

LEIBNIZ ON THE UNICORN AND VARIOUS OTHER CURIOSITIES

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There is a flourishing literature on the culture of natural curiosity in the early modern period.¹ My interest is not about that culture as such, but rather about Leibniz himself, his pronouncements with respect to various natural curiosities, what these can reveal to us about his views on science, and the role they play in his plans for scientific academies and societies. However, before discussing Leibniz's statements concerning such fringe phenomena, given that his sincerity about even the gravest subjects has been called into question in Leibnizian twentieth-century secondary literature, I begin with a few historiographical remarks in order to situate these pronouncements within the Leibnizian corpus.

1. Historiographical Preliminaries

In his "Eloge de Monsieur Leibnitz," Bernard de Fontenelle complained that Leibniz's interests were very wide-ranging, so broad, in fact, that he could not write about Leibniz's works chronologically because "Leibniz wrote about different matters in the same years, and this almost perpetual jumble, which did not produce any confusion in his ideas, these abrupt and frequent transitions from one subject to another completely different subject, which did not trouble him, would trouble and confuse this history." Clearly, Leibniz's interests were broad even by eighteenth century standards: "In the same way that the ancients could manage simultaneously up to eight harnessed horses, Leibnitz could manage simultaneously all the sciences"—and by all "the sciences" Fontenelle meant all the traditional sciences of mathematics, metaphysics,

¹ See, for example, T. Leinkauf, *Mundus Combinatus Studien zur Struktur der barocken Universalwissenschaft am Beispiel Athanasius Kirchers SJ (1602-1680)* (Berlin, 1993), P. Findlen, *Possessing Nature* (Berkeley, 1994), W. Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton, 1994), P. Smith, *The Business of Alchemy: Science and Culture in the Holy Roman Empire* (Princeton, 1995), and A. Blair, *The Theater of Nature: Jean Bodin and Renaissance Science* (Princeton, 1997).

natural philosophy, and theology. So, Fontenelle proposed to split Leibniz up: "we will make several savants from only one Leibniz."² Modern commentators, such as Bertrand Russell and Louis Couturat, have been more parsimonious. They have conceived of Leibniz not so much as a universal genius working all the sciences at once, but as a systematic philosopher, a logician applying his intuitions to metaphysics, who was forced, because of his diplomatic position or his desire for persuasiveness, to write more popular essays about theology and science for the general public. They have argued that there were two Leibnizes, an esoteric, systematic, logician-metaphysician, who deserves to be studied carefully, and an exoteric, shallow, theologian-natural philosopher, who barely needs to be read.³ Nowadays we have rejected this dual Leibniz as not meshing very well with our image of the whole Leibniz: the relations between Leibniz's logic and metaphysics were not as close as Russell and Couturat thought;⁴ changes in Leibniz's physics corresponded well with changes in his metaphysics;⁵ and, in any case, it hardly seems possible to understand Leibniz's metaphysics without reference to his theology.⁶

There is no real danger of returning to the turn-of-the-century image of Leibniz, but there is still the possibility of thinking that there is a dual Leibniz. We can find the esoteric/exoteric distinction invoked, with more plausibility, in some recent essays. Leibniz himself may be the cause of this situation, for he sometimes talked of there being deep reasons hidden below the surface in his works, of not accepting his proclamations about other philosophers at face value, of saying different things to different people depending upon the appropriateness of the forum.

A recent article, discussing Leibniz's seeming contradictions about corporeal substance in his later metaphysics, quotes him as saying to Bartholomew Des Bosses:

² Fontenelle, "Eloge," in G. W. Leibniz, *Opera Omnia*, ed. L. Dutens (Geneva, 1768), 1: xx.

³ See B. Russell, *A critical Exposition of the Philosophy of Leibniz* (London, 1900) and L. Couturat, *La Logique de Leibniz* (Paris, 1901; reprint ed. Hildesheim, 1969).

⁴ See G. H. R. Parkinson, *Logic and Reality in Leibniz's Metaphysics* (Oxford, 1965).

⁵ See D. Garber, "Leibniz: Physics and Philosophy," in *Cambridge Companion to Leibniz*, ed. N. Jolley (Cambridge, 1994), 270-352.

⁶ See R. C. Sleight, *Leibniz and Arnauld, A Commentary on Their Correspondence* (New Haven, 1990).

I do not think that those things we have discussed concerning philosophical matters are suited for communication in any public way I have written these things for you, namely for the wise, not for any one at all. And thus they are hardly appropriate for the *Mémoires de Trevoux*, which is intended more for a popular audience; I hope that you, in virtue of your goodwill towards me, would not allow them to appear in such an unsuitable place.⁷

The article then attempts to diminish the apparent contradictions by discounting various Leibnizian pronouncements; those of the *Theodicy* are said to be from a popular book: "But we must remember that this is the *Theodicy*: a book that Leibniz was prepared to release to the general public and for which he craved the widest possible support."⁸ A similar judgment is applied to the *Principles of Nature and Grace*, as compared to the *Monadology*, that is, the former is a "less abstract" summary of Leibniz's philosophy, not intended for the "wise."⁹ And Leibniz's assertions to René-Joseph de Tournemine are said to be "a masterly exercise in diplomacy," given that Tournemine is a leading Jesuit and that Leibniz, being respectful of the Jesuits' authority, did not wish to appear overly innovative. Leibniz is said to have been "disingenuous" in his response.¹⁰

Another recent article quotes a Paris-period Leibniz as saying:

A metaphysics should be written with accurate definitions and demonstrations, but nothing should be demonstrated in it apart from that which does not clash too much with received opinions. For in that way this metaphysics can be accepted; and once it has been approved then, *if people examine it more deeply later, they themselves will draw the necessary consequences* In this metaphysics, it will be useful for there to be added here or there the authoritative utterances of great men, who have reasoned in a similar way.¹¹

The "especially important lesson" to be derived from the above is that "as students of Leibniz, we must not be satisfied with the definitions and demonstrations that he offers, nor should we accept at face value his proclamations about other philosophers. Rather, we must be willing to dig beneath these definitions and comments in

⁷ G. W. Leibniz, *Philosophische Schriften*, ed. C. I. Gerhardt (Berlin, 1875-90), 2: 328.

⁸ D. Rutherford, "Metaphysics: The late period," in *Cambridge Companion to Leibniz*, ed. N. Jolley (Cambridge, 1994), 158.

⁹ Rutherford, "Metaphysics: The late period," 163.

¹⁰ Rutherford, "Metaphysics: The late period," 156-57.

¹¹ G. W. Leibniz, *Samtliche Schriften und Briefe* (Darmstadt and Leipzig, 1923-), 6.3: 573. Also cited in a discussion of Leibniz's sincerity by R. M. Adams, *Leibniz: Determinist, Theist, Idealist* (Oxford, 1994), 52.

an attempt to discover the more fundamental assumptions beneath."¹²

Whatever one decides about such theses,¹³ it is clear that one has to tread carefully as one is reading Leibniz. We may have to accept a dual Leibniz; it is just possible that he is not always forthcoming with his best considered view or his most precisely formulated theory and that he changes his presentation depending upon his audience. But the distinction between an esoteric and an exoteric Leibniz cannot cut between philosophy narrowly considered, on the one hand, and science or theology, on the other, as Russell and Couturat would have wanted it. We might have to pay attention to Leibniz's chosen mode of dissemination, but that would hold true for all of Leibniz's endeavors. What is important for the purposes of this essay is that, further, whatever one thinks of the natural curiosities Leibniz discusses and whatever one thinks of his accounts, there is no reason to think *by these criteria* that Leibniz was not just as serious when working on the natural sciences as when working on any of the other sciences (broadly construed).

There is, in fact, no demarcation in Leibniz's thought between philosophy and science and among the various sciences. Whenever Leibniz uses the word "science" (in Latin or French, of course), it means "knowledge," as opposed to the explanation of natural phenomena (or a human endeavor dealing with natural phenomena). For Leibniz *scientia* is a technical term signifying knowledge in the strict sense, normally entailing certainty or truth, to be contrasted with *cognitio*, or knowledge in the weak sense, something close to understanding, acquaintance, or even cognition.¹⁴ In the seven-

¹² Mercer, in C. Mercer and R. C. Sleight, Jr., "Metaphysics: The early period to the Discourse," in *Cambridge Companion to Leibniz*, ed. N. Jolley (Cambridge, 1994), 71.

¹³ There is a fair amount of evidence for the proposition that Leibniz might have tailored his various pronouncements to fit his audience. There are even a couple of stories that Leibniz repeated which indicate that he would not have been embarrassed to have been seen as doing so. See the early episode about his writing a letter of entrance to an alchemical society and the later episode about his pretending to be a devout Catholic in R. Ariew, "Leibniz: Life and Works," in *Cambridge Companion to Leibniz*, ed. N. Jolley (Cambridge, 1994), 21, 31.

¹⁴ See Leibniz, "Meditation on Knowledge, Truth, and Ideas," *Philosophical Essays*, ed. and trans. R. Ariew and D. Garber (Indianapolis, 1989), 23-34 or "Discourse on Metaphysics," sec. 24, *Philosophical Essays*, 56-57. *Scientia* or *science* is also applicable to God, as divine knowledge (*la science divine*), with a distinction to be drawn between God's knowledge of possibles, that is, his simple understanding (*scientia simplicis intelligentiae*), and his knowledge of actuals, that is, his knowledge

teenth century, one could use “science” in a relatively modern sense to refer roughly to the human activities to which we presently refer, namely, physics, biology, and perhaps mathematics, but along with physics, biology, and the mathematical sciences, the “sciences” would also include much of philosophy, together with metaphysics and theology.¹⁵

Leibniz can also refer to the sciences in this more or less modern sense. What we call sciences, Leibniz would think as belonging to two of the three parts of philosophy. This is made clear by one of Leibniz’s classification schemes for libraries. He divides books into various fields: theology, medicine, jurisprudence, philology, history, etc. What we would call philosophy corresponds with what he calls intellectual philosophy, divided into theoretical, that is, logic, metaphysics and philosophy of mind, and practical, that is, ethics and political philosophy). What we would call mathematics and the mathematical sciences, he calls the philosophy of imaginable things, or mathematics, divided into arithmetic, algebra, geometry, but also including, in good seventeenth century fashion, musical theory, physical astronomy, geography, optics, mechanics, etc. And what we call science, he calls the philosophy of sensible things, or physics, including physics, chemistry, and other physical or biological investigations—specifically including also the mineral and vegetative realms.¹⁶

by intuition (*scientia visionis* or *la science de la vision*)—see Leibniz, “Letter to Arnould, May 1686,” *Philosophical Essays*, 74, and “The Source of Contingent Truth,” *Philosophical Essays*, 98-101.

¹⁵ For example, two of the volumes of S. Dupleix’s multi-volume collegiate textbook, written around 1603-1610, concern the “sciences”: *La Physique, ou science des choses naturelles* and *La métaphysique, ou science surnaturelle*. Here “science” encompasses much that we wouldn’t consider as science; given that another of Dupleix’s volumes is entitled *La logique, ou art de discourir et raisonner*, in this tradition, the main contrast for “science” is “art” or “practice”; see Dupleix, *La logique* (Paris, 1984), I, chap. 8-11.

¹⁶ “Philosophia Intellectualis: Theoretica, Logica, Metaphysica, Pneumatica; Practica, Ethica & Politica.

Philosophia rerum imaginationis, seu mathematica: Mathesis pura, ubi Arithmetica, Algebra, Geometria, Musica; Astronomia cum Geographia generali, Optica, Gnomonica; Mechanica, bellica, nautica, Architectonica; Opificiaria, omnigena a vi imaginationis pendentia.

Philosophia rerum sensibilibum seu Physica: Physica massarum, & similarium, quo pertinet etiam Chymia, de aqua, igne, salibus, &c.; Regni mineralis; vegetabilis, quorsum Agricultura; animalis, quorsum Anatomica quoque; Oeconomica, & opificiaria artificialis physicis nitentia.” *Idea Leibniziana Bibliothecae ordinandae contractior*, *Opera Omnia*, 5: 213-14.

2. Various Monsters

Leibniz wrote about various natural curiosities to the most scholarly audiences, to the *Journal des savans*, to the *Acta Eruditorum* of Leipzig and to the *Mémoires de l'académie Royale des sciences de Paris*. These are the very same journals in which Leibniz published his mathematical works, his dynamics, and his philosophy; the Académie Royale is the institution to which Leibniz dedicated his *Theoria motus abstracti* and of which he became a member in 1700. During his mature period at Hanover, the 40 years from about 1676 to his death in 1716, Leibniz published more than 100 articles in learned journals.¹⁷ He published over 25 of them in the *Journal des Savans*, including some of his crucial papers on physics and mathematics¹⁸ but also letters concerning “une expérience considérable d’une eau fumante,”¹⁹ “La manière de perfectionner la medecine,”²⁰ and “La relation et la figure d’un chevreuil coiffée d’une manière fort extraordinaire.” He published over 50 papers in the *Acta Eruditorum*, again including some of the essays intended as rivals to Newton’s *Principia*,²¹ but also “Meditatio de separatione salis et aquae dulcis” and a summary of the *Protogaea*.²² He likewise issued another 25 articles or so, many of them polemics, in various other journals;²³ for the *Mémoires de l'académie Royale des sciences de Paris*, Leibniz wrote “Explication de l’Arithmetique binaire qui se sert des seuls caractères 0 et 1, avec des remarques sur son utilité, et sur ce qu’elle donne le sens des anciennes figures Chinoises de Fohy,” “Mémoire sur les pierres qui renferment

¹⁷ Ravier—in E. Ravier, *Bibliographie des Oeuvres de Leibniz* ([1937] reprint ed., Hildesheim, 1966)—lists 115 articles, together with 60 monographs, 68 chapters in edited works, and 56 reviews.

¹⁸ Such as “Si l’essence du corps consiste dans l’étendue,” “Nouvelles remarques touchant l’analyse des transcendentes,” and “Système nouveau de la nature” and its subsequent “Eclaircissements.”

¹⁹ “Nous avons vu icy une expérience considérable d’une eau fumante. Elle fume a froid et ne cesse point de fumer qu’elle ne soit tout a fait exhalée. Cependant, on la peut conserver tant qu’on veut dans une bouteille bien bouchée. Quand on la verse sur quelque chose, il en sort d’une fumée si épaisse qu’on jugeroit à la voir de loin qu’il y a en cet endroit quelque chose qui brûle.”

²⁰ Leibniz asked for a history of medicine at Paris and the Isle de France and other provinces, proposing to write annual histories of illnesses in France.

²¹ Such as “Brevis demonstratio,” “Tentamen de motuum caelestium causis,” “Specimen Dynamicum,” and “De ipsa natura.”

²² *Acta Eruditorum* (January 1693, erroneously dated 1692), 40-42.

²³ Such as the *Nouvelles de la République des lettres*, *Histoire des ouvrages des savans*, and *Mémoires de Trevoux*.



The picture of a monstrous goat transmitted by Leibniz to the *Journal des Savans* on behalf of his employer, Johann Friedrich.

des plantes ou des poissons desséchés,” and “Exposé sur un chien qui parle.” There is no reason to treat Leibniz’s work in natural history other than as seriously as he seems to have intended it—as seriously as one might treat anything else he tried to accomplish. Certainly, Leibniz’s correspondents dealt with this material as if it were important. Perhaps a good illustration of such an exchange would be the one described in the “Extract from a letter of Leibniz to the author of the *Journal des Savans*, written from Hanover on 18 June 1677, containing the account and picture of a goat whose hair is arranged in an extremely unusual manner.”

The exchange is a simple report by the editor of the *Journal des Savans*, l’Abbé La Roque, containing a few paragraphs and a picture. The first paragraph is a flattering gesture to duke Johann Friedrich, Leibniz’s employer, together with a request that he share more of his curiosities.²⁴ There follows an account of

²⁴ “L’Honneur que nous fait S. A. S. M. le Duc d’Hanovre de donner à la lecture de nos Journaux quelque’un de ces momens précieux qu’il emploie avec tant de succès au bonheur de ses Etats, et à la gloire des belles-lettres, est un effet de cette curiosité que lui donne une vaste étendue d’esprit, qui au milieu des plus grandes affaires qui l’occupent, lui laisse encore plus du tems pour les belles

Leibniz's letter. Apparently, the duke, seeing a monstrous hare depicted in the *Journal des Savans*, gave Leibniz the picture of a goat whose hair was arranged in a strange manner. According to Leibniz,

Sr. Winckel got the goat from Dessau in the land of Anhalt and raised it at Meest, a land that belonged to him. At first there was nothing out of the ordinary with it; but afterwards it needed to be tied down because it kicked passersby, then this headdress that appeared around his head grew.

Leibniz speculates about the cause of the "headdress":

I do not know whether the grief it had by being deprived of freedom contributed to it; for you know what the stories teach us, that a great unhappiness or worry was able to change the color of a prisoner's hair in one night and make an old man out of a young one. The doctors made some even more extraordinary observations, which have greater bearing on the headdress or growth with which we are concerned, about a substance which is not very hard, but which can nevertheless be called *rudimentum cornuum*, because it is this substance from which the horns are formed.

Be that as it may, his majesty intended to send this goat to the king, as he had done in similar circumstances; but the goat died a few months later. A picture was made of it from life, of which a faithful and exact smaller copy is enclosed.

The editor of the *Journal* accepted Leibniz's generally sober account, published the picture, and even embellished upon Leibniz's remarks:

We can add to Mr. Leibniz's reflections that the physical cause of this growth could be attributed to the aqueous humor of this animal not being able to be dissipated when it was tied down, as it is ordinarily through the heat these kinds of animals acquire through their leaps, their bounds, and their running around; this great humidity which was mixed with the juice and volatile salt that form the horns, then drove down this matter by its weight and rendered it soft, with a colder temperament.²⁵

None of this seems unusual by seventeenth century standards. In fact, what should come across in the contrast between Leibniz and the editor of the *Journal des Savans* is Leibniz's hesitancy and caution.

choses. Mais la bonté avec laquelle ce Prince si intelligent et si éclairé daigne enrichir nôtre travail, par la part qu'il veut qu'on nous fasse des choses les plus rares qui se trouvent dans ses Etats, est une suite de l'estime qu'il fait de celui de tous les sçavans, qui peut-être pourroit un jour l'obliger à nous faire communiquer les choses merveilleuses de Physique et de Mécanique qu'il fait voir tous les jours avec admiration aux gens de sa Cour, qui ont l'honneur de l'approcher de plus près," "Extrait d'une lettre de M. L. à l'Auteur du Journal des Savans, écrite de Hanover le 18 Juin 1677, contenant la relation et la figure d'un chevreuil coiffée d'une manière fort extraordinaire," *Opera Omnia*, 2b: 175.

²⁵ Ibid.

A similar attitude was shown by Leibniz in his account of a talking dog. In an initial letter to Pierre de Varignon, who reported the phenomenon to him, Leibniz spoke skeptically about the matter, though he allowed its possibility, especially given that the account came from "a Prince who has seen the dog speak at a fair, where a multitude of other people can testify to the truth of the matter."²⁶ Two years later, Leibniz wrote that he "has now seen and heard the talking dog; it pronounced well the words *thé*, *café*, *chocolat*, and *assemblée*, among others."²⁷ In the report to the Académie, Leibniz described the dog as a common, middle-sized dog owned by a peasant. According to Leibniz, a young girl who heard the dog make noises resembling German words decided to teach it to speak. After much time and effort, it learned to pronounce approximately thirty words, including *thé*, *café*, etc., French words which had passed into German unchanged. The dog, described as having had a disposition which is rarely found in other dogs, was three years old when it was trained. Leibniz also adds the crucial observation that the dog speaks only "as an echo," that is, after its master pronounced the word; "it seems that the dog speaks only by force, in spite of itself, though without ill-treatment."²⁸

Leibniz's stand concerning the possibility of a talking dog is mirrored in what he says about prophets and genies. In a letter to Pierre Coste, he defends himself against an intimation that the existence of prophets would be contrary to his hypothesis of pre-established harmony.²⁹ Leibniz asserts that the existence of prophets "would strongly agree with it. I have always said that the present is pregnant with the future, and that there is a perfect interconnection between things, no matter how distant they are from one another, so that someone who is sufficiently acute could read the one from the other." He elaborates:

I would not even oppose someone who maintains that there are spheres in the universe in which prophecies are more common than in ours, just as there might be a world in which dogs have noses sufficiently acute to smell their game at 1,000 leagues; perhaps there may also be spheres in which genies have greater leave than they have here below to interfere with the

²⁶ *Mathematische Schriften*, ed. C. I. Gerhardt (Berlin, 1849-55), 4: 194.

²⁷ *Mathematische Schriften*, 4: 199.

²⁸ "Exposé d'une lettre de Mr. Leibniz à l'Abbé de St. Pierre, sur un chien qui parle," *Opera Omnia*, 2b: 180; *Hist. de l'Académie Royale des Sciences de Paris*, 1715.

²⁹ *Philosophische Schriften*, 3: 393-94.

actions of rational animals. But when it is a question of reasoning about what actually happens here, our presumptive judgment must be based on what is usual in our sphere, where these kinds of prophetic views are extremely rare. We cannot swear that there are no such prophets, but, it seems to me, it is a good bet that those in question are not.

Leibniz then reproaches Coste for having gotten his facts about prophets from newspapers, instead of getting them directly from a reliable source; he adds, paraphrasing the facts that Coste recited,

If you yourself have observed, with all due attention, a gentleman with a yearly income of two thousand pounds sterling who prophesies well in Greek, Latin, and French, although he only knows English well, there would be nothing to criticize. Thus I beg you to send me some more information about this very curious and important matter.³⁰

3. *The Unicorn*

Having hopefully established Leibniz as a sober, cautious interpreter, a skeptic or a debunker, one might say, though clearly not a close-minded person, but one who is prepared to concede the



The Quedlinburg monster or unicorn

³⁰ *Philosophische Schriften*, 3: 403-04; "Letter to Coste, on Human Freedom," *Philosophical Essays*, pp. 195-96. Coste's undated reply relates that the prophets lost all credibility because of their rash prediction of the resurrection of one of their members. *Philosophische Schriften*, 3: 405.

possibility of many strange phenomena, we are in the position to analyze his belief in unicorns. There is a strange picture appended to *Protogaea*, chapter 35, "Concerning the horn of the unicorn and the monstrous animal dug up at Quedlinburg."

The *Protogaea, or on the primitive aspect of the earth and on the traces of a most ancient history enclosed in the very monuments of nature*, is Leibniz's volume of natural history or geology. It happens to be the first volume of Leibniz's history of the house of Hanover, which the Princes of Brunswick had delegated him to write. Leibniz intended to preface his history with a dissertation on the state of Germany as it was prior to all histories, taking as evidence the natural monuments, shells petrified in earth, stones with the imprint of fish or plants, and even fish and plants not from the country itself, but bearing the marks of the flood. As he says at the beginning of the book, "Even a slight notion about great things has its cost. Thus, in order to trace our state back to its first beginnings, we should say something about the first configuration of the earth and about the nature of the soil and what it contains."³¹

³¹ G. W. Leibniz, *Protogaea*, ed. Ludwig Sheidt (Göttingen, 1749), 1. Leibniz intended to continue his history by treating the oldest known people, then the different peoples that succeeded one another in that country, treating their languages, and the mixtures of these languages, to the extent that they can be judged by etymologies. The origins of Brunswick would begin with Charlemagne and continue with the Emperors descended from him and with the five Emperors of the House of Brunswick. This segment of time would encompass the ancient history of Saxony through the House of Witikind, of Upper Germany through the House of the Guelfs, and of Lombardy through the Houses of the Dukes and Marquis of Tuscany and Liguria, tracing the descent of the Princes of Brunswick. After these origins would come the genealogy of the House of the Guelfs, with a short history up to the seventeenth century. This genealogy would be accompanied by those of the other great Houses, including the House of the Ghibellines, ancient and modern Austria, and Bavaria. To accomplish his design and to amass sufficient materials, Leibniz scoured the whole of Germany, visited ancient Abbeys, searched town archives, and examined tombs and other antiquities. He never completed the *History of the House of Brunswick*, which was probably an important reason for why he was out of favor with his employer toward the end of his life. But we should not think that Leibniz balked at the project, preferring instead to write a volume of geology. In fact, Leibniz took on the project with his customary optimism, that is, he took on much more than he could reasonably accomplish. One cannot look upon the masses of corollary materials he did publish and think that he was not completely given to the project, including the first volume. Among other works, Leibniz brought out the *Codex Juris Gentium Diplomaticus*, a volume containing the acts of nations, declarations of war, peace treaties and marriage contracts of various sovereigns, in 1692; and in 1700, he published a supplement to the volume; from 1707-11, he published a three-volume collection of original pieces related to the history of Brunswick, *Scriptorum Brunsvicensia illustrantium*. (Leibniz also published *Lettre sur la connexion des maisons de Brunsvic et d'Este*,

The text of chapter 35 on unicorns is brief. Leibniz begins with a skeptical remark:

Since it has been demonstrated by Bartholin that unicorns (once one of the most curious and rarest ornaments of natural history cabinets but now surrendered to the people's admiration) come from fish from the Northern ocean, we are allowed to think that the unicorn fossil found in our countryside has the same origin.³²

But Leibniz does not think that all the remains of unicorns can be accounted for in the same way, as remains of aquatic animals, that is, as narwhal teeth:

However, we should not hide the fact that a quadruped unicorn of the size of a horse can be found in Abyssinia, if we have to believe the Portuguese Hieronimus Lupo and Balthasar Tellesio;³³ and similarly, the skeleton extracted from limestone in 1663 on Mount Zeunikenberg, next to Quedlinburg, looked more like a terrestrial animal than anything else.

Moreover, the 1663 skeleton was discovered by Otto von Guericke, an observer with impeccable credentials, as Leibniz reminds us:

This fact was certified by Otto von Guericke, Burgomaster of Magdeburg, who has ennobled our era by his discoveries. He was the first inventor of a pump capable of aspirating the air from a container, making remarkable demonstra-

1695; *Specimen Historiae Arcanae sive Anectodatae de Vita Alexandri VI*, 1696; *Dissertatio de Origine Germaniorum*, 1697; *Accesiones Historicae*, vol. 1, 1698, vol. 2, 1700; *Alberici Monachi Trium Fontium Chronicon*, 1698.) Leibniz left behind enough materials that G. H. Pertz, a Hanover librarian and editor of Leibniz's works was able to put it all together and finally publish the history in four fat volumes during the nineteenth century. The only complete unpublished manuscript was the preface, the *Protogaea*; but it was not totally unknown. Leibniz disseminated bits and pieces of it in letters, various articles in learned journals, and inserted a few paragraphs of it in his *Theodicy*. He appeared most proud of his account of fossils, having written a letter about fossils, the aforementioned report to the Académie des Sciences de Paris about fossils, and various sections of *Protogaea*, particularly chapter 18, "Where do the imprints of various fish in clay come from?" which I discuss below. ("Epistola ad autorem dissertationes de figuris animalium quae in lapidibus observantur, & lithozoorum nomine venire possunt," *Opera Omnia*, 2b: 176-77, and *Mémoire sur les pierres qui renferment des plantes & des poissons desséchés*, *Opera Omnia*, 2b: 178-79).

³² The note by Bertrand de Saint-Germain refers to "Gaspar Bartholin, the noted Danish physician and naturalist from the first half of the 17th century." Leibniz might have been referring to "De unicornu eiusque affinibus et succedaneis," from *Opuscula quatuor singularia* (Copenhagen, 1628) of Caspar Bartholin (1585-1629), but he also could have been referring to its revision in *De unicornu observationes novae accesserunt de aureo cornu* (Poitiers, 1645) by Thomas Bartholin (1616-1680).

³³ According to J.-M. Barrande, Tellesio was a Portuguese Jesuit who wrote *Historia general de Ethiopia Alta* (1660), translated and summarized by Thévenot. *Protogaea: de l'aspect primitif de la terre*, ed. J.-M. Barrande and trans. B. de Saint-Germain (Toulouse, 1993), 242

tions of it in 1653 to the Diet of Ratisbon, in the presence of the Emperor himself. This invention was then marvelously perfected by the rare genius of the Englishman, Robert Boyle, that illustrious man, brother of the Irish Count of Cork, who has enriched us with a new treasury of experiences.

Leibniz continues,

Thus Guericke, in the book he published on the void, relates incidentally that a skeleton of a unicorn animal was found with a lowered back, as is common with animals, but with its head raised and its forehead armed with a horn of almost five ells, of the size of a man's thigh, but tapering by degrees. This skeleton was broken and extracted by pieces, because of the ignorance and carelessness of the diggers. But the horn, united with the head and some ribs, as well as the backbone and some bones, were brought to the abbess of the place.³⁴

If I may be permitted a presentist comment: The figure to which we have been referring was originally printed in 1704 by Michael Bernhard [Valentini], who drew it from notes and sketches by von Guericke and descriptions of it by Johann Mayer;³⁵ it was then reproduced by Leibniz and printed with the original edition of the *Protogaea* by C. L. Sheidt in 1749 and included in Louis Dutens' *Leibnitii Opera Omnia*, volume II, in 1768. The editor and translator of the nineteenth century French edition of the *Protogaea*, Bertrand de Saint-Germain, refused to reproduce the drawing and other such figures without comment, but elsewhere proclaimed with respect to Steno's drawing of glossopetrae and a monstrous shark that "il s'éloigne trop de la nature pour qu'il soit utile de la reproduire ici."³⁶ However, accompanying the unicorn is another figure, which, it is alleged, is sufficiently natural that contemporary geologists can identify it as a fossil elephant molar.³⁷ The inference is then drawn that Leibniz's unicorn was an imaginative reconstruction of the bones of an elephant with only one tusk.³⁸

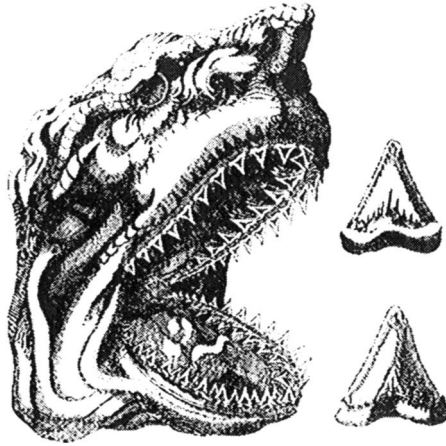
³⁴ Chap. 35, *Opera Omnia*, 2b: 230: De cornu Monocerosis et ingenii animalis Quedlinburgi effosso. Von Guericke's book is *Experimenta nova, ut vocant Magdeburgica, de paucis spatio* ... (Amsterdam, 1672). See *Protogaea: de l'aspect primitif de la terre*, 242-43.

³⁵ B. Accordi, "The Museum Calceolarium (XVIth century) of Verona Illustrated in 1622 by Ceriti and Chiocco." *Geologica Romana* 14 (1977), 42.

³⁶ *Protogée*, ed. and trans. B. de Saint-Germain (Paris: L. Langlois, 1859), 80 note.

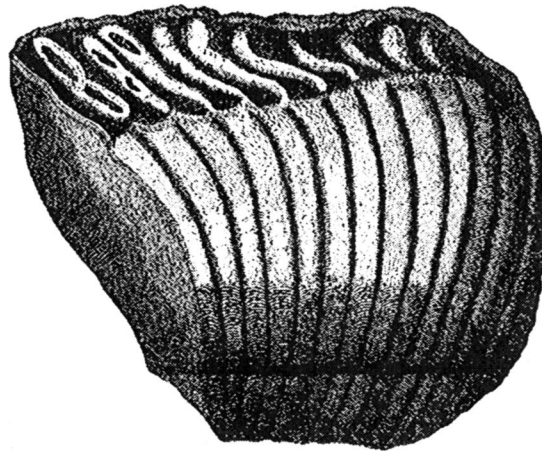
³⁷ Accordi, "The Museum Calceolarium": "the same drawing next to which is a fossil elephant's molar."

³⁸ "C'est de reste à la suite de la découverte par Otto von Guericke à Quedlemburg, dans le Harz, en 1663, des fragments d'un squelette (les ossements d'un éléphant, mais avec une seule défense), que Leibniz fut convaincu de la réalité des licornes," A. Schnapper, *Le géant, la licorne et la tulipe. Collections et collectionneurs dans la France du XVIIe siècle* (Paris, 1988), 1: 94.



Steno's drawing, reproduced by Leibniz, which Bertrand de Saint-Germain refused to reproduce as "too unnatural"

Das animalis mami Tule porre Stenoharyum i colle limoso affixi.



The reproduction of a fossil identifiable as an elephant molar

Chapter 35 of the *Protogaea* is preceded by some chapters relevant to Leibniz's account of the unicorn. Chapter 31 is entitled "Glossopetrae are shark teeth." Leibniz sometimes gets the credit for demystifying glossopetrae in the secondary literature, but, as he himself indicates, he was simply repeating the views of previous

Italian naturalists.³⁹ In chapter 31, he compares favorably glossopetrae with shark teeth and reaffirms the conclusions of the Italian painter-naturalist Agostino Scylla and of his countryman Nicolaus Steno.

In chapter 32, "The Use of Glossopetrae in Medicine is well-known," Leibniz continues the removal of glossopetrae from the realm of magic; he relates the various claims made for their curative properties: an antidote against poisons, a medicine for stomach aches, sore throats, blisters that arise from sour humors, and internal acids. He claims that "one cannot refuse a certain medicinal value to them, but that this value is very exaggerated by credulity In my opinion, glossopetrae are most useful as toothpaste, either because the powder obtained from them is sufficiently hard and rough, or because this dental matter seems to be what is least harmful for teeth." Chapter 33 details a classification of shells,⁴⁰ and chapter 34 discusses various fossils from the Baumann and Scharzfeld caves.⁴¹

The chapters following the one on the unicorn are also quite revealing. Chapter 36 concerns a "description of Scharzfeld cave and of the bones found in it" and chapter 37 is a "description of Baumann cave and of what it contains." From the personal account these chapters contain, it appears that Leibniz actually visited these caves: "My subject invites me to speak most particularly of the two caves of my country which I have visited in person ... Scharzfeld ... is called by the people who live in the area the cave of the dwarfs, because a person of ordinary height cannot enter it except by crawling." (Thus, one has to imagine Leibniz on his stomach entering Scharzfeld cave.) He states "one also finds there a great number of teeth of various color, often white, and frequently implanted on pieces of jawbones; some of them are of such magnitude *that they cannot be referred to any actually known animal*." He continues, "on one of the columns [stalagmites] it is believed one sees the image of a monk; on another the image of Moses with horns." But Leibniz concludes that "as for the games⁴² of nature

³⁹ Cf. Accordi "The Museum Calceolarium," 33, who credits Fabio Colonna as the first to recognize glossopetrae as shark's teeth.

⁴⁰ Chap. 33: "De Belemnitis, Osteocolla, Corallio, Strombitis, Conchyitis, Trochitis, Entrochitis, Ebore fossili."

⁴¹ Chap. 34: "De offibus, maxillis, et dentibus minoribus et majoribus, quae in antro Baumanniano et alibi etiam apud nos inveniuntur."

⁴² Throughout, what I translate as "games of nature" is *lusus naturae*, more properly "sports of nature"; this is perfectly good English, as in "the little dog laughed

which one calls to the attention of the visitor, they need the help of the imagination.”⁴³

4. *Fossils*

Thus, the chapters surrounding chapter 35 are sober reflections, from the demystification of glossopetrae and their medicinal use to the debunking of various games of nature. If so, then why should Leibniz be, as it were, “taken in” by Von Guericke’s “unicorn”? The answer lies in Leibniz’s account of fossils. For Leibniz, fossils are the remains of animals. They are the real products of a natural furnace, the earth, created on analogy with goldsmiths who produce a golden insect by pouring gold into a mold made by covering an insect with some suitable metal and driving away its ashes.⁴⁴ Leibniz’s thesis was a conscious attempt to oppose the then-fashionable views of Athanasius Kircher, Joachim Becher, and others, who held that fossils are mere games of nature produced by the force that nature has of making stones (the *vis lapidifica*) and requiring no further explanation. “Those who hold a different opinion from ours have let themselves be seduced by the frivolous accounts, set out in somber fashion, in the writings of Kircher, Becher, and others, who speak of *marvelous games of nature* and of *nature’s formative force*.”⁴⁵

Leibniz summarizes his thoughts on fossils in his *Mémoire* to the Académie on *Stones Containing Dried Plants and Fish*. There he argues that some kind of earth has covered up various lakes and buried plants and fish. That earth then hardened into clay, and time, or some other cause, then destroyed the delicate matter of the plants or fish, in the same way flies and ants wither away in amber. The matter of the plants or fish, having been consumed, left behind in the clay an imprint which was then filled by some other matter and baked by the subterranean fire or by some other chemical process. Having given his naturalistic account of fossils as

to see such a sport”—sport as genetic mutation—but slightly archaic. The example is due to Richard Arthur.

⁴³ *Protogaea*, chap. 29: “ludicra imaginationis”; “fictas pleraque aut semivisa ... imaginatio in rerum signaturis ludit”; “sed haec imaginationis judicia sunt, non oculorum.”

⁴⁴ *Protogaea*, chap. 18.

⁴⁵ *Protogaea*, chap. 29; see also chap. 20.

the petrification of the remains of animals, Leibniz then takes on his opponents:

Several authors have called these kinds of representations of fish or of plants in stones, *Games of Nature*; but that is a purely poetic idea If nature played, it would play with greater liberty; it would not subject itself to express so exactly the smallest traits of the original, and, what is still more remarkable, to conserve their dimensions so strictly. When this exactness is not found, the things can be games, that is, arrangements that are in some sense fortuitous.⁴⁶

We can see why Leibniz discusses the games of nature found in his caves and underscores that they require help from the imagination to be seen as the head of Moses, etc., what is not the case for fossils and other remains.⁴⁷ It is also clear that Leibniz is not dogmatic about the nature of the process resulting in petrification. Although he denies the accounts of contemporary scholastics, such as Kircher and Becher, he specifically allows the account of older scholastics, suggesting that he could accept fossils as remains of creatures *transformed* by some petrifying force (*vis lapidifactiva*):

If someone refuses to admit that nature formed these stones by cooking them, and prefers to assume that after some silt has covered the fish, the silt was changed into stone, either by the effect of its own constitution, or by a kind of petrifying virtue, or by some other cause, ... although that is hard to understand, I would not deny this. I do not claim to establish anything in this respect, other than that *these impressions come from real fish*.⁴⁸

⁴⁶ *Opera Omnia*, 2b: 179. The opposition to the poetical thesis of Kircher and Becher was a new development in Leibniz's thought. C. Cohen cites an undated and unedited Leibnizian manuscript (probably from before 1678, the year of Leibniz's first meeting with Steno); there Leibniz writes: "I find it difficult to believe that the bones one sometimes finds in the fields, or that one discovers by digging in the earth, are the remains of real giants; similarly, that the maltese stones commonly called serpent teeth are parts of fish, and that shells often found rather far from the sea are the certain marks of the sea having covered these places, and upon withdrawing, left behind these shells, which then became petrified."

If that were true, perhaps the earth would have to be much older than is reported by the holy scriptures. But I don't want to stop there, and we need to give natural reasons here. Thus, I believe that these forms of bones of animals and shells are often only games of nature which have been formed apart without having come from animals. For it is invariable that stones grow and take on a thousand strange forms, as testify the stones that the reverend father Kircher has amassed in his Subterraneous World." C. Cohen, *Le destin du mammoth* (Paris, 1994), 79.

⁴⁷ Cf. chap. 29 of *Protogaea*.

⁴⁸ *Protogaea*, chap. 20. See also R. Ariew, "A New Science of Geology in the Seventeenth Century?" in *Revolution and Continuity: Essays in the History and Philosophy of Early Modern Science*, ed. P. Barker and R. Ariew (Washington DC, 1991), 81-92.

This looks like Leibniz at his most conciliatory.⁴⁹ But it would be a superficial judgment. We can better understand Leibniz's account by contrasting it with a standard conservative account of fossils from a contemporary textbook, the *Philosophy, Following the Principles of Saint Thomas*, of the Dominican, Antoine Goudin. According to Goudin, fossils (or minerals) are bodies formed in the bowels of the earth; they can be reduced to three classes: stones, metals, and fossils (properly speaking):

Their common matter comes from earth and water; but these elements are first purified and reduced into variously tempered exhalations, then distilled and combined among themselves, and finally concretized into these bodies. Their efficient cause is, on the one hand, the heat that produces certain exhalations from within the depths of the earth, and on the other, from the action which the sun and stars from above exercise on terrestrial products by modifying them secretly; finally it is also a certain force earth itself possesses variously, following the different places in which the mixed body is formed. This force, similar to the maternal bosom from which animals arise, assuredly plays a great role in the formation of these bodies; this is why, according to Aristotle and Saint Thomas, earth and water furnish to everything arising from the bowels of the earth their matter and bosom, as would a mother, while heaven and the stars fulfill the office of the father, who imparts the form.⁵⁰

We can see from the above that, without specifically stating it, Leibniz accepts only the material and efficient cause from the scholastic theory of fossils, implicitly rejecting the formal cause. This is, of course, consistent with his restoration of forms only to metaphysics, giving purely mechanistic explanations at the level of physics: "to separate the use one should make of them from the abuse that has been made of them."⁵¹ And it is the real lesson of the unicorn. Leibniz wants to remove such phenomena from the realm of astrology as usually interpreted in his time, that is, phenomena considered as contraventions of the ordinary course of nature, monsters that are not to be fully explained, but marveled at for what they portend in a fortuitous world regulated by the stars, which incline, but do not necessitate.⁵² He wants to treat all such

⁴⁹ Cf. Leibniz, Letter to Remond, *Philosophische Schriften*, 3: 607.

⁵⁰ A. Goudin, *Philosophie suivant les principes de Saint Thomas*, trans. T. Bourard (Paris, 1864 [original ed. Paris, 1668]), 301: *Des corps mixtes inanimés, dit fossiles*.

⁵¹ "New System of Nature," *Philosophical Essays*, 139; see also "Against Barbaric Physics," and others.

⁵² For more on monsters as contraventions of the ordinary course of nature, see P. Dear, "Jesuit Mathematical Science and the Reconstitution of Experience in the Early Seventeenth Century," *Studies in History and Philosophy of Science* 18 (1987), 133-175. Following Dear, the basic point is this: the essential properties of

phenomena as regularities. His unicorn is, after all, no different than any other animal whose remains can be examined; he realizes that he is committed to there having been animals which no longer exist;⁵³ and the remains of his unicorn have been described by an unimpeachable observer. The unicorn can therefore take its place among the natural curiosities that Leibniz catalogues as part of a hoped for empirical database.

5. *Scientific Societies and Museums*

This is where Leibniz the collector and creator of scientific societies enters into the account. In the same way that in his "Manner of Perfecting Medicine" Leibniz proposed to write annual histories of illnesses in France in order to provide the data for perfecting medicine, Leibniz proposed scientific societies and museums as repositories of information for perfecting science. In his plan for Russia's first public museum, Leibniz had written to Peter the

an acorn explain why it grows into an oak tree, given that it actually does; if it does not, accidental impediments must have prevented it: an acorn failing to grow into a oak tree would shed no light on the nature of acorns. Deviations from the ordinary course of nature, if sufficiently spectacular, would be dubbed "monsters," and far from being regarded as providing privileged insight, they would be taken to be portents or omens, literally supernatural occurrences due to God's intervention; whether portents or not, they were by definition contrary to nature, and hence not illuminating of the natural order. See also L. Daston and K. Parks, "Unnatural Conceptions: The Study of Monsters in 16th and 17th century France and England," *Past and Present* 92 (1981), 20-34.

⁵³ According to C. Cohen, it is impossible for Leibniz to conceive of extinct species; for him, the world was created perfect (*Le destin du mammouth*, 83-84). Cohen repeats the thesis on 248: "But since God has created the world perfect and immutable, the disappearance of species remains unthinkable for him." To support the thesis, she quotes again from Leibniz's unedited manuscript: "we find stone shells of several unknown species which we would seek in vain in the sea, a mark that these are games of nature, unless one holds that they are lost species, something not likely" (*Le destin du mammouth*, 315-16). But this is mistaken. First, Cohen's thesis is too strong. Leibniz is giving probabilistic arguments. There is no question about what is conceivable or what is possible. Second, Leibniz has changed his mind about every other aspect of the matter under discussion: accepting the bones as petrified remains of aquatic origin and rejecting the thesis that they are games of nature. There is no reason to believe that Leibniz would continue to hold it is not likely that they are lost species. Third, and most important, when giving a metaphysical account, Leibniz does not deny the physical phenomenon. Nothing follows about the physical extinction of species, even if Leibniz believed that there are no extinctions *in a strict metaphysical sense*. The same holds for the physical phenomena of birth and death, given Leibniz's metaphysical account of birth and death (see *Philosophical Essays*, 141).

Great in 1708: "Concerning the Museum and the cabinets and *Kunstammern* pertaining to it, it is absolutely essential that they should be such as to serve not only as objects of general curiosity, but also as means to the perfection of the arts and sciences."⁵⁴ The various plans for scientific societies he drew up for the Elector of Hanover in 1680, for the Elector of Brandenburg in 1700, for Peter the Great in 1708, and for the three Austrian Emperors, as well as an earlier plan of 1671, allotted an important place to cabinets of medals, antiquities, instruments, and anatomy, zoological and botanical gardens, and an *iconothèque*, all of which would illustrate "the great works of art and nature."⁵⁵ In his proposal for a Royal Academy of Sciences in Berlin, Leibniz writes:

It would be rather important to give Tableaux of the Sciences and of the liberal as well as mechanical Arts, and to erect a Theater of Nature and Art ... And the Theater of Nature and Art, which would contain the very things of nature, or models of them, would have an even greater effect. It would enrich the imagination by presenting it with a quantity of distinct ideas.

Moreover, it would be better to study the bodies of humans, animals and plants, and other natural things in the three realms, which serve as remedies, nourishment, or instruments for people, analyzing them through anatomy as well as chemistry; these require well furnished laboratories, and above all microscopes, which allow us to discover in the sensible world another insensible world, in which the causes of sensible things are very often hidden By these means we will soon have an inestimable treasure concerning the workings of inner nature. The king's or the country's mines, gardens, parks, and cabinets of rarities will furnish the matter for research into the three realms, mineral, vegetal, and animal, if the inspectors, officers, and custodians of the various relevant professions are required to assist in this.⁵⁶

The philosopher who told Peter the Great that you cannot have enough books obviously meant it in the broader sense that you cannot have enough data.⁵⁷

⁵⁴ Gerje, *Otnoschenje Leibnitza k Rossii i Petru Velikomu* (1871), 76, as quoted in O. Neverov, "His Majesty's Cabinet and Peter I's Kunstkammer," *The Origins of Museums, The Cabinet of Curiosities in 16th and 17th Century Europe*, ed. O. Impey and A. MacGregor (Oxford, 1985), 56. The full text is available in *Nouvelles lettres et opuscules inédits*, ed. A. Foucher de Careil (Paris, 1857), 7: 473-74.

⁵⁵ *Nouvelles lettres et opuscules inédits*, 7: 79, as quoted in W. Schupbach, "Some Cabinets of Curiosities in European Academic Institutions," *The Origins of Museums, The Cabinet of Curiosities in 16th and 17th Century Europe*, 166. See also Leibniz, "An Odd Thought Concerning a New Sort of Exhibition (1675)," *Selections*, ed. P. Wiener (New York, 1951), 585-94.

⁵⁶ Discours de M. Leibniz, sur le projet d'érection d'une Académie Royale à Berlin, sur les moyens de fonder et de faire fleurir cette Société (*Histoire de l'académie de Berlin*, t. VII, 1752) *Opera Omnia*, 5: 176-77.

⁵⁷ "Il est indispensable de fonder des bibliothèques, un théâtre de la nature et

With his unicorn, Leibniz himself takes his place within a culture of natural curiosity, stretching from Jean Bodin and Scipion Dupleix to Marin Mersenne and the various scientific academies.⁵⁸ But Leibniz does not hawk curiosities for their own sake; his spirit is more like that of his fellow dreamer of scientific academies, Mersenne, who asks whether we are able to walk on water without miracle and without magic, debunking the claims of those who brag of secrets from China or Persia—for “they are normally so deprived of science and reason that one does not like to hear them or see them a second time”—but who answers in the affirmative, that is, as long as one is wearing big rubber boots filled with air.⁵⁹

This Leibniz cannot be described as dual. While this Leibniz may be variable—he changes his mind about various theories, for example, rejecting Kircher and his games of nature, having previously been seduced by him, and he writes differentially to various correspondents depending upon their social status and/or political persuasion, there is no evidence of a radical duality that cuts across genres. Fontenelle was right; it was he who was constructing the several savants from only one Leibniz. Similarly, it was Russell and the others who constructed dual Leibnizes from one complex seventeenth century thinker.

de l'art, y compris des cabinets des arts et des raretés, des jardins de plantes et ménageries, des observations et des laboratoires Une bibliothèque ne peut pas être ni trop grande ni trop rare, car souvent, dans les moindres livres, on peut trouver quelque bonne chose que les meilleurs mêmes ne renferment pas,” *Nouvelles lettres et opuscules inédits*, 7: 470-71. Cf. also *Nouvelles lettres et opuscules inédits*, 7: 138-154.

⁵⁸ Obviously, the curious come in many stripes (and from divergent contexts): some are collectors, others not, some explain their phenomena using powers and virtues, others invoke various mechanisms. The point is that the interest in curiosities was extremely widespread at the time. However, an exception to the culture was Descartes, who clearly disliked the whole business. See K. Pomian, “La culture de la curiosité,” *Collectionneurs, Amateurs et Curieux. Paris, Venise: XVIe-XVIIIe siècle* (Paris, 1987), 61-80. In pp. 78-80 he points out that in *Regulae*, but especially in *La Recherche de la Vérité*, Descartes is anti-curiosity; cf. title: “par la lumière naturelle qui toute pure et sans emprunter le secours de la religion ni de la philosophie, détermine les opinions que doit avoir un honeste homme, touchant les choses qui peuvent occuper sa pensée et pénétrer jusque dans les secrets des plus curieuses sciences”; R. Descartes, *Oeuvres*, ed. C. Adam and A. Tannery (Paris, 1964-74), 10: 499: “tout ce qu'on vous peut enseigner de meilleur sur ce sujet, c'est que le désir de savoir, qui est commun à tous les hommes, est une maladie qui ne peut se guérir car la curiosité s'accroît avec la doctrine.” Cf. also *Discours*, pt. vi.

⁵⁹ M. Mersenne, *Question Inouyes* (Paris, 1985 [original ed. 1637]), 13-14.

ABSTRACT

I discuss some of Leibniz's pronouncements about fringe phenomena—various monsters; talking dogs; genies and prophets; unicorns, glossopetrae, and other games of nature—in order to understand better Leibniz's views on science and the role these curiosities play in his plans for scientific academies and societies. However, given that Leibniz's sincerity has been called into question in twentieth-century secondary literature, I begin with a few historiographical remarks so as to situate these pronouncements within the Leibnizian corpus. What emerges is an image of Leibniz as a sober, cautious interpreter, a skeptic one might say, but one who is prepared to concede the possibility of many strange phenomena. Leibniz expects these fringe phenomena to take their place among the natural curiosities catalogued as part of a hoped for empirical database intended as means toward the perfection of the sciences.