

Review of the "Lancet's" article on the history of anaesthetic discovery / by the original discoverer, Robert H. Collyer, M.D.

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Publication/Creation

London : [Plackett & Co., printers], 1871.

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REVIEW

OF

THE "LANCET'S" ARTICLE

ON THE

History of Anæsthetic Discovery.

BY THE ORIGINAL DISCOVERER,

ROBERT H. COLLYER, M.D.,

Discoverer of "Induced Mental Hallucination;" Author of "The Physiology of the Brain and Nervous System;" "Treatment of Abnormal Functions of the Brain;" Graduate of the Berkshire Medical College; Member of the Massachusetts Medical Society; formerly Student of the London and Paris Schools of Medicine; Special Commissioner to the International Exhibition of Paris, 1867, late Principal Physician to the Cholera Hospital, Mexico; Marine Hospital, New Orleans, &c., &c.

REGISTERED BY THE COUNCIL OF MEDICAL EDUCATION AT THE ROYAL
COLLEGE OF PHYSICIANS, LONDON.

LONDON:

—
1871.

REVIEW OF THE "LANCET'S" ARTICLE

ON THE

History of Anæsthetic Discovery.

NOTE 1.

SIR HUMPHRY DAVY in 1800 incidentally stated, "that the nitrous oxide, in its extensive operation, seems capable of destroying physical pain; it may probably be used with advantage during surgical operations in which no great effusion of blood takes place."

Sir Humphry had no idea that the continued inhalation of this gas would produce *unconsciousness*; he merely recommended its use in the sense of a sedative or opiate. It is singular, that when used by Horace Wells in 1844, no attempt was ever made to produce unconsciousness, for, as Dr. Elsworth says the patients, when having *their teeth extracted*, appeared *merry* during the operation.

It will naturally be asked, how it was that Davy's suggestion in 1800 was never put to the test, and remained dormant for thirty-nine years? The reply is most easy. The profession considered the sufferance of pain as a necessary and even beneficial accompaniment to surgical operations, in confirmation of which I quote from the work of Velpeau, one of the most eminent French surgeons, published in 1839:—"To do away with pain in surgical operations is a visionary impossibility, which is *now* not permitted to be thought of; the *cutting instrument and pain* in surgical operations, are two things which cannot be presented to the mind of the patient one without the other, and we are obliged necessarily to admit the association (*i.e.*, of *pain* and surgical operations)."

When, in 1840, I first announced to the medical profession of Charleston, South Carolina, that I had reduced a dislocation of the hip joint, some two months previously, near New Orleans, without the patient having experienced the least pain, during an unconscious state, in which he had been reduced by the inhalation of alcoholic vapour, no one gave the least

credence to my statement of the fact, or believed it possible that a person could be rendered insensible by "inhalation" so that one of the most difficult and painful operations could have taken place without pain.

Conscious, myself, of the truth of the physiological phenomenon that "unconscious insensibility" could be produced by the inhalation of "narcotic and stimulating vapours;" being in no way discouraged by the ridicule and incredulity with which my statements were everywhere received, caused a fixed determination to investigate—and *classify* the different modes of producing "unconscious insensibility."—1st. By great natural fatigue; 2nd. By the transmission of the nervous principle; 3rd. Concentration of the mind on one subject, accompanied by muscular action; 4th. By steadily gazing on an object; 5th. By the inhalation of narcotic and stimulating vapours. It was thought then by me, and was so stated, that all these conditions of brain were identical. My opinions in this regard have changed.

It must be remembered, that in 1840, 1841, 1842, and 1843, I was treading entirely new ground, no aid being afforded, from a mocking and scoffing world. Nothing is more easy than to reason on the past, as to what might or might not have been done. Wisdom after events or *ex-post facto* advice does not demand the exercise of great judgment. It is impossible for any one to say in truth, what he would have done, had he been similarly situated, under circumstances so exceptional. After a great principle has been developed or a fact established, every one is astonished at the means that have been employed in arriving at the discovery. It is the old story of Columbus and the egg. "Nothing is more easy when you know how to do it."

It was most easy to discover other parts of America, after the continent itself had *been discovered*. The difficulty was the establishment and original discovery of the fact, that the inhalation of narcotic and stimulating vapours produced an unconscious *anæsthetic state*. No one has attempted to dispute the priority of my claim to the publication of this discovery in 1843. It is not a matter of opinion, but of a fact, which cannot be controverted, as some of the original documents of 1842 and 1843 are still in existence. I challenge any one to produce an anterior publication, that unconsciousness (insensibility) was produced by the *inhalation* of narcotic and stimulating vapours.

It is perfectly true, as stated by the *Lancet*, that from 1839 to 1844, which might have been extended to 1846, I did lecture and perform

experiments on the inhalation of narcotic and stimulating vapours, in view of producing a state of "unconscious insensibility," so that surgical operations should be rendered painless.

NOTE 2.

"The lectures and works of Dr. Collyer were of a kind, we must candidly say, not calculated to arrest seriously the attention of the profession at the time."

If the suggestion of Sir Humphry Davy in 1800 had not *arrested* the serious attention of the profession, and who remained insensible to the advantage to be derived from anæsthesia for forty-six years, *until an ignorant* man took out a patent, how is it possible that my experiments, which were carefully and philosophically carried out, could receive attention from the profession? It is also singular that in January, 1845, when Horace Wells *made an attempt to administer the protoxide* of nitrogen gas, before the medical students of Dr. Warren's class in Boston, that this fact did not arrest the attention of the medical profession.

It was the fact, of a *patent* and a *secret*, and other such charlatanry on the part of Morton and Jackson, which brought the use of anæsthetics prominently forward, and caused them to be adopted by the profession. That my lectures and experiments were conducted on scientific principles the following quotations show—

Cheltenham Examiner and Looker-on, February, 1844.—"Dr. Collyer's lecture at the Assembly Rooms on Thursday evening differed essentially from that delivered at the Literary Institution, which was of a purely scientific and professional character, for the most part discussing the subject in a philosophical spirit, whereas that of Thursday was altogether of a popular kind, not entering into the *rationale* of the question."

Liverpool Mail, October 13th, 1843.—"Thus ended the first lecture, the audience (a great portion professional) expressing themselves as being fully convinced that Dr. Collyer was master of his subject and capable of throwing a flood of scientific information in regard to departments which have remained, hitherto, unexplained."

Liverpool Standard, October 14th, 1843.—"From want of space we are prevented from giving a detailed account of Dr. Collyer's philosophical lecture."

On all and every occasion, I met committees of medical men, who

witnessed my experiments. On one occasion—the investigations continued for weeks—a resolution having been *unanimously* passed that “The experiments of Dr. Collyer were *not* to be accounted for on any physiological principle known to them.”

NOTE 3.

“His experiments, in some of which he resorted to mesmerism, and in others to the administration of the fumes of alcohol in which poppy seeds and coriander had been steeped, were popular rather than scientific. But this principle he incessantly promulgated in Boston, Philadelphia, Liverpool, and other places, that the so-called mesmeric influence was *identical* in action with that induced by the inhalation of narcotic and stimulating vapours.” He theorised on the condition of the brain produced by those agencies, and argued, that mesmerism brought on a congestive state of brain in those susceptible to its influence. “That during the congestive state the brain did not receive impressions from the rest of the body, but was, so to speak, cut off from connection with the body for the time; and under the influence of narcotic vapours, the same *congestive* condition of brain is obtained.”

No one can doubt the fact that I published in 1843 these words:—“*The inhalation of narcotic and stimulating vapours produce an insensible, unconscious state identical with that of the mesmeric coma,*” in which state all sorts of surgical operations had been performed by me without the consciousness of the patient. In all my public lectures, experiments in confirmation of producing unconsciousness by inhalation, were performed. How is it possible that these facts could have been published by me, had I not known of their *existence*? No one will attribute or give me the credit of being possessed of prophetic faculties. How could I have used these words “the inhalation of narcotic and stimulating vapours produce an insensible (anæsthetic) state,” if the fact had not been known to me? This publication in May, 1843, is several years in advance of the date claimed by others.

The writer has omitted to state that I particularly used these words—“nervous congestive state of brain”—in contradistinction to congestion caused by an increased flow of blood to a part. Not content with having made this mistake, the writer adds *a note*, wherein he says—

“*Recent* research has led to the opinion that during sleep and insensi-

bility produced by artificial means the brain is probably deprived of blood, rather than congested."

It is therefore evident, that in 1842 I had anticipated what "*recent research*" has ONLY now arrived at. My articles at that date are all headed, "Nervous Congestion." Of course I do not attribute this error to any other cause than want of information on this point; but it is of major importance to my reputation that I should correct it.

NOTE 4.

"It is difficult to estimate what Dr. Collyer's lectures and writings had upon the direct progress of the discovery, but as at the time we name, they excited great general attention, as the lectures were delivered in various places before large audiences and were commented on by the public press, and as his writings were disseminated broadcast, it is next to impossible that they did not direct the minds of men to the subject of inhalation for the purpose of producing temporary insensibility to pain. Any way it is one of the strangest of coincidences, if it be a coincidence, that the development of the anæsthetic process by inhalation took place immediately after Collyer's public exhibitions (experiments) and the very centres where his lectures had been delivered."

I have extracted this paragraph in full, as it is most important that it should be answered in detail.

It must be remembered that *Horace Wells* and *Wm. T. Morton* were partners as dentists in Boston. They were (medically) uneducated men, and knew nothing of physiology—that they both attended my lectures, and saw my experiments in private, on inhalation, there exists no doubt; as to Morton, he visited my office in School Street, Boston. It was in December, 1844, that Mr. Wells had a tooth extracted after the inhalation of nitrous oxide gas, and it was in September, 1846, that Morton extracted a tooth from Frost, who had been rendered insensible by the inhalation of ether. I constantly *extracted teeth* publicly during an insensible state, and in connection with my professional friends all kinds of capital surgical operations were performed, such as the extraction of a *fungus eye* from a child twenty-two months old, extirpation of the breast, including the axillary glands, removal of tumours, amputation of the thigh, &c. These operations were performed in the years 1841, 1842, and 1843. On several occasions the anæsthetic state was induced by the inhalation of alcoholic

vapours; on some occasions I extracted teeth during that state. The Committee of the House of Representatives were so fully convinced that Morton had got his information from my experiments and lectures that they refused to consider his claim to priority. I was at the time, 1852, in California.

The writer in the *Lancet* has omitted a most important fact, namely, that in March, 1847, I published a long letter in the *London Critic*, wherein it is stated that "*had I not been prevented in consequence of illness, I would have long since visited London with my publications,*" &c.

Two years subsequent to this I was robbed by a banditti in Mexico, who took my diplomas and the documents referred to in the *Critic*. The official documents from the Mexican authorities confirmatory of this robbery are now in my possession.

NOTE 5.

"We have further, no doubt that, had he given up the mesmeric idea and proceeded systematically with his plan of making the body *insensible* by *inhaling* the vapour of alcohol, he would have no one to dispute with him in priority."

It is difficult to understand how my priority is interfered with, because of my investigating mesmerism, as the writer admits that I produced insensibility by the inhalation of alcoholic vapours. I would like to know if ether, chloroform, bichloride of mythelene, are not alcoholic vapours? It is the alcoholic base which produces the anæsthetic effect, merely modified by the other substances with which it is combined.*

NOTE 6.

"As it was, after throwing out a fine suggestion, he virtually deserted it himself, as if he did not see the whole of its extensive application and importance."

Now, I have only to show that at no time from 1839 to December 10th, 1846, did I *desert* the advocacy of the necessity of producing the anæsthetic state, so that surgical operations could be performed painlessly. I have the most undeniable proof, that so late as December 10th, 1846, I gave a lecture in St. Helier's, Jersey, which was one week prior to the arrival in

* Dr. B. W. Richardson, in a paper read before the British Association in 1869, says the first surgical operation during an anæsthetic state was performed by Dr. Collyer, the patient having inhaled alcoholic vapour, in 1839.

England of the news of Morton's experiments with ether. The following attestation of the fact was given—

“ January 2nd, 1847.

“ We, the undersigned, were present at a lecture delivered by Dr. Collyer on the evening of December 10, 1846, in this town. We distinctly heard him state that he had frequently, by the inhalation of narcotic and stimulating vapours, brought about a state of unconsciousness like that produced by the mesmeric passes, and that during that state all kinds of surgical operations could be performed without pain to the patient.

“ Signed :

A. J. Le Cras.

G. G. Bowring.

A. Le Bas.

B. Thompson.

J. Deslandes.

S. Thompson.

H. Thompson.

Col. J. C. J. Davidson.

M. J. Preshaw, Surgeon.

A. J. Howard.

G. G. Irwine.

Fred. M. Young.

A. W. Alderson.

H. Alderson.

Herbert A. Gray.

J. De la Taste.

J. H. Fergerson.

M. W. Holloway.”

This is not consistent with the assertion that the principle advocated by me in 1840, 1841, 1842, and 1843, was ever deserted.

NOTE 7.

“ Enthusiastic Collyer, we say to our minds, was the true modern pioneer after all, the man who ran first and beckoned and called, however oddly, others to follow, but with so much effect that a few followed at once and many afterwards.” It is here admitted, that no one has, in point of time, any right to claim priority in having produced an “ unconscious insensible state by the inhalation of narcotic and stimulating vapours.” My object in reviewing the *Lancet's* article, is to supply some omissions which are important, as showing *the battle* that had to be fought single-handed, and to correct some unintentional mistakes, as it is not gratifying to be misrepresented, even though it is done with the best of intentions.

I have just completed a work for publication entitled “ History of the Anæsthetic Discovery,” in connection with *the Vital Element, Vital Photography, The Philosophy of Somnambulism, Dreams, Suspended Animation, &c.*

This work will enter into the details of the various stages which ultimately culminated in the general use of anæsthetics. Also, preparing for the press, a treatise on *Vaccination and Re-Vaccination.*

CHRONOLOGY OF THE ANÆSTHETIC DISCOVERY.

1800.

SIR HUMPHRY DAVY suggested the idea of inhaling protoxide of nitrogen to allay pain, without advancing any philosophy as to its mode of operation, nor did he suppose that it would produce unconsciousness.

DECEMBER, 1839.

DR. R. H. COLLYER reduced a dislocation of the hip joint, the patient having been rendered *unconscious* by the inhalation of alcoholic vapours.

OCTOBER, 1841.

DR. R. H. COLLYER produced an *anæsthetic* condition in a child twenty-two months, during which state Dr. Rich, of Bangor, state of Maine, extirpated the entire globe of the eye, together with a large fungus.

APRIL, 1843.

DR. R. H. COLLYER extracted a tooth from Miss Allen, at the Philadelphia Museum, assisted by Dr. Hare, professor of chemistry, university of Pennsylvania, the patient having been rendered unconscious by the inhalation of alcoholic and narcotic vapours.

MAY, 1843.

DR. R. H. COLLYER published a work in Philadelphia, which he copyrighted at the time, wherein at pages 26, 27, 28, 29, he distinctly and unequivocally states, that the inhalation of narcotic and stimulating vapours produces an anæsthetic or unconscious insensible state.

DECEMBER, 1844.

HORACE WELLS, a dentist, of Hartford, Connecticut, having attended the exhibition of nitrous oxide gas, by Mr. Coulton, and in consequence of one of the *inhalers* of "the laughing gas," having contused his ankle without any manifestation of pain, he, Wells, on the following day had a tooth extracted painlessly. Mr. Wells never supposed it necessary to *produce unconsciousness*, nor was he aware that the inhalation of the protoxide would produce that state, this is evident from his letter to *Galignani's Messenger*, February, 1847.

SEPTEMBER, 1846.

WM. T. G. MORTON, a dentist and former partner of Mr. Wells, having heard that ether was oftentimes substituted for the protoxide in the chemical lecture-room, determined on making the experiment which he did on a Mr. Frost with success. He became associated with Dr. Charles T. Jackson, of Boston; they conjointly took out a *patent* for the use of ether in surgical operations.

NOVEMBER, 1847.

SIR JAMES SIMPSON (at the suggestion of Mr. Waldie, of Liverpool) inhaled the substance known as chloroform. To the early and extensive use of anæsthetics in midwifery and surgical operations we are largely indebted to this great and good man; his name is indelibly associated with the anæsthetic discovery.

JUNE, 1857.

DR. JOHN SNOW.—This gentleman distinguished himself for originality of research, rarely equalled. He added to the list of the anæsthetics amylene

JUNE, 1867.

DR. BENJAMIN W. RICHARDSON.—No one has been more indefatigable in the investigation of the anæsthetics than this eminent physician, which has resulted in the discovery and successful use of Bichloride of mythelene.

No question, before many years have elapsed, other and more safe anæsthetics than the chlorine compounds will have been discovered; at the present date, the re-use of protoxide of nitrogen gas is extensively employed in dental surgery, nor is there any reason why this agent should not be resorted to, in more important surgical operations.

For thirty-nine years, that is from the date of Sir Humphry Davy's suggestion in 1800 to 1839, no one had thought of the necessity, or supposed it possible to produce a state of unconscious insensibility (anæsthetic state) by inhalation—or, as the *Lancet*, states “during which time, the road was skirted and surveyed, and even gambolled upon by merry philosophers and their youths once a year. At last some men began to use it in earnest, and it became a high road to be pronounced blessed by millions who should find in it escape from physical agony. What pioneers explored the road, declared it open, and led writhing humanity into it, as into Elysium, will be described.”

The lapse of thirty-nine years—that is from 1800 to 1839, was the period immediately after which Dr. Collyer reduced the dislocation of the negro Bob in an anæsthetic state—produced by the *inhalation* of alcoholic vapours, which is the *first* recorded *surgical* operation during an anæsthetic state from the inhalation of vapours.

Dr. Jacob Begelow says, “The anæsthetic process is the most beneficent discovery which has helped humanity since the primeval days of paradise.”

In 1840, a series of experiments were made by Dr. Collyer with nitrous oxide gas in Baltimore. It was not, however, until 1842, that he esta-

blished the fact, that the inhalation of narcotic and stimulating vapours produced an anæsthetic state.

The medical profession has made three great discoveries :—Dr. William Harvey discovered the circulation of the blood ; contemporaneous history states, that not a medical man of the time gave his adherence or believed in the discovery. Dr. Jenner made the discovery that the lymph from the pustules of the cow was a preventitive, or at least secured the person vaccinated against one of the most dreadful pestilences that ever afflicted the human race. Notwithstanding the inestimable benefit derived from vaccination, it will hardly be credited that it was with the greatest difficulty that Dr. Jenner could induce any one to adopt or give the least credence to his discovery. Every species of opposition, every imaginable difficulty, was made.

With regard to the anæsthetic discovery, no one in truth or justice can pretend that the honour of the discovery does not belong to Dr. Collyer ; he was the first who produced an unconscious, or anæsthetic, state by inhalation. The evidence which exists of this fact is undeniable ; to him alone is due the credit of having established and published the fact which was years in advance of every other claimant, that “ the inhalation of narcotic and stimulating vapours ” produced this insensible state of brain.

The fact of his having performed *surgical operations* during an anæsthetic state by the mesmeric operation prior to the publication as regards inhalation, is a confirmation, of the most positive character, that his mind was for years directed in the same channel of thought. As we have the fact before us that a large fungus, involving the eye of a child only twenty-two months was removed, an operation which lasted only thirty-five minutes without the knowledge of the infant, was successfully performed by Dr. Collyer in 1841, it strengthens most materially his position, in 1843, when he published, that the states of insensibility induced by mesmerism and inhalation *are identical*. Had he never induced, prior to this period, an anæsthetic state, with a view to the performance of surgical operations, then it might be advanced that he had merely published *a fact*, which is premising too much, as it indicates a knowledge, which could not have been arrived at without the experience of the fact published. The original article from the *Bostonian*, April 23rd, 1842, is before us—

“ Whilst Dr. Collyer was at Bangor, Dr. Dean, a physician of that place, requested Dr. Collyer to visit a child in a town sixteen miles distant. He consented, and they went in company with Dr. Rich, an eminent surgeon

at Bangor. When they arrived at the house, the mother had the child in her arms; its condition was dreadful, there was a scrofulous tumour or ulcer the size of a large hen's egg covering one of its eyes, and a surgical operation was necessary. Dr. Collyer took the child and mesmerised it so as to deprive it of all sensibility. Dr. Rich then performed the operation of cutting out the entire eye, which lasted thirty-five minutes, during which time the child did not exhibit any feeling of pain."

In the next year Dr. Collyer publishes that the inhalation of narcotic vapours *produces an identical state of the brain*. After this, where is the merit of those who, in 1844 or 1846, merely followed his teachings, years in advance? The great principle having been propounded and published to the world, all who follow are mere imitators. No one will pretend there is much originality in the substitution of one anæsthetic agent for another. Dr. Collyer having used alcoholic vapours to produce anæsthesia, there certainly was not much expenditure of thought demanded, for another to use ether, a third chloroform, a fourth amylene, a fifth carbonic acid, a sixth nitrous oxide—in fine, the list might be extended to some twenty substances, all of which produce anæsthesia when inhaled. No one disputes that there is not merit in searching after a better and more safe anæsthetic than the carbon and chlorine compounds, but that it involves a great discovery is out of the question.

It is impossible to over-estimate the talent and research of such men as Sir James Simpson, Dr. Snow, Dr. Nunnely, and Dr. B. W. Richardson in England; Drs. Broca, Flourens, Serres, Ozanam, Soubeiran, Lallemand, Louget, Duroy, and Dumoulin, in France, who have investigated the physiological effects of various anæsthetic agents on the animal economy. Their works are replete with the most valuable information.

Instead of ignoring the anæsthetic state induced by mesmerism, as some would fain do, from want of moral courage to investigate it, the profession should remember, that had it not been established that surgical operations could be painlessly performed during that state, in all probability the discovery of producing anæsthesia by inhalation would have been deferred indefinitely for another century—the one condition led directly to the other. The discovery was not made suddenly, but was the gradual process of untiring investigation, sometimes jeopardising the life of the individual on whom the experiments were made.

All kinds of narcotic and stimulating vapours were successively tried. The principle once established it only remained to be adopted by others.

Without question, the first adoption into practice required no ordinary courage—or as the French say *hardiesse* and *audacitè*. In this connection Mr. Wm. T. G. Morton—from an entire ignorance of physiology—prosecuted the task in such a manner—by securing a *patent*, and associating in this speculation a professor of chemistry, Dr. Charles Jackson—induced the profession to be suddenly seized with the necessity of rendering surgical operations painless.

Had Dr. Collyer secured a patent for his discovery, and thought of the *pecuniary* benefit to be derived therefrom, he would have induced *its general adoption* prior to 1846.

When the writer of the *Lancet* says, “Dr. Collyer, after throwing out a fine suggestion, virtually deserted it himself, as if he did not himself see the whole of its extensive application and importance,” no language can be more contrary to the facts of the case. We find Dr. Collyer as early as 1839 reducing a dislocation of the hip-joint during an anæsthetic state, induced by the inhalation of alcoholic vapours. In 1841 he produces an anæsthetic state in a child only twenty-two months old, so that a fungus involving the globe of the eye should be painlessly extirpated. Next month he assists at the amputation of the thigh; and in December, 1841, removes the entire breast, including the axillary glands. The whole of the year 1842 is employed in the promulgation, by public lectures, pamphlets, &c., the necessity of producing an anæsthetic state, so that surgical operations could be painlessly performed. On every occasion—when practicable—teeth were *extracted publicly*. These facts took place in the City of Boston, United States, and elsewhere. In 1843 we find Dr. Collyer lecturing in Philadelphia. At one of these experimental lectures he was assisted by Dr. Hare, professor of chemistry in the University of Pennsylvania—a young woman was rendered insensible, by the inhalation of narcotic and stimulating vapours, and during this state a tooth was extracted painlessly. In the summer of 1843 Dr. Collyer visits New Brunswick and Nova Scotia, and in October of the same year, he delivers a most successful course of lectures in Liverpool. Copies of the *Standard* and *Mail* of that town, are before us, in which Dr. Collyer is advocating the inhalation of stimulating and narcotic vapours, to produce an anæsthetic state; his lectures are accompanied by experiments demonstrating the facts. In 1846 we find him still advocating the same principle.

Having covered seven years of constant toil and the most indefatigable exertions in the advocacy of a *great discovery*, we are told that “*he virtually*

deserted it himself." It would be difficult to conceive of a more persistent adherence or the adoption of a more strenuous and effectual method to make it known to the world.

The desertion or abandonment of an idea, is with truth applied to Horace Wells, who, after a few trials, in December, 1844, and January, 1845, gave up all further interest in a subject, which was only taken up by him in December, 1844, after the exhibition of the nitrous oxide by Mr. Coulton, and which subsequently was never heard of until Mr. Morton, in September, 1846, administered ether, which had been done by Dr. Collyer in 1842.

In March, 1847, seven months prior to the first use of chloroform by Dr. James Simpson, of Edinburgh, these words are used by Dr. Collyer in the *London Critic*. The lungs are the manufacturing organs of the system they supply the wasted powers, their function being particularly in action during sleep; whenever any stimulating vapour is applied to them, their productive function is much increased. This is the case in the inhalation of ether or protoxide of *nitrogen or any other stimulating vapour*.

How is it, if I virtually deserted the fine suggestion, that the medical profession have *since confirmed* my *published discoveries*?—

- 1st, That the anæsthetic state of brain was one of *nervous congestion*;
- 2nd, That, *all stimulating vapours*, when inhaled, produce the anæsthetic state?

The abnormal condition of the brain, during the *anæsthetic state* was declared by Dr. Collyer, in 1842, to be that of "*nervous congestion*" which "*only recent research*" has confirmed to be the case. It appears more than strange, that had not Dr. Collyer made experiments, that he should have arrived at such a singularly correct conclusion; in fine, the more the subject is impartially examined, the more positive is the evidence of his priority.

Had the writer taken the most ordinary pains, he never would have written so carelessly and jauntily, on a subject of such grave magnitude, involving the reputation of one, who devoted so much time successfully to the development of a great principle, or law of the animal economy. As has been shown the recognition, at the time, of the claims of a discoverer is no criterion of his merits.

ROBERT H. COLLYER, M.D.,

London, March, 1871.

Lille, France.

PREPARING FOR THE PRESS. BY DR. COLLYER.

A TREATISE
ON
VACCINATION & RE-VACCINATION,

Showing the absolute necessity of renovating the anti-varioid properties of the vaccine lymph by resorting to the original source, that is, the matter obtained from the cow.

It is a known physiological law, that by constant inter-vaccination the specific properties of the original lymph become comparatively innocuous as a preventative to the susceptibility to small pox.

Inter-vaccination, if continued for a long period without resorting to the original source, is liable to propagate the virus of other diseases, which have been inoculated in constitutions hereditary predisposed, and which may appear immediately following the introduction of the lymph even from a child who to all appearance is perfectly healthy, but who may be the recipient of *disease*, which is developed in after-years.

For this reason the primary source should be used (the cow), more particularly in re-vaccination.

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ALSO,

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THE BRAIN AND NERVOUS SYSTEM.

LONDON :

PLACKETT & Co., Printers, 9 & 10, St. Bride's Avenue, Fleet Street, E.C.



