

# Two Physicians Who Were ahead of Their Time



Dr. William Cullen



Dr. Erasmus Darwin

Two English physicians who helped shape medicine in America. Both physicians were way ahead of their time in the use and understanding of alternative therapies. Along with being gifted physicians they were both inventors. In 1757 Dr. William Cullen documented the first public demonstration of artificial refrigeration. He is also credited with introducing the word 'placebo' into the field of medicine. Dr. Erasmus Darwin made a sketch of a simple hydrogen-oxygen rocket engine. Some of his other inventions include a horizontal windmill and a carriage that would not tip over. His grandson is Charles Darwin, known for his theory of evolution.

# The Evolution of Acupuncture in the U.S.A



**Erasmus Darwin 1722- 1802**

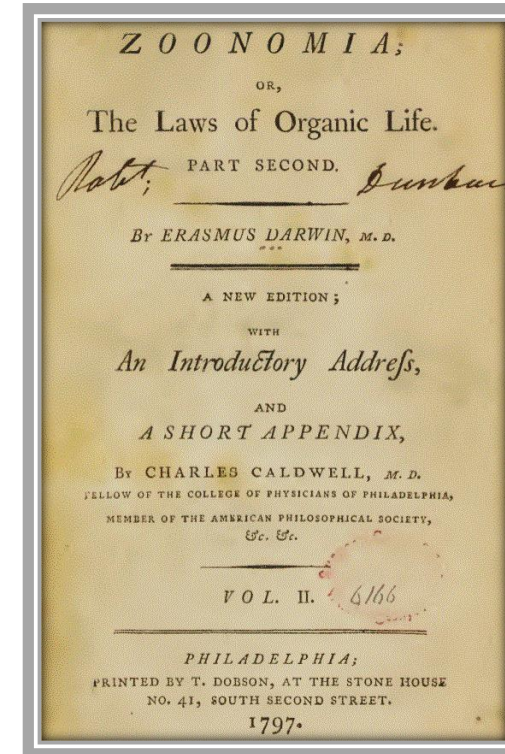
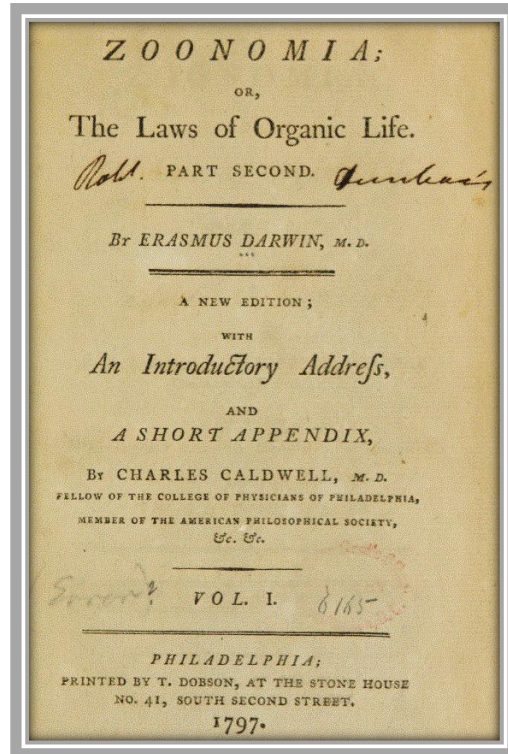
Erasmus Darwin, M.D. was an English physician and inventor of several devices. Darwin never patented any of his inventions, he believed this would damage his reputation as a doctor. However, he encouraged his friends to patent their own modifications of his designs. Darwin's most important scientific work, *Zoonomia* (or the Laws of Organic Life) 1794–1797, delves into pathology, anatomy, psychology, and the functioning of the body

# Darwin Invented the Rocket Engine



Some of Darwin's inventions include a horizontal windmill, a canal lift for barges, a copying machine, and a carriage that would not tip over. Darwin made a sketch of a simple hydrogen-oxygen rocket engine with gas tanks connected by plumbing and pumps to an elongated combustion chamber and expansion nozzle; a concept not seen until one century later.

# Zoonomia Volume I & II



Zoonomia; or the Laws of Organic Life (published by J. Johnson, London in 1794) is a two-volume medical book by Erasmus Darwin. It was later published in the US by T. Dobson, Philadelphia in 1797. Zoonomia is the first book to reference the word “acupuncture” in the US.



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## Copyright and printing of Zoonomia; or, The laws of organic life

In two parts Zoonomia; or the laws of organic life [electronic resource] : Part second. By Erasmus Darwin, M.D. ...  
A new edition; with an introductory address, and a short appendix, / by Charles Caldwell, M.D. Fellow of the  
College of Physicians of Philadelphia, member of the American Philosophical Society, &c. &c. by Erasmus Darwin

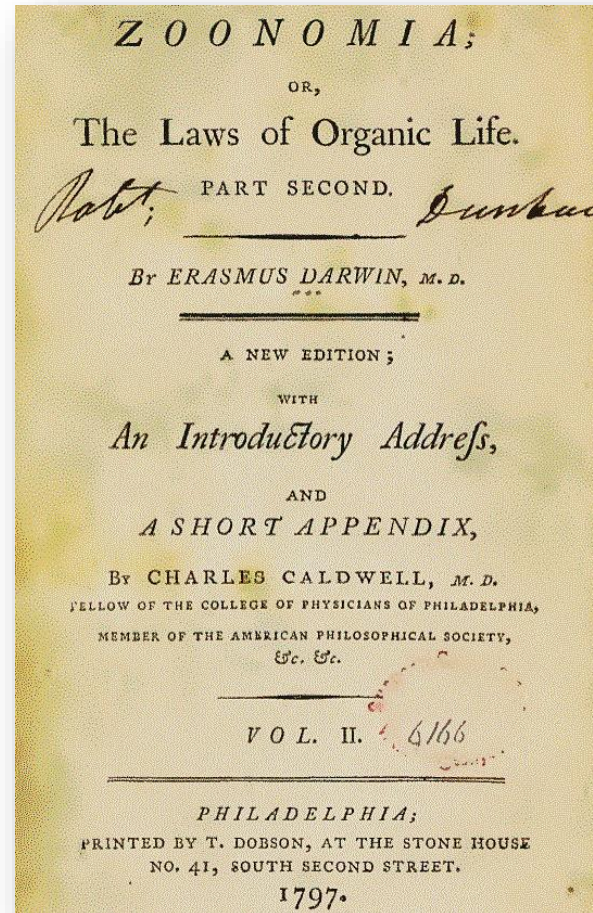
**Published 1797** by Printed by T. Dobson, at the stone house no. **41, South Second Street, Philadelphia**

Written in English. Edition Notes

Part I, edited by Samuel L. Mitchill, **was printed at New York** by T. & J. Swords **in 1796** (Evans 30312). Edition statement transposed; precedes "Vol. I." on title page.



# Zoonomia Volume II



Acupuncture Appears in the USA For the First Time

[2551013RX2.pdf \(nih.gov\)](#)

# Defemination and Explanation of Terms

## PREFACE.

xi

In the Methodus Medendi, which is marked by M. M. at the end of many of the species of diseases, the words incitantia, sorbentia, torpentina, &c. refer to the subsequent articles of the Materia Medica, explaining the operations of medicines.

The remote causes of many diseases, their periods, and many circumstances concerning them, are treated of in the preceding volume; the descriptions of many of them, which I have omitted for the sake of brevity, may be seen in the Nosologia Methodica of Sauvages, and in the Synopsis Nosologiæ of Dr. Cullen, and in the authors to which they refer.

DERBY, Jan. 1, 1796.

## PREFACE.

Xi

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# Darwin States the Following on Page 143

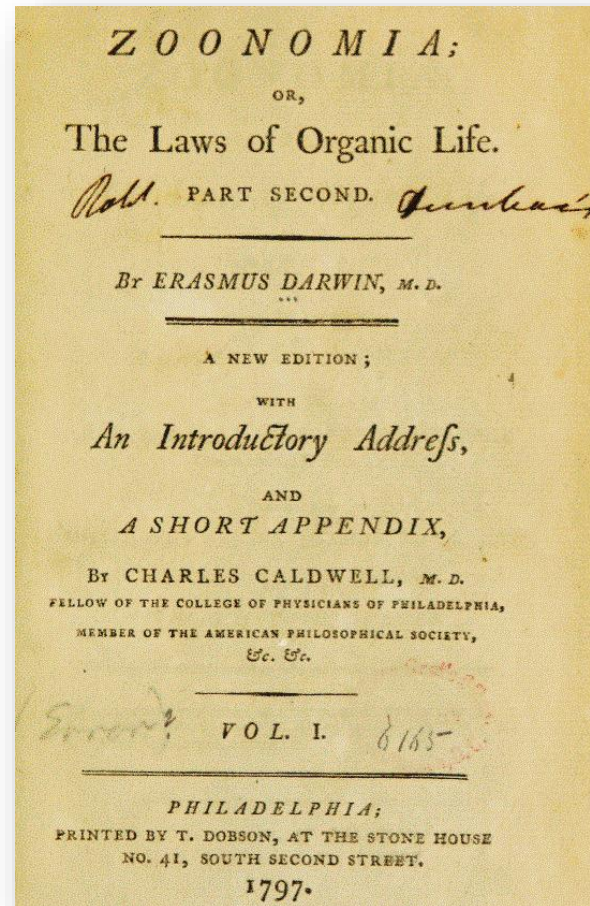
M. M. Detect and extract the diseased tooth. Cut the affected nerve, or stimulate the diseased membrane by acupuncture. Venesection to six ounces by the lancet or by leeches. A strong emetic and a subsequent cathartic; and then an opiate and the bark. Pass small electric shocks through the pained membrane, and through the teeth on the same side. Apply vitriolic ether externally, and a grain of opium with camphor internally, to the cheek on the affected side, where a diseased tooth may be suspected.

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“M.M. Detect and extract the diseased tooth. Cut the affected nerve, or stimulate the diseased membrane by acupuncture”.



# Zoonomia Volume I



[2551013RX1.pdf \(nih.gov\)](#)

## More on Acupuncture by Darwin in 1797

# From Page 195

CLASS I. 3. 1.] OF IRRITATION.

195

stance? Or could half a pound, or a pound, of crude mercury be injected as a clyster, the patient being elevated by the knees and thighs so as to have his head and shoulders much lower than his bottom, or even for a short time held up by the heels? Could this also be of advantage in strangulated hernia?

Where the disease is owing to strangulated hernia, the part should be sprinkled with cold water, or iced water, or salt and water recently mixed, or moistened with ether. In cases of strangulated hernia, could acupuncture, or puncture with a capillary trocar, be used with safety and advantage to give exit to air contained in the strangulated bowel? Or to stimulate it into action? It is not uncommon for bashful men to conceal their being afflicted with a small hernia, which is the cause of their death; this circumstance should therefore always be enquired into. Is the seat or cause of the ileus always below the valve of the colon, and that of the cholera above it? See Class II. 1. 2. 11.

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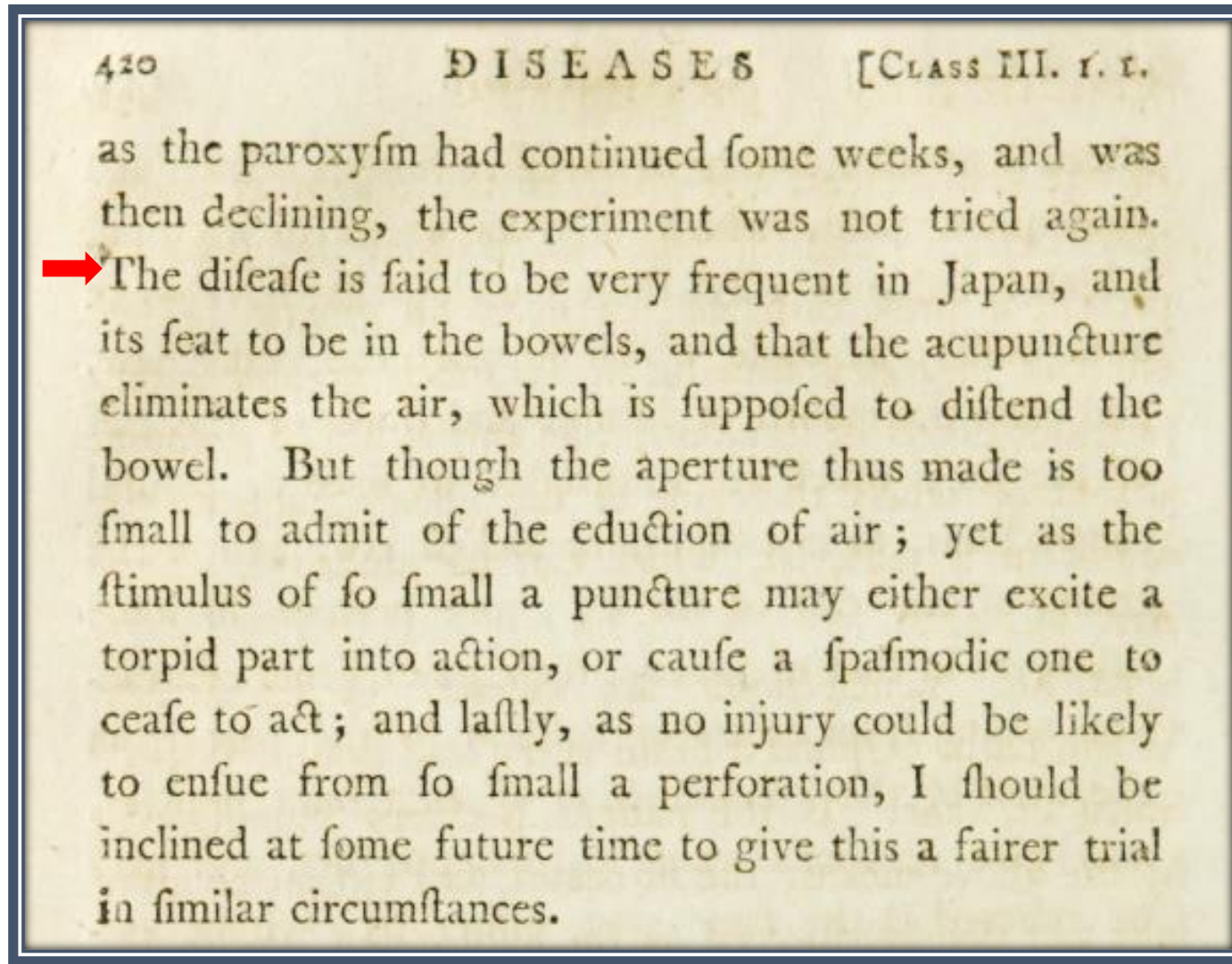
# From Page 419

Considering the great resemblance between this kind of painful epilepsy and the colic of Japan, as described by Kemfer ; and that that disease was said to be cured by acupuncture, or the prick of a needle ; I directed some very thin steel needles to be made about three inches long, and of such a temper, that they would bend double rather than break ; and wrapped wax thread over about half an inch of the blunt end for a handle. One of these needles, when the pain occurred, was pushed about an inch into the painful part, and the pain instantly ceased ; but I was not certain, whether the fear of the patient, or the stimulus of the puncture, occasioned the cessation of pain ; and

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# From Page 420



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# From Page 421

M. M. Venesection. An emetic. A cathartic. Warm bath. Opium a grain every half hour. Wine. Spirit of wine. If the patient becomes intoxicated by the above means, the fit ceases, and violent vomitings and debility succeed on the subsequent day, and prevent a return. Blisters or sinapisms on the small of the leg, taken off when they give much pain, are of use in slighter convulsions. Acupuncture. Electricity. Asperision with cold water on the painful part.

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# Acupuncture, Expertise and Cross-Cultural Medicine

By R. Bivins, 2000

Page 221

## 3 Sharpening the Needle

- 1 Anon, *The Modern Part of the Universal History*, Vol. 4 (London, 1759), 647.
- 2 Erasmus Darwin actually used the term 'acupuncture' in 1794. In Darwin, *Zoonomia; or the laws of organic life*, 3rd edn, Vol. 3 (London, 1801), 254, he asked: 'In cases of strangulated hernia, could acupuncture, or puncture with a capillary trocar be used with safety and advantage to give exit to air contained in the strangulated bowel? Or to stimulate it into action?' His use of



Dr. William Cullen

Dr. William Cullen (1710 – 1790) was a Scottish physician, chemist and one of the most important professors at the Edinburgh Medical School, during the 18<sup>th</sup> century.

Many of Dr. Cullen's best-known students continued to correspond with him throughout his long life. These students included Dr. **Benjamin Rush**, a central figure in the founding of the United States of America; Dr. **John Morgan**, who founded the first medical school in the American colonies (The University of Pennsylvania School of Medicine in 1779. Formally known as The Medical School at the College of Philadelphia 1765). Rev Prof **John Walker** DD MD 1731–1803 (grandson John Walker aka Johnnie Walker).

# Cullen Definition of Sympathy



Cullen developed a theory of 'sympathy' which informed his ideas about clinical medicine. He defined sympathy as a mind-body function, a kind of 'vital force' that animated the human body, coordinated function, and transmitted sensation to target organs. As a theorist he propounded a psychosomatic theory of illness and mind-body therapeutics. Cullen defined disease "as an excess or deficiency of sensibility. His theory of 'sympathy' underpinned his description of the functions of the nervous system, which made up two-thirds of his lectures on medical physiology





Dr. Cullen is credited with introducing the word 'placebo' into the field of medicine. Until then the term 'placebo' was used in a religious manner rather than a medical context. His lecture notes reveal a clinical understanding of mind-body interaction centered on a physician's therapeutic intentions and his attunement to the patient sympathy. This well-crafted use of active placebo treatment by the physician to dispensed a weak, physiologically active substance to please and calm the patient rather than to cure their underlying disorder. Placebo treatments are defined by the physician's lack of curative intention than the actual physiological make-up of the compound being prescribed



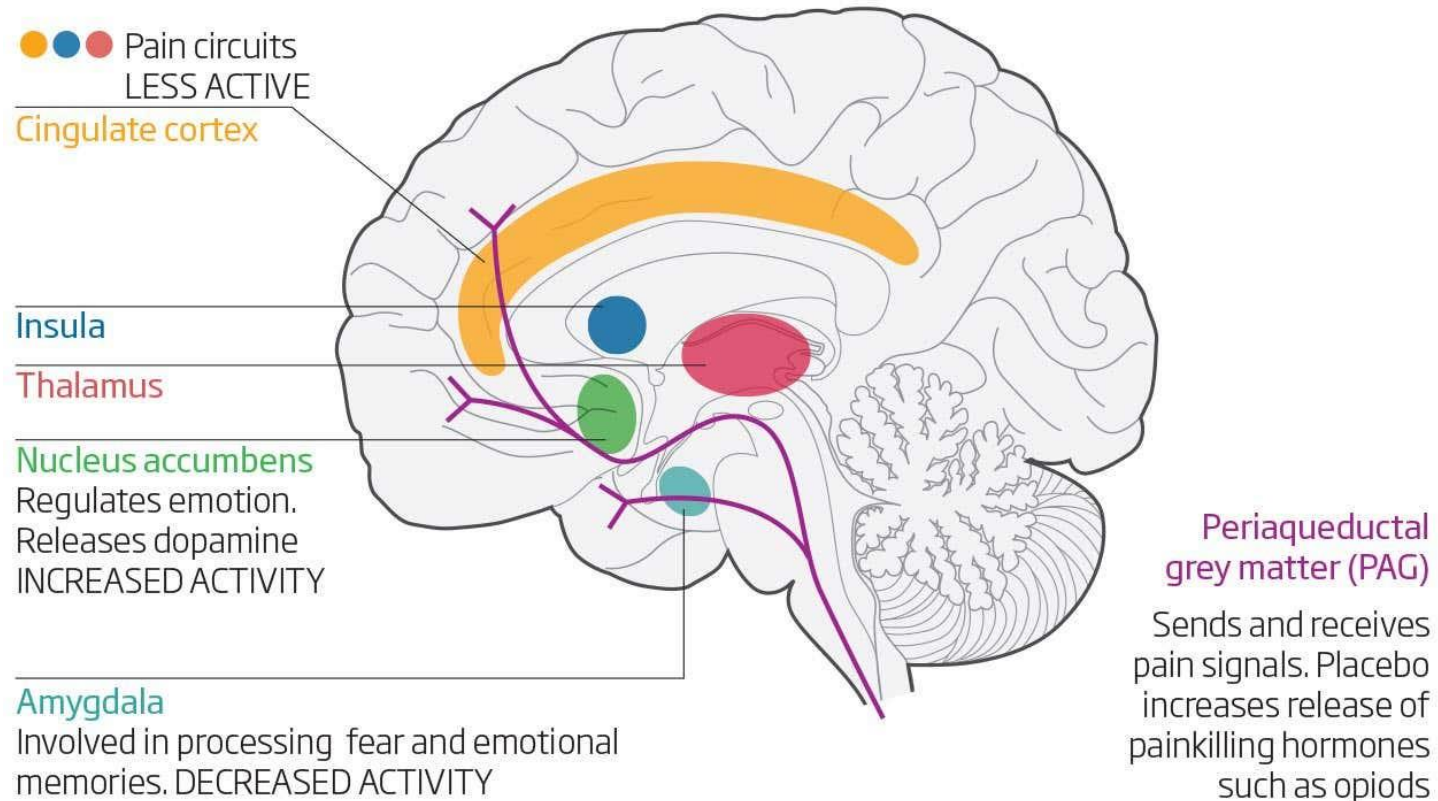
# How Does the Placebo Effect Work?

Research on the placebo effect has focused on the relationship of mind and body. One of the most common theories is that the placebo effect is due to a person's expectations. If a person expects a pill to do something, then it's possible that the body's own chemistry can cause effects like what a medication might have caused.

# The Effects of Placebo on your Brain

## Your brain on placebo

Brain imaging studies have revealed specific areas of the brain are involved in the placebo effect



# Cullen States the Following About Placebos



“When prescribing placebo, physicians should choose, in low doses presumably, active compounds that will tend to work against the disease in question, and in concert with the patient's general constitution”.



# Artificial Refrigeration



Cullen was a leading British physician of the 18th century. He was the most prestigious and influential medical educator of his day, holding chairs in chemistry, theory of medicine and practice of medicine at the University of Edinburgh. In 1756, he documented the first public demonstration of artificial refrigeration

# The Cullen Project



## Statistics

**20,678 Pages digitized**

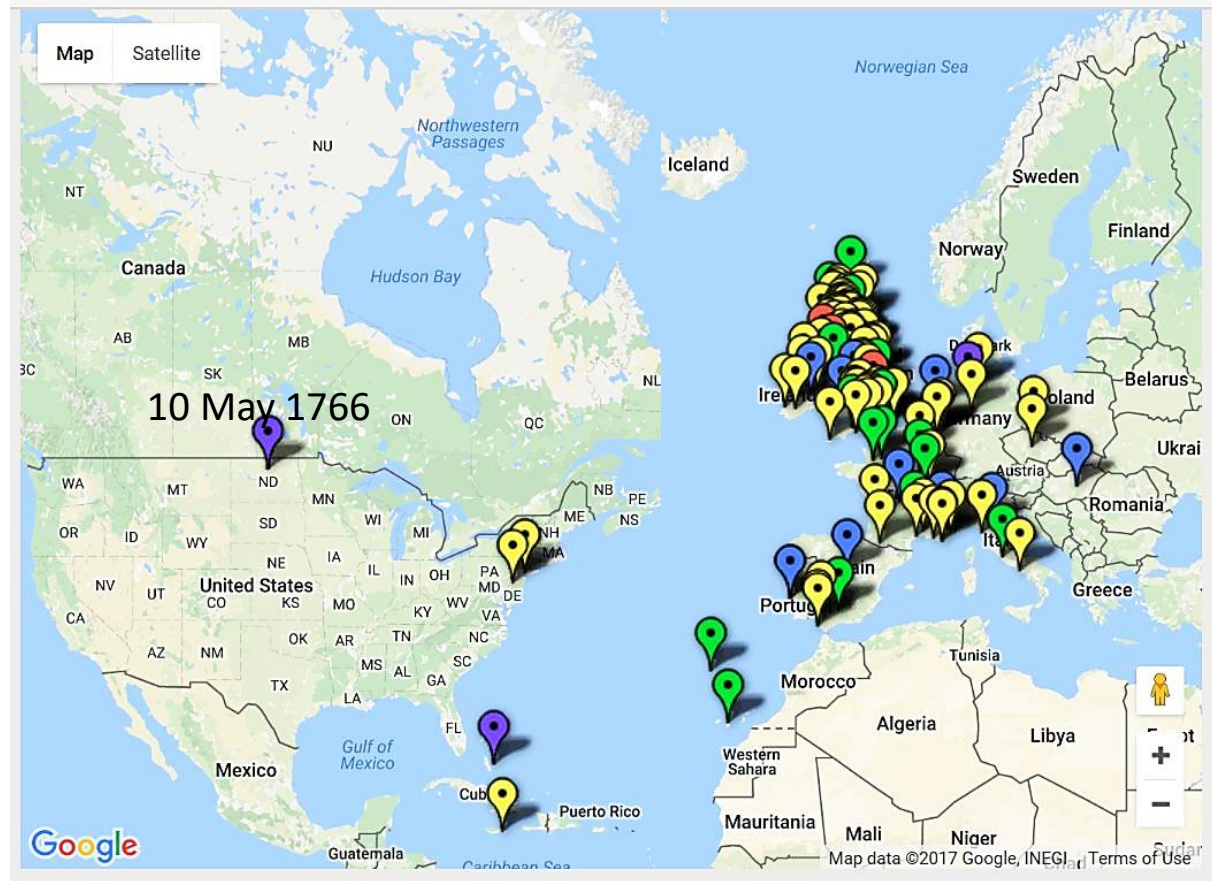
**5,603 Documents online**

**3,799 Documents transcribed**

**Letters to 5,298 People**

**Consulted 2,499 Cases**

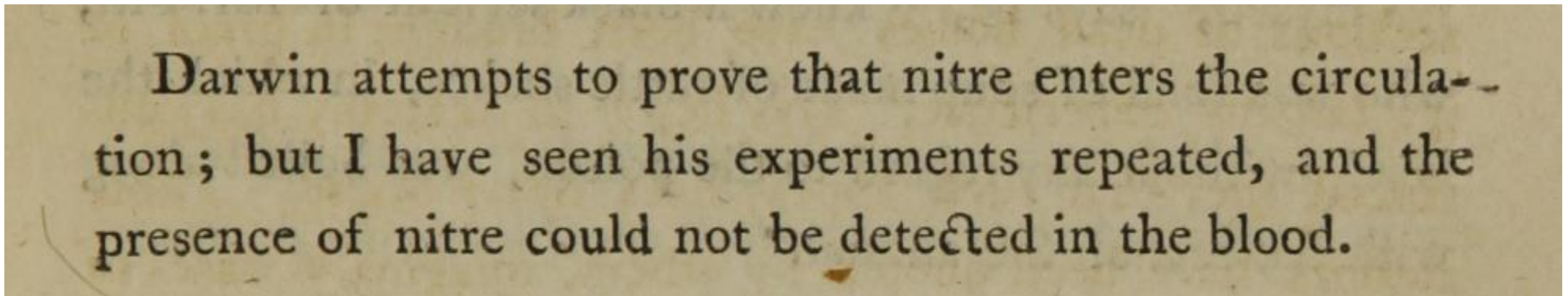
**Sent letters to 1,216 Places**



<http://www.cullenproject.ac.uk/>

# Were US Doctors Familiar with Acupuncture in the 1700's?

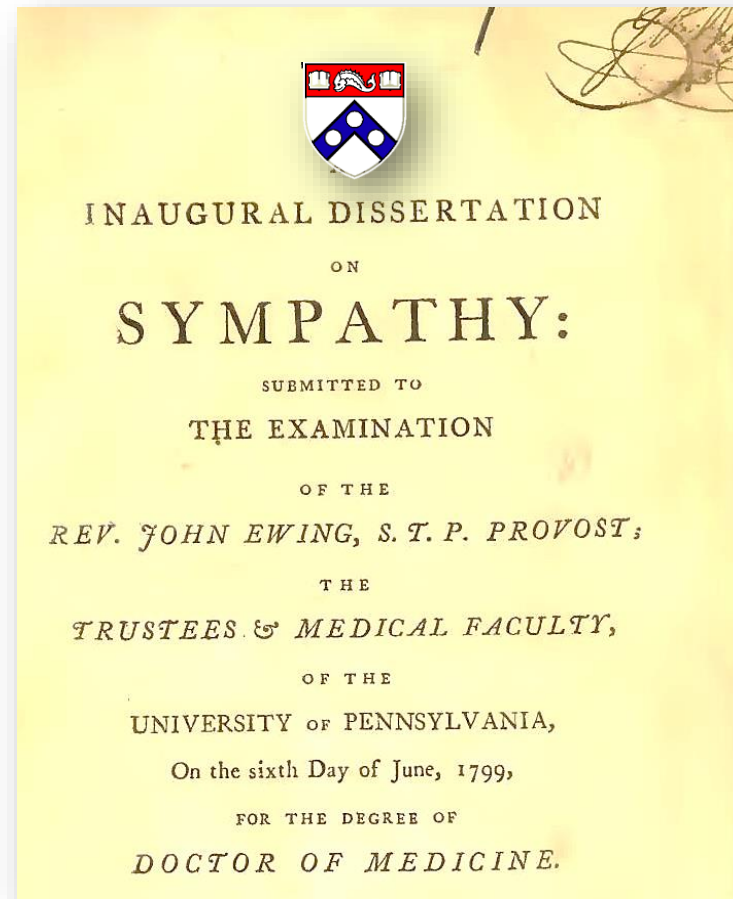
The following dissertation (for medical doctor) comes from Dr. Arthur May in 1799. He speaks on the uses of moxa and mind body medicine. It is my belief that he was familiar with acupuncture and its effects on pain. He cites Dr. Darwin's research (from Zoonomia Volume II) in his dissertation, this leads me to believe he knew of acupuncture effects. Dr. May quotes Darwin's work on page 25 of his dissertation. See photo below for a copy of that quote. His dissertation on Sympathy is based on Dr. Cullen's theory in mind-body medicine. He quotes Dr. Cullen as well.



Dissertation on Sympathy By Dr. May in 1799

<https://collections.nlm.nih.gov/catalog/nlm:nlmuid-2563002R-bk>

# Dissertation on Sympathy



<https://collections.nlm.nih.gov/catalog/nlm:nlmuid-2563002R-bk>

Do the following pages of Dr. Arthur May Dissertation speak of an early form of auriculotherapy?



# Sympathy Dissertation Definition's

The definition below that appears in Dr. May's Medical Doctoral in June of 1799

## **Eruption:**

1. A breaking out, especially the appearance of lesions on the skin.
2. A rapidly developing dermatosis of the skin or mucous membranes
3. Passage of a tooth through the alveolar process and perforation of the gums

## **Catarrh:**

may be synonymous with, or vaguely indistinguishable from the common cold, nasopharyngitis, pharyngitis, rhinitis, or sinusitis

## **Empiric: (*empirical* )**

In medicine or other branches of science, relies solely on observation and experiment

# Universal & Partial = 1



Mr. Hunter divides " the sympathy of the body, into two kinds: universal, and partial. By the universal sympathy is meant, where the whole constitution sympathises with some sensation, or action of a part. By partial sympathy, is meant, when one or more distinct parts sympathise

# Sympathy: Page 9

This accounts for one disease curing another. Mr. Hunter (Dr. John Hunter, Scottish surgeon) says, "No two different fevers can exit in the same constitution, nor two local diseases in the same part, at the same time. The suspension or cure of a gonorrhoea, by a fever, may be an instance of this. The failure of inoculation, and the power of resisting many infections, depend upon this: the great difference in the time from the application of the cause to the appearance of the disease depend upon the same principle."

Dr. Rush mentions several cases of pulmonary consumption, (Tuberculosis) cured, or suspended by gout, madness, dyspepsia, head-ach, eruptions, diarrhoea, pregnancy, etc.

# Sympathy: Page 10

cured by the same state of fever.—A child of Mr. S. was cured of an eruption, by a catarrh; which ceasing, the eruption returned: some weeks after, the same fever suspended the same eruption. An empiric cures tooth-ach, by burning the ear with a hot iron: moxa, burned on the skin, behind the ear, effects the same cure. Give a dog

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A large ulcer, on the leg of a patient in the Pennsylvania Hospital, was cured by the same state of fever.—A child of Mr. S. was cured of an eruption, by a catarrh; which ceasing, the eruption returned: some weeks after, the same fever suspended the same eruption. An empiric cures toothache, by **burning the ear with a hot iron: moxa, burned on the skin, behind the ear,** effects the same cure.



# Sympathy: Page 13

Sympathies exist between the stomach and skin, between the eyes and genitals, between the testes and parotid glands, etc. In a word, the whole system, mind and body, is one mass of general sympathy : no sooner is any part affected, than the impression is communicated throughout the whole. Sympathy is the conductor of disease, and this same sympathy is the agent of cure. All the operations of medicines, I have ever witnessed, appeared to have been performed by the agency of sympathy.

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