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CURRENTS AND COUNTER-CURRENTS

Wm. B. Lewis.

IN MEDICAL SCIENCE.

WITH

OTHER ADDRESSES AND ESSAYS.

BY

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AMERICAN ACADEMY OF ARTS AND SCIENCES.

BOSTON:
TICKNOR AND FIELDS.

M DCCC LXI.

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TO

JAMES JACKSON, M.D.,

MY EARLIEST MEDICAL TEACHER,

WHOSE FRIENDSHIP AND COUNSEL HAVE BEEN AMONG THE CHIEF
PLEASURES AND PRIVILEGES OF MY LIFE,

These Essays

ARE AFFECTIONATELY AND RESPECTFULLY
DEDICATED.

P R E F A C E .

THE character of the opposition which some of these papers have met with suggests the inference that they contain really important, but unwelcome truths. Negatives multiplied into each other change their sign and become positives. Hostile criticisms meeting together are often equivalent to praise, and the square of fault-finding turns out to be the same thing as eulogy.

But a writer has rarely so many enemies as it pleases him to believe. Self-love leads us to overrate the numbers of our negative constituency. The larger portion of my limited circle of readers must be quite indifferent to, if not ignorant of, the adverse opinions which have been expressed or recorded concerning any of these Addresses or Essays now submitted to their own judgment. It is proper, however, to inform them, that some of the positions maintained in these pages have been unsparingly attacked, with various degrees of ability, scholarship, and good-breeding. The tone of criticism naturally changes with local conditions in different parts of a country extended like our own, so that it is one of the most convenient gauges of the partial movements in the direction of civili-

zation. It is satisfactory to add, that the views assailed have also been unflinchingly defended by unsought champions, among the ablest of whom it is pleasant to mention, at this moment of political alienation, the Editor of the Charleston Medical Journal.

“Currents and Counter-Currents” was written and delivered as an *Oration*, a florid rhetorical composition, expressly intended to secure the attention of an audience not easy to hold as listeners. It succeeded in doing this, and also in being as curiously misunderstood and misrepresented as if it had been a political harangue. This gave it more local notoriety than it might otherwise have attained, so that, as I learn, one ingenious person made use of its title as an advertisement to a production of his own.

The commonest mode of misrepresentation was this: qualified propositions, the whole meaning of which depended on the qualifications, were stripped of these and taken as absolute. Thus, the attempt to establish a *presumption* against giving poisons to sick persons was considered as equivalent to condemning the use of these substances. The only important inference the writer has been able to draw from the greater number of the refutations of his opinions which have been kindly sent him, is that the preliminary education of the Medical Profession is not always what it ought to be.

One concession he is willing to make, whatever sacrifice of pride it may involve. The story of Massasoit, which has furnished a coral, as it were, for some teething critics, when subjected to a powerful logical analysis, though correct in its essentials, proves to have been told with exceptionable breadth of statement, and therefore

(to resume the metaphor) has been slightly rounded off at its edges, so as to be smoother for any who may wish to bite upon it hereafter. In other respects the Discourse has hardly been touched. It is only an individual's expression, in his own way, of opinions entertained by hundreds of the Medical Profession in every civilized country, and has nothing in it which on revision the writer sees cause to retract or modify. The superstitions it attacks lie at the very foundation of Homœopathy, and of almost every form of medical charlatanism. Still the mere routinists and unthinking artisans in most callings dislike whatever shakes the dust out of their traditions, and it may be unreasonable to expect that Medicine will always prove an exception to the rule. One half the opposition which the numerical system of Louis has met with, as applied to the results of treatment, has been owing to the fact that it showed the movements of disease to be far more independent of the kind of practice pursued than was agreeable to the pride of those whose self-confidence it abated.

The statement, that medicines are more sparingly used in physicians' families than in most others, admits of a very natural explanation, without putting a harsh construction upon it, which it was not intended to admit. *Outside pressure* is less felt in the physician's own household; that is all. If this does not sometimes influence him to give medicine, or what seems to be medicine, when among those who have more confidence in drugging than his own family commonly has, the learned Professor Dunglison is hereby requested to apologize for his definition of the word *Placebo*, or to expunge it from his Medical Dictionary.

One thing is certain. A loud outcry on a slight touch reveals the weak spot in a profession, as well as in a patient. It is a doubtful policy to oppose the freest speech in those of our own number who are trying to show us where they honestly believe our weakness lies. Vast as are the advances of our Science and Art, may it not possibly prove on examination that we retain other old barbarisms beside the use of the astrological sign of Jupiter, with which we endeavor to insure good luck to our prescriptions? Is it the act of a friend or a foe to try to point them out to our brethren when asked to address them, and is the speaker to subdue the constitutional habit of his style to a given standard, under penalty of giving offence to a grave assembly?

“Homœopathy and its Kindred Delusions” was published nearly twenty years ago, and has been long out of print, so that the author tried in vain to procure a copy until the kindness of a friend supplied him with the only one he has had for years. A foolish story reached his ears that he was attempting to buy up stray copies for the sake of suppressing it. This edition was in the press at that very time.

Many of the arguments contained in the Lectures have lost whatever novelty they may have possessed. All its predictions have been submitted to the formidable test of time. They appear to have stood it, so far, about as well as most uninspired prophecies; indeed, some of them require much less accommodation than certain grave commentators employ in their readings of the ancient Prophets.

If some statistics recently published* are correct, Homœopathy has made very slow progress in Europe. In all England, as it appears, there are hardly a fifth more Homœopathic practitioners than there are students attending Lectures at the Massachusetts Medical College at the present time. In America it has undoubtedly proved more popular and lucrative, yet how loose a hold it has on the public confidence is shown by the fact that, when a specially valued life, which has been played with by one of its agents, is seriously threatened, the first thing we expect to hear is that a regular practitioner is by the patient's bed, and the Homœopathic counsellor overruled or discarded. Again, how many of the ardent and capricious persons who embraced Homœopathy have run the whole round of pretentious novelties; — have been boarded at water-cure establishments, closeted with uterine and other specialists, and finally wandered overseas to put themselves in charge of foreign celebrities, who dosed them as lustily as they were ever dosed before they took to globules! It will surprise many to learn to what a shadow of a shade Homœopathy has dwindled in the hands of many of its noted practitioners. The itch-doctrine is treated with contempt. Infinitesimal doses are replaced by full ones whenever the fancy-practitioner chooses. Good Homœopathic reasons can be found for employing anything that anybody wants to employ. Homœopathy is now merely a name, an unproved theory, and a box of pellets pretending to be

* Medical Investigator. Devoted to the Advancement of the Homœopathic System of Medicine. Chicago, Jan. 1st, 1861.

specifics, which, as all of us know, fail ignominiously in those cases where we would thankfully sacrifice all our prejudices and give the world to have them true to their promises.

Homœopathy has not died out so rapidly as Tractoration. Perhaps it was well that it should not, for it has taught us a lesson of the healing faculty of Nature which was needed, and for which many of us have made proper acknowledgments. But it probably does more harm than good to medical science at the present time, by keeping up the delusion of treating everything by specifics,—the old barbarous notion that sick people should feed on poisons,* against which a part of the Discourse at the beginning of this volume is directed.

The infinitesimal globules have not become a curiosity as yet, like Perkins's Tractors. But time is a very elastic element in Geology and Prophecy. If Daniel's seventy weeks mean four hundred and ninety years, as the learned Prideaux and others have settled it that they do, the "not many years" of my prediction may be stretched out a generation or two beyond our time, if necessary, when the prophecy will no doubt prove true.

It might be fitting to add a few words with regard to the Essay on the Contagiousness of Puerperal Fever. But the whole question I consider to be now transferred

* *Lachesis*, arrow-poison, obtained from a serpent (Pulte). *Crotalus horridus*, rattlesnake's venom (Neidhard). The less dangerous *Pediculus capitis* is the favorite remedy of Dr. Mure, the English "Apostle of Homœopathy." These are examples of the retrograde current setting towards barbarism.

from the domain of medical inquiry to the consideration of Life Insurance agencies and Grand Juries. For the justification of this somewhat sharply accented language I must refer the reader to the paper itself for details which I regret to have been forced to place on permanent record.

The Essay on the Mechanism of Vital Actions was written, it must be remembered, before the recent discussions on the Origin of Species. The reader must also notice the difference in the dates of the two Addresses which follow this Essay.

BOSTON, January, 1861.



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CURRENTS AND COUNTER-CURRENTS
IN MEDICAL SCIENCE.

AN ADDRESS,

DELIVERED BEFORE THE

MASSACHUSETTS MEDICAL SOCIETY,

AT THE ANNUAL MEETING,

MAY 30, 1860.

“*Νούσων φύσιες ἰητροί.*”

“*Facultate magis quam violentia.*”

HIPPOCRATES.

CURRENTS AND COUNTER-CURRENTS

IN MEDICAL SCIENCE.

OUR Annual Meeting never fails to teach us at least one lesson. The Art whose province it is to heal and to save cannot protect its own ranks from the inroads of disease and the waste of the Destroyer.

Seventeen of our associates have been taken from us since our last Anniversary. Most of them followed their calling in the villages or towns that lie among the hills or along the inland streams. Only those who have lived the kindly, mutually dependent life of the country, can tell how near the physician who is the main reliance in sickness of all the families throughout a thinly settled region comes to the hearts of the people among whom he labors, how they value him while living, how they cherish his memory when dead. For these friends of ours who have gone before, there is now no more toil; they start from their slumbers no more at the cry of pain; they sally forth no more into the storms; they ride no longer over the lonely roads that knew them so well; their wheels are rusting on

their axles or rolling with other burdens; their watchful eyes are closed to all the sorrows they lived to soothe. Not one of these was famous in the great world; some were almost unknown beyond their own immediate circle. But they have left behind them that loving remembrance which is better than fame, and if their epitaphs are chiselled briefly in stone, they are written at full length on living tablets in a thousand homes to which they carried their ever-welcome aid and sympathy.

One whom we have lost, very widely known and honored, was a leading practitioner of this city. His image can hardly be dimmed in your recollection, as he stood before you only three years ago, filling the same place with which I am now honored. To speak of him at all worthily, would be to write the history of professional success, won without special aid at starting, by toil, patience, good sense, pure character, and pleasing manners; won in a straight uphill ascent, without one breathing-space until he sat down, not to rest, but to die. If prayers could have shielded him from the stroke, if love could have drawn forth the weapon, and skill could have healed the wound, this passing tribute might have been left to other lips and to another generation.

Let us hope that our dead have at last found that rest which neither summer nor winter, nor day nor night, had granted to their unending earthly labors!

And let us remember that our duties to our brethren do not cease when they become unable to share our toils, or leave behind them in want and woe those whom their labor had supported. It is honorable to the Profession that it has organized an Association* for the relief of its suffering members and their families; it owes this tribute to the ill-rewarded industry and sacrifices of its less fortunate brothers who wear out health and life in the service of humanity. I have great pleasure in referring to this excellent movement, which gives our liberal profession a chance to show its liberality, and serves to unite us all, the successful and those whom fortune has cast down, in the bonds of a true brotherhood.

A medical man, as he goes about his daily business after twenty years of practice, is apt to suppose that he treats his patients according to the teachings of his experience. No doubt this is true to some extent; to what extent depending much on the qualities of the individual. But it is easy to prove that the prescriptions of even wise physicians are very commonly founded on something quite different from experience. Experience must be based on the permanent facts of nature. But a glance at the prevalent modes of treatment of any two successive generations will show that there is a change-

* The Massachusetts Medical Benevolent Society.

able as well as a permanent element in the art of healing; not merely changeable as diseases vary, or as new remedies are introduced, but changeable by the going out of fashion of special remedies, by the decadence of a popular theory from which their fitness was deduced, or other cause not more significant. There is no reason to suppose that the present time is essentially different in this respect from any other. Much, therefore, which is now very commonly considered to be the result of experience, will be recognized in the next, or in some succeeding generation, as no such result at all, but as a foregone conclusion, based on some prevalent belief or fashion of the time.

There are, of course, in every calling, those who go about the work of the day before them, doing it according to the rules of their craft, and asking no questions of the past or of the future, or of the aim and end to which their special labor is contributing. These often consider and call themselves *practical men*. They pull the oars of society, and have no leisure to watch the currents running this or that way; let theorists and philosophers attend to them. In the mean time, however, these currents are carrying the practical men, too, and all their work may be thrown away, and worse than thrown away, if they do not take knowledge of them and get out of the wrong ones and into the right ones as soon as they may.¹¹ Sir Edward Parry and his party were

going straight towards the pole, in one of their arctic expeditions, travelling at the rate of ten miles a day. But the ice over which they travelled was drifting straight towards the equator, at the rate of *twelve* miles a day, and yet no man among them would have known that he was travelling two miles a day backward, unless he had lifted his eyes from the track in which he was plodding. It is not only going backward that the plain practical workman is liable to, if he will not look up and look around; he may go forward to ends he little dreams of. It is a simple business for a mason to build up a niche in a wall; but what if, a hundred years afterwards, when the wall is torn down, the skeleton of a murdered man drop out of the niche? It was a plain practical piece of carpentry for a Jewish artisan to fit two pieces of timber together according to the légal pattern in the time of Pontius Pilate; he asked no questions, perhaps, but we know what burden the cross bore on the morrow! And so, with subtler tools than trowels or axes, the statesman who works in policy without principle, the theologian who works in forms without a soul, the physician who, calling himself a practical man, refuses to recognize the larger laws which govern his changing practice, may all find that they have been building truth into the wall, and hanging humanity upon the cross.

The truth is, that medicine, professedly founded on observation, is as sensitive to outside influences,

political, religious, philosophical, imaginative, as is the barometer to the changes of atmospheric density. Theoretically it ought to go on its own straightforward inductive path, without regard to changes of government or to fluctuations of public opinion. But look a moment while I clash a few facts together, and see if some sparks do not reveal by their light a closer relation between the Medical Sciences and the conditions of Society and the general thought of the time, than would at first be suspected.

Observe the coincidences between certain great political and intellectual periods and the appearance of illustrious medical reformers and teachers. It was in the age of Pericles, of Socrates, of Plato, of Phidias, that Hippocrates gave to medical knowledge the form which it retained for twenty centuries. With the world-conquering Alexander, the word-embracing philosopher Aristotle, appropriating anatomy and physiology, among his manifold spoils of study, marched abreast of his royal pupil to wider conquests. Under the same Ptolemies who founded the Alexandrian Library and Museum, and ordered the Septuagint version of the Hebrew Scriptures, the infallible Herophilus* made those six hundred dissections of which Tertullian accused him, and the sagacious Erasistratus introduced his mild antiphlogistic treatment in opposition to the polypharmacy

* "Contradicere Herophilo in anatomicis, est contradicere evangelium," was a saying of Fallopius.

and antidotal practice of his time. It is significant that the large-minded Galen should have been the physician and friend of the imperial philosopher Marcus Aurelius. The Arabs gave laws in various branches of knowledge to those whom their arms had invaded, or the terror of their spreading dominion had reached, and the point from which they started was, as Humboldt acknowledges, "the study of medicine, by which they long ruled the Christian Schools,"* and to which they added the department of chemical pharmacy.

Look at Vesalius, the contemporary of Luther. Who can fail to see one common spirit in the radical ecclesiastic and the reforming court-physician? Both still to some extent under the dominion of the letter: Luther holding to the real presence; Vesalius actually causing to be drawn and engraved two muscles which he knew were not found in the human subject, because they had been described by Galen, from dissections of the lower animals.† Both breaking through old traditions in the search of truth; one, knife in hand, at the risk of life and reputation, the other at the risk of fire and fagot, with that mightier weapon which all the devils could not silence, though they had been thicker than the tiles on the house-tops. How much the physician of the Catholic Charles V. had in common with the

* Cosmos, II. 587.

† Opera Omnia, Basileæ, 1555. Lib. II., Tab. V. VI. pp. 225, 228.

great religious destructive, may be guessed by the relish with which he tells the story how certain Pavian students exhumed the body of an "elegans scortum," or lovely dame of ill repute, the favorite of a monk of the order of St. Anthony, who does not seem to have resisted temptation so well as the founder of his order.* We have always ranked the physician Rabelais among the early reformers, but I do not know that Vesalius has ever been thanked for his hit at the morals of the religious orders, or for turning to the good of science what was intended for the "benefit of clergy."

Our unfortunate medical brother, Michael Servetus, the spiritual patient to whom the theological moxa was applied over the entire surface for the cure of his heresy, came very near anticipating Harvey.† The same quickened thought of the time which led him to dispute the dogmas of the Church, opened his mind to the facts which contradicted the dogmas of the Faculty.

Harvey himself was but the posthumous child of the great Elizabethan period. Bacon was at once his teacher and his patient. The founder of the

* Op. cit., Lib. V. Cap. 15, p. 663.

† "Non per parietem cordis mediam, ut vulgo creditur, sed magno artificio, a dextro cordis ventriculo, longe per pulmones tractu, et a vena arteriosa, in arteriam venosam transfunditur." — Bostock's *Physiology*, note to p. 211. I cite the passage on account of the calling in question of the claims of Servetus by Amedée Pichot. (*Life and Labors of Sir Charles Bell*, London, 1860, p. 3.)

new inductive philosophy had only been dead two years when the treatise on the Circulation, the first-fruit of the Restoration of Science, was given to the world.

And is it to be looked at as a mere accidental coincidence, that while Napoleon was modernizing the political world, Bichat was revolutionizing the science of life and the art that is based upon it; that while the young general was scaling the Alps, the young surgeon was climbing the steeper summits of unexplored nature; that the same year read the announcement of those admirable *Researches on Life and Death*, and the bulletins of the battle of *Marengo*?

If we come to our own country, who can fail to recognize that Benjamin Rush, the most conspicuous of American physicians, was the intellectual offspring of the movement which produced the Revolution? "The same hand," says one of his biographers, "which subscribed the declaration of the political independence of these States, accomplished their emancipation from medical systems formed in foreign countries, and wholly unsuitable to the state of diseases in America."

Following this general course of remark, I propose to indicate in a few words the direction of the main intellectual current of the time, and to point out more particularly some of the eddies which tend

to keep the science and art of medicine from moving with it, or even to carry them backwards.

The two dominant words of our time are *law* and *average*, both pointing to the uniformity of the order of being in which we live. Statistics have tabulated everything, — population, growth, wealth, crime, disease. We have shaded maps showing the geographical distribution of larceny and suicide. Analysis and classification have been at work upon all tangible and visible objects. The Positive Philosophy of Comte has only given expression to the observing and computing mind of the nineteenth century.

In the mean time, the great stronghold of intellectual conservatism, traditional belief, has been assailed by facts which would have been indicted as blasphemy but a few generations ago. Those new tables of the law, placed in the hands of the geologist by the same living God who spoke from Sinai to the Israelites of old, have remodelled the beliefs of half the civilized world. The solemn scepticism of science has replaced the sneering doubts of witty philosophers. The more positive knowledge we gain, the more we incline to question all that has been received without absolute proof.

As a matter of course, this movement has its partial reactions. The province of faith is claimed as a port free of entry to unsupported individual convictions. The tendency to question is met by the

unanalyzing instinct of reverence. The old church calls back its frightened truants. Some who have lost their hereditary religious belief find a resource in the revelations of Spiritualism. By a parallel movement, some of those who have become medical infidels pass over to the mystic band of believers in the fancied miracles of Homœopathy.

Under these influences transmitted to, or at least shared by, the medical profession, the old question between "Nature," so called, and "Art," or professional tradition, has reappeared with new interest. I say the old question, for Hippocrates stated the case on the side of "Nature" more than two thousand years ago.* Miss Florence Nightingale, — and if I name her next to the august Father of the Healing Art, its noblest daughter well deserves that place of honor, — Miss Florence Nightingale begins her late volume with a paraphrase of his statement. But from a very early time to this there has always been a strong party against "Nature." Themison called the practice of Hippocrates "a meditation upon death." Dr. Rush says: "It is impossible to calculate the mischief which Hippocrates has done, by first marking nature with his name and afterwards letting her loose upon sick people. Millions have perished by her hands in all ages and countries." Sir John Forbes, whose defence of "Nature" in disease you all know, and to the testimonial

* Epidemics, Book VI. Sect. 5.

in whose honor four of your Presidents have contributed, has been recently greeted, on retiring from the profession, with a wish that his retirement had been twenty years sooner, and the opinion that no man had done so much to destroy the confidence of the public in the medical profession.

In this Society we have had the Hippocratic and the Themisonic side fairly represented. The Treatise of one of your early Presidents on the Mercurial Treatment is familiar to my older listeners. Others who have held the same office have been noted for the boldness of their practice, and even for partiality to the use of complex medication.

On the side of "Nature" we have had, first of all, that remarkable discourse on Self-Limited Diseases,* which has given the key-note to the prevailing medical tendency of this neighborhood, at least, for the quarter of a century since it was delivered. Nor have we forgotten the address delivered at Springfield twenty years later,† full of good sense and useful suggestions, to one of which suggestions we owe the learned, impartial, judicious, well-written Prize Essay of Dr. Worthington Hooker.‡ We

* On Self-Limited Diseases. A Discourse delivered before the Massachusetts Medical Society, at their Annual Meeting, May 27th, 1835. By Jacob Bigelow, M.D.

† "Search out the Secrets of Nature." By Augustus A. Gould, M.D. Read at the Annual Meeting, June 27th, 1855.

‡ Rational Therapeutics. A Prize Essay. By Worthington Hooker, M.D., of New Haven. Boston. 1857.

should not omit from the list the important address of another of our colleagues,* showing by numerous cases the power of Nature in healing compound fractures to be much greater than is frequently supposed,—affording, indeed, more striking illustrations than can be obtained from the history of visceral disease, of the supreme wisdom, forethought, and adaptive dexterity of that divine Architect, as shown in repairing the shattered columns which support the living temple of the body.

We who are on the side of “Nature” please ourselves with the idea that we are in the great current in which the true intelligence of the time is moving. We believe that some who oppose, or fear, or denounce our movement, are themselves caught in various eddies that set back against the truth. And we do most earnestly desire and most actively strive, that Medicine, which, it is painful to remember, has been spoken of as “the withered branch of science” at a meeting of the British Association, shall be at length brought fully to share, if not to lead, the great wave of knowledge which rolls with the tides that circle the globe.

If there is any State or city which might claim to be the American head-quarters of the nature-trusting heresy, provided it be one, that State is Massachu-

* On the Treatment of Compound and Complicated Fractures. By William J. Walker, M.D. Read at the Annual Meeting. May 29th, 1845.

setts, and that city is its capital. The effect which these doctrines have upon the confidence reposed in the profession, is a matter of opinion. For myself, I do not believe this confidence can be impaired by any investigations which tend to limit the application of troublesome, painful, uncertain, or dangerous remedies. Nay, I will venture to say this, that if every specific were to fail utterly, if the cinchona trees all died out, and the arsenic mines were exhausted, and the sulphur regions were burned up, if every drug from the vegetable, animal, and mineral kingdom were to disappear from the market, a body of enlightened men, organized as a distinct profession, would be required just as much as now, and respected and trusted as now, whose province should be to guard against the causes of disease, to eliminate them if possible when still present, to order all the conditions of the patient so as to favor the efforts of the system to right itself, and to give those predictions of the course of disease which only experience can warrant, and which in so many cases relieve the exaggerated fears of sufferers and their friends, or warn them in season of impending danger. Great as the loss would be if certain active remedies could no longer be obtained, it would leave the medical profession the most essential part of its duties, and all, and more than all, its present share of honors; for it would be the death-blow to charlatanism, which depends for its success almost entirely on drugs, or at least on a nomenclature that suggests them.

There is no offence, then, or danger in expressing the opinion, that, after all which has been said, the community is still overdosed. The best proof of it is, that no families take so little medicine as those of doctors, except those of apothecaries, and that old practitioners are more sparing of active medicines than younger ones.* The conclusion from these facts is one which the least promising of Dr. Howe's pupils in the mental department could hardly help drawing.

Part of the blame of over-medication must, I fear, rest with the profession, for yielding to the tendency to self-delusion, which seems inseparable from the practice of the art of healing. I need only touch on the common modes of misunderstanding or misapplying the evidence of nature.

First, there is the natural incapacity for sound observation, which is like a faulty ear in music. We see this in many persons who know a good deal about books, but who are not sharp-sighted enough to buy a horse or deal with human diseases.

Secondly, there is in some persons a singular inability to weigh the value of testimony; of which, I think, from a pretty careful examination of his books,

* Dr. James Jackson has kindly permitted me to make the following extract from a letter just received by him from Sir James Clark, and dated May 26th, 1860:—

“As a physician advances in age, he generally, I think, places less confidence in the ordinary medical treatment than he did, not only during his early, but even his middle period of life.”

Hahnemann affords the best specimen outside the walls of Bedlam.

The inveterate logical errors to which physicians have always been subject, are chiefly these: —

The mode of inference *per enumerationem simplicem*, in scholastic phrase; that is, counting only their favorable cases. This is the old trick illustrated in Lord Bacon's story of the gifts of the shipwrecked people, hung up in the temple. — Behold! they vowed these gifts to the altar, and the gods saved them. Ay, said a doubting bystander, but how many made vows of gifts and were shipwrecked notwithstanding? — The numerical system is the best corrective of this and similar errors. The arguments commonly brought against its application to all matters of medical observation, treatment included, seem to apply rather to the tabulation of facts ill observed, or improperly classified, than to the method itself.

The *post hoc ergo propter hoc* error: he got well after taking my medicine; therefore in consequence of taking it.

The false induction from genuine facts of observation, leading to the construction of theories which are then deductively applied in the face of the results of direct observation. The school of Broussais has furnished us with a good example of this error.

And lastly, the error which Sir Thomas Browne calls giving "a reason of the golden tooth;" that is, assuming a falsehood as a fact, and giving reasons

for it, commonly fanciful ones, as is constantly done by that class of incompetent observers who find their "golden tooth" in the fabulous effects of the homœopathic materia medica, — which consists of sugar of milk and a nomenclature.

Another portion of the blame rests with the public itself, which insists on being poisoned. Somebody buys all the quack medicines that build palaces for the mushroom, say rather, the toadstool millionnaires. Who is it? These people have a constituency of millions. The popular belief is all but universal that sick persons should feed on noxious substances. One of our members was called not long since to a man with a terribly sore mouth. On inquiry he found that the man had picked up a box of unknown pills, in Howard Street, and had proceeded to take them, on general principles, pills being good for people. They happened to contain mercury, and hence the trouble for which he consulted our associate.

The outside pressure, therefore, is immense upon the physician, tending to force him to active treatment of some kind. Certain old superstitions, still lingering in the mind of the public, and not yet utterly expelled from that of the profession, are at the bottom of this, or contribute to it largely. One of the most ancient is, that disease is a malignant agency or entity, to be driven out of the body by offensive substances, as the smoke of the fish's heart and liver drove the devil out of Tobit's bridal chamber, accord-

ing to the Apocrypha. Epileptics used to suck the blood from the wounds of dying gladiators.* The Hon. Robert Boyle's little book was published some twenty or thirty years before our late President, Dr. Holyoke, was born.† In it he recommends, as internal medicines, most of the substances commonly used as fertilizers of the soil. His *Album Græcum* is best left untranslated, and his *Zebethum Occidentale* is still more transcendently unmentionable except in a strange dialect. It sounds odiously to us to hear him recommend for dysentery a powder made from "the sole of an old shoe worn by some man that walks much." Perhaps nobody here ever heard of tying a stocking, *which had been worn during the day*, round the neck at night for a sore throat. The same idea of virtue in unlovely secretions! ‡

Even now, the Homœopaths have been introducing the venom of serpents, under the learned title of *Lachesis*, and outraging human nature with infusions of the *pediculus capitis*; that is, of course, as we understand their dilutions, the names of these things; for if a fine-tooth-comb insect were drowned in Lake Superior, we cannot agree with them in thinking that every drop of its waters would be

* Plinii Hist. Mundi, Lib. xxviii., C. 4.

† A Collection of Choice and Safe Remedies. The Fifth Edition, corrected. London. 1712. Dr. Holyoke was born in 1728.

‡ The idea is very ancient. "*Sordes hominis*" — "*Sudore et oleo medicinam facientibus.*" — Plin., xxviii. 4

impregnated with all the pedicular virtues they so highly value. They know what they are doing. They are appealing to the detestable old superstitious presumption in favor of whatever is nauseous and noxious as being good for the sick.

Again, we all occasionally meet persons stained with nitrate of silver, given for epilepsy. Read what Dr. Martin says, about the way in which it came to be used, in his excellent address before the Norfolk County Medical Society, and the evidence I can show, but have not time for now, and then say what you think of the practice which on such presumptions turns a white man as blue as the double-tattooed King of the Cannibal Islands! [*Note A.*]

If medical superstitions have fought their way down through all the rationalism and scepticism of the nineteenth century, of course the theories of the schools, supported by great names, adopted into the popular belief and incorporated with the general mass of misapprehension with reference to disease, must be expected to meet us at every turn in the shape of bad practice founded on false doctrine. A French patient complains that his blood heats him, and expects his doctor to bleed him. An English or American one says he is bilious, and will not be easy without a dose of calomel. A doctor looks at a patient's tongue, sees it coated, and says the stomach is foul; his head full of the old saburral notion, which the extreme inflammation-doctrine of Brous-

sais did so much to root out, but which still leads, probably, to much needless and injurious wrong of the stomach and bowels by evacuants, when all they want is to be let alone. It is so hard to get anything out of the dead hand of medical tradition! The mortmain of theorists extinct in science, clings as close as that of ecclesiastics defunct in law.

One practical hint may not be out of place here. It seems to be sometimes forgotten, by those who must know the fact, that the tongue is very different, anatomically and physiologically, from the stomach. Its condition does not in the least imply a similar one of the stomach, which is a very different structure, covered with a different kind of epithelium, and furnished with entirely different secretions. A silversmith will, for a dollar, make a small *hoe*, of solid silver, which will last for centuries, and will give a patient more comfort, used for the removal of the accumulated epithelium and fungous growths which constitute the "fur," than many a prescription with a splitfooted \mathcal{R} before it, addressed to the parts out of reach.

I think more of this little implement, on account of its agency in saving the Colony at Plymouth in the year 1623. Edward Winslow heard that Massasoit was sick and like to die. He found him with a houseful of people about him, women rubbing his arms and legs, and friends "making such a hellish noise" as they probably thought would scare away

the devil of sickness. Winslow gave him some conserve, washed his mouth, *scraped his tongue*, which was in a horrid state, got down some drink, made him some broth, dosed him with an infusion of strawberry leaves and sassafras root, and had the satisfaction of seeing him rapidly recover. Massasoit, full of gratitude, revealed the plot which had been formed to destroy the colonists, whereupon the Governor ordered Captain Miles Standish to see to them; who thereupon, as everybody remembers, stabbed Pecksuot with his own knife, broke up the plot, saved the colony, and thus rendered Massachusetts and the Massachusetts Medical Society a possibility, as they now are a fact before us.* So much for this parenthesis of the tongue-scraper, which helped to save the young colony from a much more serious scrape, and may save the Union yet, if a Presidential candidate should happen to be taken sick as Massasoit was, and his tongue wanted cleaning,—which process would not hurt a good many politicians, with or without a typhoid fever.

Again, see how the “bilious” theory works in every-day life here and now, illustrated by a case from actual life. A youthful practitioner, whose last molars have not been a great while cut, meets an experienced and noted physician in consultation. This is the case. A slender, lymphatic young woman

* Winslow's Good News from New England, or a Relation, &c. Chap. 20, 21.

is suckling two lusty twins, the intervals of suction being occupied on her part with palpitations, headaches, giddiness, throbbing in the head, and various nervous symptoms, her cheeks meantime getting bloodless, and her strength running away in company with her milk. The old experienced physician, seeing the yellowish waxy look which is common in anæmic patients, considers it a "bilious" case, and is for giving a rousing emetic. Of course, he has to be wheedled out of this, a recipe is written for beef-steaks and porter, the twins are ignominiously expelled from the anæmic bosom, and forced to take prematurely to the bottle, and this prolific mother is saved for future usefulness in the line of maternity.

The practice of making a profit on the medicine ordered has been held up to reprobation by one at least of the orators who have preceded me. That the effect of this has been ruinous in English practice I cannot doubt, and that in this country the standard of practice was in former generations lowered through the same agency is not unlikely. I have seen an old account-book in which the physician charged an extra price for gilding his rich patients' pills. If all medicine were very costly, and the expense of it always came out of the physician's fee, it would really be a less objectionable arrangement than this other most pernicious one. He would naturally think twice before he gave an emetic or cathartic which evacuated his own pocket, and be sparing of

the cholagogues that emptied the biliary ducts of his own wallet, unless he were *sure* they were needed. If there is any temptation, it should not be in favor of giving noxious agents, as it clearly must be in the case of English druggists and "General Practitioners." The complaint against the other course is a very old one. Pliny, inspired with as truly Roman a horror of quackery as the elder Cato, — who declared that the Greek doctors had sworn to exterminate all barbarians, including the Romans, with their drugs, but is said to have physicked his own wife to death, notwithstanding, — Pliny says, in so many words, that the cerates and cataplasms, plasters, collyria, and antidotes, so abundant in his time, as in more recent days, were mere tricks to make money.

A pretty strong eddy, then, or rather many eddies, setting constantly back from the current of sober observation of nature, in the direction of old superstitions and fancies, of exploded theories, of old ways of making money, which are very slow to pass out of fashion! But there are other special American influences which we are bound to take cognizance of. If I wished to show a student the difficulties of getting at truth from medical experience, I would give him the history of epilepsy to read. If I wished him to understand the tendencies of the American medical mind, its sanguine enterprise, its self-confidence, its audacious handling of Nature, its

impatience with her old-fashioned ways of taking time to get a sick man well, I would make him read the life and writings of Benjamin Rush. Dr. Rush thought and said that there were twenty times more intellect and a hundred times more knowledge in the country in 1799 than before the Revolution. His own mind was in a perpetual state of exaltation, produced by the stirring scenes in which he had taken a part, and the quickened life of the time in which he lived. It was not the state to favor sound, calm observation. He was impatient, and Nature is profoundly imperturbable. We may adjust the beating of our hearts to her pendulum if we will and can, but we may be very sure that she will not change the pendulum's rate of going because our hearts are palpitating. He thought he had mastered yellow-fever. "Thank God," he said, "out of one hundred patients whom I have visited or prescribed for this day, I have lost none." Where was all his legacy of knowledge when Norfolk was decimated? Where was it when the blue flies were buzzing over the coffins of the unburied dead piled up in the cemetery of New Orleans, at the edge of the huge trenches yawning to receive them?

One such instance will do as well as twenty. Dr. Rush must have been a charming teacher, as he was an admirable man. He was observing, rather than a sound observer; eminently observing, curious, even, about all manner of things. But he could not help

feeling as if Nature had been a good deal shaken by the Declaration of Independence, and that American art was getting to be rather too much for her, — especially as illustrated in his own practice. He taught thousands of American students, he gave a direction to the medical mind of the country more than any other one man; perhaps he typifies it better than any other. It has clearly tended to extravagance in remedies and trust in remedies, as in everything else. How could a people which has a revolution once in four years, which has contrived the Bowie-knife and the revolver, which has chewed the juice out of all the superlatives in the language in Fourth of July orations, and so used up its epithets in the rhetoric of abuse that it takes two great quarto dictionaries to supply the demand; which insists in sending out yachts and horses and boys to out-sail, out-run, out-fight, and checkmate all the rest of creation; how could such a people be content with any but “heroic” practice? What wonder that the stars and stripes wave over doses of ninety grains of sulphate of quinine,* and that the American eagle screams with delight to see three drachms of calomel given at a single mouthful? †

* More strictly, ninety-six grains in two hours. — *Dunglison's Practice*, 1842, Vol. II. p. 520. Eighty grains in one dose. — *Ibid.*, p. 536. Ninety-six grains of sulphate of quinine are equal to eight ounces of good bark. — *Wood & Bache*.

† *Pereira*, II. 614. Quoted from *Christison's Treatise on Poisons*.

Add to this the great number of Medical Journals, all useful, we hope, most of them necessary, we trust, many of them excellently well conducted, but which must find something to fill their columns, and so print all the new plans of treatment and new remedies they can get hold of, as the newspapers, from a similar necessity, print the shocking catastrophes and terrible murders.

Besides all this, here are we, the great body of teachers in the numberless medical schools of the Union, some of us lecturing to crowds who clap and stamp in the cities, some of us wandering over the country, like other professional fertilizers, to fecundate the minds of less demonstrative audiences at various scientific stations; all of us talking habitually to those supposed to know less than ourselves, and loving to claim as much for our art as we can, not to say for our own schools, and possibly indirectly for our own practical skill. Hence that annual crop of introductory lectures; the useful blossoming into the ornamental, as the cabbage becomes glorified in the cauliflower; that lecture-room literature of adjectives, that declamatory exaggeration, that splendid show of erudition borrowed from D'Israeli, and credited to Lord Bacon and the rest, which have suggested to our friends of the Medical Journals an occasional epigram at our expense. Hence the tendency in these productions, and in medical lectures generally, to over-state the efficacy

of favorite methods of cure, and hence the premium offered for showy talkers rather than sagacious observers, for the men of adjectives rather than of nouns substantive in the more ambitious of these institutions.*

Such are some of the eddies in which we are liable to become involved and carried back out of the broad stream of philosophical, or, in other words, truth-loving, investigations. The causes of disease, in the mean time, have been less earnestly studied in the eagerness of the search for remedies. Speak softly! Women have been borne out from an old-world hospital, two in one coffin, that the horrors of their prison-house might not be known, while the very men who were discussing the treatment of the disease were stupidly conveying the infection from bed to bed, as rat-killers carry their poisons from one household to another. Do not some of you remember that I have had to fight this private-pestilence question against a scepticism which sneered in the face of a mass of evidence such as the calm statisticians of the Insurance office could not listen to without horror and indignation? † Have we forgot-

* "Ingeniorum Græciæ flatu impellimur. Palamque est, ut quisque inter istos loquendo polleat, imperatorem illieo vitæ nostræ necisque fieri." — (*Plin. Hist. Mundi*, XXIX. 1.) I hope I may use the old Roman liberty of speech without offence.

† The Contagiousness of Puerperal Fever. — N. E. Quar. Jour. of Medicine and Surgery, April, 1843. Reprinted, with Additions. Boston: Ticknor & Fields. 1855.

ten what is told in one of the books published under our own sanction, that a simple measure of ventilation, proposed by Dr. John Clark, had saved more than *sixteen thousand children's lives* in a single hospital? * How long would it have taken small doses of calomel and rhubarb to save as many children? These may be useful in prudent hands, but how insignificant compared to the great hygienic conditions! Causes, causes, and again causes, — more and more we fall back on these as the chief objects of our attention. The shortest system of medical practice that I know of is the oldest, but not the worst. It is older than Hippocrates, older than Chiron the Centaur. Nature taught it to the first mother when she saw her first-born child putting some ugly pebble or lurid berry into its mouth. I know not in what language it was spoken, but I know that in English it would sound thus: Spit it out!

Art can do something more than say this. It can sometimes reach the pebble or berry after it has been swallowed. But the great thing is to keep these things out of children's mouths, and as soon as they are beyond our reach, to be reasonable and patient with Nature, who means well, but does not like to hurry, and who took nine calendar months, more or less, to every mother's son among us, before she thought he was fit to be shown to the public.

* Collins's Midwifery, p. 312. (In Lib. of Prac. Med.)

Suffer me now to lay down a few propositions, whether old or new it matters little, not for your immediate acceptance, nor yet for your hasty rejection, but for your calm consideration.

But first, there are a number of terms which we are in the habit of using in a vague though not unintelligible way, and which it is as well now to define. These terms are the tools with which we are to work, and the first thing is to sharpen them. It is nothing to us that they have been sharpened a thousand times before; they always get dull in the using, and every new workman has a right to carry them to the grindstone and sharpen them to suit himself.

Nature, in medical language, as opposed to *Art*, means trust in the reactions of the living system against ordinary normal impressions.

Art, in the same language, as opposed to *Nature*, means an intentional resort to extraordinary abnormal impressions for the relief of disease.

The reaction of the living system is the essence of both. Food is nothing, if there is no digestive act to respond to it. We cannot raise a blister on a dead man, or hope that a carminative forced between his lips will produce its ordinary happy effect.

Disease, dis-case, — disturbed quiet, uncomfortableness, — means imperfect or abnormal reaction of the living system, and its more or less permanent results.

Food, in its largest sense, is whatever helps to build up the normal structures, or to maintain their natural actions.

Medicine, in distinction from food, is every unnatural or noxious agent applied for the relief of disease.

Physic means properly the *Natural* art, and Physician is only the Greek synonyme of *Naturalist*.

With these few explanations I proceed to unfold the propositions I have mentioned.

Disease and death, if we may judge by the records of creation, are inherently and essentially necessary in the present order of things. A perfect intelligence, trained by a perfect education, could do *no more* than keep the laws of the physical and spiritual universe. An imperfect intelligence, imperfectly taught, — and this is the condition of our finite humanity, — will certainly fail to keep all these laws perfectly. Disease is one of the penalties of one of the forms of such failure. It is prefigured in the perturbations of the planets, in the disintegration of the elemental masses; it has left its traces in the fossil organisms of extinct creations.* But it is especially the prerogative, I had almost said privilege, of educated and domesticated beings, from man down to

* Professor Agassiz has kindly handed me the following note : —

“There are abnormal structures in animals of all ages anterior to the creation of mankind. Malformed specimens of Crinoids are known from the Triassic and Jurassic deposits. Malformed and diseased

the potato, serving to teach them, and such as train them, the laws of life, and to get rid of those who will not mind or cannot be kept subject to these laws.

Disease, being always an effect, is always in exact proportion to the sum of its causes, as much in the case of Spigelius, who dies of a scratch, as in that of the man who recovers after an iron bar has been shot through his brain. The one prevalent failing of the medical art is to neglect the causes and quarrel with the effect.

There are certain general facts which include a good deal of what is called and treated as disease. Thus, there are two opposite movements of life to be seen in cities and elsewhere, belonging to races which, from various persistent causes, are breeding down and tending to run out, and to races which are breeding up, or accumulating vital capital, — a descending and an ascending series. Let me give an example of each; and that I may incidentally remove a common impression about this country as compared with the Old World, an impression which got tipsy with conceit and staggered into the atti-

bones of tertiary mammalia have been collected in the caverns of Gailenreuth with traces of healing.”

Professor Jeffries Wyman has also favored me with an interesting communication, from which I extract this statement:—

“Necrosis, caries, ankylosis, and osteophytes have been observed in fossil bones. Zeis (Leipsic, 1856) has written a memoir on the specimens of this nature contained in the Royal Cabinet of Natural History at Dresden.”

tude of a formal proposition in the work of Dr. Robert Knox,* I will illustrate the downward movement from English experience, and the upward movement from a family history belonging to this immediate neighborhood.

Miss Nightingale speaks of "the fact so often seen of a great-grandmother, who was a tower of physical vigor, descending into a grandmother perhaps a little less vigorous, but still sound as a bell, and healthy to the core, into a mother languid and confined to her carriage and house, and lastly into a daughter sickly and confined to her bed." So much for the descending English series; now for the ascending American series.

Something more than one hundred and thirty years ago there was graduated at Harvard College a delicate youth, who lived an invalid life and died at the age of about fifty. His two children were both of moderate physical power, and one of them diminutive in stature. The next generation rose in physical development, and reached eighty years of age and more in some of its members. The fourth generation was of fair average endowment. The fifth generation, great-great-grandchildren of the slender

* "Already the Anglo-Saxon rears with difficulty his offspring in Australia: it is the same in most parts of America. But for the supplies they receive from Europe the race would perish, even in these most healthy climates."—*The Races of Men*. Philadelphia, 1850, p. 317.

invalid, are several of them of extraordinary bodily and mental power; large in stature, formidable alike with their brains and their arms, organized on a more extensive scale than either of their parents.

This brief account illustrates *incidentally* the fallacy of the universal-degeneration theory applied to American life; the same on which one of our countrymen has lately brought some very forcible facts to bear in a muscular discussion of which we have heard rather more than is good for us. But the two series, American and English, ascending and descending, were adduced with the main purpose of showing the immense difference of vital endowments in different strains of blood; a difference to which all ordinary medication is in all probability a matter of comparatively trivial purport. Many affections which art has to strive against might be easily shown to be vital to the well-being of society. Hydrocephalus, tabes mesenterica, and other similar maladies, are natural agencies which cut off the children of races that are sinking below the decent minimum which nature has established as the condition of viability, before they reach the age of reproduction. They are really not so much diseases, as manifestations of congenital incapacity for life; the race would be ruined if art could ever learn always to preserve the individuals subject to them. We must do the best we can for them, but we ought also to know what these "diseases" mean.

Again, invalidism is the normal state of many organizations. It can be changed to disease, but never to absolute health by medicinal appliances. There are many ladies, ancient and recent, who are perpetually taking remedies for irremediable pains and aches. They *ought* to have headaches and back-aches and stomach-aches; they are not well if they do not have them. To expect them to live without frequent twinges, is like expecting a doctor's old chaise to go without creaking; if it did, we might be sure the springs were broken. There is no doubt that the constant demand for medicinal remedies from patients of this class leads to their over-use; often in the case of cathartics, sometimes in that of opiates. I have been told, by an intelligent practitioner in a Western town, that the constant prescription of opiates by certain physicians in his vicinity has rendered the habitual use of that drug in all that region very prevalent; more common, I should think, than alcoholic drunkenness in the most intemperate localities of which I have known anything. A frightful endemic demoralization betrays itself in the frequency with which the haggard features and drooping shoulders of the opium-drunkards are met with in the streets.

The next proposition I would ask you to consider, is this:—

The *presumption* always is that every noxious agent, including medicines proper, which hurts a well man, hurts a sick one. [*Note B.*]

Let me illustrate this proposition before you decide upon it. If it were known that a prize-fighter were to have a drastic purgative administered two or three days before a contest, or a large blister applied to his back, no one will question that it would affect the betting on his side unfavorably; we will say to the amount of five per cent. Now the drain upon the resources of the system produced in such a case must be at its minimum, for the subject is a powerful man, in the prime of life, and in admirable condition. If the drug or the blister-takes five per cent from his force of resistance, it will take at least as large a fraction from any invalid. But this invalid has to fight a champion who strikes hard, but cannot be hit in return, who will press him sharply for breath, but will never pant himself while the wind can whistle through his fleshless ribs. The suffering combatant is liable to want all his stamina, and five per cent may lose him the battle.

All noxious agents, all appliances which are not natural food or stimuli, all medicines proper, cost a patient, on the average, five per cent of his vital force, let us say. Twenty times as much waste of force produced by any of them, that is, would exactly kill him, nothing less than kill him, and nothing more. If this, or something like this, is true, then all these medications are, *prima facie*, injurious.

In the game of Life-or-Death, *Rouge et Noir*, as played between the Doctor and the Sexton, this five

per cent, this certain small injury entering into the chances, is clearly the sexton's perquisite for keeping the green table, over which the game is played, and where he hoards up his gains. Suppose a blister to diminish a man's pain, effusion or dyspnoea to the saving of twenty per cent in vital force; his profit from it is fifteen, in that case, for it always hurts him five to begin with, according to our previous assumption.

Presumptions are of vast importance in medicine, as in law. A man is presumed innocent until he is proved guilty. A medicine — that is, a noxious agent, like a blister, a seton, an emetic, or a cathartic — should always be presumed to be hurtful. It always is *directly* hurtful; it may sometimes be indirectly beneficial. If this presumption were established, and disease always assumed to be the innocent victim of circumstances, and not punishable by medicines, that is, noxious agents, or poisons, until the contrary was shown, we should not so frequently hear the remark commonly, perhaps erroneously, attributed to Sir Astley Cooper, but often repeated by sensible persons, that, on the whole, more harm than good is done by medication. Throw out opium, which the Creator himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not dis-

cover, and is hardly needed to apply [*Note C*]; throw out wine, which is a food, and the vapors which produce the miracle of anæsthesia, and I firmly believe that if the whole materia medica, *as now used*, could be sunk to the bottom of the sea, it would be all the better for mankind, — and all the worse for the fishes.

But to justify this proposition, I must add that the injuries inflicted by over-medication are to a great extent masked by disease. Dr. Hooker believes that the *typhus syncopalis* of a preceding generation in New England, “was often in fact a brandy and opium disease.” How is a physician to distinguish the irritation produced by his blister from that caused by the inflammation it was meant to cure? How can he tell the exhaustion produced by his evacuants from the collapse belonging to the disease they were meant to remove?

Lastly, medication without insuring favorable hygienic conditions, is like amputation without ligatures. I had a chance to learn this well of old, when physician to the Broad Street district of the Boston Dispensary. There, there was no help for the utter want of wholesome conditions, and if anybody got well under my care, it must have been in virtue of the rough-and-tumble constitution which emerges from the struggle for life in the street gutters, rather than by the aid of my prescriptions.

.But if the materia medica were lost overboard,

how much more pains would be taken in ordering all the circumstances surrounding the patient (as can be done everywhere out of the crowded pauper districts), than are taken now by too many who think they do their duty and earn their money when they write a recipe for a patient left in an atmosphere of domestic malaria, or to the most negligent kind of nursing! I confess that I should think my chance of recovery from illness less with Hippocrates for my physician and Mrs. Gamp for my nurse, than if I were in the hands of Hahnemann himself, with Florence Nightingale or good Rebecca Taylor to care for me.

If I am right in maintaining that the presumption is always against the use of noxious agents in disease, and if any whom I might influence should adopt this as a principle of practice, they will often find themselves embarrassed by the imperative demand of patients and their friends for such agents where a case is not made out against this standing presumption. I must be permitted to say, that I think the French, a not wholly uncivilized people, are in advance of the English and ourselves in the art of prescribing for the sick without hurting them. And I do confess that I think their varied ptisans and syrups are as much preferable to the mineral regimen of bug-poison and ratsbane, so long in favor on the other side of the Channel, as their art of preparing food for the table to the rude cookery of those

hard-feeding and much-dosing islanders. We want a reorganized *cuisine* of invalidism perhaps as much as the culinary reform, for which our lyceum lecturers, and others who live much at hotels and taverns, are so urgent. Will you think I am disrespectful if I ask whether, even in Massachusetts, a dose of calomel is not sometimes given by a physician on the same principle as that upon which a landlord occasionally prescribes bacon and eggs, — because he cannot think of anything else quite so handy? I leave my suggestion of borrowing a hint from French practice to your mature consideration.

I may, however, call your attention, briefly, to the singular fact, that English and American practitioners are apt to accuse French *medical* practice of inertness, and French *surgical* practice of unnecessary activity. Thus, Dr. Bostock considers French medical treatment, with certain exceptions, as “decidedly less effective” than that of his own country.* Mr. S. Cooper, again, defends the simple British practice of procuring union by the first intention against the attacks of M. Roux and Baron Larrey.† We have

* Hist. of Med., in Cyc. of Prac. Med., Vol. I. p. 70.

† Cooper's Surg. Dict., Art. *Wounds*. Yet Mr. John Bell gives the French surgeons credit for introducing this doctrine of adhesion, and accuses O'Halloran of “rudeness and ignorance,” and “bold, uncivil language,” in disputing their teaching. — (*Princ. of Surgery*, Vol. I. p. 42.) Mr. Hunter succeeded at last in naturalizing the doctrine and practice, but even he had to struggle against the perpetual jealousy of rivals, and died at length assassinated by an insult.

often heard similar opinions maintained by our own countrymen. While Anglo-American criticism blows hot and cold on the two departments of French practice, it is not, I hope, indecent to question whether all the wisdom is necessarily with us in both cases.

Our art has had two or three lessons which have a deep meaning to those who are willing to read them honestly. The use of water-dressings in surgery completed the series of reforms by which was abolished the "coarse and cruel practice" of the older surgeons, who with their dressings and acrid balsams, their tents and leaden tubes, "absolutely delayed the cure." The doctrine of Broussais, transient as was its empire, reversed the practice of half of Christendom for a season, and taught its hasty disciples to shun their old favorite remedies as mortal poisons. This was not enough permanently to shift the presumption about drugs where it belonged, and so at last, just as the sympathetic powder and the Unguentum Armarium came in a superstitious age to kill out the abuses of external over-medication, the solemn farce of Homœopathy was enacted in the face of our own too credulous civilization, that under shelter of its pretences the "inward bruises" of over-drugged viscera might be allowed to heal by the first intention. Its lesson we must accept, whether we will or not; its follies we are tired of talking about. The security of the medical profession against this and all similar fancies, is in the aver-

age constitution of the human mind with regard to the laws of evidence.

My friends and brothers in Art! There is nothing to be feared from the utterance of any seeming heresy to which you may have listened. I cannot compromise your collective wisdom. If I have strained the truth one hair's breadth for the sake of an epigram or an antithesis, you are accustomed to count the normal pulse-beats of sound judgment, and know full well how to recognize the fever-throbs of conceit and the nervous palpitations of rhetoric.

The freedom with which each of us speaks his thought in this presence, belongs in part to the assured position of the Profession in our Commonwealth, to the attitude of Science, which is always fearless, and to the genius of the soil on which we stand, from which Nature withheld the fatal gift of malaria only to fill it with exhalations that breed the fever of inquiry in our blood and in our brain. But mainly we owe the large license of speech we enjoy to those influences and privileges common to us all as self-governing Americans.

This Republic is the chosen home of *minorities*, of the less power in the presence of the greater. It is a common error to speak of our distinction as consisting in the rule of the majority. Majorities, the greater material powers, have always ruled before. The history of most countries has been that of ma-

majorities, — mounted majorities, clad in iron, armed with death, treading down the tenfold more numerous minorities. In the old civilizations they root themselves like oaks in the soil; men must live in their shadow or cut them down. With us the majority is only the flower of the passing noon, and the minority is the bud which may open in the next morning's sun. We must be tolerant, for the thought which stammers on a single tongue to-day may organize itself in the growing consciousness of the time, and come back to us like the voice of the multitudinous waves of the ocean on the morrow.

Twenty-five years have passed since one of your honored Presidents spoke to this Society of certain limitations to the power of our Art, now very generally conceded. Some were troubled, some were almost angry, thinking the Profession might suffer from such concessions. It has certainly not suffered here; if, as some affirm, it has lost respect anywhere, it was probably for other, and no doubt sufficient reasons.

Since that time the civilization of this planet has changed hands. Strike out of existence at this moment every person who was breathing on that day, May 27th, 1835, and every institution of society, every art and every science would remain intact and complete in the living that would be left. Every idea the world then held has been since dissolved and recrystallized.

We are repeating the same process. Not to make silver shrines for our old divinities, even though by this craft we should have our wealth, was this Society organized and carried on by the good men and true who went before us. Not for this, but to melt the gold out of the past, though its dross should fly in dust to all the winds of heaven, to save all our old treasures of knowledge and mine deeply for new, to cultivate that mutual respect of which outward courtesy is the sign, to work together, to feel together, to take counsel together, and to stand together for the truth, now, always, here, everywhere ; for this our fathers instituted, and we accept, the offices and duties of this time-honored Society.

NOTES.

SOME passages contained in the original manuscript of the Address, and omitted in the delivery on account of its length, are restored in the text or incorporated with these Notes.

NOTE A. — (p. 21.)

There is good reason to doubt whether the nitrate of silver has any real efficacy in epilepsy. It has seemed to cure many cases, but epilepsy is a very uncertain disease, and there is hardly anything which has not been supposed to cure it. Dr. Copland cites many authorities in its favor, most especially Lombard's cases. But De la Berge and Monneret (*Comp. de Méd.*, Paris), 1839, analyze these same cases, eleven in number, and can only draw the inference of a very questionable value in the supposed remedy. Dr. James Jackson says that relief of epilepsy is not to be attained by any medicine with which he is acquainted, but by diet. (*Letters to a Young Physician*, p. 67.) Guy Patin, Dean of the Faculty of Paris, Professor at the Royal College, Author of the *Antimonial Martyrology*, a wit and a man of sense and learning, who died almost two hundred years ago, had come to the same conclusion, though the chemists of his time boasted of their remedies. "Did you ever see a case of epilepsy cured by nitrate of silver?" I said to one of the oldest and most experienced surgeons in this country. "Never," was his instant reply. Dr. Twitchell's experience was very similar. How, then, did nitrate of silver come to be given for epilepsy? Because, as

Dr. Martin has so well reminded us, lunatics were considered formerly to be under the special influence of Luna, the moon, (which Esquirol, be it observed, utterly denies,) and lunar caustic, or nitrate of silver, is a salt of that metal which was called luna from its whiteness, and of course must be in the closest relations with the moon. It follows beyond all reasonable question that the moon's metal, silver, and its preparations, must be the specific remedy for moon-blasted maniacs and epileptics!

Yet the practitioner who prescribes the nitrate of silver supposes he is guided by the solemn experience of the past, instead of by its idle fancies. He laughs at those old physicians who placed such confidence in the right hind hoof of an elk as a remedy for the same disease, and leaves the record of his own belief in a treatment quite as fanciful and far more objectionable, written in indelible ink upon a living tablet where he who runs may read it for a whole generation, if nature spares his walking advertisement so long.

NOTE B. — (p. 36.)

The *presumption* that a man is innocent until he is proved guilty, does not mean that there are no rogues, but lays the *onus probandi* on the party to which it properly belongs. So with this proposition. A noxious agent should never be employed in sickness unless there is ample evidence in the particular case to overcome the general presumption against all such agents, — and the evidence is very apt to be defective.

The miserable delusion of Homœopathy builds itself upon an axiom directly the opposite of this; namely, that the sick are to be cured by poisons. *Similia similibus curantur* means exactly this. It is simply a theory of universal poisoning, nullified in practice by the infinitesimal contrivance. The only way to kill it and all similar fancies, and to throw every quack nostrum into discredit, is to root out completely the suckers of the old rotten

superstition that whatever is odious or noxious is likely to be good for disease. The current of sound practice with ourselves is, I believe, setting fast in the direction I have indicated in the above proposition. To uphold the exhibition of noxious agents in disease, as the *rule*, instead of admitting them cautiously and reluctantly as the *exception*, is, as I think, an eddy of opinion in the direction of the barbarism out of which we believe our art is escaping. It is only through the enlightened sentiment and action of the Medical Profession that the community can be brought to acknowledge that drugs should "always be regarded as evils."

It is true that some suppose, and our scientific and thoughtful associate, Dr. Gould, has half countenanced the opinion, that there may yet be discovered a specific for every disease. Let us not despair of the future, but let us be moderate in our expectations. When an oil is discovered that will make a bad watch keep good time; when a recipe is given which will turn an acephalous fœtus into a promising child; when a man can enter the second time into his mother's womb and give her back the infirmities which twenty generations have stirred into her blood, and infused into his own through hers, we may be prepared to enlarge the National Pharmacopœia with a list of specifics for everything but old age,—and possibly for that also.

NOTE C. — (p. 39.)

The term specific is used here in its ordinary sense, without raising the question of the propriety of its application to these or other remedies.

The credit of introducing *Cinchona* rests between the Jesuits, the Countess of Chinchon, the Cardinal de Lugo, and Sir Robert Talbor, who employed it as a secret remedy. (Pereira.) *Mercury* as an internal specific remedy was brought into use by that "impudent and presumptuous quack," as he was considered, Paracelsus. (Encyc. Brit., Art. *Paracelsus*.) *Arsenic* was intro-

duced into England as a remedy for intermittents by Dr. Fowler, in consequence of the success of a patent medicine, the Tasteless Ague Drops, which were supposed, "probably with reason," to be a preparation of that mineral. (Rees's Cyc., Art. *Arsenic.*) *Colchicum* came into notice in a similar way, from the success of the *Eau Medicinale* of M. Husson, a French military officer. (Pereira.) Iodine was discovered by a saltpetre manufacturer, but applied by a physician in place of the old remedy, burnt sponge, which seems to owe its efficacy to it. (Dunglison, *New Remedies.*) As for *Sulphur*, "the common people have long used it as an ointment" for scabies. (Rees's Cyc., Art. *Scabies.*) The modern *antiscorbutic* regimen is credited to Captain Cook. "To his sagacity we are indebted for the first impulse to those regulations by which scorbutus is so successfully prevented in our navy." (Lond. Cyc. *Prac. Med.*, Art. *Scorbutus.*) *Iron* and various salts which enter into the normal composition of the human body do not belong to the *materia medica* by our definition, but to the *materia alimentaria*. For the first introduction of iron as a remedy, see Pereira, who gives a very curious old story.

The statement in the text concerning a portion of the *materia medica* stands exactly as delivered, and is meant exactly as it stands. No denunciation of drugs as sparingly employed by a wise physician, was or is intended. If, however, as Dr. Gould stated in his "valuable and practical discourse" to which the Massachusetts Medical Society "listened with profit as well as interest," "Drugs, in themselves considered, may always be regarded as evils," — any one who chooses may question whether the evils from their abuse are, on the whole, greater or less than the undoubted benefits obtained from their proper use. The large exception of *opium*, *wine*, *specifics*, and *anæsthetics*, made in the text, takes off enough from the useful side, as I fully believe, to turn the balance; so that a vessel containing none of these, but loaded with antimony, strychnine, acetate of lead, aloes,

aconite, lobelia, lapis infernalis, stercus diaboli, tormentilla, and other approved, and, in skilful hands, really useful remedies, brings, on the whole, more harm than good to the port it enters.

“It is a very narrow and unjust view of the practice of medicine, to suppose it to consist altogether in the use of powerful drugs, or of drugs of any kind. Far from it.” “The physician may do very much for the welfare of the sick, more than others can do, although he does not, even in the major part of cases, undertake to control and overcome the disease by art. It was with these views that I never reported any patient *cured* at our hospital. Those who recovered their health were reported as *well*, not implying that they were made so by the active treatment they had received there. But it was to be understood that all patients received in that house were to be cured, that is, taken care of.” (Letters to a Young Physician, by JAMES JACKSON, M.D., Boston, 1855.)

“Hygienic rules, properly enforced, fresh air, change of air, travel, attention to diet, good and appropriate food judiciously regulated, together with the administration of our tonics, porter, ale, wine, iron, etc., supply the diseased or impoverished system with what Mr. Gull, of St. Bartholomew’s Hospital, aptly calls ‘the raw material of the blood;’ and we believe that if any real improvement has taken place in medical practice, independently of those truly valuable contributions we have before described, it is in the substitution of tonics, stimulants, and general management, for drastic cathartics, for bleeding, depressing agents, including mercury, tartar emetics, &c., so much in vogue during the early part even of this century.”—(F. P. PORCHER, in *Charleston Med. Journal and Review*, for January, 1860.)

HOMŒOPATHY,
AND ITS KINDRED DELUSIONS:

TWO LECTURES

DELIVERED BEFORE THE

BOSTON SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE.

1842.

Καπνου σκιᾶς ὄναρ.

P R E F A C E .

WHEN a physician attempts to convince a person, who has fallen into the Homœopathic delusion, of the emptiness of its pretensions, he is often answered by a statement of cases in which its practitioners are thought to have effected wonderful cures. The main object of the first of these Lectures is to show, by abundant *facts*, that such statements, made by persons unacquainted with the fluctuations of disease and the fallacies of observation, are to be considered in general as of little or no value in establishing the truth of a medical doctrine, or the utility of a method of practice.

Those kind friends who suggest to a person suffering from a tedious complaint, that he "had better try Homœopathy," are apt to enforce their suggestion by adding, that "at any rate it can do no harm." This may or may not be true as regards the individual. But it always does very great harm to the community to encourage ignorance, error, or deception, in a profession which deals with the life and health of our fellow-creatures. Whether or not

those who countenance Homœopathy are guilty of this injustice towards others, the second of these Lectures may afford them some means of determining.

To deny that good effects may happen from the observance of diet and regimen when prescribed by Homœopathists as well as by others, would be very unfair to them. But to suppose that men with minds so constituted as to accept such statements and embrace such doctrines as make up the so-called science of Homœopathy, are more competent than others to regulate the circumstances which influence the human body in health and disease, would be judging very harshly the average capacity of ordinary practitioners.

To deny that some patients may have been actually benefited through the influence exerted upon their imaginations, would be to refuse to Homœopathy what all are willing to concede to every one of those numerous modes of practice known to all intelligent persons by an opprobrious title. So long as the body is affected through the mind, no audacious device, even of the most manifestly dishonest character, can fail of producing occasional good to those who yield it an implicit or even a partial faith. The argument founded on this occasional good, would be as applicable in justifying the counterfeiter and giving circulation to his base coin, on the ground that a spurious dollar had often relieved a poor man's necessities.

Homœopathy has come before our public at a period when the growing spirit of eclecticism has prepared many ingenious and honest minds to listen to all new doctrines with a candor liable to degenerate into weakness. It is not impossible that the pretended evolution of great and mysterious virtues from infinitely attenuated atoms, may have enticed a few over-refining philosophers, who have slid into a vague belief that matter subdivided grows less material, and approaches nearer to a spiritual nature as it requires a more powerful microscope for its detection.

However this may be, some persons seem disposed to take the ground of Menzel, that the Laity must pass formal judgment between the Physician and the Homœopathist, as it once did between Luther and the Romanists. The practitioner and the scholar must not therefore smile at the amount of time and labor expended in these Lectures upon this shadowy system ; which, in the calm and serious judgment of many of the wisest members of the medical profession, is not entitled by anything it has ever said or done to the notoriety of a public rebuke, still less to the honors of critical martyrdom.

LECTURE I.

I HAVE selected four topics for this lecture, the first three of which I shall touch but slightly, the last more fully. They are

1. The Royal cure of the King's Evil, or Scrofula.
2. The Weapon Ointment, and its twin absurdity, the Sympathetic Powder.
3. The Tar-water mania of Bishop Berkeley.
4. The History of the Metallic Tractors, or Perkinism.

The *first two* illustrate the ease with which numerous *facts* are accumulated to prove the most fanciful and senseless extravagances.

The *third* exhibits the entire insufficiency of exalted wisdom, immaculate honesty, and vast general acquirements to make a good physician of a great bishop.

The *fourth* shows us the intimate machinery of an extinct delusion, which flourished only forty years ago; drawn in all its details, as being a rich and comparatively recent illustration of the pretensions, the arguments, the patronage, by means of which

windy errors have long been, and will long continue to be, swollen into transient consequence. All display in superfluous abundance the boundless credulity and excitability of mankind upon subjects connected with medicine.

From the time of Edward the Confessor to Queen Anne, the monarchs of England were in the habit of touching those who were brought to them suffering with the scrofula, for the cure of that distemper. William the Third had good sense enough to discontinue the practice, but Anne resumed it, and, among her other patients, performed the royal operation upon a child, who, in spite of his disease, grew up at last into Samuel Johnson. After laying his hand upon the sufferers, it was customary for the monarch to hang a gold piece around the neck of each patient. Very strict precautions were adopted to prevent those who thought more of the golden angel hung round the neck by a white ribbon, than of relief for their bodily infirmities, from making too many calls, as they sometimes attempted to do. "According to the statement of the advocates and contemporaries of this remedy, none ever failed of receiving benefit unless their little faith and credulity starved their merits. Some are said to have been cured immediately on the very touch, others did not so easily get rid of their swellings, until they were touched a second time.

Several cases are related, of persons who had been blind for several weeks, and months, and obliged even to be led to Whitehall, yet recovered their sight immediately upon being touched, so as to walk away without any guide." *

So widely, at one period, was the belief diffused, that, in the course of twelve years, nearly a hundred thousand persons were touched by Charles the Second. Catholic divines, in disputes upon the orthodoxy of their church, did not deny that the power had descended to Protestant princes; — Dr. Harpsfield, in his Ecclesiastical History of England, admitted it, and, in Wiseman's words, "when Bishop *Tooker* would make use of this Argument to prove the Truth of our Church, Smitheus doth not thereupon go about to deny the Matter of fact; nay, both he and Cope acknowledge it." "I my self," says Wiseman, the best English surgical writer of his day, — "I my self have been a frequent Eye-witness of many hundreds of Cures performed by his Majesties Touch alone, without any assistance of Chirurgery; and those, many of them such as had tired out the endeavors of able Chirurgeons before they came hither. It were endless to recite what I myself have seen, and what I have received acknowledgments of by Letter, not only from the severall parts of this Nation, but also from *Ireland, Scotland, Jersey, Garn-*

* Edinburgh Medical and Surgical Journal, Vol. III. p. 103.

sey. It is needless also to remember what Miracles of this nature were performed by the very Bloud of his late Majesty of Blessed memory, after whose decollation by the inhumane Barbarity of the Regicides, the reliques of that were gathered on Chips and in Handkerchieffs by the pious Devotes, who could not but think so great a suffering in so honourable and pious a Cause, would be attended by an extraordinary assistance of God, and some more then ordinary miracle: nor did their Faith deceive them in this there point, being so many hundred that found the benefit of it.”*

Obstinate and incredulous men, as he tells us, accounted for these cures in three ways: by the journey and change of air the patients obtained in coming to London; by the influence of imagination; and the wearing of gold.

To these objections he answers,—1st. That many of those cured were inhabitants of the city. 2d. That the subjects of treatment were frequently infants. 3d. That sometimes silver was given, and sometimes nothing, yet the patients were cured.

A superstition resembling this probably exists at the present time in some ignorant districts of England and this country. A writer in a Medical Journal in the year 1807, speaks of a farmer in Devonshire, who, being a ninth son of a ninth son, is

* *Severall Chirurgicall Treatises.* London. 1676. p. 246.

thought endowed with healing powers like those of ancient royalty, — and who is accustomed one day in every week to *strike for the evil*.

I remember that one of my schoolmates told me, when a boy, of a seventh son of a seventh son, somewhere in Essex county, who touched for the scrofula, and who used to hang a silver fourpence halfpenny about the neck of those who came to him, which fourpence halfpenny it was solemnly affirmed became of a remarkably black color after having been some time worn, and that his own brother had been subjected to this extraordinary treatment; but I must add that my schoolmate drew a bow of remarkable length, strength, and toughness for his tender years.

One of the most curious examples of the fallacy of popular belief and the uncertainty of asserted facts in medical experience is to be found in the history of the UNGUENTUM ARMARIUM, or WEAPON OINTMENT.

Fabricius Hildanus, whose name is familiar to every surgical scholar, and Lord Bacon, who frequently dipped a little into medicine, are my principal authorities for the few circumstances I shall mention regarding it. The Weapon Ointment was a preparation used for the healing of wounds, but instead of its being applied to them, the injured part was washed and bandaged, and the weapon with which the wound was inflicted was carefully anointed with the un-

guent. Empirics, ignorant barbers, and men of that sort, are said to have especially employed it. Still there were not wanting some among the more respectable members of the medical profession who supported its claims. The composition of this ointment was complicated, in the different formulæ given by different authorities; but some substances addressed to the imagination, rather than the wound or weapon, entered into all. Such were portions of mummy, of human blood, and of moss from the skull of a thief hung in chains.

Hildanus was a wise and learned man, one of the best surgeons of his time. He was fully aware that a part of the real secret of the Unguentum Armarium consisted in the washing and bandaging the wound and then letting it alone. But he could not resist the solemn assertions respecting its efficacy; he gave way before the outcry of *facts*, and therefore, instead of denying all their pretensions, he admitted and tried to account for them upon supernatural grounds. As the virtue of those applications, he says, which are made to the weapon cannot reach the wound, and as they can produce no effect without contact, it follows, of necessity, that the Devil must have a hand in the business; and as he is by far the most long-headed and experienced of practitioners, he cannot find this a matter of any great difficulty. Hildanus himself reports, in detail, the case of a lady who had received a moderate wound, for which the Unguen-

tum Armarium was employed without the slightest use. Yet instead of receiving this flat case of failure as any evidence against the remedy, he accounts for its not succeeding by the devout character of the lady, and her freedom from that superstitious and over-imaginative tendency which the Devil requires in those who are to be benefited by his devices.

Lord Bacon speaks of the Weapon Ointment, in his Natural History, as having in its favor the testimony of men of credit, though, in his own language, he himself "as yet is not fully inclined to believe it." His remarks upon the asserted facts respecting it show a mixture of wise suspicion and partial belief. He does not like the precise directions given as to the circumstances under which the animals from which some of the materials were obtained were to be killed; for he thought it looked like a provision for an excuse in case of failure, by laying the fault to the omission of some of these circumstances. But he likes well that "they do not observe the confecting of the Ointment under any certain *constellation*; which is commonly the excuse of *magical medicines*, when they fail, that they were not made under a fit figure of heaven."* It was pretended that if the offending weapon could not be had, it would serve the purpose to anoint a wooden one made like it.

* This was a mistake, however, since the two recipes given by Hil-danus are both very explicit as to the aspect of the heavens required for different stages of the process.

“This,” says Bacon, “I should doubt to be a device to keep this strange form of cure in request and use; because many times you cannot come by the weapon itself.” And in closing his remarks on the statements of the advocates of the ointment, he says, “Lastly, it will cure a beast as well as a man, which I like best of all the rest, because it subjecteth the matter to an easy trial.” It is worth remembering, that more than two hundred years ago, when an absurd and fantastic remedy was asserted to possess wonderful power, and when sensible persons ascribed its pretended influence to imagination, it was boldly answered that the cure took place when the wounded party did not know of the application made to the weapon, and even when a brute animal was the subject of the experiment, and that this assertion, lie as we all know it was, came in such a shape as to shake the incredulity of the keenest thinker of his time. The very same assertion has been since repeated in favor of Perkinism, and, since that, of Homœopathy.

The same essential idea as that of the Weapon Ointment reproduced itself in the still more famous SYMPATHETIC POWDER. This Powder was said to have the faculty, if applied to the blood-stained garments of a wounded person, to cure his injuries, even though he were at a great distance at the time. A friar, returning from the East, brought the recipe to Europe somewhat before the middle of the seven-

teenth century. The Grand Duke of Florence, in which city the friar was residing, heard of his cures, and tried, but without success, to obtain his secret. Sir Kenelm Digby, an Englishman well known to fame, was fortunate enough to do him a favor, which wrought upon his feelings and induced him to impart to his benefactor the composition of his extraordinary Powder. This English knight was at different periods of his life an admiral, a theologian, a critic, a metaphysician, a politician, and a disciple of Alchemy. As is not unfrequent with versatile and inflammable people, he caught fire at the first spark of a new medical discovery, and no sooner got home to England than he began to spread the conflagration.

“An opportunity soon offered itself to try the powers of the famous Powder. Mr. J. Howel, having been wounded in endeavoring to part two of his friends who were fighting a duel, submitted himself to a trial of the Sympathetic Powder. Four days after he received his wounds, Sir Kenelm dipped one of Mr. Howel’s garters in a solution of the Powder, and immediately, it is said, the wounds, which were very painful, grew easy, although the patient, who was conversing in a corner of the chamber, had not the least idea of what was doing with his garter. He then returned home, leaving his garter in the hands of Sir Kenelm, who had hung it up to dry, when Mr. Howel sent his servant in a great hurry to tell him that his wounds were paining him horri-

bly ; the garter was therefore replaced in the solution of the Powder, and the patient got well after five or six days of its continued immersion."

"King James First, his son Charles the First, the Duke of Buckingham, then prime minister, and all the principal personages of the time, were cognizant of this fact ; and James himself, being curious to know the secret of this remedy, asked it of Sir Kenelm, who revealed it to him, and his Majesty had the opportunity of making several trials of its efficacy, which all succeeded in a surprising manner." *

The king's physician, Dr. Mayenne, was made master of the secret, which he carried to France and communicated to the Duke of Mayerne, who performed many cures by means of it, and taught it to his surgeon, who, after the duke's death, sold it to many distinguished persons, by whose agency it soon ceased to be a secret. What was this wonderful substance which so astonished kings, princes, dukes, knights, and doctors? Nothing but powdered blue vitriol. But it was made to undergo several processes that conferred on it extraordinary virtues. Twice or thrice it was to be dissolved, filtered, and crystallized. The crystals were to be laid in the sun during the months of June, July, and August, taking care to turn them carefully that all should be exposed. Then they were to be powdered, triturated, and again exposed to the sun,

* Dict. des Sciences Médicales.

again reduced to a very fine powder, and secured in a vessel, while hot, from the sunshine. If there seem anything remarkable in the fact of such astonishing properties being developed by this process, it must be from our short-sightedness, for common salt and charcoal develop powers quite as marvellous after a certain number of thumps, stirs, and shakes, from the hands of modern workers of miracles. In fact the Unguentum Armarium and Sympathetic Powder resemble some more recent prescriptions; the latter consisting in an infinite dilution of the common dose in which remedies are given, and the two former in an infinite dilution of the common distance at which they are applied.

Whether philosophers, and more especially metaphysicians, have any peculiar tendency to dabble in drugs and dose themselves with physic, is a question which might suggest itself to the reader of their biographies.

When Bishop Berkeley visited the illustrious Malebranche at Paris, he found him in his cell, cooking in a small pipkin a medicine for an inflammation of the lungs, from which he was suffering; and the disease being unfortunately aggravated by the vehemence of their discussion, or the contents of the pipkin, carried him off in the course of a few days. Berkeley himself afforded a remarkable illustration

of a truth which has long been known to the members of one of the learned professions, namely, that no amount of talent or of acquirements in other departments, can rescue from lamentable folly those who, without something of the requisite preparation, undertake to experiment with nostrums upon themselves and their neighbors. The exalted character of Berkeley is thus drawn by Sir James Mackintosh: "Ancient learning, exact science, polished society, modern literature, and the fine arts, contributed to adorn and enrich the mind of this accomplished man. All his contemporaries agreed with the satirist in ascribing

" 'To Berkeley every virtue under heaven.' "

"Even the discerning, fastidious, and turbulent Atterbury said, after an interview with him, 'So much understanding, so much knowledge, so much innocence, and such humility, I did not think had been the portion of any but angels, till I saw this gentleman.' "

But among the writings of this great and good man is an Essay of the most curious character, illustrating his weakness upon the point in question, and entitled, "Siris, a Chain of Philosophical Reflections and Inquiries concerning the Virtues of TAR WATER, and divers other Subjects," — an essay which begins with a recipe for his favorite fluid, and slides by gentle gradations into an examination

of the sublimest doctrines of Plato. To show how far a man of honesty and benevolence, and with a mind of singular acuteness and depth, may be run away with by a favorite notion on a subject his habits and education do not fit him to investigate, I shall give a short account of this Essay, merely stating that as all the supposed virtues of Tar Water, made public in successive editions of his treatise by so illustrious an author, have not saved it from neglect and disgrace, it may be fairly assumed that they were mainly imaginary.

The bishop, as is usual in such cases, speaks of himself as indispensably obliged, by the duty he owes to mankind, to make his experience public. Now this was by no means evident, nor does it follow in general, that because a man has formed a favorable opinion of a person or a thing he has not the proper means of thoroughly understanding, he shall be bound to print it, and thus give currency to his impressions, which may be erroneous, and therefore injurious. He would have done much better to have laid his impressions before some experienced physicians and surgeons, such as Dr. Mead and Mr. Cheselden, to have asked them to try his experiment over again, and have been guided by their answers. But the good bishop got excited; he pleased himself with the thought that he had discovered a great panacea; and having once tasted the bewitching cup of self-quackery, like many be-

fore and since his time, he was so infatuated with the draught, that he would insist on pouring it down the throats of his neighbors and all mankind.

The precious fluid was made by stirring a gallon of water with a quart of tar, leaving it forty-eight hours, and pouring off the clear water. Such was the specific which the great metaphysician recommended for averting and curing all manner of diseases. It was, if he might be believed, a preventive of the small-pox, and of great use in the course of the disease. It was a cure for impurities of the blood, coughs, pleurisy, peripneumony, erysipelas, asthma, indigestion, cachexia, hysterics, dropsy, mortification, scurvy, and hypochondria. It was of great use in gout and fevers, and was an excellent preservative of the teeth and gums; answered all the purpose of Elixir Proprietatis, Stoughton's drops, diet drinks, and mineral waters; was particularly to be recommended to sea-faring persons, ladies, and men of studious and sedentary lives; could never be taken too long, but, on the contrary, produced advantages which sometimes did not begin to show themselves for two or three months.

“From my representing Tar Water as good for so many things,” says Berkeley, “some perhaps may conclude it is good for nothing. But charity obligeth me to say what I know, and what I think, howsoever it may be taken. Men may censure and object as they please, but I appeal to time and ex-

periment. Effects misimputed, cases wrong told, circumstances overlooked, perhaps, too, prejudices and partialities against truth, may for a time prevail and keep her at the bottom of her well, from whence nevertheless she emergeth sooner or later, and strikes the eyes of all who do not keep them shut." I cannot resist the temptation of illustrating the bishop's belief in the wonderful powers of his remedy, by a few sentences from different parts of his essay. "The hardness of stubbed vulgar constitutions renders them insensible of a thousand things that fret and gall those delicate people, who, as if their skin was peeled off, feel to the quick everything that touches them. The tender nerves and low spirits of such poor creatures would be much relieved by the use of Tar Water, which might prolong and cheer their lives." "It [the Tar Water] may be made stronger for brute beasts, as horses, in whose disorders I have found it very useful." "This same water will also give charitable relief to the ladies, who often want it more than the parish poor; being many of them never able to make a good meal, and sitting pale, puny, and forbidden, like ghosts, at their own table, victims of vapors and indigestion." It does not appear among the virtues of Tar Water that "children cried for it," as for some of our modern remedies, but the bishop says, "I have known children take it for above six months together with great benefit, and without any incon-

venience ; and after long and repeated experience I do esteem it a most excellent diet drink, fitted to all seasons and ages." After mentioning its usefulness in febrile complaints, he says: "I have had all this confirmed by my own experience in the late sickly season of the year one thousand seven hundred and forty-one, having had twenty-five fevers in my own family cured by this medicinal water, drunk copiously." And to finish these extracts with a most important suggestion for the improvement of the British nation: "It is much to be lamented that our Insulars, who act and think so much for themselves, should yet, from grossness of air and diet, grow stupid or doat sooner than other people, who, by virtue of elastic air, water-drinking, and light food, preserve their faculties to extreme old age; an advantage which may perhaps be approached, if not equalled, even in these regions, by Tar Water, temperance, and early hours."

Berkeley died at the age of about seventy; he might have lived longer, but his fatal illness was so sudden that there was not time enough to stir up a quart of the panacea. He was an illustrious man, but he held two very odd opinions; that tar water was everything, and that the whole material universe was nothing.

Most of those present have at some time in their

lives heard mention made of the METALLIC TRACTORS, invented by one Dr. Perkins, an American, and formerly enjoying great repute for the cure of various diseases. Many have seen or heard of a satirical poem, written by one of our own countrymen also, about forty years since, and called "Terrible Tractoration." The Metallic Tractors are now so utterly abandoned, that I have only by good fortune fallen upon a single one of a pair, to show for the sake of illustration. For more than thirty years this great discovery, which was to banish at least half the evils which afflict humanity, has been sleeping undisturbed in the grave of oblivion. Not a voice has, for this long period, been raised in its favor; its noble and learned patrons, its public institutions, its eloquent advocates, its brilliant promises are all covered with the dust of silent neglect; and of the generation which has sprung up since the period when it flourished, very few know anything of its history, and hardly even the title which in its palmy days it bore of PERKINISM. Taking it as settled, then, as no one appears to answer for it, that Perkinism is entirely dead and gone, that both in public and private, officially and individually, its former adherents even allow it to be absolutely defunct, I select it for anatomical examination. If this pretended discovery was made public; if it was long kept before the public; if it was addressed to the people of different countries; if it was formally

investigated by scientific men, and systematically adopted by benevolent persons, who did everything in their power to diffuse the knowledge and practice of it; if various collateral motives, such as interest and vanity, were embarked in its cause; if, notwithstanding all these things, it gradually sickened and died; then the conclusion seems a fair one, that it did not deserve to live. Contrasting its failure with its high pretensions, it is fair to call it an imposition; whether an express fraudulent contrivance or not, some might be ready to question. Everything historically shown to have happened concerning the mode of promulgation, the wide diffusion, the apparent success of this delusion, the respectability and enthusiasm of its advocates, is of great interest in showing to what extent and by what means a considerable part of the community may be led into the belief of that which is to be eventually considered as an idle folly. If there is any existing folly, fraudulent or innocent in its origin, which appeals to certain arguments for its support; provided that the very same arguments can be shown to have been used for Perkinism with as good reason, they will at once fall to the ground. Still more, if it shall appear that the general course of any existing delusion bears a strong resemblance to that of Perkinism, that the former is most frequently advocated by the same class of persons who were conspicuous in behalf of the latter, and treated

with contempt or opposed by the same kind of persons who thus treated Perkinism; if the facts in favor of both have a similar aspect; if the motives of their originators and propagators may be presumed to have been similar; then there is every reason to suppose that the existing folly will follow in the footsteps of the past, and after displaying a given amount of cunning and credulity in those deceiving and deceived, will drop from the public view like a fruit which has ripened into spontaneous rottenness, and be succeeded by the fresh bloom of some other delusion required by the same excitable portion of the community.

Dr. Elisha Perkins was born at Norwich, Connecticut, in the year 1740. He had practised his profession with a good local reputation for many years, when he fell upon a course of experiments, as it is related, which led to his great discovery. He conceived the idea that metallic substances might have the effect of removing diseases, if applied in a certain manner; a notion probably suggested by the then recent experiments of Galvani, in which muscular contractions were found to be produced by the contact of two metals with the living fibre. It was in 1796 that his discovery was promulgated in the shape of the *Metallic Tractors*, two pieces of metal, one apparently iron and the other brass, about three inches long, blunt at one end and pointed at the other. These instruments were applied for the cure

of different complaints, as rheumatism, local pains, inflammations, and even tumors, by drawing them over the affected part very lightly for about twenty minutes. Dr. Perkins took out a patent for his discovery, and travelled about the country to diffuse the new practice. He soon found numerous advocates of his discovery, many of them of high standing and influence. In the year 1798, the tractors had crossed the Atlantic, and were publicly employed in the Royal Hospital at Copenhagen. About the same time the son of the inventor, Mr. Benjamin Douglass Perkins, carried them to London, where they soon attracted attention. The Danish physicians published an account of their cases, containing numerous instances of alleged success, in a respectable octavo volume. In the year 1804, an establishment, honored with the name of the Perkeinean Institution, was founded in London. The transactions of this institution were published in pamphlets, the Perkeinean Society had public dinners at the Crown and Anchor, and a poet celebrated their medical triumph in strains like these : —

“ See, *pointed metals*, blest with power t’ appease
The ruthless rage of merciless disease,
O’er the frail part a subtle fluid pour,
Drenched with invisible Galvanic shower,
Till the arthritic staff and crutch forego,
And leap exulting like the bounding roe !”

While all these things were going on, Mr. Benja-

min Douglass Perkins was calmly pocketing money, so that after some half a dozen years he left the country with more than ten thousand pounds, which had been paid him by the believers in Great Britain. But in spite of all this success, and the number of those interested and committed in its behalf, Perkinism soon began to decline, and in 1811 the Tractors are spoken of by an intelligent writer as being almost forgotten. Such was the origin and duration of this doctrine and practice, into the history of which we will now look a little more narrowly.

Let us see, then, by whose agency this delusion was established and kept up; whether it was principally by those who were accustomed to medical pursuits, or those whose habits and modes of reasoning were different; whether it was with the approbation of those learned bodies usually supposed to take an interest in scientific discoveries, or only of individuals whose claims to distinction were founded upon their position in society, or political station, or literary eminence; whether the judicious or excitable classes gave most deeply into it; whether, in short, the scientific men of that time were deceived, or only intruded upon, and shouted down for the moment by persons who had no particular call to invade their precincts.

Not much, perhaps, was to be expected of the Medical Profession in the way of encouragement. One Dr. Fuller, who wrote in England, himself a

Perkinist, thus expressed his opinion: "It must be an *extraordinary* exertion of virtue and humanity for a medical man, whose livelihood depends either on the sale of drugs, or on receiving a guinea for writing a prescription, which must relate to those drugs, to say to his patient, 'You had better purchase a set of Tractors to keep in your family; they will cure you without the expense of my attendance, or the danger of the common medical practice.' For very obvious reasons medical men must *never* be expected to recommend the use of Perkinism. The Tractors must trust for their patronage to the enlightened and philanthropic out of the profession, or to medical men retired from practice, and who know of no other *interest* than the luxury of relieving the distressed. And I do not despair of seeing the day, when but very few of this description as well as private families will be without them."

Whether the motives assigned by this medical man to his professional brethren existed or not, it is true that Dr. Perkins did not gain a great deal at their hands. The Connecticut Medical Society expelled him in 1797 for violating their law against the use of *nostrums*, or secret remedies. The leading English physicians appear to have looked on with singular apathy or contempt at the miracles which it was pretended were enacting in the hands of the apostles of the new practice. In looking over the reviews of the time, I have found little beyond brief occasional

notices of their pretensions ; the columns of these journals being occupied with subjects of more permanent interest. The state of things in London is best learned, however, from the satirical poem to which I have already alluded as having been written at the period referred to. This was entitled, "Terrible Traactoration!! A Poetical Petition against Galvanizing Trumpery and the Perkinistic Institution. Most respectfully addressed to the Royal College of Physicians, by Christopher Caustic, M. D., LL. D., A. S. S., Fellow of the Royal College of Physicians, Aberdeen, and Honorary Member of no less than nineteen very learned Societies." Two editions of this work were published in London in the years 1803 and 1804, and one or two have been published in this country.

"Terrible Traactoration" is supposed, by those who never read it, to be a satire upon the follies of Perkins and his followers. It is, on the contrary, a most zealous defence of Perkinism, and a fierce attack upon its opponents, most especially upon such of the medical profession as treated the subject with neglect or ridicule. The Royal College of Physicians was the more peculiar object of the attack, but with this body, the editors of some of the leading periodicals, and several physicians distinguished at that time, and even now remembered for their services to science and humanity, were involved in unsparing denunciations. The work is by no means of the simply

humorous character it might be supposed, but is overloaded with notes of the most seriously polemical nature. Much of the history of the subject, indeed, is to be looked for in this volume.

It appears from this work that the principal members of the medical profession, so far from hailing Mr. Benjamin Douglass Perkins as another Harvey or Jenner, looked very coldly upon him and his Tractors; and it is now evident that, though they were much abused for so doing, they knew very well what they had to deal with, and were altogether in the right. The delusion at last attracted such an amount of attention as to induce Dr. Haygarth and some others of respectable standing to institute some experiments which I shall mention in their proper place, the result of which might have seemed sufficient to show the emptiness of the whole contrivance.

The Royal Society, that learned body which for ages has constituted the best tribunal to which Britain can appeal in questions of science, accepted Mr. Perkins's Tractors and the book written about them, passed the customary vote of thanks, and never thought of troubling itself further in the investigation of pretensions of such an aspect. It is not to be denied that a considerable number of physicians did avow themselves advocates of the new practice; but out of the whole catalogue of those who were publicly proclaimed as such, no one has ever been

known, so far as I am aware, to the scientific world, except in connection with the short-lived notoriety of Perkinism. Who were the people, then, to whose activity, influence, or standing with the community was owing all the temporary excitement produced by the Metallic Tractors?

First, those persons who had been induced to purchase a pair of Tractors. These little bits of brass and iron, the intrinsic value of which might, perhaps, amount to ninepence, were sold at five guineas a pair! A man who has paid twenty-five dollars for his whistle is apt to blow it louder and longer than other people. So it appeared that when the "Perkinean Society" applied to the possessors of Tractors in the metropolis to concur in the establishment of a public institution for the use of these instruments upon the poor, "it was found that only five out of above a hundred objected to subscribe, on account of their want of confidence in the efficacy of the practice; and these," the committee observes, "there is reason to believe, never gave them a fair trial, probably never used them in more than one case, and that perhaps a case in which the Tractors had never been recommended as serviceable." "Purchasers of the Tractors," said one of their ardent advocates, "would be among the last to approve of them if they had reason to suppose themselves defrauded of five guineas." He forgot poor Moses, with his "gross of green spectacles, with silver rims and shagreen cases." "Dear

mother," cried the boy, "why won't you listen to reason? I had them a dead bargain, or I should not have bought them. The silver rims alone will sell for double the money."

But it is an undeniable fact, that many persons of considerable standing, and in some instances holding the most elevated positions in society, openly patronized the new practice. In a translation of a work entitled "Experiments with the Metallic Tractors," originally published in Danish, thence rendered successively into German and English, Mr. Benjamin Perkins, who edited the English edition, has given a copious enumeration of the distinguished individuals, both in America and Europe, whose patronage he enjoyed. He goes so far as to signify that ROYALTY itself was to be included among the number. When the Perkinian Institution was founded, no less a person than Lord Rivers was elected President, and eleven other individuals of distinction, among them Governor Franklin, son of Dr. Franklin, figured as Vice-Presidents. Lord Henniker, a member of the Royal Society, who is spoken of as a man of judgment and talents, condescended to patronize the astonishing discovery, and at different times bought three pairs of Tractors. When the Tractors were introduced into Europe, a large number of testimonials accompanied them from various distinguished characters in America, the list of whom is given in the translation of the Danish work referred to, as follows :

“Those who have individually stated cases, or who have presented their names to the public as men who approved of this remedy, and acknowledged themselves instrumental in circulating the Tractors, are fifty-six in number; thirty-four of whom are physicians and surgeons, and many of them of the first eminence, thirteen clergymen, most of whom are doctors of divinity, and connected with the literary institutions of America; among the remainder are two members of Congress, one professor of natural philosophy in a college, &c., &c.” It seemed to be taken rather hardly by Mr. Perkins that the translators of the work which he edited, in citing the names of the advocates of the Metallic Practice, frequently omitted the honorary titles which should have been annexed. The testimonials were obtained by the Danish writer, from a pamphlet published in America, in which these titles were given in full. Thus one of these testimonials is from “John Tyler, Esq., a magistrate in the county of New London, and late Brigadier-General of the militia in that State.” The “omission of the General’s title” is the subject of complaint, as if this title were sufficient evidence of the commanding powers of one of the patrons of tractoration. A similar complaint is made when “Calvin Goddard, Esq., of Plainfield, Attorney at Law, and a member of the Legislature of the State of Connecticut,” is mentioned without his titular honors, and even on account of the omission of the

proper official titles belonging to "Nathan Pierce, Esq., Governor and Manager of the Almshouse of Newburyport." These instances show the great importance to be attached to civil and military dignities, in qualifying their holders to judge of scientific subjects, a truth which has not been overlooked by the legitimate successors of the Perkinists. In Great Britain, the Tractors were not less honored than in America, by the learned and the illustrious. The "Perkinistic Committee" made this statement in their report: "Mr. Perkins has annually laid before the public a large collection of new cases communicated to him for that purpose by disinterested and intelligent characters, from almost every quarter of Great Britain. In regard to the competency of these vouchers, it will be sufficient simply to state that, amongst others whose names have been attached to their communications, are eight professors in four different universities, twenty-one regular Physicians, nineteen Surgeons, thirty Clergymen, twelve of whom are Doctors of Divinity, and numerous other characters of equal respectability."

It cannot but excite our notice and surprise that the number of *clergymen* both in America and Great Britain who thrust forward their evidence on this medical topic was singularly large in proportion to that of the members of the medical profession. Whole pages are contributed by such worthies as the Rev. Dr. Trotter of Hans Place, the Rev. War-

ing Willett, Chaplain to the Earl of Dunmore, the Rev. Dr. Clarke, Chaplain to the Prince of Wales. The style of these theologico-medical communications may be seen in the following from a divine who was also professor in one of the colleges of New England. "I have used the Tractors with success in several other cases in my own family, and although, like Naaman the Syrian, I cannot tell why the waters of Jordan should be better than Abana and Pharpar, rivers of Damascus; yet since experience has proved them so, no reasoning can change the opinion. Indeed the causes of all common facts are, we think, perfectly well known to us; and it is very probable, fifty or a hundred years hence, we shall as well know why the Metallic Tractors should in a few minutes remove violent pains, as we now know why cantharides and opium will produce opposite effects, namely, we shall know very little about either excepting facts." Fifty or a hundred years hence! if he could have looked forward forty years, he would have seen the descendants of the "Perkinistic" philosophers swallowing infinitesimal globules, and knowing and caring as much about the Tractors as the people at Saratoga Springs do about the waters of Abana and Pharpar.

I trust it will not be thought in any degree disrespectful to a profession which we all honor, that I have mentioned the great zeal of many clergymen in the cause of Perkinism. I hope, too, that I may

without offence suggest the causes which have often led them out of their own province into one to which their education has no special reference. The members of that profession ought to be, and commonly are, persons of benevolent character. Their duties carry them into the midst of families, and particularly at times when the members of them are suffering from bodily illness. It is natural enough that a strong desire should be excited to alleviate sufferings which may have defied the efforts of professional skill ; as natural that any remedy which recommends itself to the belief or the fancy of the spiritual physician should be applied with the hope of benefit ; and perfectly certain that the weakness of human nature, from which no profession is exempt, will lead him to take the most flattering view of its effects upon the patient ; his own sagacity and judgment being staked upon the success of the trial. The inventor of the Tractors was aware of these truths. He therefore sent the Tractors gratuitously to many clergymen, accompanied with a formal certificate that the holder had become entitled to their possession by the payment of five guineas. This was practised in our own neighborhood, and I remember finding one of these certificates, so presented, which proved that among the risks of infancy I had to encounter Perkins's Tractors. Two clergymen of Boston and the vicinity, both well known to local fame, gave in their testimony to the value of the instru-

ments thus presented to them ; an unusually moderate proportion, when it is remembered that to the common motives of which I have spoken was added the seduction of a gift for which the profane public was expected to pay so largely.

It was remarkable, also, that Perkinism, which had so little success with the medical and scientific part of the community, found great favor in the eyes of its more lovely and less obstinate portion. "The lady of Major Oxholm," — I quote from Mr. Perkins's volume, — "having been lately in America, had seen and heard much of the great effects of Perkinism. Influenced by a most benevolent disposition, she brought these Tractors and the pamphlet with her to Europe, with a laudable desire of extending their utility to her suffering countrymen." Such was the channel by which the Tractors were conveyed to Denmark, where they soon became the ruling passion. The workmen, says a French writer, could not manufacture them fast enough. Women carried them about their persons, and delighted in bringing them into general use. To what extent the Tractors were favored with the patronage of English and American ladies, it is of course not easy to say, except on general principles, as their names were not brought before the public. But one of Dr. Haygarth's stories may lead us to conjecture that there was a class of female practitioners who went about doing good with the Tractors in England as well as in Denmark. A

certain lady had the misfortune to have a spot as big as a silver penny at the corner of her eye, caused by a bruise, or some such injury. Another lady, who was a friend of hers, and a strong believer in Perkinism, was very anxious to try the effects of tractoration upon this unfortunate blemish. The patient consented ; the lady “ produced the instruments, and, after drawing them four or five times over the spot, declared that it changed to a paler color, and on repeating the use of them a few minutes longer, that it had almost vanished, and was scarcely visible, and departed in high triumph at her success.” The lady who underwent the operation assured the narrator “ that she looked in the glass immediately after, and that not the least visible alteration had taken place.”

It would be a very interesting question, what was the intellectual character of those persons most conspicuous in behalf of the Perkinistic delusion? Such an inquiry might bring to light some principles which we could hereafter apply to the study of other popular errors. But the obscurity into which nearly all these enthusiasts have subsided renders the question easier to ask than to answer. I believe it would have been found that most of these persons were of ardent temperament and of considerable imagination, and that their history would show that Perkinism was not the first nor the last hobby-horse they rode furiously. Many of them

may very probably have been persons of more than common talent, of active and ingenious minds, of versatile powers and various acquirements. Such, for instance, was the estimable man to whom I have repeatedly referred as a warm defender of tractoration, and a bitter assailant of its enemies. The story tells itself in the biographical preface to his poem. He went to London with the view of introducing a hydraulic machine, which he and his Vermont friends regarded as a very important invention. He found, however, that the machine was already in common use in that metropolis. A brother Yankee, then in London, had started the project of a mill, which was to be carried by the water of the Thames. He was sanguine enough to purchase one fifth of this concern, which also proved a failure. At about the same period he wrote the work which proved the great excitement of his mind upon the subject of the transient folly then before the public. Originally a lawyer, he was in succession a mechanic, a poet, and an editor, meeting with far less success in each of these departments than usually attends men of less varied gifts, but of more tranquil and phlegmatic composition. But who is ignorant that there is a class of minds characterized by qualities like those I have mentioned; minds with many bright and even beautiful traits; but aimless and fickle as the butterfly; that settle upon every gayly-colored illusion as it

opens into flower, and flutter away to another when the first has dropped its leaves, and stands naked in the icy air of truth!

Let us now look at the general tenor of the arguments addressed by believers to sceptics and opponents. Foremost of all, emblazoned at the head of every column, loudest shouted by every triumphant disputant, held up as paramount to all other considerations, stretched like an impenetrable shield to protect the weakest advocate of the great cause against the weapons of the adversary, was that omnipotent monosyllable, which has been the patrimony of cheats and the currency of dupes from time immemorial, — Facts! Facts! Facts! First came the published cases of the American clergymen, brigadier-generals, almshouse governors, representatives, attorneys, and esquires. Then came the published cases of the surgeons of Copenhagen. Then followed reports of about one hundred and fifty cases published in England, “demonstrating the efficacy of the metallic practice in a variety of complaints both upon the human body and on horses, &c.” But the progress of *facts* in Great Britain did not stop here. Let those who rely upon the numbers of their testimonials as being alone sufficient to prove the soundness and stability of a medical novelty, digest the following from the report of the Perkinistic Committee. “The cases published [in Great Britain] amounted, in

March last, the date of Mr. Perkins's last publication, to about five thousand. Supposing that not more than one cure in three hundred which the Tractors have performed has been published, and the proportion is probably much greater, it will be seen that the number, to March last, will have exceeded one million five hundred thousand!"

Next in order, after the appeal to what were called *facts*, came a series of arguments, which have been so long bruised and battered round in the cause of every doctrine or pretension, new, monstrous, or deliriously impossible, that each of them is as odiously familiar to the scientific scholar as the faces of so many old acquaintances among the less reputable classes, to the officers of police.

No doubt many of my hearers will recognize in the following passages, arguments they may have heard brought forward with triumphant confidence, in behalf of some doctrine not yet extinct. No doubt some may have honestly thought they proved something; may have used them with the purpose of convincing their friends, or of silencing the opponents of their favorite doctrine, whatever that might be. But any train of arguments which was contrived for Perkinism, which was just as applicable to it as to any other new doctrine in the same branch of science, and which was fully employed against its adversaries forty years since, might, in common charity, be suffered to slumber in the grave

of Perkinism. Whether or not the following sentences, taken literally from the work of Mr. Perkins, were the originals of some of the idle propositions we hear bandied about from time to time, let those who listen judge.

The following is the test assumed for the new practice: "If diseases are really removed, as those persons who have practised extensively with the Tractors declare, it should seem there would be but little doubt of their being generally adopted; but if the numerous reports of their efficacy which have been published are forgeries, or are unfounded, the practice ought to be crushed." To this I merely add, it has been crushed.

The following sentence applies to that *à priori* judging and uncandid class of individuals who buy their dinners without tasting all the food there is in the market. "On all discoveries there are persons who, without descending to any inquiry into the truth, pretend to know, as it were by *intuition*, that newly asserted facts are founded in the grossest errors. These were those who *knew* that Harvey's report of the circulation of the blood was a preposterous and ridiculous suggestion, and in latter [later] days there were others who knew that Franklin deserved reproach for declaring that points were preferable to balls for protecting buildings from lightning."

Again: "This unwarrantable mode of offering

assertion for *proof*, so unauthorized and even unprecedented except in the condemnation of a Galileo, the persecution of a Copernicus, and a few other acts of inquisitorial authority, in the times of ignorance and superstition, affords but a lamentable instance of one of his remarks, that this is far from being the Age of Reason."

"The most valuable medicines in the *Materia Medica* act on principles of which we are totally ignorant. None have ever yet been able to explain how opium produces sleep, or how bark cures intermittent fevers; and yet few, it is hoped, will be so absurd as to desist from the use of these important articles because they know nothing of the principle of their operations." Or if the argument is preferred, in the eloquent language of the Perkinistic poet:—

"What though the CAUSES may not be explained,
Since these EFFECTS are duly ascertained,
Let not self-interest, prejudice, or pride,
Induce mankind to set the means aside;
Means which, though simple, are by Heaven designed
T' alleviate the woes of human kind."

This course of argument is so often employed, that it deserves to be expanded a little, so that its length and breadth may be fairly seen. A series of what are called facts are brought forward to prove some very improbable doctrine. It is objected by judicious people, or such as have devoted them-

selves to analogous subjects, that these assumed facts are in direct opposition to all that is known of the course of nature, that the universal experience of the past affords a powerful presumption against their truth, and that in proportion to the gravity of these objections, should be the number and competence of the witnesses. The answer is a ready one. What do we know of the mysteries of Nature? Do we understand the intricate machinery of the Universe? When to this is added the never-failing quotation, —

“There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy,” —

the question is thought to be finally disposed of.

Take the case of astrology as an example. It is in itself strange and incredible that the relations of the heavenly bodies to each other at a given moment of time, perhaps half a century ago, should have anything to do with my success or misfortune in any undertaking of to-day. But what right have I to say it cannot be so? Can I bind the sweet influences of Pleiades, or loose the bands of Orion? I do not know by what mighty magic the planets roll in their fluid paths, confined to circles as unchanging as if they were rings of steel, nor why the great wave of ocean follows in a sleepless round upon the skirts of moonlight; nor can I say from any certain knowledge that the phases of the heav-

enly bodies, or even the falling of the leaves of the forest, or the manner in which the sands lie upon the sea-shore, may not be knit up by invisible threads with the web of human destiny. There is a class of minds much more ready to believe that which is at first sight incredible, and because it is incredible, than what is generally thought reasonable. *Credo quia impossibile est*,—"I believe, because it is impossible,"—is an old paradoxical expression which might be literally applied to this tribe of persons. And they always succeed in finding something marvellous, to call out the exercise of their robust faith. The old Cabalistic teachers maintained that there was not a verse, line, word, or even letter in the Bible which had not a special efficacy either to defend the person who rightly employed it, or to injure his enemies; always provided the original Hebrew was made use of. In the hands of modern Cabalists every substance, no matter how inert, acquires wonderful medicinal virtues, provided it be used in a proper state of purity and subdivision.

I have already mentioned the motives attributed by the Perkinists to the Medical Profession, as preventing its members from receiving the new but unwelcome truths. This accusation is repeated in different forms and places, as, for instance, in the following passage:—

“Will the medical man, who has spent much

money and labor in the pursuit of the arcana of Physic, and on the exercise of which depends his support in life, proclaim the inefficacy of his art, and recommend a remedy to his patient which the most unlettered in society can employ as advantageously as himself? and a remedy, too, which, unlike the drops, the pills, the powders, &c., of the *Materia Medica*, is *inconsumable*, and ever in readiness to be employed in successive diseases?"

As usual with these people, much indignation was expressed at any parallel between their particular doctrine and practice and those of their exploded predecessors. "The motives," says the disinterested Mr. Perkins, "which must have impelled to this attempt at classing the METALLIC PRACTICE with the most paltry of empyrical projects, are but too thinly veiled to escape detection."

To all these arguments was added, as a matter of course, an appeal to the feelings of the benevolent in behalf of suffering humanity, in the shape of a notice that the poor would be treated *gratis*. It is pretty well understood that this gratuitous treatment of the poor does not necessarily imply an excess of benevolence, any more than the gratuitous distribution of a trader's shop-bills is an evidence of remarkable generosity; in short, that it is one of those things which honest men often do from the best motives, but which rogues and impostors never fail to announce as one of their special rec-

commendations. It is astonishing to see how these things brighten up at the touch of Mr. Perkins's poet:—

“Ye worthy, honored, philanthropic few,
 The muse shall weave her brightest wreaths for you,
 Who in Humanity's bland cause unite,
 Nor heed the shaft by interest aimed or spite;
 Like the great Pattern of Benevolence,
 Hygeia's blessings to the poor dispense;
 And though opposed by folly's servile brood,
 ENJOY THE LUXURY OF DOING GOOD.”

Having thus sketched the history of Perkinism in its days of prosperity; having seen how it sprung into being, and by what means it maintained its influence, it only remains to tell the brief story of its discomfiture and final downfall. The vast majority of the sensible part of the medical profession were contented, so far as we can judge, to let it die out of itself. It was in vain that the advocates of this invaluable discovery exclaimed over their perverse and interested obstinacy,—in vain that they called up the injured ghosts of Harvey, Galileo, and Copernicus to shame that unbelieving generation; the Baillies and the Heberdens,—men whose names have come down to us as synonymous with honor and wisdom,—bore their reproaches in meek silence, and left them unanswered to their fate. There were some others, however, who, believing the public to labor under a delusion, thought it worth while to see whether the charm would be

broken by an open trial of its virtue, as compared with that of some less hallowed formula. It must be remembered that a peculiar value was attached to the Metallic Tractors, as made and patented by Mr. Perkins. Dr. Haygarth, of Bath, performed various experiments upon patients afflicted with different complaints,—the patients supposing that the real five-guinea Tractors were employed. Strange to relate, he obtained equally wonderful effects with Tractors of lead and of wood; with nails, pieces of bone, slate pencil, and tobacco-pipe. Dr. Alderson employed sham Tractors made of wood, and produced such effects upon five patients that they returned solemn thanks in church for their cures. A single specimen of these cases may stand for all of them. Ann Hill had suffered for some months from pain in the right arm and shoulder. The Tractors (*wooden ones*) were applied, and in the space of five minutes she expressed herself relieved in the following apostrophe: “Bless me! why, who could have thought it, that them little things could pull the pain from one. Well, to be sure, the longer one lives, the more one sees; ah, dear!”

These experiments did not result in the immediate extinction of Perkinism. Doubtless they were a great comfort to many obstinate unbelievers, and helped to settle some sceptical minds; but for the real Perkinistic enthusiasts, it may be questioned whether they would at that time have changed their

opinion though one had risen from the dead to assure them it was an error. It perished without violence, by an easy and natural process. Like the famous toy of Mongolfier, it rose by means of heated air, — the fevered breath of enthusiastic ignorance, — and when this grew cool, as it always does in a little while, it collapsed and fell.

And now, on reviewing the whole subject, how shall we account for the extraordinary prevalence of the belief in Perkinism among a portion of what is supposed to be the thinking part of the community?

Could the cures have been real ones, produced by the principle of ANIMAL MAGNETISM? To this it may be answered that the Perkinists ridiculed the idea of approximating Mesmer and the founder of their own doctrine, that nothing like the somnambule condition seems to have followed the use of the Tractors, and that neither the exertion of the will, nor the powers of the individual who operated, seem to have been considered of any consequence. Besides, the absolute neglect into which the Tractors soon declined is good evidence that they were incapable of affording any considerable and permanent relief in the complaints for the cure of which they were applied.

Of course, a large number of apparent cures were due solely to nature; which is true under every form of treatment, orthodox or empirical. Of course many persons experienced at least temporary relief from the strong impression made upon their minds by this novel and marvellous method of treatment.

Many, again, influenced by the sanguine hopes of those about them, like dying people, who often say sincerely, from day to day, that they are getting better, cheated themselves into a false and short-lived belief that they were cured ; and as happens in such cases, the public never knew more than the first half of the story.

When it was said to the Perkinists, that whatever effects they produced were merely through the imagination, they declared (like the advocates of the ROYAL TOUCH and the UNGUENTUM ARMARIUM) that this explanation was sufficiently disproved by the fact of numerous and successful cures which had been witnessed in infants and brute animals. Dr. Haygarth replied to this, that “in these cases it is not the *Patient*, but the *Observer*, who is deceived by his own imagination,” and that such may be the fact, we have seen in the case of the good lady who thought she had conjured away the bunch from her friend’s eyelid, when it remained as large as ever.

As to the motives of the inventor and vender of the Tractors, the facts must be allowed to speak for themselves. But when two little bits of brass and iron are patented, as an invention, as the result of numerous experiments, when people are led, or even allowed to infer that they are a peculiar compound, when they are artfully associated with a new and brilliant discovery (which then happened to be Galvanism), when they are sold at many hundred times

their value, and the seller prints his opinion that a Hospital will suffer inconvenience “unless it possesses many sets of the Tractors, and these placed in the hands of the patients to practise on each other,” one cannot but suspect that they were contrived in the neighborhood of a wooden nutmeg factory; that legs of ham in that region are not made of the best mahogany; and that such as buy their cucumber seed in that vicinity have to wait for the fruit as long as the Indians for their crop of gunpowder.

The succeeding lecture will be devoted to an examination of the doctrines of Samuel Hahnemann and his disciples; doctrines which some consider new and others old; the common title of which is variously known as Hó-mœopathy, Homœ-óp-athy, Homœo-páth-y, or Hom’pathy, and the claims of which are considered by some as infinitely important, and by many as immeasurably ridiculous.

I wish to state, for the sake of any who may be interested in the subject, that I shall treat it, not by ridicule, but by argument; perhaps with great freedom, but with good temper and in peaceable language; with very little hope of reclaiming converts, with no desire of making enemies, but with a firm belief that its pretensions and assertions cannot stand before a single hour of calm investigation.

LECTURE II.

IT may be thought that a direct attack upon the pretensions of HOMŒOPATHY is an uncalled-for aggression upon an unoffending doctrine and its peaceful advocates.

But a little inquiry will show that it has long assumed so hostile a position with respect to the Medical Profession, that any trouble I, or any other member of that profession may choose to bestow upon it, may be considered merely as a matter of self-defence. It began with an attempt to show the insignificance of all existing medical knowledge. It not only laid claim to wonderful powers of its own, but it declared the common practice to be attended with the most positively injurious effects, that by it acute diseases are aggravated, and chronic diseases rendered incurable. It has at various times brought forward collections of figures having the air of statistical documents, pretending to show a great proportional mortality among the patients of the Medical Profession, as compared with those treated according to its own rules. Not contented with choosing a

name of classical origin for itself, it invented one for the whole community of innocent physicians, assuring them, to their great surprise, that they were all ALLOPATHISTS, whether they knew it or not, and including all the illustrious masters of the past, from Hippocrates down to Hunter, under the same gratuitous title. The line, then, has been drawn by the champions of the new doctrine; they have lifted the lance, they have sounded the charge, and are responsible for any little skirmishing which may happen.

But, independently of any such grounds of active resistance, the subject involves interests so disproportioned to its intrinsic claims, that it is no more than an act of humanity to give it a public examination. If the new doctrine is not truth, it is a dangerous, a deadly error. If it is a mere illusion, and acquires the same degree of influence that we have often seen obtained by other illusions, there is not one of my audience who may not have occasion to deplore the fatal credulity which listened to its promises.

I shall therefore undertake a sober examination of its principles, its facts, and some points of its history. The limited time at my disposal requires me to condense as much as possible what I have to say, but I shall endeavor to be plain and direct in expressing it. Not one statement shall be made which cannot be supported by unimpeachable reference; not one word shall be uttered which I am not as willing to print as to speak. I have no quibbles to utter, and I shall

stoop to answer none; but with full faith in the sufficiency of a plain statement of facts and reasons, I submit the subject to the discernment of my audience.

The question may be asked in the outset, — Have you submitted the doctrines you are professing to examine to the test of long-repeated and careful experiment; have you *tried* to see whether they were true or not? To this I answer, that it is abundantly evident, from what has often happened, that it would be of no manner of use for me to allege the results of any experiments I might have instituted. Again and again have the most explicit statements been made by the most competent persons of the utter failure of all their trials, and there were the same abundant explanations offered as used to be for the Unguentum Armarium and the Metallic Tractors. I could by no possibility perform any experiments the result of which could not be easily explained away so as to be of no conclusive significance. Besides, as arguments in favor of Homœopathy are constantly addressed to the public in journals, pamphlets, and even lectures, by inexperienced dilettanti, the same channel must be open to all its opponents.

It is necessary, for the sake of those to whom the whole subject may be new, to give in the smallest possible compass the substance of the Homœopathic Doctrine. Samuel Hahnemann, its founder, is a

German physician, now living in Paris,* at the age of eighty-seven years. In 1796 he published the first paper containing his peculiar notions; in 1805 his first work on the subject; in 1810 his somewhat famous Organon of the Healing Art; the next year what he called the Pure Materia Medica; and in 1828 his last work, the Treatise on Chronic Diseases. He has therefore been writing at intervals on his favorite subject for nearly half a century.

The one great doctrine which constitutes the basis of Homœopathy as a system, is expressed by the Latin aphorism,

“SIMILIA SIMILIBUS CURANTUR,”

or *like cures like*, that is, diseases are cured by agents capable of producing symptoms resembling those found in the disease under treatment. A disease for Hahnemann consists essentially in a group of symptoms. The proper medicine for any disease is the one which is capable of producing a similar group of symptoms, when given to a healthy person.

It is of course necessary to know what are the trains of symptoms excited by different substances, when administered to persons in health, if any such can be shown to exist. Hahnemann and his disciples give catalogues of the symptoms which they affirm were produced upon themselves or others by a large number of drugs which they submitted to experiment.

* Hahnemann died in 1843.

The second great fact which Hahnemann professes to have established is the *efficacy of medicinal substances reduced to a wonderful degree of minuteness or dilution*. The following account of his mode of preparing his medicines is from his work on Chronic Diseases, which has not, I believe, yet been translated into English. A grain of the substance, if it is solid, a drop if it is liquid, is to be added to about a third part of one hundred grains of sugar of milk in an unglazed porcelain capsule, which has had the polish removed from the lower part of its cavity by rubbing it with wet sand ; they are to be mingled for an instant with a bone or horn spatula, and then rubbed together for six minutes ; then the mass is to be scraped together from the mortar and pestle, which is to take four minutes ; then to be again rubbed for six minutes. Four minutes are then to be devoted to scraping the powder into a heap, and the second third of the hundred grains of sugar of milk to be added. Then they are to be stirred an instant and rubbed six minutes, — again to be scraped together four minutes and forcibly rubbed six ; once more scraped together for four minutes, when the last third of the hundred grains of sugar of milk is to be added and mingled by stirring with the spatula ; six minutes of forcible rubbing, four of scraping together, and six more (positively the last six) of rubbing, finish this part of the process.

Every grain of this powder contains the hundredth

of a grain of the medicinal substance mingled with the sugar of milk. If, therefore, a grain of the powder just prepared is mingled with another hundred grains of sugar of milk, and the process just described repeated, we shall have a powder of which every grain contains the hundredth of the hundredth, or the ten thousandth part of a grain of the medicinal substance. Repeat the same process with the same quantity of fresh sugar of milk, and every grain of your powder will contain the millionth of a grain of the medicinal substance. When the powder is of this strength, it is ready to use in the further solutions and dilutions to be made use of in practice.

A grain of the powder is to be taken, a hundred drops of alcohol are to be poured on it, the vial is to be slowly turned for a few minutes, until the powder is dissolved, and two shakes are to be given to it. On this point I will quote Hahnemann's own words. "A long experience and multiplied observations upon the sick lead me within the last few years to prefer giving only two shakes to medicinal liquids, whereas I formerly used to give ten." The process of dilution is carried on in the same way as the attenuation of the powder was done; each successive dilution with alcohol reducing the medicine to a hundredth part of the quantity of that which preceded it. In this way the dilution of the original millionth of a grain of medicine contained in the grain of powder operated on is carried successively to the billionth,

trillionth, quadrillionth, quintillionth, and very often much higher fractional divisions. A dose of any of these medicines is a minute fraction of a drop, obtained by moistening with them one or more little globules of sugar, of which Hahnemann says it takes about two hundred to weigh a grain.

As an instance of the strength of the medicines prescribed by Hahnemann, I will mention carbonate of lime. He does not employ common chalk, but prefers a little portion of the friable part of an oyster-shell. Of this substance, carried to the sextillionth degree, so much as one or two globules of the size mentioned can convey, is a common dose. But for persons of very delicate nerves it is proper that the dilution should be carried to the decillionth degree. That is, an important medicinal effect is to be expected from the two hundredth or hundredth part of the millionth of the millionth of the millionth of the millionth, of the millionth of the millionth of the millionth, of the millionth, of the millionth of the millionth of a grain of oyster-shell. This is only the tenth degree of potency, but some of his disciples profess to have obtained palpable effects from much higher dilutions.*

* The degrees of DILUTION must not be confounded with those of POTENCY. Their relations may be seen by this table : —

1st dilution, — One hundredth of a drop or grain.

2d “ One ten thousandth.

3d “ One millionth, — marked $\overline{\text{I}}$.

4th “ One hundred millionth.

5th “ One ten thousand millionth.

6th “ One million millionth, or one billionth, — marked $\overline{\text{II}}$.

The third great doctrine of Hahnemann is the following. *Seven eighths at least of all chronic diseases* are produced by the existence in the system of that infectious disorder known in the language of science by the appellation of PSORA, but to the less refined portion of the community by the name of ITCH. In the words of Hahnemann's *Organon*, "This Psora is the sole true and fundamental cause that produces all the other countless forms of disease, which, under the names of nervous debility, hysteria, hypochondriasis, insanity, melancholy, idiocy, madness, epilepsy, and spasms of all kinds, softening of the bones, or rickets, scoliosis and cyphosis, caries, cancer, fungus hæmatodes, gout, — yellow jaundice and cyanosis, dropsy, — gastralgia, epistaxis, hæmoptysis, — asthma and suppuration of the lungs, — megrim, deafness, cataract and amaurosis, — paralysis, loss of sense, pains of every kind, &c., appear in our pathology as so many peculiar, distinct, and independent diseases."

For the last three centuries, if the same authority may be trusted, under the influence of the more refined personal habits which have prevailed, and the

7th dilution,	— One hundred billionth.
8th	“ One ten thousand billionth.
9th	“ One million billionth, or one trillionth, — marked $\overline{\text{III}}$.
10th	“ One hundred trillionth.
11th	“ One ten thousand trillionth.
12th	“ One million trillionth, or one quadrillionth, — marked $\overline{\text{IV}}$, — and so on indefinitely.

The large figures denote the degrees of POTENCY.

application of various external remedies which repel the affection from the skin, Psora has revealed itself in these numerous forms of internal disease, instead of appearing, as in former periods, under the aspect of an external malady.

These are the three cardinal doctrines of Hahnemann, as laid down in those standard works of Homœopathy, the *Organon* and the *Treatise on Chronic Diseases*.

Several other principles may be added, upon all of which he insists with great force, and which are very generally received by his disciples.

1. Very little power is allowed to the curative efforts of nature. Hahnemann goes so far as to say, that no one has ever seen the simple efforts of nature effect the durable recovery of a patient from a chronic disease. In general, the Homœopathist calls every recovery which happens under his treatment a *cure*.

2. Every medicinal substance must be administered in a state of the most perfect purity, and uncombined with any other. The union of several remedies in a single prescription destroys its utility, and, according to the *Organon*, frequently adds a new disease.

3. A large number of substances commonly thought to be inert, develop great medicinal powers when prepared in the manner already described; and a great proportion of them are ascertained to have specific antidotes in case their excessive effects require to be neutralized.

4. Diseases should be recognized, as far as possible, not by any of the common names imposed upon them, as fever or epilepsy, but as individual collections of symptoms, each of which differs from every other collection.

5. The symptoms of any complaint must be described with the most minute exactness, and so far as possible in the patient's own words. To illustrate the kind of circumstances the patient is expected to record, I will mention one or two from the 313th page of the Treatise on Chronic Diseases, — being the first one at which I opened accidentally.

“After dinner, disposition to sleep; the patient winks.”

“After dinner, prostration and feeling of weakness (nine days after taking the remedy).”

This remedy was that same oyster-shell which is to be prescribed in fractions of the sextillionth or decillionth degree. According to Hahnemann, the action of a single dose of the size mentioned does not fully display itself in some cases, until twenty-four or even thirty days after it is taken, and in such instances has not exhausted its good effects until towards the fortieth or fiftieth day, — before which time it would be absurd and injurious to administer a new remedy.

So much for the doctrines of Hahnemann, which have been stated without comment, or exaggeration of any of their features, very much as any adherent of his opinions might have stated them, if obliged to compress them into so narrow a space.

Does Hahnemann himself represent Homœopathy as it now exists? He certainly ought to be its best representative, after having created it, and devoted his life to it for half a century. He is spoken of as the great physician of the time, in most, if not all homœopathic works. If he is not authority on the subject of his own doctrines, *who is?* So far as I am aware, not one tangible discovery in the so-called science has ever been ascribed to any other observer; at least, no general principle or law, of consequence enough to claim any prominence in homœopathic works, has ever been pretended to have originated with any of his illustrious disciples. He is one of the only two homœopathic writers with whom, as I shall mention, the Paris publisher will have anything to do upon his own account. The other is Jahr, whose Manual is little more than a catalogue of symptoms and remedies. If any persons choose to reject Hahnemann as not in the main representing Homœopathy, if they strike at his authority, if they wink out of sight his deliberate and formally announced results, it is an act of suicidal rashness; for upon his sagacity and powers of observation, and experience, as embodied in his works, and especially in his *Materia Medica*, repose the foundations of Homœopathy as a practical system.

So far as I can learn from the conflicting statements made upon the subject, the following is the present condition of belief.

1. All of any note agree that the law *Similia similibus* is the only fundamental principle in medicine. Of course, if any man does not agree to this, the name Homœopathist can no longer be applied to him with propriety.

2. The belief in and employment of the infinitesimal doses is general, and in some places universal, among the advocates of Homœopathy; but a distinct movement has been made in Germany to get rid of any restriction to the use of these doses, and to employ medicines with the same license as other practitioners.

3. The doctrine of the origin of most chronic diseases in Psora, notwithstanding Hahnemann says it cost him twelve years of study and research to establish the fact and its practical consequences, has met with great neglect and even opposition from very many of his own disciples.

It is true, notwithstanding, that, throughout most of their writings which I have seen, there runs a prevailing tone of great deference to Hahnemann's opinions, a constant reference to his authority, a general agreement with the minor points of his belief, and a pretence of harmonious union in a common faith.*

* Those who will take the trouble to look over Hull's Translation of Jahr's Manual, may observe how little comparative space is given to remedies resting upon any other authority than that of Hahnemann.

Many persons, and most physicians and scientific men, would be satisfied with the statement of these doctrines, and examine them no further. They would consider it vastly more probable that any observer in so fallacious and difficult a field of inquiry as medicine had been led into error, or walked into it of his own accord, than that such numerous and extraordinary facts had really just come to light. They would feel a right to exercise the same obduracy towards them as the French Institute is in the habit of displaying when memoirs or models are offered to it, relating to the squaring of the circle or perpetual motion; which it is the rule to pass over without notice. They would feel as astronomers and natural philosophers must have felt when, some half a dozen years ago, an unknown man came forward, and asked for an opportunity to demonstrate to Arago and his colleagues that the moon and planets were at a distance of a little more than a hundred miles from the earth. And so they would not even look into Homœopathy, though all its advocates should exclaim, in the words of Mr. Benjamin Douglass Perkins, vender of the Metallic Tractors, that "On all discoveries there are persons who, without descending to any inquiry into the truth, pretend to know, as it were by *intuition*, that newly asserted facts are founded in the grossest errors." And they would lay their heads upon their pillows with a perfectly clear conscience, although they were

assured that they were behaving in the same way that people of old did towards Harvey, Galileo, and Copernicus, the identical great names which were invoked by Mr. Benjamin Douglass Perkins.

But experience has shown that the character of these assertions is not sufficient to deter many from examining their claims to belief. I therefore lean but very slightly on the extravagance and extreme apparent singularity of their pretensions. I might have omitted them, but on the whole it seemed more just to the claims of my argument to suggest the vast complication of improbabilities involved in the statements enumerated. Every one must of course judge for himself as to the weight of these objections, which are by no means brought forward as a proof of the extravagance of Homœopathy, but simply as entitled to a brief consideration before the *facts* of the case are submitted to our scrutiny.

The three great asserted discoveries of Hahnemann are entirely unconnected with and independent of each other. Were there any natural relation between them, it would seem probable enough that the discovery of the first would have led to that of the others. But assuming it to be a fact that diseases are cured by remedies capable of producing symptoms like their own, no manifest relation exists between this fact and the next assertion, namely, the power of the infinitesimal doses. And allowing both these to be true, neither has the remotest affinity to the

third new doctrine, that which declares seven eighths of all chronic diseases to be owing to Psora.

This want of any obvious relation between Hahnemann's three cardinal doctrines appears to be self-evident, upon inspection. But if, as is often true with his disciples, they prefer the authority of one of their own number, I will refer them to Dr. Trinks's paper on the present state of Homœopathy in Europe, with which, of course, they are familiar, as his name is mentioned as one of the most prominent champions of their faith, in their American official organ. It would be a fact without a parallel in the history, not merely of medicine, but of science, that three such unconnected and astonishing discoveries, each of them a complete revolution of all that ages of the most varied experience had been taught to believe, should spring full formed from the brain of a single individual.

Let us look a moment at the first of his doctrines. Improbable though it may seem to some, there is no essential absurdity involved in the proposition that diseases yield to remedies capable of producing like symptoms. There are, on the other hand, some analogies which lend a degree of plausibility to the statement. There are well-ascertained facts, known from the earliest periods of medicine, showing that, under certain circumstances, the very medicine which, from its known effects, one would expect to aggravate the disease, may contribute to its relief. I may be per-

mitted to allude, in the most general way, to the case in which the spontaneous efforts of an overtaken stomach are quieted by the agency of a drug which that organ refuses to entertain upon any terms. But that *every* cure ever performed by medicine should have been founded upon this principle, although without the knowledge of the physician; that the Homœopathic axiom is, as Hahnemann asserts, “the *sole* law of nature in therapeutics,” a law of which nothing more than a transient glimpse ever presented itself to the innumerable host of medical observers, is a dogma of such sweeping extent, and pregnant novelty, that it demands a corresponding breadth and depth of unquestionable facts to cover its vast pretensions.

So much ridicule has been thrown upon the pretended powers of the *minute doses*, that I shall only touch upon this point for the purpose of conveying, by illustrations, some shadow of ideas far transcending the powers of the imagination to realize. It must be remembered that these comparisons are not matters susceptible of dispute, being founded on simple arithmetical computations, level to the capacity of any intelligent schoolboy. A person who once wrote a very small pamphlet, made some show of objecting to calculations of this kind, on the ground that the highest dilutions could easily be made with a few ounces of alcohol. But he should have remembered that at every successive dilution he lays

aside or throws away ninety-nine hundredths of the fluid on which he is operating, and that, although he begins with a drop, he only prepares a millionth, billionth, trillionth, and similar fractions of it, all of which, added together, would constitute but a vastly minute portion of the drop with which he began. But now let us suppose we take one single drop of the tincture of camomile, and that the *whole* of this were to be carried through the common series of dilutions.

A calculation nearly like the following was made by Dr. Panvini, and may be readily followed in its essential particulars by any one who chooses.

For the first dilution it would take 100 drops of alcohol.

For the second dilution it would take 10,000 drops, or about a pint.

For the third dilution it would take 100 pints.

For the fourth dilution it would take 10,000 pints, or more than 1,000 gallons, and so on to the ninth dilution, which would take ten billion gallons, which he computed would fill the basin of Lake Agnano, a body of water two miles in circumference. The twelfth dilution would of course fill a million such lakes. By the time the seventeenth degree of dilution should be reached, the alcohol required would equal in quantity the waters of ten thousand Adriatic seas. Trifling errors must be expected, but they are as likely to be on one side as the other, and any little

matter like Lake Superior or the Caspian would be but a drop in the bucket.

Swallowers of globules, one of your little pellets, moistened in the mingled waves of one million lakes of alcohol, each two miles in circumference, with which had been blended that one drop of Tincture of Camomile, would be of precisely the strength recommended for that medicine in your favorite Jahr's Manual, against the most sudden, frightful, and fatal diseases!*

And proceeding on the common data, I have just made a calculation which shows that this single drop of Tincture of Camomile, given in the quantity ordered by Jahr's Manual, would have supplied every individual of the whole human family, past and present, with more than five billion doses each, the action of each dose lasting about four days.

Yet this is given only at the quadrillionth, or fourth degree of potency, and various substances are frequently administered at the decillionth or tenth

* In the French edition of 1834, the proper doses of the medicines are mentioned, and Camomile is marked IV. Why are the doses omitted in Hull's Translation, except in three instances out of the whole two hundred remedies, notwithstanding the promise in the preface that "some remarks upon the *doses used* may be found at the head of each medicine"? Possibly because it makes no difference whether they are employed in one homœopathic dose or another; but then it is very singular that such precise directions were formerly given in the same work, and that Hahnemann's "experience" should have led him to draw the nice distinctions we have seen in a former part of this Lecture (p. 107).

degree, and occasionally at still higher attenuations, with professed medicinal results. Is there not in this as great an exception to all the hitherto received laws of nature, as in the miracle of the loaves and fishes? Ask this question of a Homœopathist, and he will answer by referring to the effects produced by a very minute portion of vaccine matter, or the extraordinary diffusion of odors. But the vaccine matter is one of those substances called *morbid poisons*, of which it is a peculiar character to multiply themselves, when introduced into the system, as a seed does in the soil. Therefore the hundredth part of a grain of the vaccine matter, if no more than this is employed, soon increases in quantity, until, in the course of about a week, it is a grain or more, and can be removed in considerable drops. And what is a very curious illustration of Homœopathy, it does not produce its most characteristic effects until it is already in sufficient quantity not merely to be visible, but to be collected for further use. The thoughtlessness which can allow an inference to be extended from a product of disease possessing this susceptibility of multiplication when conveyed into the living body, to substances of inorganic origin, such as silex or sulphur, would be capable of arguing that a pebble may produce a mountain, because an acorn can become a forest.

As to the analogy to be found between the alleged action of the infinitely attenuated doses, and

the effects of some odorous substances which possess the extraordinary power of diffusing their imponderable emanations through a very wide space, however it may be abused in argument, and rapidly as it evaporates on examination, it is not like that just mentioned, wholly without meaning. The fact of the vast diffusion of some odors, as that of musk or the rose, for instance, has long been cited as the most remarkable illustration of the divisibility of matter, and the nicety of the senses. And if this were compared with the effects of a very minute dose of morphia on the whole system, or the sudden and fatal impression of a single drop of prussic acid, or, with what comes still nearer, the poisonous influence of an atmosphere impregnated with invisible *malaria*, we should find in each of these examples an evidence of the degree to which nature, in some few instances, concentrates powerful qualities in minute or subtile forms of matter. But if a man comes to me with a pestle and mortar in his hand, and tells me that he will take a little speck of some substance which nobody ever thought to have any smell at all, as, for instance, a grain of chalk or of charcoal, and that he will, after an hour or two of rubbing and scraping, develop in a portion of it an odor which, if the whole grain were used, would be capable of pervading an apartment, a house, a village, a province, an empire, nay, the entire atmosphere of this broad planet

upon which we tread ; and that from each of fifty or sixty substances he can in this way develop a distinct and hitherto unknown odor ; and if he tries to show that all this is rendered quite reasonable by the analogy of musk and roses, I shall certainly be justified in considering him incapable of reasoning, and beyond the reach of my argument. What if, instead of this, he professes to develop new and wonderful medicinal powers from the same speck of chalk or charcoal, in such proportions as would impregnate every pond, lake, river, sea, and ocean of our globe, and appeals to the same analogy in favor of the probability of his assertion.

All this may be true, notwithstanding these considerations. But so extraordinary would be the fact, that a single atom of substances which a child might swallow without harm by the teaspoonful, could, by an easy mechanical process, be made to develop such inconceivable powers, that nothing but the strictest agreement of the most cautious experimenters, secured by every guaranty that they were honest and faithful, appealing to repeated experiments in public, with every precaution to guard against error, and with the most plain and peremptory results, should induce us to lend any credence to such pretensions.

The third doctrine, that *Psora*, the other name of which you remember, is the cause of the great majority of chronic diseases, is a startling one, to say

the least. That an affection always recognized as a very unpleasant personal companion, but generally regarded as a mere temporary incommodity, readily yielding to treatment in those unfortunate enough to suffer from it, and hardly known among the better classes of society, should be all at once found out by a German physician to be the great scourge of mankind, the cause of their severest bodily and mental calamities, cancer and consumption, idiocy and madness, must excite our unqualified surprise. And when the originator of this singular truth ascribes, as in the page now open before me, the declining health of a disgraced courtier, the chronic malady of a bereaved mother, even the melancholy of the love-sick and slighted maiden, to nothing more nor less than the insignificant, unseemly, and almost unmentionable ITCH, does it not seem as if the very soil upon which we stand were dissolving into chaos, over the earthquake-heaving of discovery?

And when one man claims to have established these three independent truths, which are about as remote from each other as the discovery of the law of gravitation, the invention of printing, and that of the mariner's compass, unless the facts in their favor are overwhelming and unanimous, the question naturally arises, Is not this man deceiving himself, or trying to deceive others?

I proceed to examine the proofs of the leading ideas of Hahnemann and his school.

In order to show the axiom, *similia similibus curantur* (or like is cured by like), to be the basis of the healing art, — “the sole law of nature in therapeutics,” — it is necessary, —

1. That the symptoms produced by drugs in healthy persons should be faithfully studied and recorded.

2. That drugs should be shown to be always capable of curing those diseases most like their own symptoms.

3. That remedies should be shown *not* to cure diseases when they do not produce symptoms resembling those presented in these diseases.

1. The effects of drugs upon healthy persons have been studied by Hahnemann and his associates. Their results were made known in his *Materia Medica*, a work in three large volumes in the French translation, published about eight years ago. The mode of experimentation appears to have been, to take the substance on trial, either in common or minute doses, and then to set down every little sensation, every little movement of mind or body, which occurred within many succeeding hours or days, as being produced solely by the substance employed. When I have enumerated some of the symptoms attributed to the power of the drugs taken, you will be able to judge how much value is to be ascribed to the assertions of such observers.

The following list was taken literally from the

Materia Medica of Hahnemann, by my friend M. Ver-
nois, for whose accuracy I am willing to be respon-
sible. He has given seven pages of these symptoms,
not selected, but taken at hazard from the French
translation of the work. I shall be very brief in
my citations.

“After stooping some time, sense of painful weight
about the head, upon resuming the erect posture.”

“An itching, tickling sensation at the outer edge
of the palm of the left hand, which obliges the per-
son to scratch.” The medicine was acetate of lime,
and as the action of the globule taken is said to
last twenty-eight days, you may judge how many
such symptoms as the last, might be supposed to
happen.

Among the symptoms attributed to muriatic acid
are these: a catarrh, sighing, pimples; “after hav-
ing written a long time with the back a little bent
over, violent pain in the back and shoulder-blades,
as if from a strain,” — “dreams which are not re-
membered,—disposition to mental dejection,—wake-
fulness before and after midnight.”

I might extend this catalogue almost indefinitely.
I have not cited these specimens with any view to
exciting a sense of the ridiculous, which many
others of those mentioned would not fail to do, but
to show that the common accidents of sensation, the
little bodily inconveniences to which all of us are
subject, are seriously and systematically ascribed to

whatever medicine may have been exhibited, even in the minute doses I have mentioned, whole days or weeks previously.

To these are added all the symptoms ever said by anybody, whether deserving confidence or not, as I shall hereafter illustrate, to be produced by the substance in question.

The effects of sixty-four medicinal substances, ascertained by one or both of these methods, are enumerated in the *Materia Medica* of Hahnemann, which may be considered as the basis of practical Homœopathy. In the *Manual of Jahr*, which is the common guide, so far as I know, of those who practise Homœopathy in these regions, two hundred remedies are enumerated, many of which, however, have never been employed in practice. In at least one edition there were no means of distinguishing those which had been tried upon the sick from the others. It is true that marks have been added in the edition employed here, which serve to distinguish them; but what are we to think of a standard *practical* author on *Materia Medica*, who at one time omits to designate the proper doses of his remedies, and at another to let us have any means of knowing whether a remedy has ever been tried or not, while he is recommending its employment in the most critical and threatening diseases?

I think that, from what I have shown of the character of Hahnemann's experiments, it would be a

satisfaction to any candid inquirer, to know whether other persons, to whose assertions he could look with confidence, confirm these pretended facts. Now there are many individuals, long and well known to the scientific world, who have tried these experiments upon healthy subjects, and utterly deny that their effects have at all corresponded to Hahnemann's assertions.

I will take, for instance, the statements of Andral, (and I am not referring to his well-known public experiments in his hospital,) as to the result of his own trials. This distinguished physician is Professor of Medicine in the School of Paris, and one of the most widely known and valued authors upon practical and theoretical subjects the profession can claim in any country. He is a man of great kindness of character, a most liberal eclectic by nature and habit, of unquestioned integrity, and is called, in the leading article of the first number of the *Homœopathic Examiner*, "an eminent and very enlightened allopathist." Assisted by a number of other persons in good health, he experimented on the effects of cinchona, aconite, sulphur, arnica, and the other most highly extolled remedies. His experiments lasted a year, and he stated publicly to the Academy of Medicine, that they never produced the slightest appearance of the symptoms attributed to them. The results of a man like this, so extensively known as one of the most philosophical and candid, as well as

brilliant of instructors, and whose admirable abilities and great liberality are generally conceded, ought to be of great weight in deciding the question.

M. Double, a well-known medical writer and a physician of high standing in Paris, had occasion as long ago as 1801, before he had heard of Homœopathy, to make experiments upon Cinchona, or Peruvian bark. He and several others took the drug in every kind of dose for four months, and the fever it is pretended by Hahnemann to excite never was produced.

M. Bonnet, President of the Royal Society of Medicine of Bordeaux, had occasion to observe many soldiers during the Peninsular war, who made use of cinchona as a preservative against different diseases, — but he never found it to produce the pretended paroxysms.

If any objection were made to evidence of this kind, I would refer to the express experiments on many of the Homœopathic substances, which were given to healthy persons with every precaution as to diet and regimen, by M. Louis Fleury, without being followed by the slightest of the pretended consequences. — And let me mention as a curious fact, that the same quantity of arsenic given to one animal in the common form of the unprepared powder, and to another after having been rubbed up into six hundred globules, offered no particular difference of activity in the two cases. This is a strange contradiction to the doctrine of the

development of what they call by an ingenious pleonasm "dynamic power," by means of friction and subdivision.

In 1835, a public challenge was offered to the best-known Homœopathic physician in Paris to select any ten substances asserted to produce the most striking effects; to prepare them himself; to choose one by lot without knowing which of them he had taken, and try it upon himself or any intelligent and devoted Homœopathist, and, waiting his own time, to come forward and tell what substance had been employed. The challenge was at first accepted, but the acceptance retracted before the time of trial arrived.

From all this I think it fair to conclude that the catalogues of symptoms attributed in Homœopathic works to the influence of various drugs upon healthy persons are not entitled to any confidence.

2. It is necessary to show in the next place that medicinal substances are always capable of curing diseases most like their own symptoms. For facts relating to this question we must look to two sources; the recorded experience of the medical profession in general, and the results of trials made according to homœopathic principles, and capable of testing the truth of the doctrine.

No person, that I am aware of, has ever denied that in some cases there exists a resemblance between the effects of a remedy and the symptoms of

diseases in which it is beneficial. This has been recognized, as Hahnemann himself has shown, from the time of Hippocrates. But according to the records of the medical profession, as they have been hitherto interpreted, this is true of only a very small proportion of useful remedies. Nor has it ever been considered as an established truth that the efficacy of even these few remedies was in any definite ratio to their power of producing symptoms more or less like those they cured.

Such was the state of opinion when Hahnemann came forward with the proposition that all the cases of successful treatment found in the works of all preceding medical writers were to be ascribed solely to the operation of the homœopathic principle, which had effected the cure, although without the physician's knowledge that this was the real secret. And strange as it may seem, he was enabled to give such a degree of plausibility to this assertion, that any person not acquainted somewhat with medical literature, not quite familiar, I should rather say, with the relative value of medical evidence, according to the sources whence it is derived, would be almost frightened into the belief, at seeing the pages upon pages of Latin names he has summoned as his witnesses.

It has hitherto been customary, when examining the writings of authors of preceding ages, upon subjects as to which they were less enlightened than

ourselves, and which they were very liable to misrepresent, to exercise some little discretion ; to discriminate, in some measure, between writers deserving confidence and those not entitled to it. But there is not the least appearance of any such delicacy on the part of Hahnemann. A large majority of the names of old authors he cites are wholly unknown to science. With some of them I have been long acquainted, and I know that their accounts of diseases are no more to be trusted than their contemporary Ambrose Paré's stories of mermen, and similar absurdities. But if my judgment is rejected, as being a prejudiced one, I can refer to Cullen, who mentioned three of Hahnemann's authors in one sentence, as being "not necessarily bad authorities ; but certainly such when they delivered very improbable events ;" and as this was said more than half a century ago, it could not have had any reference to Hahnemann. But although not the slightest sign of discrimination is visible in his quotations, — although for him a handful of chaff from Schenck is all the same thing as a measure of wheat from Morgagni, — there is a formidable display of authorities, and an abundant proof of ingenious researches to be found in each of the great works of Hahnemann with which I am familiar.*

* Some painful surmises might arise as to the erudition of Hahnemann's English Translator, who makes two individuals of "Zacutus, Lucitanus," as well as respecting that of the conductors of an American

It is stated by Dr. Leo-Wolf, that Professor Joerg, of Leipsic, has proved many of Hahnemann's quotations from old authors to be adulterate and false. What particular instances he has pointed out I have no means of learning. And it is probably wholly impossible on this side of the Atlantic, and even in most of the public libraries of Europe, to find anything more than a small fraction of the innumerable obscure publications which the neglect of grocers and trunkmakers has spared to be ransacked by the all-devouring genius of Homœopathy. I have endeavored to verify such passages as my own library afforded me the means of doing. For some I have looked in vain, for want, as I am willing to believe, of more exact references. But this I am able to affirm, that, out of the very small number which I have been able to trace back to their original authors, I have found two to be wrongly quoted, one of them being a gross misrepresentation.

The first is from the ancient Roman author, Cælius Aurelianus ; the second from the venerable folio of Forestus. Hahnemann uses the following expressions, — if he is not misrepresented in the English Translation of the Organon : “ Asclepiades on one occasion cured an inflammation of the brain by administering a small quantity of wine.” After cor-

Homœopathic periodical, who suffer the name of the world-renowned Cardanus to be spelt *Cardamus* in at least three places, were not this gross ignorance of course attributable only to the printer.

recting the erroneous reference of the Translator, I can find no such case alluded to in the chapter. But Cælius Aurelianus mentions two modes of treatment employed by Asclepiades, into both of which the use of wine entered, as being in the highest degree irrational and dangerous.*

In speaking of the oil of anise-seed, Hahnemann says that Forestus observed violent colic caused by its administration. But, as that author tells the story, a young man took, by the counsel of a surgeon, an acrid and virulent medicine, the name of which is not given, which brought on a most cruel fit of the gripes and colic. After this another surgeon was called, who gave him oil of anise-seed and wine, which increased his suffering.† Now if this was the Homœopathic remedy, as Hahnemann pretends, it might be a fair question why the young man was not cured by it. But it is a much graver question why a man who has shrewdness and learning enough to go so far after his facts, should think it right to treat them with such astonishing negligence or such artful unfairness.

Even if every word he had pretended to take from his old authorities were to be found in them, even if the authority of every one of these authors were beyond question, the looseness with which they are

* Cælius Aurel. De Morb. Acut. et Chron., Lib. I. cap. xv. *not.* xvi. Amsterdam. Wetstein, 1755.

† *Observ. et Curat. Med.*, Lib. XXI. obs. xiii. Frankfort, 1614.

used to prove whatever Hahnemann chooses is beyond the bounds of credibility. Let me give one instance to illustrate the character of this man's mind. Hahnemann asserts, in a note annexed to the 110th paragraph of the Organon, that the smell of the rose will cause certain persons to faint. And he says in the text that substances which produce peculiar effects of this nature on particular constitutions cure the same symptoms in people in general. Then, in another note to the same paragraph, he quotes the following fact from one of the last sources one would have looked to for medical information, the Byzantine Historians.

“It was by these means” (i. e. Homœopathically) “that the Princess Eudisia with rose-water restored a person who had fainted!”

Is it possible that a man who is guilty of such pedantic folly as this,—a man who can see a confirmation of his doctrine in such a recovery as this,—a recovery which is happening every day, from a breath of air, a drop or two of water, untying a bonnet-string, loosening a stay-lace, and which can hardly help happening, whatever is done,—is it possible that a man, of whose pages, not here and there one, but hundreds upon hundreds are loaded with such trivialities, is the Newton, the Columbus, the Harvey of the nineteenth century!

The whole process of demonstration he employs is this. An experiment is instituted with some

drug upon one or more healthy persons. Everything that happens for a number of days or weeks is, as we have seen, set down as an effect of the medicine. Old volumes are then ransacked promiscuously, and every morbid sensation or change that anybody ever said was produced by the drug in question is added to the list of symptoms. By one or both of these methods, each of the sixty-four substances enumerated by Hahnemann is shown to produce a very large number of symptoms, the lowest in his scale being ninety-seven, and the highest fourteen hundred and ninety-one. And having made out this list respecting any drug, a catalogue which, as you may observe in any Homœopathic manual, contains various symptoms belonging to every organ of the body, what can be easier than to find alleged cures in every medical author which can at once be attributed to the Homœopathic principle; still more if the grave of extinguished credulity is called upon to give up its dead bones as living witnesses; and worst of all, if the monuments of the past are to be mutilated in favor of "the sole law of Nature in therapeutics"?

There are a few familiar facts of which great use has been made as an entering-wedge for the Homœopathic doctrine. They have been suffered to pass current so long that it is time they should be nailed to the counter, a little operation which I undertake, with perfect cheerfulness, to perform for them.

The first is a supposed illustration of the Homœopathic law, found in the precept given for the treatment of parts which have been frozen, by friction with snow or similar means. But we deceive ourselves by names, if we suppose the frozen part to be treated by cold, and not by heat. The snow may even be actually *warmer* than the part to which it is applied. But even if it were at the same temperature when applied, it never did and never could do the least good to a frozen part, except as a mode of regulating the application of what? of *heat*. But the heat must be applied *gradually*, just as food must be given a little at a time to those perishing with hunger. If the patient were brought into a warm room, heat would be applied *very rapidly*, were not something interposed to prevent this, and allow its gradual admission. Snow or iced water is exactly what is wanted; it is not cold to the part; it is very possibly warm, on the contrary, for these terms are relative, and if it does not melt and let the heat in, or is not taken away, the part will remain frozen up until doomsday. Now the treatment of a frozen limb by heat, in large or small quantities, is not Homœopathy.

The next supposed illustration of the Homœopathic law is the alleged successful management of burns, by holding them to the fire. This is a popular mode of treating those burns which are of too little consequence to require any more efficacious

remedy, and would inevitably get well of themselves, without any trouble being bestowed upon them. It produces a most acute pain in the part, which is followed by some loss of sensibility, as happens with the eye after exposure to strong light, and the ear after being subjected to very intense sounds. This is all it is capable of doing, and all farther notions of its efficacy must be attributed merely to the vulgar love of paradox. If this example affords any comfort to the Homœopathist, it seems as cruel to deprive him of it as it would be to convince the mistress of the smoke-jack or the flat-iron, that the fire does not literally "draw the fire out," which is her hypothesis.

But if it were true that frost-bites were cured by cold and burns by heat, it would be subversive, so far as it went, of the great principle of Homœopathy. For you will remember that this principle is, that *Like* cures *Like*, and not that *Same* cures *Same*; that there is *resemblance* and not *identity* between the symptoms of the disease and those produced by the drug which cures it, and none have been readier to insist upon this distinction than the Homœopaths themselves. For if *Same* cures *Same*, then every poison must be its own antidote, — which is neither a part of their theory, nor their so-called experience. They have been asked, often enough, why it was that arsenic could not cure the mischief which arsenic had caused, and why the infectious cause

of small-pox did not remedy the disease it had produced, and then they were ready enough to see the distinction I have pointed out. O no! it was not the hair of the same dog, but only of one very much like him!

A third instance in proof of the Homœopathic law is sought for in the acknowledged efficacy of vaccination. And how does the law apply to this? It is granted by the advocates of Homœopathy, that there is a resemblance between the effects of the vaccine virus on a person in health, and the symptoms of small-pox. Therefore, according to the rule, the vaccine virus will cure the small-pox, which, as everybody knows, is entirely untrue. But it prevents small-pox, say the Homœopaths. Yes, and so does small-pox prevent itself from ever happening again, and we know just as much of the principle involved in the one case as in the other. For this is only one of a series of facts which we are wholly unable to explain. Small-pox, measles, scarlet-fever, hooping-cough, protect those who have them once from future attacks; but nettle-rash and catarrh and lung-fever, each of which is just as homœopathic to itself as any one of the others, have no such preservative power. We are obliged to accept the fact, unexplained, and we can do no more for vaccination than for the rest.

I come now to the most directly practical point connected with the subject, namely, —

What is the state of the evidence as to the efficacy of the proper Homœopathic treatment in the cure of diseases.

As the treatment adopted by the Homœopathists has been almost universally by means of the infinitesimal doses, the question of their efficacy is thrown open, in common with that of the truth of their fundamental axiom, as both are tested in practice.

We must look for facts as to the actual working of Homœopathy to three sources.

1. The statements of the unprofessional public.
2. The assertions of Homœopathic practitioners.
3. The results of trials by competent and honest physicians, not pledged to the system.

I think, after what we have seen of medical facts, as they are represented by incompetent persons, we are disposed to attribute little value to all statements of wonderful cures, coming from those who have never been accustomed to watch the caprices of disease, and have not cooled down their young enthusiasm by the habit of tranquil observation. Those who know nothing of the natural progress of a malady, of its ordinary duration, of its various modes of terminating, of its liability to accidental complications, of the signs which mark its insignificance or severity, of what is to be expected of it when left to itself, of how much or how little is to be anticipated from remedies, those who know nothing or next to nothing of all these things, and who

are in a great state of excitement from benevolence, sympathy, or zeal for a new medical discovery, can hardly be expected to be sound judges of facts which have misled so many sagacious men, who have spent their lives in the daily study and observation of them. I believe that, after having drawn the portrait of defunct Perkinism, with its five thousand printed cures, and its million and a half computed ones, its miracles blazoned about through America, Denmark, and England; after relating, that forty years ago women carried the Tractors about in their pockets, and workmen could not make them fast enough for the public demand; and then showing you, as a curiosity, a single one of these instruments, an odd one of a pair, which I obtained only by a lucky accident, so utterly lost is the memory of all their wonderful achievements; I believe, after all this, I need not waste time in showing that medical accuracy is not to be looked for in the florid reports of benevolent associations, the assertions of illustrious patrons, the lax effusions of daily journals, or the effervescent gossip of the tea-table.

Dr. Hering, whose name is somewhat familiar to the champions of Homœopathy, has said that “the new healing art is not to be judged by its success in isolated cases only, but according to its success in general, its innate truth, and the incontrovertible nature of its innate principles.”

We have seen something of “the incontrovertible

nature of its innate principles," and it seems probable, on the whole, that its success in general must be made up of its success in isolated cases. Some attempts have been made, however, to finish the whole matter by sweeping statistical documents, which are intended to prove its triumphant success over the common practice.

It is well known to those who have had the good fortune to see the *Homœopathic Examiner*, that this journal led off, in its first number, with a grand display of everything the newly imported doctrine had to show for itself. It is well remarked, on the *twenty-third page* of this article, that "the comparison of bills of mortality among an equal number of sick, treated by divers methods, is a most poor and lame way to get at conclusions touching principles of the healing art." In confirmation of which, the author proceeds, upon the *twenty-fifth page*, to prove the superiority of the Homœopathic treatment of cholera, by precisely these very bills of mortality. Now, every intelligent physician is aware that the poison of cholera differed so much in its activity at different times and places, that it was next to impossible to form any opinion as to the results of treatment, unless every precaution was taken to secure the most perfectly corresponding conditions in the patients treated, and hardly even then. Of course, then, a Russian Admiral, by the name of Mordvinow, backed by a number of so-called physicians, practising in

Russian villages, is singularly competent to the task of settling the whole question of the utility of this or that kind of treatment; to prove that, if not more than eight and a half per cent of those attacked with the disease perished, the rest owed their immunity to Hahnemann. I can remember when more than a hundred patients in a public institution were attacked with what, I doubt not, many Homœopathic physicians (to say nothing of Homœopathic admirals) would have called cholera, and *not one* of them died, though treated in the common way, and it is my firm belief, that, if such a result had followed the administration of the omnipotent globules, it would have been in the mouth of every adept in Europe, from Quin of London to Spohr of Gandersheim. No longer ago than yesterday, in one of the most widely circulated papers of this city, there was published an assertion that the mortality in several Homœopathic Hospitals was not quite five in a hundred, whereas, in what are called by the writer Allopathic Hospitals, it is said to be eleven in a hundred. An honest man should be ashamed of such an *argumentum ad ignorantiam*. The mortality of a hospital depends not merely on the treatment of the patients, but on the class of diseases it is in the habit of receiving, on the place where it is, on the season, and many other circumstances. For instance, there are many hospitals in the great cities of Europe that receive few diseases of a nature to endanger life, and, on the other hand,

there are others where dangerous diseases are accumulated out of the common proportion. Thus, in the wards of Louis, at the Hospital of La Pitié, a vast number of patients in the last stages of consumption were constantly entering, to swell the mortality of that hospital. It was because he was known to pay particular attention to the diseases of the chest that patients laboring under those fatal affections to an incurable extent were so constantly coming in upon him. It is always a miserable appeal to the thoughtlessness of the vulgar, to allege the naked fact of the less comparative mortality in the practice of one hospital or of one physician than another, as an evidence of the superiority of their treatment. Other things being equal, it must always be expected that those institutions and individuals enjoying to the highest degree the confidence of the community will lose the largest proportion of their patients; for the simple reason that they will naturally be looked to by those suffering from the gravest class of diseases; that many, who know that they are affected with mortal disease, will choose to die under their care or shelter, while the subjects of trifling maladies, and mere troublesome symptoms, amuse themselves to any extent among the fancy practitioners. When, therefore, Dr. Muhlenbein, as stated in the *Homœopathic Examiner*, and quoted in yesterday's *Daily Advertiser*, asserts that the mortality among his patients is only one per cent since he has practised

Homœopathy, whereas it was six per cent when he employed the common mode of practice, I am convinced by this, his own statement, that the citizens of Brunswick, whenever they are *seriously* sick, take good care not to send for Dr. Muhlenbein!

It is evidently impossible that I should attempt, within the compass of a single lecture, any detailed examination of the very numerous cases reported in the Homœopathic Treatises and Journals. Having been in the habit of receiving the French Archives of Homœopathic Medicine, until the premature decease of that Journal, I have had the opportunity of becoming acquainted somewhat with the style of these documents, and experiencing whatever degree of conviction they were calculated to produce. Although of course I do not wish any value to be assumed for my opinion, such as it is, I consider that you are entitled to hear it. So far, then, as I am acquainted with the general character of the cases reported by the Homœopathic physicians, they would for the most part be considered as wholly undeserving a place in any English, French, or American periodical of high standing, if, instead of favoring the doctrine they were intended to support, they were brought forward to prove the efficacy of any common remedy administered by any common practitioner. There are occasional exceptions to this remark; but the general truth of it is rendered probable by the fact that these cases are always, or almost always, written

with the single object of showing the efficacy of the medicine used, or the skill of the practitioner, and it is recognized as a general rule that such cases deserve very little confidence. Yet they may sound well enough, one at a time, to those who are not fully aware of the fallacies of medical evidence. Let me state a case in illustration. Nobody doubts that *some* patients recover under every form of practice. Probably all are willing to allow that a large majority, for instance, ninety in a hundred, of such cases as a physician is called to in daily practice, would recover, sooner or later, with more or less difficulty, provided nothing were done to interfere seriously with the efforts of nature.

Suppose, then, a physician who has a hundred patients prescribes to each of them pills made of some entirely inert substance, as starch, for instance. Ninety of them get well, or if he chooses to use such language, he cures ninety of them. It is evident, according to the doctrine of chances, that there must be a considerable number of coincidences between the relief of the patient and the administration of the remedy. It is altogether probable that there will happen two or three *very striking* coincidences out of the whole ninety cases, in which it would seem evident that the medicine produced the relief, though it had, as we assumed, nothing to do with it. Now suppose that the physician publishes these cases, will they not have a plausible appear-

ance of proving that which, as we granted at the outset, was entirely false? Suppose that instead of pills of starch he employs microscopic sugar-plums, with the five million billion trillionth part of a suspicion of aconite or pulsatilla, and then publishes his successful cases, through the leaden lips of the press, or the living ones of his female acquaintances, — does that make the impression a less erroneous one? But so it is that in Homœopathic works and journals and gossip one can never, or next to never, find anything but successful cases, which might do very well as a proof of superior skill, did it not prove as much for the swindling advertisers whose certificates disgrace so many of our newspapers. How long will it take mankind to learn that while they listen to “the speaking hundreds and units, who make the world ring” with the pretended triumphs they have witnessed, the “dumb millions” of deluded and injured victims are paying the daily forfeit of their misplaced confidence!

I am sorry to see also that a degree of ignorance as to the natural course of diseases is often shown in these published cases, which, although it may not be detected by the unprofessional reader, conveys an unpleasant impression to those who are acquainted with the subject. Thus a young woman affected with *jaundice* is mentioned in the German Annals of Clinical Homœopathy as having been cured in twenty-nine days by pulsatilla and nux vomica.

Rummel, a well-known writer of the same school, speaks of curing a case of jaundice in thirty-four days by Homœopathic doses of pulsatilla, aconite, and cinchona. I happened to have a case in my own household, a few weeks since, which lasted about ten days, and this was longer than I have repeatedly seen it in hospital practice, so that it was nothing to boast of.

Dr. Munneche of Lichtenburg in Saxony is called to a patient with sprained ankle who had been a fortnight under the common treatment. The patient gets well by the use of arnica in a little more than a month longer, and this extraordinary fact is published in the French Archives of Homœopathic Medicine.

In the same journal is recorded the case of a patient who with nothing more, so far as any proof goes, than *influenza*, gets down to her shop upon the sixth day.

And again, the cool way in which everything favorable in a case is set down by these people entirely to their treatment, may be seen in a case of croup reported in the Homœopathic Gazette of Leipsic, in which leeches, blistering, inhalation of hot vapor, and powerful internal medicine had been employed, and yet the merit was all attributed to one drop of some homœopathic fluid.

I need not multiply these quotations, which illustrate the grounds of an opinion which the time does

not allow me to justify more at length ; other such cases are lying open before me ; there is no end to them if more were wanted ; for nothing is necessary but to look into any of the numerous broken-down Journals of Homœopathy, the volumes of which may be found on the shelves of those curious in such matters.

A number of public trials of Homœopathy have been made in different parts of the world. Six of these are mentioned in the Manifesto of the Homœopathic Examiner. Now to suppose that any trial can absolutely *silence* people, would be to forget the whole experience of the past. Dr. Haygarth and Dr. Alderson could not stop the sale of the five-guinea tractors, although they proved that they could work the same miracles with pieces of wood and tobacco-pipe. It takes time for truth to operate as well as homœopathic globules. Many persons thought the results of these trials were decisive enough of the nullity of the treatment ; those who wish to see the kind of special pleading and evasion by which it is attempted to cover results which, stated by the Homœopathic Examiner itself, look exceedingly like a miserable failure, may consult the opening flourish of that Journal. I had not the intention to speak of these public trials at all, having abundant other evidence on the point. But I think it best, on the whole, to mention two of them in a few words, — that instituted at Naples and that of Andral.

There have been few names in the medical profession, for the last half-century, so widely known throughout the world of science as that of M. Esquirol, whose life was devoted to the treatment of insanity, and who was without a rival in that department of practical medicine. It is from an analysis communicated by him to the *Gazette Médicale de Paris* that I derive my acquaintance with the account of the trial at Naples by Dr. Panvini, physician to the Hospital della Pace. This account seems to be entirely deserving of credit. Ten patients were set apart, and not allowed to take any medicine at all, — much against the wish of the Homœopathic physician. All of them got well, and of course all of them would have been claimed as triumphs if they had been submitted to the treatment. Six other slight cases (each of which is specified) got well under the homœopathic treatment, — none of its asserted specific effects being manifested. All the rest were cases of grave disease; and so far as the trial, which was interrupted about the fortieth day, extended, the patients grew worse, or received no benefit. A case is reported on the page before me of a soldier affected with acute inflammation in the chest, who took successively aconite, bryonia, nux vomica, and pulsatilla, and after *thirty-eight days* of treatment remained without any important change in his disease. The homœopathic physician who treated these patients was M. de Horatiis, who had

the previous year been announcing his wonderful cures. And M. Esquirol asserted to the Academy of Medicine in 1835, that this M. de Horatiis, who is one of the prominent personages in the Examiner's Manifesto published in 1840, had subsequently renounced Homœopathy. I may remark, by the way, that this same periodical, which is so very easy in explaining away the results of these trials, makes a mistake of only six years or a little more as to the time when this at Naples was instituted.

M. Andral, the "eminent and very enlightened allopathist" of the Homœopathic Examiner, made the following statement in March, 1835, to the Academy of Medicine: "I have submitted this doctrine to experiment; I can reckon at this time from one hundred and thirty to one hundred and forty cases, recorded with perfect fairness, in a great hospital, under the eye of numerous witnesses; to avoid every objection I obtained my remedies of M. Guibourt, who keeps a Homœopathic pharmacy, and whose strict exactness is well known; the regimen has been scrupulously observed, and I obtained from the sisters attached to the hospital a special regimen, such as Hahnemann orders. I was told, however, some months since, that I had not been faithful to all the rules of the doctrine. I therefore took the trouble to begin again; I have studied the practice of the Parisian Homœopaths, as I had studied their books, and I became convinced that they treated their

patients as I had treated mine, and I affirm that I have been as rigorously exact in the treatment as any other person.”

And he expressly asserts the entire nullity of the influence of all the homœopathic remedies tried by him in modifying, so far as he could observe, the progress or termination of diseases. It deserves notice, that he experimented with the most boasted substances, — cinchona, aconite, mercury, bryonia, belladonna. Aconite, for instance, he says he administered in more than forty cases of that collection of feverish symptoms, in which it exerts so much power, according to Hahnemann, and in not one of them did it have the slightest influence, the pulse and heat remaining as before.

These statements look pretty honest, and would seem hard to be explained away, but it is calmly said that he “did not know enough of the method to select the remedies with any tolerable precision.”* Who are they that practice Homœopathy, and say this of a man with the *Materia Medica* of Hahnemann lying before him? Who are they that send these same globules, on which he experimented, accompanied by a little book, into families, whose

* Homœopathic Examiner, Vol. I. p. 22.

“Nothing is left to the caprice of the physician. (‘In a word, instead of being dependent upon blind chance, that there is an infallible law, guided by which, the physician *MUST* select the proper remedies.’)” Ibid., in a notice of Menzel’s paper.

members are thought competent to employ them, when they deny any such capacity to a man whose life has been passed at the bedside of patients, the most prominent teacher in the first Medical Faculty in the world, the consulting physician of the King of France, and one of the most renowned practical writers, not merely of his nation, but of his age? I leave the quibbles by which such persons would try to creep out from under the crushing weight of these conclusions to the unfortunates who suppose that a *reply* is equivalent to an *answer*.

Dr. Baillie, one of the physicians in the great Hôtel Dieu of Paris, invited two Homœopathic practitioners to experiment in his wards. One of these was *Curie*, now of London, whose works are on the counters of some of our bookstores, and probably in the hands of some of my audience. This gentleman, whom Dr. Baillie declares to be an enlightened man, and perfectly sincere in his convictions, brought his own medicines from the pharmacy which furnished Hahnemann himself, and employed them for four or five months, upon patients in his ward, and with results equally unsatisfactory, as appears from Dr. Baillie's statement, at a meeting of the Academy of Medicine. And a similar experiment was permitted by the Clinical Professor of the Hôtel Dieu of Lyons, with the same complete failure.

But these are old and prejudiced practitioners. Very well, then take the statement of Dr. Fleury, a

most intelligent young physician, who treated homœopathically more than fifty patients, suffering from diseases which it was not dangerous to treat in this way, taking every kind of precaution as to regimen, removal of disturbing influences, and the state of the atmosphere, insisted upon by the most vigorous partisans of the doctrine, and found not the slightest effect produced by the medicines. And more than this, read nine of these cases, which he has published, as I have just done, and observe the absolute nullity of aconite, belladonna, and bryonia against the symptoms over which they are pretended to exert such palpable, such obvious, such astonishing influences. In the view of these statements, it is impossible not to realize the entire futility of attempting to silence this asserted science, by the flattest and most peremptory results of experiment. Were all the hospital physicians of Europe and America to devote themselves, for the requisite period, to this sole pursuit, and were their results to be unanimous as to the total worthlessness of the whole system in practice, this slippery delusion would slide through their fingers without the slightest decomposure, when, as they supposed, they had crushed every joint in its tortuous and trailing body.

3. I have said, that to show the truth of the Homœopathic doctrine, as announced by Hahnemann, it would be necessary to show, in the third place,

that remedies never cure diseases when they are not capable of producing similar symptoms. The burden of this somewhat comprehensive demonstration, lying entirely upon the advocates of this doctrine, it may be left to their mature reflections.

It entered into my original plan, to treat of the doctrine relating to *Psora*, or itch,—an almost insane conception, which I am glad to get rid of, for this is a subject one does not care to *handle without gloves*. I am saved this trouble, however, by finding that many of the disciples of Hahnemann, those disciples the very gospel of whose faith stands upon his word, make very light of his authority on this point, although he himself says, “It has cost me twelve years of study and research, to trace out the source of this incredible number of chronic affections, to discover this great truth, which remained concealed from all my predecessors and contemporaries, to establish the basis of its demonstration, and find out, at the same time, the curative medicines that were fit to combat this hydra in all its different forms.”

But, in the face of all this, the following remarks are made by Wolff, of Dresden, whose essays, according to the editor of the *Homœopathic Examiner*, “represent the opinions of a large majority of Homœopaths in Europe.”

“It cannot be unknown to any one at all familiar

with Homœopathic literature, that Hahnemann's idea of tracing the large majority of chronic diseases to actual itch, has met with the greatest opposition from Homœopathic physicians themselves." And again, "If the Psoric theory has led to no proper schism, the reason is to be found in the fact that it is almost without any influence in practice."

We are told by Jahr, that Dr. Griesselich, "Surgeon to the Grand Duke of Baden," and a "distinguished" homœopathist, actually asked Hahnemann for the *proof* that chronic diseases, such as dropsy, for instance, never arise from any other cause than itch; and that, according to common report, the venerable sage was highly incensed (*fort courroucé*) with Dr. Hartmann, of Leipsic, another "distinguished" Homœopathist, for maintaining that they certainly did arise from other causes.

And Dr. Fielitz, in the Homœopathic Gazette of Leipsic, after saying, in a good-natured way, that Psora is the Devil in medicine, and that physicians are divided on this point into diabolists and exorcists, declares that, according to a remark of Hahnemann, the whole civilized world is affected with Psora. I must therefore disappoint any advocate of Hahnemann who may honor me with his presence, by not attacking a doctrine on which some of the disciples of his creed would be very happy to have its adversaries waste their time and strength. I will not meddle with this excrescence, which, though often

used in time of peace, would be dropped, like the limb of a shell-fish, the moment it was assailed ; time is too precious, and the harvest of living extravagances nods too heavily to my sickle, that I should blunt it upon straw and stubble.

I will close the subject with a brief examination of some of the statements made in Homœopathic works, and more particularly in the brilliant Manifesto of the Examiner, before referred to. And first, it is there stated under the head of "Homœopathic Literature," that "SEVEN HUNDRED volumes have been issued from the press developing the peculiarities of the system, and many of them possessed of a scientific character that *savans* know well how to respect." If my assertion were proper evidence in the case, I should declare, that, having seen a good many of these publications, from the year 1834, when I bought the work of the *Rev.* Thomas Everest,* to within a few weeks, when I received my last importation of Homœopathic literature, I have found that all, with a very few exceptions, were stitched pamphlets varying from twenty or thirty pages to somewhat less than a hundred, and generally resembling each other as much as so many spelling-books.

But not being evidence in the case, I will give you

* Dr. Curie speaks of this silly pamphlet as having been published in 1835.

the testimony of Dr. Trink, of Dresden, who flourishes on the fifteenth page of the same Manifesto as one of the most distinguished among the Homœopathists of Europe. I translate the sentence literally from the *Archives de la Médecine Homœopathique*.

“The literature of Homœopathy, if that honorable name must be applied to all kinds of book-making, has been degraded to the condition of the humblest servitude. Productions without talent, without spirit, without discrimination, flat and pitiful eulogies, exaggerations surpassing the limits of the most robust faith, invectives against such as dared to doubt the dogmas which had been proclaimed, or catalogues of remedies; of such materials is it composed! From distance to distance only, have appeared some memoirs useful to science or practice, which appear as so many green oases in the midst of this literary desert.”

It is a very natural as well as a curious question to ask, What has been the success of Homœopathy in the different countries of Europe, and what is its present condition?

The greatest reliance of the advocates of Homœopathy is of course on Germany. We know very little of its medical schools, its medical doctrines, or its medical men, compared with those of England and France. And, therefore, when an intelligent traveller gives a direct account from personal inspection of the miserable condition of the Homœopathic

hospital at Leipsic, the first established in Europe, and the first on the list of the ever-memorable Manifesto, it is easy enough to answer or elude the fact by citing various hard names of "distinguished" practitioners, which sound just as well to the uninformed public as if they were Meckel, or Tiedemann, or Langenbeck. Dr. Leo-Wolf, who, to be sure, is opposed to Homœopathy, but who is a scholar, and ought to know something of his own countrymen, assures us that, "Dr. Kopp is the only German Homœopathist, if we can call him so, who has been distinguished as an author and practitioner before he examined this method." And Dr. Lee, the same gentleman in whose travels the paragraph relating to the Leipsic Hospital is to be found, says the same thing. And I will cheerfully expose myself to any impertinent remark which it might suggest, to assure my audience that I never heard or saw one authentic Homœopathic name of any country in Europe, which I had ever heard mentioned before as connected with medical science by a single word or deed sufficient to make it in any degree familiar to my ears, unless Arnold of Heidelberg is the anatomist who discovered a little nervous centre, called the otic ganglion. But you need ask no better proof of who and what the German adherents of this doctrine must be, than the testimony of a German Homœopathist as to the wretched character of the works they manufacture to enforce its claims.

As for the act of this or that government tolerating or encouraging Homœopathy, every person of common intelligence knows that it is a mere form granted or denied according to the general principles of policy adopted in different states, or the degree of influence which some few persons who have adopted it may happen to have at court. What may be the value of certain pompous titles with which many of the advocates of Homœopathy are honored, it might be disrespectful to question. But in the mean time, the judicious inquirer may ponder over an extract, which I translate from a paper relating to a personage well known to the community as *Williams the Oculist*, with whom I had the honor of crossing the Atlantic some years since, and who himself handed me two copies of the paper in question.

“To say that he was oculist of Louis XVIII. and of Charles X., and that he now enjoys the same title with respect to His Majesty, Louis Philippe, and the King of the Belgians, is unquestionably to say a great deal; and yet it is one of the least of his titles to public confidence. His reputation rests upon a basis more substantial even than the numerous diplomas with which he is provided, than the membership of the different medical societies which have chosen him as their associate,” etc., etc.

And as to one more point, it is time that the public should fully understand that the common method of supporting barefaced imposture at the present

day, both in Europe and in this country, consists in trumping up "Dispensaries," "Colleges of Health," and other advertising charitable clap-traps, which use the poor as decoy-ducks for the rich, and the proprietors of which have a strong predilection for the title of "Professor." These names, therefore, have come to be of little or no value as evidence of the good character, still less of the high pretensions of those who invoke their authority. Nor does it follow, even when a chair is founded in connection with a well-known institution, that it has either a salary or an occupant; so that it may be, and probably is, a mere harmless piece of toleration on the part of the government if a Professorship of Homœopathy is really in existence at Jena or Heidelberg. And finally, in order to correct the error of any who might suppose that the whole Medical Profession of Germany has long since fallen into the delusions of Hahnemann, I will quote two lines which a celebrated anatomist and surgeon (whose name will occur again in this lecture in connection with a very pleasing letter) addressed to the French Academy of Medicine in 1835. "I happened to be in Germany some months since, at a meeting of nearly six hundred physicians; one of them wished to bring up the question of Homœopathy; they would not even listen to him." This may have been very impolite and bigoted, but that is not precisely the point in reference to which I mention the circumstance.

But if we cannot easily get at Germany, we can very easily obtain exact information from France and England. I took the trouble to write some months ago to two friends in Paris, in whom I could place confidence, for information upon the subject. One of them answered briefly to the effect that nothing was said about it. When the late Curator of the Lowell Institute, at his request, asked about the works upon the subject, he was told that they had remained a long time on the shelves quite unsalable, and never spoken of.

The other gentleman,* whose name is well known to my audience, and who needs no commendation of mine, had the kindness to procure for me many publications upon the subject, and some information which sets the whole matter at rest, so far as Paris is concerned. He went directly to the Baillières, the principal and almost the only publishers of all the Homœopathic books and journals in that city. The following facts were taken by him from the account-books of this publishing firm. Four Homœopathic Journals have been published in Paris; three of them by the Baillières.

The reception they met with may be judged of by the following list, showing the number of subscribers to each on the books of the publishing firm in Paris during several successive years:—

* Dr. Henry J. Bigelow, now Professor of Surgery in Harvard University.

	Year.	Subscribers.
1. <i>Bibliothèque Homœopathique</i> , . . .	1833	129
“ “ “	1835	80
“ “ “	1837	72
“ “ “	1839	55
“ “ “	1841	31
2. <i>Archives de la Médecine Homœo-</i> <i>pathique</i> ,	1834	186
“ “ “	1836	175
“ “ “	1838	148
Changed its name to <i>Journal de la</i> <i>Doctrine Hahnemanienne</i> , in . . .	1840	114
Ceased to be published.		
3. <i>Revue Critique et Retrospective de</i> <i>la Matière Médicale</i> ,	1840	65
“ “ “	1841	51
4. A Review published by some other house, which lasted one year, and had about fifty subscribers, appeared in 1834–35.		

These are the only four Journals of Homœopathy ever published in Paris. The Baillières informed my correspondent that the sale of homœopathic books was much less than formerly, and that consequently they should undertake to publish no new books upon the subject, except those of Jahr or Hahnemann. “This man,” says my correspondent, — referring to one of the brothers, — “the publisher and head-quarters of Homœopathy in Paris, informs me that it is going

down in England and Germany as well as in Paris." For all the facts he had stated he pledged himself as responsible.

Homœopathy was in its prime in Paris, he said, in 1836 and 1837, and since then has been going down.

Louis told my correspondent that no person of distinction in Paris had embraced Homœopathy, and that it was declining. If you ask who Louis is, I refer you to the well-known Homœopathist, Peschier of Geneva, who says, addressing him, "I respect no one more than yourself; the feeling which guides your researches, your labors, and your pen, is so honorable and rare, that I could not but bow down before it; and I own, if there were any allopathist who inspired me with higher veneration, it would be him and not yourself whom I should address."

Among the names of "Distinguished Homœopaths," however, displayed in imposing columns, in the index of the Homœopathic Examiner, are those of MARJOLIN, AMUSSAT, and BRESCHET, names well known to the world of science, and the last of them identified with some of the most valuable contributions which anatomical knowledge has received since the commencement of the present century. One Dr. Croserio,* who stands sponsor for many *facts* in

* This gentleman's distinction is vouched for by Dr. F. Hartmann of Leipsic. Dr. Hartmann's distinction is certified by the editor of the Homœopathic Examiner.

that journal, makes the following statement among the rest: "Professors, who are esteemed among the most distinguished of the Faculty (*Faculté de l'École de Médecine*), both as to knowledge and reputation, have openly confessed the power of Homœopathia in forms of disease where the ordinary method of practice proved totally insufficient. It affords me the highest pleasure to select from among these gentlemen, Marjolin, Amussat, and Breschet."

Here is a literal translation of an original letter, now in my possession, from one of these Homœopaths to my correspondent:—

"DEAR SIR, AND RESPECTED PROFESSIONAL BROTHER:—

"You have had the kindness to inform me in your letter that a new American Journal, the *New World*,* has made use of my name in support of the pretended Homœopathic doctrines, and that I am represented as one of the warmest partisans of Homœopathy in France.

"I am vastly surprised at the reputation manufactured for me upon the new continent; but I am obliged, in deference to truth, to reject it with my whole energy. I spurn far from me everything which relates to that charlatanism called Homœopathy, for these pretended doctrines cannot endure the scrutiny of wise and enlightened persons, who

* I first saw M. Breschet's name mentioned in that Journal.

are guided by honorable sentiments in the practice of the noblest of arts.

“ I am, &c., &c.,

“ G. BRESCHET,

“ Professor in the Faculty of Medicine,
Member of the Institute, Surgeon of
Hôtel Dieu, and Consulting Surgeon
to the King, &c.

“ Paris, 3d November, 1841.”

Concerning Amussat, my correspondent writes, that he was informed by Madame Hahnemann, who converses in French more readily than her husband, and therefore often speaks for him, that “ he was not a physician, neither Homœopathist nor Allopathist, but that he was the surgeon of their own establishment ; that is, performed as a surgeon all the operations they had occasion for in their practice.”

I regret not having made any inquiries as to Marjolin, who, I doubt not, would strike his ponderous snuff-box until it resounded like the Grecian horse, at hearing such a doctrine associated with his respectable name. I was not aware, when writing to Paris, that this worthy Professor, whose lectures I long attended, was included in these audacious claims ; but after the specimens I have given of the accuracy of the foreign correspondence of the Homœopathic Examiner, any further information I might obtain would seem so superfluous as hardly to be worth the postage.

Homœopathy may be said, then, to be in a sufficiently miserable condition in Paris. Yet, there lives and there has lived for years, the illustrious Samuel Hahnemann, who himself assured my correspondent that no place offered the advantages of Paris in its investigation, by reason of the attention there paid to it.

In England, it appears by the statement of Dr. Curie in October, 1839, about eight years after its introduction into the country, that there were eighteen Homœopathic physicians in the United Kingdom, of whom only three were to be found out of London, and that many of these practised Homœopathy in secret.

It will be seen, therefore, that, according to the recent statement of one of its leading English advocates, Homœopathy had obtained not quite half as many practical disciples in England as Perkinism could show for itself in a somewhat less period from the time of its first promulgation in that country.

Dr. Curie's letter, dated London, October 30, 1839, says there is "one in Dublin, Dr. Luther; at Glasgow, Dr. Scott." The "distinguished" Croserio writes from Paris, dating October 20, 1839, "On the other hand, Homœopathy is commencing to make an inroad into England by the way of Ireland. At Dublin, distinguished physicians have already embraced the new system, and a great part of the nobility and gentry of that city have emancipated them-

selves from the English fashion and professional authority.”

But the Marquis of Anglesea and Sir Edward Lytton Bulwer patronize Homœopathy; the Queen Dowager Adelaide has been treated by a Homœopathic physician. “Jarley is the delight of the nobility and gentry.” “The Royal Family are the patrons of Jarley.”

Let me ask if a Marquis and a Knight are better than two Lords, and if the Dowager of Royalty is better than Royalty itself, all of which illustrious dignities were claimed in behalf of Benjamin Douglass Perkins?

But if the balance is thought too evenly suspended in this case, another instance can be given in which the evidence of British noblemen and their ladies is shown to be as valuable in establishing the character of a medical man or doctrine, as would be the testimony of the Marquis of Waterford concerning the present condition and prospects of missionary enterprise. I have before me an octavo volume of more than four hundred pages, in which, among much similar matter, I find highly commendatory letters from the Marchioness of Ormond, Lady Harriot Kavanagh, the Countess of Buckinghamshire, the Right Hon. Viscount Ingestre, M. P., and the Most Noble, the Marquis of Sligo, — all addressed to “John St. John Long, Esq.,” a wretched charlatan, twice tried for, and once convicted of, manslaughter at the Old Bailey.

This poor creature, too, like all of his tribe, speaks of the medical profession as a great confederation of bigoted monopolists. He too says, that "If an innovator should appear, holding out hope to those in despair, and curing disorders which the faculty have recorded as irremediable, he is at once, and without inquiry, denounced as an empiric and an impostor." He, too, cites the inevitable names of Galileo and Harvey, and refers to the feelings excited by the great discovery of Jenner. From the treatment of the great astronomer who was visited with the punishment of other heretics by the ecclesiastical authorities of a Catholic country some centuries since, there is no very direct inference to be drawn to the medical profession of the present time. His name should be babbled no longer, after having been placarded for the hundredth time in the pages of St. John Long. But if we are doomed to see constant reference to the names of Harvey and Jenner in every worthless pamphlet containing the prospectus of some new trick upon the public, let us, once for all, stare the facts in the face, and see how the discoveries of these great men were actually received by the medical profession.

In 1628, Harvey published his first work upon the circulation. His doctrines were a complete revolution of the prevailing opinions of all antiquity. They immediately found both champions and opponents; of which last, one only, Riolanus, seemed to Harvey

worthy of an answer, on account of his "rank, fame, and learning." Controversy in science, as in religion, was not, in those days, carried on with all the courtesy which our present habits demand, and it is possible that some hard words may have been applied to Harvey, as it is very certain that he used the most contemptuous expressions towards others.

Harvey declares, in his second letter to Riolanus, "Since the first discovery of the circulation, hardly a day, or a moment has passed, without my hearing it both well and ill spoken of; some attack it with great hostility, others defend it with high encomiums; one party believe that I have abundantly proved the truth of the doctrine against all the weight of opposing arguments, by experiments, observations, and dissections; others think it not yet sufficiently cleared up, and free from objections." Two really eminent Professors, Plempius of Louvain, and Waelæus of Leyden, were among its early advocates.

The opinions sanctioned by the authority of long ages, and the names of Hippocrates and Galen, dissolved away, gradually, but certainly, before the demonstrations of Harvey. Twenty-four years after the publication of his first work, and six years before his death, his bust in marble was placed in the Hall of the College of Physicians, with a suitable inscription recording his discoveries.

Two years after this, he was unanimously invited to accept the Presidency of that body; and he lived

to see his doctrine established, and all reputable opposition withdrawn.

There were many circumstances connected with the discovery of Dr. Jenner which were of a nature to excite repugnance and opposition. The practice of inoculation for the small-pox had already disarmed that disease of many of its terrors. The introduction of a contagious disease from a brute creature into the human system naturally struck the public mind with a sensation of disgust and apprehension, and a part of the medical public may have shared these feelings. I find that Jenner's discovery of vaccination was made public in June, 1798. In July of the same year, the celebrated surgeon, Mr. Cline, vaccinated a child with virus received from Dr. Jenner, and in communicating the success of this experiment, he mentions that Dr. Lister, formerly of the Small-Pox Hospital, and himself, are convinced of the efficacy of the cow-pox. In November of the same year, Dr. Pearson published his "Inquiry," containing the testimony of numerous practitioners in different parts of the kingdom, to the efficacy of the practice. Dr. HAYGARTH, who was so conspicuous in exposing the follies of Perkinism, was among the very earliest to express his opinion in favor of vaccination. In 1801, Dr. Lettsom mentions the circumstance "as being to the honor of the medical professors, that they have very generally encouraged this salutary practice, although it is certainly calculated to lessen their pecu-

niary advantages by its tendency to extirpate a fertile source of professional practice.”

In the same year, the Medical Committee of Paris spoke of vaccination in a public letter, as “the most brilliant and most important discovery of the eighteenth century.” The Directors of a Society for the Extermination of the Small-Pox, in a Report dated October 1st, 1807, “congratulate the public on the very favorable opinion which the Royal College of Physicians of London, after a most minute and laborious investigation made by the command of his Majesty, have *a second time* expressed on the subject of vaccination, in their Report laid before the House of Commons, in the last session of Parliament; in consequence of which the sum of twenty thousand pounds was voted to Dr. Jenner, as a remuneration for his discovery, in addition to ten thousand pounds before granted.” (In June, 1802.)

These and similar accusations, so often brought up against the Medical Profession, are only one mode in which is manifested a spirit of opposition not merely to medical science, but to all science, and to all sound knowledge. It is a spirit which neither understands itself nor the object at which it is aiming. It gropes among the loose records of the past, and the floating fables of the moment, to glean a few truths or falsehoods tending to prove, if they prove anything, that the persons who have passed their lives in the study of a branch of knowledge the very essence of which

must always consist in long and accurate observation, are less competent to judge of new doctrines in their own department than the rest of the community. It belongs to the clown in society, the destructive in politics, and the rogue in practice.

The name of Harvey, whose great discovery was the legitimate result of his severe training and patient study, should be mentioned only to check the pretensions of presumptuous ignorance. The example of Jenner, who gave his inestimable secret, the result of twenty-two years of experiment and researches, unpurchased to the public, — when, as was said in Parliament, he might have made a hundred thousand pounds by it as well as any smaller sum, — should be referred to only to rebuke the selfish venders of secret remedies, among whom his early history obliges us reluctantly to record Samuel Hahnemann. Those who speak of the great body of physicians as if they were united in a league to support the superannuated notions of the past against the progress of improvement, have read the history of medicine to little purpose. The prevalent failing of this profession has been, on the contrary, to lend a too credulous ear to ambitious and plausible innovators. If at the present time ten years of public notoriety have passed over any doctrine professing to be of importance in medical science, and if it has not succeeded in raising up a powerful body of able, learned, and ingenious advocates for its claims, the fault must be in the doctrine and not in the medical profession.

Homœopathy has had a still more extended period of trial than this, and we have seen with what results. It only remains to throw out a few conjectures as to the particular manner in which it is to break up and disappear.

1. The confidence of the few believers in this delusion will never survive the loss of friends who may die of any acute disease, under a treatment such as that prescribed by Homœopathy. It is doubtful how far cases of this kind will be trusted to its tender mercies, but wherever it acquires any considerable foothold, such cases must come, and with them the ruin of those who practise it, should any highly valued life be thus sacrificed.

2. After its novelty has worn out, the ardent and capricious individuals who constitute the most prominent class of its patrons will return to visible doses, were it only for the sake of a change.

3. The Semi-Homœopathic practitioner will gradually withdraw from the rotten half of his business and try to make the public forget his connection with it.

4. The ultra Homœopathist will either recant and try to rejoin the medical profession; or he will embrace some newer and if possible equally extravagant doctrine; or he will stick to his colors and go down with his sinking doctrine. *Very few will pursue the course last mentioned.*

A single fact may serve to point out in what direc-

tion there will probably be a movement of the dissolving atoms of Homœopathy. On the 13th page of the too frequently cited Manifesto of the Examiner I read the following stately paragraph:—

“Bigelius, M. D., physician to the Emperor of Russia, whose elevated reputation is well known in Europe, has been an acknowledged advocate of Hahnemann’s doctrines for several years. He abandoned Allopathia for Homœopathia.” The date of this statement is January, 1840. I find on looking at the booksellers’ catalogues that one Bigel, or Bigelius, to speak more classically, has been at various times publishing Homœopathic books for some years.

Again, on looking into the *Encyclographie des Sciences Médicales* for April, 1840, I find a work entitled “Manual of HYDROSUDOPATHY, or the Treatment of Diseases by Cold Water, etc., etc., by Dr. Bigel, Physician of the School of Strasburg, Member of the Medico-Chirurgical Institute of Naples, of the Academy of St. Petersburg, — Assessor of the College of the Empire of Russia, Physician of his late Imperial Highness the Grand Duke Constantine, Chevalier of the Legion of Honor, etc.” *Hydrosudopathy* or *Hydropathy*, as it is sometimes called, is a new medical doctrine or practice which has sprung up in Germany since Homœopathy, which it bids fair to drive out of the market, if, as Dr. Bigel says, fourteen physicians afflicted with diseases which defied themselves and their colleagues came to Graefenberg, in

the year 1836 alone, and were cured. Now Dr. Bigel, "whose elevated reputation is well known in Europe," writes as follows: "The reader will not fail to see in this defence of the curative method of Graefenberg, a profession of medical faith, and he will be correct in so doing." And his work closes with the following sentence, worthy of so distinguished an individual: "We believe, with religion, that the water of baptism purifies the soul from its original sin; let us believe also, with experience, that it is for our corporeal sins the redeemer of the human body." If Bigel, Physician to the late Grand Duke Constantine, is identical with Bigel whom the Examiner calls Physician to the Emperor of Russia, it appears that he is now actively engaged in throwing cold water at once upon his patients and the future prospects of Homœopathy.

If, as must be admitted, no one of Hahnemann's doctrines is received with tolerable unanimity among his disciples, except the central axiom, *Similia similibus curantur*; if this axiom itself relies mainly for its support upon the folly and trickery of Hahnemann, what can we think of those who announce themselves ready to relinquish all the accumulated treasures of our art, to trifle with life upon the strength of these fantastic theories? What shall we think of professed practitioners of medicine, if, in the words of Jahr, "from ignorance, for their personal convenience, or

through charlatanism, they treat their patients one day Homœopathically and the next Allopathically ;” if they parade their pretended new science before the unguarded portion of the community ; if they suffer their names to be coupled with it wherever it may gain a credulous patient ; and deny all responsibility for its character, refuse all argument for its doctrines, allege no palliation for the ignorance and deception interwoven with every thread of its flimsy tissue, when they are questioned by those competent to judge and entitled to an answer ?

Such is the pretended science of Homœopathy, to which you are asked to trust your lives and the lives of those dearest to you. A mingled mass of perverse ingenuity, of tinsel erudition, of imbecile credulity, and of artful misrepresentation, too often mingled in practice, if we may trust the authority of its founder, with heartless and shameless imposition. Because it is suffered so often to appeal unanswered to the public, because it has its journals, its patrons, its apostles, some are weak enough to suppose it can escape the inevitable doom of utter disgrace and oblivion. Not many years can pass away before the same curiosity excited by one of Perkins’s Tractors will be awakened at the sight of one of the Infinitesimal Globules. If it should claim a longer existence, it can only be by falling into the hands of the sordid wretches who wring their bread from the cold grasp of disease and death in the hovels of ignorant poverty.

As one humble member of a profession which for more than two thousand years has devoted itself to the pursuit of the best earthly interests of mankind, always assailed and insulted from without by such as are ignorant of its infinite perplexities and labors, always striving in unequal contest with the hundred-armed giant who walks in the noonday, and sleeps not in the midnight, yet still toiling, not merely for itself and the present moment, but for the race and the future, I have lifted my voice against this lifeless delusion, rolling its shapeless bulk into the path of a noble science it is too weak to strike, or to injure.

SOME MORE RECENT VIEWS ON

HOMŒOPATHY.

A NOTICE OF THE "HOMŒOPATHIC DOMESTIC PHYSICIAN."

FROM THE ATLANTIC MONTHLY FOR DECEMBER, 1857.



HOMŒOPATHY.

THE book referred to beneath * lies before us with its valves open, helpless as an oyster on its shell, inviting the critical pungent, the professional acid, and the judicial impaling trident. We will be merciful. This fat little literary mollusk is well-conditioned, of fair aspect, and seemingly good of its kind. Twenty-four thousand individuals, — we have its title-page as authority, — more or less lineal descendants of Solomon, have become the fortunate possessors of this plethoric guide to earthly immortality. They might have done worse ; for the work is well printed, well arranged, and typographically creditable to the great publishing-house which honors Cincinnati by its intelligent enterprise. The purchasers have done very wisely in buying a book which will not hurt their eyes. Mr. Otis Clapp, biblioplist, has the work, and will be pleased to supply it to an indefinite number of the family above referred to.

* Homœopathic Domestic Physician, etc., by J. H. PULTE, M. D. Cincinnati. 1857.

Men live in the immediate neighborhood of a great menagerie, the doors of which are always open. The beasts of prey that come out are called diseases. They feed upon us, and between their teeth we must all pass sooner or later, — all but a few, who are otherwise taken care of. When these animals attack a man, most of them give him a scratch or a bite, and let him go. Some hold on a little while ; some are carried about for weeks or months, until the carrier drops down, or they drop off. By and by one is sure to come along that drags down the strongest, and makes an end of him.

Most people know little or nothing of these beasts, until all at once they find themselves attacked by one of them. They are therefore liable to be frightened by those which are not dangerous, and careless with those that are destructive. They do not know what will soothe, and what will exasperate them. They do not even know the dens of many of them, though they may be close to their own dwellings.

A physician is one who has lived among these beasts, and studied their aspects and habits. He knows them all well, and looks them in the face, and lays his hand on their backs daily. They seem, as it were, to know him, and to greet him with such *risus sardonius* as they can muster. He knows that his friends and himself have all got to be eaten up at last by them, and his friends have the same belief. Yet they want him near them at all times, and with

them when they are set upon by any of these their natural enemies. He goes, knowing pretty well what he can do and what he cannot.

He can talk to them in a quiet and sensible way about these terrible beings, concerning which they are so ignorant, and liable to harbor such foolish fancies. He can frighten away some among them of the lesser kind with certain ill-smelling preparations he carries about him. Once in a while he can draw the teeth of some of the biggest, or throttle them. He can point out their dens, and so keep many from falling into their jaws.

This is a great deal to promise or perform, but it is not all that is expected of him. Sick people are very apt to be both fools and cowards. Many of them confess the fact in the frankest possible way. If you doubt it, ask the next dentist about the wisdom and courage of average manhood under the dispensation of a bad tooth. As a tooth is to a liver, so are the dentists' patients to the doctors', in the want of the two excellences above mentioned.

Those not over-wise human beings called *patients* are consequently a little unreasonable. They come with a small scratch, which Nature will heal very nicely in a few days, and insist on its being closed at once with some kind of joiner's glue. They want their little coughs cured, so that they may breathe at their ease, when they have no lungs left that are worth mentioning. They would have called in Luke the

physician to John the Baptist, when his head was in the charger, and asked for a balsam that would cure cuts. This kind of thing cannot be done. But it is very profitable to lie about it, and say that it can be done. The people who make a business of this lying, and profiting by it, are called *quacks*.

But as patients wish to believe in all manner of "cures," and as all doctors love to believe in the power of their remedies, and as nothing is more open to self-deception than medical experience, the whole matter of therapeutics has always been made a great deal more of than the case would justify. It has been an inflated currency, — fifty pretences on paper, to one fact of true, ringing metal.

Many of the older books are full of absurd nostrums. A century ago, Huxham gave messes to his patients containing more than four hundred ingredients. Remedies were ordered which must have been suggested by the imagination; things odious, abominable, unmentionable; flesh of vipers, powder of dead men's bones, and other horrors, best mused in expressive silence. Go to the little book of Robert Boyle, — wise man, philosopher, revered of Addison, — and you will find so many cures for the most formidable diseases, many of them of this fantastic character, that disease should seem to have been a thing which one could turn off at will, like gas or water in our houses. Only there were rather too many specifics in those days. For if one has "an

excellent approved remedy" that never fails, it seems unnecessary to print a list of twenty others for the same purpose. This is wanton excess; it is gilding the golden pill, and throwing fresh perfume on the *Mistura Assafoetidæ*.

As the observation of nature has extended, and as mankind have approached the state of only *semi*-barbarism in which they now exist, there has been an improvement. The *Materia Medica* has been weeded; much that was worthless and revolting has been thrown overboard; simplicity has been introduced into prescriptions; and the whole business of *drugging* the sick has undergone a most salutary reform. The great fact has been practically recognized, that the movements of life in disease obey laws which, under the circumstances, are on the whole salutary, and only require a limited and occasional interference by any special disturbing agents. The list of specifics has been reduced to a very brief catalogue, and the delusion which had exaggerated the power of drugging for so many generations has been tempered down by sound and systematic observation.

Homœopathy came, and with one harlequin bound leaped out of its century backwards into the region of quagmires and fogs and mirages, from which true medical science was painfully emerging. All the trumpery of exploded pharmacopœias was revived under new names. Even the domain of the loath-

some has been recently invaded, and simpletons are told in the book before us to swallow serpents' poison ; nay, it is said that the *pediculus capitis* is actually prescribed in infusion, — hunted down in his capillary forest, and transferred to the digestive organs of those he once fed upon.

It falsely alleged one axiom as the basis of existing medical practice, namely, *Contraria contrariis curantur*, — “Contraries are cured by contraries.” No such principle was ever acted upon, exclusively, as the basis of medical practice. The man who does not admit it as *one* of the principles of practice would, on *medical* principles, refuse a drop of cold water to cool the tongue of Dives in fiery torments. The only unconditional principle ever recognized by medical science has been, that diseases are to be treated by the remedies which experience shows to be useful. The universal use of both *cold* and *hot* external and internal remedies in various inflammatory states puts the garrote at once on the babbling throat of the senseless assertion of the homœopathists, and stultifies for all time the nickname “allopathy.”

It falsely alleged a second axiom, *Similia similibus curantur*, — “Like is cured by like,” — as the basis of its own practice ; for it does not keep to any such rule, as every page of the book before us abundantly shows.

It outraged respectable invalidism by laying all its sufferings to the charge of *itch*, or something a good

deal worse ; an insane fancy, about which even Homœopathy is at present disposed to be quiet.

It subjected credulous mankind to the last of indignities in forcing it to listen to that doctrine of infinitesimals and potencies which is at once the most epigrammatic of paradoxes, and the crowning exploit of pseudo-scientific audacity.

It proceeded to prove itself true by juggling statistics ; some of the most famous of which, we may remark, are very well shown up by Professor Worthington Hooker, in a recent essay. And having done all these things, it sat down in the shadow of a brazen bust of its founder, and invited mankind to join in the Barmecide feast it had spread on the coffin of Science ; who, however, proved not to have been buried in it, — indeed, not to have been buried at all.

Of course, it had, and has, a certain success. Its infinitesimal treatment being a nullity, patients are never hurt by drugs, *when it is adhered to*. It pleases the imagination. It is image-worship, relic-wearing, holy-water-sprinkling, transferred from the spiritual world to that of the body. Poets accept it ; sensitive and spiritual women become sisters of charity in its service. It does not offend the palate, and so spares the nursery those scenes of single combat in which infants were wont to yield at length to the pressure of the spoon, and the imminence of asphyxia. It gives the ignorant, who have such an inveterate itch for dabbling in physic, a book, and a doll's medicine-

chest, and lets them play doctors and doctresses without fear of having to call in the coroner. And just so long as unskilful and untaught people cannot tell coincidences from cause and effect in medical practice, — which to do, the wise and experienced know how difficult! — so long it will have plenty of “facts” to fall back upon. Who can blame a man for being satisfied with the argument, “I was ill, and am well, — great is Hahnemann!”? Only this argument serves all impostors and impositions. It is not of much value, but it is irresistible, and therefore quackery is immortal.

Homœopathy is one of its many phases; the most imaginative, the most elegant, and, it is fair to say, the least noxious in its direct agencies. “It is melancholy” — we use the recent words of the world-honored physician of the Queen’s household, Sir John Forbes — “to be forced to make admissions in favor of a system so utterly false and despicable as Homœopathy.” Yet we must own that it may have been indirectly useful, as the older farce of the weapon-ointment certainly was, in teaching medical practitioners to place more reliance upon nature. Most scientific men see through its deceptions at a glance. It may be practised by shrewd men and by honest ones; rarely, it must be feared, by those who are both shrewd and honest. As a psychological experiment on the weakness of cultivated minds, it is the best trick of the century.

PÜERPERAL FEVER,
AS A PRIVATE PESTILENCE.

AN ESSAY

PRINTED IN 1843; REPRINTED, WITH ADDITIONS, 1855.

TO

THE MEDICAL STUDENTS AND GRADUATES

OF HARVARD UNIVERSITY.

THE POINT AT ISSUE.

THE AFFIRMATIVE.

“The disease known as Puerperal Fever is so far contagious, as to be frequently carried from patient to patient by physicians and nurses.” — *O. W. Holmes*, 1843.

THE NEGATIVE.

“The result of the whole discussion will, I trust, serve, not only to exalt your views of the value and dignity of our profession, but to divest your minds of the overpowering dread that you can ever become, especially to woman, under the extremely interesting circumstances of gestation and parturition, the minister of evil; that you can ever convey, in any possible manner, a horrible virus, so destructive in its effects, and so mysterious in its operations as that attributed to puerperal fever.” — *Professor Hodge*, 1852.

“I prefer to attribute them to accident, or Providence, of which I can form a conception, rather than to a contagion of which I cannot form any clear idea, at least as to this particular malady.” — *Professor Meigs*, 1852.

“ in the propagation of which they have no more to do, than with the propagation of cholera from Jessore to San Francisco, and from Mauritius to St. Petersburg.” — *Professor Meigs*, 1854.

“ I arrived at that certainty in the matter, that I could venture to foretell what women would be affected with the disease, upon hearing by what midwife they were to be delivered, or by what nurse they were to be attended, during their lying-in ; and, almost in every instance, my prediction was verified.” — *Gordon*, 1795.

“ A certain number of deaths is caused every year by the contagion of puerperal fever, communicated by the nurses and medical attendants.”— *Farr*, in *Fifth Annual Report of Registrar-General of England*, 1843.

. . . . “ boards of health, if such exist, or, without them, the medical institutions of a country, should have the power of coercing, or of inflicting some kind of punishment on those who recklessly go from cases of puerperal fevers to parturient or puerperal females, without using due precaution ; and who, having been shown the risk, criminally encounter it, and convey pestilence and death to the persons they are employed to aid in the most interesting and suffering period of female existence.”
— *Copland's Medical Dictionary*, Art. *Puerperal States and Diseases*. 1852.

“ We conceive it unnecessary to go into detail to prove the contagious nature of this disease, as there are few, if any, American practitioners who do not believe in this doctrine.”— *Dr. Lee*, in *Additions to Article last cited*.

INTRODUCTION.

IT happened, some years ago, that a discussion arose in a Medical Society, of which I was a member, involving the subject of a certain supposed cause of disease, about which something was known, a good deal suspected, and not a little feared. The discussion was suggested by a case, reported at the preceding meeting, of a physician who made an examination of the body of a patient who had died with puerperal fever, and who himself died in less than a week, apparently in consequence of a wound received at the examination, having attended several women in confinement in the mean time, all of whom, as it was alleged, were attacked with puerperal fever.

Whatever apprehensions and beliefs were entertained, it was plain that a fuller knowledge of the facts relating to the subject would be acceptable to all present. I therefore felt that it would be doing a good service to look into the best records I could find, and inquire of the most trustworthy practitioners I knew, to learn what experience had to teach in

the matter, and arrived at the results contained in the following pages.

The Essay was read before the Boston Society for Medical Improvement, and, at the request of the Society, printed in the *New England Quarterly Journal of Medicine and Surgery*, for April, 1843. As this Journal never obtained a large circulation, and ceased to be published after a year's existence, and as the few copies I had struck off separately were soon lost sight of among the friends to whom they were sent, the Essay can hardly be said to have been fully brought before the Profession.

The subject of this Paper has the same profound interest for me at the present moment, as it had when I was first collecting the terrible evidence out of which, as it seems to me, the commonest exercise of reason could not help shaping the truth it involved. It is not merely on account of the bearing of the question, — if there is a question, — on all that is most sacred in human life and happiness, that the subject cannot lose its interest. It is because it seems evident that a fair statement of the facts must produce its proper influence on a very large proportion of well-constituted and unprejudiced minds. Individuals may, here and there, resist the practical bearing of the evidence on their own feelings or interests; some may fail to see its meaning, as some persons may be found who cannot tell red from green; but I cannot doubt that most readers will be satisfied and con-

vinced, to loathing, long before they have finished the dark obituary calendar laid before them.

I do not know that I shall ever again have so good an opportunity of being useful as was granted me by the raising of the question which produced this Essay. For I have abundant evidence that it has made many practitioners more cautious in their relations with puerperal females, and I have no doubt it will do so still, if it has a chance of being read, though it should call out a hundred counterblasts, proving to the satisfaction of their authors that it proved nothing. And, for my own part, I had rather rescue one mother from being poisoned by her attendant, than claim to have saved forty out of fifty patients, to whom I had carried the disease. Thus, I am willing to avail myself of any hint coming from without, to offer this paper once more to the press. The occasion has presented itself, as will be seen, in a convenient, if not in a flattering form.

I send this Essay again to the MEDICAL PROFESSION, without the change of a word or syllable. I find, on reviewing it, that it anticipates and eliminates those secondary questions which cannot be entertained for a moment, until the one great point of fact is peremptorily settled. In its very statement of the doctrine maintained, it avoids all discussion of the nature of the disease "*known as puerperal fever,*" and all the somewhat stale philology of the word *contagion*. It

mentions, fairly enough, the names of sceptics, or unbelievers as to the reality of personal transmission ; of Dewees, of Tonnellé, of Dugès, of Baudelocque, and others ; of course, not including those whose works were then unwritten or unpublished ; nor enumerating all the Continental writers who, in ignorance of the great mass of evidence accumulated by British practitioners, could hardly be called well informed on this subject. It meets all the array of negative cases, — those in which disease did not follow exposure, — by the striking example of small-pox, which, although one of the most contagious of diseases, is subject to the most remarkable irregularities and seeming caprices in its transmission. It makes full allowance for other causes besides personal transmission, especially for epidemic influences. It allows for the possibility of different modes of conveyance of the destructive principle. It recognizes and supports the belief that a series of cases may originate from a single primitive source which affects each new patient in turn ; and especially from cases of Erysipelas. It does not undertake to discuss the theoretical aspect of the subject ; that is a secondary matter of consideration. Where facts are numerous, and unquestionable, and unequivocal in their significance, theory must follow them as it best may, keeping time with their step, and not go before them, marching to the sound of its own drum and trumpet. Having thus narrowed its area to a limited practical

platform of discussion, a matter of life and death, and not of phrases or theories, it covers every inch of it with a mass of evidence which I conceive a Committee of Husbands, who can count coincidences and draw conclusions as well as a Synod of Accoucheurs, would justly consider as affording ample reasons for an *unceremonious dismissal* of a practitioner, (if it is conceivable that such a step could be waited for,) after five or six funerals had marked the path of his daily visits, while other practitioners were not thus escorted. To the Profession, therefore, I submit the paper in its original form, and leave it to take care of itself.

To the MEDICAL STUDENTS, into whose hands this Essay may fall, some words of introduction may be appropriate, and perhaps, to a small number of them, necessary. There are some among them who, from youth, or want of training, are easily bewildered and confused in any conflict of opinions into which their studies lead them. They are liable to lose sight of the main question in collateral issues, and to be run away with by suggestive speculations. They confound belief with evidence, often trusting the first because it is expressed with energy, and slighting the latter because it is calm and unimpassioned. They are not satisfied with proof; they cannot believe a point is settled, so long as everybody is not silenced. They have not learned that error is got out of the minds

that cherish it, as the tænia is removed from the body, one joint, or a few joints at a time, for the most part, rarely the whole evil at once. They naturally have faith in their instructors, turning to them for truth, and taking what they may choose to give them; babes in knowledge, not yet able to tell the breast from the bottle, pumping away for the milk of truth at all that offers, were it nothing better than a Professor's shrivelled forefinger.

In the earliest and embryonic stage of professional development, any violent impression on the instructor's mind is apt to be followed by some lasting effect on that of the pupil. No mother's mark is more permanent than the mental nævi and moles, and excrescences, and mutilations, that students carry with them out of the lecture-room, if once the teeming intellect which nourishes theirs has been scared from its propriety by any misshapen fantasy. Even an impatient or petulant expression, which to a philosopher would be a mere index of the low state of amiability of the speaker at the moment of its utterance, may pass into the young mind as an element of its future constitution, to injure its temper or corrupt its judgment. It is a duty, therefore, which we owe to this younger class of students, to clear any important truth, which may have been rendered questionable in their minds by such language, or any truth-teller against whom they may have been prejudiced by hasty epithets, from the impressions

such words have left. Until this is done, they are not ready for the question, where there is a question for them to decide. Even if we ourselves are the subjects of the prejudice, there seems to be no impropriety in showing that this prejudice is local or personal, and not an acknowledged conviction with the public at large. It may be necessary to break through our usual habits of reserve to do this, but this is the fault of the position in which others have placed us.

Two widely-known and highly-esteemed practitioners, Professors in two of the largest Medical Schools of the Union, teaching the branch of art which includes the Diseases of Women, and therefore speaking with authority; addressing in their lectures and printed publications large numbers of young men, many of them in the tenderest immaturity of knowledge, have recently taken ground in a formal way against the doctrine maintained in this paper.* The first of the two publications, Dr. Hodge's Lecture, while its theoretical considerations and negative ex-

* On the Non-Contagious Character of Puerperal Fever: An Introductory Lecture. By Hugh L. Hodge, M. D., Professor of Obstetrics in the University of Pennsylvania. Delivered Monday, October 11, 1852. Philadelphia. 1852.

On the Nature, Signs, and Treatment of Childbed Fevers: in a Series of Letters Addressed to the Students of his Class. By Charles D. Meigs, M. D., Professor of Midwifery and the Diseases of Women and Children in Jefferson Medical College, Philadelphia, etc., etc. Philadelphia. 1854. Letter VI.

periences do not seem to me to require any further notice than such as lay ready for them in my Essay written long before, is, I am pleased to say, unobjectionable in tone and language, and may be read without offence.

This can hardly be said of the chapter of Dr. Meigs's volume which treats of Contagion in Childbed Fever. There are expressions used in it which might well put a stop to all scientific discussions, were they to form the current coin in our exchange of opinions. I leave the "very young gentlemen," whose careful expositions of the results of practice in more than six thousand cases are characterized as "the jejune and fizenless dreamings of sophomore writers," to the sympathies of those "dear young friends," and "dear young gentlemen," who will judge how much to value their instructor's counsel to think for themselves, knowing what they are to expect if they happen not to think as he does.

One unpalatable expression, I suppose the laws of construction oblige me to appropriate to myself, as my reward for a certain amount of labor bestowed on the investigation of a very important question of evidence, and a statement of my own practical conclusions. I take no offence, and attempt no retort. No man makes a quarrel with me over the counterpane that covers a mother, with her new-born infant at her breast. There is no epithet in the vocabulary of slight and sarcasm that can reach my personal

sensibilities in such a controversy. Only just so far as a disrespectful phrase may turn the student aside from the examination of the evidence, by discrediting or dishonoring the witness, does it call for any word of notice.

I appeal from the disparaging language by which the Professor in the Jefferson School of Philadelphia would dispose of my claims to be listened to. I appeal, not to the vote of the Society for Medical Improvement, although this was an unusual evidence of interest in the paper in question, for it was a vote passed among my own townsmen ; nor to the opinion of any American, for none know better than the Professors in the great Schools of Philadelphia how cheaply the praise of native contemporary criticism is obtained. I appeal to the recorded opinions of those whom I do not know, and who do not know me, nor care for me, except for the truth that I may have uttered ; to Copland, in his Medical Dictionary, who has spoken of my Essay in phrases to which the pamphlets of American " scribblers " are seldom used from European authorities ; to Ramsbotham, whose compendious eulogy is all that self-love could ask ; to the Fifth Annual Report of the Registrar-General of England, in which the second-hand abstract of my Essay figures largely, and not without favorable comment, in an important appended paper. These testimonies, half forgotten until this circumstance recalled them, are dragged into the light, not in a paroxysm

of vanity, but to show that there may be food for thought in the small pamphlet which the Philadelphia Teacher treats so lightly. They were at least unsought for, and would never have been proclaimed but for the sake of securing the privilege of a decent and unprejudiced hearing.

I will take it for granted that they have so far counterpoised the depreciating language of my fellow-countryman and fellow-teacher, as to gain me a reader here and there among the youthful class of students I am now addressing. It is only for their sake that I think it necessary to analyze, or explain, or illustrate, or corroborate any portion of the following Essay. But I know that nothing can be made too plain for beginners; and as I do not expect the practitioner, or even the more mature student, to take the trouble to follow me through an Introduction which I consider wholly unnecessary and superfluous for them, I shall not hesitate to stoop to the most elementary simplicity for the benefit of the younger student. I do this more willingly, because it affords a good opportunity, as it seems to me, of exercising the untrained mind in that medical logic which does not seem to have been either taught or practised in our schools of late, to the extent that might be desired.

I will now exhibit, in a series of propositions reduced to their simplest expression, the same essential statements and conclusions as are contained in

the Essay, with such commentaries and explanations as may be profitable to the inexperienced class of readers addressed.

I. It has been long believed, by many competent observers, that Puerperal Fever (so called) is sometimes carried from patient to patient by medical assistants.

II. The express object of this Essay is to prove that it is so carried.

III. In order to prove this point, it is not necessary to consult any medical theorist, as to whether or not it is consistent with his preconceived notions that such a mode of transfer should exist.

IV. If the medical theorist insists on being consulted, and we see fit to indulge him, he cannot be allowed to assume that the alleged laws of contagion, *deduced from observation* in other diseases, shall be cited to disprove the alleged laws *deduced from observation* in this. Science would never make progress under such conditions. Neither the long incubation of hydrophobia, nor the protecting power of vaccination, would ever have been admitted, if the results of observation in these affections had been rejected as contradictory to the previously ascertained laws of contagion.

V. The disease in question is not a common one; producing, on the average, about three deaths in a thousand births, according to the English Registration returns which I have examined.

VI. When an unusually large number of cases of this disease occur about the same time, it is inferred, therefore, that there exists some special cause for this increased frequency. If the disease prevails extensively over a wide region of country, it is attributed without dispute to an *epidemic* influence. If it prevails in a single locality, as in a hospital, and not elsewhere, this is considered proof that some *local* cause is there active in its production.

VII. When a large number of cases of this disease occur in rapid succession, in one individual's ordinary practice, and few or none elsewhere, these cases appearing in scattered localities, in patients of the same average condition as those who escape under the care of others; there is the same reason for connecting the cause of the disease with the *person* in this instance, as with the *place* in that last mentioned.

VIII. Many series of cases, answering to these conditions, are given in this Essay, and many others will be referred to which have occurred since it was written.

IX. The alleged results of observation may be *set aside*; first, because the so-called facts are in their own nature equivocal; secondly, because they stand on insufficient authority; thirdly, because they are not sufficiently numerous. But, in this case, the disease is one of striking and well-marked character; the witnesses are experts, interested in denying and disbelieving the facts; the number of consecutive

cases in many instances frightful, and the number of series of cases such, that I have no room for many of them except by mere reference.

X. These results of observation, being admitted, may, we will suppose, be *interpreted* in different methods. Thus the coincidences may be considered the effect of *chance*. I have had the chances calculated by a competent person, that a given practitioner, A., shall have sixteen fatal cases in a month, on the following data: A. to average attendance upon two hundred and fifty births in a year; three deaths in one thousand births to be assumed as the average from puerperal fever; no epidemic to be at the time prevailing. It follows, from the answer given me, that if we suppose every one of the five hundred thousand annual births of England to have been recorded during the last half-century, there would not be one chance in a million million million millions, that one such series should be noted. No possible fractional error in this calculation can render the chance a working probability. Applied to dozens of series of various lengths, it is obviously an absurdity. Chance, therefore, is out of the question as an explanation of the admitted coincidences.

XI. There is, therefore, *some* relation of cause and effect between the physician's presence and the patient's disease.

XII. Until it is proved to what *removable condition* attaching to the attendant the disease is owing, he is

bound to stay away from his patients so soon as he finds himself singled out to be tracked by the disease. How long, and with what other precautions, I have suggested, without dictating, at the close of my essay. If the physician does not at once act on any reasonable suspicion of his being the medium of transfer, the families where he is engaged, if they are allowed to know the facts, should decline his services for the time. His feelings on the occasion, however interesting to himself, should not be even named in this connection. A physician who talks about *ceremony* and *gratitude*, and *services rendered*, and the *treatment he got*, surely forgets himself; it is impossible that he should seriously think of these small matters where there is even a question whether he may not carry disease, and death, and bereavement into any one of "his families," as they are sometimes called.

I will now point out to the young student the mode in which he may relieve his mind of any confusion, or possibly, if *very* young, any doubt, which the perusal of Dr. Meigs's Sixth Letter may have raised in his mind.

The most prominent ideas of the Letter are, first, that the transmissible nature of puerperal fever appears improbable, and, secondly, that it would be very inconvenient to the writer. Dr. Woodville, Physician to the Small-Pox and Inoculation Hospital in London, found it improbable, and exceedingly in-

convenient to himself, that cow-pox should prevent small-pox; but Dr. Jenner took the liberty to prove the fact, notwithstanding.

I will first call the young student's attention to the show of negative facts, (exposure without subsequent disease,) of which much seems to be thought. And I may, at the same time, refer him to Dr. Hodge's Lecture, where he will find the same kind of facts and reasoning. Let him now take up Watson's Lectures, the good sense and spirit of which have made his book a universal favorite, and open to the chapter on Continued Fever. He will find a paragraph containing the following sentence: "A man might say, 'I was in the battle of Waterloo, and saw many men around me fall down and die, and it was said that they were struck down by musket-balls; but I know better than that, for I was there all the time, and so were many of my friends, and we were never hit by any musket-balls. Musket-balls, therefore, could not have been the cause of the deaths we witnessed.' And if, like contagion, they were not palpable to the senses, such a person might go on to affirm that no proof existed of there being any such thing as musket-balls." Now let the student turn back to the Chapter on Hydrophobia in the same volume. He will find that John Hunter knew a case in which, of twenty-one persons bitten, only one died of the disease. He will find that one dog at Charenton was bitten at different times by thirty

different mad dogs, and outlived it all. Is there no such thing, then, as hydrophobia? Would one take no especial precautions if his wife, about to become a mother, had been bitten by a rabid animal, because so many escape? Or let him look at Underwood on Diseases of Children,* and he will find the case of a young woman who was inoculated eight times in thirty days, at the same time attending several children with small-pox, and yet was not infected. But seven weeks afterwards she took the disease and died.

It would seem as if the force of this argument could hardly fail to be seen, if it were granted that every one of these series of cases were so reported as to prove that there could have been no transfer of disease. *There is not one of them* so reported, in the Lecture or the Letter, as to prove that the disease may not have been carried by the practitioner. I strongly suspect that it was so carried in some of these cases, but from the character of the very imperfect evidence, the question can never be settled without further disclosures.

Although the Letter is, as I have implied, principally taken up with secondary and collateral questions, and might therefore be set aside as in the main irrelevant, I am willing, for the student's sake, to touch some of these questions briefly, as an illustration of its logical character.

* Philadelphia, 1842, p. 244, note.

The first thing to be done, as I thought when I wrote my Essay, was to throw out all discussions of the word *contagion*, and this I did effectually by the careful wording of my statement of the subject to be discussed. My object was not to settle the etymology or definition of a word, but to show that women had often died in childbed, poisoned in some way by their medical attendants. On the other point, I, at least, have no controversy with anybody, and I think the student will do well to avoid it in this connection. If I must define my position, however, as well as the term in question, I am contented with Worcester's definition; provided always this avowal do not open another side-controversy on the merits of his Dictionary, which Dr. Meigs has not cited, as compared with Webster's, which he has.

I cannot see the propriety of insisting that all the laws of the eruptive fevers must necessarily hold true of this peculiar disease of puerperal women. If there were any such propriety, the laws of the eruptive fevers must at least be stated correctly. It is not true, for instance, as Dr. Meigs states, that contagion is "no respecter of persons;" that "it attacks all individuals alike." To give one example: Dr. Gregory, of the Small-Pox Hospital, who ought to know, says that persons pass through life apparently insensible to or unsusceptible of the small-pox virus, and that the same persons do not take the vaccine disease.

As to the short time of incubation, of which so

much is made, we have no right to decide beforehand whether it shall be long or short, in the cases we are considering. A dissection wound may produce symptoms of poisoning in six hours; the bite of a rabid animal may take as many months.

After the student has read the case in Dr. Meigs's 136th paragraph, and the following one, in which he exclaims against the idea of contagion, because the patient, delivered on the 26th of December, was attacked in twenty-four hours, and died on the third day, let him read what happened at the "Black Assizes" of 1577 and 1750. In the first case, six hundred persons sickened the same night of the exposure, and three hundred more in three days.* Of those attacked in the latter year, the exposure being on the 11th of May, Alderman Lambert died on the 13th, Under-Sheriff Cox on the 14th, and many of note before the 20th.† But these are old stories. Let the student listen then to Dr. Gerhard, whose reputation as a cautious observer he may be supposed to know. "The nurse was shaving a man, who died in a few hours after his entrance; he inhaled his breath, which had a nauseous taste, and in an hour afterwards was taken with nausea, cephalalgia, and ringing of the ears. From that *moment* the attack began, and assumed a severe character. The assistant was supporting another patient, who died soon afterwards; he felt the pungent heat upon his

* Elliotson's Practice, p. 299.

† Rees's Cyc., Art. *Contagion*.

skin, and was taken immediately with the symptoms of typhus."* It is by notes of cases, rather than notes of admiration, that we must be guided, when we study the Revised Statutes of Nature, as laid down from the curule chairs of Medicine.

Let the student read Dr. Meigs's 140th paragraph soberly, and then remember, that, not only does he *infer*, *suspect*, and *surmise*, but he actually *asserts* (page 154), "there was poison in the house," because three, out of five patients admitted into a ward, had puerperal fever, and died. Have I not as much right to draw a positive inference from "Dr. A.'s" seventy exclusive cases, as he from the three cases in the ward of the Dublin Hospital? All practical medicine, and all action in common affairs, is founded on inferences. How does Dr. Meigs know that the patients he bled in puerperal fever would not have all got well if he had not bled them?

"You see a man discharge a gun at another; you see the flash, you hear the report, you see the person fall a lifeless corpse; and you *infer*, from all these circumstances, that there was a ball discharged from the gun, which entered his body and caused his death, because such is the usual and natural cause of such an effect. But you did not see the ball leave the gun, pass through the air, and enter the body of the slain; and your testimony to the fact of killing is, therefore, only inferential, — in other words, circum-

* Am. Journ. Med. Sciences, Feb. 1837, p. 299.

stantial. It is *possible* that no ball was in the gun ; and we *infer* that there was, only because we cannot account for death on any other supposition.”*

“The question always comes to this,—Is the circumstance of intercourse with the sick followed by the appearance of the disease in a proportion of cases so much greater than any other circumstance common to any portion of the inhabitants of the place under observation, as to make it inconceivable that the succession of cases occurring in persons having that intercourse should have been the result of chance? If so, the inference is unavoidable, that that intercourse must have acted as a cause of the disease. *All observations which do not bear strictly on that point are irrelevant*, and, in the case of an epidemic first appearing in a town or district, a succession of *two cases* is sometimes sufficient to furnish evidence, which, on the principle I have stated, is nearly irresistible.”†

Possibly an inexperienced youth may be awe-struck by the quotation from Cuvier. These words, or their equivalent, are certainly to be found in his Introduction. So are the words “top not come down”! to be found in the Bible, and they were as much meant for the ladies’ head-dresses, as the words of Cuvier were meant to make clinical observation wait for a permit from anybody to look with its eyes and count

* Chief Justice Gibson, in Am. Law Journal, Vol. VI. p. 123.

† Dr. Alison.

on its fingers. Let the inquiring youth read the whole Introduction, and he will see what they mean.

I intend no breach of courtesy, but this is a proper place to warn the student against skimming the prefaces and introductions of works for mottos and embellishments to his thesis. He cannot learn anatomy by thrusting an exploring needle into the body. He will be very liable to misquote his author's meaning while he is picking off his outside sentences. He may make as great a blunder as that simple prince, who praised the conductor of his orchestra for the piece just before the overture; the musician was too good a courtier to tell him that it was only the tuning of the instruments.

To the six propositions in the 142d paragraph, and the remarks about "specific" diseases, the answer, if any is necessary, seems very simple. An inflammation of a serous membrane may give rise to secretions which act as a poison, whether that be a "specific" poison or not, as Dr. Horner has told his young readers, and as dissectors know too well; and that poison may produce its symptoms in a few hours after the system has received it, as any may see in Druitt's Surgery, if they care to look. Puerperal peritonitis may produce such a poison, and puerperal women may be very sensible to its influences, conveyed by contact or exhalation. Whether this is so or not, facts alone can determine, and to facts we have had recourse to settle it.

The following statement is made by Dr. Meigs in his 142d paragraph, and developed more at length, with rhetorical amplifications, in the 134th. "No human being, save a pregnant or parturient woman, is susceptible to the poison." This statement is wholly incorrect, as I am sorry to have to point out to a Teacher in Dr. Meigs's position. I do not object to the erudition which quotes Willis and Fernelius, the last of whom was pleasantly said to have "preserved the dregs of the Arabs in the honey of his Latinity." But I could wish that more modern authorities had not been overlooked. On this point, for instance, among the numerous facts disproving the statement, the American Journal of Medical Sciences, published not far from his lecture-room, would have presented him with a respectable catalogue of such cases. Thus he might refer to Mr. Storrs's paper "On the Contagious Effects of Puerperal Fever on the Male Subject; or on Persons not Childbearing," (Jan. 1846,) or to Dr. Reid's case, (April, 1846,) or to Dr. Barron's statement of the children's dying of peritonitis in an epidemic of puerperal fever at the Philadelphia Hospital, (Oct. 1842,) or to various instances cited in Dr. Kneeland's article, (April, 1846.) Or if he would have referred to the New York Journal, he might have seen Prof. Austin Flint's cases. Or, if he had honored my Essay so far, he might have found striking instances of the same kind in the first of the new series of cases there reported and else-

where. I do not see the bearing of his proposition, if it were true. But it is one of those assertions that falls in a moment before a slight examination of the facts; and I confess my surprise, that a professor who lectures on the Diseases of Women should have ventured to make it.

Nearly seven pages are devoted to showing that I was wrong in saying I would not be "understood to imply that there exists a doubt in the mind of any well-informed member of the medical profession, as to the fact that puerperal fever is sometimes communicated from one person to another, both directly and indirectly." I will devote seven lines to these seven pages, which seven lines, if I may say it without offence, are, as it seems to me, six more than are strictly necessary.

The following authors are cited as sceptics by Dr. Meigs:—

<p><i>Deweese</i>.—I cited the same passage. Did not know half the facts. <i>Robert Lee</i>.—Believes the disease is sometimes communicable by contagion. <i>Tonnellé</i> and <i>Baudelocque</i>.—Both cited by me. <i>Jacquemier</i>.—Published three years after my Essay. <i>Kiwisch</i>.—Behindhand in knowledge of Puerperal Fever.* <i>Paul Dubois</i>.—<i>Scanzoni</i>.</p>	}	<p>Continental writers not well informed on this point.†</p>
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* B. & F. Med. Rev., Jan. 1842.

† See Dr. Simpson's Remarks at Meeting of Edin. Med. Chir. Soc. (Am. Jour. Oct. 1851.)

The story of Von Busch is of interest and value, but there is nothing in it which need perplex the student. It is not pretended that the disease is always, or even, it may be, in the majority of cases, carried about by attendants; only that it is so carried in certain cases. That it may have local and epidemic causes, as well as that depending on personal transmission, is not disputed. Remember how small-pox often disappears from a community in spite of its contagious character, and the necessary exposure of many persons to those suffering from it; in both diseases contagion is only one of the coefficients of the disease.

I have already spoken of the possibility that Dr. Meigs may have been the medium of transfer of puerperal fever in some of the cases he has briefly catalogued. Of Dr. Rutter's cases I do not know how to speak. I only ask the student to read the facts stated by Dr. Condie, as given in my Essay, and say whether or not a man should allow his wife to be attended by a practitioner, in whose hands "scarcely a female that has been delivered for weeks past has escaped an attack," "while no instance of the disease has occurred in the patients of any other accoucheur practising in the same district." If I understand Dr. Meigs and Dr. Hodge, they would not warn the physician or spare the patient under such circumstances. They would "go on," if I understand them, not to seven, or seventy, only, but to

seventy times seven, if they could find patients. If this is not what they mean, may we respectfully ask them to state what they do mean, to their next classes, in the name of humanity, if not of science!

I might repeat the question asked concerning Dr. Rutter's cases, with reference to those reported by Dr. Robertson. Perhaps, however, the student would like to know the opinion of a person in the habit of working at matters of this kind in a practical point of view. To satisfy him on this ground, I addressed the following question to the President of one of our principal Insurance Companies, leaving Dr. Meigs's book and my Essay in his hands at the same time.

Question. "If such facts as Robertson's cases were before you, and the attendant had had ten, or even five fatal cases, or three, or *two* even, would you, or would you not, if insuring the life of the next patient to be taken care of by that attendant, expect an extra premium over that of an average case of childbirth?"

Answer. "Of course I should require a very large extra premium, if I would take the risk at all."

But I do not choose to add the expressions of indignation which the examination of the facts before him called out. I was satisfied from the effect they produced on him, that if all the hideous catalogues of cases now accumulated were fully brought to the knowledge of the public, nothing, since the days of

Burke and Hare, has raised such a cry of horror as would be shrieked in the ears of the Profession.

Dr. Meigs has elsewhere invoked "Providence" as the alternative of accident, to account for the "coincidences." (Obstetrics, Phil. 1852, p. 631.) If so, Providence either acts through the agency of secondary causes, as in other diseases, or not. If through such causes, let us find out what they are, as we try to do in other cases. It may be true that offences, or diseases, will come, but "woe unto him through whom they come," if we catch him in the voluntary or careless act of bringing them! But if Providence does not act through secondary causes in this particular sphere of etiology, then why does Dr. Meigs take such pains to reason so extensively about the laws of contagion, which, on that supposition, have no more to do with this case than with the plague which destroyed the people after David had numbered them? Above all, what becomes of the theological aspect of the question, when he asserts that a practitioner was "only *unlucky* in meeting with the epidemic cases?" (Op. cit. p. 633.) We do not deny that the God of battles decides the fate of nations; but we like to have the biggest squadrons on our side, and we are particular that our soldiers should not only say their prayers, but also keep their powder dry. We do not deny the agency of Providence in the disaster at Norwalk, but we turn off the engineer, and charge the Company five thousand dollars apiece

for every life that is sacrificed. Why a grand jury should not bring in a bill against a physician who switches off a score of women one after the other along his private track, when he knows that there is a black gulf at the end of it, down which they are to plunge, while the great highway is clear, is more than I can answer. It is not by laying the open draw to Providence that he is to escape the charge of manslaughter.

To finish with all these lesser matters of question, I am unable to see why a female must necessarily be unattended in her confinement, because she declines the services of a particular practitioner. In all the series of cases mentioned, the death-carrying attendant was surrounded by others not tracked by disease and its consequences. Which, I would ask, is worst, — to call in another, even a rival practitioner, or to submit an unsuspecting female to a risk which an Insurance Company would have nothing to do with?

I do not expect ever to return to this subject. There is a point of mental saturation, beyond which argument cannot be forced without breeding impatient, if not harsh feelings, towards those who refuse to be convinced. If I have so far manifested neither, it is well to stop here, and leave the rest to those younger friends who may have more stomach for the dregs of a stale argument.

The extent of my prefatory remarks may lead some

to think that I attach too much importance to my own Essay. Others may wonder that I should expend so many words upon the two productions referred to, the Letter and the Lecture. I do consider my Essay of much importance so long as the doctrine it maintains is treated as a *question*, and so long as any important part of the defence of that doctrine is thought to rest on its evidence or arguments. I cannot treat as insignificant any opinions bearing on life, and interests dearer than life, proclaimed yearly to hundreds of young men, who will carry them to their legitimate results in practice.

The teachings of the two Professors in the great schools of Philadelphia are sure to be listened to, not only by their immediate pupils, but by the Profession at large. I am too much in earnest for either humility or vanity, but I do entreat those who hold the keys of life and death, to listen to me also for this once. I ask no personal favor; but I beg to be heard in behalf of the women whose lives are at stake, until some stronger voice shall plead for them.

I trust that I have made the issue perfectly distinct and intelligible. And let it be remembered that this is no subject to be smoothed over by nicely adjusted phrases of half-assent and half-censure divided between the parties. The balance must be struck boldly and the result declared plainly. If I have been hasty, presumptuous, ill-informed, illogical; if my array of facts means nothing; if there is no rea-

son for any caution in the view of these facts ; let me be told so on such authority that I must believe it, and I will be silent henceforth, recognizing that my mind is in a state of disorganization. If the doctrine I have maintained is a mournful truth ; if to disbelieve it, and to practise on this disbelief, and to teach others so to disbelieve and practise, is to carry desolation, and to charter others to carry it, into confiding families, let it be proclaimed as plainly what is to be thought of the teachings of those who sneer at the alleged dangers, and scout the very idea of precaution. Let it be remembered that *persons* are nothing in this matter ; better that twenty pamphleteers should be silenced, or as many professors unseated, than that one mother's life should be taken. There is no quarrel here between men, but there is deadly incompatibility and exterminating warfare between doctrines. *Coincidences*, meaning nothing, though a man have a monopoly of the disease for weeks or months ; or *cause and effect*, the cause being in some way connected with the person ; this is the question. If I am wrong, let me be put down by such a rebuke as no rash declaimer has received since there has been a public opinion in the medical profession of America ; if I am right, let doctrines which lead to professional homicide be no longer taught from the chairs of those two great Institutions. Indifference will not do here ; our Journalists and Committees have no right to take up their

pages with minute anatomy and tediously detailed cases, while it is a question whether or not the "black-death" of child-bed is to be scattered broadcast by the agency of the mother's friend and adviser. Let the men who mould opinions look to it; if there is any voluntary blindness, any interested oversight, any culpable negligence, even, in such a matter, and the facts shall reach the public ear; the pestilence-carrier of the lying-in chamber must look to God for pardon, for man will never forgive him.

THE
CONTAGIOUSNESS OF PUERPERAL FEVER.

IN collecting, enforcing, and adding to the evidence accumulated upon this most serious subject, I would not be understood to imply that there exists a doubt in the mind of any well-informed member of the medical profession as to the fact that puerperal fever is sometimes communicated from one person to another, both directly and indirectly. In the present state of our knowledge upon this point I should consider such doubts merely as a proof that the sceptic had either not examined the evidence, or, having examined it, refused to accept its plain and unavoidable consequences. I should be sorry to think, with Dr. Rigby, that it was a case of "oblique vision;" I should be unwilling to force home the *argumentum ad hominem* of Dr. Blundell, but I would not consent to make a *question* of a momentous fact which is no longer to be considered as a subject for trivial discussions, but to be acted upon with silent promptitude. It signifies nothing that wise and experienced practitioners have sometimes doubted the reality of

the danger in question ; no man has the right to doubt it any longer. No negative facts, no opposing opinions, be they what they may or whose they may, can form any answer to the series of cases now within the reach of all who choose to explore the records of medical science.

If there are some who conceive that any important end would be answered by recording such opinions, or by collecting the history of all the cases they could find in which no evidence of the influence of contagion existed, I believe they are in error. Suppose a few writers of authority can be found to profess a disbelief in contagion, — and they are very few compared with those who think differently, — is it quite clear that they formed their opinions on a view of all the facts, or is it not apparent that they relied mostly on their own solitary experience ? Still further, of those whose names are quoted, is it not true that scarcely a single one could by any possibility have known the half or the tenth of the facts bearing on the subject which have reached such a frightful amount within the last few years ? Again, as to the utility of negative facts, as we may briefly call them, — instances, namely, in which exposure has not been followed by disease, — although, like other truths, they may be worth knowing, I do not see that they are like to shed any important light upon the subject before us. Every such instance requires a good deal of circumstantial explanation before it can be ac-

cepted. It is not enough that a practitioner should have had a single case of puerperal fever not followed by others. It must be known whether he attended others while this case was in progress, whether he went directly from one chamber to others, whether he took any, and what precautions. It is important to know that several women were exposed to infection derived from the patient, so that allowance may be made for want of predisposition. Now if of negative facts so sifted there could be accumulated a hundred for every one plain instance of communication here recorded, I trust it need not be said that we are bound to guard and watch over the hundredth tenant of our fold, though the ninety and nine may be sure of escaping the wolf at its entrance. If any one is disposed, then, to take a hundred instances of lives endangered or sacrificed out of those I have mentioned, and make it reasonably clear that within a similar time and compass *ten thousand* escaped the same exposure, I shall thank him for his industry, but I must be permitted to hold to my own practical conclusions, and beg him to adopt or at least to examine them also. Children that walk in calico before open fires are not always burned to death; the instances to the contrary may be worth recording; but by no means if they are to be used as arguments against woollen frocks and high fenders.

I am not sure that this paper will escape another remark which it might be wished were founded in

justice. It may be said that the facts are too generally known and acknowledged to require any formal argument or exposition, that there is nothing new in the positions advanced, and no need of laying additional statements before the profession. But on turning to two works, one almost universally, and the other extensively appealed to as authority in this country, I see ample reason to overlook this objection. In the last edition of Dewees's Treatise on the Diseases of Females, it is expressly said, "In this country, under no circumstance that puerperal fever has appeared hitherto, does it afford the slightest ground for the belief that it is contagious." In the "Philadelphia Practice of Midwifery" not one word can be found in the chapter devoted to this disease, which would lead the reader to suspect that the idea of contagion had ever been entertained. It seems proper, therefore, to remind those who are in the habit of referring to these works for guidance, that there may possibly be some sources of danger they have slighted or omitted, quite as important as a trifling irregularity of diet, or a confined state of the bowels, and that whatever confidence a physician may have in his own mode of treatment, his services are of questionable value whenever he carries the bane as well as the antidote about his person.

The practical point to be illustrated is the following: *The disease known as Puerperal Fever is so far*

contagious as to be frequently carried from patient to patient by physicians and nurses.

Let me begin by throwing out certain incidental questions, which, without being absolutely essential, would render the subject more complicated, and by making such concessions and assumptions as may be fairly supposed to be without the pale of discussion.

1. It is granted that all the forms of what is called puerperal fever may not be, and probably are not, equally contagious or infectious. I do not enter into the distinctions which have been drawn by authors, because the facts do not appear to me sufficient to establish any absolute line of demarcation between such forms as may be propagated by contagion, and those which are never so propagated. This general result I shall only support by the authority of Dr. Ramsbotham, who gives, as the result of his experience, that the same symptoms belong to what he calls the infectious and the sporadic forms of the disease, and the opinion of Armstrong in his original Essay. If others can show any such distinction, I leave it to them to do it. But there are cases enough that show the prevalence of the disease among the patients of a single practitioner when it was in no degree epidemic, in the proper sense of the term. I may refer to those of Mr. Roberton and of Dr. Peirson, hereafter to be cited, as examples.

2. I shall not enter into any dispute about the

particular *mode* of infection, whether it be by the atmosphere the physician carries about him into the sick-chamber, or by the direct application of the virus to the absorbing surfaces with which his hand comes in contact. Many facts and opinions are in favor of each of these modes of transmission. But it is obvious that in the majority of cases it must be impossible to decide by which of these channels the disease is conveyed, from the nature of the intercourse between the physician and the patient.

3. It is not pretended that the contagion of puerperal fever must always be followed by the disease. It is true of all contagious diseases, that they frequently spare those who appear to be fully submitted to their influence. Even the vaccine virus, fresh from the subject, fails every day to produce its legitimate effect, though every precaution is taken to insure its action. This is still more remarkably the case with scarlet fever and some other diseases.

4. It is granted that the disease may be produced and variously modified by many causes besides contagion, and more especially by epidemic and endemic influences. But this is not peculiar to the disease in question. There is no doubt that small-pox is propagated to a great extent by contagion, yet it goes through the same periods of periodical increase and diminution which have been remarked in puerperal fever. If the question is asked how we are to reconcile the great variations in the mortality of

puerperal fever in different seasons and places with the supposition of contagion, I will answer it by another question from Mr. Farr's letter to the Registrar-General. He makes the statement that "*five* die weekly of small-pox in the metropolis when the disease is not epidemic," — and adds, "The problem for solution is, — Why do the 5 deaths become 10, 15, 20, 31, 58, 88, weekly, and then progressively fall through the same measured steps?"

5. I take it for granted, that if it can be shown that great numbers of lives have been and are sacrificed to ignorance or blindness on this point, no other error of which physicians or nurses may be occasionally suspected will be alleged in palliation of this; but that whenever and wherever they can be shown to carry disease and death instead of health and safety, the common instincts of humanity will silence every attempt to explain away their responsibility.

The treatise of Dr. Gordon, of Aberdeen, was published in the year 1795, being among the earlier special works upon the disease. A part of his testimony has been occasionally copied into other works, but his expressions are so clear, his experience is given with such manly distinctness and disinterested honesty, that it may be quoted as a model which might have been often followed with advantage.

"This disease seized such women only as were visited, or delivered, by a practitioner, or taken care of

by a nurse, who had previously attended patients affected with the disease.”

“I had evident proofs of its infectious nature, and that the infection was as readily communicated as that of the small-pox or measles, and operated more speedily than any other infection with which I am acquainted.”

“I had evident proofs that every person who had been with a patient in the puerperal fever became charged with an atmosphere of infection, which was communicated to every pregnant woman who happened to come within its sphere. This is not an assertion, but a fact, admitting of demonstration, as may be seen by a perusal of the foregoing table,” — referring to a table of seventy-seven cases, in many of which the channel of propagation was evident.

He adds, “It is a disagreeable declaration for me to mention, that I myself was the means of carrying the infection to a great number of women.” He then enumerates a number of instances in which the disease was conveyed by midwives and others to the neighboring villages, and declares that “these facts fully prove that the cause of the puerperal fever, of which I treat, was a specific contagion, or infection, altogether unconnected with a noxious constitution of the atmosphere.”

But his most terrible evidence is given in these words: “I ARRIVED AT THAT CERTAINTY IN THE MATTER, THAT I COULD VENTURE TO FORETELL WHAT WOMEN

WOULD BE AFFECTED WITH THE DISEASE, UPON HEARING BY WHAT MIDWIFE THEY WERE TO BE DELIVERED, OR BY WHAT NURSE THEY WERE TO BE ATTENDED, DURING THEIR LYING-IN : AND, ALMOST IN EVERY INSTANCE, MY PREDICTION WAS VERIFIED.”

Even previously to Gordon, Mr. White of Manchester had said, “I am acquainted with two gentlemen in another town, where the whole business of midwifery is divided betwixt them, and it is very remarkable that one of them loses several patients every year of the puerperal fever, and the other never so much as meets with the disorder,” — a difference which he seems to attribute to their various modes of treatment.*

Dr. Armstrong has given a number of instances in his Essay on Puerperal Fever, of the prevalence of the disease among the patients of a single practitioner. At Sunderland, “in all, forty-three cases occurred from the 1st of January to the 1st of October, when the disease ceased ; and of this number forty were witnessed by Mr. Gregson and his assistant, Mr. Gregory, the remainder having been separately seen by three accoucheurs.” There is appended to the London edition of this essay, a letter from Mr. Gregson, in which that gentleman says, in reference to the great number of cases occurring in his practice, “The cause of this I cannot pretend fully to explain, but I should be wanting in common liberality if I

* On the Management of Lying-in Women, p. 120.

were to make any hesitation in asserting, that the disease which appeared in my practice was highly contagious, and communicable from one puerperal woman to another." "It is customary among the lower and middle ranks of people to make frequent personal visits to puerperal women resident in the same neighborhood, and I have ample evidence for affirming that the infection of the disease was often carried about in that manner; and, however painful to my feelings, I must in candor declare, that it is very probable the contagion was conveyed, in some instances, by myself, though I took every possible care to prevent such a thing from happening, the moment that I ascertained that the distemper was infectious." Dr. Armstrong goes on to mention six other instances within his knowledge, in which the disease had at different times and places been limited, in the same singular manner, to the practice of individuals, while it existed scarcely if at all among the patients of others around them. Two of the gentlemen became so convinced of their conveying the contagion, that they withdrew for a time from practice.

I find a brief notice, in an *American Journal*, of another series of cases, first mentioned by Mr. Davies, in the *Medical Repository*. This gentleman stated his conviction that the disease is contagious.

"In the autumn of 1822, he met with twelve cases, while his medical friends in the neighborhood did not meet with any, 'or at least very few.' He could

attribute this circumstance to no other cause than his having been present at the examination, after death, of two cases, some time previous, and of his having imparted the disease to his patients, notwithstanding every precaution.”*

Dr. Gooch says, “It is not uncommon for the greater number of cases to occur in the practice of one man, whilst the other practitioners of the neighborhood, who are not more skilful or more busy, meet with few or none. A practitioner opened the body of a woman who had died of puerperal fever, and continued to wear the same clothes. A lady whom he delivered a few days afterwards was attacked with and died of a similar disease; two more of his lying-in patients, in rapid succession, met with the same fate; struck by the thought, that he might have carried contagion in his clothes, he instantly changed them, and met with no more cases of the kind.† A woman in the country, who was employed as washerwoman and nurse, washed the linen of one who had died of puerperal fever; the next lying-in patient she nursed, died of the same disease; a third nursed by her met with the same fate, till the neighborhood, getting afraid of her, ceased to employ her.”‡

* Philad. Med. Journal for 1825, p. 408.

† A similar anecdote is related by Sir Benjamin Brodie, of the late Dr. John Clarke. *Lancet*, May 2, 1840.

‡ An Account of some of the most important Diseases peculiar to Women, p. 4.

In the winter of the year 1824, "Several instances occurred of its prevalence among the patients of particular practitioners, whilst others who were equally busy met with few or none. One instance of this kind was very remarkable. A general practitioner, in large midwifery practice, lost so many patients from puerperal fever, that he determined to deliver no more for some time, but that his partner should attend in his place. This plan was pursued for one month, during which not a case of the disease occurred in their practice. The elder practitioner, being then sufficiently recovered, returned to his practice, but the first patient he attended was attacked by the disease and died. A physician, who met him in consultation soon afterwards, about a case of a different kind, and who knew nothing of his misfortune, asked him whether puerperal fever was at all prevalent in his neighborhood, on which he burst into tears, and related the above circumstances.

"Among the cases which I saw this season in consultation, four occurred in one month in the practice of one medical man, and all of them terminated fatally."*

Dr. Ramsbotham asserted, in a Lecture at the London Hospital, that he had known the disease spread through a particular district, or be confined to the practice of a particular person, almost every

* Gooch, *Op. cit.*, p. 71.

patient being attacked with it, while others had not a single case. It seemed capable, he thought, of conveyance, not only by common modes, but through the dress of the attendants upon the patient.*

In a letter to be found in the London Medical Gazette for January, 1840, Mr. Robertson, of Manchester, makes the statement which I here give in a somewhat condensed form.

A midwife delivered a woman on the 4th of December, 1830, who died soon after with the symptoms of puerperal fever. In one month from this date the same midwife delivered thirty women, residing in different parts of an extensive suburb, of which number sixteen caught the disease and all died. These were the only cases which had occurred for a considerable time in Manchester. The other midwives connected with the same charitable institution as the woman already mentioned are twenty-five in number, and deliver, on an average, ninety women a week, or about three hundred and eighty a month. None of these women had a case of puerperal fever. "Yet all this time this woman was crossing the other midwives in every direction, scores of the patients of the charity being delivered by them in the very same quarters where her cases of fever were happening."

Mr. Robertson remarks, that little more than half the women she delivered during this month took the fever; that on some days all escaped, on others only

* Lond. Med. Gaz., May 2, 1835.

one or more out of three or four ; a circumstance similar to what is seen in other infectious maladies.

Dr. Blundell says, "Those who have never made the experiment can have but a faint conception how difficult it is to obtain the exact truth respecting any occurrence in which feelings and interests are concerned. Omitting particulars, then, I content myself with remarking, generally, that from more than one district I have received accounts of the prevalence of puerperal fever in the practice of some individuals, while its occurrence in that of others, in the same neighborhood, was not observed. Some, as I have been told, have lost ten, twelve, or a greater number of patients, in scarcely broken succession ; like their evil genius, the puerperal fever has seemed to stalk behind them wherever they went. Some have deemed it prudent to retire for a time from practice. In fine, that this fever may occur spontaneously, I admit ; that its infectious nature may be plausibly disputed, I do not deny ; but I add, considerately, that in my own family, I had rather that those I esteemed the most should be delivered, unaided, in a stable, by the manger-side, than that they should receive the best help, in the fairest apartment, but exposed to the vapors of this pitiless disease. Gossiping friends, wet-nurses, monthly nurses, the practitioner himself, these are the channels by which, as I suspect, the infection is principally conveyed." *

* Lect. on Midwifery, p. 395.

At a meeting of the Royal Medical and Chirurgical Society, Dr. King mentioned that some years since a practitioner at Woolwich lost sixteen patients from puerperal fever in the same year. He was compelled to give up practice for one or two years, his business being divided among the neighboring practitioners. No case of puerperal fever occurred afterwards, neither had any of the neighboring surgeons any cases of this disease.

At the same meeting Mr. Hutchinson mentioned the occurrence of three consecutive cases of puerperal fever, followed subsequently by two others, all in the practice of one accoucheur.*

Dr. Lee makes the following statement: "In the last two weeks of September, 1827, five fatal cases of uterine inflammation came under our observation. All the individuals so attacked had been attended in labor by the same midwife, and no example of a febrile or inflammatory disease of a serious nature occurred during that period among the other patients of the Westminster General Dispensary, who had been attended by the other midwives belonging to that institution." †

The recurrence of long series of cases like those I have cited, reported by those most interested to disbelieve in contagion, scattered along through an interval of half a century, might have been thought

* Lancet, May 2, 1840.

† Lond. Cyc. of Pract. Med., Art. *Fever, Puerperal*.

sufficient to satisfy the minds of all inquirers that here was something more than a singular coincidence. But if, on a more extended observation, it should be found that the same ominous groups of cases clustering about individual practitioners were observed in a remote country, at different times, and in widely separated regions, it would seem incredible that any should be found too prejudiced or indolent to accept the solemn truth knelled into their ears by the funeral bells from both sides of the ocean,—the plain conclusion that the physician and the disease entered, hand in hand, into the chamber of the unsuspecting patient.

That such series of cases have been observed in this country, and in this neighborhood, I proceed to show.

In Dr. Francis's *Notes to Denman's Midwifery*, a passage is cited from Dr. Hosack, in which he refers to certain puerperal cases which proved fatal to several lying-in women, and in some of which the disease was supposed to be conveyed by the accoucheurs themselves.*

A writer in the *New York Medical and Physical Journal* for October, 1829, in speaking of the occurrence of puerperal fever, confined to one man's practice, remarks, "We have known cases of this kind occur, though rarely, in New York."

I mention these little hints about the occurrence

* *Denman's Midwifery*, p. 675, 3d Am. ed.

of such cases, partly because they are the first I have met with in American medical literature, but more especially because they serve to remind us that behind the fearful array of published facts there lies a dark list of similar events, unwritten in the records of science, but long remembered by many a desolated fireside.

Certainly nothing can be more open and explicit than the account given by Dr. Peirson, of Salem, of the cases seen by him. In the first nineteen days of January, 1829, he had five consecutive cases of puerperal fever, every patient he attended being attacked, and the three first cases proving fatal. In March, of the same year, he had two moderate cases, in June, another case, and in July, another, which proved fatal. "Up to this period," he remarks, "I am not informed that a single case had occurred in the practice of any other physician. Since that period I have had no fatal case in my practice, although I have had several dangerous cases. I have attended in all twenty cases of this disease, of which four have been fatal. I am not aware that there has been any other case in the town of distinct puerperal peritonitis, although I am willing to admit my information may be very defective on this point. I have been told of some 'mixed cases,' and 'morbid affections after delivery.' " *

In the Quarterly Summary of the Transactions of

* Remarks on Puerperal Fever, pp. 12 and 13.

the College of Physicians of Philadelphia,* may be found some most extraordinary developments respecting a series of cases occurring in the practice of a member of that body.

Dr. Condie called the attention of the Society to the prevalence, at the present time, of puerperal fever of a peculiarly insidious and malignant character. "In the practice of one gentleman extensively engaged as an obstetrician, nearly every female he has attended in confinement, during several weeks past, within the above limits," (the southern sections and neighboring districts,) "had been attacked by the fever."

"An important query presents itself, the Doctor observed, in reference to the particular form of fever now prevalent. Is it, namely, capable of being propagated by contagion, and is a physician who has been in attendance upon a case of the disease warranted in continuing, without interruption, his practice as an obstetrician? Dr. C., although not a believer in the contagious character of many of those affections generally supposed to be propagated in this manner, has nevertheless become convinced by the facts that have fallen under his notice, that the puerperal fever now prevailing is capable of being communicated by contagion. How otherwise can be explained the very curious circumstance of the disease in one district being exclusively confined to the practice of a

* For May, June, and July, 1842.

single physician, a Fellow of this College, extensively engaged in obstetrical practice, — while no instance of the disease has occurred in the patients under the care of any other accoucheur practising within the same district; scarcely a female that has been delivered for weeks past has escaped an attack?"

Dr. Rutter, the practitioner referred to, "observed that, after the occurrence of a number of cases of the disease in his practice, he had left the city and remained absent for a week, but on returning, no article of clothing he then wore having been used by him before, one of the very first cases of parturition he attended was followed by an attack of the fever, and terminated fatally; he cannot, readily, therefore, believe in the transmission of the disease from female to female, in the person or clothes of the physician."

The meeting at which these remarks were made was held on the 3d of May, 1842. In a letter dated December 20, 1842, addressed to Dr. Meigs, and to be found in the *Medical Examiner*,* he speaks of "those horrible cases of puerperal fever, some of which you did me the favor to see with me during the past summer," and talks of his experience in the disease, "now numbering nearly seventy cases, all of which have occurred within less than a twelvemonth past."

And Dr. Meigs asserts, on the same page, "Indeed,

* For January 21, 1843.

I believe that his practice in that department of the profession was greater than that of any other gentleman, which was probably the cause of his seeing a greater number of the cases." This from a professor of midwifery, who some time ago assured a gentleman whom he met in consultation, that the night on which they met was the eighteenth in succession that he himself had been summoned from his repose,* seems hardly satisfactory.

I must call the attention of the inquirer most particularly to the Quarterly Report above referred to, and the letters of Dr. Meigs and Dr. Rutter, to be found in the Medical Examiner. Whatever impression they may produce upon his mind, I trust they will at least convince him that there is some reason for looking into this apparently uninviting subject.

At a meeting of the College of Physicians just mentioned, Dr. Warrington stated, that a few days after assisting at an autopsy of puerperal peritonitis, in which he laded out the contents of the abdominal cavity with his hands, he was called upon to deliver three women in rapid succession. All of these women were attacked with different forms of what is commonly called puerperal fever. Soon after these he saw two other patients, both on the same day, with the same disease. Of these five patients two died.

At the same meeting, Dr. West mentioned a fact related to him by Dr. Samuel Jackson, of Northum-

* Medical Examiner for December 10, 1842.

berland. Seven females, delivered by Dr. Jackson in rapid succession, while practising in Northumberland county, were all attacked with puerperal fever, and five of them died. "Women," he said, "who had expected me to attend upon them, now becoming alarmed, removed out of my reach, and others sent for a physician residing several miles distant. These women, as well as those attended by midwives, all did well; nor did we hear of any deaths in childbed within a radius of fifty miles, excepting two, and these I afterwards ascertained to have been caused by other diseases." He underwent, as he thought, a thorough purification, and still his next patient was attacked with the disease and died. He was led to suspect that the contagion might have been carried in the gloves which he had worn in attendance upon the previous cases. Two months or more after this he had two other cases. He could find nothing to account for these, unless it were the instruments for giving enemata, which had been used in two of the former cases, and were employed by these patients. When the first case occurred, he was attending and dressing a limb extensively mortified from erysipelas, and went immediately to the accouchement with his clothes and gloves most thoroughly imbued with its effluvia. And here I may mention, that this very Dr. Samuel Jackson, of Northumberland, is one of Dr. Dewees's authorities against contagion.

The three following statements are now for the first time given to the public. All of the cases referred to occurred within this State, and two of the three series in Boston and its immediate vicinity.

I. The first is a series of cases which took place during the last spring in a town at some distance from this neighborhood. A physician of that town, Dr. C., had the following consecutive cases.

No. 1,	delivered	March	20,	died	March	24.
“ 2,	“	April	9,	“	April	14.
“ 3,	“	“	10,	“	“	14.
“ 4,	“	“	11,	“	“	18.
“ 5,	“	“	27,	“	May	3.
“ 6,	“	“	28,	had some symptoms,		
						[recovered.
“ 7,	“	May	8,	had some symptoms,		
						[also recovered.

These were the only cases attended by this physician during the period referred to. “They were all attended by him until their termination, with the exception of the patient No. 6, who fell into the hands of another physician on the 2d of May. (Dr. C. left town for a few days at this time.) Dr. C. attended cases immediately before and after the above-named periods, none of which, however, presented any peculiar symptoms of the disease.

About the 1st of July, he attended another patient in a neighboring village, who died two or three days after delivery.

The first patient, it is stated, was delivered on the 20th of March. "On the 19th, Dr. C. made the autopsy of a man who died suddenly, sick only forty-eight hours; had œdema of the thigh, and gangrene extending from a little above the ankle into the cavity of the abdomen." Dr. C. wounded himself, very slightly, in the right hand during the autopsy. The hand was quite painful the night following, during his attendance on the patient No. 1. He did not see this patient after the 20th, being confined to the house, and very sick from the wound just mentioned, from this time until the 3d of April.

Several cases of erysipelas occurred in the house where the autopsy mentioned above took place, soon after the examination. There were also many cases of erysipelas in town at the time of the fatal puerperal cases which have been mentioned.

The nurse who laid out the body of the patient No. 3, was taken on the evening of the same day with sore throat and erysipelas, and died in ten days from the first attack.

The nurse who laid out the body of the patient No. 4, was taken on the day following with symptoms like those of this patient, and died in a week, without any external marks of erysipelas.

"No other cases of similar character with those of Dr. C. occurred in the practice of any of the physicians in the town or vicinity at the time. Deaths following confinement have occurred in the practice

of other physicians during the past year, but they were not cases of puerperal fever. No post-mortem examinations were held in any of these puerperal cases.”

Some additional statements in this letter are deserving of insertion.

“A physician attended a woman in the immediate neighborhood of the cases numbered 2, 3, and 4. This patient was confined the morning of March 1st, and died on the night of March 7th. It is doubtful whether this should be considered a case of puerperal fever. She had suffered from canker, indigestion, and diarrhoea for a year previous to her delivery. Her complaints were much aggravated for two or three months previous to delivery; she had become greatly emaciated, and weakened to such an extent, that it had not been expected that she would long survive her confinement, if indeed she reached that period. Her labor was easy enough; she flowed a good deal, seemed exceedingly prostrated, had ringing in the ears, and other symptoms of exhaustion; the pulse was quick and small. On the second and third day there was some tenderness and tumefaction of the abdomen, which increased somewhat on the fourth and fifth. He had cases in midwifery before and after this, which presented nothing peculiar.”

It is also mentioned in the same letter, that another physician had a case during the last summer and another last fall, both of which recovered.

Another gentleman reports a case last December, a second case five weeks, and another three weeks since. All these recovered. A case also occurred very recently in the practice of a physician in the village where the eighth patient of Dr. C. resides, which proved fatal. "This patient had some patches of erysipelas on the legs and arms. The same physician has delivered three cases since, which have all done well. There have been no other cases in this town or its vicinity recently. There have been some few cases of erysipelas." It deserves notice that the partner of Dr. C., who attended the autopsy of the man above mentioned and took an active part in it; who also suffered very slightly from a prick under the thumb-nail received during the examination, had twelve cases of midwifery between March 26th and April 12th, all of which did well, and presented no peculiar symptoms. It should also be stated, that during these seventeen days he was in attendance on all the cases of erysipelas in the house where the autopsy had been performed.

I owe these facts to the prompt kindness of a gentleman whose intelligence and character are sufficient guaranty for their accuracy.

The two following letters were addressed to my friend Dr. Storer, by the gentleman in whose practice the cases of puerperal fever occurred. His name renders it unnecessary to refer more particularly to

these gentlemen, who on their part have manifested the most perfect freedom and courtesy in affording these accounts of their painful experience.

“January 28, 1843.

II. . . . “The time to which you allude was in 1830. The first case was in February, during a very cold time. She was confined the 4th, and died the 12th. Between the 10th and 28th of this month, I attended six women in labor, all of whom did well except the last, as also two who were confined March 1st and 5th. Mrs. E., confined February 28th, sickened, and died March 8th. The next day, 9th, I inspected the body, and the night after attended a lady, Mrs. B., who sickened, and died 16th. The 10th, I attended another, Mrs. G., who sickened, but recovered. March 16th, I went from Mrs. G.’s room to attend a Mrs. H., who sickened, and died 21st. The 17th, I inspected Mrs. B. On the 19th, I went directly from Mrs. H.’s room to attend another lady, Mrs. G., who also sickened, and died 22d. While Mrs. B. was sick, on 15th, I went directly from her room a few rods, and attended another woman, who was not sick. Up to 20th of this month I wore the same clothes. I now refused to attend any labor, and did not till April 21st, when, having thoroughly cleansed myself, I resumed my practice, and had no more puerperal fever.

“The cases were not confined to a narrow space.

The two nearest were half a mile from each other, and half that distance from my residence. The others were from two to three miles apart, and nearly that distance from my residence. There were no other cases in their immediate vicinity which came to my knowledge. The general health of all the women was pretty good, and all the labors as good as common, except the first. This woman, in consequence of my not arriving in season, and the child being half-born at some time before I arrived, was very much exposed to the cold at the time of confinement, and afterwards, being confined in a very open, cold room. Of the six cases you perceive only one recovered.

“In the winter of 1817 two of my patients had puerperal fever, one very badly, the other not so badly. Both recovered. One other had swelled leg, or phlegmasia dolens, and one or two others did not recover as well as usual.

“In the summer of 1835 another disastrous period occurred in my practice. July 1st, I attended a lady in labor, who was afterwards quite ill and feverish; but at the time I did not consider her case a decided puerperal fever. On the 8th, I attended one who did well. On the 12th, one who was seriously sick. This was also an equivocal case, apparently arising from constipation and irritation of the rectum. These women were ten miles apart and five from my residence. On 15th and 20th, two who did well. On

25th, I attended another. This was a severe labor, and followed by unequivocal puerperal fever, or peritonitis. She recovered. August 2d and 3d, in about twenty-four hours I attended four persons. Two of them did very well; one was attacked with some of the common symptoms, which however subsided in a day or two, and the other had decided puerperal fever, but recovered. This woman resided five miles from me. Up to this time I wore the same coat. All my other clothes had frequently been changed. On 6th, I attended two women, one of whom was not sick at all; but the other, Mrs. L., was afterwards taken ill. On 10th, I attended a lady, who did very well. I had previously changed all my clothes, and had no garment on which had been in a puerperal room. On 12th, I was called to Mrs. S., in labor. While she was ill, I left her to visit Mrs. L., one of the ladies who was confined on 6th. Mrs. L. had been more unwell than usual, but I had not considered her case anything more than common till this visit. I had on a surtout at this visit, which, on my return to Mrs. S., I left in another room. Mrs. S. was delivered on 13th with forceps. These women both died of decided puerperal fever.

“ While I attended these women in their fevers, I changed my clothes, and washed my hands in a solution of chloride of lime after each visit. I attended seven women in labor during this period, all of whom recovered without sickness.

“In my practice I have had several single cases of puerperal fever, some of whom have died and some have recovered. Until the year 1830, I had no suspicion that the disease could be communicated from one patient to another by a nurse or midwife; but I now think the foregoing facts strongly favor that idea. I was so much convinced of this fact, that I adopted the plan before related.

“I believe my own health was as good as usual at each of the above periods. I have no recollection to the contrary.

“I believe I have answered all your questions. I have been more particular on some points perhaps than necessary; but I thought you could form your own opinion better than to take mine. In 1830, I wrote to Dr. Channing a more particular statement of my cases. If I have not answered your questions sufficiently, perhaps Dr. C. may have my letter to him, and you can find your answer there.”*

“Boston, February 3, 1843.

III. “DY DEAR SIR,—I received a note from you last evening, requesting me to answer certain questions therein proposed, touching the cases of puerperal fever which came under my observation the past summer. It gives me pleasure to comply with

* In a letter to myself, this gentleman also stated, “I do not recollect that there was any erysipelas or any other disease particularly prevalent at the time.”

your request, so far as it is in my power so to do, but, owing to the hurry in preparing for a journey, the notes of the cases I had then taken were lost or mislaid. The principal *facts*, however, are too vivid upon my recollection to be soon forgotten. I think, therefore, that I shall be able to give you all the information you may require.

“All the cases that occurred in my practice took place between the 7th of May and the 17th of June, 1842.

“They were not confined to any particular part of the city. The first two cases were patients residing at the South End, the next was at the extreme North End, one living in Sea Street and the other in Roxbury. The following is the order in which they occurred:—

“Case 1. Mrs. ——— was confined on the 7th of May, at 5 o'clock, P. M., after a natural labor of six hours. At 12 o'clock at night, on the 9th, (thirty-one hours after confinement,) she was taken with severe chill, previous to which she was as comfortable as women usually are under the circumstances. She died on the 10th.

“Case 2. Mrs. ——— was confined on the 10th of June (four weeks after Mrs. C.), at 11 A. M., after a natural, but somewhat severe labor of five hours. At 7 o'clock, on the morning of the 11th, she had a chill. Died on the 12th.

“Case 3. Mrs. ———, confined on the 14th of

June, was comfortable until the 18th, when symptoms of puerperal fever were manifest. She died on the 20th.

“Case 4. Mrs. —, confined June 17th, at 5 o'clock, A. M., was doing well until the morning of the 19th. She died on the evening of the 21st.

“Case 5. Mrs. — was confined with her *fifth* child on the 17th of June, at 6 o'clock in the evening. This patient had been attacked with puerperal fever, at three of her previous confinements, but the disease yielded to depletion and other remedies without difficulty. This time, I regret to say, I was not so fortunate. She was not attacked, as were the other patients, with a chill, but complained of extreme pain in abdomen, and tenderness on pressure, almost from the moment of her confinement. In this, as in the other cases, the disease resisted all remedies, and she died in great distress on the 22d of the same month. Owing to the extreme heat of the season, and my own indisposition, none of the subjects were examined after death. Dr. Channing, who was in attendance with me on the three last cases, proposed to have a *post-mortem* examination of the subject of case No. 5, but from some cause which I do not now recollect, it was not obtained.

“You wish to know whether I wore the same clothes when attending the different cases. I cannot positively say, but I should think I did not, as the weather became warmer after the first two cases ;

I therefore think it probable that I made a change of at least a *part* of my dress. I have had no other case of puerperal fever in my own practice for three years, save those above related, and I do not remember to have lost a patient before with this disease. While absent, last July, I visited two patients sick with puerperal fever, with a friend of mine in the country. Both of them recovered.

“The cases that I have recorded were not confined to any particular constitution or temperament, but it seized upon the strong and the weak, the old and the young,—one being over forty years, and the youngest under eighteen years of age. If the disease is of an erysipelatos nature, as many suppose, contagionists may perhaps find some ground for their belief in the fact, that, for two weeks previous to my first case of puerperal fever, I had been attending a severe case of erysipelas, and the infection may have been conveyed through me to the patient; but on the other hand, why is not this the case with other physicians, or with the same physician at all times, for since my return from the country I have had a more inveterate case of erysipelas than ever before, and no difficulty whatever has attended any of my midwifery cases?”

I am assured, on unquestionable authority, that “About three years since, a gentleman in extensive midwifery business, in a neighboring State, lost in the

course of a few weeks eight patients in child-bed, seven of them being undoubted cases of puerperal fever. No other physician of the town lost a single patient of this disease during the same period." And from what I have heard in conversation with some of our most experienced practitioners, I am inclined to think many cases of the kind might be brought to light by extensive inquiry.

This long catalogue of melancholy histories assumes a still darker aspect when we remember how kindly nature deals with the parturient female, when she is not immersed in the virulent atmosphere of an impure lying-in hospital, or poisoned in her chamber by the unsuspected breath of contagion. From all causes together, not more than four deaths in a thousand births and miscarriages happened in England and Wales during the period embraced by the first Report of the Registrar-General.* In the second Report the mortality was shown to be about five in one thousand.† In the Dublin Lying-in Hospital, during the seven years of Dr. Collins's mastership, there was one case of puerperal fever to 178 deliveries, or less than six to the thousand, and one death from this disease in 278 cases, or between three and four to the thousand.‡ Yet during this period the disease was endemic in the hospital, and might have

* 1st Report, p. 105.

† Collins's Midwifery, p. 228, &c.

‡ 2d Report, p. 73.

gone on to rival the horrors of the pestilence of the Maternité, had not the poison been destroyed by a thorough purification.

In private practice, leaving out of view the cases that are to be ascribed to the self-acting system of propagation, it would seem that the disease must be far from common. Mr. White, of Manchester, says, "Out of the whole number of lying-in patients whom I have delivered, (and I may safely call it a great one,) I have never lost one, nor to the best of my recollection, has one been greatly endangered, by the puerperal, miliary, low nervous, putrid malignant, or milk fever."* Dr. Joseph Clarke informed Dr. Collins, that in the course of *forty-five* years' most extensive practice, he lost but *four* patients from this disease.† One of the most eminent practitioners of Glasgow, who has been engaged in very extensive practice for upwards of a quarter of a century, testifies that he never saw more than twelve cases of real puerperal fever.‡

I have myself been told by two gentlemen practising in this city, and having for many years a large midwifery business, that they had neither of them lost a patient from this disease, and by one of them that he had only seen it in consultation with other physicians. In five hundred cases of midwifery, of which Dr. Storer has given an abstract in the first

* *Op. cit.*, p. 115.

‡ *Lancet*, May 4, 1833.

† *Collins's Treatise on Midwifery*, p. 228.

number of this Journal, there was only one instance of fatal puerperal peritonitis.

In the view of these facts, it does appear a singular coincidence, that one man or woman should have ten, twenty, thirty, or seventy cases of this rare disease, following his or her footsteps with the keenness of a beagle, through the streets and lanes of a crowded city, while the scores that cross the same paths on the same errands know it only by name. It is a series of similar coincidences which has led us to consider the dagger, the musket, and certain innocent-looking white powders, as having some little claim to be regarded as dangerous. It is the practical inattention to similar coincidences which has given rise to the unpleasant but often necessary documents called *indictments*, which has sharpened a form of the cephalotome sometimes employed in the case of adults, and adjusted that modification of the fillet which delivers the world of those who happen to be too much in the way while such striking coincidences are taking place.

I shall now mention a few instances in which the disease appears to have been conveyed by the process of direct inoculation.

Dr. Campbell, of Edinburgh, states that in October, 1821, he assisted at the *post-mortem* examination of a patient who died with puerperal fever. He carried the pelvic viscera in his pocket to the class-room. The same evening he attended a woman in labor without previously changing his clothes; this patient

died. The next morning he delivered a woman with the forceps; she died also, and of many others who were seized with the disease within a few weeks, three shared the same fate in succession.

In June, 1823, he assisted some of his pupils at the autopsy of a case of puerperal fever. He was unable to wash his hands with proper care, for want of the necessary accommodations. On getting home he found that two patients required his assistance. He went without further ablution, or changing his clothes; both these patients died with puerperal fever.* This same Dr. Campbell is one of Dr. Churchill's authorities against contagion.

Mr. Robertson says that in one instance within his knowledge a practitioner passed the catheter for a patient with puerperal fever late in the evening; the same night he attended a lady who had the symptoms of the disease on the second day. In another instance a surgeon was called while in the act of inspecting the body of a woman who had died of this fever, to attend a labor; within forty-eight hours this patient was seized with the fever.†

On the 16th of March, 1831, a medical practitioner examined the body of a woman who had died a few days after delivery, from puerperal peritonitis. On the evening of the 17th he delivered a patient who was seized with puerperal fever on the 19th, and

* Lond. Med. Gaz., December 10th, 1831.

† Ibid., for January, 1832.

died on the 24th. Between this period and the 6th of April, the same practitioner attended two other patients, both of whom were attacked with the same disease and died.*

In the autumn of 1829, a physician was present at the examination of a case of puerperal fever, dissected out the organs, and assisted in sewing up the body. He had scarcely reached home when he was summoned to attend a young lady in labor. In sixteen hours she was attacked with the symptoms of puerperal fever, and narrowly escaped with her life.†

In December, 1830, a midwife who had attended two fatal cases of puerperal fever at the British Lying-in Hospital, examined a patient who had just been admitted, to ascertain if labor had commenced. This patient remained two days in the expectation that labor would come on, when she returned home and was then suddenly taken in labor, and delivered before she could set out for the hospital. She went on favorably for two days, and was then taken with puerperal fever and died in thirty-six hours.‡

“A young practitioner, contrary to advice, examined the body of a patient who had died from puerperal fever; there was no epidemic at the time; the case appeared to be purely sporadic. He delivered three other women shortly afterwards; they all died with puerperal fever, the symptoms of which broke

* London Cyc. of Pract. Med., Art. *Fever, Puerperal*.

† *Ibid.*

‡ *Ibid.*

out very soon after labor. The patients of his colleague did well, except one, where he assisted to remove some coagula from the uterus; she was attacked in the same manner as those whom he had attended, and died also." The writer in the British and Foreign Medical Review, from whom I quote this statement, — and who is no other than Dr. Rigby, — adds, "We trust that this fact alone will forever silence such doubts, and stamp the well-merited epithet of 'criminal,' as above quoted, upon such attempts."*

From the cases given by Mr. Ingleby, I select the following. Two gentlemen, after having been engaged in conducting the *post-mortem* examination of a case of puerperal fever, went in the same dress, each respectively, to a case of midwifery. "The one patient was seized with the rigor about thirty hours afterwards. The other patient was seized with a rigor the third morning after delivery. *One recovered, one died.*"† One of these same gentlemen attended another woman in the same clothes two days after the autopsy referred to. "The rigor did not take place until the evening of the fifth day from the first visit. *Result fatal.*" These cases belonged to a series of seven, the first of which was thought to have originated in a case of erysipelas. "Several cases of a mild character followed the foregoing seven, and their nature being now most unequivocal, my friend declined

* Brit. and For. Medical Review, for Jan. 1842, p. 112.

† Edin. Med. and Surg. Journal, April, 1838.

visiting all midwifery cases for a time, and there was no recurrence of the disease." These cases occurred in 1833. Five of them proved fatal. Mr. Ingleby gives another series of seven cases which occurred to a practitioner in 1836, the first of which was also attributed to his having opened several erysipelatous abscesses a short time previously.

I need not refer to the case lately read before this Society, in which a physician went, soon after performing an autopsy of a case of puerperal fever, to a woman in labor, who was seized with the same disease and perished. The forfeit of that error has been already paid.

At a meeting of the Medical and Chirurgical Society before referred to, Dr. Merriman related an instance occurring in his own practice, which excites a reasonable suspicion that two lives were sacrificed to a still less dangerous experiment. He was at the examination of a case of puerperal fever at two o'clock in the afternoon. *He took care not to touch the body.* At nine o'clock the same evening he attended a woman in labor; she was so nearly delivered that he had scarcely anything to do. The next morning she had severe rigors, and in forty-eight hours she was a corpse. Her infant had erysipelas and died in two days.*

In connection with the facts which have been stated, it seems proper to allude to the dangerous and often

* Lancet, May 2, 1840.

fatal effects which have followed from wounds received in the *post-mortem* examination of patients who have died of puerperal fever. The fact that such wounds are attended with peculiar risk has been long noticed. I find that Chaussier was in the habit of cautioning his students against the danger to which they were exposed in these dissections.* The head *pharmacien* of the Hôtel Dieu, in his analysis of the fluid effused in puerperal peritonitis, says that practitioners are convinced of its deleterious qualities, and that it is very dangerous to apply it to the denuded skin.† Sir Benjamin Brodie speaks of it as being well known that the inoculation of lymph or pus from the peritoneum of a puerperal patient is often attended with dangerous and even fatal symptoms. Three cases in confirmation of this statement, two of them fatal, have been reported to this Society within a few months.

Of about fifty cases of injuries of this kind, of various degrees of severity, which I have collected from different sources, at least twelve were instances of infection from puerperal peritonitis. Some of the others are so stated as to render it probable that they may have been of the same nature. Five other cases were of peritoneal inflammation; three in males. Three were what was called enteritis, in one instance

* Stein, l'Art d'Accoucher, 1794; Dict. des Sciences Médicales, Art. *Puerperul*.

† Journal de Pharmacie, January, 1836.

complicated with erysipelas; but it is well known that this term has been often used to signify inflammation of the peritoneum covering the intestines. On the other hand, no case of typhus or typhoid fever is mentioned as giving rise to dangerous consequences, with the exception of the single instance of an undertaker mentioned by Mr. Travers, who seems to have been poisoned by a fluid which exuded from the body. The other accidents were produced by dissection, or some other mode of contact with bodies of patients, who had died of various affections. They also differed much in severity, the cases of puerperal origin being among the most formidable and fatal. Now a moment's reflection will show that the number of cases of serious consequences ensuing from the dissection of the bodies of those who had perished of puerperal fever, is so vastly disproportioned to the relatively small number of autopsies made in this complaint as compared with typhus or pneumonia (from which last disease not one case of poisoning happened), and still more from all diseases put together, that the conclusion is irresistible that a most fearful morbid poison is often generated in the course of this disease. Whether or not it is *sui generis*, confined to this disease, or produced in some others, as, for instance, erysipelas, I need not stop to inquire.

In connection with this may be taken the following statement of Dr. Rigby. "That the discharges from a patient under puerperal fever are in the highest de-

gree contagious we have abundant evidence in the history of lying-in hospitals. The puerperal abscesses are also contagious, and may be communicated to healthy lying-in women by washing with the same sponge; this fact has been repeatedly proved in the Vienna Hospital; but they are equally communicable to women not pregnant; on more than one occasion the women engaged in washing the soiled bed-linen of the General Lying-in Hospital have been attacked with abscess in the fingers or hands, attended with rapidly spreading inflammation of the cellular tissue."*

Now add to all this the undisputed fact, that within the walls of lying-in hospitals there is often generated a miasm, palpable as the chlorine used to destroy it, tenacious so as in some cases almost to defy extirpation, deadly in some institutions as the plague; which has killed women in a private hospital of London so fast that they were buried two in one coffin to conceal its horrors; which enabled Tonnellé to record two hundred and twenty-two autopsies at the Maternité of Paris; which has led Dr. Lee to express his deliberate conviction that the loss of life occasioned by these institutions completely defeats the objects of their founders; and out of this train of cumulative evidence, the multiplied groups of cases clustering about individuals, the deadly results of autopsies, the inoculation by fluids from the living patient, the mur-

* System of Midwifery, p. 292.

derous poison of hospitals, — does there not result a conclusion that laughs all sophistry to scorn, and renders all argument an insult?

I have had occasion to mention some instances in which there was an apparent relation between puerperal fever and erysipelas. The length to which this paper has extended does not allow me to enter into the consideration of this most important subject. I will only say, that the evidence appears to me altogether satisfactory that some most fatal series of puerperal fever have been produced by an infection originating in the matter or effluvia of erysipelas. In evidence of some connection between the two diseases, I need not go back to the older authors, as Pouteau or Gordon, but will content myself with giving the following references, with their dates; from which it will be seen that the testimony has been constantly coming before the profession for the last few years.

London Cyclopædia of Practical Medicine, — article *Puerperal Fever*, 1833.

Mr. Ceeley's Account of the Puerperal Fever at Aylesbury. *Lancet*, 1835.

Dr. Ramsbotham's Lecture. *London Medical Gazette*, 1835.

Mr. Yates Ackerly's Letter in the same Journal, 1838.

Mr. Ingleby on Epidemic Puerperal Fever. *Edinburgh Medical and Surgical Journal*, 1838.

Mr. Paley's Letter. London Medical Gazette, 1839.

Remarks at the Medical and Chirurgical Society. Lancet, 1840.

Dr. Rigby's System of Midwifery. 1841.

Nunneley on Erysipelas, — a work which contains a large number of references on the subject. 1841.

British and Foreign Quarterly Review, 1842.

Dr. S. Jackson, of Northumberland, as already quoted from the Summary of the College of Physicians, 1842.

And lastly, a startling series of cases by Mr. Storrs, of Doncaster, to be found in the American Journal of the Medical Sciences, for January, 1843.

The relation of puerperal fever with other continued fevers would seem to be remote and rarely obvious. Hey refers to two cases of synochus occurring in the Royal Infirmary of Edinburgh, in women who had attended upon puerperal patients. Dr. Collins refers to several instances in which puerperal fever has appeared to originate from a continued proximity to patients suffering with typhus.*

Such occurrences as those just mentioned, though most important to be remembered and guarded against, hardly attract our notice in the midst of the gloomy facts by which they are surrounded. Of these facts, at the risk of fatiguing repetitions, I have summoned a sufficient number, as I believe,

* Treatise on Midwifery, p. 228.

to convince the most incredulous that every attempt to disguise the truth which underlies them all is useless.

It is true that some of the historians of the disease, especially Hulme, Hull, and Leake, in England; Tonnellé, Dugès, and Baudelocque, in France, profess not to have found puerperal fever contagious. At the most they give us mere negative facts, worthless against an extent of evidence which now overlaps the widest range of doubt, and doubles upon itself in the redundancy of superfluous demonstration. Examined in detail, this and much of the show of testimony brought up to stare the daylight of conviction out of countenance, proves to be in a great measure unmeaning and inapplicable, as might be easily shown were it necessary. Nor do I feel the necessity of enforcing the conclusion which arises spontaneously from the facts which have been enumerated, by formally citing the opinions of those grave authorities who have for the last half-century been sounding the unwelcome truth it has cost so many lives to establish.

“It is to the British practitioner,” says Dr. Rigby, “that we are indebted for strongly insisting upon this important and dangerous character of puerperal fever.”*

The names of Gordon, John Clarke, Denman,

* British and Foreign Med. Rev. for January, 1842.

Burns, Young,* Hamilton,† Haighton,‡ Good,§ Waller,|| Blundell, Gooch, Ramsbotham, Douglas,¶ Lee, Ingleby, Locock,** Abercrombie,†† Alison,‡‡ Travers,§§ Rigby, and Watson,||| many of whose writings I have already referred to, may have some influence with those who prefer the weight of authorities to the simple deductions of their own reason from the facts laid before them. A few Continental writers have adopted similar conclusions.¶¶ It gives me pleasure to remember, that while the doctrine has been unceremoniously discredited in one of the leading Journals,*** and made very light of by teachers in two of the principal Medical Schools, of this country, Dr. Channing has for many years inculcated, and enforced by examples, the danger to be apprehended

* Encyc. Britannica, XIII. 467, Art. *Medicine*.

† Outlines of Midwifery, p. 109.

‡ Oral Lectures, &c.

§ Study of Medicine, II. 195.

|| Medical and Physical Journal, July, 1830.

¶ Dublin Hospital Reports, for 1822.

** Library of Practical Medicine, I. 373.

†† Researches on Diseases of the Stomach, &c., p. 181.

‡‡ Library of Practical Medicine, Vol. I. p. 96.

§§ Further Researches on Constitutional Irritation, p. 128.

||| Lond. Medical Gazette, February, 1842.

¶¶ See British and Foreign Medical Review, Vol. III. p. 525, and Vol. IV. p. 517. Also Ed. Med. and Surg. Journal for July, 1824, and American Journal of Med. Sciences for January, 1841.

*** Phil. Med. Journal, Vol. XII. p. 364.

and the precautions to be taken in the disease under consideration.

I have no wish to express any harsh feeling with regard to the painful subject which has come before us. If there are any so far excited by the story of these dreadful events, that they ask for some word of indignant remonstrance, to show that science does not turn the hearts of its followers into ice or stone, let me remind them that such words have been uttered by those who speak with an authority I could not claim.* It is as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation, when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought

* Dr. Blundell and Dr. Rigby in the works already cited.

down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly!

There may be some among those whom I address who are disposed to ask the question, What course are we to follow in relation to this matter? The facts are before them, and the answer must be left to their own judgment and conscience. If any should care to know my own conclusions, they are the following; and in taking the liberty to state them very freely and broadly, I would ask the inquirer to examine them as freely in the light of the evidence which has been laid before him.

1. A physician holding himself in readiness to attend cases of midwifery, should never take any active part in the post-mortem examination of cases of puerperal fever.

2. If a physician is present at such autopsies, he should use thorough ablution, change every article of dress, and allow twenty-four hours or more to elapse before attending to any case of midwifery. It may be well to extend the same caution to cases of simple peritonitis.

3. Similar precautions should be taken after the autopsy or surgical treatment of cases of erysipelas, if the physician is obliged to unite such offices with his obstetrical duties, which is in the highest degree inexpedient.

4. On the occurrence of a single case of puerperal fever in his practice, the physician is bound to consider the next female he attends in labor, unless some weeks, at least, have elapsed, as in danger of being infected by him, and it is his duty to take every precaution to diminish her risk of disease and death.

5. If within a short period two cases of puerperal fever happen close to each other, in the practice of the same physician, the disease not existing or prevailing in the neighborhood, he would do wisely to relinquish his obstetrical practice for at least one month, and endeavor to free himself by every available means from any noxious influence he may carry about with him.

6. The occurrence of three or more closely connected cases, in the practice of one individual, no others existing in the neighborhood, and no other sufficient cause being alleged for the coincidence, is *primâ facie* evidence that he is the vehicle of contagion.

7. It is the duty of the physician to take every precaution that the disease shall not be introduced by nurses or other assistants, by making proper in-

quiries concerning them, and giving timely warning of every suspected source of danger.

8. Whatever indulgence may be granted to those who have heretofore been the ignorant causes of so much misery, the time has come when the existence of a *private pestilence* in the sphere of a single physician should be looked upon, not as a misfortune, but a crime ; and in the knowledge of such occurrences, the duties of the practitioner to his profession should give way to his paramount obligations to society.

ADDITIONAL REFERENCES AND CASES.

Fifth Annual Report of the Registrar-General of England. 1843. Appendix. Letter from William Farr, Esq. — Several new series of cases are given in the Letter of Mr. Storrs, contained in the Appendix to this Report. Mr. Storrs suggests precautions similar to those I have laid down, and these precautions are strongly enforced by Mr. Farr, who is, therefore, obnoxious to the same criticisms as myself.

Hall and Dexter, in *Am. Journal of Med. Sc.* for January, 1844. — Cases of puerperal fever seeming to originate in erysipelas.

Elkington, of Birmingham, in *Provincial Med. Journal*, cited in *Am. Journ. Med. Sc.* for April, 1844. — Six cases in less than a fortnight, seeming to originate in a case of erysipelas.

West's Reports, in *Brit. and For. Med. Review* for October, 1845, and January, 1847. — Affection of the arm, resembling malignant pustule, after removing the placenta of a patient who died from puerperal fever. Reference to cases at Würzburg, as proving contagion, and to Keiller's cases in the *Monthly Journal* for February, 1846, as showing connection of puerperal fever and erysipelas.

Kneeland. — Contagiousness of Puerperal Fever. *Am. Jour. Med. Sc.*, January, 1846. Also, Connection between Puerperal Fever and Epidemic Erysipelas. *Ibid.*, April, 1846.

Robert Storrs. — Contagious Effects of Puerperal Fever on the Male Subject; or on Persons not Child-bearing. (From *Provincial Med. and Surg. Journal*.) *Am. Jour. Med. Sc.*, January, 1846. Numerous cases. See also Dr. Reid's case in same Journal for April, 1846.

Routh's paper in Proc. of Royal Med. Chir. Soc., Am. Jour. Med. Sc., April, 1849, also in B. and F. Med. Chir. Review, April, 1850.

Hill, of Leuchars. — A Series of Cases illustrating the Contagious Nature of Erysipelas and of Puerperal Fever, and their Intimate Pathological Connection. (From Monthly Journal of Med. Sc.) Am. Jour. Med. Sc., July, 1850.

Skoda on the Causes of Puerperal Fever. (Peritonitis in rabbits, from inoculation with different morbid secretions.) Am. Jour. Med. Sc., October, 1850.

Arneth. — Paper read before the National Academy of Medicine. Annales d'Hygiène, Tome LXV. 2^e Partie. (Means of Disinfection proposed by M. "Semmelweis" (Semmelweiss). Lotions of chloride of lime and use of nail-brush before admission to lying-in wards. Alleged sudden and great decrease of mortality from puerperal fever. Cause of disease attributed to inoculation with cadaveric matters.) See also *Routh's* paper, mentioned above.

Moir. — Remarks at a meeting of the Edinburgh Medico-Chirurgical Society. Refers to cases of Dr. Kellie, of Leith. *Sixteen* in succession, *all fatal*. Also to several instances of individual pupils having had a succession of cases in various quarters of the town, while others, practising as extensively in the same localities, had none. Also to several special cases not mentioned elsewhere. Am. Jour. Med. Sc. for October, 1851. (From New Monthly Journal of Med. Science.)

Simpson. — Observations at a Meeting of the Edinburgh Obstetrical Society. (An "eminent gentleman," according to Dr. Meigs, whose "name is as well known in America as in (his) native land." Obstetrics. Phil. 1852, pp. 368, 375.) The student is referred to this paper for a valuable *resumé* of many of the facts, and the necessary inferences, relating to this subject. Also for another series of cases, Mr. Sidey's, five or six in rapid succession, Dr. Simpson attended the dissection of two of Dr. Sidey's cases,

and freely handled the diseased parts. His next four child-bed patients were affected with puerperal fever, and it was the first time he had seen it in practice. As Dr. Simpson is a *gentleman* (Dr. Meigs, as above), and as “a gentleman’s hands are clean” (Dr. Meigs’s Sixth Letter), it follows that a gentleman with clean hands may carry the disease. *Am. Jour. Med. Sc.*, October, 1851.

Peddie. — The five or six cases of Dr. Sidey, followed by the four of Dr. Simpson, did not end the series. A practitioner in Leith having examined, in Dr. Simpson’s house, a portion of the uterus obtained from one of the patients, had immediately afterwards three fatal cases of puerperal fever. Dr. Peddie referred to two distinct series of consecutive cases in his own practice. He had since taken precautions, and not met with any such cases. *Am. Jour. Med. Sc.*, October, 1851.

Copland. — Considers it proved that Puerperal Fever may be propagated by the hands and the clothes, or either, of a third person, the bed-clothes or body-clothes of a patient. Mentions a new series of cases, one of which he saw, with the practitioner who had attended them. She was *the sixth* he had had within a few days. *All died.* Dr. Copland insisted that contagion had caused these cases; advised precautionary measures, and the practitioner had no other cases for a considerable time. Considers it *criminal*, after the evidence adduced, — which he could have quadrupled, — and the weight of authority brought forward, for a practitioner to be the medium of transmitting contagion and death to his patients. Dr. Copland lays down rules similar to those suggested by myself, and is therefore entitled to the same epithet for so doing. *Medical Dictionary*, New York, 1852. Article, *Puerperal States and Diseases.*

If there is any appetite for facts so craving as to be yet unappeased, — *lassata, necdum satiata*, — more can be obtained. Dr. Hodge remarks that “the frequency and importance of this singular circumstance (that the disease is occasionally more prevalent with one practitioner than another) has been exceedingly over-

rated." More than thirty strings of cases, more than two hundred and fifty sufferers from puerperal fever, more than one hundred and thirty deaths appear as the results of a sparing estimate of such among the facts I have gleaned as could be numerically valued. These facts constitute, we may take it for granted, but a small fraction of those that have actually occurred. The number of them might be greater, but "'t is enough, 't will serve," in Mercutio's modest phrase, so far as frequency is concerned. For a just estimate of the importance of the singular circumstance, it might be proper to consult the languid survivors, the widowed husbands, and the motherless children, as well as "the unfortunate accoucheur."

THE
POSITION AND PROSPECTS
OF
THE MEDICAL STUDENT.

AN ADDRESS

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THE POSITION AND PROSPECTS OF THE MEDICAL STUDENT.

It was not my good fortune, during the period of my studies, to be connected with the Society which I have the honor of addressing. I know enough, however, of its objects and of its history to feel sure that it will take an interest in every effort, however humble, which aims to illustrate the progress and promises of our science, to defend it against senseless clamor, to elevate the standard of the young men who have devoted their lives to its pursuit, to encourage them in their honorable toils, to warn them of their dangers, and even to point out their faults, without fear, though without any other authority than the call of truth and duty.

In making some remarks upon *the Position and Prospects of the Medical Student*, I must entreat you to allow me a somewhat wider range than the circle which includes only your own number. I would address myself, through you, to all the young men now in the course of their medical education who surround you, or who may be within the reach of my

voice. If, therefore, there should be anything in this address which meets with your approval, be pleased to receive it as my return for the attention you have shown me ; if there should be anything that may sound harsh to your ears, suffer it, not for your own sakes, nor as intended for you, but for the sake of the great body of students of which you constitute a part, and which will furnish its candid interpreters and judges.

So wide a subject as I have chosen can only be partially treated within the somewhat liberal hour that I shall venture to claim. In speaking of the present *position* of the medical student, it seems becoming to pass over many comparisons which might prove unfavorable, in some respects, to the past. The existing condition of medical schools, the character of the present race of teachers, the standard of the text-books generally employed, are among these. Leaving these out of the question, there is enough to interest us in glancing at the passing phases of each of the branches which make up the usual course of study ; and in pointing out certain influences that result from the character of our pursuits. Again, the *prospects* which open before the medical student in his professional life would require a long roll of canvas for their display, and you must be content with a cabinet picture instead of a panorama. The effect of the cold and slow welcome which the world offers to the young physician upon his mind and

feelings ; the attitude assumed by society towards medical science at the present period ; the true way of meeting the various follies which assail the medical practitioner, — these are the points that I shall briefly illustrate, to the exclusion of many others which the title I have chosen might equally embrace.

The branches which unite to form the science of medicine never presented themselves to the medical student in a manner more adapted to kindle his zeal and energies than at the present time. In almost every department, the recent impress or the active progress of improvement is most distinctly visible.

Anatomy and Physiology have received from the hand of Art an instrument which has enabled them to penetrate, with almost miraculous skill, into the mysteries of living structures and functions. From the days of Malpighi and Leeuwenhoeck, whose admirable observations were made with simple lenses, until those of Prevost and Dumas, or even later, it could hardly be said that any great additions were made to the intimate knowledge of animal structure by means of the microscope. That the blood corpuscles should not have been known to be flattened disks until the time of Hewson, must show the former imperfection of the means of observation to any one who has seen them rolling over like sixpences in the field of a common modern instrument. The fanciful descriptions of Sir Everard Home and Mr. Bauer,

made only to be contradicted ; the too notorious mystification in the matter of the *acarus scabiei* in the hospitals of Paris, justified in some measure the contempt into which investigations of this kind gradually declined. Such insuperable difficulties seemed to attend the construction of compound microscopes, tolerably free from the effects of chromatic and spherical aberration, that about twenty years since men like Biot and Wollaston predicted it would never rival the simple instrument. Soon after the year 1820, by one of those simultaneous impulses so common at the period of great discoveries, the attention of several opticians and mathematicians of the Continent and of England was turned to this important scientific problem. The result was the achromatic compound microscope in its present state of wonderful perfection.

We are poised midway between two material infinities, the infinitely great and the infinitely little. The confines of the first, strange as it may seem, were thoroughly explored before we had reached the inner borders of the second. Uranus and the asteroids were led in by Science like wild colts from the outskirts of creation, before the *acarus* and the cheese-mite had settled the duel concerning their identity. But when at length the microscope was taken with its sudden convulsion of improvement, a new world of wonders opened upon the eye of the observer of nature. The same scrupulous sagacity which had

swept the sparkling floor of the firmament beyond the orbit of Saturn, the same daring which, in the words of the elder Herschel, had "gauged the heavens" with its mighty cylinders, was now to be seen counting the stomachs of once invisible animalcules and diving into the abysses of an impalpable drop of fluid. At the present time there is scarcely a line in structural or physiological anatomy which is not written over by the hand of recent microscopic discovery. The texture of every organ has been determined with a degree of precision before unapproached. The fluids have been shown to contain and to evolve regular structures. If the blood-corpuscles are not *proved* to be "swimming glands," the expression no longer excites the idea of anything improbable or unnatural. A geologist hands to his physiological friend a particle broken from a fossil tooth, and requires the nature, size, habits, food, date, of the behemoth, the megalosaurus, the palæotherium, that chewed upon it. The physiologist grinds a speck of it down to a translucent lamina, saturates this shaving with the light from a little concave mirror, screws his inexorable lenses to their focus, and extorts a truth which nature had buried beneath the deluge and blotted with the night of uncounted ages. The form of the branching tubes is manifest; *ex pede Herculem*; as the tubes, so the tooth; as the tooth, so the creature; the perished antediluvian rises out of his fossil sepulchre. The unaccom-

plished promise of Archimedes hardly surpasses the performance of modern philosophy;—give her but a thread from the web of nature, and she will suspend a living universe upon it; give her but a ray from the luminous fountain of truth, and she will catch a photograph from an extinct creation.

But how can we speak in terms of sufficient delight and wonder of that discovery which has lifted the veil between the mortal eye and the life-giving energy, at the moment when the flowing atoms of matter are uniting into the mysterious harmony of organized structure! The recent microscopic discoveries concerning the development of living tissues, animal and vegetable, are among the most remarkable truths ever yet reached by observation.

By the long, winding path of facts we arrive at the clear summits of general laws. From these, as from celestial observatories, we contemplate more nearly the all-embracing Spirit of the universe. A general law is the expression of wisdom and power not yet concealed by their own incidental manifestations; it is a circle which surrounds the Deity within the outer wall of phenomena. The discoveries just referred to may be ranked, for their universality of extent, with the loftiest generalizations of the astronomer and the chemist.

The law of gravity reduced to a single principle the varied movements of those great masses which traverse the immensities of space.

The law of combination in definite proportions brought down to a graduated scale the hitherto chaotic range of chemical compounds, and led by irresistible inference to the great primordial truth of the atomic constitution of matter.

The most sublime vision that ever dawned upon the eye of discovery is that which reveals the evolution of new worlds from the luminous ether of the nebulæ, commencing by the condensation of their particles in a solid nucleus at the centre of gravitation.

This telescopic phenomenon has at length found its counterpart in the microscopic history of the primitive organization of the living tissues. It is now received as an established truth, that every organized structure is developed from a cell, itself evolved from a nucleus, which again is constituted by the spontaneous aggregation of granules in the midst of a fluid. Thus the tube of the astronomer has carried his vision into illimitable space, and shown him the hand of creative power, as it shapes worlds and systems out of chaos; while the lens of the microscopic observer has lifted the invisible up to the level of his senses, to display the same eternal agency as it fashions a living creature from the elements of a formless fluid.

These are some of the results of the application of the microscope to anatomy and physiology. I will not speak of its employment in the investigation of

diseased products, and in combination with chemical agents. These fields have but just been opened, and who can tell what mysteries are ready to burst into the flame of demonstration with the chance spark of any day of scientific labor ?

Look again at the progress of chemistry in its application to the phenomena of life. The attempt has been made to show, not merely that certain combinations and decompositions take place in living bodies, by which new products are evolved, and life kept active in the midst of the shifting organization, but the analyst has taken his balance, his measuring jar, his pound of food, and his *man*, and traced the material of support through the organs of the recipient, with all its successive changes, to its resolution into the elements of the earth or atmosphere, calling every organ to account for its share in exact decimals, as a manufacturer might trace the progress of a bale of cotton through the hands of his various operatives. The strictly medical page of chemistry has but just been fairly laid open. It is true that alkalis have long been given to correct acidity, and gases were respired in the days of Beddoes and mahogany-furnished cow-houses, but the experiments were for the most part obvious and of limited utility, or built upon fanciful speculations. But medical chemistry is beginning to deal with stricter problems. Given, a man in whose joints the insoluble urate of soda is depositing itself in solid masses ; what element shall

we throw in among these fighting atoms, to restore their équilibre ? The chemist looks over his tables of the elementary constitution of bodies, and finds that the required conditions are answered by the *benzoic acid*. He drops a certain number of grains of this substance into the mouth of his human alembic, and the insoluble concretions are eliminated, as the soluble hippurate of soda.

One fact like that just mentioned is like one star in the heavens, the herald of a thousand which will soon be kindled. But let all magnificent promises be left out of sight, you may still be thankful for three great sources of knowledge, all bearing upon the history and treatment of disease, and which may be almost said to be peculiar to your time and that of your immediate predecessors. Pathological Anatomy, Auscultation, Medical Statistics, — these three great implements of knowledge are offered to you in a state of perfection unknown to many, at the period of their medical education, who, though your seniors, will occupy the same stage of action as yourselves.

Pathological anatomy is, in one sense, old ; bodies have been opened from an early period. There have been men profoundly skilled in the science of morbid change of structure before this age or the preceding age was born. But we can scarcely dispute that the general diffusion of knowledge through the medical

world on this subject, and the reduction of pathological results to simple terms may be dated since the beginning of the present century, and especially belong to the last half of this period.

Pathological anatomy was a chaos to the medical profession in general, until the following points were clearly made out. First, the character of inflammation in its different forms, and affecting different tissues, as distinguishable from various appearances long confounded with it. Secondly, the distinction of the tubercle from all other morbid deposits, and the final determination of its invariable characters. Thirdly, the discrimination of malignant growths, and their ultimate reduction to the three forms of scirrhus, encephaloid, and colloid.

At the time when Broussais erected his system, the characters of inflammation, especially as affecting the mucous tissues, were so little comprehended, that the whole fabric of our science tottered for a time before his audacious statements. A few vascular arborizations, the result of passive congestion, a little redness from cadaveric changes, were enough to demonstrate the existence of gastritis or gastro-enteritis, and all the dogmas, and all the practical inferences belonging to the so-called *physiological system*, followed in the wake of this error in observation. The subtlety of his reasoning, and the hissing vehemence of his style, effervescent as acids upon marble, aided the temporary triumph of his doctrine. Whatever

others have done for its downfall, the death-blow came from the scalpel of Louis. That common continued fever is not gastro-enteritis, that tubercle is not essentially the consequence of inflammation ; these two facts he placed beyond dispute, and from that moment the empire of Broussais began to dissolve. In vain did the old athlete writhe like Laocoon in the embrace of the serpents ; his children, his darling doctrines, circled with coil upon coil of their iron antagonist, were slowly choked out of life, while he himself battled vainly to the last, with the whole strength of his Herculean energies. The physiological system, as a whole, passed away, and with it a mode of practice founded upon false principles, and often leading to dangerous practical conclusions. This was the immediate consequence of a more exact study of the characters of inflammation, joined to a nicer scrutiny of the individual organs.

The self-styled practical men of provincial celebrity sometimes sneer at the labors of the pathologist, as ignorant sailors laugh at the landlubber who computes their captain's logarithms ; alike unconscious that their path through doubt and danger is traced by the hand which is the object of their stupid laughter. At this very time, during this very day which passes over our heads, a hundred thousand leeches would have been draining the lifeblood from that noble army of martyrs whom the physicians of America call their patients, in the vain hope of subduing

an imaginary inflammation, had not the great French pathologist wilted down his youth upon the stone floor of the amphitheatre of La Charité, and sent out his new truths upon the winds that turn the weather-cocks of medical Christendom! The true characters of inflammation having once been fixed with a certain degree of exactness, the first great stumbling-block in the way of the pathological anatomist was removed.

The diseases now known as tuberculous were for a long period scattered and concealed under various disguises, which prevented their real identity from being recognized. In the lymphatic glands tubercle was known as scrofula, in the bones as white swelling, in the lungs as phthisis, in various other internal organs by no distinctive name whatever. Thus, the tuberculous affections were separated at their natural point of union, and became joined to various other diseases, with which their relations were wholly accidental. In the year 1810, for instance, when Bayle wrote his work on Phthisis, he recognized pulmonary tubercle only as one of six forms of the disease of which he was treating. Of the other five, one was characterized by what are commonly called gray granulations, another by the calcareous depositions which mark the seat of former tuberculous disease. The three remaining forms, the melanotic, the ulcerous, the cancerous, had no relation whatever with tuberculous disease. Here, as you may observe, a

set of symptoms, called, from the most remarkable one, *phthisis*, in connection with different changes affecting certain organs, namely, the lungs, was taken as the basis of arrangement for the facts collected by this distinguished observer. It followed among other consequences that the pathologist who trod in his footsteps learned to consider tuberculous consumption, and what he called cancerous consumption, as two varieties only of the same disease.

No error could be greater than this; none more calculated to mislead the inexperienced observer. Tubercle, and cancerous or malignant degeneration, are not only unlike each other in every circumstance of structure, mode of development, history and progress, but they appear to be actually in some sense the antagonists and almost irreconcilable opposites of each other. A cancerous patient is less likely to have tubercle, and a tuberculous patient less likely to have malignant disease, than another person suffering from some different affection.

It was not until all tuberculous affections, in whatever organ they might be found, were brought together as a natural group, and all other morbid changes separated from them, that their true history became easy to learn. The student is now well aware that the production of a single particle of genuine tuberculous matter in any portion of the system is a formal declaration and warning, on the part of nature, of what she has suffered, has done,

and is about to do. That hereditary influences, or ill treatment of the body in some form, have depressed the living energy below the standard of healthy existence; that every solid and fluid in the body is more or less imperfect in composition and organization; that the local manifestations at one or more points of the system are the effects, and not the primary causes, of a general morbid condition; that by a process of softening, and its destructive inflammatory consequences, the new deposition tends to destroy the texture of the part where it has occurred, and in this process to react more or less powerfully, perhaps fatally, on the system; that this process can only be effectually and certainly arrested by replacing every atom of the imperfectly vitalized organism with new and healthier particles, taken from the soil, the atmosphere, and acted on by the sunbeams; in other words, by causing a complete interstitial renovation of the body by proper food, and exercise, in the midst of abundant air and light; all these facts, in all their numberless applications, follow from the discovery that any tuberculous affection has shown itself in the body. In every point of view, therefore, the distinction of tubercle from all other morbid deposits, and its recognition as the essential anatomical element of every disease where it is found, is of vast assistance to the pathologist and the practitioner.

Those whose education dates but a few years back

will remember the inextricable confusion which reigned upon the subject of malignant growths. What relation was held to each other by such diseases as the pancreatic and mammary sarcoma of Abernethy, the lardaceous tissue of the French writers, the spongoid inflammation of Burns, the cerebri-form disease of Laennec, the medullary sarcoma, the milt-like tumor of other authors? To make the acquaintance of all these and many more seeming varieties, was like shaking hands with Briareus, or borrowing the glasses of Argus. Three principal forms have been found enough to include them all; and the forms of scirrhus and encephaloid to embrace ninety-nine hundredths of the whole. The third species of malignant disease, colloid, though comparatively rare, is yet easily discriminated, with a very little attention, from every other morbid change of structure. The student has only to settle clearly in his mind the distinctive characters of these three kinds of disease in their different aspects and stages, and their tendencies and future progress, with all the inferences respecting their treatment acquired by past experience, are within his immediate grasp. A just classification, like the lens in an optical instrument, converges and brings into a clear image the scattered and refracted rays of individual observation.

I have spoken of inflammation, tubercle, and malignant diseases, as having been brought to their respective foci by the labors of comparatively recent

observers. Doubtless morbid anatomy has many other points requiring study and nice attention, but these lesions, after all, constitute the tripod of organic disease. Of the others, some are rare, and are hardly more than objects of occasional curiosity ; such as melanosis and hydatids ; and many are too obvious to be misunderstood ; such as mechanical injuries, perforations, and hemorrhages.

Once more, gentlemen, you may think yourselves singularly happy that at the period when you are entering into professional life, the value of Auscultation, or rather of the physical signs of disease, is permanently established, and the means of acquiring the necessary skill in this branch of our art of easy attainment. Ten years ago it was not uncommon, in this centre of knowledge, to meet with persons of a certain degree of reputation in the medical profession, who considered the discoveries of Laennec as leading to little or nothing to be relied upon and of practical utility. I can but too well remember many remarks to this effect which were uttered to me or before me at the period when I was a student ; sometimes by my companions, and sometimes by those whose age and standing insured an exaggerated respect for their expressions. I shall never forget the contemptuous air of wisdom with which such remarks were made ; the assumption, on the part of individuals, of a degree of sagacity which rendered all the

methods of direct exploration unnecessary ; the buzzing air of triumph with which every mistake, supposed or real, of the as yet inexperienced students of the art in question, was speckled over with the fly-blows of gossiping annotation. The remembrance of my own feelings at such times, listening to these unwise sarcasms, has given me so strong a spirit of rebellion against the authority of all men who talk too loudly of their own "experience," that I fear my sympathies will always be on the school-boy side of every question, until time has driven me too beyond all equivocation into the ranks of spectacled wisdom, and ex-officio infallibility.

It is idle now to expatiate upon all that we owe to the divining-rod of thoracic disease. A few years ago some of us thought it expedient to point out the reality and the extent of its utility to those around us who might have undervalued it. We should feel disposed at the present time rather to suggest some cautions against its excessive use and its substitution for a more enlarged investigation of disease.

A physical exploration of a patient by a skilful person is an autopsy performed before death. This expression may convey an idea of its importance in the study of disease. But allow me to add one or two brief hints which may be useful to you hereafter in a class of cases you will too often be called to witness.

A prolonged examination is often very distressing

to a feeble patient. Remember that your instrument of examination is a probe, feeling among your patient's vitals, with more or less suffering to him, however interesting it may be to yourself. Do not indulge your curiosity at his expense, any more than you would thrust the exploring instrument of surgery to the bottom of every sinus in a wound beyond the reach of art.

Remember that in most cases of tuberculous disease it is by no means indispensable, so far as the patient is concerned, to make out a topographical estimate of the exact amount and distribution of an undoubted mass of disease. It is sometimes quite as well not to do it, and thus to save the necessity of answering disagreeable questions.

When you begin to examine a supposed phthisical patient, settle in your own mind, at least, what you are to tell him in case you find the signs that were feared. Learn how far he wishes to know his state, and form your opinion how far he ought to know it, before your examination has made you master of the secret of his life or death.

Remember that many tuberculous patients are suspicious as jealousy, impressible as hysteria, acute as insanity; that with all their supposed unconsciousness of their state, they are often singularly alive to apprehension; and be careful that you do not startle them, as is sometimes done, by employing percussion in such a manner as to astonish even their unaccus-

tomed ears with the ominous character of its sounds, or by any expression of surprise at what you may observe.

Whatever you suppose you have discovered, beware, O beware how you commit yourself in a too confident prognosis! The patient whom you have found resounding under the clavicles like the Trojan horse, breathing with the respiratory murmur of a prize-fighter, may die in three months with his lungs devoured by tuberculous disease. The patient whom you have condemned on the faith of indisputable physical signs may greet you with a pleasant smile for many years, and live to write your obituary.

Remember that the errors of stethoscopists spring much oftener from the faults of their brains than of their ears. Mistaking a single sound will rarely lead a man into important error who duly reflects upon the accompanying signs and symptoms. Observation may trip now and then without throwing you, for her gait is a walk; but inference always gallops, and if she stumbles, you are gone.

Finally, if you are ever called, as I was a few years ago, to visit a patient in consultation with a physician much older than yourself, and your respected friend, as in that case, insists repeatedly, inveterately, and in every instance, on applying the *wrong end* of the stethoscope to his ear, while he gravely rests the ivory ear-piece upon the patient's thorax, remember the scene between Gil Blas and the archbishop, and

do not trifle with the wisdom of experience in attempting to teach your scientific grandfather.

I have said that you have also good cause to be thankful that you were born into the period of Medical Statistics. I would speak briefly in this place respecting one branch of this subdivision of science, namely, the application of the numerical system to the analysis of individual diseases. A great deal has been said and written upon the application of arithmetic to medicine, which there is no need of repeating or disputing here. Much ingenuity has sometimes been shown in arguing against the use and practicability of this mode of investigation, or in magnifying its possible abuses and chances of leading into error. A few sentences may despatch the whole of these objections. And first, facts must be settled with accuracy before any attempt is made to count them. Error in these is fatal; but no more so when they are counted than when they are reasoned from without counting. This is self-evident. Certainly it is not *counting* our spurious coin, but *having* it, that makes us poorer than we suppose. Secondly and lastly, it should be remembered what the numerical system professes and what it does not profess to do. It professes to furnish us the means of extracting the collective results of a mass of individual facts too long to be analyzed by the unaided memory. It *does not* profess to be answerable for all the conclusions

we may see fit to draw from these results. I will offer you an illustration in miniature.

Given a hundred patients affected with the small-pox between the months of December and February. Of these patients ten die. Given, another hundred patients who had small-pox between the months of June and August. Of these patients five die. The fact of the relative mortality in these cases can only be accurately expressed in numbers, and the numbers can only be obtained by counting. The case is as clear as that of a merchant's balance.

But now suppose an attempt to reason from this result. *Small-pox is twice as fatal in winter as in summer.* Such a conclusion might be drawn, and yet be entirely erroneous. Perhaps the winter patients were in a poor quarter of a city, and the others in a healthier section, — perhaps they were the subjects of a different and more malignant epidemic, — perhaps they were treated in a different manner.

Just so the merchant sums up his accounts, strikes his balance, finds that he has gained his ten thousand dollars, draws an erroneous practical conclusion, acts upon it, and becomes a bankrupt. Is that any reason why the state of his affairs should not be always ascertained by an exact arithmetical process? Or shall his clerks read over the day-book and ledger, and without summing up the columns, write an occasional essay containing their "impressions" as to the conditions of his business; that his operations in sugar

have been "frequently" successful, while his dealings in cotton are "probably" attended with a "considerable" amount of loss?

Enough, and more than enough of argument on so plain a matter. The numerical system is of so obvious utility in medicine that it could not have been wholly overlooked by former observers. On the pages of Bayle lying before me are two tables drawn up from his observation more than thirty years ago, giving the exact proportion in which lesions of the larynx and of the alimentary canal occurred in a hundred cases of phthisis.

Numerical analysis in medicine is analogous to quantitative analysis in chemistry. The words of Liebig, applied to the latter, might, with a very slight alteration of words, be applied to the former. "From the moment that we begin to look earnestly and conscientiously for the true answers to our question; that we take the trouble, by means of weight and measure, to fix our observations, and express them in the form of equations, these answers are obtained without difficulty."

The advance of Medical Statistics in all its branches, as shown, not merely by the works of Louis and his followers, but in the Reports drawn up by the authority of different governments, especially those of the Registrar-General of England and the papers founded upon them, and in the investigation of the effects of climate and other hygienic influences, is most obvious.

The accurate statistical laborer is setting a machinery in motion, the results of which he can never certainly foresee. But just as the carpet-loom, rightly worked, must produce a given figure, as the barrel-organ must utter a certain tune, as the calculating machine must render a precise answer, so his toils must lead to some definite, harmonious, and absolute results. You are fortunate that such an influence is making itself clearly felt at the period when you are entering the profession.

There are many improvements in several most important departments of medical science to which it is only necessary to allude.

First in consequence is the ever-growing conviction, in and out of the profession, of the comparative insignificance of *drugging* in all its forms as an antagonist to disease. That the body is a changeable compound of particles, which must be properly aired, washed, agitated, rested, protected, and renewed, in order that their changes may run on in the rhythm called health, and that no drug can take the place of these conditions any more than it can give music to a piano-string which is loose or broken, is to some extent understood. A vast deal of annoyance and often positive injury is spared to the patient, while the physician has learned submission to the laws of nature, and grown less presumptuous in his expectations and promises.

Concerning various practical improvements in the different branches of our art, it is not my intention to make any particular remarks. The simplification of prescriptions, the isolation of the active principles of many vegetable products, the introduction of new and useful remedies into practice, are matters of interest, but these may be considered as a part of the steady growth of knowledge, and hardly as marking an epoch of progress. The same remark may be applied to the improvements in mechanical surgery. Strictly speaking, this art may be susceptible of continual improvement, in the same way as watch-making or printing; but that each of these pursuits has pretty clearly shown all its essential capabilities, will be generally conceded. We would not undervalue the recent achievements of ingenuity in the invention of subcutaneous operations and the revival and improvement of plastic surgery. But that there are distinct and visible limits to this department is so clear that the wildest optimist can hardly look forward to the time when such operations as the "total extirpation of the sphenoid," once mentioned in a London journal, shall be performed with impunity upon the living subject.

I have little to say respecting the progress of another branch of the profession, in which the more extended employment of auscultation and the discovery of kiestein are the most conspicuous novelties. I must, however, leave my path a moment for the

sake of calling your most serious attention to a fact not often enough insisted upon, — namely, the contagiousness of puerperal fever. Having developed the evidence on this point at some length in a journal recently published in this place,* you will not expect a repetition of it here. Allow me only to repeat my conclusions to you.

The offices of an attendant upon the parturient female, in the vast majority of cases, consist of very little more than the prevention of improper meddling, and the promotion of his patient's comfort. The accidents involving life are mere exceptions in the course of a natural process, and when they occur his power over them is generally limited, and often nothing, or next to nothing. I believe that all who will take the trouble to look over the fifteen thousand cases of Dr. Collins, or any other extensive tables giving the result of a large experience, will not think this an unfair statement.

But from the facts I have exposed elsewhere, it appears that the medical attendant has a power of doing mischief which has sometimes proved enormous. He may carry a pestilence about with him from house to house, that shall kill more women in a month than he is like to save in his whole life: there is too great reason to fear that he has done so often. Look over the tremendous series of cases

* New England Quarterly Journal of Medicine and Surgery for 1843. (See the preceding pages.)

proving what I say, and then if a question should ever arise between your private advantage and a score or two of innocent lives, remember that you have been warned against adding your names to the list of those who, with a smile upon their faces, have carried death from bedside to bedside, sometimes ignorantly and innocently, and sometimes negligently, if not criminally ; but compared to whom Toffana was a public benefactress, and the Marchioness of Brinvilliers a nursing mother !

We have thus glanced over the range of medical sciences as they present themselves to the student of the present day, looking, as we passed them in review, at the illuminated points they offer, and here and there presuming to add a word of caution or warning.

I should not feel that I was answering their wishes, if, when called to address a body of men younger than myself, about to become members of the profession I have followed, I did not speak freely to them of the peculiar dangers to which they are exposed by the nature of their pursuits.

To us of the medical profession, the great calamities of life present themselves under a strangely modified aspect. Disease is our playmate, and Death is our familiar acquaintance. In the great tragedies of life the vast multitude of mankind look with tearful and throbbing emotion upon scenes to us as little

exciting as the stage machinery to the actors in a drama. The still features of the dead, the white folds of the last robe which covers the body, all the objects and thoughts that hush the gay and worldly into momentary solemnity, are to us but the habitual accompaniment of a stage in human history we are often called upon to witness.

By such a discipline even a tender nature loses much of its ready impressibility, but not therefore of its sincere love and sympathy for its fellow-creatures in their anguish and trials. By such training a coarse nature may become brutalized, and forfeit its heavenly birthright, — a share in every human sorrow.

In a recent work of fiction, read by unprecedented numbers in both hemispheres, the author has held up the medical profession, in the person of an imaginary physician of a Parisian hospital, to the observation of the world at large. The character of Dr. Griffon, as delineated in the *Mysteries of Paris*, is an indictment of the scientific physician at the bar of the novel-reading public. I will not stop to criticise the work in which it is found. Many of you are familiar with its brilliancy of invention and variety of incident, its charming impossibilities, and the talking machinery which plays the parts of its different characters. In this book, which is a poem founded on the well-known work of Parent Duchatelet, where bursts of enthusiastic morality are succeeded by the inflamma-

tory love-songs of a posturing Creole, and projects of reforming society are skipped by impatient adolescents that they may read the chapter devoted to the description of erotic mania, accusations are brought forward that sooner or later many of you will be destined to hear re-echoed.

The first charge is founded on an absurd misrepresentation of the mode sometimes adopted in hospitals or elsewhere to determine the true relative value of different modes of treatment. You take a hundred patients, says M. Eugene Sue, try one experiment upon them, and see how many die; then take another hundred, and try another experiment, and see how many die under that treatment. This *argumentum ad invidiam* may hereafter serve a mob as the pretext for tearing down a hospital. But is it not clear that more than one mode of treatment, in some diseases, has a positive claim to trial? This is so manifest that, ten to one, the very declaimer against trying experiments is clamorous that some notion or other he has taken up should have a fair trial; that is, should be experimented with on human beings. The true question for the jury is not, "Do hospital or other physicians try experiments?" for strictly speaking, every administration of a remedy is an experiment, — but, "Do they study diligently the claims of all new and old methods, and do they know how to select those which offer the best chance of proving useful?" Either the best mode of treating

a disease is positively ascertained or not. If it is ascertained, no man would think of employing a method known to be a comparatively bad one. If it is a question between two or more methods of treatment which is best, and if there is abundant and satisfactory proof that *both are good and safe*, how absurd to say that the physician is not authorized to try more than one! Which one shall it be? Who shall dictate? What can decide between them but a competent trial? Why have a medical profession, except to know, first, what remedies are always certain, and, secondly, and ten times oftener, what are most deserving of trial where certainty does not exist?

It is clear, in the next place, that if the physician has a right to try a given mode of treatment *once*, which will generally decide nothing at all, he has a right to try it *repeatedly*; perhaps ten times, perhaps a hundred, according to circumstances. It is as clear that he is perfectly justified in counting the days, weeks, or months that each case may have lasted, the number of times this or that symptom appeared, the proportion of cases that recovered or terminated fatally.

The dealers in the rag-fair of light literature have taken a great fancy, of late, to airing their philanthropy and morality. Everything must come successively into fashion, even the virtues; but when a former "elegant voluptuary" undertakes to reform

abuses, we have a right to regret that he did not give the time to learning the facts concerning these supposed abuses, which he wasted on his banquets and his odalisques. Dr. Griffon may very probably stand for the founder of the numerical system. It is true that Louis, after having employed the more ordinary treatment of fever for some years, and learned its general degree of success, determined to make trial of another method, and that not in one or two cases only, but in a sufficient number to furnish some term of comparison with his former method. Here is one of those heartless experiments that M. Sue holds up to the horror of his slip-shod thousands of readers. But what was this method which Louis thus ventured to subject to trial? It was the plan proposed and followed for many years by M. Laroque, a physician in a French hospital; and which had acquired a reputation, seemingly not without foundation, of being attended with a truly remarkable degree of success.

Hard times for the physician of the nineteenth century! The philanthropist at his right ear brands him as a murderous bigot, if he will not try a new and vaunted method, and the philanthropist at his left ear calls him an experimenting homicide, if he tries it in the only way that can lead to any definite conclusion as to its value.

I pass to another charge contained in the celebrated romance referred to, and involving, to a greater or less extent, the whole medical profession,

attacked in the person of a fictitious character. I mean the brutal treatment of the sick in charitable institutions ; especially a shameless indifference to the delicacy of females, many of whose infirmities are always revealed with pain, and who are said to be sometimes subjected to public examinations that overwhelm them with confusion and agony.

So far as this country is concerned the accusation would prove wholly unfounded. I believe that in all civilized countries outrages of this sort are only exceptions to a general habit of tenderness and regard for the sick and destitute. Alas, that I should ever have witnessed such an exception ! Yes, I have seen, in a great foreign hospital, in broad daylight, in the midst of a crowd of bearded young men, a young, tender, and suffering female thus outraged. I have seen a rough hand tear from her figure the only covering of her heaving bosom, and expose her, in the centre of a trampling and wedging multitude, to a scrutiny that would make a harlot shudder. Decency and humanity must be violated, that a præcordial region might be inspected, a professor might expatiate, and a class admire. If the Genius of Science smiled as the new fact was inscribed upon his iron tablets, what was the expression of Heaven's recording angel as he wrote down this unmanly insult in the pages consecrated to the wrongs of helpless poverty ?

The amphitheatre for surgical operations is the scene

of tortures which should never be undervalued, however familiar the sight of them may have grown to the seasoned student. That act of frightful violence to a fellow-creature which you call a "brilliant operation," may be the twentieth, or the fiftieth of the kind you have witnessed. You are used to such sights, and it is hard to realize that others are not used to such sufferings. Do you remember that this seemingly brief space of mortal anguish has been for months or years the one waking and sleeping terror of the poor victim of disease before you,—that, like the iron chamber of the story, this dreadful necessity has been narrowing closer and closer about him day by day, at every approach darkening some window of life and happiness, and now in the midst of fearful sights and sounds is lacerating his convulsed fibres, and pouring out his smoking heart's blood? Do you remember how long the memory of this little period will blend with all his thoughts, how every kind look he received will be treasured in his heart, how every careless word will be recalled, how every thoughtless cruelty will leave its scar deeper than the terrible seams of the knife and the cautery?

I have not left my stated pursuits at your kind request, to come before you either for the sake of bestowing flattery, or receiving applause. To you, and through you to your fellow-students, I must offer a few words, which, as they come from my heart and my conscience, I will not dishonor by introducing with an apology.

In the many operations I have attended in the hospitals of France and England, often in the midst of a crowd of students more numerous and less orderly in their deportment than are ever found in the hospitals of our own country, I never but once heard the ordinary theatrical expression of applause at the close of an operation, and it was then immediately and indignantly silenced. Is it necessary for me to inform you that the same manner of expressing approbation has more than once manifested itself on this side of the Atlantic, and even in one of our own public institutions?

If I should see to-morrow in the journals, or in any popular work, a statement of this fact, and an appeal to the feelings of the public on the point, I should expect a simultaneous expression of surprise and disgust to echo through the whole community. Far be it from me to make this appeal to the public; I had rather speak of the fact directly to the faces of those whose duty it is to support the honor of the medical profession. But were an exposure and public denunciation of this truly barbarous practice to appear in any popular publication, I, for one, should be disinclined and unable to say one word in defence of those who had armed every thinking man, much more every gentle-hearted woman and pitying child, against them. No! The listeners to this address may receive it with applause, or hisses, or silence, as they please. The spectators of a drama, the audience

of a concert, may express their delight by ringing plaudits, if they choose. But there is a limit where decency requires us to refrain from indulging our impulses. We do not think it necessary to honor the utterer of an impressive prayer with a round from the floor and galleries of the house of worship. Do so, do so a thousand times before you thus violate the peaceful walls devoted to the languishing and dying poor! Spare your noisy honors to the sanguinary triumphs of the art of mutilation, while the neglected *subject* lies panting in his blood before you. Do you ask who constituted me a critic or a censor in this matter? I answer, God, who made me a man; society, which imposed my duties; my nature, not palsied to sympathy; my profession, not yet degraded beneath that of the gladiator. Better that one of your own number should speak out, than wait for the cheap newspaper and the philanthropic novelist; better humanize our own manners than have our fellow-citizens say of the physician as the early Romans of Archagathus: *transiisse nomen in carnificem*, — that his name is changed to that of butcher; better keep a becoming quiet within the asylum of disease, than have the passers-by who hear its floors rattling with tumultuous applause, break in upon us, thinking to enjoy an hour of private theatricals, and start with horror to find that such is the tribute of youthful sympathy to a bleeding wretch, broken upon the wheel of Science, for the crime of a disease she could not master by her remedies!

Let me devote the few additional moments I may venture to claim, to some remarks respecting your prospects on entering upon the active duties of the profession.

Some plain truths have been recently laid before the student as to the time during which he must, in most cases, be content to live on his future expectations. If fifteen years, as it has been said, are required to obtain a good city practice, of course, where no accidental aid, or peculiar good fortune, conspires with the requisite industry and ability, a long and dreary blank separates many of you from the object of your ambition. What becomes of medical men during this long period? The answer is not a flattering one. Many of them lose their impulse and ambition, shrink in all their intellectual dimensions, become atrophied and indurated, so that at the period when they have attained success, the sunshine comes too late for their development into their natural proportions. Many are worn out with long waiting, and seek for some other pursuit where their faculties may be called into active exercise. A few only, like the steady oak, add a new and wider ring to their mental growth with every year that creeps torpidly by them. You cannot wonder that four or five years since, I should have said, in a few loose couplets which I still remember, —

But thou, poor dreamer, who hast vainly thought
To live by knowledge which thy bloom has bought, —

Thou who hast waited with thy martyr smile,
Hope ever whispering, *yet a little while*, —
Too proud to stoop beneath thy nobler aim,
While prostrate meanness crawls to wealth and fame ;
Thou all unfriended, as thy blossoms fade
In the chill circle of thy senior's shade ;
Go, spurn the art that every boon denies
Till age sits glassy in thy sunken eyes ;
Go, scorn the treasury that withholds its store
Till hope grows cold, and blessings bless no more !

In the calm pursuit of medical truth, in the delightful paths of natural science, in the acquisition of that more liberal range of knowledge for which your busy years will offer little opportunity, in forming and maintaining useful and dignified relations with the society of which you form a part, these trying years will roll gently over you, and as the first silver arrows of time fall among the locks of your waning youth, the golden promises of fortune will begin their tardy fulfilment.

You are to enter upon your professional duties at a time which offers some peculiarities affecting your interests and comfort. Society is congratulating itself, in all its orations and its periodicals, that the spirit of inquiry has become universal, and will not be repressed ; that all things are summoned before its tribunal for judgment. No authority is allowed to pass current, no opinion to remain unassailed, no profession to be the best judge of its own men and

doctrines. The ultra-radical version of the axiom that all men are born free and equal, which says, "I am as good as you are," and means, "I am a little better," has invaded the regions of science. The dogmas of the learned have lost their usurped authority, but the dogmas of the ignorant rise in luxuriant and ever-renewing growths to take their place. The conceit of philosophy, which at least knew something of its subjects, has found its substitute in the conceit of the sterile hybrids who question all they choose to doubt in their capacity of levellers, and believe all that strikes their fancy in their character of reverential mystics. This is the spirit which you will daily meet with applied to your own profession, and which might condense its whole length and breadth into the following formula: A question involving the health and lives of mankind has been investigated by many generations of men, prepared by deep study and long experience, in trials that have lasted for years, and in thousands upon thousands of cases; the collected results of their investigations are within my reach; I, who have neither sought after, reflected upon, nor tested these results, declare them false and dangerous, and zealously maintain and publish that a certain new method, which I have seen employed once, twice, or several times, in a disease, of the ordinary history, progress, duration, and fatality of which I am profoundly ignorant, with a success which I (not knowing anything about the

matter) affirm to be truly surprising, is to be substituted for the arrogant notions of a set of obsolete dogmatists, heretofore received as medical authorities.

What difference does it make, whether the speaker is the apostle of Thomsonism, the "common sense" scientific radicalism of the barn-yard, or homœopathy, the mystical scientific radicalism of the drawing-room? It is the same spirit of ignorant and saucy presumption, with a fractional difference in grammar and elegance of expression. If this is just, it affords you a hint as to the true manner of dealing with such adversaries. Do not think that the special error they utter before you is all that you have to vanquish. The splinter of stone at your feet which you would dentolish with your logical hammer, runs deeper under the soil of society than you may at first imagine; it is only the edge of a stratum that stretches into the heart of the blue mountains in the far horizon. Think not to gain anything by arguing against those who are drunken upon the alcohol hot from the still of brainless philanthropists; who are raving with the nitrous oxide fresh from the retort of gaseous reformers. Argument must have a point of resistance in a fixed reasoning principle, as the lever must have its counter-pressure in the fulcrum; no mariner would hope to take an observation by an *ignis fatuus*, to steer by a light-house floating unanchored upon the tempestuous ocean! No, your object must not be this or that heretical opinion, but the false philos-

ophy, or the shattered intellectual organization from which it springs ; it is Folly who is masking under the liberty-cap of Free Inquiry ; it is Insanity who has wandered from the hospital without his keeper !

After what I have just said, you cannot think I shall waste your time with allusions to the particular vanities that happen to engross the medical amateurs of our community at this precise moment. On some occasions, and before some audiences, it may be justifiable, and perhaps useful, to show up some extreme and insupportable extravagance as an example, not for the sake of the sharpers who live by it, or the simpletons whom they live upon, but for that of a few sensible listeners who are disturbed by their clamor, and wish to know its meaning. Even then you must expect a shoal of pamphlets to spring upon you with the eagerness of sharks, and the ability of barnacles. You have given a meal to your hungry enemies by merely showing yourself, like an animal that ventures into a meadow during the short empire of the horse-flies.

I know too well the character of these assailants to gratify their demand for publicity by throwing a stone into any of their nests. They welcome every cuff of criticism as a gratuitous advertisement ; they grow turgid with delight upon every eminence of exposure which enables them to climb up where they can be seen. Little as they know of anything, they understand the hydrostatic paradox of contro-

versy ; that it raises the meanest disputant to a seeming level with his antagonist ; that the calibre of a pipe-stem is as good as that of a water-spout, when two columns are balanced against each other. They would be but too happy to figure again in the eyes of that fraction of the public which knows enough to keep out of fire and water, and to quote that famous line from the idiot's copy-book,—

“ Who shall decide when doctors disagree ? ”

As I have given them more prose than they are worth, allow me to toss them a few lines written for a recent anniversary, which, if they are unworthy of your approbation, are quite good enough for them.

The feeble sea-birds, blinded in the storms,
 On some tall light-house dash their little forms ;
 And the rude granite scatters for their pains
 Those small deposits which were meant for brains.
 Yet the proud fabric in the morning sun
 Stands all unconscious of the mischief done ;
 Still the red beacon pours its evening rays
 For the lost pilot with as broad a blaze ;
 Nay, shines all radiance o'er the scattered fleet
 Of gulls and boobies, brainless at its feet.

I tell their fate, but courtesy disclaims
 To call our kind by such ungentle names ;
 Yet if your rashness bid you vainly dare,
 Think on their doom, ye simple, and beware.

See where aloft its hoary forehead rears
 The towering pride of twice a thousand years !
 Far, far below the vast, incumbent pile,
 Sleeps the broad rock from art's Ægean isle ;

Its massive courses, circling as they rise,
Swell from the waves, and mingle with the skies ;
There every quarry lends its marble spoil,
And clustering ages blend their common toil ;
The Greck, the Roman reared its mighty walls,
The silent Arab arched its mystic halls ;
In that fair niche, by countless billows laved,
Trace the deep lines that Sydenham engraved ;
On yon broad front, that breasts the changing swell,
Mark where the ponderous sledge of Hunter fell ;
By that square buttress look where Louis stands,
The stone yet warm from his uplifted hands ;
And say, O Science ! shall thy life-blood freeze
When fluttering folly flaps on walls like these ?

Go, then, to meet your chosen Science, who waits for you like a bride adorned with her ancestral jewels, and crowned with fresh-gathered garlands ! How checkered with the ever-glancing sunbeams and the ever-fitting shadows of joy and of sorrow is the long path to which she beckons your eager footsteps ! Go forth from these courts of learning, armed with the borrowed wisdom of age, yet ever cherishing the tender sympathies of childhood. The distant murmur which you hear from the trampled fields before you will soon grow louder in your ears, and you will find yourselves swept into the whirlwind of the world's tumultuous conflict. Go forward in hope and serene courage ; Disease is calling you from his bed of anguish, Death is looking for you to smooth his pillow, Posterity is expecting you, impatient to be laid in his cradle !

MECHANISM OF VITAL ACTIONS.

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MECHANISM OF VITAL ACTIONS.

IF the reader of this paper live another complete year, his self-conscious principle will have migrated from its present tenement to another, the raw materials, even, of which are not as yet put together. A portion of that body of his which is to be, will ripen in the corn of the next harvest. Another portion of his future person he will purchase, or others will purchase for him, headed up in the form of certain barrels of potatoes. A third fraction is yet to be gathered in a Southern rice-field. The limbs with which he is then to walk will be clad with flesh borrowed from the tenants of many stalls and pastures, now unconscious of their doom. The very organs of speech with which he is to talk so wisely, or plead so eloquently, or preach so effectively, must first serve his humbler brethren to bleat, to bellow, and for all the varied utterances of bristled or feathered barn-yard life. His bones themselves are, to a great extent, *in posse*, and not *in esse*. A bag of phosphate of lime which he has ordered from Professor Mapes, for his grounds, contains a large part

of what is to be his next year's skeleton. And, more than all this, as by far the greater part of his body is nothing, after all, but water, the main substance of his scattered members is to be looked for in the reservoir, in the running streams, at the bottom of the well, in the clouds that float over his head, or diffused among them all.

For a certain period, then, the permanent human being is to use the temporary fabric made up of these shifting materials. So long as they are held together in human shape, they manifest certain properties which fit them for the use of a self-conscious and self-determining existence. But it is as absurd to suppose any identification of this existence with the materials which it puts on and off, as to suppose the hand identified with the glove it wears, or the sponge with the various fluids which may in succession fill its pores. Our individual being is in no sense approximated to a potato by living on that esculent for a few months; and if we study the potato while it forms a part of our bodies under the name of brain or muscle, we shall learn no more of the true nature of our self-determining consciousness than if we studied the same tuber in the hill where it grew.

These forms of nutritive matter which pass through our systems in a continual round may be observed, weighed, tested, analyzed, tortured in a thousand ways, without our touching for a moment the higher problem of our human existence. Sooner or later,

according to the perfection of our methods and instruments, we bring hard up against a deaf, dumb, blind fact. The microscope reaches a granule, and there it stops. Chemistry finds a few bodies which it cannot decompose, and plays with them as with so many dominos, counting and matching equivalents as our old friends of the Café Procope used to count and match the spots on their humbler playthings. But why C_4 , O_2 , H_6 , have such a tendency to come together, and why, when they have come together, a fluid ounce of the resulting compound will make the small philosopher as great as a king for an hour or two, and give him the usual headache which crowns entail upon their wearers, the next morning, is not written in the pages of Lehmann, nor treasured in the archives of Poggendorf. Experimental physiology teaches how to stop the wheels of the living machinery, and sometimes how to start them when their action is checked; but no observation from the outside ever did or ever will approach the mystery of that most intense of all realities, — our relations, as responsible agents, to right and wrong. It will never answer, by aid of microscope, or balance, or scalpel, that ever-recurring question, —

“ Whence this pleasing hope, this fond desire,
This longing after immortality? ”

The study of physical and physiological phenomena has been thought to lead to what is called ma-

terialism, or something worse. In spite of Galen's half-Christian religious eloquence, — in spite of Haller's defence of the faith, and of Boerhaave's apostolic piety, — we cannot forget the old saying, that where there are three physicians there are two atheists. It would be almost as fair to say, that where there are three bank-clerks there are two rogues. Unquestionably, the handling of large sums of money betrays into dishonesty some men who would have resisted slighter temptations. So the exclusive study of the bodily functions may, now and then, lead away a weak mind from the contemplation of the spiritual side of nature. The mind, like the eye, has its adjustment to near and remote objects. A watchmaker can find the broken tooth in a ship's chronometer quicker than the captain, and the captain will detect a sail in the distance long before the artisan can see it. Physiologists and metaphysicians look at the same objects with different focal adjustments; but if they deny the truths out of their own immediate range, their eyes have got the better of their judgment. If the mariner will not trust his chronometer to the expert, he loses his reckoning; if the nice-fingered myope should play sailor, the pirate would be sure to catch him. Our old, foolish proverb is not, therefore, wholly without its meaning. Charlatans in physiology, who are not so likely to be found in any other profession as in the one mentioned, make the mistake of confounding the results derived from their obser-

vation of the working of certain instruments, in health or disease, with those which claim another and a more exalted source. Our convictions, even without special divine illumination, reveal us to ourselves, not as machines, but as sub-creative centres of intelligence and power. The two ranges of mental vision should never be confounded for good or for bad. The laws of the organism cannot be projected, *a priori*, on the strength of the profoundest intuitions. Hunter's maxim, "Don't think, but try," comes down like a pile-driver on the audacious head possessed by the delusion that it can find out how things are, by abstract speculation upon the question how they ought to be. But, on the other hand, the doctrine of an immortal spirit will never come from the dissecting-room or the laboratory, unless it is first carried thither from a higher sphere. Yet there is nothing in these workshops which can efface it, any more than their gases and exhalations can blot out the stars of heaven.

Thus what we have to say must be considered as applying solely to the living body, and not to the divine emanation which, in the human form, seems, but only seems, to identify itself for a while with the shape it uses. We shall not even think it necessary to consider the living body in all its attributes. Animals have a life in common with plants: they grow, they keep their condition, they decay; they reproduce their kind, they perish; and these acts, apart from

self-consciousness or any voluntary agency, constitute them living creatures. This simplest and broadest aspect of living nature is that which we propose to consider.

Life may be contemplated either as a condition, manifested by a group of phenomena, or as the cause of that condition. Looked at as a condition, it is the active state peculiar to an organism, vegetable or animal, which consists in the maintenance of structural integrity by a constant interchange of elements with surrounding matter. This interchange is effected under the influence of certain exciting agencies, or stimuli, such as light and heat, which are essential to its due performance. An egg or a seed perishing undeveloped has never been excited into this active state, and therefore cannot be said to have lived. It was only for a time capable of living, if the proper stimuli and surrounding matters had been present.

But life may be considered, again, as a *cause* of the phenomena just referred to, and it is in this aspect that we mean to regard it; and before attempting to examine our special question, we must remember the limits of all our inquiries with reference to causation. We can hope for nothing more, in the way of positive increase of knowledge, than these results, in any such inquiry:—to detect the constant antecedents of any condition or change; to resolve one or more antecedents into consequents of some previous fact; to show that one or more of the

causative elements are the same that are productive of other effects ; and, lastly, to reproduce the effect by supplying the causative conditions, or to prove the nature of the constant antecedent by experiment. As to the essence of causation or of force, in any of its aspects, we are no wiser than Newton, the profoundest student of its laws, and the readiest to confess his ignorance of its intimate nature.

Let us look first at the theological relations of an inquiry into the causes and nature of life. These, if nothing else, may, we think, be satisfactorily adjusted.

Every action, or series of actions, is referred by the mind to a force, and this again to a power. Thus the action of a clock is referred to the force of the spring, and this force is the manifestation of a power stored in the spring by winding it up, and set free by giving the first swing to the pendulum. We may consider action as the specific application of force ; force, as the transfer of power, or power *in transitu* ; power itself, as the original or delegated source of being, or of change in its condition. Thus life, which appears as a series of actions, is referred to a force commonly called vital, and this to a power, having its centre in the Divine Being ; for all who recognize a Divinity are agreed that all power comes from him. This is what they mean when they call omnipotence one of his attributes. The first manifestations of force are habitually referred to the same original

source. Thus we say that the Creator gave motion to the planets in space, taking it for granted that the Master-hand alone could impart their original impulse. If, however, we are asked why they continue to roll on, we are told that the *vis inertiae* keeps them from stopping. But this is a mere name, and we might as well say that the *vis motus* starts a planet, as that the *vis inertiae* keeps it going. A simpler statement is that the Divine agency, once in operation, never changes without cause. We cannot allow force to be self-sustaining any more than self-originating, nor matter itself to be self-subsistent any more than self-creating. “Actualia dependent a Deo tum in existendo, tum in agendo.” “Neque male docetur conservationem divinam esse continuatam creationem, ut radius continue a sole prodit.” Such are the words of Leibnitz. The apparent uniformity of force, and the seeming independent existence of matter, lead us to speak of them as if their laws, as we term them, were absolutely and eternally inherent. But a law which an omnipotent, omniscient, omnipresent Being enforces, is plainly nothing more than the Lawgiver himself at work. This is the meaning of that somewhat startling utterance of Oken, “The universe is God rotating.” Transcendental Physiology is beginning to steal from the hymn-books.

“ With glory clad, with strength arrayed,
The Lord, that o'er all nature reigns,
The world's foundations strongly laid,
And the vast fabric still sustains.”

So sang Tate and Brady, paraphrasing the royal David. And Watts, still more expressly, in the hymn made famous by "the harp of thousand strings":—

" His Spirit moves our heaving lungs,
Or they would breathe no more."

Once giving in our complete adhesion to the doctrine of the "immanent Deity," we get rid of many difficulties in the way of speculative inquiry into the nature and origin of things. This may be an important preliminary. Mr. Newport, the very distinguished physiological anatomist, communicated a paper to the Linnæan Society, in the year 1845, "On the Natural History of the Oil Beetle, *Meloë*." It contained the following sentence: "The facts I have now detailed lead me, in conformity with the discovery by Faraday of the analogy of light with heat, magnetism, and electricity, to regard light as the primary source of all vital and instinctive power, the degrees and variations of which may, perhaps, be referred to modifications of this influence on the special organization of each animal body." The Council of the Society objected to the publication of the passage from which this is extracted. The Society's *Index Expurgatorius* would have been more complete, if it had included the Invocation of the third book of *Paradise Lost*, which has hitherto escaped the Anglican censorship.

But if the student of nature and the student of di-

vinity can once agree that all the forces of the universe, as well as all its power, are immediately dependent upon its Creator, — that He is not only *omnipotent*, but *omnimovent*, — we have no longer any fear of nebular theories, or doctrines of equivocal generation, or of progressive development. If we saw a new planet actually formed in the field of the telescope, or the imaginary “*Acarus Crossii*” put together “*de toutes pièces*” under the microscope, true to its alleged pedigree, — out of *Silex*, by Galvanism, — it would no more turn us into atheists, than a sight of the mint would make us doubt the national credit.

We are ready, therefore, to examine the mystery of life with the same freedom that we should carry into the examination of any other problem; for it is only a question of what mechanism is employed in its evolution and sustenance.

We begin, then, by examining the general rules which the Creator seems to have prescribed to his own operations. We ask, in the first place, whether he is wont, so far as we know, to employ a great multitude of materials, patterns, and forces, or whether he has seen fit to accomplish many different ends by the employment of a few of these only.

In all our studies of external nature, the tendency of increasing knowledge has uniformly been to show that the rules of creation are simplicity of material, economy of inventive effort, and thrift in the expenditure of force. All the endless forms in which matter

presents itself to us are resolved by chemistry into some threescore supposed simple substances, some of these, perhaps, being only modifications of the same element. The shapes of beasts and birds, of reptiles and fishes, vary in every conceivable degree; yet a single vertebra is the pattern and representation of the framework of them all, from eels to elephants. The identity reaches still further, — across a mighty gulf of being, — but bridges it over with a line of logic as straight as a sunbeam, and as indestructible as the scymitar-edge that spanned the chasm in the fable of the Indian Hades. Strange as it may sound, the tail which the serpent trails after him in the dust, and the head of Plato, were struck in the die of the same primitive conception, and differ only in their special adaptation to particular ends. Again, the study of the movements of the universe has led us from their complex phenomena to the few simple forces from which they flow. The falling apple and the rolling planet are shown to obey the same tendency. The stick of sealing-wax which draws a feather to it, is animated by the same impulse that convulses the stormy heavens.

These generalizations have simplified our view of the grandest material operations, yet we do not feel that creative power and wisdom have been shorn of any single ray by the demonstrations of Newton or of Franklin. On the contrary, the larger the collection of seemingly heterogeneous facts we can bring under

the rule of a single formula, the nearer we feel that we have reached towards the source of knowledge, and the more perfectly we trace the little arc of the immeasurable circle which comes within the range of our hasty observations, at first like the broken fragments of a many-sided polygon, but at last as a simple curve which encloses all we know or can know of Nature. To our own intellectual wealth, the gain is like that of the over-burdened traveller, who should exchange hundred-weights of iron for ounces of gold. Evanescent, formless, unstable, impalpable, a fog of uncondensed experiences hovers over our consciousness like an atmosphere of uncombined gases. One spark of genius shoots through it, and its elements rush together and glitter before us in a single translucent drop. It would hardly be extravagant to call Science the art of packing knowledge.

We are moving in the right direction, therefore, when we summon all the agencies of nature before the tribunal of Science, and try the question of their identity under their various *aliases*, just so often as a new set of masks or disguises is detected in their possession. The accumulated discoveries of late years have resulted in such a trial. Following the same course that Newton and Franklin followed in their generalizations, living philosophers have attempted to show relations of mutual convertibility, if not of identity, between the series of forces known as light, heat, electricity, magnetism, and chemical

affinity. Some leading facts indicating their intimate relationship may be very briefly recalled.

A body heated to a certain point becomes luminous ; its heat seems to pass over partly into the condition of light. Thus iron becomes *red-hot* at about 1,000° Fahrenheit. Light may, perhaps, be changed into, or manifest itself as heat. In Franklin's famous experiment, the black cloth, which absorbs all the luminous rays, sinks deepest into the snow. Light, again, may act chemically, as heat does, as we see in the results of photography. It may be fixed in a body, like heat, as is shown in the Bologna phosphorus, which shines for some minutes after being exposed to sunlight, or to the common light of day. Heat develops electricity, as in the various thermo-electric combinations of different metals. Electricity produces light, and sets fire to combustibles. The highest magnetic powers are developed in iron by the action of galvanic electricity. The magnet, again, is made to give galvanic shocks in a common form of battery, with the usual manifestations of light and heat. Chemical force develops light, heat, and electricity ; and each of these is used constantly in the laboratory as a practical means of inducing chemical action. Heat alone is shown, by an experiment of Mr. Grove, to be capable of decomposing water. Further than this, as all forms of motion are capable of developing heat, or light, or electricity, according to the conditions under which it

occurs, and as heat and electricity and chemical changes are habitually used to produce motion, it is questioned whether all the apparent varieties of force are not mutually convertible, there being in reality but one kind of force, which manifests itself in each of the different modes just spoken of according to the material substratum through which it is passing, or some other modifying cause. And as there are facts indicating the existence of a system of equivalents as prevailing in these conversions, or of a fixed ratio between the various convertible forms of force, so that a given electrical force will produce just so much heat or chemical decomposition, and either of these reproduce the original amount of electricity, it has been maintained that the total force of the inorganic universe is undergoing perpetual transfer, but never changes in amount, any more than the matter of the universe is altered in quantity by change of form.

This would be the noblest of generalizations, could we accept it without limit, as an established truth:— a few simple elements; the material world formed by their innumerable combinations;— one force, an effluence from the central power of creation, animating all; binding atoms, guiding systems, illuminating, warming, renewing, dissolving, as it passes through the various media of which the unbreathing universe is made up.

We may carry the generalization a step further. We know nothing of matter itself except as a collec-

tion of localized forces, points of attraction and repulsion, as Boscovich expressed his notion of its elements. Take a quartz crystal as an example. It resists the passage of certain other forces through a limited portion of space. It resists the separation of that sphere of resistance into two or more parts, by means of what we call cohesion. If a ray of light attempts to pass the portion of space within which these circumscribed forces have been found to act, it is thrown back or bent from its course. Here, then, are localized forces, or agencies that produce change; the existence of anything behind them — substance, or substratum — is a mere hypothesis. But while the fluent forces of the universe have been shown to pass more or less completely into one another, these collections of stationary forces which we call matter have hitherto maintained their ground against every attempt to reduce them to unity, or to render them in any degree mutually convertible. Our threescore groups of fixed forces, known as simple substances, defy all further analysis, so far as our present power and knowledge extend.

But we must remember that, even if the hypothesis of the absolute unity of the various imponderable agencies were established as a fact, we should still have to look somewhere between their sources and our organs for the difference in their manifestations. And this could be only in the media through which they act. If electricity becomes magnetic attraction

in passing through iron, and iron only, we must look to the metal for the cause of its change of form. Thus we only transfer the differentiating agency from one sphere to another, in consequence of the experimental inferences of the physicist and the chemist. If chemistry had reduced matter to some one mother-element, we should have been forced to refer all its different manifestations, such as gold, sulphur, oxygen, and the rest, to the influence of external agencies operating through them. The tendency of modern research, without claiming for its inferences the character of demonstration, is in the other direction;—unity of the fluent forces; diversity of the fixed forces, or matter.

Such are the data derived from the inorganic world with which we approach the consideration of the phenomena which belong to organized beings. According to their analogies we should look for the cause of any peculiar manifestation we might meet with, in the fixed forces or material structure of the organism.

When we commence the examination of this material structure, we find it so different from everything that we have met with in lifeless matter, that we are tempted to believe it must differ no less in elementary composition. The substance of these five hundred mute slaves which we call muscles, and the currents of this “running flesh” that we call blood, seem unlike anything in earth, air, or waters. But Chemistry meets us with her all-searching analysis,

and tells us that this solid and this fluid, and all the other structures of the body, however varied in aspect, are but combinations of a few elements which we know well in the laboratories of Nature and Art. A few gallons of water, a few pounds of carbon and of lime, some cubic feet of air, an ounce or two of phosphorus, a few drams of iron, a dash of common salt, a pinch of sulphur, a grain or more of each of several hardly essential ingredients, and we have Man, according to Berzelius and Liebig. We have literally "weighed Hannibal," or his modern representative, and are ready to answer Juvenal's question. The wisest brain, the fairest face, and the strongest arm before or since Ulysses and Helen and Agamemnon, were, or are, made up of these same elements, not twenty in number, and scarcely a third of the simple substances known to the chemist. The test-tube, and the crucible, and the balance which "cavils on the ninth part of a hair," have settled that question. Appearances, therefore, have proved deceptive with regard to the composition of the organism.

Again, if we looked for the first time at the mode of action of the living structure, we should probably decide that the forces at work to produce the operations we observe must be of an essentially different nature from those which we see manifested in brute matter. Here are solids sustained and fluids lifted against the force of gravity. Here is heat generated without fire. Here is bread turned into flesh. Here

is a glairy and oily fluid shut up in a tight casket, sealed by Nature as carefully as the last will and testament of an heirless monarch ; and lo ! what the casket holds is juggled into blood, bone, marrow, flesh, feathers, by the aid of a little heat, which, increased a few degrees, might give us an omelet instead of a chicken. Surely, we should say, here must be new forces, unknown to the common forms of matter. Yet appearances may deceive us, as they deceived us respecting the substance of the organism until the chemist set us right.

We must try the actions just as he has tried the elements. We are not bound to do for them any more than he has done for the materials he has worked upon. If he has stopped at analysis, and confessed that synthesis was beyond his powers, so may we. He has shown us the carbon, the iron, and the other elements of which blood and muscular fibre are made up. But he has never made a drop of blood or a fibre of muscle. We have done as much for physiological analysis, if we can show that such or such a living action is produced by some form of natural force with which we are acquainted as it appears in inorganic matter, although we cannot reproduce the living action by artificial contrivances. It is not to be supposed that the laboratory can present combining elements to one another under all the conditions furnished by the organism, nor that any one living act may be imitated after the mu-

tually interdependent round of movements has been permanently interrupted.

Proceeding, then, to our analysis of the living actions, a very superficial examination shows us that many of the physical agencies are manifested in the organism in the same way as in ordinary matter. Thus gravity is always at work to drag us down to the earth. It holds us spread out on the nurse's lap in infancy. We stand up against it for some three or four score years. Then it pulls us slowly downward again. The biped is forced to become a tripod. The jaw falls by its own weight, and must continually be lifted again ; so that old men, as Haller remarked, seem to be constantly chewing. It stretches us out at last, and flattens the earth over our bones, and so has done with us. Our fluids obey it during our whole lives. The veins of the legs dilate in tall men who stand much ; the hands blanch if we hold them up ; the face reddens if we stoop. The same cohesion that gives strength to knife-handles and tenacity to bowstrings serves the purposes of life in bones and sinews. The valves of the heart and vessels, which pointed Harvey to the discovery of the circulation, proclaim the obedience of the fluids to the laws of hydraulics. The tear-passages are filled by the force of capillary attraction. The skin soaks up fluids and allows them to escape through it, as membranes and films of paper and sheets of unglazed porcelain do in our experiments. The chemical reactions between

the blood and the atmosphere, and between the gastric juice and the food, may be imitated very successfully out of the body. The eye and the ear recognize the ordinary laws of light and sound in all their arrangements. Levers, pulleys, and even the wheel and axle, play their usual part in the passive transfer of the forces which move the living machinery.

These facts, and many others of similar character which might be mentioned, point to the following conclusion. If there is a special force acting in the living organism, it must exist in addition to the general forces of nature, and not as a substitute for them. To know whether such a special force is necessary, or whether the general forces of nature are sufficient, we must know what these last are capable of doing, and what they cannot do, and must compare their ascertained power and its limitations with the living task to be performed. This is the next point to be examined.

That form of force which we call chemical affinity is capable of giving an indefinite number of aspects and qualities to matter, by varying the proportions and mode of combination of a few simple elements. Oxygen and nitrogen, which are the breath of our nostrils, become a corrosive fluid when united in certain simple proportions differing from those of atmospheric air. The same elements, in varied combinations, serve us as food, or form a fluid, one drop of which kills almost like a stroke of lightning.

Thus there is nothing exceptional in the fact, that the compounds of the vegetable or animal structure should present the distinctive characters by which we know them as starch or fat, as fibre or muscle.

Neither does there appear to be anything in the mere fact of assimilation, which establishes a distinct line of demarcation between the living and the lifeless world. A crystal, from a solution containing several salts, appropriates just the materials adapted to build up its own substance. A lichen does nothing more. The air is a solution of the elements which form it, and it appropriates and fixes them. The penetration of the new materials into the organic structure, and their interstitial distribution among its parts, might seem to draw the line of distinction. But this is very limited in many plants, and depends on their mechanical arrangement, one division growing upon the outside and another upon the inside. The porosity of organized beings which favors this mode of nutrition is nothing but an increase of internal surface; soluble nutritive matters are diffused through their textures just as water and other fluids pass into the pores of the Spanish *alcarraza*; and there is no reason why this internal surface should not appropriate new matter, as well as the external surface of a mineral.

The constancy of specific form is not more absolute in organized beings than in crystals. The difference between different crystalline shapes of the same

mineral is not greater than that of the grub and the butterfly, or of the floating and the fixed Medusa.

Nor is a certain limitation of size a distinguishing mark of vitality. Some crystals are microscopic; some needle-like; some columnar. No diamond was ever found too heavy for a lady's coronet; but there are beryls which it would break a man's back to carry.

The plant and the animal have been thought to be peculiar in maintaining their integrity by continual waste and renewal. They are a perpetual "whirlpool," into which new matter is constantly passing, and from which the materials which have been used are always being thrown out. It might at first seem hard to match this condition by any fact from the inorganic world. But from time immemorial, life has been compared to a flame, a spark, a torch, a candle.

"Et, quasi cursores, vitæ lampada tradunt."

The inverted flambeau of the ancients is still a frequent symbol in our rural cemeteries. Macbeth, Othello, John of Gaunt, have made the image familiar to us in different forms.

*"My oil-dried lamp, and time-bewasted light,
Shall be extinct with age and endless night."*

The simile is in fact a little fatigued with long use, and the Humane Society is hardly true to its name when it tolerates the expression that "the vital spark

was extinct." But this is the very object of comparison that we here want, not for ornament, but use. Professor Draper has beautifully drawn the parallel between the flame and the plant. The flame is not living, yet it grows ; it is fed by incessant waste and supply ; and it dies at length, exhausted, clogged, or suddenly quenched. The plant must suck up fluid by its wick-like roots, as well as the lamp by its root-like wick. The leaves must let it evaporate, as does the alcohol in an unprotected spirit-lamp. Here, then, is the mechanism of perpetual interstitial change, which we have a right to say may be purely physical in the one case, as in the other.

We need not wonder, in view of this perpetual change of material, that the living body, as a whole, resists decomposition. The striking picture drawn by Cuvier in his Introduction to the Comparative Anatomy, in which the living loveliness of youthful beauty is contrasted with the fearful changes which a few hours will make in the lifeless form, loses its apparent significance when we remember the necessary consequence of the arrest of its interior movements. The living body is like a city kept sweet by drains running under ground to every house, into which the water which supplies the wants of each household is constantly sweeping its refuse matters. The dead body is the same city, with its drains choked and its aqueducts dry. The individual system, like the mass of collective life which constitutes

a people, is continually undergoing interstitial decomposition. If we take in a ton every twelvemonth, in the shape of food, drink, and air, and get rid of only a quarter of it unchanged into our own substance, we die ten times a year; not all of us at any one time, but a portion of us at every moment. It is a curious consequence of this, we may remark, by the way, that, if the refuse of any of our great cities were properly economized, its population would eat itself over and over again in the course of every generation. We consume nothing. Our food is like those everlasting pills that old pharmacopœias tell of, heirlooms for the *dura ilia* of successive generations. But we change what we receive, first into our own substance, then into waste matter, and we have no evidence that any single portion of the body resists decomposition longer during life than after death. Only, all that decays is at once removed while the living state continues.

As for our inability, already referred to, to imitate most of the organic compounds, it is no more remarkable than our inability to manufacture precious stones. Some combinations take place readily; others require the most delicately adjusted conditions. Potassium and oxygen rush into each other's arms like true lovers. Iron blushes a tardier consent before changing its maiden name for oxide. The "noble metals" are coy to the great elemental wooer; they must be tampered with by go-betweens

before they will yield. Chlorine and hydrogen unite with a violent explosion, if exposed to sunlight. Hydrogen and oxygen resist the mediation of the sunbeams, but come together with sudden vehemence if crossed by the electric spark or touched by a flame. Most bodies must be dissolved before they will form alliances; "*corpora non agunt nisi soluta.*" Some can combine only in the nascent state; like princes, they must be betrothed in their cradles. There is nothing strange, then, in the fact, that combinations formed in the vegetable or animal laboratory should be hard to imitate out of the body. Yet the chemist has already succeeded in forming urea; and artificial digestive fluids, borrowing nothing from life but a bit of dried and salted rennet, do their work quite as well as the gastric juice of many dyspeptic professors. These instances show us that, if we can only supply the necessary conditions, the chemical forces are always ready. Nature expects every particle of carbon, and the rest, to do its duty under all circumstances. The digestive secretions often devour the stomach after death. A drowned man is restored by artificial respiration; the air forced into the lungs changes the blood in their capillary vessels; the blood thus changed is enabled to flow more freely; the heart is unloaded of its stagnant contents, and roused to action; the round of vital acts is once more set in motion; and all this because carbon and oxygen are always true to each other.

We are obliged to confess, as the result of this examination, that the inherent and inalienable relations of the elements found in the living organism may be sufficient to account for all the acts of composition and decomposition observed during life, without invoking that special "chimie vivante" which Broussais and others have supposed to be one of the properties of organization.

There is another mode of operation found in animals and vegetables, which has been considered as depending upon special *vital*, in distinction from physical, causes. This is the process by which certain bodies are selected from others for absorption or secretion; as when the chyle is taken up by the lacteals, and the bile is separated from the blood by the liver. To account for this, the organs have been supposed to possess a certain "low intelligence," which directs them in this selection. Yet there is evidence that the ordinary physical laws are not idle in these operations, and it is fair to ask if they may not be the only real agencies. The lacteals will not take up oily matters until they have been turned into an emulsion by the pancreatic fluid; just as a wick wetted with water will not take up oil until this is emulsified, or made a soap of.

We may still inquire why each secreting gland forms or transmits its own special product, and no other; why the liver secretes only bile, and the lachrymal gland only tears. We can see nothing in the

anatomical formation of these organs to account for their peculiar modes of action. But there are many phenomena of simple physical transudation equally unexplained. When water and alcohol are separated by a membrane, a current is established between the fluids in both directions, that from the water to the alcohol — the denser to the lighter — being the most rapid. When a similar experiment is performed with sirup and water, the current is from the water to the sirup, — the lighter to the denser. When the same fluids are employed, the nature and position of the membrane used occasion differences which we cannot explain. With the skin of a frog, the current from the water is most rapid when the internal surface is towards the alcohol. But with an eel-skin, the reversed position is most favorable to the flow in the same direction.

Again, in the phenomena of precipitation, as seen in the laboratory, we have an illustration of the chemical side of secretion. Two clear fluids are mixed, and one of them immediately separates or secretes one or more of its elements as a distinct product; or both may be decomposed with entire transformation of aspect and properties. Or a simple solid substance is introduced into a fluid compound, and at once seizes upon some constituent, and appropriates it, as when iron is immersed in solutions of salts of copper. Still more striking is the well-known action of spongy platinum in pro-

ducing the combination of hydrogen and oxygen, without undergoing any chemical change itself.

Let us see whether some of these same physical operations may not be manifested in the liver, taking this as the typical secreting organ. Its cell-walls may govern their currents of transudation by laws of their own, as eel-skins and frog-skins govern the currents of alcohol and water. The two kinds of blood which meet in its capillary vessels may react upon each other, and produce mutual decomposition, as well as any other compound fluids. The substance of the liver has as much right to appropriate fat, without a special license from vitality, as the iron, in the experiment referred to above, to appropriate copper. It may have as good a title from the Supreme Authority to join the elements that form cholesterine, as spongy platinum to unite hydrogen and oxygen. This catalytic agency — the priestly office of chemical nature which gives to one body the power of marrying innumerable pairs of loving atoms, itself standing apart in elemental celibacy — is not to be denied its possible place in the living mechanism. Its action may, perhaps, be more extended than in inanimate bodies. The instances furnished by the action of the pancreatic fluid and the gastric juice may belong to a far more numerous series of similar phenomena. We may grant a difference of degree between the separations or secretions effected by the reactions among the complex elements of the organism, and

those witnessed in unorganized matter ; but the difference of essential nature is less easily demonstrated.

But it will be said that the several parts select their special secretions with reference to the general wants of the system. If there is no evidence of adaptation of parts to a whole anywhere except in living beings, then we must allow that here is a difference in kind as well as in degree, which it would be hard to reconcile with the supposition that the same forces are the sole agents in both cases. But it is vain to deny that the macrocosm shows the same adaptation of parts as the microcosm. When the *Resolute* was found adrift and boarded by the American sailors, there was no sail on her masts, and no hand at her helm. Yet there was just as much evidence in her build and equipments that she was framed and provided for a definite purpose, as if the good ship had been seen with all her men at the ropes and the steersman at the wheel, following a lead into the ice-fields of the North. So if the earth had been visited by some wandering spirit before a fern had spread its leaves, or a trilobite had clashed his scales, the evidence of adaptation of its several parts to one another, as well as to ulterior ends, would have been clear as the sun that shone upon its primeval strata. Its steady circuit through the heavens, exposing it on all sides to light and shade in succession ; the qualities of matter which lead its various forms to arrange themselves as shapeless matrix, or geometrical solid, into ever

downward-sinking waters and ever upward-rising atmospheres ; the self-preserving and self-classifying tendency, constantly at work to educe new harmonies out of the destroying conflict of the active powers of nature, — show that the adaptation of parts to the whole is wider than the realm and older than the reign of life.

All the physical laws, in and out of the organism, are arranged in harmony with one another. Each organ of a plant or an animal is supported by, and accountable to, the general system. But this system holds the same relations to the surrounding universe. Every creature that is born has an account opened at once with Nature, — debtor by so much of carbon, oxygen, hydrogen, azote ; creditor by so much carbonic acid and ammonia, or whatever may be the medium of payment. Life is adapted to maintain a certain normal composition of the atmosphere, as much as the atmosphere to maintain life. And as air existed before plant or animal lived to breathe it, and as air is made up of at least three elements, each of these, considered as a part, was adjusted in quality and quantity to the whole with the same fitness that we see in the relation of the amount and quality of the bile as compared with the other secretions and the wants of the system.

But the living system protects itself by special provisions, it will be said ; look at the thickened cuticle upon the workingman's hand, and see how admirably

it shields the sensitive surface. True; and see also how delightfully the same thickened cuticle acts in the case of a *corn*. The avidity with which the most deadly substances are sucked in by the skin, — the suddenness with which a single drop of poison will work its way through the system from the surface of a mucous membrane, — shows us that the same force acts for good or bad indifferently; that is, it is under the general law of harmony, but not modified to meet accidental conditions. Just so, in the greater universe, the tide rises by one of its beneficent provisions, wafting a hundred fleets into their harbors, but not less surely drowning the poor wretches who are caught on the sands by its advancing waters. “Faugh a ballagh!” — “Clear the coast!” — is the word when we get across the track of any natural agency. We must not expect it to turn out for any particular end; the Creator has imparted no such wisdom to matter.

The course of a single ray of light is the eternal illustration of the Divine mode of action. It is always in straight lines. The difference between our utilitarian methods, always looking to special ends, and the Supreme handling of things in their universal aspect, is beautifully shown in the structure of one of our domestic animals. If a watchmaker should insist on putting into a common watch one little wheel, unseen, and unconnected with the rest of the machinery, because he had made repeaters which

required such a wheel, we should smile at his lost labor. But there is a little collar-bone, too small to be of any use, floating in the midst of the muscles about a cat's shoulder, which is as constant as if the animal's welfare depended on it. Why is it there? It is the vanishing point of a series of models formed on one general plan. The plan, as a whole, is a monument of infinite wisdom, adapted to the various needs of a numerous series of conscious beings. But it is so vast that it includes what we call *utility* as one of its accidents, and this anatomical fact shows us one of the borders at which the Divine conception overlaps the temporary application. The human artisan is wise in leaving out the wheel when it is no longer wanted. But the seemingly trivial arrangement just mentioned shows that the Deity respects a normal type more than a practical fact. His thoughts and his ways are not as ours.

The limited duration of existence might be thought to be characteristic of organic being. But, in the first place, this fact is not so universal and absolute as might be supposed. De Candolle long since promulgated the doctrine that trees live indefinitely, and never die but from injury or disease. The death of our great forest-trees is commonly owing to fracture, in consequence of the decay of the inner portion of the stem, which no longer performs any but a mechanical office. On the other hand, many crystals undergo decomposition, of form at least, within a

longer or shorter period, by efflorescence or deliquescence. The very conditions of organic life imply a liability to disable its implements. A river chokes up its own bed with detritus; a chimney fills itself up with soot. The organism is a multilocular sac of fluids which are loaded with dissolved and suspended matters. The smoke of life ascends from innumerable pores of animal bodies, from the first gasp to the last breath which is expelled. What marvel that the vessels become thickened, and the working organs clogged, with accumulating deposits? We can only wonder, with the hymn to which we have referred, that the harmony of so exquisitely adjusted a mechanism should be so long maintained, and not at all at the brevity of life in any of its forms, or the diversity of its duration.

But there is the great mystery of reproduction. Are there any acts of inorganic nature parallel to those which take place in the development of an embryo of one of the higher animals? This development may be decomposed into the following separate elements:—1. A movement of assimilation imparted by an organism to a separable product of secretion or of growth; 2. A differentiating movement, which divides and arranges the formative materials into the substance of tissues and organs; 3. A modelling force, or shaping agency, which determines the form of the several parts and of the whole; 4. A co-ordinating force, which brings the

various separate acts into harmony with one another, the *motus regius* of Lord Bacon.

Now, the question is, not whether all these actions are combined in any other known group of material changes than embryonic development, but whether any one of them is absolutely *sui generis*. And, first, we do not see why molecular movements may not be imparted by one portion of matter to another, as well as movements in mass. Fire is so propagated, and forms a new centre independent of its origin. Magnetism is imparted from one body to another, without diminution of its intensity in the first. Secondly, the rending apart of the most intimately combined elements, and their distribution to the positive and negative poles respectively, may illustrate the separation of the several constituents of the embryonic structure from one another. A very weak current will decompose saline mixtures, and even refractory oxides. Heat alone, as we have seen, will decompose water. Is it not in harmony with these physical facts, that a weak current of heat, long continued, as in incubation, should induce the separation and *quasi* polar arrangement of the loosely combined atoms which are to form the embryo? Thirdly, is not the shaping power more obvious in the rhombs of a fragment of Iceland spar than in the disc of a lichen, which falls on a stone, and spreads just as a drop of rain would spread? We may, in fact, see the two forms of the modelling process—Nature's plane and spherical

geometry — in operation side by side in the same structure. The *raphides*, or included crystals, which we often find in great abundance in vegetable cells, — those of the onion, for instance, — illustrate the point in question. Lastly, we have already seen cause to deny that the principle of harmony of parts, or multiplicity in unity, can be confined to living bodies, without overlooking the most obvious adjustments of the elements of general nature to one another and to one great plan. “The wonderful uniformity in the planetary system,” says Newton, “must be allowed the effect of choice; and so must the uniformity in the bodies of animals.”

It appears, from the survey we have taken, that we might expect, from the general character of the creative plan, that, as pre-existing materials were employed to form organic structures, so pre-existing force or forces would be employed to maintain organic actions, or unconscious life. It is certain that the materials of the organism are, to a great extent, subject to the common laws of mechanical and chemical forces. It is not proved that these same forces are incompetent to produce the whole series of interstitial changes in which the functions of life common to vegetables and animals consist. On the contrary, the more we vary our experiments and extend our observation, the more difficult we find the task of assigning limits to their power. The preservation of specific form and dimensions has not

appeared to be confined to living beings. The co-operation of the parts of an organized structure does, indeed, imply a plan, or pre-established harmony, but no more than the arrangement of the spheres, or the relation of the elements to one another. Each little world of life shows only the same *solidarity*, on a small scale, that prevents the universe from being a chaos. Limits of duration are not peculiar to living beings, nor always evident in them. Reproduction combines several modes of action, no one of which is without its inorganic parallel.

Given, then, a plant or a man, there seems no good reason why either should not begin to live with all its might, so soon as the conditions of light, heat, air, — whatever stimuli or food it requires, — shall be made to act upon it. Such is the case with the drowned man who is “brought to life.” He was defunct to all intents and purposes, except that the organs and fluids had not had time to become clogged, or decomposed, when a whiff of air set the whole machinery going again. “Two is my number,” said Sir Charles Napier. “Two wives, two daughters, two sons, and *two deaths*. I died at Corunna, and now the grim old villain approaches again.” Life is not the absolute unit we suppose. If a man is dead who “breathes his last,” or “expires,” such dead men have unquestionably been restored to life without a miracle. In other words, a man may be dead conditionally, — dead, unless there

happen to be a double bellows or a galvanic battery in the neighborhood, and some one who knows how to use it. But if a man is not dead so long as any so-called living process goes on, then most men are buried alive; for there is no doubt that certain secretions—the mucous secretion, among others, as one of our best pathologists thinks—take place for a considerable time after a person has “expired.” Probably a certain number of those who have just died or expired could be resuscitated to movement, if not to consciousness, by artificial respiration, if it were a thing to be desired. The reason that they cannot be permanently restored, like those rescued from the water, is that some organ or fluid has undergone an important injury, in the vast majority of cases, if not in all.

Life is a necessary attribute, then, of a perfect organism exposed to the proper external influences, as much as gravity is of a metal, or hardness of a diamond. Just as the Creator, in calling the material elements into existence, contemplated their fitness to form a part of the living creation yet to be, so did He also diffuse such forces, or forms of force, through the world, as should of necessity manifest themselves through any perfect organism as what we call *life*. Such is the conclusion pointed at by the range of analogies we have adduced. A vast number of facts testify in its favor, and it is hard to find any that oppose it which-

cannot be explained. Whatever incomprehensible mystery there may have been in the first fabrication of these living time-keepers which measure ages in their conscious or unconscious movements, one common key seems enough to wind them all up and set them going. We may not accept Mr. Newport's generalization as to light, but whatever form of force we may recognize as the *primum mobile* in the series of organic movements, we are contented to accept as the chosen mode of action of the all-pervading Presence. If the Deity has seen fit to make one agent serve many purposes, the fact will be acquiesced in, in the face of the threatened San Benitos of all the Linnæan Societies.

The battle-ground of Atheism is not in the field of natural science ; meaning by that the study of material phenomena. The argument from design to an intelligent Contriver does not require the knowledge of Cuvier or Humboldt to make it satisfactory. Every man carries about with him in his own organization a syllogism which all the logic in the world can never mend. If his scepticism will not melt away in such an ocean of evidence, it is because it is insoluble. Whatever contrivances have been employed, the grand result of an immeasurable whole, all the parts of which are fitted together with a foresight and wisdom which it mocks the human intellect to attempt to sound, except along its shallower edges, remains to be accounted for, and Paley's ar-

gument from the watch to its maker illustrates the simple course of reasoning which the healthy mind is naturally forced to follow.

The evidence we have been considering applies to the perfect and mature organism, and does not reach the question how such organisms first came into being. Who shall tell us whether the first egg was parent or offspring of the first fowl? The poet must answer for the philosopher. Milton has ventured to paraphrase the Scriptural account of creation with a freedom not always allowed to modern science. "The tepid caves, and fens, and shores" hatch their feathered broods from eggs. The grassy clods become the mothers of young cattle. The bees appear, not a single pair, but "swarming," as our own naturalists tell us they must have appeared. But our prosaic evidence as to the introduction of the forms of life upon our planet is limited.

And, first, there is no authentic evidence that the development of any organism has been directly observed without the demonstrated or probable presence of a germ derived from a previous structure having similar characters. Even the vexed question of the origin of the entozoa, or internal parasites, has received its approximate solution from modern investigations. The tape-worm, for instance, is found to exist in two different forms, or stages of development. Each perfect tape-worm contains some twelve millions of eggs, capable of being reduced to a float-

ing dust, and thus being deposited on various articles used as food. The mouse, nibbling at everything, swallows some of these, and they grow in his body into the state of *cystic worms*, an intermediate form of development, only of late recognized as being a stage of the tape-worm's growth. By and by the cat eats the mouse, and the cystic worm, finding its proper habitat in this animal's alimentary canal, assumes the true proportions of the *tania crassicolis*. And so, another cystic worm, which is common in the flesh of oxen, sheep, and especially pigs, becomes, by a similar metamorphosis, the *tania solium*, or long tape-worm of their human consumer. The tribes that live on raw flesh are said to be particularly subject to the tape-worm. The hint derived from their experience may serve as an offset against Dr. Kane's Arctic experience, and the recommendation of a raw diet from nearer sources. So far as our immediate object is concerned, we have got rid of one enigma in finding, not only the cradles, but the nurseries, of these entozoa. We are obliged to consign the supposed instances of equivocal generation derived from their history to the same category with Virgil's swarm of bees born from a decaying carcass.

But, in the second place, the evidence of Geology has made it plain that new forms of life have been called into being at many different periods of the earth's history. The multitude of distinct floras and faunas in different regions and strata of the earth

sufficiently proves that the formation of new organisms has been as much a part of the regular order of things in creation as the precession of the equinoxes, or upheavals and depressions, or any of those changes that work out their great results in the longer cycles of time. No one who observes the manner in which new specific forms are gradually introduced among those already existing, can help seeing that such new formations may have been quietly intercalated in the midst of their predecessors by a series of operations in which, as in the mighty processes by which new continents are uplifted, nothing but secondary agencies were apparent. Chemistry teaches us, as we have seen, that no new materials were required to be called into being. It is not to be supposed that certain parcels of carbon or of oxygen were created when the first living forms, containing these elements as a matter of necessity, were fashioned, inasmuch as they already existed in immeasurable abundance. What was wanted was, not the materials of the organism, or of its germ, but the force to bring them together without the intermediate action of a parent structure. The creation of matter out of nothing is perfectly credible as a fact, but not definitely conceivable by our imaginations. The combination of pre-existing elements, and the development of new properties in the resulting compound, is what we daily witness.

If the most insignificant infusorial plant or ani-

mal, having well-defined specific characters, had been evolved under our own eyes, in circumstances precluding the possible existence of a germ derived from a previous similar being, the fact would furnish us with a theory of the organic creation, so far as the purely vital, not the spiritual, side is concerned. Not having any such fact to appeal to, but, on the contrary, finding the rule that whatever lives comes from a germ absolutely universal, so far as we are acquainted with actual life, we are reduced to barren speculation as to the special mechanism employed in the many changes of programme which the palæontologist points out to us in the vegetable and animal world of the past.

“The world is in its dotage, and yet the cosmogony, or creation of the world” puzzles us, as it did the philosopher from whom these words are cited. By feeling our way up, through what is possible, or at least conceivable, from the laws of the inorganic world to the simplest manifestations of life, we may construct a theory of the evolution of life by means of the existing forces of nature, acting in different degree or intensity from their present ordinary mode of operation.

Let us construct such a theory, not to lean upon it, but to see what degree of plausibility it may present, or how its weakness may drive us to another hypothesis. We will try to make the most of it, as an advocate pleads his client's cause without compromising

his private opinion. Suppose the problem to be the mechanism of the introduction of vegetable life. And, first, let us illustrate our possible relations to this question by an imaginary picture of a body of philosophers of a somewhat ruder stamp than ourselves, and the statement of a question which may have occurred to them, and taxed their highest faculties.

A group of savages, living in a remote island, have from time immemorial been in the habit of employing fire for warming themselves and in cooking. They never suffer it to be extinguished everywhere at once, for they know that they cannot rekindle it except from another fire. They breed it as we breed trees in our nurseries. The fact of burning is no more a mystery to them than any other natural fact; its phenomena are constant, determinable beforehand, and controllable, and although they cannot talk about carbon and oxygen as button-using sages talk, they practically know the laws of combustion. They know that fire is prolific and self-developing; that it has its little red seeds, and in due time its slender buds, and broad waving corolla, like a flower; that it loves air, and hates water; that it gives pleasure or pain, according to the way of using it; that it renders the flesh of the canine race still more acceptable than their living presence, and even adds new tenderness to the paternal relation, in case of premature bereavement. All this they know. But

if they are asked where the first fire came from, or how it was born, they have no answer to render, or only an idle story to tell. It was the gift of the Great Spirit, or some tawny Prometheus stole it from heaven. As for any mechanism by which it can be produced, they are entirely unable to suggest or conceive it. The wind, they know, fans a spark into a flame, but they laugh at the idea that the wind should kindle a fire without a single spark to begin with. At length a great hurricane sweeps over their island. It sways the tangled forest-branches backward and forward; it rends and twists and grinds them, until the earth is strewed with their fragments. Two dry boughs are swinging across each other, and chafing in the blast. Presently a smoke rises from their point of crossing, and then a flame,—the woods are set on fire; but the great mystery is solved, and from that time forward the natives rub two sticks together when they desire to have the means of warming their fingers, or discussing the merits of such game as they may have bagged in their last skirmish.

We stand in the same relation to the origin of vegetable life as that in which the savages stood to the origin of fire, before the tempest revealed it. Give us but one little vegetable spark, and we can in due time kindle it by our appliances into a flame of blossoms wreathed in a cloud of foliage. Thrust into the soil this little brown scale, one of those which the elm has dropped in thousands at our feet,

and it will go on towering and spreading until it overshadows the fourth part of an acre. Take this double-winged germ, which looks so like an Egyptian amulet, and bury it. Out of its core will spring a tall shaft that will wear its greenness for a century, though scarred with many a wound, through which its sweet juices have been stolen. This persistent force, building up the elm and the maple out of such mere specks of matter, holding steadily to the specific characters of each in every diversity of soil and climate, and maintaining them through the vicissitudes of a hundred seasons, is as great a mystery as would be the production of such a seed as either of those mentioned by deposition from the air which contains their elements, or their formation *de novo* from any collection of their proximate principles. It is only because we are not in the habit of witnessing the formation of germs as a daily occurrence, that we invest it with preternatural conditions. Geologists, who are constantly dealing with successive new creations, learn to accept the primitive evolution of an organism as a regular process, equally with its continuance. The lighting of a friction-match is not more wonderful than the conflagration of a great city which it kindles. If Schultze and Schwann had succeeded, instead of failed, in their experiments on equivocal generation, we should have taken the fact as quietly as the invention of lucifers.

Let us proceed with our theoretical construction.

We have as much right to say that carbon has a tendency to take the form of a plant under certain circumstances, as that it has to become a diamond under other conditions. We do not see it changing directly into a plant; did we ever see it crystallizing into a diamond? Let us now consider the earth just at the period before the first evolution of vegetable life. As uncounted billions of tons of carbon have since been abstracted from the atmosphere to represent what we may call the fixed organic capital of our planet, as well as vast quantities of other elements derived from the earth and the waters, we may suppose the soil and atmosphere to have then represented a saturated solution of the elements of vegetable organisms. Some change of condition, natural, but exceptional, like the hurricane in our imaginary picture,—an influx of alien elements from some distant source, or an alteration of temperature, for instance,—destroys the equilibrium of the solution. There takes place a vast precipitate of living crystals,—needle-like, acuminated, porous, crusted with an inorganic coat of silex,—the grass which covers the plains and hill-sides. The organic solution having been thus reduced, the next living precipitate may probably be of a different grade, more slowly formed, more complex, a higher vegetable growth. Would this process be a whit more incomprehensible than the deposition of a cube of common salt from a clear fluid? Now, although a nucleus in

the shape of a pre-existing cube of salt helps and accelerates this last process, it is not always necessary to it. So the living shape, which commonly depends for development on its pre-existing nucleus, or germ, may be conceived, under certain conditions, to be formed without it, obeying the same general forces, which are confessedly strong enough to shape and build up a mighty tree out of a mere particle of matter, or more properly from the elements, to which this particle has given their first direction. After a certain number of vital precipitations, we might suppose the solution, atmospheric or other, of the organizable substances, to retain just so much of these principles as would be sufficient to keep up the integrity of the organic deposits. The cube of salt will retain its form indefinitely, if kept in the fluid from which it was deposited. And thus we see a reason for the fact that every organism is immersed in a solution of its own constituents. It does not follow that we must be able to imitate this natural process by our artificial arrangements. To say nothing of our very imperfect control of the natural forces, the scale of magnitude of the experiment may entirely determine the results. Spontaneous combustion happens not unfrequently in heaps of vegetable matter; but no experimenter will expect the same substances to take fire in such quantities as he examines by the microscope.

It is only going a step further in our supposition

to conceive the first stage of vital precipitation as a simpler process. We may suppose the living precipitate to consist of what we may call *indifferent germs*, that is, assimilating and self-developing centres, determinable, but not yet determined; bearing the same relation to vegetable growths generally, which the seed of an apple or pear bears to the many possible varieties that may spring from it. This hypothesis is by no means identical with that of progressive development. It supposes the existence of permanent types, but conceives each type to represent the plastic diagonal of two forces, — a general organizing principle and a local determining one. The line of direction once fixed persists indefinitely, self-perpetuating, in the individual and the species, a vital movement parallel to its own axis. It is not our fault if these indifferent germs are the same things as the *semina rerum* of the old heathen Lucretius and his masters; the question is, whether they do not assist our conception of the mechanism of creation, and remove a part of its seeming difficulty.

We might apply this hypothesis of indifferent germs to that singular parallelism without identity observed in the organisms of remote regions. The resemblance between many growths of the Eastern and Western continents, for instance, would follow as the result of the diffusion of identical germs amidst similar, but not identical, general conditions

of soil and climate. The same series of resemblances might be expected, which we see in distant, but corresponding, parts of the body, in various affections of the skin. Both arms or both cheeks often present very nearly the same diseased aspect, the blood being the common source of the disturbing element, and certain corresponding parts on the two sides of the body furnishing the conditions for its development. So the two planetary limbs thrust through the folds of the ocean, one on either side, may be supposed to throw out their grasses, or oaks, or elms; like each other, but not the same.

“God has been pleased,” says Paley, “to prescribe limits to his own power, and to work his ends within these limits.” We can conceive of the introduction of vegetable life without any over-stepping of the present self-prescribed limits of Divine power, as we understand them. It is not absurd to suppose that new vegetable types may be forming from time to time in the existing order of things. The vulgar belief is in favor of such occurrences. The extraordinary fact of the appearance of oaks after a pine-growth has been removed, and other occurrences of similar nature, have never been thoroughly investigated, so far as we can learn. Scientific men question curiously on the subject; there is a doubt in their minds about the acorns, if they accept the facts about the oaks, as commonly alleged. It is strange that such substantial seeds should be scattered so

widely. It is stranger that such perishable matter as they hold should retain its vitality so long. The experiments on equivocal generation have been made too recently, and by men of too much judgment, to allow us to treat the doctrine with contempt. A thousand negative experiments can never settle the question definitively. We do not say that it is probable, but we cannot say it is not true, that new types may be intercalated every century or every year into the existing flora. If the Dix pear was created for the first time in a garden in Washington Street, who shall say that the same power may not have just given us a new fungus in some corner of its vast nursery?

Whatever difficulties we find in attempting to frame a conception of the first evolution of *animal* life, there are certain facts which we are authorized to take as guides in our reasonings or imaginings upon the matter. Science confirms the statement of Revelation, that animal life must have come into being after vegetable life. The plain reason is, that plants are necessary to prepare the food of animals. And since no existing animal organism is ever built up directly from the elements, but only out of materials derived directly or mediately from the vegetable world, we may question whether those first created were put together directly from the elements. The first animals were necessarily placed where their food was abundant. But their food contained the ele-

ments of their bodies, and why should not the proximate principles contained in the accumulations of vegetable matter about their birthplace have furnished the materials of the first, as well as of all subsequent organisms?

The primordial development of the higher animals presents this peculiar difficulty,—that their germs depend for their evolution on their continued connection with the parent. We can conceive of an infusorial seed or ovum as being formed by the “concourse of atoms,” guided by that Infinite Wisdom which we see every day grouping the same atoms about their living nuclei. Reasonable men experiment with the hope of observing such a fact. But no one since Paracelsus—unless it be the mother of Frankenstein—has thought of getting up an artificial *homunculus*, or *homo*, or even a lower mammal, or a bird. Vaucanson’s duck was perhaps the nearest approach to such a performance. He could utter the monosyllable abhorred of medical men, and make himself disagreeable in more ways than it is necessary to mention. But he was nothing better than wood, and illustrates the hopeless distance between the best of our paltry toys and the universe of miracles shut up in any one of the more perfect animal organisms. So difficult has the problem of the evolution of the higher animal forms appeared to speculative philosophers, that they have invented the theory of progressive development of the superior from the

lower types. The sharp lines which separate species, as shown by observation of every organic form, extinct as well as living, have caused this famous and seductive hypothesis to be very generally rejected as untenable.

With all the difficulties, however, that stand in the way of our conceiving of the evolution of a mammal by the aid of the general forces of nature acting on the organic elements, we do not see where to draw the line which shall separate the higher from the lower forms of life, and assign a different origin to the two divisions of the series. Reasoning from below upwards, we should come to this frank conclusion, that, as definite form, limited duration, growth and decay, harmony of parts, transmissible qualities, all implying a controlling intelligence, are manifested in the inorganic world, we cannot assume that the same forces which produce its phenomena may not show themselves through all forms of organized matter as *vital* force. And as the conditions of action of these forces must have varied at different periods of the earth's history, we cannot assume that they have always been incompetent to bring together the elements of organized matter. The various organic forms which we observe fossilized in the strata of the earth, without any parent structures in the subjacent layers, may be considered as marking by their appearance the epoch of successive "fits of easy transmission" of the plastic elemental influence.

“Sed, quia finem aliquam pariundi debet habere,
Destitit ; ut mulier, spatio defessa vetusto.”

And here we leave this aspect of the question, to look at it in another point of view.

We recognize two, and only two, great divisions in created things. To the first class of his creatures the Deity sustains only active relations. All their qualities, functions, adjustments, harmonies, are immediate expressions of his wisdom and power. Every specific form is a manifestation of the Supreme thought. Every elemental movement is the Sovereign's self in action. The only question is whether he has at one time been present in our elements with an organizing force, and afterwards withdrawn this particular manifestation, or whether under the same conditions these elements would always manifest his ideas in the production of the same forms, just as they now maintain the present forms of life by a perpetual miracle, which we fail to recognize as such only because it is familiar to our daily experience. We have stated, as well as our space permitted, the argument for the presence of an organizing force in the elements around us.

To the second class of his creatures the Creator stands in passive as well as active relations. They are no longer simple instruments to do his bidding. They may disobey him, and violate the harmonies of the universe. They have the great prerogative of self-determination, which, with knowledge of the

moral relations of their acts, constitutes them responsible beings.

Now, if our previous view of matter and of elemental force as continuous Divine manifestations is correct, they could not in the nature of things become self-determining existences. The creation of independent centres of will and action involves a change in the character of the formative agencies hitherto at work in the portion of the universe with which we are acquainted. And here we come at once upon that mystery of mysteries: How and when are these spiritual natures called into being, and what is their relation to the material frames whose fundamental vital action we have alone considered? Have they existed in some former state, as Plato taught in the Academy, and Dr. Edward Beecher has maintained in the Church? Are the shores of embryonic life crowded with souls waiting for their bodies, as Lucretius tells his readers was the foolish fable, and as Brigham Young reveals to his congregation and announces in his harem? Or can it be that Tennyson has solved the difficulty when he tells us that,

“ star and system rolling past,
A soul shall draw from out the vast,
And strike his being into bounds,
“ And, moved through life of lower phase,
Result in man, be born and think”?

Or does the soul organize its own body, as thoughtful men have held, from Aristotle to Mr. Garth Wilkinson?

Into these and similar questions we cannot now enter, if under any circumstances we should be willing to cast a line into such fathomless abysses of speculation. But as we have followed the physical view of life upward until we have reached an impassable limit, it is but fair to indicate briefly the reversed aspect of living nature, when viewed from above downward, by taking, as the point of departure, its spiritual apex, instead of its material base.

The introduction of self-determining existence, or sub-creative centres, into the order of things, marks, as we have said, the great change of action by which Omnipotence saw fit to assume passive, as well as active, relations to its creatures. There is nothing in light or heat, or electricity, or chemical or mechanical force, that can give any account of spiritual existence. When the first human soul was introduced to earthly being, if not before the date of this last birth of creation, there was a new force put forth which was not any of these. And so, whenever a new soul takes mortal shape, we recognize it as an emanation from its Maker by some other channel than through the elemental substances or influences that wait upon its secondary or simply organic necessities.

We could not think it strange that, at the period of this spiritual evolution, a force running parallel with it in the material world, — a force not identical with any of the ordinary physical agencies, — should

combine the elements of the bodily form, and shape it to the wants of the immaterial principle. We should not therefore be constrained to throw upon the common forces of Nature that wonderful development from simple to complex, from general to special, which carries a translucent vesicle through a series of evolutions and differentiations, until it wears the shape of the august being to whom the Deity has delegated a portion of his omnipotence. But this conclusion would oblige us to argue backward from it to the lower animals, whose material frames and organic existence are essentially identical in their composition and mode of being with our own. And conceding that a special change of character in the forces of Nature marks the appearance of animal life, there would be strong reason for extending the same supposition to the vegetable kingdom. This is only one instance of the difference between our conclusions when we look from the higher sphere, and those which we naturally accept from the workshops of material philosophy. We must be content to remain in doubt on many details of creation not revealed to us, on which we can only shape a few half-shadowed hypotheses.

In conclusion, we recognize our spiritual natures as having only incidental and temporary relations with the material substance and general forces of the universe. But we may concede that, the further our examination extends, the more completely the or-

ganic or simply vital forces appear to resolve themselves into manifestations of those closely related or mutually convertible principles which give activity to the unconscious portion of the universe. We have no experimental evidence that these physical agencies can form any living germ by their action upon matter; nor can we prove the contrary. The only directly observed conditions of the evolution of a living structure involve the presence of a germ derived from a being of similar characters. But observation of the earth's strata shows that new forms of life have appeared at numerous successive periods by some other creative mechanism. We can frame hypotheses not inconsistent with the ordinary laws of matter to account for such formations, but they can be regarded only as more or less ingenious speculations. We are obliged to recognize a special intervention of creative power in the introduction of spiritual existence in the midst of the pre-existing unconscious creation. If we allow that higher modes of action have once been superinduced upon the ordinary physical forces, we cannot deny the possibility, and even probability, of repeated changes in the working machinery of creation, coinciding with the evolution of each new type of organization. And if new formulæ of force in combination with matter preceded the creation of each organism, or group of organisms, we can understand that a special *vital* formula may be involved in the continuance of their

existence. Thus accepting the fact of a change of law as a possible part of the constitution of the universe, we arrive, independently of Revelation, at the doctrine of Miracles, as this term is commonly understood. But in the view we have taken, whatever part may be assigned to the physical forces in the production and phenomena of life, all being is not the less one perpetual miracle, in which the Infinite Creator, acting through what we often call secondary causes, is himself the moving principle of the universe he first framed and never ceases to sustain.

VALEDICTORY ADDRESS,

DELIVERED TO THE

MEDICAL GRADUATES OF HARVARD UNIVERSITY,

AT THE

ANNUAL COMMENCEMENT,

WEDNESDAY, MARCH 10, 1858.

VALEDICTORY ADDRESS.

GENTLEMEN OF THE GRADUATING CLASS, —

It is my grateful duty to address you a few words in the name of the Medical Faculty, under the auspices of which you have just entered the Medical Profession. In their name I welcome you to the labors, the obligations, the honors, and the rewards which, if you are faithful, you may look for in your chosen calling. In their name I offer you the hand of fellowship, and call you henceforth brothers. These elder brethren of the same great family repeat to you the words of welcome. The wide community of practitioners receives you in full communion from this moment. You are enrolled hereafter on that long list of the Healers of men, which stretches back unbroken to the days of Heroes and Demigods, until its earliest traditions blend with the story of the brightest of the ancient Divinities.

Once *Medicinæ Doctor*, always *Doctor Medicinæ*. You can unfrock a clergyman and unweave a husband, but you can never put off the title you have just won. Trusting that you will always cling to it, as it will

cling to you, I shall venture to offer a few hints which you may find of use in your professional career.

The first counsel I would offer is this: Form a distinct PLAN for life, including duties to fulfil, virtues to practise, powers to develop, knowledge to attain, graces to acquire. Circumstances may change your plan, experience may show that it requires modification, but start with it as complete as if the performance were sure to be the exact copy of the programme. If you reject this first piece of advice, I am afraid nothing else I can say will be of service. Some weakness of mind or of moral purpose can alone account for your trusting to impulse and circumstances. Nothing else goes on well without a plan; neither a game of chess, nor a campaign, nor a manufacturing or commercial enterprise, and do you think that you can play this game of life, that you can fight this desperate battle, that you can organize this mighty enterprise, without sitting down to count the cost and fix the principles of action by which you are to be governed?

It is not likely that any of you will deliberately lay down a course of action pointing to a low end, to be reached by ignoble means. But keep a few noble models before you. For faithful life-long study of science you will find no better example than John Hunter, never satisfied until he had the pericardium of Nature open and her heart throbbing naked in his

hand. For calm, large, illuminated, philosophical intellect, hallowed by every exalted trait of character, you will look in vain for a more perfect pattern than Haller. But ask your seniors who is their living model, and if they all give you the same name, then ask them why he is thus honored, and their answers will go far toward furnishing the outline of that course I would hope you may lay down and follow.

Let us look, in the very brief space at our disposal, at some of those larger and lesser rules which might be supposed to enter as elements into the plan of a physician's life.

DUTY draws the great circle which includes all else within it. Of your responsibility to the Head Physician of this vast planetary ambulance, or travelling hospital which we call Earth, I need say little. We reach the Creator chiefly through his creatures. Whoso gave the cup of cold water to the disciple gave it to the Master; whoso received that Master received the Infinite Father who sent him. If performed in the right spirit, there is no higher worship than the unpurchased service of the medical priesthood. The sick man's faltered blessing reaches heaven through the battered roof of his hovel before the *Te Deum* that reverberates in vast cathedrals.

Your duty as physicians involves the practice of every virtue and the shunning of every vice. But there are certain virtues and graces of pre-eminent

necessity to the physician, and certain vices and minor faults against which he must be particularly guarded.

And first, of *truth*. Lying is the great temptation to which physicians are exposed. Clergymen are expected to tell such portions of truth as they think will be useful. Their danger is the *suppressio veri*, rather than direct falsehood. Lawyers stand in professional and technical relations to veracity. Thus, the clerk swears a witness to tell the truth, the whole truth, and nothing but the truth. The lawyer is expected to get out of the witness not exactly the truth, but a portion of the truth, and nothing but the truth — which suits him. The fact that there are two lawyers pulling at the witness in different directions, makes it little better; the horses pulled different ways in that frightful old punishment of tearing men to pieces; so much the worse for the man. But this is an understood thing, and we do not hesitate to believe a lawyer — outside of the court-room.

The physician, however, is not provided with a special license to say the thing which is not. He is expected to know the truth, and to be ready to tell it. Yet nothing is harder than for him always to do it. Whenever he makes an unnecessary visit, he tells a lie. Whenever he writes an unnecessary prescription, he tells a lie. It is audibly whispered that some of the “general practitioners,” as they are called in England, who make their profit on the

medicines they dispense, are too fond of giving those complicated mixtures which can be charged at a pleasing figure in their accounts. It would be better if the patient were allowed a certain discount from his bill for every dose he took, just as children are compensated by their parents for swallowing hideous medicinal draughts.

All false pretences whatsoever, acted or spoken; all superficial diagnoses, where the practitioner does not know what he knows, or, still worse, knows that he does not know; all unwarranted prognoses and promises of cure; all claiming for treatment that which may have been owing to Nature only; all shallow excuses for the results of bad practice, are lies and nothing else.

There is one safe rule which I will venture to lay down for your guide in every professional act, involving the immediate relation with the object of your care; so plain that it may be sneered at as a truism, but so difficult to follow that he who has never broken it deserves canonizing better than many saints in the calendar: *A physician's first duty is to his patient; his second only, to himself.*

All quackery reverses this principle as its fundamental axiom. Every practitioner who reverses it is a quack. A man who follows it may be ignorant, but his ignorance will often be safer than a selfish man's knowledge.

You will find that this principle will not only keep

you in the great highway of truth, but that if it is ever a question whether you must leave that broad path, it will serve you as a guide. A lie is a deadly poison. You have no right to give it in large or small doses, for any selfish purpose connected with your profession, any more than for other selfish objects. But as you administer arsenic or strychnia in certain cases, without blame; nay, as it may be your duty to give them to a patient; are there not also cases in which the moral poison of deceit is rightly employed for a patient's welfare? So many noble-hearted and conscientious persons have scruples about any infraction of the absolute rule of truth, that I am willing briefly to discuss and illustrate a question which will often be presented to you hereafter.

Truth in the abstract is perhaps made too much of as compared to certain other laws established by as high authority. If the Creator made the tree-toad so like the moss-covered bark to which it clings, and the larva of a *sphinx* so closely resembling the elm-leaf on which it lives, and that other larva so exquisitely like a broken twig, not only in color, but in the angle at which it stands from the branch to which it holds, with the obvious end of deceiving their natural enemies, are not these examples which man may follow? The Tibboo, when he sees his enemy in the distance, shrinks into a motionless heap, trusting that he may be taken for a lump of black basalt, such as is frequently met with in his native desert. The Austra-

lian, following the same instinct, crouches in such form that he may be taken for one of the burnt stumps common in his forest region. Are they not right in deceiving, or lying, to save their lives? or would a Christian missionary forbid their saving them by such a trick? If an English lady were chased by a gang of murdering and worse than murdering Sepoys, would she not have a right to cheat their pursuit by covering herself with leaves, so as to be taken for a heap of them? If you were starving on a wreck, would you die of hunger rather than cheat a fish out of the water by an artificial bait? If a school-house were on fire, would you get the children quietly down stairs under any convenient pretence, or tell them the precise truth, and so have a rush and a score or two of them crushed to death in five minutes?

These extreme cases test the question of the absolute inviolability of truth. It seems to me that no one virtue can be allowed to exclude all others, with which in this mortal state it may sometimes stand in opposition. Absolute justice must be tempered by mercy; absolute truth, by the law of self-preservation, by the harmless deceits of courtesy, by the excursions of the imaginative faculty, by the exigencies of human frailty, which cannot always bear the truth in health, still more in disease.

Truth is the breath of life to human society. It is the food of the immortal spirit. Yet a single word

of it may kill a man as suddenly as a drop of prussic acid. An old gentleman was sitting at table when the news that Napoleon had returned from Elba was told him. He started up, repeated a line from a French play, which may be thus Englished, —

The fatal secret is at length revealed,

and fell senseless in apoplexy. You remember the story of the old man who expired on hearing that his sons were crowned at the Olympic games. A worthy inhabitant of a village in New Hampshire fell dead on hearing that he was chosen town clerk.

I think the physician may, in extreme cases, deal with truth as he does with food, for the sake of his patient's welfare or existence. He may partly or wholly withhold it, or, under certain circumstances, medicate it with the deadly poison of honest fraud. He must often look the cheerfulness he cannot feel, and encourage the hope he cannot confidently share. He must sometimes conceal and sometimes disguise a truth which it would be perilous or fatal to speak out.

I will tell you two stories to fix these remarks in your memory. When I was a boy, a grim old Doctor in a neighboring town was struck down and crushed by a loaded sledge. He got up, staggered a few paces, fell, and died. He had been in attendance upon an ancient lady, a connection of my own, who at that moment was lying in a most critical position.

The news of the accident reached her, but not its fatal character. Presently the minister of the parish came in, and a brief conversation like this followed: — Is the Doctor badly hurt? — Yes, badly. — Does he suffer much? — He does not; he is easy. — And so the old gentlewoman blessed God and went off to sleep; to learn the whole story at a fitter and safer moment. I know the minister was a man of truth, and I think he showed himself in this instance a man of wisdom.

Of the great caution with which truth must often be handled, I cannot give you a better illustration than the following from my own experience. A young man, accompanied by his young wife, came from a distant place, and sent for me to see him at his hotel. He wanted his chest examined, he told me. — Did he wish to be informed of what I might discover? — He did. — I made the *ante-mortem* autopsy desired. Tubercles; cavities; disease in full blast; death waiting at the door. I did not say this, of course, but waited for his question. — Are there any tubercles? he asked presently. — Yes, there are. — There was silence for a brief space, and then, like Esau, he lifted up his voice and wept; he cried with a great and exceeding bitter cry, and then the twain, husband and wife, with loud ululation and passionate wringing of hands, shrieked in wild chorus like the *keeners* of an Irish funeral, and would not be soothed or comforted. The fool! He had brought a letter from

his physician, warning me not to give an opinion to the patient himself, but to write it to him, the medical adviser, and this letter *the patient had kept back*, determined to have my opinion from my own lips, not doubting that it would be favorable. In six weeks he was dead, and I never questioned that his own folly and my telling him the naked truth killed him before his time.

If the physician, then, is ever authorized to tamper with truth, for the good of those whose lives are intrusted to him, you see how his moral sense may become endangered. Plain speaking, with plenty of discreet silence, is the rule; but read the story of the wife of Cæcinna Pætus, with her sick husband and dead child, in the letters of Pliny the Younger (Lib. III. XVI.), and that of good King David's faithful wife Michal, how she cheated Saul's cut-throats (1 Samuel xix. 13), before you proclaim that homicide is always better than *vericide*.

If you can avoid this most easily besetting sin of falsehood, to which your profession offers such peculiar temptations, and for which it affords such facilities, I can hardly fear that the closely related virtues which cling to truth, honesty and fidelity to those who trust you, will be wanting to your character.

That you must be temperate, so that you can be masters of your faculties at all times; that you must be pure, so that you shall pass the sacred barriers of the family circle, open to you as to none other of all

the outside world, without polluting its sanctuary by your presence, it is, I think, needless for me to urge.

Charity is the eminent virtue of the medical profession. Show me the garret or the cellar which its messengers do not penetrate ; tell me of the pestilence which its heroes have not braved in their errands of mercy ; name to me the young practitioner who is not ready to be the servant of servants in the cause of humanity, or the old one whose counsel is not ready for him in his perplexities, and I will expatiate upon the claims of a virtue which I am content to leave you to learn from those who have gone before you, and whose footprints you will find in the path to every haunt of stricken humanity.

But there are lesser virtues, with their corresponding failings, which will bear a few words of counsel.

First, then, of that honorable reserve with reference to the history of his patient, which should belong to every practitioner. No high-minded or even well-bred man can ever forget it ; yet men who might be supposed both high-minded and well-bred have been known habitually to violate its sacred law. As a breach of trust, it demands the sternest sentence which can be pronounced on the offence of a faithless agent. As a mark of vanity and egotism, there is nothing more characteristic than to be always babbling about one's patients, and nothing brings a man an ampler return of contempt among his fellows. But as this kind of talk is often intended to prove a

man's respectability by showing that he attends rich or great people, and as this implies that a medical man needs some contact of the kind to give him position, it breaks the next rule I shall give you, and must be stigmatized as *leze-majesty* toward the Divine Art of Healing.

This next rule I proclaim in no hesitating accents: *Respect your own profession!* If Sir Astley Cooper was ever called to let off the impure ichor from the bloated limbs of George the Fourth, it was the King who was honored by the visit, and not the Surgeon. If you do not feel as you cross the millionaire's threshold that your Art is nobler than his palace, the footman who lets you in is your fitting companion, and not his master. Respect your profession, and you will not chatter about your "patrons," thinking to gild yourselves by rubbing against wealth and splendor. Be a little proud,—it will not hurt you; and remember that it depends on how the profession bears itself whether its members are the peers of the highest, or the barely tolerated operatives of society, like those Egyptian dissectors, hired to use their ignoble implements, and then chased from the house where they had exercised their craft, followed by curses and volleys of stones. The Father of your Art treated with a Monarch as his equal. But the Barber-Surgeons' Hall is still standing in London. You may hold yourselves fit for the palaces of princes, or you may creep back to the Hall of the Barber-

Surgeons, just as you like. Richard Wiseman, who believed that a rotten old king, with the *corona Veneris* encircling his forehead with its copper diadem, could cure scrofula by laying his finger on its subject, — Richard Wiseman, one of the lights of the profession in his time, spoke about giving his patients over to his “servants” to be dressed after an operation. We do not count the young physician or the medical student as of menial condition, though in the noble humility of science to which all things are clean, or of that “entire affection” which, as Spenser tells us, “hateth nicer hands,” they stoop to offices which the white-gloved waiter would shrink from performing. It is not here, certainly, where John Brooks — not without urgent solicitation from lips which still retain their impassioned energy — was taken from his quiet country rides, to hold the helm of our Imperial State; not here, where Joseph Warren left the bedside of his patients to fall on the smoking breastwork of yonder summit, dragging with him, as he fell, the curtain that hung before the grandest drama ever acted on the stage of time, — not *here* that the Healer of men is to be looked down upon from any pedestal of power or opulence!

If you respect your profession as you ought, you will respect all honorable practitioners in this honored calling. And respecting them and yourselves, you will beware of all degrading jealousies, and despise every unfair art which may promise to raise

you at the expense of a rival. How hard it is not to undervalue those who are hotly competing with us for the prizes of life! In every great crisis our instincts are apt suddenly to rise upon us, and in these exciting struggles we are liable to be seized by that passion which led the fiery race-horse, in the height of a desperate contest, to catch his rival with his teeth as he passed, and hold him back from the goal by which a few strides would have borne him. But for the condemnation of this sin I must turn you over to the tenth commandment, which, in its last general clause, unquestionably contains this special rule for physicians, — *Thou shalt not covet thy neighbor's patients.*

You can hardly cultivate any sturdy root of virtue but it will bear the leaves and flowers of some natural grace or other. If you are always fair to your professional brethren, you will almost of necessity encourage those habits of courtesy in your intercourse with them which are the breathing organs and the blossoms of the virtue from which they spring.

And now let me add various suggestions relating to matters of conduct which I cannot but think may influence your course, and contribute to your success and happiness. I will state them more or less concisely as they seem to require, but I shall utter them magisterially, for the place in which I stand allows me to speak with a certain authority.

Avoid all *habits* that tend to make you unwilling to go wherever you are wanted at any time. No over-feeding or drinking or narcotic must fasten a ball and chain to your ankle. *Semper paratus* is the only motto for a physician!

The necessity of *punctuality* is generally well understood by the profession in cities. In the country it is not unusual to observe a kind of testudinous torpor of motion, common to both man and beast, and which can hardly fail to reach the medical practitioner. Punctuality is so important, in consultations especially, to the patient as well as the practitioner, that nothing can excuse the want of it,—not even having nothing to do,—for the busiest people, as everybody knows, are the most punctual. There is another precept which I borrow from my wise friend and venerated instructor the Emeritus Professor of Theory and Practice; and you may be very sure that he never laid down a rule he did not keep himself. Endeavor always to make your visit to a patient at the same regular time, when he expects you. You will save him a great deal of fretting, and occasionally prevent his sending for your rival when he has got tired of waiting for you.

Your conduct in the sick-room, in conversation with the patient or his friends, is a matter of very great importance to their welfare and to your own reputation. You remember the ancient surgical precept, — *Tuto, cito; jucunde*. I will venture to

write a parallel precept under it, for the manner in which a medical practitioner shall operate with his tongue ; a much more dangerous instrument than the scalpel or the bistoury. *Breviter, suaviter, caute.* Say not too much, speak it gently, and guard it cautiously. Always remember that words used before patients or their friends are like coppers given to children ; you think little of them, but the children count them over and over, make all conceivable imaginary uses of them, and very likely change them into something or other which makes them sick, and causes you to be sent for to clean out the stomach you have so unwittingly filled with trash ; a task not so easy as it was to give them the means of filling it.

The forming of a diagnosis, the utterance of a prognosis, and the laying down of a plan of treatment, all demand certain particular cautions. You must learn them by your mistakes, it may be feared, but there are a few hints which you may not be the worse for hearing.

Sooner or later, everybody is tripped up in forming a diagnosis. I saw Velpeau tie one of the carotid arteries for a supposed aneurism, which was only a little harmless tumor, and kill his patient. Mr. Dease, of Dublin, was more fortunate in a case which he boldly declared an abscess, while others thought it an aneurism. He thrust a lancet into it, and proved himself in the right. Soon after, he made another similar diagnosis. He thrust in his lancet as before, and

out gushed the patient's blood and his life with it. The next morning Mr. Dease was found dead and floating in his own blood. He had divided the femoral artery. The same caution that the surgeon must exercise in his examination of external diseases, the physician must carry into all his physical explorations. If the one can be cheated by an external swelling, the other may be deceived by an internal disease. Be very careful; be very slow; be very modest in the presence of Nature. One special caution let me add. If you are ever so accurate in your physical explorations, do not rely too much upon your results. Given fifty men with a certain fixed amount of organic disease, twenty may die, twenty may linger indefinitely, and ten may never know they have anything the matter with them. I think you will pardon my saying that I have known something of the arts of direct exploration, though I wrote a youthful Essay on them, which, of course, is liable to be considered a presumption to the contrary. I would not, therefore, undervalue them, but I will say that a diagnosis which maps out the physical condition ever so accurately, is, in a large proportion of cases, of less consequence than the opinion of a sensible man of experience, founded on the history of the disease, though he has never seen the patient.

And this leads me to speak of prognosis and its fallacies. I have doomed people, and seen others doom them, over and over again, on the strength of

physical signs, and they have lived in the most contumacious and scientifically unjustifiable manner as long as they liked, and some of them are living still. I see two men in the street, very often, who were both as good as dead in the opinion of all who saw them in their extremity. People will insist on living, sometimes, though manifestly *moribund*. In Dr. Elder's Life of Kane you will find a case of this sort, told by Dr. Kane himself. The captain of a ship was dying of scurvy, but the crew mutinied, and he gave up dying for the present to take care of them. An old lady in this city, *near her end*, got a little vexed about a proposed change in her will; made up her mind not to die just then; ordered a coach; was driven twenty miles to the house of a relative, and lived four years longer. Cotton Mather tells some good stories which he picked up in his experience, or out of his books, showing the *unstable equilibrium* of prognosis. Simon Stone was shot in nine places, and as he lay for dead the Indians made two hacks with a hatchet to cut his head off. He got well, however, and was a lusty fellow in Cotton Mather's time. Jabez Musgrove was shot with a bullet which went in at his ear and came out at his eye on the other side. A couple of bullets went through his body also. Jabez got well, however, and lived many years. *Per contra*, Colonel Rossiter, cracking a plum-stone with his teeth, broke a tooth and lost his life. We have seen physicians dying, like Spigelius, from a scratch;

and a man who had had a crowbar shot through his head alive and well. These extreme cases are warnings. But you can never be too cautious in your prognosis, in the view of the great uncertainty of the course of any disease not long watched, and the many unexpected turns it may take.

I think I am not the first to utter the following caution: Beware how you take away *hope* from any human being. Nothing is clearer than that the merciful Creator intends to blind most people as they pass down into the dark valley. Without very good reasons, temporal or spiritual, we should not interfere with his kind arrangements. It is the height of cruelty and the extreme of impertinence to tell your patient he must die, except you are sure that he wishes to know it, or that there is some particular cause for his knowing it. I should be especially unwilling to tell a child that it could not recover; if the theologians think it necessary, let them take the responsibility. God leads it by the hand to the edge of the precipice in happy unconsciousness, and I would not open its eyes to what he wisely conceals.

Having settled the cautious method to be pursued in deciding what a disease is, and what its course is to be; having considered how much of your knowledge or belief is to be told, and to whom it is to be imparted, the whole question of treatment remains to be reduced to system.

It is not a pleasant thing to find that one has killed

a patient by a slip of the pen. I am afraid our barbarous method of writing prescriptions in what is sometimes fancifully called Latin, and with the old astrological sign of Jupiter at the head of them to bring good luck, may have helped to swell the list of casualties. We understand why plants and minerals should have technical names, but I am much disposed to think that good plain English, written out at full length, is good enough for the practical physician's use. Why should I employ the language of Celsus? He commonly used none but his own. However, if we must use a dead language, and symbols which are not only dead, but damned, by all sound theology, let us be very careful in forming those medical quavers and semiquavers that stand for ounces and drachms, and all our other enlightened hieroglyphics. One other rule I may venture to give, forced upon me by my own experience. After writing a recipe, make it an invariable rule to read it over, not mechanically, but with all your faculties wide awake. One sometimes *writes* a prescription as if his hand were guided by a medium,—automatically, as the hind legs of a water-beetle strike out in the water after they are separated from the rest of him. If all of you will follow the rule I have given, sooner or later some one among you will very probably find himself the author of a homicidal document, which but for this precaution might have carried out its intentions.

With regard to the exhibition of drugs as a part

of your medical treatment, the golden rule is, *be sparing*. Many remedies you give would make a well person so ill that he would send for you at once if he had taken one of your doses accidentally. It is not quite fair to give such things to a sick man, unless it is clear that they will do more good than the very considerable harm you know they will cause. Be very gracious with children especially. I have seen old men shiver at the recollection of the rhubarb and jalap of infancy. You may depend upon it that half the success of Homœopathy is due to the sweet peace it has brought into the nursery. Between the gurgling down of loathsome mixtures and the saccharine deliquescence of a minute globule, what tender mother could for a moment hesitate ?

Let me add one other hint which I believe will approve itself on trial. After proper experience of the most approved forms of remedies, or of such as you shall yourselves select and combine, make out your own brief list of real every-day prescriptions, and do not fall into the habit of those extemporaneous fancy-combinations, which amuse the physician more than they profit the patient. Once more : if you must give a medicine, do it in a manly way, and not in half-doses, hacking but not chopping at the stem of the deadly-fruited tree you would bring down. Remember this, too ; that although remedies may often be combined advantageously, the difficulty of estimating the effects of a prescription is as the

square of the number of its ingredients. The deeper you wade in polypharmacy, the less you see of the ground on which you stand.

It is time to bring these hurried and crowded remarks to a close. Reject what in them is false, examine what is doubtful, remember what is true; and so, God bless you, Gentlemen, and Farewell!

THE END.

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