

exhalation of  $\text{CO}_2$ . This effect is almost instantaneous when the articles are taken into the stomach fasting."

The vapor of alcohol also lessens the exhalation of carbonic acid, and it is probable that the A. C. E. mixture, now justly becoming popular, owes its comparative safety to this fact, and not so much to the fact that the alcohol favorably influences the evaporation of the more volatile constituents.

*Time of Day.*—The early morning hours, and the earlier before eleven o'clock the better, is the most favorable time for chloroforming. About 11 A.M. and 4 P.M. are the most unfavorable times. At these times the temperature of the body naturally increases, and of course, the activity of the respiration.

The obstetric hours of the night, between twelve and three o'clock, A.M., are the most favorable times in the twenty-four hours, and this is one of the several causes of the safety of chloroform in labor.

These are no merely physiological fancies, but are substantiated by many surgeons, that they have less trouble with chloroform in the forenoon than in the afternoon.

*Seasons.*—"It has been well established that spring is the season of the greatest, and fall the season of the least activity of the respiratory functions." (Flint.) Had we statistics as to the time of the year as affecting deaths from chloroform, it would probably be seen that the majority of them occur in spring and winter, and this irrespective of the comparatively larger number of administrations at those times.

*Temperature.*—But if it were true, as some writers and a Commission allege, that deaths from chloroform are due to over-dosing, there would be more deaths during the summer.

For at a temperature of  $85^\circ \text{F.}$ , air will contain and carry twice as much of the vapor as at  $65^\circ$ .

But as if to neutralize the greater volatility there is much less  $\text{CO}_2$  exhaled in warm weather.

Chloroform is the favorite anæsthetic in southern Europe, and in the progressive, yet conservative Southern States of North America, and most of the reports of deaths from chloroform seem to come from the Northern States of the United States, where comparatively little chloroform is used.

*Pure Air.*—"It has been noted," says Packard in his *Minor Surgery*, "that chloroform acts more speedily when administered in the open air."

It not only acts more speedily, but more safely in the open air.

This is well proven by the good results from military surgery, which is largely conducted in the open air, and during the warm months.

When the inhalation is begun, as it should not be, in the presence of a large clinic, and with the usual  $\text{CO}_2$  saturation of the amphitheater, we often have heard the expressions, "the patient does not take the anæsthetic," "well, doctor, please give it to him," etc.

The anæsthetizer's lot, under those circumstances, as he has often experienced, is not a happy one. And thus is illustrated the incompatibility between carbonic acid and chloroform.

*Moisture.*—When possible chloroform should be given in dry weather, as the system furnishes more  $\text{CO}_2$  in damp weather.

#### CONCLUSIONS.

It is the brawn of a subject, irrespective of his

weight, that makes chloroform dangerous for him.

To the man with "muscles of brass," and to the sturdy, scantily menstruating domestic, ether and not chloroform should be given, and more especially in northern latitudes.

Should Mr. John L. Sullivan be chloroformed while in his prime, and during a northern spring or winter, America would be in great danger of losing her champion.

The *fatty heart*, which we used to hear so much about, and which is impossible of diagnosis, is as nothing in the scale of danger to the *fatless muscle*, which is both the manufactory and storehouse of carbonic acid.

For this reason it is not the drunkard nor the opium habitué, nor the user of tobacco, and decidedly not the average sedentary and professional man who is a bad subject for chloroform, for all of these exhale a lessened amount of  $\text{CO}_2$ , but the active and muscular man in the prime of life.

To him it is dangerous and when he is killed by it, it is frequently before he is thoroughly anæsthetized.

### HOW AN ELECTRIC CURRENT MAY BE ABSORBED INTO THE LIFE CURRENT OF HUMAN BEINGS BY INDUCTION, AND WITHOUT VISIBLE CONNECTION WITH ANY ELECTRICAL APPARATUS OR CONDUCTOR.

THE EFFECTS WHICH MAY BE PRODUCED BY MEANS OF THE ELECTRO-MAGNETISM UPON THE BRAIN.

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The phenomena of electrical action by absorption and induction is just now awakening the attention of the scientific world. In Johnson's *Universal Cyclopædia*, latest edition, Vol. v, p. 188, he says: "The most important phenomena of magnetic action is that called induction, or the magnetizing action of a magnet on distant substances, animate and inanimate. We also find that this phenomena was discovered and put into practical use by Mesmer, a Vienna physician, in 1774, who found that he could influence and communicate at will to his patients, even at a distance from them, by means of electro-magnets generating a magnetic fluid or electric current."

The *International Cyclopædia*, Vol. ix, says: "By induction we mean the power that an electric current has to excite, to magnetize and to draw into actual contact with itself, properties and bodies near or in range with the current, but not in connection with the same, thus forming a closed current as long as the current of induction is kept up or lasts."

"By absorption we mean the power or force which an electric current has of absorbing or drawing into itself by suction any body near, but not in contact with the current."

In *Lessons in Mechanics of Magnetism*, p. 29, Edmund Shaftsbury published in 1888, he says:

"The phenomena of induction and absorption by electrical currents is just now awakening the attention of the scientific world."

"Induction is the process by which another person or object is influenced. That actual contact or near approach is *not* necessary is proven by the magnetic needle, which feels an influence exerted thousands of

miles away, yet were this not a fact established beyond all power of contradiction, no person could be found at the present day to believe it." Upon page 35, he informs us that "M. Dubois was the skilful experimenter who first succeeded in making the compass needle deviate by an invisible motor or electrical force, and that this deviation was effected at great distances and ceased when this force was removed."

In a pamphlet called "The Narrative of John Trust," published at Alexandria, Va., in 1865, we find that Joseph Mazzina, an Italian, was said to have been the greatest electro-magnetizer in the world, carrying out his plans largely through subordinates, whom he placed under his influence; he is said to have exerted a wide influence upon European politics by these means, and to have been instrumental in the downfall of Napoleon III. That various crimes have been committed by subjects under the influence of an unscrupulous electro-magnetizer known as "criminal suggestion" is a well authenticated fact, and one that demands immediate investigation. This is also the secret of the mind reader and the medium. Electro-magnetism, be it understood, includes all phenomena in which an electric current magnetizes or influences animal life; the most powerful form being that produced by the electro-dynamo. Some of these dynamos have fork-like springs which are the poles of the machine, and which show in what direction the properties or bodies are which are under the influence of the current. By means of the blower or bellows upon the main shaft a strong current of electrical air may be produced, having a powerful suction. This is the chief element used in igniting the electric spark or natural magnetism—or in other words, vital force in animate life, known as magnetizing and electrocuting by absorption and induction. This current is felt but not seen, unless a wonderful force is used, then a smoke-like vapor may be discovered.

It should be more generally understood that electricity or vital power exists in all things to a greater or lesser degree, and that this electricity, or vital force, constitutes the chief elements of the brain and body. The phosphorus of the brain being identical with the electric spark, then what may not the consequences be when this brain power or phosphorus is ignited by an electric force, thus overbalancing the natural equilibrium or equipoise of the brain and body. The brain is the electrical condenser, ready at any instant to charge or control any nerve of the body.

Thales was not far out of the way when he said "that electricity was the life." Let us realize that the human body alone contains all the elements of a stupendous electric battery.

Man was made out of the dust of the earth. When we recall how many centuries electricity has been known and studied under its various forms and names, we feel less and less reconciled as to the comparative ignorance that exists since the creation of the world; yet we are still in our infancy as to its limits or possibilities, and are constantly expecting new developments.

Thales, the chief of the Seven Wise Men of Greece, discovered something of its power from a piece of amber or "electron," which he found possessed the properties of attracting light articles to itself when excited by simple friction. This was more than twenty-five centuries ago, yet how slow has been our comprehension of this great force. And we generally

credit its discovery to Benjamin Franklin, because he was the first student and philosopher to show how its power could be put to practical use in this country, and it is only in our own century that the power and possibilities of the electro-magnet have been in any sense understood. Many cases have recently come to light in Europe showing how this force has been used to add a new and terrible chapter to the records of crime; and we can cite dozens of cases in our own country, from John Brown, J. Wilkes Booth, Guiteau, Ward, Kincaid and others down to pretty Jessie White, who was tortured through electro-magnetism into shooting herself at Joliet over a year ago. That they were victims of this terrible, insidious and most secret form of torture there can be no doubt to an expert, as they have shown every evidence of the same. The effects of an electric current upon the human body are easily detected, chief of which is a grayish or yellowish pallor and deep, dark circles under the eyes, showing that the blood is becoming magnetized or poisoned, and that pressure has been brought to bear upon the brain, thus weakening the vital force and draining the system. Often the victim becomes magnetized until he is not under the control of his own will and judgment, before he is aware of any influence. This crime is resorted to by the electro-magnetizer as stated for various purposes, among which may be mentioned secret communications called "mind telegraphy" or "the under current," "mind reading," influencing legislation, obtaining information as to State and executive secrets, reading the minds of accused persons in order to obtain evidence of their guilt (this latter is known to have been resorted to in Paris), producing insanity, paralysis and various brain disorders, vicarious assassinations, murders, thieves, inebriates, immorality and vice of every kind, and lastly for slow poisoning or immediate death. By the aid of an electric current upon the human body, almost any form of disease, and even consumption, may be produced or simulated. The form of brain torture and exhaustion by which means real or apparent insanity is frequently produced is called "tricknomania" (see *The Woman's Tribune*, May 17, 1890, published in Washington). For description of the effects of electro-magnetism upon the human body, see the *National View*, September 27, 1890 (published in Washington).

When we realize the great force and velocity of the electric current, which is known to travel eight thousand miles a minute, we can understand that the electric poisoner, absorber and magnetizer can keep up at will the current he has ignited or absorbed by his electrical apparatus, or in other words "cupped," no matter how far removed he may be from the victim. As we have said, a powerful current upon the heart stops its beating, commonly called heart failure or heart disease, for which no natural cause can be assigned, and it takes a powerful force indeed to stop or even weaken this great organ, the largest and strongest in the human body.

One of the surest effects of electrocution, or in other words that a human body has been injured by an electric current, says Dr. Tyler, is the tenderness of the flesh, and the slight shock which the piercing of the flesh by a needle produces. We can cite example after example of the terrible secret influence of the electric magnetizer, showing how the lives of honorable men and women are wrecked, how great bodies of men are secretly organized and controlled,

ready at the command of the chief through his subordinates to commit any crime, from arson and murder down to robberies and thefts. We can cite cases of families severed, homes broken up, ladies of high position humiliated and injured by these terrible means; of forgeries committed, money extorted—but enough has been said to impress all with the urgent necessity of an immediate investigation and exposure of this terrible force. Scientists and electricians should be called upon to ascertain if some way cannot be devised to trace the electric poisoner who has absorbed the human being's life current by the means which we have described. The government of every country should at once also pass stringent laws preventing the practice of magnetism, or the so-called hypnotism, even upon animals. In conclusion, let us study the laws of life, which should be the laws of health; in other words, let us study nature, and try and understand the great forces around us. If men and women would only think and reason for themselves, how much misery might be spared the world. The Creator designed that man should not die until he reached an old age, like the corn that is ripe or the fruit that is ready to fall; all else is contrary to the laws of creation, and we do err when we lay the breaking of these laws to divine interposition or Providence. We see no reason or natural cause why man may not live more than a century, when no mechanical cause is at work to sap his vitality. Let us remember the long lives of the patriarchs, when crime was comparatively unknown, and may our teachers, scholars, leaders and divines teach the doctrine of longevity rather than that of mortality; of living useful and honored lives, and teach us how to perpetuate the same by being among the first to discover, to denounce and to expose all forms of vice and crime, all forms of mechanical agency by which means life may be taken or shortened and the causes or motive force discovered.

### DENISON'S PORTABLE LUNG COMPRESSOR OR EMPHYSEMA JACKET.

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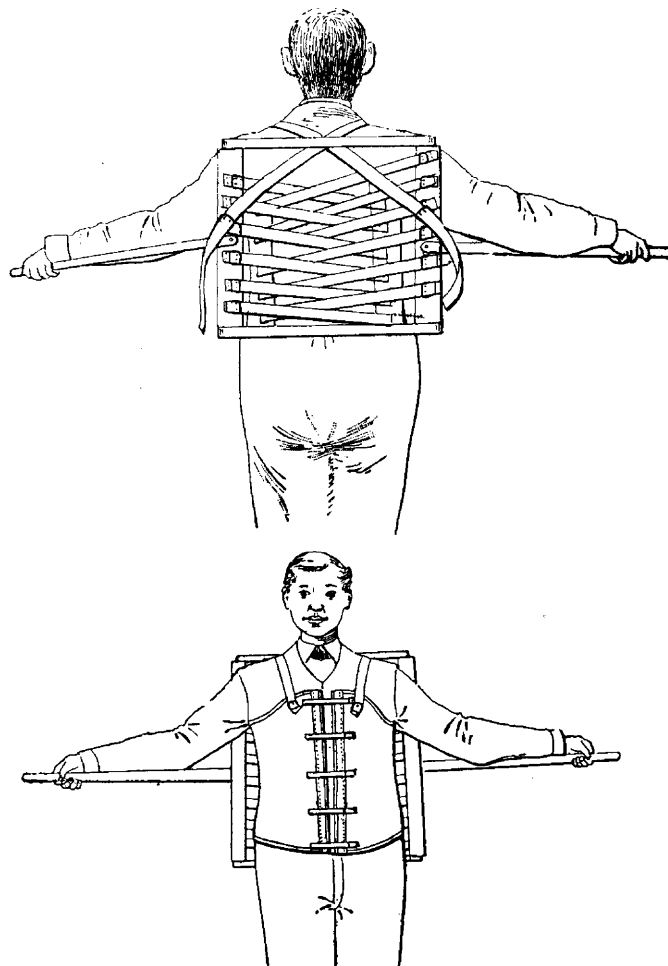
This apparatus is especially constructed to aid the clearing out of secretions and stagnant air contained in the lungs under certain conditions of disease, such as emphysema, and bronchiectasis, or either of them alone whether associated or not with the profuse bronchial catarrh usual to these distressing troubles.

Abundant expectoration is brought about, the tendency to pulmonary oedema is lessened, and a freer and more natural circulation both of the air and the blood currents within the thorax is produced by the proper use of this device.

The following is Dr. Denison's description of this lung compressor extracted from his address as President of the American Climatological Association, Sept. 1890, on "Abnormal Intra-Thoracic Air Pressures:"

Before leaving this subject, I wish to describe a device I have had constructed for the self-treatment of emphysema. We will call it the Portable Lung Compressor. It was suggested to me by the "Ross-

bach Chair," which, in its mechanism and result, it much resembles. Its purpose is *the rhythmical and forcible compressions of the chest in consonance with expiration*. The idea of assisting the expiratory movements of the emphysematous patient is not a new one, as before Rossbach invented his chair physicians (Gerhardt first) used to train nurses to press the sides of the patient's chest during expiration;



and belts and other devices have been used to compress the chest. The results have been stated as generally favorable.

This lung compressor, or emphysema jacket, is supported and controlled by a simple nearly square frame, which can be hung against the wall, so that the patient can get into the jacket alone. This frame has for its sides pivoted, half round, elliptical beams, arranged so they can be pivoted at from one to three inches from their centres, thus giving greater compression as desired. To these, bands are fastened by buckles, which bands are sewed to the opposite sides of the jacket, and therefore cross each other at the patient's back. By their traction they squeeze the chest when the jacket is used. The compression can be made to suit any shaped chest, or any particular part of a given chest, by dividing the front lacing of the corset in three different fastenings, and by the adjustment which the posterior straps and buckles and the retaining shoulder straps permits. The power is ample, which is given by the side levers (attached to the middle of the side rollers), as they are moved forward by the patient's hands during expiration, and backward during inspiration.