Locke's Approach to Health and Healing: Between the Scientific and the Popular

Claire Crignon*

Abstract: One might be tempted to view Locke's skepticism with regards to the very nature and purpose of advances in Western medicine as one example in a long tradition of philosophical tirades against physicians, often followed by a call for self-treatment and gentle remedies. The article aims to show that this analysis corresponds to only one aspect of Locke's views on medicine. Locke's critique of anatomy and his doubts about what we can expect from the use of instruments such as the microscope and his skepticism towards emerging technical advances in medical instruments do not mean that he contested the value of health. Locke's approach to medicine must be seen within the context of the Baconian project of a natural history of nature and diseases. An appreciation of the growing influence of Baconianism in medicine during the 17th century is crucial in order to understand why natural and experimental philosophers such as Locke, Glanvill or Boyle favored therapeutics over causal explanations of diseases. Criticism of speculative philosophy, and insistence on observation and experiment are not specific to Locke's reflections on progress in medicine. Many philosophers of this period valued the knowledge of a wide variety of people who did not have access to medical knowledge, such as North American indigeneous peoples, illiterates, artisans or women natives while highlighting the inadequacies of knowledge inherited from scholasticism. What is remarkable in Locke's use of natural history in medicine is that he includes popular beliefs, prejudices and errors, as well as diseases and natural phenomena in the very process of description and observation. Observing common knowledge and understanding how ordinary or apparently ignorant persons sometimes discover cures by chance or are hindered from discovering the right therapy because of prejudice is useful when examining the dynamics behind the evolution and progress of the art of medicine progress. The inquiry into the intellectual virtues required of a practitioner of the natural history method becomes an example or even a case study of the natural history method itself. It is also a way of questioning the limits of rationality in medicine and of placing the art of medicine art at the intersection of what the historian and philosopher of

* I would like to thank the reviewers for their very useful comments.

Studi Lockiani 2023
ISSN 2724-4016 doi:10.4454/sl.4-707

biomedical sciences Georges Canguilhem (1904-1995) called a "scientific" approach and a "folk" approach to health.

Keywords: Learned, speculative / folk medicine, natural history, indigenous knowledge, Locke, Bacon, *Sylva sylvarum*

Introduction

Over the last thirty years, Kenneth Dewhurst, François Duchesneau, and more recently Jonathan Craig Walmsley, Peter Anstey and Lawrence Principe have shared Locke's critical reflections on medical art, and anatomy, as well as his note-taking and observations on the history of the future Earl of Shaftesbury's disease and treatment.[1] All these works have considerably improved our understanding of the nature of Locke's collaboration with the English physician Thomas Sydenham (1624-1689). We now understand better how the philosopher and the physician worked on the characterization of a new method of treatment (*methodus medendi*) based on observation and on natural history. Locke's involvement in the medical debates of his time was crucial to our understanding of the genesis of his philosophical project of inquiry into human understanding. Unlike Descartes, Locke does not seem particularly confident in the ability of medicine to appropriate the title of science, likely to elucidate the causes of diseases. Many diseases remained incurable and most treatments were ineffective. Instead, he recommends not relying too heavily on physicians and states that as a philosopher, he "wishes well to the practice of physic, tho' he meddles not with it".[2]

Nevertheless, focusing solely on Locke's pessimism as regards the possibility of progress in medical knowledge and his criticisms of anatomy would be as simplistic as solely focusing on Descartes's confidence in founding medicine on infallible demonstrations.[3] Descartes did not only trust demonstrative medicine; he also paid heed to psychosomatic and dietetic medicine and approved of self-medication. In the same way, Locke did not merely discuss physicians' abilities to find the remote causes of diseases. Nor did he only

1 See Dewhurst, *John Locke (1632-1704), Physician and Philosopher*; Duchesneau, *L'empirisme de Locke*; Walmsley, *John Locke's Natural Philosophy (1632-1671)*; Anstey, *John Locke and Natural Philosophy*; Principe and Anstey, "John Locke and the Case of Anthony Ashley Cooper".

2 John Locke to Thomas Molyneux, 20 January 1693, in Locke, *Correspondence*, vol. 4, p. 630.

3 Romano, "Les trois médecines de Descartes", pp. 675-96.

question the role of instruments in the potential progress of medicine. He also offered optimistic perspectives on what to expect from medical art, provided that its most speculative tendency was discarded.

This paper aims to show how Locke's commitment to Baconian natural history led him to consider the physician's proper focus as therapeutics over causal explanations commonly offered by learned and speculative physicians. Locke never denied the fact that the highest value of medicine is the elimination of disease itself and the achievement of health. He defends the idea that health is not the privilege of the medical profession. Lay people, North American indigenous peoples, poor people living in the countryside and women practicing medicine without specific formal education but with a certain degree of "folk" wisdom and the practical skills in the observation of nature (roots, plants, animals etc.) were all involved in healing practices and played a crucial role in the transformation of medicine into a valuable art for the improvement of human life.

The first section of this paper recalls Locke's diagnosis of medical art in early manuscripts and his criticism of a theoretical approach to the body. Rather than questioning the effectiveness and the possibility of progress in medicine, Locke criticizes the human tendency to deliver causal and dogmatic explanations of disease. In the second section, we highlight the positive side of Locke's diagnosis of medicine. Referring to his medical manuscripts, correspondence and journal, we show how Locke referred to valuable arts developed by lay people, peasants, the poor, women, North American indigenous peoples, and individuals who had no speculative knowledge of the body. One of the main criteria for defining the usefulness of medical art is the ability to integrate popular practices and beliefs into the construction of medical knowledge and think globally about diseases and health, taking foreign and not-so-foreign popular healing practices into account. In the third and final section, we show how the Baconian legacy in natural history, and more specifically *Sylva Sylvarum* (1626) played a crucial role in Locke's interest in the subjective and non-rational part of the healing process. Natural history is concerned with physical diseases and its accurate description. But it also explores the beliefs, prejudices and biases in the minds of physicians and patients. Finally, we conclude by pointing out the ambivalence of Locke's references to folk practices in medicine and trying to interpret them not only as a way of dominating and assimilating indigenous knowledge, or as a manifestation of curiosity but more profoundly as a way of rethinking the limits of rationality in medicine.

1. *Locke's diagnosis of medicine*

Locke's epistemological pessimism as regards progress in medicine is well-documented thanks to the very active research conducted on his medical manuscripts over the last twenty years.[4] In both *Anatomia* (1668) and *De Arte Medica* (1669), Locke seems to adopt Bacon's legacy on the question of the conditions and criteria for progress in medical knowledge. Sixty years after Bacon's statements in his treatise *On the Proficience and Advancement of Learning*, Locke does not say that medicine is "a science that has been much more professed than advanced" or that he sees no "addition". On the contrary, he emphasizes the "great improvements some parts of medicine have received within these few years", and the "confidence" that "it is yet capable of great additions (...)".[5]

Still, one might be surprised to find him particularly critical of anatomy and the advances that were to be expected from recent discoveries in the field. Writing some forty years after Harvey's discovery of blood circulation (*De Motu Cordis*, 1628) and fifteen years after Francis Glisson's works on the physiology of the liver (*Anatomia Hepatis*, 1654), Locke seems skeptical as to why more should be expected from anatomy as a scholarly discipline than from "remote speculative principles", divorced from "useful knowledge".[6] "Knowing the natural shape, size, situation, & color of any part" is not a sufficient condition for knowledge of diseases and their cure.[7] We should not expect this kind of "subtle anatomy" to diminish the "large catalogue of yet incurable diseases".[8] In this manuscript, Locke disqualifies anatomy as an art able to contribute to medical progress. "If therefore anatomy shows us neither the causes nor cures of most diseases, I think it is not very likely to bring any great advantages for removing the pains and maladies of mankind".[9]

[4] Here we should here point out that since the second half of the 20th century, K. Dewhurst and F. Duchesneau have pioneered research on Locke's medical empiricism and on the close relationship and collaboration between Locke and Thomas Sydenham. However, it is only since the 2000s that readers have benefited from stabilized versions of Locke's medical manuscripts thanks to C. Walmsley and P. Anstey (even though they often diverge in their interpretations). Locke's medical manuscripts will be published following Peter Anstey's transcriptions in *The Clarendon Edition of the Works of John Locke*. I am referring to the transcriptions established by Anstey and Principe.

[5] Locke, *De Arte Medica*, NA PRO 30/24/47, 50*r*.

[6] Ibid., 51*r*.

[7] Locke, *Anatomia*, NA PRO 30/24/47/2, 32*v*.

[8] Locke, *De Arte Medica*, 49*r*.

[9] Locke, *Anatomia*, 32*r*.

What is the goal of medical art? It is to alleviate suffering and cure diseases, but also to try to increase "length of life with freedom from infirmity and pain".[10] Rather than searching in vain for remote causes of diseases – a stance that leads to endless controversies and disputes – physicians should instead focus on "industry and observation".[11] This position was expressed by Celsus in *De Medicina* at the beginning of the 1st century explaining the disagreement between rationalists and empiricists in medicine: rationalists pretend to gain access to remote causes while empiricists only pretend to observe correlations between phenomena.[12] This is also Sydenham's thesis in his *Observationes Medicae* (1676). Physicians should seek to promote a kind of knowledge that is commensurate with the capacities of their understanding. Rather than pretending to know the essence of disease, they should observe "outward appearance" and describe the "circumstances" of disease, gathering information from the history of disease rather than trying to "solve problems" in a dogmatic way.[13]

Sydenham and Locke question the state of medical knowledge and its progress or stagnation through the prism of its interest and benefit to humanity.[14] Both were convinced that, to achieve this goal, medicine should move closer to the mechanical arts, which, Bacon believed, had made considerable progress. In their view, trying to find ways of healing the body is akin to developing efficient techniques in more prosaic disciplines such as farming and gardening.

In modern times, natural philosophers widely shared this position in debates about medical method. As S. Shapin has well noted, it was closely linked to the "modern assault on school knowledge" and the "criticism of the schools hierarchical forms".[15] Anatomy is associated with speculative medicine, dogmatism, quarrelsomeness and pedantry. On the contrary, the modern physician is someone who can use his knowledge of nature to work on the health of the body and transform its relationship with the environment:

> No matter how much the physician's role - though not the surgeon's or apothecary's - was argued to belong to the world of polite and pure learning,

10 Locke, *De Arte Medica*, 49*r*.
11 Ibid., 52*r*.
12 Celsus, *De Medicina*, pp. 17-19.
13 Sydenham, *Observationes Medicae*, III.2.8, p. 71; III.2.13, 73; III.2.30, p. 77.
14 Locke, *De Arte Medica*, 49*r*: "Length of life with freedome from infirmity & pain as much as the constitution of our fraile composure is capable of is of soe great concernment to mankinde, that there can scarce be found any greater undertakeing then the profession to cure diseases (...). He that shall go about to do this shall noe question deserve the thanks of mankinde for soe good an intention (...)".
15 Shapin, "The Man of Science", p. 184.

> the value of the physician's knowledge was nevertheless vouched for by its ability both to explain the vicissitudes of the human body and, where possible to guide those practices that maintained health and alleviated disease.[16]

The "decline of the old medical regime" and of the "learned profession" does not mean that natural philosophers and physicians gave up all rationalist ambitions in medicine.[17] Within the community of natural and experimental philosophers, there was intense debate about a possible complementarity between anatomy's speculative and experimental dimensions. The "compleat physician"[18] is someone who can combine the exercise of the mind or intellect, "Speculation" with the "work of the hands", and "dissection".[19]

Locke is well aware of this rationalist ambition in medicine. It was through Sydenham that Locke's writings on medicine became known.[20] But we should not forget that Thomas Willis, Sedleian Professor of Natural Philosophy at Oxford, introduced him to medical knowledge and practice in the 1660's. The rationalist aim of physics is clearly stated in the Preface to *Pharmaceutice Rationalis*. Many discoveries in the field of arts and sciences come from "experiments and observations either by chance or on set purpose". Nevertheless, physicians should not give up their ambition to understand "the aetiology or the reasons" of diseases and cures.[21] In his *Medical-Philosophical Discourse of Fermentation*, Willis also describes the value and limitations of the three main theoretical hypotheses used at the time to think about the human body and to characterize health and disease. Firstly, the Galenic definition of health, based on the balance between the four elements in nature and the human body humors. Secondly, the atomistic hypothesis grounded in the Epicurean philosophy that "undertakes Mechanically the unfolding of things and accommodates Nature with Working tools, as it were in the hand of an Artificer, and without running to Occult Qualities, Sympathies and other refuges of Ignorance". Willis distances himself from these first two hypotheses. The Galenic hypothesis does not help us to penetrate "the more secret recesses

16 Ibid., p. 187.

17 Cook, *The Decline of the Old Medical Regime in Stuart England*, and Siraisi, "Medicine, 1450-1620, and the History of Science".

18 Merrett, *The Character of a Compleat Physician or Naturalist*, pp. 2-3.

19 "In the true notion of Anatomy then two acts are comprehended; a work of the hands, Dissection, and an exercise of the Mind or Intellect, Speculation". Charleton, *Enquiries into human Nature*, Preface, D2.

20 Anstey, "The Creation of the English Hippocrates".

21 Willis, *Pharmaceutice Rationalis*, The Preface to the reader, *Works*, A2.

of Nature". The mechanical one "rather supposes than demonstrates its principles". It is productive of "Notions extremely subtil" but "remote from the sense" and it does not "sufficiently quadrate with the Phaenomena of Nature when we descend to particulars".[22] The rejection of the "art of physic" as a "speculative science" is clearly expressed in Willis's *Treatise on Feavers* (1659), as well as his call for a reform of medicine that would return to observations and experiments, as recommended by Hippocrates.[23]

The speculative nature of the Galenic and Epicurean hypotheses is the main reason why Willis prefers the third, the "chemical hypothesis". Introduced by Paracelsus and transmitted by Van Helmont in the 17th century,[24] this hypothesis asserts that "all bodies are composed of spirit, sulphur, salt, water and earth". Principles do not mean abstract entities, but "such kind of substances only, into which physical things are resolved, as it were into parts, lastly sensible". These principles help the physician to understand the "intestine motions" inside the body and allow him to approach the dynamic of physiological and pathological processes. The chemical hypothesis is more respectful of nature and its complexity because "it determinates Bodies into sensible parts, and cutts open things as it were to the life".[25]

Locke seems to have acted as an assistant to David Thomas during his time at Oxford, carrying out chemical experiments and collecting drugs, "partly at Boyle's instigations".[26] From the beginning of *Anatomia*, written in 1668 in close collaboration with Thomas Sydenham, he clearly rejects a speculative practice of anatomy and expresses his adoption of a living and practical dissection of the physiological processes, based on the history and observation of correlations between phenomena. However, he does not unreservedly embrace the experimental medicine model that developed after the rise of experimental philosophy.[27] Unlike Bacon he does not believe that natural history and experiments carried out with the aid of instruments are "the basic stuff and raw material of the true and legitimate induction".[28] Locke is cautious about what we might expect from the use of techniques such as dissection or instru-

22 Willis, *Medical-Philosophical Discourse of Fermentation*, *Works*, ch. I, pp. 1-3.

23 Willis, *Treatise of Feavers*, The Preface to the reader, *Works*, p. 45.

24 About the importance of the chemical hypotheses in medicine during the 17th century, see works of W. Debus and A. Clericuzio. About Helmontian medicine in Locke's philosophy, see Anstey, "John Locke and Helmontian medicine".

25 Willis, *Of Fermentation*, p. 2.

26 Bourne, 1991, p. 132.

27 On this question see Crignon, *Locke médecin*, pp. 359-60.

28 Bacon, *A Description of the Intellectual Globe*, p. 105.

ments such as the microscope. The discovery of the human body is not just about the use of instruments or access to the physiological workings and causes of these processes. Such an approach to medicine will not familiarize us with our bodies. What matters here is our ability to understand the intimate and invisible processes by which we can feel, perceive, breathe, nourish ourselves, grow, and then diminish and perish. While we can observe phenomenal correlations, e.g., to describe the effects of the coincidence of somatic and mental phenomena, the knowledge of causes or any demonstrable learning about this mutual influence remains beyond our reach.

What is left for people who still want to understand the functioning of their bodies, i.e., how breathing, digestion and blood circulation work? Locke's answer is well known: empirical practices and observations are more likely to improve our living conditions and our earthly existence:

> Experiments and Historical Observations we may have, from which we may draw Advantages of Ease and Health, thereby increasing our stock of Conveniences for this Life: but beyond this, I fear our Talents reach not, nor are our Faculties, as I guess, able to advance.[29]

When people try to "find new inventions" and increase their knowledge of nature, it is only to "procure new and beneficial productions whereby our stock of riches (i.e., things useful for the conveniences of our life) may be increased or better preserved".[30] But what sort of things should we be observing? And what kind of "natural history" can offer us this kind of practical knowledge that will help us bridge the gap between the speculative approach to the body and intimate access to our sensations and feelings when we suffer from illness and pain?

2. *Making the art of medicine useful: observing local healing practices at home and abroad*

What insights can observation and natural history give us about the human body, health, disease and pain? In the following section, we will look at the positive side of Locke's diagnosis of medicine. Locke does not simply reject speculative medical knowledge. He proposes alternative models that are more

[29] Locke, *Essay*, IV.xii.10, p. 645.
[30] Locke, "Understanding" (1677), in *Political Essays*, p. 261.

likely to produce the useful knowledge he demands. Natural history seems to be a good candidate for defining a method that will render the art of medicine useful.[31] A question may be asked here: how can we explain the rejection of speculative medical knowledge since the beginning of the modern era? What changes occurred that made the use of observation and experimentation absolutely necessary?

The expansion of the genre of medical observation and the appeal of experimentation are linked to several factors. The first was "the prevalence of epidemic diseases" (such as smallpox, plague and syphilis). The second was "(...) contemporary controversy over the possibility of 'new' diseases unknown to the ancients". The discovery of the New World plays a crucial role in establishing an analogy between discovering unknown territories and discovering new diseases.[32]

Some natural philosophers, such as Joseph Glanvill, compare the human body to unexplored regions of the world, such as America: "For our own bodies, though we see, and feel, and continually converse with them, yet their constitution, and inward frame is an America, and yet undiscovered Region".[33] Like Glanvill, Locke uses an analogy between the exploration of the body and that of unknown or even hostile territory. Those who "hope to bring men by such a system to the knowledge of the infirmities of bodys, the constitution nature signs changes & history of diseases with the safe & direct way of their cure" should act like explorers seeking to explore a territory overgrown "with briars & thornes". It is necessary "to take a view & draw a map of the country".[34] The survey of a territory cultivated by a geographer or a cartographer has nothing to do with the speculative vision of the anatomist. The goal of this overview is a very practical one: to identify obstacles that might impede exploration and efforts to master nature and to take possession of a place.

What kinds of skills are needed to achieve this? Locke's answer is clear: those who spend their time speculating and following the "maxims of the schools" do not contribute to advancing the "conveniencies of human life". We owe much more to artisans, to "plowmen, tanners, smithes, bakers, dier painters"

[31] About the distinction between speculative and experimental philosophy in natural philosophy and its use in "particulars branches of natural philosophy", such as mechanics, astronomy, chemistry, physiology or medicine, see Anstey, "Experimental versus Speculative Natural Philosophy".

[32] Siraisi, "Medicine, 1450-1620, and the History of Science", p. 504. See also Cook, "Medicine", pp. 416-23.

[33] Glanvill, *Scepsis Scientifica*, p. 31.

[34] Locke, *De Arte Medica*, 52*r*.

and to those who devote "their time & thoughts about the works of nature".[35] It is remarkable how Locke approaches the question of the goal of medical knowledge by focusing on what can reasonably be expected from it. The pursuit of health is no different from the pursuit of food, the desire to have "faire gardens" or to cultivate "fruitful fields". If someone wants to enjoy a good meal, they should go to a chef rather than a nutritionist. If someone wants to grow a beautiful garden, they should go to "a ploughman" or to an "illiterate gardener" rather than a "scholar" or a "speculative philosopher".[36] The advancement of knowledge is something that could be compared to the process of extracting resources "from the earth": it is to help people achieve the "advantages of Ease and Health" and to increase their "stock and conveniences for this life".[37]

Echoing Bacon's insistence (e.g., in *De Augmentis Scientiarum*)[38] on improving the mechanical arts in order to benefit natural philosophy, Locke seeks to reassess the importance of technical and practical knowledge of nature and natural bodies. The "improvement of useful arts" relies on the "meaner sort of people who (have) weaker parts" and "less opportunities" to devote themselves to knowledge than "the most acute & ingenious part of men" who are only involved "by custom & education" in "idle speculations".[39] But who are these ordinary people who are deprived of a speculative knowledge of the body whereas they have an understanding of the healing processes?

In the *Essay concerning Human Understanding*, Locke argues that we owe to "craftsmen and mechanics" all the arts that are "useful to our lives".[40] However craftsmen are not the only ones who can claim this kind of "sagacity". In his manuscripts and correspondence, Locke refers to the secular or "indigenous knowledge"[41] of women,[42] poor men, peasants, and indigenous peoples. These people did not have access to formal education but relied on observation to solve everyday problems and accumulate a kind of empirical knowledge. The uneducated but "sagacious Indian", the "savage American" appears in Locke's manuscripts and correspondence as a key figure for this kind of profane and useful knowledge in natural philosophy. In Locke's *Essay concerning Human*

35 Ibid., 54*r*.
36 Ibid.
37 Locke, *Essay*, IV.xii.10, p. 645.
38 Bacon, *Of the Advancement of Learning*, pp. 64-65, and *De Augmentis Scientiarum*, pp. 473-75.
39 Locke, *De Arte medica*, 53*r*.
40 Locke, *Essay*, III.x.9, p. 495.
41 Irving Stonebraker, "The Sagacity of the Indians".
42 See for instance Locke, *Anatomia*, NA PRO 30/24/47/2, 38*r*, where Locke ascribes the knowledge of the efficacy of medicine to "old womens experience" rather than to "learned mens theories".

Understanding, America appears as a place where people could discover many things thanks to their "ignorance in useful arts and want of the greatest part of the conveniences of life".[43]

Locke's medical manuscripts offer notable examples of references made to this profane knowledge, whether acquired abroad or outside the cities, in the English countryside. In *Anatomia* (31*v*-32*r*), Locke compares the sagacity and ingenuity of Indians and their ability to cure "many diseases" despite their minimal tools ("they had not so much as knives") and lack of education (they were "illiterate", "unlearnd"), with the inability of the "best read Doctors" in Europe despite their extensive knowledge of anatomy. Medical knowledge was vital for travelers and sailors who discovered new diseases as they explored new countries. America is known to have "provided information about several aspects of natural history that were of interest to Locke".[44] Beyond America, Locke was deeply curious about foreign substances and practices from distant lands. In *Some Thoughts Concerning Reading and Study for a Gentleman*, he recommends travel books, such as those by Sandys, Roe, Brown, Gage, Dampier or Thévenot.[45] The discovery of the New World and travel accounts of native practices play a crucial role in Locke's interest in natural history. They provided him with a wealth of information about the natural environment (soils, weather), about flora and fauna, and the medicinal properties of plants and animals.

The manuscripts on Lord Ashley Cooper's history of illness and the healing of a liver abscess[46] illustrate that learned physicians are often powerless in the face of the lived experience of pain and often refer either to indigenous knowledge or to local country practices. In his observations, Locke mentions many substances coming from foreign countries. He was well aware of the use of Peruvian bark (*cinchona calisaya*), an antipyretic remedy derived from the cinchona tree, discovered by a Jesuit missionary called Bernabé Cobo and introduced to Europe around 1665.[47] Sydenham explicitly prescribes it in his advice on the illness of Lord Ashley Cooper, who was suffering from a liver abscess and had sent requests to the best physicians of the day demanding the best way to cure him. Although the efficacy of the remedy was debated (some apothecaries replaced it with the cheaper cherry bark because of its high cost), Sydenham presents it in

43 Locke, *Essay*, IV.xii.11, p. 639.
44 Irving, *Natural Science and the Origins of the British Empire*, p. 120.
45 Locke, "Some Thoughts Concerning Reading and Study for a Gentleman" (1703), in *Political Essays*, p. 353.
46 Principe and Anstey, "John Locke and the Case of Anthony Ashley Cooper".
47 Dewhurst, *Dr. Thomas Sydenham (1624-1689). His Life and Original Writings*, p. 41.

his *Observationes Medicae* (1676) as a specific treatment for agues.[48] In his *Dissertation on Hysterical and Hypochondriacal Passions*, he extolled the wonderful effects of remedies derived from nature rather than from art.[49] In a review of Boyle's *Treatise on Specific Remedies* (1686), Locke mentions the use of quinine for fevers, and asserts that experience is the only guide possible to observing symptoms without knowing the causes, but also to noting the efficacy of a remedy without knowing its corpuscular composition:

> On guérit très promptement la morsure des Scorpions, en mettant sur la blessure de l'huile de Scorpion [...]. Le kinkina est encore un remède spécifique contre les fièvres, et particulièrement contre la fièvre quarte.[50]

Locke's correspondence offers some notable examples of accidental discoveries as to the medicinal properties of animals or plants. Appointed secretary to the Lord Proprietors of Carolina by Anthony Ashley Cooper, later 1st Earl of Shaftesbury, to further the establishment of colonies in North America, Locke received a great deal of information from members of the army between 1667 and 1675. Sir Peter Colleton, for example, deputy governor of Barbados, sent him several letters discussing "trade between the West Indies and England" and "the medicinal proprieties of American plants".[51] The healing power of certain natural substances were discovered by chance, on a warship or on the battlefield. In his letter, Peter Colleton describes the healing power of the "Tarara Root" when applied to wounds caused by poisoned arrows. This discovery is attributed to "Major Walker", a relative and "Captain in the princes Regiment of Dragoons". It was, however, purely accidental and was attributed to the Major's good powers of observation. An Indian accidentally stabbed himself in the thumb with a poisoned arrow while aboard a ship where no medicine could have cured him. At that moment, the Major by chance discovered the presence of this root in the Indian's belongings. The Major observed how his face brightened when he found this natural substance. He concluded that it had healing properties and applied it to the wound. What is remarkable about this story is the fact that the Westerner guessed at the Indian's lay knowledge simply by

48 Sydenham, *Observationes Medicae*, I, 5, 33, p. 130.

49 Sydenham, *Of the Disease called in Women the Hysterical, in Men the Hypochondriacal Passion, Dr. Sydenham's Compleat Method of Curing Almost all Diseases*, pp. 16-17.

50 Locke, *De Specificorum Remediorum cum corpusculari Philosophia Concordia*, p. 266. Boyle, *Of the Reconcileableness of Specifick Medicines to the Corpuscular Philosophy*.

51 Sir Peter Colleton to John Locke, 12 August 1673, in Locke, *Selected Correspondence*, n° 275, p. 37.

observing his behavior. The letter contrasts the Western physicians' disdain for these native remedies with their success among the people: "I find amongst the people it hath an extreme high reputation, but our Doctors who think it not for their profit that any should have the power of healing but themselves (...)".[52]

Peter Colleton's remarks on the ability of Indians to heal wounds and Locke's comments about the ability of old women to treat diseases that were considered incurable by learned physicians came at the same historical moment, as noted by Sarah Irving Stonebraker in her commentary on William Dampiers' Diaries and Remarks on the "sagacity of Indians".

> (...) the intellectual framework of Baconian natural history, with its conception of the usefulness of knowledge, and its resistance to theorizing, provided a space in which it was possible to view indigenous people not merely as objects of knowledge but also as authors of knowledge.[53]

However, Locke was not only dealing with stories about the efficacy of indigenous remedies that he read in travel books. Daniel Carey points out that he also "employed the distinctive method exploited by the Royal Society of compiling inquiries for voyagers bound for distant countries", such as Persia, Virginia, Guiana, Brazil, and the Caribbean. Following Boyle's method of writing a natural history of a country,[54] Locke is attentive to all information transmitted by natives or navigators, travellers, illiterates, craftsmen, and peasants. Indeed, Boyle maintains a proximity to nature that experimental philosophers cannot emulate:

> I shall not on this occasion altogether overlook this Circumstance, That an Experimental Philosopher so often increases his Knowledge of Natural things, by what He learns from the Observations and Practises, even of Mean, and perhaps of Illiterate Persons, (such as Shepherds, Plowmen, Smiths, Fowlers, &c.) because they are conversant with the Works of Nature.[55]

[52] Ibid., pp. 45-46. William Dampier describes a similar situation in his *New Voyage around the World*. A buccaneer and surgeon who had accompanied Dampier on various expeditions, suffered from sore legs. The application of a vine leaf gave him relief, a remedy handed down through encounters with the Indian population during their expedition to the Isthmus and Darien (modern-day Isthmus of Panama) between North and South America. See Dampier, *A New Voyage*, p. 449, and Irving Stonebraker, "The Sagacity of the Indians", p. 557.

[53] Irving Stonebraker, "The Sagacity of the Indians", p. 544.

[54] Boyle, *General Heads for a Natural History of a Country*. Anstey and Hunter, "Robert Boyle's Designe about Natural History", p. 108.

[55] Boyle, *The Christian Virtuoso*, p. 313. See Parageau, *The Paradoxes of Ignorance*, p. 138.

His *Journal* contains many observations on diseases or poisonous bites unknown in Europe but also on foreign therapeutical practices and unusual cures. He underlined passages about unusual cures in travel books he was reading, such as *Histoire Naturelle et Politique de Siam*, written by Nicolas Gervaise, published in Paris in 1689. In this book, the author describes admirable simple plants ignored by French apothecaries, which grow abundantly without being cultivated and proven to be much more effective than European medicines.[56] The reader will not find any explanation of the causal relationships between the use of a substance and the healing process. Gervaise simply describes how he used some remedies discovered in the Kingdom of Siam.[57] Travelogues generally contented themselves with observing phenomenal correlations, such as "the employment of a porous stone applied to the wound to draw out venom".[58] Members of the Royal Society collected these observations and then discussed them publicly. In *The History of the Royal Society*, Thomas Birch describes the therapeutic use of this stone.[59] Locke is not interested in analyzing the causal relationship between the use of a substance and recovery. Nevertheless, the very process of collecting an observation in a foreign country, checking that it has been reported by a reliable person, and submitting it to a scientific institution such as the Royal Society where it is publicly discussed, sometimes also asking for supplementary information (i.e., queries), is a very good way of testing the value of the empirical correlation observed. However natural philosophers don't always have to travel as far to make useful observations. Everyday practices, those observed in the countryside or in households, are also of interest. One of the texts attached to the manuscripts of Lord Ashley Cooper's case refers to a similar event: an incident involving a poor man, someone who could not consult the learned physicians of the College but whose wound was cut with "a penknife", the only instrument available in this "poor village".[60] The letter is addressed to George Talbot (1606-1695), an English physician who may have been involved in Lord Ashley Cooper's treatment and who prescribed the use of a popular remedy to cure the abscess, powder of sympathy, a remedy that

56 Gervaise, *Histoire naturelle du Royaume de Siam*, ch. IV, "Des fleurs et des plantes qui croissant dans le royaume de Siam", pp. 20-21.

57 Ibid., ch. IX, "Des insectes et des reptiles", p. 39.

58 For this reference to Gervaise, see Carey, "Locke, travel literature, and the natural history of man", pp. 330-31.

59 Birch, *History of the Royal Society*, vol. 2, p. 274, and vol. 4, p. 39, and p. 43.

60 Thomas Strickland to Sir Gilbert Talbot, 26 October 1668, NA PRO 30/24/47/2, 14*r*, in Principe and Anstey, "John Locke and the Case of Anthony Ashley Cooper", p. 489.

was supposed to act at a distance, not directly on the wound, but on the blood flowing from it. This remedy was popularized by Kenelm Digby who described its therapeutic effects in *A Late Discourse... Touching the Cure of Wound by the Powder of Sympathy* (London, 1658).[61] Boyle also acknowledged its efficacy in *Certain Physiological Essays*, writing that he could observe its action "as an Eye-witness".[62] It was also discussed by members of the Royal Society in 1661, thanks to reports by Gilbert Talbot.[63]

In mid-17th-century England, the hierarchy between scientific medicine and folk practices was not always easy to establish. Some natural philosophers were curious about folk practices and recognized their usefulness. However, the majority of writers tended to ignore them, sometimes even disqualifying them as not scientifically based or not rigorously proved. This rejection of folk practices culminated in the mode of writing discussing popular errors in medicine. James Primerose, for example, whose treatise *De vulgi in medicina erroribus*, published in Amsterdam, 1639 and translated into English in 1651, assiduously explored this issue, devoted an entire chapter to women who "medle with physic and surgery" to distinguish their ignorant nursing practices from those of the learned.[64] It is striking that the skills ascribed to women in this chapter are precisely those that Locke ascribes to craftsmen and mechanics, but also to the lay people who took care of the ordinary aspects of human life, to cooks, to gardeners, to those who strove to work "for the good of mankind": "(...) they know how to make a bed well, boyle pottage, cullices, barley broth, make Almond milke, and they know many remedies for sundry diseases". Moreover, they are "especially busied about surgery", and claim to be able to heal "ulcers and wounds" that require "a skilfull physician". The fact that women take "remedies out of England books, or else make use of such as are communicated to them by others"[65] is, according to Primerose, an excellent reason to be suspicious of their practice.[66]

61 Digby, *A Late Discourse* [...] *Touching the Cure of Wounds by the Powder of Sympathy*. The use of the powder of sympathy is mentioned in Locke's observations on the Case of Lord Ashley, see *Obs. 68*, NA PRO 30/24/47/2, 25*v*, in Principe and Anstey, "John Locke and the Case of Anthony Ashley Cooper", p. 428.

62 Boyle, *Certain Physiological Essays*, pp. 73-74.

63 Birch, *History of the Royal Society*, vol. 1, p. 25, and p. 31.

64 Primerose, *Popular Errors*, lib. I, ch. v, pp. 19-21.

65 Ibid., p. 20.

66 About the changing relations between learned knowledge and folk practices, see Burke, *Popular Culture in Early Modern Europe*. The term "folk" medicine is probably a 18th century phenomenon. The rejection of popular knowledge culminates during the 17th with the publication in 1646 of Thomas Browne, *Pseudodoxa Epidemica*.

Conversely, non-Western peoples, women, peasants and the poor, who did not have access to the remedies of mainstream medicine, were often able to develop alternative healing methods. Although Primerose rejects their practice, his writings show that women could heal ulcers with foreign remedies, such as exotic plants. People's expectations of medicine varied depending on whether they saw it as a demonstration-based science limited to a particular professional group (white men living in Europe), or as a widespread method of treatment throughout the world, passed on from country to country and built up collectively.

Locke's writings on medicine clearly reflect this ambivalent relationship between learned and popular medicine. Although he sometimes refers to these practices to highlight the inadequacies and flaws of learned European medicine, he also refers to the tradition of popular errors in medicine, pointing to the importance of writers such as Laurent Joubert (1529-1583), professor of Medicine at Montpellier, and Scipione Mercurio (1540-1615), an Italian physician who collected and described the errors "made by women and ordinary doctors":

> The eminent scholars Joubert (writing in French) and Scipio Mercurius in his book on Obstetrics and on Popular Errors have included almost all the points about childbirth in which mistakes are usually made both by women and ordinary doctors.[67]

3. *Baconian natural history as a case example to observe popular ways of thinking about cures and healing*

Let us summarize Locke's references to folk and popular practices in medicine, whether practiced in foreign and remote countries or locally: in the countryside or households. These practices were performed by individuals such as peasants, women and individuals commonly referred to as "empirics" or even "quacks". The idea of learning from indigenous knowledge is not unique to Locke. Consider Robert Boyle's remarks in his treatise on the *Usefulness of Experimental Naturall Philosophy* (1663), the second part being devoted to medical knowledge:

[67] Locke, *Journals* (1675-1679), in Dewhurst, *John Locke (1632-1704). Physician and Philosopher*, p. 136. Laurent Joubert wrote *Erreurs populaires touchant la médecine et le régime de santé*, Rouen, Raphaël Du Petit Val, 1601. Scipio Mercurio is the author of *De Gli Errori Populari d'Italia*, Venice, 1603.

> Nor should we onely expect some improvements to the Therapeutical part of Physick, from the Writings of so ingenious People as the Chineses; but probably the knowledge of Physitians might be not inconsiderably increased, if Men were a little more curious to take notice of the Observations and Experiments, suggested partly by the Practice of Midwives, Barbers, old Women, Empiricks, and the rest of that illiterate crue, that presume to meddle with Physick among our selves; and partly by the Indians and other barbarous Nations, without excepting the People of such part of Europe it self, where the generality of Men is so illiterate and poor, as to live without Physitians.[68]

Earlier, Boyle described Chinese doctors as "much inferior, in point of Learning to ours". This is also true for midwives, barbers and elderly women. However, the text suggests that they possess other skills that could potentially improve the practice of physicians, particularly in the field of therapy. Hence, two questions arise. The first is, how should we understand this paradox? What tradition are Boyle and Locke following when they refer to locally acquired therapeutical practices through chance and observation? Secondly, does Locke's writing contain any original ideas regarding the ability of peasants or indigenous peoples to cure diseases unmanageable by European doctors?

This section aims to demonstrate that Locke adheres to Baconian ideas when employing the natural history method to observe common medical practices and beliefs. Locke does not limit himself to stating that the knowledge held by ordinary people is superior to the speculative knowledge held by learned physicians, which is a trivial assertion. He employs Baconian natural history to observe the process which allows lay people to discover therapeutics by chance and cure diseases that elude learned physicians. In addition, he employs Bacon's definition of natural history as a form of magic to draw attention to the subjective aspects of the healing process, including beliefs, prejudices and, at times, superstitions.

The influence of the Baconian method of writing natural histories on Locke's approach to natural philosophy has been documented by Peter Anstey.[69] In *The Politics of Locke's Philosophy*, Neal Woods highlighted the fact that Baconianism influenced many natural philosophers practicing medicine or writing about medicine such as Bathurst, Willis, Boyle, Lower and Sydenham.[70] Bacon initiated a comprehensive project on writing natural histories, which are collections of facts and observations about distinct objects or qualities, including

[68] Boyle, *Usefulness of Natural Philosophy*, II, I, ch. X, p. 426.
[69] Anstey, "Locke, Bacon and Natural History".
[70] Woods, *The Politics of Locke's Philosophy*, pp. 65-83.

but not limited to, that of atmospheric phenomena such as air and winds, and biological phenomena such as life and death, and of physical properties describing density and rarity. Additionally, the project also encompassed the history of man, anatomical history, the history of body parts, the history of mental faculties, the history of sleep, the history of human reproduction and nutrition etc.[71]

Locke's medical manuscripts, particularly *De Arte Medica* (1669), reasserted Bacon's diagnosis in *The Advancement of Learning* (1605) regarding the lack of progress in the field of physic and about the need of delivering human life from infirmities and pain:

> Length of life with freedome from infirmity & pain as much as the constitution of our fraile composure is capable of is of soe great concernment to mankind, that there can scarce be found any greater undertakeing then the profession to cure diseases.[72]

Locke's thinking about the relationship between learned and popular knowledge was strongly influenced by another Baconian text. While studying medicine and beginning to write on the subject at Oxford in the mid-1660s, Locke was reading Bacon's *Sylva sylvarum* (published posthumously in 1626).[73] This text belongs to the natural history genre and is composed of ten books, each containing a hundred observations or experiments. In his commonplace books, Locke made reference to Bacon. He owned a copy of *Sylva sylvarum* in his library.[74] During the 17th century, *Sylva* was widely known and read. The book was published with the *New Atlantis*, Bacon's scientific utopia in which he narrated a European expedition's discovery of an unknown island. In this text, the situation between Europeans and the indigenous population is reversed. Bacon portrays Europeans as ignorant, powerless and vulnerable, while the inhabitants of the *New Atlantis* seem to possess extensive knowledge of occidental customs and habits. This text describes the island's natural resources, including water, minerals, plants and animals. Additionally, it highlights the ingenious experiments that the inhabitants conceived to improve their living conditions and eradicate physical pain as well as diseases. This illustrates the significance of travel literature during the 17th century in stimulating discus-

71 Bacon, *Catalogue of Particular Histories*, *Parasceve*, in OFB XI, pp. 474-85.
72 Locke, *De Arte Medica*, 49. See Crignon, *Locke médecin*, p. 408.
73 Anstey, *John Locke Critical Assessments*, p. 305.
74 BL MS Locke f. 19, fols 169 and 264; LL, p. 78.

sions about making practical discoveries. Many of the observations and experiments alluded to in the *New Atlantis* are drawn from *Sylva*. In *Sylva* but also in his *History of Life and Death* (*Historia Vitae et Mortis*, 1623) Bacon makes observations and conducts experiments on nutrition, life, death and prolongation of life. The sixth century of *Sylva sylvarum* describes the expected medical benefits of collecting plants from foreign lands and transplanting them from the Indies to Europe.[75] One of Bacon's legacies is his advocacy of travel in order to gather information from other regions of the world so as to enhance our understanding of human health and advance the healing process:

> We have dispensatories, or shops of medicine. Wherein you may easily think, if we have such variety of plants and living creatures more than you have in Europe (for we know you have), the simples, drugs, and ingredients of medicines, must likewise be in so much the greater variety.[76]

Robert Boyle clearly expresses this Baconian agenda in natural history in *Certain Physiological Essays*, a text published in 1663 when Locke was working closely with him and collecting data on air, blood and respiration.[77] Boyle explicitly presents his text as a continuation of Bacon's *Sylva*:

> (...) I must inform you that many of the Particulars which we are now considering, were in my first Design collected in order to Continuation of the Lord Verulam's *Sylva Sylvarum*, or Natural History.[78]

Two aspects of *Sylva* are particularly noteworthy. Firstly, Bacon does not content himself with describing natural phenomena, such as those belonging to the "history of nature free", the "history of arts" and the "history of strange and irregular phenomena".[79] He is also interested in describing the dispositions that lead the observer to acquire useful knowledge or, on the contrary, to fail in the very process of experimentation. In this posthumous treatise, he develops the idea of "experiential literacy" (*experiencia literata*), a kind of discovery that involves recourse to mediations and is deployed in various ways, giving rise to descriptions and detailed observations. "Experiential literacy" (as opposed to

[75] Bacon, *Sylva sylvarum*, "Experiments in Consort touching Forraine Plants", 574, 575, 576, pp. 415-16.
[76] Serjeantson, "Natural knowledge in the *New Atlantis*", p. 91, and Bacon, *New Atlantis*, p. 483.
[77] Anstey, "Locke, Bacon and Natural History".
[78] Boyle, *Certain Physiological Essays*, A Proemial Essay, p. 17.
[79] Bacon, *The Advancement of Learning*, p. 62.

"experiential illiteracy)" integrates failure and error into the very process of experimentation, whether it is with sounds and acoustics, chemical, meteorological or botanic experiments.[80] Great discoveries depend more "on luck and chance rather than on knowledge of causes",[81] and "the example of medicine is clear evidence of this fact".[82] In *The Wisdom of the Ancients* (1609), Bacon describes the process of "*experientia literata*", a process of accidental discovery that includes error and failure in the very process of experimentation: "the discovery of things useful to life and the furniture of life", such as agriculture (or medicine), is not to be expected from "abstract philosophies", but from the accidental and "sagacious experience" of Pan, who "by a kind of accident, and as it were while engaged in hunting, stumble upon such discoveries".[83] Hunting, gardening, and traveling are ways of observing and experimenting that can help us understand processes better than logic or reasoning.

Secondly, in *Sylva*, Bacon makes a remarkable claim: *Sylva* is "so to speak" not just natural history, but "a high kind of natural magic": "For it is not a description of nature only, but a breaking of nature into great and strange works".[84] In his introduction to the book, William Rawley described the "purpose of the *New Atlantis* as 'the producing of great and marvellous works for the benefit of men'".[85] To characterize natural history as natural magic does not mean that natural history is concerned with supernatural phenomena. Bacon is merely referring to the Renaissance meaning of magic when writers such as Della Porta, for example, explained that magicians were concerned with producing wonderful and inexplicable effects.[86] According to Bacon, magic and mechanics are two ways of manipulating matter and two aspects of operative philosophy. Bacon defines magic as a kind of learning that "applies the knowledge of hidden forms to the production of wonderful operations, and by uniting (...) actives with passives, displays the wonderful works of nature".[87]

Medical practice and knowledge offer remarkable examples of the active dimension of knowledge of nature. In the first century of *Sylva*, Bacon describes

80 Parageau and Crignon, "Bacon and the Forms of Experimentation: A Reappraisal", pp. 11-12.

81 Bacon, *De Augmentis Scientiarum,* V, II, p. 505. On *experientia literata* as a kind of sagacity, see Bacon, *Of the Advancement of Learning*, p. 115.

82 Giglioni, "Learning to Read Nature: Francis Bacon's Notion of Experiential Literacy", p. 420.

83 Bacon, *De Sapientia Veterum*, "Pan", p. 831.

84 Bacon, *Sylva sylvarum*, 93, p. 378.

85 Rawley, "To the Reader", p. 84.

86 Porta, *Magia Naturalis* (1558). See Rusu, *From Natural History to Natural Magic. Francis Bacon's Sylva sylvarum*.

87 Bacon, *De Augmentis Scientiarum*, p. 474.

several observations and experiments on the process of purging. These observations reveal what was considered hidden or secret in the human body or mind, especially that which belongs to the transmission of thoughts or the work of imagination. The last century of *Sylva* is devoted to the question of the power of imagination. This power could act on the body of the person who imagines, it could act on natural substances, such as plants, wood, stones, metals, and finally on "the spirits of men and living creatures" (exp. 945). Understanding the power of imagination in the human mind is crucial when describing a process such as healing and what defies causal explanation.

In experiment 997, Bacon tells us the story of the wife of the English Ambassador in Paris and relates how she cured him of warts he had since childhood, by using a "Peece of Lard" with which the warts were rubbed and then exposed to the sun "upon a Poast of her Chamber Window, which was to the South".[88] This experiment illustrates the active effects of "sympathy" between "Individuals that have been Entire, or have Touched". The act of imagining the corruption of a piece of external matter is a powerful aid to the patient's mind in regard to the corruption of warts. Approaching the healing process as a magical operation and experimenting with these operations is a way of revealing what has hitherto been considered hidden and unbelievable. This means that understanding the healing process involves observing mental processes, experimenting with the powerful effects of the imagination and also including the beliefs and even prejudices of the caregiver and care recipient in the process of experimentation.

These two aspects of the Baconian legacy in the field of natural history applied to medicine might help us approach the positive significance of the reference to indigenous practices in Locke's writings on medicine. First, it allows Locke to acknowledge the value of experience and chance in the process of acquiring knowledge. If mechanics, illiterates, peasants, women, and natives cannot rely on either habit or education to acquire useful knowledge of nature, what means or tools are available to them? What benefits can we expect from this apparently inadequate knowledge that we ascribe to those "branded with the disgraceful name of mechanics".[89] Locke's response in *De Arte Medica* (1669) can be considered Baconian. He argues that "chance" and "well-designed experiments" are more likely to lead to "happy discoveries"[90] than philosophical speculations. According to this manuscript, ignorant and uneducated

88 Bacon, *Sylva sylvarum*, 997, pp. 669-70.
89 Locke, *De Arte Medica*, 54*r*.
90 Ibid., 53*r*.

people possess special abilities like "innocence, honesty, common sense, inventiveness"[91] which allow them to make useful and unexpected discoveries. They can discover by chance things that educated people and scholars are unable to find or neglect to consider, which they can then share with learned physicians.

Secondly, the use of "experientia literata" as a distinct tool in the natural history methodology is an effective way of paying attention to what we now perceive and disqualify as the subjective experience of the observer. The use of natural history in medicine enables two things. Firstly, to observe the prejudices and methodological biases in the minds of physicians. Secondly, to include popular beliefs and representations in the minds of patients.

One should observe the physician's disposition and state of mind when, for example, they propose a new treatment. One should also pay attention to the patient's mood and ability to accept or tolerate a treatment. This acceptance depends on the habits, customs, prejudices or opinions they have been taught since childhood. Incorporating prejudices and habits into medical knowledge is a prerequisite for it to be useful. Usefulness should not be limited to the efficacy of remedies proven by experiments. It also incorporates the beliefs about cures passed on from one era and population to another.

Let us begin with the first aspect (observing the caregiver's mind). In the manuscripts and letters on Lord Ashley Cooper's disease, Locke points out that the usefulness of a cure or treatment does not depend on the certainty of medical knowledge but rather on moral dispositions: "diligence" and "faithfulness" in observing and telling the story of a particular disease (Locke to De Briolay, 59*r*), the desire to act for the good of patients and to save their lives rather than to preserve one's reputation. It is also closely linked to practical skills: "Nicely to observe the history of diseases in all their changes and circumstances, is a work of time, accurateness, attention and judgement (...)".[92] A good physician does not claim to provide a certain knowledge about the human body and its functions. They can only offer "opinions", which may be "mistakes".[93] Nevertheless, they must concentrate on their task and try to improve the situation and condition of the patients who have entrusted their lives to them, even if they cannot define with certainty what would be the most beneficial treatment for the individual concerned. The difficulties in giving advice about bodies and the doubts that may arise when deciding on

[91] Parageau, "Colomb ignorant trouva le nouveau monde", p. 46.
[92] Locke to Dr. Thomas Molyneux, 20 January 1693, in Locke, *Correspondence*, vol. 4, p. 629.
[93] Locke to Dr. Denis Grenville, 13/23 March 1678, in Locke, *Correspondence*, vol. 1, p. 558.

treatments should not prevent the physician from acting or making decisions in situations of uncertainty. Nevertheless, we should not neglect that some caregivers behave like quacks, trying to manipulate or to mystify patients and taking advantage of their illness. Locke was well aware that some practitioners often used the superstitious dimension of some remedies to mystify patients and make them believe in the efficacy of a cure. Referring to the use of vomiting to cure epilepsy, he mentions the success of a certain "Dr. Godfrey" and immediately points out that quacks are always ready to exploit them:[94]

> take the stick of elder that grows on a sallow. Cut it into short pieces, and soe threaded and hung to the pit of the stomach. This after vomiting Dr. Godfrey has found succeed in epilepsies of grown people as well as infants and vertigos too. This Hartman relates but he addes some superstition to it [in order to mistify].[95]

Secondly, we must observe the patient's state of mind, their desires, passions, interests, prejudices received since their childhood.[96] Locke's attitude to folk medicine is often critical or questioning. Nevertheless, he pays attention to the patient's condition: do they feel better? Are they comfortable after treatment? He usually observes a practice, reports it, and then questions it. As in the case of Lady Northumberland, who suffers from trigeminal neuralgia, with toothache pain and severe headaches:

> This morning my Lady Northumberland had, till she eat at dinner, perfect ease in her teeth without any paine, itching or any the least alterity which she had not had (for soe long an interval as this which was of 4 or 5 howers) these neare 3 months last. Q. Whether this be to be imputed to her sweating a little gently this morning upon the use of Godard's drops or from any alteration they have made in her bloud or succus nervosus, she having now taken them these 3 nights last past in this methode.[97]

Locke here is alluding to a popular pharmaceutical remedy (also called *Guttae Anglicanae* or *Guttae Goddardianae*) which, according to different interpretations, was invented either by Jonathan Goddard (1617-1675), physician to

[94] Locke, *Journals*, Fri. Nov. 25, in Dewhurst, *John Locke (1632-1704), Physician and Philosopher*, p. 147.

[95] Ibid. Added in shorthand.

[96] Beliefs, prejudices and common representations in the field of physic are subjects Locke deals with in his *Some Thoughts Concerning Education*, § 1-30.

[97] Locke, *Journals* (1675-1679), in Dewhurst, *John Locke (1632-1704), Physician and Philosopher*, p. 102. Dewhurst, "A Symposium on Trigeminal Neuralgia", pp. 21-36.

Oliver Cromwell, Professor of Physic at Oxford, or by Dr. William Goddard (dates unknown) educated in Padua and Fellow of the College of Physicians.[98] It was a very popular medicine used for a wide range of purposes: for fainting, apoplexy, or to cure bladder stones. It was made from "five pounds of human skull (of a person hanged of dead or dead of some violent death), two pounds of dried vipers, two pounds of hartshorn, and two of ivory (...) minced, distilled, shaken, filtered and redistilled".[99]

It should be noted that Locke neither approves nor disapproves of the use of this remedy. Observing an improvement in the patient's condition (she felt better), he proposed two hypotheses and two possible effects of its methodological use. Even if this remedy is more akin to a magical charm handed down by tradition than to a medicine whose composition would have been based on scientific experiments, the correlation between its use and an improvement in the patient appears to be a matter of fact. The operative dimension of treatment, its effects on the mental and physical condition of the patient, even in situations where causes remain unknown and where remedies seem more akin to superstitious practices than to scientifically tested cures, should be considered as part of the art of medicine.

Locke also offers to put these beliefs, prejudices or mystifications to the test. Following Bacon in *Sylva*, he observes popular practices, describes them and points out their magical dimension. At the same time, he experimented with them, applying them to Europeans, or even to his own relatives, to see if they still worked when the magical dimension was suppressed:

> It often happens to them (i.e., in the Maldives) that, having been long in the sun of the height of the day, after sunset they cannot see a speck, whatsoever fire or light is brought near them (...) they feel no other ill effect. This is called the Rosnan disease. To cure it they cook the liver of a cock, write on it words and charms, and swallow it at the moment of sunset. My companion and I suffered greatly from this for some time, but having learned the above prescription we took the cock's liver and omitted the charms, to see if that would suffice, and found that we were cured just the same. Pyrard, 486 pp. p. 201.[100]

98 Dewhurst, *John Locke (1632-1704), Physician and Philosopher*, p. 102, n. 1, and Wootton, *Chronicles of Pharmacy*, vol. II, p. 179.

99 Goddard, "Goddard's Drops: a Paradox of the C17th".

100 Locke, *Journal* (1675-1679), in Dewhurst, *John Locke (1632-1704), Physician and Philosopher*, p. 121. F. Pyrard (1578-1621) was a French navigator and explorer. He is the author of *Voyage de François Pyrard de Laval contenant sa navigation aux indes orientales, Maldives, Moluques, et au Brésil*, Paris, Thiboust, 1619 (1st ed. 1611).

There remains, of course, one important difference between Locke's use of natural history and the Baconian method of interpreting nature. Bacon was not content with observing, describing and performing experiments. He also viewed natural history as a first step leading to induction, and as a way of gaining access to demonstrative knowledge (and discovering axioms in nature).[101] According to Locke, we can neither access real essences nor discover remote causes of disease. We must therefore rely on observation, experiment and the "testimony of experienced witnesses".[102] As he writes in book IV of the *Essay*, this is particularly true when it comes to the knowledge of bodies:

> We are able, I imagine, to reach very little general Knowledge concerning the Species of Bodies, and their several Properties. Experiments and Historical Observations we may have, from which we may draw Advantages of Ease and Health, and thereby increase our stock of Conveniences for this Life.[103]

Nevertheless, Locke uses this first step to include in medical knowledge elements that tend to remain invisible or that are not considered relevant: everything related to chance discovery and what Georges Canguilhem called "bottom-up rationality".[104] Locke is well aware of the limits of rationality in medicine and of the various levels of rationality: starting from what people consider to be rational or reasonable could help to improve medical knowledge. He uses this first step of Baconian natural history to defend the idea that healing is not only a "scientific concept" but also, and perhaps above all, a "popular notion".[105] We cannot explain the operations that improve or heal bodies and minds. Nevertheless if we want medicine to produce real effects, to work on bodies and minds, and to provide ease and comfort, we should probably abandon the ambition of providing authoritative explanations of diseases (especially causal explanations) and start with an observation of popular representations of disease and the healing process.

101 Bacon, *De Augmentis scientiarum*, V, ii.

102 Anstey, "Locke, Bacon and Natural history", p. 39.

103 Locke, *Essay*, IV.xii.10, p. 643.

104 On this question, see Canguilhem, "Puissance et limites de la rationalité en médecine", p. 401.

105 Canguilhem, "La santé concept vulgaire et question philosophique", p. 52: "(...) il n'y a pas de science de la santé. Admettons-le pour l'instant. Santé n'est pas un concept scientifique, c'est un concept vulgaire. Ce qui ne veut pas dire trivial, mais simplement commun, à la portée de tous".

4. *Conclusion*

How should we interpret the frequent references to "indigenous knowledge" or local therapeutical practices in Locke's writings? As we have seen, they might come either from travel books and observations made in remote countries or from folk practices and traditions delivered by peasants, women, quacks and illiterate persons. Firstly, it is important to note the very comprehensive meaning of 'indigenous knowledge'. We can define it as knowledge that is "contingent, historically situated, particular to the specifics of locality, group dynamics, place and time".[106] It includes non-European knowledge systems and idiosyncratic forms of belief or knowledge shared by certain people in a particular place or at a specific time. In this paper, we have defended the idea that Baconian natural history allowed natural philosophers such as Locke to pay attention to alternative health approaches and to test the efficacy attributed to certain folk remedies. It is part of the Baconian legacy in the field of natural history to value knowledge acquired empirically, thanks to sagacity, a quality that leads to the discovery of things by chance.

The reasons given for valuing indigenous knowledge (acquired through experience and chance) are ambivalent. It is characteristic of "early modern navigators and colonists" to emphasize "the indigenous population's knowledge of nature – of its operations and creatures – which they described as empirical knowledge of sagacity".[107] Yet they are symptomatic of Locke's view concerning the value of ignorance. As Parageau points out, Locke is "particularly attentive to the social and cultural dimensions of knowledge and ignorance" and is convinced that there is a great diversity of human understanding.[108]

Paying attention to the ignorance of old women who practice medicine or to the sagacity of Indians is a way of recognizing the diversity of people's understandings according to their family, social, political and cultural contexts. While Indians are ignorant of so-called learned medicine, Europeans are themselves ignorant of the therapeutic use of many plants and natural substances. According to Locke, ignorance should not be seen as a curse sent by God to punish people for their sins; it is inherent in human nature.[109] Nevertheless,

[106] Agrawal, "On Power and Indigenous Knowledge", p. 177.

[107] Parageau, *The Paradoxes of Ignorance*, p. 139. See Scott Parrish, *American Curiosity*, ch. 6, "Indian Sagacity", and Irving Stonebraker, "The Sagacity of the Indians".

[108] Locke, *Of the Conduct of the Understanding*, p. 29.

[109] Parageau, *The Paradoxes of Ignorance*, pp. 145-58.

man can overcome ignorance. Natural history, observation, and experimentation are good ways to improve our faculties and in our attempts to get closer to nature. It is also an excellent way to approach diversity of understanding and knowledge in the world. Applied to medicine, this means that it will help physicians to become more aware of the variety of diseases in the world and the appearance of new ones. It will also enable them to use foreign remedies (from plants, herbs, animal substances etc.) to cure diseases and relieve pain. The introduction of the natural history method into medicine meant arousing the curiosity of practitioners about common medical practices handed down by laymen, amateurs, travelers, explorers or rank soldiers. In this way, a link can be established between the "ways of knowing" nature and the "ways of believing" in nature, without excluding popular beliefs from medical knowledge.[110] The use of this diversity in medical practice could be very promising, especially for those who do not have access to trained physicians.

However, recognizing the value of indigenous knowledge through the use of natural history remains ambivalent. Firstly, because, as Jonathan Pickstone points out, natural history is a way of knowing but also a way of possessing nature: "In this culture of possession, natural history was necessarily a matter for the craftsmen and traders who supplied it, but also for the surgeons, apothecaries and physicians (...)".[111] The promotion of mechanical arts and crafts is also aimed at taking possession of the human body, mastering physiological functions, life span, etc. According to Boyle, experimental natural philosophy aims to restore "the empire of men over inferior creatures" and more broadly over nature, "whereas physick only enables man to master his own body".[112] For all these reasons, we must admit that European physicians and philosophers tended to regard the information, remedies and practices they observed in their travels and explorations of new lands merely as raw materials or rudimentary knowledge inferior to their own, in order to reassess their domination over foreign peoples and minds. Secondly, we should not forget that Locke borrowed heavily from travel books full of idealized representations of the noble savage. He also adopted the "underlying dichotomies of these travelogues between the darkness of pagan savagism and the

110 Pickstone, *Ways of Knowing*, pp. 76-77.
111 Ibid., p. 67.
112 Boyle, *Usefulness of Natural Philosophy*, p. 407, and Irving, *Natural Science and the Origins of the British Empire*, p. 77.

lightness of Christian civility".[113] The opposition between the savage Indians and the civilized Europeans is ambiguous, even if it tends to emphasize unexpected abilities of the former. Locke was practically involved in the colonial administration. Curiosity and respect for indigenous practices is also a way of assimilating them culturally.[114]

Nevertheless, we agree with S. Irving-Stonebraker here when she emphasizes the "complexity of English attitudes towards indigenous culture and knowledge". Correspondence extracts and references to foreign practices in Locke's manuscripts show a genuine curiosity about alternative healing methods, especially where speculative and learned medicine appeared powerless. The Baconian legacy in the field of natural history, and more specifically the influence of *Sylva Sylvarum*, allowed Locke to observe and describe non-rational dimensions of healing, whether from the point of view of the healer or the patient. Again following Bacon, he does not observe popular practices in order to entertain his readers: "fabulous experiments and secrets, frivolous impostures" should not be collected only "for pleasure and strangeness".[115] Strange phenomena and popular practices are also "sound matter for the intellect", with the help of which "we may build philosophy and the sciences" and distinguish them from "popular errors and fables". Locke's commitment to Baconian natural history led him to characterize the proper focus of the physicians as therapeutics, but also to scrutinize and test a variety of cures and their effects on patients, including popular and foreign ones. Not excluding popular cures is perhaps not just a matter of curiosity, but of thinking about the limits of rationality in medicine.

Abbreviations

LL:	Harrison, John, and Laslett, Peter, *The Library of John Locke*, 2nd ed., Clarendon Press, Oxford 1971.
OFB XI:	Bacon, Francis, The *Instauratio Magna* Part II: *Novum organum* and Associated Texts, *The Oxford Francis Bacon*, vol. XI, eds. Graham Rees and Maria Wakely, Clarendon Press, Oxford 2004.

[113] Arneil, *John Locke and America*, p. 33.
[114] Ibid., pp. 21-44.
[115] Bacon, *The Advancement of Learning*, p. 63.

Bibliography

Agrawal, Arun, "On Power and Indigenous Knowledge", in Posey, Darell A. (ed.), *Cultural and spiritual values of biodiversity*, United Nations Environment Programme/ Intermediate Technology Publications, London 1999, pp. 177-80.

Anstey, Peter R., "Locke, Bacon and Natural History", in *Early Science and Medicine* 7 (2002), 1, pp. 65-92.

Anstey, Peter R., "Experimental versus Speculative Natural Philosophy", in Anstey, Peter R., and Shuster, John A. (eds.), *The Science of Nature in the Seventeenth Century*, Springer, Dordrecht 2005, pp. 215-42.

Anstey, Peter, R., *John Locke Critical Assessments*, Routledge, London 2006.

Anstey, Peter R., and Hunter, Michael, "Robert Boyle's Designe about Natural History", in *Early Science and Medicine* 13 (2008), 2, pp. 83-126.

Anstey, Peter R., "John Locke and Helmontian medicine", in Wolfe, Charlers T., and Gal, Ofer (eds.), *The Body as Object and Instrument of Knowledge: Embodied Empiricism in Early Modern Science*, Springer, Dordrecht-London-New York 2010, pp. 93-117.

Anstey, Peter R., *John Locke and Natural Philosophy*, Oxford University Press, Oxford 2011.

Anstey, Peter R., "The Creation of the English Hippocrates", in *Medical History* 55 (2011), 4, pp. 457-78.

Arneil, Barbara, *John Locke and America. The Defence of English Colonialism*, Oxford University Press, Oxford 1996.

Ayers, Michael, *Locke, Epistemology and Ontology*, Routledge, London 1999 (1st ed. 1993).

Bacon, Francis, *Sylva sylvarum*, in *The Works of Francis Bacon*, eds. James Spedding, Robert Leslie Ellis and Douglas Denon Heath, vol. IV, Brown & Taggard, Boston 1862 (1627), pp. 141-477.

Bacon, Francis, *New Atlantis*, in *Francis Bacon: A Critical Edition of the Major Works*, ed. Brian Vickers, Oxford University Press, Oxford 1996, pp. 457-89.

Bacon, Francis, *The Advancement of Lerning*, in *The Oxford Francis Bacon*, vol. IV, ed. Michale Kiernan, Clarendon Press, Oxford 2000.

Bacon Francis, *A Description of the Intellectual Globe*, in *The Oxford Francis Bacon*, vol. VI, ed. Graham Rees, Clarendon Press, Oxford 2003.

Bacon, Francis, *Catalogue of Particular Histories, Parasceve*, in The *Instauratio Magna* Part II: *Novum organum* and Associated Texts, *The Oxford Francis Bacon*, vol. XI, eds. Graham Rees and Maria Wakely, Clarendon Press, Oxford 2004, pp. 474-85.

Bacon, Francis, *De Augmentis Scientiarum*, *De Sapientia Veterum*, in *The Philosophical Works of Francis Bacon*, reprinted from the texts and translations, with the notes and prefaces, of Ellis & Spedding, ed. J.M. Robertson, Routledge, New York 2011 (1st ed. 1905).

Birch, Thomas, *History of the Royal Society*, 4 vols., printed for A. Millar, London 1756-1757.

Bourne, Henry Richard Fox, *The Life of John Locke*, Thoemmes Press, Bristol 1991.

Boyle, Robert, *General Heads for a Natural History of a Country, Great or Small, imparted likewise by Mr. Boyle*, in *Philosophical Transactions of the Royal Society of London* 1 (1666), 11. The Royal Society Publishing, https://doi.org/10.1098/rstl.1665.0082.

Boyle, Robert, *De specificiorum remediorum cum corpusculari philosophia concordia*, London 1686.

Boyle, Robert, *Certain Physiological Essays* (2nd ed. 1669), in *The Works of Robert Boyle*, eds. Michael W.C. Hunter and Edward B. Davis, Pickering & Chatto, London 1999, vol. II, pp. 3-203.

Boyle, Robert, *Usefulness of Natural Philosophy* (1662-63), in *The Works of Robert Boyle*, eds. Michael W.C. Hunter and Edward B. Davis, Pickering & Chatto, London 1999, vol. III, pp. 189-560.

Boyle, Robert, *Of the Reconcileableness of Specifick Medicines to the Corpuscular Philosophy* (1686), in *The Works of Robert Boyle*, eds. Michael W.C. Hunter and Edward B. Davis, Pickering & Chatto, London 1999, vol. X, pp. 351-403.

Boyle, Robert, *The Christian Virtuoso*, in *The Works of Robert Boyle*, eds. Michael W.C. Hunter and Edward B. Davis, Pickering & Chatto, London 1999, vol. XI, pp. 281-327.

Browne, Thomas, *Pseudodoxia Epidemica, or Inquiry into very received Tenents and commonly received Truths*, Edward Dod, London 1646.

Burke, Peter, *Popular Culture in Early Modern Europe*, Temple Smith, London 1978.

Casaubon, Meric, *A Letter of Meric Casaubon D. D. to Peter du Moulin D. D. and Prebendarie of the same Church: Concerning Natural experimental Philosophie, and some books lately set out about it*, William Morden, Cambridge 1669.

Canguilhem, Georges, "Puissance et limites de la rationalité en médecine", in Id., *Études d'histoire et de philosophie des sciences*, Vrin, Paris 1989, pp. 392-411.

Canguilhem, Georges, "La santé concept vulgaire et question philosophique", in Id., *Écrits sur la médecine*, Seuil, Paris 2002, pp. 49-68.

Carey, Daniel, "Compiling nature's history: travellers and travel narratives in the early Royal Society", in *Annals of Science* 54 (1997), 3, pp. 269-92.

Carey, Daniel, "Locke, travel literature, and the natural history of man", in *John Locke Critical Assessments*, ed. Peter Anstey, Routledge, London 2006, pp. 327-44.

Carey, Daniel, "Preface: New Directions in the study of English Travel Writing", in *Etudes Anglaises* 70 (2017), 2, pp. 131-37.

Celsus, Aulus C., *De Medicina*, English trans. Walter George Spencer, The Loeb Classical Library, Heinemann, London 1938.

Charleton, Walter, *Enquiries into human Nature in VI. Anatomic Praelections in the New Theatre of the Royal Colledge of Physicians in London*, M. White for B. Boulter, London 1680.

Clericuzio, Antonio, *Elements, principes and corpuscules. A study of atomism and chemistry in the seventeenth century*, Kluwer, Dordrecht 2000.

Cook, Harold J., *The Decline of the Old Medical Knowledge in Stuart England*, Cornell University Press, Ithaca 1986.

Cook, Harold J., "Medicine", in *The Cambridge History of Science*, vol. 3, eds. Katharine Park and Lorraine Daston, Cambridge University Press, Cambridge 2006, pp. 407-32.

Corneanu, Sorana, *Regimens of the mind: Boyle, Locke, and the early modern* cultura animi *tradition*, The University of Chicago Press, Chicago 2011.

Crignon, Claire, *Locke médecin: manuscrits sur l'art médical (1666-1670)*, Garnier, Paris 2016.

Crignon, Claire, and Parageau, Sandrine, "Bacon and the Forms of Experimentation: A Reappraisal", in *Archives de Philosophie* 84 (2021), 1, pp. 7-15.

Culpeper, Nicholas, *Medicaments for the Poor or Physick For the Common People*, J. Streater, London 1670.

Dampier, William, *A new voyage around the world describing particularly the isthmus of America [...]*, J. Knapton, London 1697.

Debus, Allen, *The English Paracelsians*, Oldbourne, London 1965.

Dewhurst, Kenneth, "A Symposium on Trigeminal Neuralgia", in *Journal of the History of Medicine* 12 (1957), pp. 21-36.

Dewhurst, Kenneth, *John Locke (1632-1704), Physician and Philosopher: A Medical Biography. With an Edition of the Medical Notes in his Journals*, The Wellcome Medical Library, London 1963.

Dewhurst, Kenneth, *Dr. Thomas Sydenham (1624-1689). His Life and Original Writing*, The Wellcome Historical Medical Library, London 1966.

Digby, Kenelm, *A Late Discourse [...] Touching the Cure of Wounds by the Powder of Sympathy, rendered faithfully out of French into English, by R. White*, R. Lawnes et T. Davies, London 1658.

Duchesneau, François, *L'empirisme de Locke*, Martinus Nijhoff, La Haye 1973.

Gervaise, Nicolas, *Histoire naturelle du Royaume de Siam*, Claude Barbin, Paris 1689.

Giglioni, Guido, "Learning to Read Nature: Francis Bacon's Notion of Experiential Literacy (*Experientia Literata*)", in *Early Science and Medicine* 18 (2013), 4-5, pp. 405-34.

Glanvill, Joseph, *Scepsis Scientifica: Or Confest Ignorance, the Way to Science: in an Essay of the Vanity of Dogmatizing and Confident Opinion* (1665), in *Collected Works of Joseph Glanvill*, ed. Bernhard Fabian, G. Olms Verlag, Hildesheim-Zürich-New York 1979, vol. IV.

Goddard, Jonathan Charles, "Goddard's Drops: a Paradox of the C17th", in *Urology News* 19 (2015), 6, https://www.baus.org.uk/_userfiles/pages/files/Museum/23%20-%20Goddards%20Drops.pdf.

Hooke, Robert, *Micrographia: or some physiological Descriptions of Minute Bodies made by Magnifying Glasses with Observations and Enquiries Thereupon*, J. Martin and J. Allestry, London 1665.

Irving, Sarah, *Natural Science and the Origins of the British Empire*, Pickering & Chatto, London 2008.

Irving Stonebraker, Sarah, "The Sagacity of the Indians: William Dampier's Surprising Respect for Indigeneous Knowledge", in *Journal of Early Modern History* 21 (2017), pp. 543-64.

Irving Stonebraker, Sarah, "The Surprising Lineage of Useful Knowledge", in *Politics, Religion and Ideas in Seventeenth and Eighteenth Century Britain, Essays in Honor of Mark Goldie*, eds. Justin Champion, John Coffey, Tim Harris, and John Marshall, The Boydell Press, Woodbridge 2019, pp. 277-92.

Locke, John, *Anatomia* (1668), NA PRO 30/24/47/2, fos 31*r*-38*r*.

Locke, John, *De Arte Medica* (1669), NA PRO 30/24/47/2, fos 49-56*r*.

Locke, John, *Smallpox Preface* (1670), NA PRO 30/24/47/2, fos 64-69.

Locke, John, *Smallpox Epistle Dedicatory* (1670), NA PRO 30/24/47/2, fos 60-63.

Locke, John, *De Specificorum Remediorum cum corpusculari Philosophia Concordia, cui accessit Dissertatio de varia simplicium Medicamentorum utilitate, usuque. Ex Anglico in Latinum Sermonem traducebat D. A. M. D. Auctore Roberto Boyleo Nobili Anglo Societatis Regiae socio*, London 1686, in *Bibliothèque Universelle et Historique de l'année 1686*, vol. II, 2nd ed., Wolfgang Waesberge, Boom and Van Someren, Amsterdam 1687, pp. 263-77.

Locke, John, *Of the Conduct of the Understanding*, London, 1706, in *Posthumous Works of John Locke*, printed by W. B. for A. and J. Churchill, London 1706, pp. 3-98.

Locke, John, *A Letter Concerning Toleration*, in *The Works of John Locke*, a new edition corrected, vol. 6, London 1823, reprint Scientia Verlag, Aalen 1963.

Locke, John, *An Essay concerning Human Understanding*, ed. Peter H. Nidditch, Clarendon Press, Oxford 1975.

Locke, John, *Correspondence*, ed. E.S. de Beer, vol. 4, Oxford University Press, Oxford 1979.

Locke, John, *Some Thoughts Concerning Education*, eds. John W. and Jean S. Yolton, Clarendon Press, Oxford 1989.

Locke, John, *Political Essays*, ed. Mark Goldie, Cambridge University Press, Cambridge 1997.

Locke, John, *Selected Correspondence*, ed. Mark Goldie, Oxford University Press, Oxford 2002.

Merrett, Christopher, *The Character of a Compleat Physician or Naturalis*, Printed for E.H., London 1680.

Parageau, Sandrine, "Colomb ignorant trouva le nouveau monde. Ignorance, découverte fortuite et expérimentation à la première modernité", in *Revue d'Histoire des Sciences* 74 (2021), 1, pp. 41-62.

Parageau, Sandrine, *The Paradoxes of Ignorance in Early Modern England and France*, Stanford University Press, Stanford 2023.

Pickstone, John V., *Ways of Knowing. A New History of Science, Technology and Medicine*, Manchester University Press, Manchester 2000.

Porta, Giambattista della, *Natural Magick, in Twenty Books, Where are set forth All the Riches and Delights of the Natural Sciences*, Th. Young & S. Speed, London 1658.

Primerose, James, *Popular Errours, Or the Errours of the People in Physick*, trad. R. Wittie, W. Wilson for N. Bourne, London 1651.

Principe, Lawrence M., and Anstey, Peter R., "John Locke and the Case of Anthony Ashley Cooper", in *Early Science and Medicine* 16 (2011), 5, pp. 379-503.

Rawley, William, "To the Reader", in Bacon, Francis, *New Atlantis. A Worke Unfinished*, W. Lee, London 1626.

Romano, Claude, "Les trois médecines de Descartes", in *XVIIe siècle* 4 (2002), 217, pp. 675-96.

Rusu, Doina Christina, *From Natural History to Natural Magic. Francis Bacon's Sylva sylvarum*, Doctoral Thesis, Radboud University, Nijmegen, and Bucharest University, 2013.

Scott Parrish, Susan, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World*, University of North Carolina Press, Chapel Hill 2006.

Serjeantson, Richard, "Natural knowledge in the New Atlantis", in *Francis Bacon's New Atlantis, New Interdisciplinary Essays*, ed. Brown Price, Manchester University Press, Manchester 2018, pp. 82-104.

Shapin, Steven, "The man of science", in *The Cambridge History of Science*, vol. 3, *Early Modern Science*, eds. Katharine Park and Lorraine Daston, Cambridge University Press, Cambridge 2006, pp. 182-92.

Siraisi, Nancy, "Medicine, 1450-1620, and the History of Science", in *Isis* 103 (2012), 3, pp. 491-514.

Sydenham, Thomas, *Of the Disease called in Women the Hysterical, in Men the Hypochondriacal Passion*, in *Dr. Sydenham's Compleat Method of Curing Almost all Diseases*, and description of their symptoms to which are now added five discourses of the same author concerning the pleurisy, gout, hysterical passion, dropsy and rheumatism, printed for H. Newman and R. Parker, London 1695, pp. 6-90.

Sydenham, Thomas, *Observationes Medicae*, ed. G.G. Meynell, *Thomas Sydenham's Observationes Medicae (London, 1676) and his Medical Observations (Manuscript 572 of the Royal College of Physicians of London), with a new transcript of related Locke MSS. In the Bodleian Library*, Winterdown Books, Folfestone 1991.

Walmsley, Jonathan C., *John Locke's Natural Philosophy (1632-1671)*, Phd Thesis, King's College, London 1998 (revised edition 2008).

Willis, Thomas, *Practice of Physick. Being the Whole Works of that Renowned Famous Physician*, T. Dring, C. Harper, J. Leigh, London 1684 (I. *Of Fermentation*, pp. 1-44., II. *Of Feavers*, pp. 45-152., IX. *Pharmaceutice Rationalis*, pp. 1-218).

Woods, Neal, *The Politics of Locke's Philosophy. A Social study of an Essay Concerning Human Understanding*, University of California Press, Berkeley-Los Angeles-London 1983.

Wootton, A.C., *Chronicles of Pharmacy*, Macmillan, London 1910, vol. II.

Claire Crignon
Archives Henri Poincaré, UMR 7117 Université de Lorraine
claire.crignon@univ-lorraine.fr