

[DRAFT ONLY. DO NOT CITE]

LEIBNIZ ON NATURAL HISTORY AND NATIONAL HISTORY

JUSTIN E. H. SMITH

I. Introduction: Bioprospecting, Ethnopropecting, and the Science of Singular Things

The belief prevails among scholars that Gottfried Wilhelm Leibniz undertook his official duties as historian of the House of Brunswick only grudgingly, preferring instead to devote his energy to his true love: *a priori* reflection upon universal truths. In fact, however, Leibniz pursued his historical research with great interest, if more slowly than his employer would have liked, and even saw it as inseparable from his broader intellectual project-- his philosophy, if you will. The perception that Leibniz was better suited to *a priori* speculation than to the investigation of particulars is one that extends back even to Leibniz's own lifetime. Thus he complains to the Swedish Slavist Johan Gabriel Sparwenfeld in a letter of 1698 that "people criticize me when I attempt to take leave of the study of mathematics, and they tell me that I am wrong to abandon solid and eternal truths in order to study the changing and perishable things that are found in history and its laws."¹

In a 1708 draft of a proposal to Peter the Great for the classificatory system to be used in the eventual library of the St. Petersburg Academy of Sciences, Leibniz identifies history, alongside mathematics and physics, as one of the three 'Realien' or distinct domains of science, namely, the one that "involves the explanation of times and places, and thus of singular things [*res singulares*]" including "the descriptions and attainments of kingdoms,

¹¹ G. W. Leibniz, *Sbornik pisem i memorialov Leibnitsa otnosyashchikhsya k Rossii i Petru Velikomu*, ed. V. I. Ger'e, Saint Petersburg, 1873, 38.

states, and peoples."² Besides what might be called civil or political history, another central branch of history --again, understood as the science of singular things-- was the study of plants, animals, and minerals. Now it is uncontroversial to note that a central motivation for the colonial expansion of Europe throughout the world in the early modern period was the prospect of natural resource extraction, and this practical end required for its success a deepened theoretical grasp of the real variety of things in nature, things never named or classified by the ancients. At the same time as the field of natural knowledge was expanding, there was a growing awareness of the inadequacy of the ancient texts, such as those of Dioscorides, Theophrastus, and Pliny, which for centuries had been able to pass as exhaustive classifications of the kinds of thing in the natural world. What resulted was, to use Londa Schiebinger's term, the early modern global system of 'bioprospecting': the communal effort to discover and classify plants and animals (though mostly plants) throughout the world (mostly those parts of the world left unstudied by the ancients), particularly with an eye to discovering the useful kinds, and bringing them back to Europe for commercial gain.³

Leibniz himself was an avid bioprospector, though most of his activity in this domain was carried out from the comfort of home, and relied upon the input of more intrepid travellers. If however we agree with some recent scholarship,⁴ then colonial science was

² Ger'e, *Sbornik pisem i memorialov*, 96.

³ See Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Harvard University Press, 2004).

⁴ See Londa Schiebinger, "Forum Introduction: The European Colonial Science Complex," in *Isis* 96 (2005): 52-55. See also the papers in Part III ("Knowledge Production: Local Contexts, Global Empires"), of Daniela Bleichmar, Paula De Vos, Kristin Huffine, and Kevin Sheehan, *Science in the Spanish and Portuguese Empires, 1500-1800*, Stanford University Press, 2009, for a variety of arguments to the effect that, in the history of colonial science, 'local' is not always the same thing as 'colonial', insofar as there were always also specific exigencies in the Europeans sites of reception of colonial scientific data.

by definition an activity done 'at home', to the extent that the way in which information was received from the colonial world was always defined by local concerns. To this extent, Leibniz's homebound colonial science may be seen as typical rather than aberrant. One might also add that for a thinker such as Leibniz, prospecting could also be done 'at home' in the more literal sense that it involved the seeking out of native knowledge that could be found in popular European traditions. As early as 1671 Leibniz writes in his *Directions concerning the Institution of Medicine* that "above all, those things that old ladies and market criers relate concerning medicinal plants [*simplicia*] should be brought together."⁵

Whether Leibniz's proposals for the accumulation of natural knowledge of singular things involved prospecting at the local or at the global level, and also what sort of knowledge of singular things he deemed important, was generally determined by the scope of the empire of the ruler he was hoping to impress. He writes, tellingly, to Count Aleksandr Golovkin in 1712 that he is interested in obtaining "some desiderata... from Russia itself. And here I have no particular interest of my own, but all of my requests serve toward the public good and toward the glory of His Majesty," the tsar. In this period, Leibniz's curiosity about singular things from Russia seems insatiable. In a note consisting in scattered observations on Russia, which may be dated based on content to between 1705 and 1712, Leibniz writes of sundry curious plants and animals, and primarily with an eye to their usefulness, such as "the root of the famous kidney vetch," which "has been observed in Russia, growing in Siberia, as well as the *Voltschnoi Koren*, which is called [in Latin] the *lupina radix* [or wolf root], which is said to have the greatest [medicinal] virtue in healing wounds, and some claim that it is beneficial to chew it for the healing of wounds." He notes that "among fish the sturgeon stands out, [as it is] considered one of the Russian delicacies;" and he describes "the *vichocho* [i.e., the Russian desman] is a

⁵ Justin E. H. Smith, *Divine Machines: Leibniz and the Sciences of Life* (Princeton University Press, 2010), Appendix 1, § 12.

large aquatic mouse that gives off a pleasant odor. Its furs are placed in the case in which linen garments are kept, thanks to which they acquire their odor."⁶

These are curious and useful creatures indeed, but what are the broader implications of Leibniz's interest in them? Leibniz's bioprospecting may not be as unconnected as it first appears to his official role as Hanoverian historian. Part of his charge as historian was to study the histories of peoples subject to its rule, which, as we will see, he thought was best done through the study of these peoples' languages. One of the ways he believed this study could be advanced was through what much later would be dubbed 'ethnobotany', the study of the names of plants in local languages (he also recognized the value of toponymy and hydronymy for tracing the history of the migrations of peoples). Leibniz believed that ethnobotany could help to reveal the structures of the human mind for cognizing the natural world, revealed by naming practices, as well as the features of things in the natural world. As he notes in the *New Essays concerning Human Understanding* of 1704:

In time all the languages of the world will be recorded and placed in the dictionaries and grammars, and compared together; this will be of very great use both for the knowledge of things, since names often correspond to their properties (as is seen by the names of plants among different peoples), and for the knowledge of our mind and the wonderful varieties of its operations.⁷

Here, then, we see the unity of bioprospecting and ethnoprospecting in Leibniz's mind. Nowhere do these two projects come together so clearly as in Leibniz's late-career interest, which began in earnest in 1697 and lasted until his death in 1716, in the Russian Empire, not so much in Russia itself, as in the diversity of plants, animals, and human

⁶ Ger'e, *Sbornik pisem i memorialov*, 47.

⁷ G. W. Leibniz, *Die philosophischen Schriften von G. W. Leibniz*, ed. C. I. Gerhardt. 7 vols. Berlin: Weidmannsche Buchhandlung, 1875-1890. Vol. V, 318. [Hereafter 'G'].

cultures under Russian imperial rule.⁸ But Leibniz's late-life Russian campaign, and the unified vision that drove him in it, of bioprospecting and ethnoprospecting as twin elements of one and the same science of singular things, took a very long time to develop. In what follows, I would like to look at two of Leibniz's earlier attempts at promoting some variety or other of prospecting beyond Europe's boundaries, seeking to understand in particular the motivation for his interest, as well as the scope and methodology of it.

II. From the Canary Islands to the Hartz Mountains, 1671-1693: Natural Resources and Sovereign Glory

In his study of Leibniz as Sinologist, Franklin Perkins brings to our attention Leibniz's belief that, in relation with China, Europe might profit from a 'commerce of light' that

⁸ There are several useful overviews of Leibniz's relations with Peter the Great and of his interest in Russia. See in particular Moritz C. Posselt, *Peter der Grosse und Leibniz*, Tartu and Moscow: Friedrich Severin Verlag, 1843; Ernst Benz, *Leibniz und Peter der Grosse*, Berlin: De Gruyter, 1947; George Gale, "Leibniz, Peter the Great, and the Modernization of Russia, or, Adventures of a Philosopher-King in the East," in *Divinatio* 22 (2005): 7-36; Vladimir Katasonov, "The Utopias and the Realities: Leibniz' Plans for Russia," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 178-182; Vladimir S. Kirsanov, "Leibniz' Ideas in the Russia of the 18th Century," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 183-190; Gerda Utermöhlen, "Leibniz im brieflichen Gespräch über Rußland mit A. H. Francke und H. W. Ludolf," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 304-309. None of these studies attempts to place Leibniz's interest in the flora and fauna, as well as in the non-Russian peoples of the Russian empire, within the context of his more global and general interest in what we are calling here 'colonial prospecting'.

moves along the same channels as the now very vigorous commerce of goods between Europe and China. This metaphor works for early modern Sino-European relations, since that the Chinese controlled resource extraction and production in their region, and the most the Europeans could do is trade with them. But things looked very different in the Americas and in some other parts of the Atlantic world. But before there is commerce, there is resource extraction, and Leibniz seems to have understood that this could also be accompanied by, so to speak, the extraction of light from nature. Eventually, he would come to think of native knowledge as a sort of local light that is best suited to the illumination of any given location. But earlier on, native ways of inhabiting their environments could for him at most be taken as unconscious responses to environmental exigencies, from which one might learn, but only as one learns from animal behavior rather than from some body of articulated knowledge.

This much is particularly clear in an early text, of 1671, entitled *A Method for Instituting a New, Invincible Militia that can Subjugate the Entire Earth, Easily Seize Control over Egypt, or Establish American Colonies*. This text was written as an addendum to his better known *Consilium aegyptiacum*, in which Leibniz sought to lay out for Louis XIV a plan for conquering Egypt. In the addendum, Leibniz has an even more ambitious plan for the French king: to transform him into the ruler of a global empire. The first step, Leibniz thinks, will be to train a new army of warrior slaves:

A certain island of Africa, such as Madagascar, shall be selected, and all the inhabitants shall be ordered to leave. Visitors from elsewhere shall be turned away, or in any event it will be decreed that they only be permitted to stay in the harbor for the purpose of obtaining water. To this island slaves captured from all over the barbarian world will be brought, and from all of the wild coastal regions of Africa, Arabia, New Guinea, etc. To this end Ethiopians, Nigritians, Angolans, Caribbeans, Canadians, and Hurons fit the bill, without discrimination. What a lovely bunch of semi-beasts! But so that this mass of men may be shaped in any way desired, it is useful only to take boys up to around the age of twelve.

Leibniz proposes to segregate these prisoners according to language, which for him is the same as segregation by race or genus. In this way, unable to communicate with any warriors beyond their own small squadron, the warriors will be unable to plan an insurrection. "In every race [*genere*]," Leibniz writes,

whoever is most trained in his squadron, which is to say among those who speak his language, shall challenge those who are the best trained in the other squadrons. The people [*gens*] that wins that year shall be the leaders. They will be able to strike terrible blows with their very powerful curved swords, to hit targets with their slings, and to rip things apart with their lances. They are to be trained to run races at such a speed as will be equal to that of horses. Which will come about first by pursuing them until they are able to touch the mane or the tail, and then freely [i.e., without horses]. They shall learn to swim first with the help of an outer shell or bladder, and thereafter without any covering; they will descend under the water after the example of diving bells, and they will learn the method of ascending and descending as they please. They shall learn to jump after the manner of the Tenerifeans, first jumping with the help of a lance... as far as human strength is able to reach, and afterwards without these.⁹

Here, Leibniz is proposing to collect people in a very literal sense. This is surely the limit case of ethnopropecting. But beyond this one thing that is striking about Leibniz's proposal is that, already here, we see an expression of Leibniz's life-long commitment to a language-based theory of ethnic or cultural difference: human diversity is rooted in the diversity of languages, and nothing more. We will return to this shortly.

Leibniz next goes on to describe the tremendous feats these warriors will perform with their lances:

⁹ G. W. Leibniz, *Sämtliche Schriften und Briefe*. Edited by Deutsche Akademie der Wissenschaften. Darmstadt and Leipzig: 1923-present, Series IV, vol. 1, 408-9.

In the beginning they will alight from a higher place by the means of their lance touching the ground below; then they will leap horizontally on a level plane, and finally from below they will leap to the top. They will learn how to climb up smooth surfaces [*per lubrica klettern*].... They shall become used to climbing however high their lance may be just by means of fixing their lances beneath them. They will learn moreover to carry the greatest and strongest lances, like Achilles, and like other ancients. Indeed, they shall learn to project them with great impetus towards a designated target, as well as of bringing one lance together with another if the one does not suffice for climbing. By means of this art they will easily conquer the mightiest European fortifications. They will be able to walk on their lances, as on stilts [*wie auff stelzen*].¹⁰

Now wherever could Leibniz have learned so much about Tenerifean martial arts? In an anonymous travel report in Thomas Sprat's 1667 *History of the Royal Society*, we find the following description of a native Tenerifean 'Guanchio' [today called Guanches], a description that Leibniz would reproduce four years later, without citing his source, sometimes nearly word-for-word:

[An English traveller] himself hath seen [the Guanches] leap from Rock to Rock, from a very prodigious height, till they came to the bottom, sometimes making ten fathom deep at one leap. The manner is thus: First they *Tertiate* their Lance (which is about the bigness of a half Pike) that is, they poise it in their hand, then they aim the point of it at any piece of a Rock, upon which they intend to light (sometimes not half a foot broad.) At their going off they clap their feet close to the Lance[,] and so carry their bodies in the Air. The point of the Lance first comes to the place, which breaks the force of their fall; then they slide gently down by the Stagge, and pitch with their feet upon the very place they first designed, and from Rock to Rock till they come to the bottome. Their Novices sometimes break their necks in

¹⁰ Ibid.

learning.¹¹

Knowing this background to the 1671 *Method* in Sprat's 1667 *History*, what has been denounced as a grossly racist tract by the young and impetuous Leibniz begins to appear more as the musings of someone who has just read a compelling adventure story— one that just happens to be set here in the Canary Islands. The only two scholars, as far as I know, to have engaged with this text, Marcelo Dascal and, separately, Peter Fenves, have focused primarily on the curious rule that Leibniz sets up for the kidnapped soldier boys, that they will all be prevented from learning each other's languages, and from forging a new one in which communication, and so possibly dissent, might take place. Fenves describes the image of these isolated, unconnected boys as a 'perverse' anticipation of the theory of windowless monads.

But in focusing on the language and domination aspect, one misses the mountaineering and sword-play aspect, and this may be more important than it at first appears. Fenves fails to note both the larger structure and aim of the report itself, as also the significance of this particular example for our understanding of Leibniz's place as a thinker and an actor in the history of colonial science. As to the first of these oversights, it is important to note that the report published by Sprat was not *principally* an ethnographic account of the already largely Hispanicized Guanches' cultural practices. The report has, rather, the classic structure of an early modern travel report: describing first the formation of the land and the properties of the rocks and minerals; then an account of the plant life, with particular attention to the more useful species; then a similar account of animal life; and finally an account of the local inhabitants. These different features of the island are described, as was typical, in what is presented as a natural progression, as if each stage of the description somehow flowed from the previous one: botany from geology, zoology from botany, and so on. In this respect, the Guanches' martial arts are seen as a sort of outcropping of the environmental features of their island. Thus, while these are arts that might be taught to Ethiopians, Canadians, and so on, who will intentionally and actively

¹¹ Thomas Sprat, *History of the Royal Society*, 1667...

learn them, even though they were never in a strict sense learned by the Guanches themselves. The Guanches' cultural practices sprout up from the rocks, so to speak, in much the same way that Tenerifean plants do. In the order of exposition in Sprat's account, it is the rocks, the fundament, that get the first treatment, and it is the cultural practices that get the last.

This approach, as we will see, is a common feature of Leibniz's ethnopropecting, which he shares with many of his contemporaries: native peoples may be learned from, but without having to acknowledge their possession of a body of knowledge approaching the scientific. They know, but they do not know that they know. Such an epistemology of the practical will underlie the work of Wilhelm Piso on the pharmaceutical knowledge of the Brazilians, which, as we will see in the next section, would directly influence Leibniz's own pharmaceutical writings. What is unusual about Leibniz's early ethnopropecting is his idea that not only the practical knowledge of different peoples could be collected, but that peoples themselves could be collected, and the native knowledge of another people could be imposed upon them.

As to Fenves's second oversight, namely, the significance of the particular example of Tenerife, it is significant that, as historians such as David Abulafia have noted,¹² the Canary Islands, explored already by 1330 and fully conquered by the end of the 15th century, amounted to a sort of prelude to the big event: the domination of the New World, which would begin a century later, and which would still not be entirely finished by the time Leibniz proposes his militia for, among other things, setting up an American colony. When Leibniz proposes 'an island of Africa' such as Madagascar, this is evidently because the Canaries have already been taken. But it is the Canaries, and the expansion of the Spanish Empire out from there, that serves as Leibniz's model and inspiration. (And of course, eventually Madagascar would be taken by the French.)

¹² See David Abulafia, *The Discovery of Mankind: Atlantic Encounters in the Age of Columbus*, Yale University Press, 2008.

Beyond simply expanding the territory under the rule of a sovereign, colonization, again, has as one of its principle aims the extraction of natural resources. For Leibniz, whether at home or abroad, the imperative to extract natural resources and their importance for measuring the magnificence of a sovereign are linked together; and these two are linked in turn to the project of history, conceived as the study of singular things in search of origins, both political and natural. Perhaps nowhere is this clearer than in Leibniz's contribution to the history of geology.

What Leibniz himself refers to as his 'Protogaea' is in fact not the work that today bears that name, but rather a one-page text published in the *Acta Eruditorum* of 1693. Leibniz's original title for the manuscript eventually published by Scheidt was *Dissertation on the Origin and the Most Ancient State of the Natural Things in the Braunschweig-Lüneburg Regions*.¹³ This title in turn echoes that of a 1665 work by Hermann Conring, *Conjectures on the Most Ancient Condition of Helmstedt and Vicinity*.¹⁴ The work published by Scheidt as the *Protogaea* was supposed to serve as the first part of Leibniz's history of the Guelf family, the ancient lineage that would give rise

¹³ G. W. Leibniz, *Die Leibniz-Handschriften*, ed. E. Bodemann, Hannover and Leipzig, 1895, 231.

¹⁴ One of Conring's greatest preoccupations in this work is with the giants supposed to have previously occupied the region of Germany he is describing. Conring adduces paleontological evidence of their presence there, which, we may presume, in fact consisted in nothing other than dinosaur fossils. Leibniz as well is interested in the hominoid giants that once ruled the earth, and he treats them both as a subject for paleontology, as in the *Protogaea*, and also as part of his project of ethnohistory, tracing the origins of the current inhabitants of Europe. On the latter, see his "Letter to a Friend, on the Titans and Giants Originating from Scythia" (*G. G. Leibnitii Opera Omnia*, ed. Louis Dutens, Geneva, 1768, vol. IV, ii, 209-210). One interesting question, far beyond our present scope, concerns the extent to which the widespread legends of giants, which would subsequently be incorporated into the historiography of Leibniz, Conring, Vico, and others, were themselves initially inspired by the observation of fossil remains.

to the House of Brunswick. Leibniz avers that in order to write this history with adequate depth, it is necessary, so to speak, to begin at the beginning, which is to say to describe the formation of the earth, the oceans, the continents and mountains.

At first glance, the *Protogaea* seems best categorized as a contribution to the variety of writing that may be called ‘cosmography’, of which the most prominent examples in the 17th century were the works of Steno, Kircher, and Burnet, and also, notably, the third and fourth parts of Descartes’s *Principia philosophiae*. He himself describes his project as a ‘natural geography’, whose aim is “to describe the diverse kinds of terrain and their stratification in different regions.” He explains that this new science will, if done correctly, serve to corroborate the account of Creation familiar from scripture, though in the end he is careful to leave biblical exegesis alone as an autonomous discipline. But Leibniz’s goals in this work are at least in part much more concrete than the general description he gives of it as ‘natural geography’ reveals. If there is some truth in Leibniz’s claim that his account of the origins of the earth are relevant to his history of the Guelf family, this is because the part of the earth to which he devotes the most attention, namely, the Harz Mountains, belongs to the current house of Brunswick, and is in fact, in view of its rich silver deposits, an important source of its operating revenue. At the time of writing what we call the *Protogaea*, Leibniz had recently spent the better part of five years in that region, attempting to construct a hydraulic and wind-driven system for generating sufficient energy to excavate the entirety of his employer’s holdings in the Harz.

For Leibniz, to write a geogony of the Hannoverian realm is at the same time to provide an account of the sovereign's riches, and this is for him an inextricable part of the task of the history to which he has been assigned. Tracing back the generations of a family goes hand in hand with a history of the region in which that lineage unfolds. Leibniz is, on religious grounds, a monogenesist, so he must believe that any ethnic group in any region (other than perhaps that part of the Eastern Mediterranean which was supposed to have been home to the Garden of Eden). But he still believes that with time, by way of a sort of benign degenerationism, a lineage or ethnic group becomes particularly well suited to

its geographical region. And a region rich in natural resources is well suited to a great sovereign.

Leibniz's *Protogaea* is in a sense an extreme confirmation of the view that colonial science is always done at home: the 'colony' in question is one that does not, and could not ever be expected to, extend beyond Central Europe, Leibniz's true home. But the perception of a link between the features of an environment and the features of its inhabitants or rulers, is very much the same as in his approach to far-flung places. The difference is that in the one case he is writing for a duke with no imperial prospects, and in the other cases he is writing for rulers with very active imperial ambitions: for Louis XIV, in the case of the *Method* of 1671; and for Peter the Great, in the case of the Russian campaign, to which we will turn shortly. First, however, let us consider Leibniz's second significant attempt at colonial prospecting, this time in his 1695 pharmaceutical treatise on the Brazilian ipecacuanha root.

III. Brazil, 1695-96: Learning from Natives who Learn from Nature

Schiebinger suggests that "in respect to natural history, an epistemological shift took place over the course of the sixteenth and seventeenth centuries away from Europeans relying on the 'summa of ancient wisdom' (Dioscorides, Pliny, Galen) toward their valuing (or at least appreciating) the authority of native peoples encountered through global expansion."¹⁵ At the same time, she acknowledges that "[a]ttitudes among Europeans across the Caribbean, of course, were not uniform."¹⁶ One widespread approach, which neither neglects native knowledge nor gives natives any credit for scientific discovery, interpreted their practical wisdom as arising from an instinctual, animal-like response to the exigencies of environment. Schiebinger identifies this sort of thinking in Charles-Marie de la Condamine, who believes that the natives of Ecuador and Peru learned about quinine by watching sick lions chew on the bark of the *Cinchona* tree.

¹⁵ Schiebinger, *Plants and Empire*, 75-6.

¹⁶ *Ibid*, 81.

The Spanish in turn learned of the remedy from the natives, and the French from the Spanish, completing this bit of wisdom's movement up the scale of being.¹⁷

The widespread idea that native languages lacked terms for abstractions, meant that, if anything could be learned from them, it would be concerning the concrete and particular, and there is perhaps no domain of knowledge more dependent on knowledge of particulars than botanical pharmaceuticals. For many European explorers, as well as Europeans who interpreted the discoveries of the explorers from the comfort of home, native botanical knowledge could easily be seen as a branch of natural history complementary to botany itself, in a way that, say, ethnomathematics would not have been. Ethnobotany involved learning from the natives, without any need to acknowledge that the natives themselves are learned.

The Dutch physician and traveller Wilhelm Piso, for example, does not put much credence in the native Brazilians' knowledge. It is Piso who brought the ipecacuanha root back to Europe in 1641, and wrote about it extensively in his *The Medical and Natural History of Brazil*, co-authored with Georg Markgraf in 1648. Leibniz's own most significant contribution to medicine was without doubt his *Relation to the Illustrious Leopoldine Society of Naturalists concerning the New American Anti-Dysentery Drug, attested with Great Successes* of 1695-6, written after reading extensively about, and evidently after conducting his own experiments with, the ipecacuanha root.¹⁸ The root was introduced in Paris in 1672, and made famous when the physician Helvétius used it

¹⁷ Ibid, 81-2. Of course, the simple recognition that something is learned from nature is not necessarily accompanied by the view that some bit of knowledge is 'working its way up' the scale of being. Bill Newman, for example, cites an account of the origins of cooking according to which the idea was first obtained through reflection on the 'coction' of food in digestion. See Newman, *Promethean Ambitions...*

¹⁸ Dutens II, ii, 110-19.

successfully to treat Louis XIV's dysentery.¹⁹ It is clear from Leibniz's study that he has a detailed knowledge of Piso and Markgraf's work, as well as of Helvétius's use of it.

It appears that Leibniz's intense interest in the root has to do with his own experience of poor health in the mid-1690s, an experience which Ekkehard Görlich believes to have triggered an existential crisis in the philosopher, with implications far beyond his work in medicine.²⁰ On April 19, 1695, Leibniz reports that he experienced earlier that day “a small griping pain [*ein Kleines Grimmen*], as if I had taken a purgative.”²¹ Two weeks later, Leibniz asks the Duchess Maria Aurora von Königsmarck to arrange for the distribution of the ipecacuanha root in Saxony.²² Within a year he will have composed an extensive treatise on this root's purgative power. By the time Leibniz writes about it for the Leopoldine Society and brings it to the attention of the German public, it has been well-known for some years in France already, and it is likely that Leibniz himself had

¹⁹ Leibniz writes of Helvétius in a letter to Schelhammer of 1715: “Helvetius brought out a little book in which he purports to promise more noble and more exquisite remedies for the majority of illnesses. He is thus an Empiric, though at present the greater part of medicine is still not empirical. And few are those matters for which certain reasons, in a domain that is so hidden, have been sufficiently established.” He adds some of his own views on the medical application of purgatives, a topic evidently still of great interest to him 20 years after the treatise on ipecacuanha: “I consider that purgations are often useful, not in the way that many believe, whereby the corrupt elements are ejected, but rather in quickening the lethargic nature by its own instruments, and in such a way almost that vomiting is useful in apoplexy. I submit these, my very audacious conjectures, to your judgment” (Dutens II, ii, 73).

²⁰ See Ekkehard Görlich, *Leibniz als Mensch und Kranker*, Hannover, 1987.

²¹ Kurt Müller and Gisela Krönert, *Gottfried Wilhelm Leibniz: Leben und Werk. Eine Chronik*, Frankfurt am Main: Klostermann, 1969, 132. “Nachmittag gegen 3 Uhr war bey der Hitze in den intestinis tenuibus, wie einstmalen, ein Kleines Grimmen, gleich wie nach einer eingenommenen Purgation. Vielleicht weil ich Mittag Garley getruncken.”

²² *Ibid*, 132.

already learned of its use while in Paris a quarter of a century earlier. He is aware of its widespread use among the Brazilian natives, and of its more recent successes in France, but is nonetheless the first to give an exhaustive account of its many uses, not only against dysentery, but also as an emetic, a diaphoretic (causing one to perspire), and an expectorant (causing one to salivate).

In the *History*, Piso describes the Brazilians' use of emetics as an example of their deep incomprehension, and of the futility of their reactions to mortal illness:

When one of them falls ill... they scarify and cut deep into the skin of his muscular arms and of parts of his thighs with the spines of the Carnaiba tree, and with the teeth of the fish they also use to sharpen their arrows, so that he bleeds profusely... They bring on vomiting by force by means of the twisted leaves of the Carnaiba, which they force into his throat. With these and similar remedies tried out in vain, they attempt nothing else, nor yet do they relinquish the sick man, but by unanimous consensus, as if desperate for his health, they kill him off with a wooden cudgel, still gratifying him and themselves, that his death has come to pass in a masculine fashion.

Although the Dutch explorer acknowledges that he had learned the virtues of ipecachuanha from the natives, he also judges that "the Asians have much better knowledge of plants than the Americans do," and goes on to note that when edible plants are scarce, the New World inhabitants content themselves with eating charred wood. This Piso writes in his introduction to the *History*. By contrast, in chapters 49 and 65, on the precise virtues of the caa-apia and the ipecacuanha roots, respectively, which are cited in their entirety by Leibniz in the *On the New American Antidysenteric*, Piso is rather more willing to acknowledge the efficacy of Brazilian botanical remedies:

Chapter 49. Of Caa-apia and Its Properties. The indigenous people crush the plant, and expel the poison from the stomach by the juice that is drunk: wounded

by serpents or struck by poison arrows, they pour it drop by drop into the wounded person in lieu of an antidote, and not without success...

Piso is particularly impressed by the native use of ipecacuanha, which strikes him as the closest thing to a botanical panacea from the New World:

Chapter 65. Of Ipecacuanha and Its Properties. Finally, the proper order of things brings us to those much-vaunted salutary roots, which, beyond their power of purgation by both the upper and lower passages, are eminently opposed to all poison. Nor do I believe that one could find on this earth a more effective remedy against the many illnesses arising from a long obstruction, and above all for the assuaging of the *fluxus ventris*... It relieves flatulence and other illnesses, counters the effect of poisons and of venoms both hidden and manifest, immediately expelling them through vomiting. Wherefore it is carefully [*religiose*] guarded by the Brazilians, who first revealed its virtues to us.

Again, these passages are transcribed in full in Leibniz's own text. In this treatise Leibniz has nothing at all to say about the native peoples of Brazil, very much unlike his earlier treatment of the Canary Islands. In part this can be explained by the fact that the *On the New American Antidysenteric* is a highly occasional piece with a very specific audience, who would have no time for ethnographic data. It is also an audience with no conceivable political designs on Brazil, but only, at most, commercial ones. Addressing Louis XIV and Peter the Great, Leibniz would find it worthwhile to survey the peoples under their possible or actual rule as of a kind with the subjects of geographical or botanical surveys. But when addressing the Leopoldine *curiosi*, Leibniz sees no particular need to dwell on ethnography.

Leibniz plainly believes, then, that for certain purposes bioprospecting is possible without ethnoprospecting. But there is at least an implicit anthropological commitment in Leibniz's promotion of his new antidysenteric: Brazilian bodies and European bodies are, for him, fundamentally the same, even to the extent that the illnesses of a Brazilian body

are not peculiar to his native environment. Thus Leibniz complains in his treatise that "there are in fact a number of people who deny that medicines of so much proven virtue could be obtained for the illnesses of every temperament and constitutions. Some of them condemn everything that is exotic as unsuited to our bodies." What is more, Leibniz's complaints about the stagnancy and inefficacy of European medicine appear to echo Piso's own derisive account of native Brazilian responses to illness. He writes in the that "medicine is an uncertain art, which sustains the credulity of men, like the great dream of the philosophers' stone."²³ What works for a Brazilian body works just as well for a European, and credulity works in the one case just the same as in the other. Leibniz proceeds to point out that the root's virtue could not be peculiar to the region in which it is found, since, after all, colonial bioprospecting is in the end only a worthwhile endeavor to the extent that the plants discovered have some use at home. As Leibniz ironically puts it: "[Piso], in fact, is not writing this for the sake of practicing medicine in Brazil."

Six years after his treatise on ipecacuanha, Leibniz produces his only other known text on botany, this time on questions not of utility, but of the method of classification. In this 1701 text, a letter to A. C. Gackenholtz later given the title "On Botanical Method," Leibniz argues that in botany, divisions are generally made either with respect to the particular usefulness of the plant for human beings, or with respect to the plant's morphological features. Both of these criteria are accessible, Leibniz notes, without any particular grasp of the 'interior' nature of the plant. But, he goes on, there is no reason to despair of not being able to access this interior nature, since as a result of the work of Jungius, Malpighi, Hooke, Swammerdam, and Leeuwenhoek, "soon we will arrive at something more profound" in our study of plants.²⁴ At around the same time, he seems to be developing a similar optimism about the classification of ethnolinguistic groups, a classification that is based on principles remarkably similar to those he spells out for the classification of plants. Nowhere is this clearer than in his lengthy campaign for the promotion of a natural history of Russia.

²³ Ibid.

²⁴ Dutens II, ii, 171.

IV. The Russian Empire, 1697-1716: Ethnopropecting in the Service of the Tsar

Scholars have often supposed that Leibniz's interest in Russia was strictly instrumental: first, that he saw it as a bridge to China, which was truly a *terra incognita* worthy of study, unlike the relatively close and familiar Slavic world; and second, that he hoped to be able to gain political influence as an advisor to Peter the Great (which eventually he did, being appointed to the position of Russian privy councillor in 1712). But what this account misses is that Leibniz became interested in Russia, certainly not out of any particular Russophilia, but rather as part of a much more wide-focused perspective: he wanted nothing less than an ethnolinguistic map of all of Eurasia, and he recognized that the way to gain the relevant knowledge of a broad portion of the relevant geographical area was through the mediation of the Russians.

The dream of such a map was rooted in part in the belief that language is the principal criterion of distinction between different human groups. Thus in response to François Bernier's attempt to provide a 'new division of the earth' in terms of the basic 'races' of people, Leibniz offers his own, alternative criterion of division: "I should like for the regions [of the world] to be divided according to languages, and for this to be noted on maps."²⁵ In a 1703 letter to Peter the Great's war councillor, Heinrich von Huysen, Leibniz identifies ethnolinguistics as itself a branch of geography: "Among other curiosities," he writes, "geography is not the least, and I find fault in the descriptions of distant countries to the extent that they do not take note of the languages of peoples." It is because of this oversight, Leibniz thinks, that "we do not at all know the relations between them, nor yet their origins."²⁶ For Leibniz, it is neither blood nor soil, but speech, that reveals kinship. His own 'new division of the earth' would divide people up

²⁵ G. W. Leibniz, *Otium hanoveranum, sive Miscellanea ex ore & schedis illustris Viri, piae memoriae Godofr. Guilielm. Leibnitii*, ed. Joachim Friedrich Feller. Leipzig: Johann Christian Martin, 1718, 158.

²⁶ Ger'e, *Sbornik pisem i memorialov*, 51.

according to language families, not appearance. In a 1697 letter to Sparwenfeld, Leibniz writes:

If it is true that the Kalmuks as well as the Moguls [i.e., Mongols] and Tartars [i.e., Tatars] of China depend on the Grand Lama in matters of religion, it is possible that this says something about the relation among their languages and the origin of these peoples. It is simply that the size and constitution of their body is so different among them.

Here, Leibniz is (correctly) hypothesizing the existence of a Mongol-Turkic ethnolinguistic group; he is doing so on the basis of shared religion, and he suspects that further investigation would confirm shared origins and common features of language. He cautions that differences in the the physical appearance of members of related ethnolinguistic groups can be misleading, and that language is far more important than 'race' for determining ancestral relations.

The Kalmuks (or Kalmyks) are, as Leibniz rightly recognizes, Buddhists, and therefore, by his standards, garden-variety pagans in need of conversion (among the non-Abrahamic Asian faiths, Leibniz valued the Chinese state religion, but saw Buddhism, the Vedic religions, and Taoism as backwards idolatry). But the Kalmuks' submission to the Grand Lama at least places them within a known textual tradition, while the great challenge for the creation of Leibniz's ethnolinguistic map of the Russian empire was posed by peoples who were, in fact or by presumption, non-literate, such as the 'Samoyeds' (today called by their own ethnonym, 'Nenets') or the 'Siberians' (an umbrella term covering, presumably, a vast number of Mongol-Turkic, Tungusic, and Paleo-Siberian groups). In the early 18th century these groups still had a very distinct identity in spite of their political domination by the tsarist regime (the Russian conquest of Siberia and the subordination of indigenous peoples was only completed by the end of the 16th century, and the Russians did not reach the Pacific coast until 1639). Leibniz confidently spells out, in a 1708 letter to Johann Christoph von Urbich, the tsar's privy councillor in Vienna, the linguistic affinities between Russian, Polish, and Czech, on the one hand, and

between Finnish and Hungarian on the other. But he adds "I do not know how... many other particular languages are related, for example those of the Samoyeds, the Siberians, the Mordvins, the Circassians, and the Cheremysk."²⁷ The linguistic affinities between presumably nontextual cultures are harder to discern, but not for that reason any less important.

Leibniz is virtually alone among his contemporaries in taking the languages of preliterate peoples as themselves repositories of learning. He is convinced that each language is equally expressive: Samoyed, for example, is just as suited as Latin to expression of the Ten Commandments. But at the same time each language is for Leibniz uniquely fitted to an individual people's local environment and its exigencies. The Ten Commandments can be translated from Latin into Samoyed with no loss, since they have universal validity, but Samoyed might still be better suited to the naming and description of some local moss or shrub, and cultural distinctness consists for Leibniz in the sum total of the ways in which a group's linguistic practices bring about a fit between that group and its habitat.²⁸

²⁷ Ger'e, *Sbornik pisem i memorialov*, 88.

²⁸ In part, Leibniz's interest in 'primitive' languages could be motivated by a belief that they are better at capturing the essences of things. He is a staunch opponent of the Adamic theory of language, according to which the first language spoken by the first man was one that perfectly captured and reflected the essences of the things themselves, but at the same time he does believe that at its most primitive language is to some extent able to reflect essences, insofar as words are coined onomatopoeically. A false but interesting etymology offered by Leibniz in the *New Essays* of 1704 provides a nice example of this: Leibniz believes that the word 'quek' --which in old German signifies that which is living and which has modern cognates such as 'Quecksilber', 'erquicken', and the English 'quick' (as in 'the quick and the dead')-- comes directly from the sound made by frogs (G V, 261). In this and other cases, a word may be said to be primitive or natural when it reflects something real about at least the audible aspect of a thing's existence.

In a 1712 text on the origins of the Slavs, Leibniz claims he has "recently investigated in depth the origin and the antiquity of the Slavonic peoples. I find that in this task one has two means available: the languages that the people speak, and the old histories that are available about them." As for the Slavic peoples themselves, Leibniz believes that the best source of information will be their own written histories, and he beseeches a number of his Russian correspondents to procure for him a copy of the *Paterikon*, which he believes, sight unseen, to be a comprehensive history of the emergence of the modern Russian state from its ancient Slavonic roots. But he also notes that many of the cultures about which one must learn in order to distinguish the Slavs from the non-Slavs have no historical texts to draw on, or indeed any texts at all, and here all one has to draw on are the fragments of history embedded in spoken language. These are, in Leibniz's view, a source as rich as the most detailed history. "From the languages" alone, Leibniz believes that we can establish "that the entire North, to the extent that it is known to us, can be divided into four principle groups, namely, the Tartars, the Sarmatians, the Finns, and the Germans."

At times, Leibniz even writes as though the study of language itself, as opposed to texts, amounts to the ultimate frontier of philology. Thus in the *New Essays* of 1704 he looks forward to the day when all of the sacred texts of every literate culture in the world will have been exhaustively studied, and scholars can move on to the study of the languages themselves, which always precede the composition of texts. "When the Latins, Greeks, Hebrews and Arabs shall someday be exhausted," he writes,

the Chinese, supplied also with ancient books, will enter the lists and furnish matter for the curiosity of our critics. Not to speak of some old books of the Persians, Armenians, Copts and Brahmins, which will be unearthed in time so as not to neglect any light antiquity may give on doctrines by tradition and on facts by history.

With these textual traditions mastered, Leibniz thinks that the real work will have just begun: "And if there were no longer an ancient book to examine, languages would take the place of books, and they are the most ancient monuments of mankind." Here, we see that Leibniz's concrete efforts at obtaining samples of the languages of the Russian empire are in fact but one small part of this eventual post-textual human science. "In time, he continues, "all the languages of the world will be recorded and and placed in dictionaries and grammars, and compared together."²⁹ Sacred texts have no particular priority in the order of knowledge; indeed, texts themselves are only one part of the vast learning of human cultures that can be extracted by a diligent and systematic human science. The Samoyeds have their own ancient monuments, which constitute a part of world history whether they know it or not.

Of course, in his dealings with members of Peter the Great's inner circle, Leibniz typically frames his interest in the Samoyed and other groups in terms of the goal of Christianization, and the missionary aim of his ethnopropecting is certainly evident in his preferred means of collecting samples of local languages, namely, instructing native speakers to write out core texts of the Christian faith --the Our Father, the Apostles' Creed, and so on-- in their own languages. Repeatedly throughout the early years of the 18th century, Leibniz recommends to his many correspondents in Russia that they collect samples of languages by writing down these and other familiar texts in each of the indigenous tongues of the Russian Empire.³⁰ Thus for example, in an undated letter to Lubenetskii, another of the Tsar's councillors (probably composed between 1705 and

²⁹ *Nouveaux Essais*, Bk. III, ch. 9. G V 318.

³⁰ Max Müller wrote of Leibniz's contribution to Russian linguistics: "[the linguist Friedrich von] Adelung started out from collections of words that had been compiled under the auspices of the Russian government. But for these collections it is clearly Leibniz who must be thanked. Although Peter the Great had neither time nor inclination for philological studies, his government always kept in view the plan to collect all of the languages of the Russian Empire" (*Vorlesungen über die Wissenschaft der Sprache*, 119; Ger'e xxv).

1710), he writes: "I have long wished to have *specimina linguarum* that are in the Tsar's territory, and of those bordering it, in particular I would like to have the Our Father written with interlinear translations, as well as certain common words that are used in the languages. *In specie* I would like to have news of all the different sorts of Tartars, and of the distinctions between them. It is through languages that one can best distinguish peoples."³¹ From one correspondent to the next, Leibniz expresses his desire in identical or very similar language: to Peter, in December, 1712, he wishes for a "translation of the Ten Commandments, the Our Father, the Apostles' Creed, in the particular languages of the peoples who live in Your Majesty's broad kingdom or who are neighbors to it, together with a small dictionary of each language;"³² to Golovkin, a month earlier, he requests "samples [des Essais] of all the languages other than Slavonic that are to be found in the great Empire of the Tsar and in neighboring states. These samples would consist in a translation of the Decalogue, the Lord's Prayer, and the Apostles' Creed in each of the languages, written in Russian [Russiques] characters, with the Russian version written word for word interlineally;"³³ to the Ryazan Metropolitan Stefan Iavorskii, also in November, 1712, he expresses his wish for "the Catechisms, which at the same time will be able to push the peoples along towards the true faith and piety that are being taught, as well as the Decalogue, the Lord's Prayer, and the Apostles' Creed; these are to be written in the language of the people who are to be converted, with each language [also] written in Russian characters, and with a Russian version inserted between the lines."³⁴ In confirmation of the suggestion made earlier that Leibniz's prospecting is global in scope while nonetheless having local analogues, these requests might be read as a sort of expansion of the ethnopropecting project that Leibniz himself began as early as 1697, and about which he reports to Sparwenfeld in a letter of January of that year: "We have a small remnant of Slavs here in the Lüneburg region along the Elbe," he relates. "I have inquired about them, and have asked them for the Our Father, in

³¹ Ger'e, *Sbornik pisem i memorialov*, 50.

³² Ger'e, *Sbornik pisem i memorialov*, 286.

³³ Ger'e, *Sbornik pisem i memorialov*, 275.

³⁴ Ger'e, *Sbornik pisem i memorialov*, 278.

which I find some words that are not in the Lord's Prayer, and that seem to come from [Old] Prussian, so that I imagine that these Wends [i.e., Sorbs, or indigenous German Slavs] came from over there [i.e., from the historical center of Prussia, to the north of Saxony]."³⁵

Of particular importance in Leibniz's ethnolinguistic project is the task of relating current ethnic communities to those mentioned in classical texts, and particularly to determine who are the true descendants of the Scythians, and who of the Huns. He mentions to Golovkin the peoples who "earlier emerged from Greater Scythia [and are] now for the most part subject to the Tsar of the Russians, such as the Parthians, Alans, Roxolani, Huns, Bulgars, Avars, Khazars, Hungarians, and Cumans";³⁶ and to Iavorskii he speaks of "Great Scythia, the greater part of which belongs to the Russian ruler," and which "is known to have given rise to the ancient Saka, Parthians, Gets, Massagetians, Alans, Huns, Khazars, Bulgarians, Cumans, and the Hungarians themselves."³⁷ Witsen had maintained in a 1699 letter to Leibniz,³⁸ based on linguistic evidence, that the Slavs are the descendants of the Scythians, while at least for a time Leibniz himself believes that it was the Huns who gave rise to the Slavs. Often, it seems that Leibniz alters his account of who is descended from whom in the aim of political expediency. Thus in the 1712 text on the origins of the Slavs, Leibniz identifies them as direct descendants of the Huns, and also believes that the Huns are among the people who in antiquity were called 'Scythian'. And in a 1699 letter to the Dutch explorer Nicolaes Witsen, Leibniz mentions the report he has heard of the custom in Russia, wherein authorities of the church are themselves obliged to carry out the execution of criminals, and comments that "this is a custom that still retains something of the Scythian."³⁹ Yet in the letter to Peter of December, 1712, Leibniz characterizes Russian history, and actuality, as an ongoing battle of the Russians

³⁵ Ger'e, *Sbornik pisem i memorialov*, 7.

³⁶ Ger'e, *Sbornik pisem i memorialov*, 275.

³⁷ Ger'e, *Sbornik pisem i memorialov*, 278.

³⁸ Ger'e, *Sbornik pisem i memorialov*, 45.

³⁹ Ger'e, *Sbornik pisem i memorialov*, 42.

against Scythians ancient and modern. He proposes a 'Tabor' or 'wagon fortress [*Wagenburg*]' as a strategy for battle against the Turks --now taken to be the modern-day Scythians--, and notes that it worked well "in ancient times against the Scythian peoples on the flat plains" of the steppe. The ancient battle of the noble Russians against the barbaric Scythians continues, Leibniz wishes to imply.

It is not only in writing about the peoples of the tsar's empire that Leibniz allows political expediency to influence his conceptualization of the imagined ethnolinguistic map. In a text "On the Origins of the Nations of Transylvania" of 1697, Leibniz seeks to establish the antiquity of Germanic peoples in this region, which had long been under the reign of the Hungarian king. He notes that "it seems plausible that before the ancient Dacians -- also known as Gets (if we are to believe Strabo and others)-- there was a Gothic or Germanic people there."⁴⁰ This does not mean, however, that the Germans currently residing in Transylvania may be considered indigenous, since what "was German in that place... was long since eradicated by the migrations of peoples."⁴¹ However, the fact that there is an ancient legacy of Germans in this Hungarian territory means that the Saxon merchants who have settled there more recently should not be thought of as having been 'given' the right to live there by the king, but rather as being 'called' there "by the promise of the preservation of the liberty that is instilled in them at birth."⁴²

Key to the project of determining who comes from where in the ethnic salad of Transylvania is the close, descriptive study of dialectal variations. Leibniz repeats his familiar plea for the composition of more dictionaries, but this time in reference to the multiple dialects of the German language throughout Transylvania, in order to better understand the range and nature of the differences between speakers of German in Germany proper, on the one hand, and on the other those who had migrated into regions where they were in the minority. "It would be most desirable," he writes, "to have a little

⁴⁰ Dutens IV, ii, 206-07.

⁴¹ Ibid.

⁴² Ibid.

dictionary of the language of the common people of German Transylvania, and to request that other examples as well be added, which would be genuine, rather than made to fit our own way of speaking." The purpose of dictionaries for Leibniz is plainly descriptive rather than prescriptive. By accurately reflecting local ways of speaking, they will reflect local knowledge, and so too, it may be hoped, they will reflect features of the locality itself. In important respects, Leibniz's call for dictionaries that are 'genuine' parallels his ethnographic sensitivity in other domains, among them his siding with the renegade Jesuits in the 'rites controversy', who held that Catholic ritual in China must be adapted to accommodate elements of traditional ancestor worship, which is an expression of the same concern for the adaptation of universal truth to local contexts that motivates his interest in seeing the Ten Commandments composed in Samoyed.

The particular method of extending Christian sacred texts into the world of nontextual peoples, which would involve the composition and collection of dual-language prayers for study by Russian and European glottoprospectors, serves the dual purpose of forcing Christian concepts into, e.g., Samoyed, while at the same time providing a standard grid for comparing samples of different languages among themselves. The specific method Leibniz proposes, involving transcriptions in Cyrillic with interlinear Russian translations, might be compared to the standardization of the pressing of botanical holotypes; the use of the same texts across languages, in turn, bears a certain resemblance to the common approach in botanical taxonomy, promoted by Leibniz in his letter to A. C. Gackenholtz "On Botanical Method" of 1701, according to which some particular feature of plants, say, the serration of the leaves, provides a fixed criterion of comparison. Leibniz writes in the same letter to Gackenholtz: "I do not so much condemn the recent botanists' effort to assist memory by any method of dividing into classes that they judge the more suitable. I sooner praise their approach, as long as they do not adhere to it too rigidly and almost uniquely. Although, in advance of knowing the interior constitution of these machines of nature, no accurate method can be instituted, nonetheless a certain substitute method may be employed for the sake of our comprehension and progress in theory" (II). He goes on to say that "although I support an ordering into classes according to one certain criterion that is widely variable, I would reckon that other

criteria for ordering and comparing plants should not be neglected" (VI). We cannot know, at the beginning of any investigation, the kinds of things from their interior natures. But we can contrast plants featuring serrated leaves with plants having smooth-edged leaves. We can determine the medicinal or nutritive properties of both varieties, and later we can map the regions in which the different varieties can be found. Such a map would immediately reflect a reality of interest to any natural scientist, and would be of obvious use to any merchant or physician.

But what purpose, exactly, might an ethnolinguistic map of Eurasia be hoped to serve? Leibniz's treatment of ethnopropecting as of a pair with biopropecting strongly suggests an implicit presupposition that linguistic communities grow up in their distinct regions in a way more or less analogous to plants. Each kind of thing can be collected and compared to related neighbors. Languages can be placed into families in view of deeper affinities underlying differences in the lexicon or in the number of cases employed; plants can similarly be classed together in spite of variation from region to region in the length of the roots or the prominence of the flowering part. Yet it would be a mistake to suppose that Leibniz is committed to anything like organic nationalism, which sees national groups as essentially rooted in definite regions, and sees political rights to self-determination within that region as following from this rootedness. Obviously, Leibniz believes in the right of the Russian empire to rule in subjugated territories; he envisages no Samoyed nation state in the future.

In this respect, Leibniz is certainly no communitarian in the manner of Herder and others after him (who nonetheless draw inspiration from Leibniz's ethnolinguistic work). He takes for granted the existence of transnational empires, in which less mighty nations are by rights dominated by the stronger ones. In fact, as Leibniz explains to Golovkin in 1712, compilation of data on the linguistic diversity of the "Empire des Russes" would be useful for "marking the extent of the empire." Diversity is to be promoted not in the interest of promoting the political rights of the individual communities, but rather as a reflection of the empire's vastness and power (arguably, this was the operating principle behind Soviet multiculturalism as well, which celebrated regional costumes and dances,

but in a highly centralized way). This collecting of peoples through their representation on a map, for the greater glory of the sovereign who rules the territory depicted on the map, is not entirely discontinuous with Leibniz's 1671 plan to 'collect people' in the service of the French king, and to keep them discretely sectioned off from one another in language-based camps. What has changed is the method of collecting.

In part this shift can be explained by a general softening of Leibniz's temper over the course of his life, in part by his likely realization that samples of the Lord's Prayer are of more scientific interest than linguistically divided martial-arts camps. Beyond marking the extent of the empire, by means of comprehensive ethnolinguistic data "we would know the ancient origins of peoples, the relations between them, and their migrations."⁴³ This knowledge would not ensure their right to exist, let alone their right to self-determination. But the absence of any interest in the political repercussions of the data that would be included in the map shows, perhaps, the extent to which Leibniz conceives his ethnolinguistic project as a branch of natural history, or, perhaps better, the extent to which he presumes the unity of national history and natural history.

List of Works Cited

David Abulafia, *The Discovery of Mankind: Atlantic Encounters in the Age of Columbus*, Yale University Press, 2008.

Daniela Bleichmar, "Books, Bodies and Fields: Sixteenth-Century Transatlantic Encounters With the New World," in L. Schiebinger and C. Swan (Eds.), *Colonial Botany: Science, Commerce, and Politics in the Early Modern World*, University of Pennsylvania Press, 2005, 83-99.

⁴³ Ger'e, *Sbornik pisem i memorialov*, 275.

Daniela Bleichmar, Paula De Vos, Kristin Huffine, and Kevin Sheehan, *Science in the Spanish and Portuguese Empires, 1500-1800*, Stanford University Press, 2009

George Gale, "Leibniz, Peter the Great, and the Modernization of Russia, or, Adventures of a Philosopher-King in the East," in *Divinatio* 22 (2005): 7-36.

Stefano Gensini, *Leibniz: L'armonia delle lingue*. Bari: Biblioteca Universale Laterza, 1995.

V. I. Ger'e [Guerrier], *Leibnits" i ego vek"*, Saint Petersburg: V. Golovin, 1868.

Ekkehard Görlich. *Leibniz als Mensch und Kranker*. Hannover: MD dissertation, 1987.

Vladimir Katasonov. "The Utopias and the Realities: Leibniz' Plans for Russia," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 178-182.

Vladimir S. Kirsanov. "Leibniz' Ideas in the Russia of the 18th Century," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 183-190.

G. W. Leibniz, 'G. W. L. Epistola responsoria de Methodo Botanica ad Dissertationem A. C. G. Medici eximii', in *Monatlicher Auszug* April, 1701 VIII S.68-80.

----- *Otium hanoveranum, sive Miscellanea ex ore & schedis illustris Viri, piae memoriae Godofr. Guilielm. Leibnitii*, ed. Joachim Friedrich Feller. Leipzig: Johann Christian Martin, 1718.

----- *Gothofredi Guilelmi Leibnitii Opera Omnia*, ed. Louis Dutens. 6 vols. Geneva: De Tournes, 1768. Reprint, Hildesheim: Georg Olms, 1989.

----- . *Sbornik pisem i memorialov Leibnitsa otnosiashchikhsia k Rossii i Petru Velikomu*, ed. V. I. Ger'e [Guerrier], Saint Petersburg, 1873.

----- . *Die philosophischen Schriften von G. W. Leibniz*, ed. C. I. Gerhardt. 7 vols. Berlin: Weidmannsche Buchhandlung, 1875-1890.

----- . *Sämtliche Schriften und Briefe*. Edited by Deutsche Akademie der Wissenschaften. Darmstadt and Leipzig: 1923-present.

Kurt Müller and Gisela Krönert. *Gottfried Wilhelm Leibniz: Leben und Werk. Eine Chronik*, Frankfurt am Main: Klostermann, 1969.

Max Müller. *Vorlesungen über die Wissenschaft der Sprache*, ed. Carl Böttger, Leipzig: Gustave Meyer, 1866.

Franklin Perkins, *Leibniz and China: A Commerce of Light*, Cambridge University Press, 2005.

Wilhelm Piso and Georg Markgraf, *Historia medica et naturalis Brasiliae*, Amsterdam, 1648.

Moritz C. Posselt, *Peter der Grosse und Leibnitz*, Tartu and Moscow: Friedrich Severin Verlag, 1843.

Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World*. Harvard University Press, 2004.

----- , "Forum Introduction: The European Colonial Science Complex," in *Isis* 96 (2005): 52-55.

Sigrid von der Schulenberg, *Leibniz als Sprachforscher*, Frankfurt: Klostermann, 1973.

Justin E. H. Smith, *Divine Machines: Leibniz and the Sciences of Life*, Princeton University Press, 2010.

Thomas Sprat, *History of the Royal Society*, London, 1667.

Gerda Utermöhlen, "Leibniz im brieflichen Gespräch über Rußland mit A. H. Francke und H. W. Ludolf," in *Leibniz und Europa*, Vorträge VI. Internationaler Leibniz-Kongress, vol. II (1994): 304-309.