihrem allgemeinen Zusammenhange, die Natur als ein durch innere Kräfte bewegtes und belebtes Ganzes aufzufassen. Ich war durch den Umgang mit hochbegabten Männern früh zu der Einsicht gelangt, daß ohne den ernsten Hang nach der Kenntniß des Einzelnen alle große und allgemeine Weltanschauung nur ein Luftgebilde sein könnte. Es sind aber die Einzelheiten im Naturwissen ihrem inneren Wesen nach fähig, wie durch eine aneignende Kraft sich gegenseitig zu befruchten. [...] So führt den wißbegierigen Beobachter jede Klasse von Erscheinungen zu einer anderen, durch welche sie begründet wird oder die von ihr abhängt.[28]

Here we can detect an obvious similarity with Varenius, who also saw a basic unity in a single earth system with close linkages among all terrestrial, celestial, physical and human forces.[29] As Varenius lamented, in his time geography was criticized as being either too narrowly descriptive or too widely extensive, since readers were rather bored with a bare enumeration and description of regions without an explanation of the customs of the people. In his work *Geography of Plants*, Humboldt also condemned the numerical listing of the flora by continents; what he was interested in was the distribution of vegetation and its relationship to climatic zones as well as other factors that affected the way it spread.

As regards Jefferson, we see a scientific curiosity on the part of an enlightened scientist, a researcher with a pragmatic orientation also directed toward the whole cosmos. Jefferson did not confine himself to a mere enumeration of towns, rivers, boundaries, inhabitants, industries,

---

[28] "Vorrede", 3–4.

[29] Amando Melon y Ruiz de Gordejuela, "Esquema sobre los modeladores de la moderna ciencia geográfica", *Estudios geográficos* n. 20–21 (Aug./Nov. 1945): 396.

production, and the form of government in Virginia. He described not only its rivers, but their relations to commerce and especially to their possible utility in trade, and he classified the plants and trees according to their value for ornamental, medicinal and esculent purposes. He included comparative views of America's native birds and animals with those of Europe.[30] As a result, his *Notes* touched all phenomena of the natural region, with its people and its government. Jefferson's approach to geography, in the final analysis, reflects what Varenius calls 'special geography', which is the description of particular places, versus 'general geography', which denotes the study of general and universal laws or principles that apply to all places. Furthermore, Varenius insisted on the practical importance of the type of knowledge included in 'special geography'—which is exactly Jefferson's focus in his function as a representative of the American Enlightenment. Jefferson did not elaborate on abstract concepts or universal laws characteristic of the general geography. He studied them, but he had a specific geographical interest deriving from his work as a politician, especially relevant during his term as president of the United States.

Humboldt, by contrast, wrote two regional studies, essays about Cuba and New Spain respectively. These were not limited to physical descriptions of these regions. In fact, they provide explanations of general geography terms as well. Finally, in his last work, *Cosmos*, he elaborated more profoundly on these theoretical aspects of geography. Therefore, and like Varenius, he was not regarded as an outstanding contributor to any specific field of knowledge, but to the organisation of knowledge.

It is in connection with this focus that the attitude of the three scientists regarding the position of man towards nature becomes clear. Humboldt included human beings in his concept of 'physical geography', regarding them as integral parts of nature; he did not, however, consider men a primary determinant, or assign them a special place in his research. According to his holistic view and his understanding of human society and nature as a harmonious system, he looked for the interconnection of human and physical nature, which later on inspired the term 'ecology'. In Varenius' concept of special geography, the "human properties of a place" form a third category, in addition to the celestial and terrestrial properties of a locale. He was convinced that

[30] Bergh iii.

the description of the cultures, the language, government, religion etc. of the inhabitants were to be examined alongside factors like the climate, the surface features, the minerals, animals and plants. Like Humboldt, Jefferson did not assign a special position to men in his geographical description of Virginia, for in the topics he treated in the 23 queries, only some are dedicated to human aspects.

Another common criterion shared by these three geographers is their comparative approach to science. As the founder of plant geography, Humboldt recognized the interdependence of areal phenomena and the need for explaining any one set of spatially distributed phenomena in relation to its spatial context. Therefore, he repeatedly compared areas with similar landscapes in different parts of the world. This is an obvious parallel with Varenius, who divides his *General Geography* into an absolute part, a respective part, as well as a comparative part, which contains an explanation of those properties that in turn arise from the comparison of diverse places on the earth. In Jefferson's case, too, the comparative method is manifested in his refutation of Buffon's ideas on the supposed inferiority of America, where he contrasts the properties of the Old and the New World.[31]

Finally, another similarity in the work of the three authors can be observed in their attitudes towards the role of theology in science. Although geography in Varenius' time was closely linked to religious questions, he dissented from that view, and his work can be considered the first scientific approach to this discipline.[32] Humboldt and Jefferson also continued in this line in spite of all the problems they had to face as a consequence of this conviction: the former in trying to disconnect theology from science in the first case, and the latter in establishing a new secular form of education that culminated in the creation of the University of Virginia, inaugurated in 1824.

Conclusion

Humboldt's direct reference to Varenius is very limited, though the one large comment that could be located is quite expressive and reveals Humboldt's opinion about Varenius. In Jefferson's writing there were

[31] Especially in query VI.
[32] Kish 370.

no comments about Varenius; nonetheless, similarities between the scientific concepts of the two can be detected. In any case, it is necessary to emphasize that these obvious parallels in the contributions of the three men to systematizing the knowledge available about our planet at their time may not necessarily be the result of a direct transmission of ideas. They integrated previous conceptions and ideas, which in some cases even derived from the Greek and Roman epochs, and enriched contemporary geographical understanding, due to European expeditions and discoveries, with their own observations and conclusions.

Nevertheless, what can be shown is that general inspiration through other works, through the implicit elaboration of similar intellectual models as well as explicit references; in brief, the evolution and continuation of concepts, called the *chain of ideas*, is a very fascinating topic. As is well known, Varenius, too, included and processed the ideas of previous as well as contemporary thinkers, particularly those of Bartholomäus Keckermann (1571–1608),[33] just as in several of Humboldt's texts references and comments about Thomas Jefferson and his work can be found.

Finally, it must be noted that the themes dealt with in this article could not be treated exhaustively. Therefore, this account should be regarded more as a first approach, especially with respect to the ideological and theoretical relationships among these three founders of modern geographical science.

[33] About the predecessors and sources of Varenius see: Horacio Capel Sáez, "La Personalidad geografica de Varenio", Introduction to Varenius': *Geografía General, en la que se explican las propiedades generales de la* tierra, ed. H. Capel Sáez, transl. José María Requejo Prieto, Barcelona 1974, 38–42; Hanno Beck, *Geographie: Europäische Entwicklung in Texten und Erläuterungen*, Freiburg, Br. 1973, 115–116.