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## Leonhard Ludwig Finke: Medical Geography

By Andrea Nuernberger

### *Background*

Leonhard Ludwig Finke (1747–1837), considered an important pioneer of medical geography, was born in Westkappeln, Germany, and received a medical degree from the University of Halle in 1772. After having practiced medicine for several years, he became interested in obstetrics, and as a result of his specialization was appointed Medical Officer, Instructor to Midwives, and other similar positions throughout his career. He also taught as a professor of medicine and physics in Lingen, Germany.

Finke's interest in medical geography was rooted in his official duties as a medical officer, his work as a physician, and his great interest in books. As Medical Officer, for example, he was frequently "obliged to visit the towns and villages of his district, to examine mineral springs and watering places, to supervise the apothecaries, surgeons, bath-men, and midwives, combat quackery, and provide medical care for the indigent"[ref 1]. In addition, decrees and the daily work of a physician involved Finke in preparing reports on administrative districts, which included the evaluation of environmental conditions, health conditions, and living conditions of individuals.

Finke read numerous medical and non-medical works by ancient and contemporary writers, and three authors in particular should be mentioned who influenced Finke's work substantially. Foremost, Finke was inspired by Hippocrates' *About Air, Water, and Geographic Regions*, in which Hippocrates promotes close observation of local conditions to better understand diseases. Hippocrates' book was the only work known to Finke that was "somewhat similar to a medical geography," and in his view, no other work written in the 2,000 years between Hippocrates and himself qualified as a work of medical geography. By Finke's definition, a medical geography had to cover the entire inhabited world, a premise that had not been fulfilled by any other writer before him.

Contemporary writers also had an influence on Finke. One was Johann Peter Frank, who wrote *System einer vollständigen medicinischen Polizey* (System of a Complete Medical Policy) in 1779. Frank (1745–1821), a physician and pioneer of public health, was interested in medical topography and was one of the first to urge international regulation of health problems. James Lind (1716–1794) was another contemporary writer who greatly encouraged Finke's efforts. Lind, a British physician known for his work on scurvy and health of seamen, specialized in tropical medicine and in 1768 published *An Essay on Diseases Incidental to Europeans in Hot Climates*[ref 5].

In addition to these predominant sources, Finke's ideas were also based on works by Celsus, Strabo, and Pliny as well as Baglivi, Lancisi, and Smollett[ref 1].

### *Innovation*

Finke first formally presented his ideas about medical geography at an inaugural lecture at the time of his appointment as professor. He later combined the contents of this lecture with a second lecture he gave at the end of his term and published them in a book on indigenous medicine, a field that in his view included folk remedies but no formal medical treatment. He soon became dissatisfied with the theoretical framework of this work and noted: "There was no connection between cause and effect. A country was seen to be devastated by diseases without the reason for this actually being learned." [ref 2] As a result he shifted his focus from geographical medicine to medical geography, and from a descriptive to a causative approach. As a physician, he hoped that geography would offer explanations for cause and effect, and that diseases consequently could be better understood. In 1789 he published *On Different Practices Used by People With Respect To The Sick, The Dying, And The Dead*, in which he first proposed the study of the medical geography of the world. At this time, Finke already intended to contribute a geographical-historical-sociological essay, including a printed map he had prepared. But because of high printing cost—and to the dismay of historians, cartographers, and geographers—the presumably first world disease map was never published[ref 4].

Finke's major work was *Versuch einer allgemeinen medicinisch-praktischen Geographie worin der historische Theil der einheimischen Voelker- und Staaten-Arzeneykunde vorgetragen wird* (An attempt at a General Medical-Practical Geography, in which the historical section on folk and public medicine is presented). It was published in 1792 and consisted of two volumes and one addendum, published in 1795. With well over 2,000 pages, it was not only a comprehensive discourse on a topic that is commonly believed to have developed during the mid-twentieth century, but "it was the most exhaustive in terms of both length and scope published to that point." [ref 2] In this major work, Finke takes an inherently geographic approach when he first subdivides

the globe by latitude and then describes each study area in terms of landforms, water bodies, soil, vegetation, and inhabitants' ways of life. Only after these classical geographic introductions does he then combine geographical and medical observations to particularly address general practitioners, whom he considered his main audience.

Taking into account the rapid advances in geography during this time, it is not surprising that some of the information Finke provided was outdated even a few decades after it had been published. However, what makes Finke's work stand out is that, in addition to collecting and systematizing a tremendous amount of facts and observations, he discussed in detail his conceptual understanding of medical geography. He justified his right to call his work a geography, set out to define medical geography, identified applications and beneficiaries, and acknowledged sources and future developments. Finke delineated his work from medical topography (description of the medical conditions of a particular place) and medical chorography (description of the medical conditions of a specific country) by covering all of the inhabited countries of the world, using all the sources available to him. He therefore expanded the scale from local and regional to global, and, although writing for physicians, presented his work in a geographic framework.

In accordance with Hippocrate's teachings, Finke emphasized that "there is only one medical geography, a medical geography that is comprised of the geographical aspects of disease, nutrition, and medical care." [ref 2] The revival of thinking about the relationship between place and disease was a fundamental expression of Neo-Hippocratism movement in the last half of the eighteenth century, and Finke's medical geography became a landmark for the development of medical geography as it is known today. Finke's high appraisal of Hippocrates' work strongly established the fact that medical geography has its origin in ancient times.

Finke's accomplishments deserve great admiration with respect to both practical and theoretical considerations. At the time, the Napoleonic Wars were being fought in Germany, travel was cumbersome and hindered by border crossings, and postal services were greatly compromised. The library available to Finke had a mere 200 volumes, and only by borrowing travel literature was he able to gather the information he needed for his medical geography. Finke traveled very little, and when he did, it was within a small radius. As a result, he mostly relied on secondary sources at a time when many areas of the world were still unknown.

Finke's contribution to medical geography provided an important foundation for his successors. One of these was August Hirsch, another German, who wrote three volumes of the *Handbuch der historisch-geographischen Pathologie*

(Handbook of Geographical and Historical Pathology) between 1860 and 1886. In 1893, Hirsch also wrote *Geschichte der medizinischen Wissenschaften in Deutschland* (History of the Medical Sciences in Germany), in which he briefly discussed the history of medical geography and includes the relation between his own work and Finke's *Versuch einer allgemeinen medicinisch-praktischen Geographie*. Finke's fundamentally geographic approach was also an early precursor of what later became to be known as Humboldtian Medicine, "a form of medical geography that made the then new science of physical geography—synonymous with Alexander von Humboldt's name—its basis, taking from it a scientific model of both explanation and representation for the global variations of health and diseases." [ref 3] While Finke was more interested in environmental factors rather than in the science of geography, his work fundamentally influenced medical geography as an academic discipline, a fact that all too often is overlooked today.

#### *Publications*

*Von dem verschiedenen Verfahren der Völker bei Kranken, Sterbenden und Verstorbenen: Zwei Beiträge zur Geschichte der Menschheit und der Medicin. Nebst Plan eines herauszugebenden Werkes über die einheimische Arzneikunde der verschiedenen Völker auf der Erde.* F. A. Jülicher, Lingen, 1789. [On Different Practices Used by People With Respect To The Sick, The Dying, And The Dead: Two Contributions on the History of Humanity and Medicine. Together with an outline of a work, included as a bonus, about the indigenous medical practices of different peoples of the earth [ref 2].

*Exercitationes physico-medicae de admiranda naturae simplicitate et de utili quidem, sed admodum limitanda medicina populari.* Helwing, Rinteln, 1785. (About the Admirable Simplicity of Nature, 1784, Physical Medical Practices. 1785, About the Useful But in Fact Very Limited Indigenous Medicine, 1780) [ref 2].

*Versuch einer allgemeinen medicinisch-praktischen Geographie worin der historische Theil der einheimischen Voelker- und Staaten-Arzeneykunde vorgetragen wird.* (An attempt at a General Medical-Practical Geography, in which the historical section on folk and public medicine is presented). Three volumes. Weidman, Leipzig.

#### *Related Works*

1 Rosen, George (1946) Leonhard Ludwig Finke. "On the Different Kinds of Geographies, but Chiefly on Medical Topographies, and How to Compose Them." Translated from the German with an Introduction, *Bull. History of Medicine*. 20: 527–538.

2 Frank A., Barrett (1993) "A medical geographical anniversary." *Social Science & Medicine* 37 (6): 701–710.

3 Rupke A., Nicolaas (1996) "Humboldtian Medicine." *Medical History* 40: 293–310.

4 Barrett A., Frank (2000) "Finke's 1792 map of human diseases: The first world disease map?" *Social Science & Medicine* 50: 915–921.

5 Frank A., Barrett (1991) "'Scurvy' Lind's Medical Geography." *Sm. Sci. Med.* 33(4): 347–353.

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