Hovey (B. L.) & Ely. W. S.

Bibliography

ANNUAL ADDRESS

DELIVERED BEFORE THE

MEDICAL ASSOCIATION

OF

CENTRAL NEW YORK,

JUNE 18, 1872,

BY THE PRESIDENT B. L. HOVEY, M. D.,
OF ROCHESTER,

AND

AN ESSAY ON ASIATIC CHOLERA,

BY W. S. ELY, M. D., OF ROCHESTER.

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ROCHESTER, N. Y.:
ERASTUS DARROW, PUBLISHER,
OSBURN HOUSE BLOCK.
1872.

The Medical Association of Central N. Y., was organised January, 1868. From a small beginning it has grown, in this short time, to a large and interesting society, drawing to its meetings, which are held semi-annually, the most distinguished men of the profession in this part of the State. Through this society, valuable discoveries in Surgery and other branches of Medical Science, have been published to the profession, showing at a glance the great good to its members and the world.

At the annual meeting, held in Rochester, June, 1872, the counties of Cayuga, Chemung, Cortland, Erie, Genesee, Livingston, Monroe, Ontario, Onondaga, Otsego, Senica, Wayne and Yates, were represented, constituting a very large delegation.

OFFICERS OF THE ASSOCIATION ELECTED AT THE LAST ANNUAL MEETING.

Dr. S. GILMORE of Cayuga Co., President.
" A. BOLTER, of Seneca, 1st Vice President.
" H. N. EASTMAN, of Ontario, 2d Vice President.
" T. S. BRINKERHOOF, of Auburn, Sec.'y.
" A. MERCER, of Syracuse, Treasurer.

Dr. E. M. MOORE, of Rochester was the 1st President.
" D. D. DIDAMA, of Syracuse " 2d "
" C. G. POMEROY, of Newark, " 3d "
" B. L. HOVEY, of Rochester, " 4th "

ADDRESS OF DR. B. L. HOVEY.

GENTLEMEN OF THE MEDICAL ASSOCIATION OF CENTRAL NEW YORK:

A duty is imposed upon me as your retiring presiding officer, by the laws and custom of the Association, to occupy your time briefly in discussing some subject connected with the science of medicine.

From among the multiciplity of topics which one might select for profitable study, I have chosen as my subject for this occasion, "Thoughts and reflections for the people."

It is not my purpose to trace the history of medical science from the early day—it has been written, with the improvements, in the art of healing—or to present a treatise upon diseases for study. My only purpose is to present some of the popular obstacles thrown in the way of true medical science, and if possible correct an evil which is based upon those deficiencies of human judgment which are generally called "human folly."

Individuals who occupy positions of learning and influence, theologians and lawyers, and who in their general character have not the reputation of being arrogant or conceited, constantly and confidently place their opinion and views in opposition to the whole medical profession and lend the influence of their names and position to the support of opinions, which have not been to them a study, in opposition to the judgment of that profession which has made them a matter of most careful investigation. This fact proves that folly is not confined to the illiterate or to those who are marked specimens of imbecility, but that it pervades all classes, dilutes learning, and humiliates station.

It shows also that the nature of the profession of medicine is not understood, and that the popular ideas in regard to it are formed from a most narrow and limited view of what constitutes the profession. These ideas are no doubt derived from an acquaintance with but a single division of the science of the profession, and this division is only brought in contact with the people. Individuals rarely stop to consider that the profession is composed of men who pursue it as an art, and that its working men assiduously labor and carefully drudge in the applications of its means and details to their desired end.

Many, no doubt, regard the art of medicine (and perhaps most generally it is so understood) as a mere routine acquaintance with the symptoms and names of diseases and the application to those symptoms and diseases of certain remedies which experience has taught to be available.

But were such views correct, a decent modesty would teach those who feel the necessity of deferring to the judgment in his vocation of their tailor, shoemaker or blacksmith to pay a similar regard upon medical subjects, to those who have made them their study.

To those who have been educated in the profession a very different and more expanded view is presented. He sees it in its various divisions and vast arrangements spread out over the civilized world, and acting with all the power which can be derived from an aggregation of the highest order of intellect, disciplined and strengthened to the utmost for its work. In every branch or division of his profession he sees a large collection of names, whose ability and whose mental power demands the admiration of all who can appreciate their labors—labors to which nothing short of the greatest intellectual strength is adequate. Here the eye of the professional man extends over the entire civilized world, and he sees at a glance, men in the profession studying man in health and disease from the microscopic elementary atom of each organ up to his full development.

Medical microscopists are finding beauty of form and structure where the naked eye sees not at all, and they are developing systems as wonderful in their minuteness as that of astronomy in its magnitude.

The medical chemist, at work day and night in his laboratory seeking nature in her recesses and exploring the principles and laws of combination! The anatomist, the physiologist, the pathologist; concentrating all their powers upon the various sub-divisions of these extensive sciences; the medical statician estimating the influence upon life and health of social and political conditions, of occupations, of populations, of concentration in towns, or diffusion in the country; the medical phychologist studying the health and morbid conditions of mind.

The facilities for studying these sciences are ample, both in this country and Europe; colleges and hospitals presided over by men whose names have been for years before the profession, associated with every constituent of professional greatness. These men, placed above the competition of general business, are occupied in gathering discoveries and then sending forth the proven results of their investigations and teachings to the world.

There is another class who are called professional martyrs, who, sacrificing all occupations of ease and profit, risk fortune, health and life in the pursuit of scientific truth. Some will inoculate themselves with poisonous diseases, while others pursue truth side by side with the pestilence, until the race terminates in death.

Other important aids and appliances are brought to the notice of the professional reader. Associations composed of men of the best talent in the world, present through these societies and their transactions learned treatises, giving an abiding place to every established fact or subject for further investigation. In these conventions are discussed not only diseases with new forms and symptoms, but all remedies and appliances which has the least claim to respect, and the whole undergoing revision and addition at periods sufficiently often to place them before the profession and the world.

The medical press is another channel, which is a means of bearing to its humblest and most remote member whatever of fact or truth has been found worth transmitting. Most of the journals are under the charge of men of eminent literary and professional ability, and a perusal of these pages will mark the authors as specimens of intellectual greatness, which not only the profession may be proud of, but all true scientific men.

With this brief analysis or review of the profession of Medicine, we may fearlessly assert that it rests upon principles far above the dogmas of any master or school. It has every protection against fallacy which human reason can know, and is alike independent of the eccentricities of brilliant individual genius, and of the follies and vices of its unworthy members. When brilliant men leave the proper ground of scientific truth to wander in regions of fancy, they become in their departure no authority for the profession of medicine, though they may be imposing to the public. Not unfrequently do such men secure the testimony of the applauding crowd, but they have no sympathy with those who are seeking truth. France dethroned Christianity to set up the goddess of reason, and yet Christianity resumed its place and power—because it is true.

The misapplication or misunderstanding of a single word is often a fruitful source of a train of false ideas, false reasonings and false conclusions. The word "system" as used in popular conversation upon medical science, deserves a brief consideration. This word as applied to any medical dogma, theory or scheme on the one hand, and to the science of medicine on the other, naturally suggests the idea that the science of medicine is limited to some other and opposing dogma, or theory, to maintain which, all its energies are directed. Hence the advocates of any peculiar dogma are fond of using the term—new *system* and old *system*—new *school* and old *school*—and by the acknowledgement of such distinctions a whole train of error is founded. A science which seeks for truth cannot be limited by any system, but must gather up truth, how and when it can; hence that of medicine in its very nature repudiates systems.

Any investigation in pursuit of science which works within a system, has too limited and narrow a space to embrace the whole subject; a system can no more contain the whole of the science of medicine than the part of any given thing can contain the whole. In subordinate relations, systems may be made tributary to science. But no single system as used in medicine, independent of the whole, has the right to claim more than the part of the whole it represents. The man who practices his profession claiming a specific "system" virtually says to the community that he is not a physician, but only a part of one, and in some in-

stances the fractional part is very small. The science of medicine then sits in judgment upon all theories and systems, and examines them impartially. Those that will stand the investigation and are found to be based in truth, will receive sanction and credence; those not founded in truth will, as before, have only a brief existence and die and be forgotten.

The science of medicine then, by its very nature, by the principles which govern the human mind, can limit itself to nothing short of attainable truth, and cannot be limited by or bound to any system. In the science of medicine there can be no "old school" or "new school," and the use of such terms creates false impressions and misleads the popular mind. Professional truth, as is seen by scientific men, should be presented to the people, and made a means to impart efficiency and understanding to the human intellect, as the best safeguard against any fallacy or system. When professional truth is properly presented and clearly understood, it must of necessity claim respect and confidence from the popular mind. History has sustained its decisions upon by-gone medical delusions, no matter how strongly those delusions have been supported by popular enthusiasm; and it is certain that what the science of medicine now pronounces to be delusions will prove to be such. If any system or scheme sets itself above professional investigation—which is bound to seek for truth—and claims to be a new school or system, the claim and the pretension are alone proof that it is not true. If any new claim to medical science have the least particle of truth in it, according to the laws which mind must obey, that particle must be added to the general fund of medical science. We often hear it said that "new schools," systems or sects have medical hospitals, colleges and journals, independent of general medicine. If such is the case, it only proves that the disciples of such an arrangement have shut themselves in a very narrow circle and prohibited themselves from the broad search for truth, wherever it may be found. They have bound themselves to a one-man dogma—to a system, not to a science.

Persons who favor some new scheme in the art of healing will often refer to people in high rank of society to sustain their own position. It may be they will name those distinguished in learning, or some eloquent pulpit orator, or some famed individual, and ask, "If it be not true would such individuals give it their support and approval?" It is too common a mistake to imagine, because some particular merit or circumstance elevates a man to a particular station, that he necessarily has a correct judgment on all questions. It may be that the very qualities which gave distinction to a man unfit him for close reasoning or accuracy.

If that faculty is possessed by a person which can make the bad appear the better reason, and this being the cause of distinction, the chances are that the individual would be a bad interpreter of the truth, even were he acquainted with the science in which it is sought. But when an individual unacquainted with any of the series of sciences which constitute the profession of medicine, undertakes to give the support of his name or influence and opinion to some system in opposition to general medical science, this act proves him to be wanting in common intelligence and correct judgment, whatever may be the general intelligence of the class or occupation he represents. His course is no less absurd than would be that individual's who, without any knowledge of the sounds, letters, construction or meaning of language, should dispute the interpretation of that language by those skilled in its knowledge.

Persons who adopt any special system, whether they be teachers of it or admirers, are incompetent to judge of truth independent of their system. They are fanatical in their belief, and their minds are filled with it and nothing else. Through the long period of history that the science of medicine has had a place, we find that scientific truth has pursued a steady conrse from age to age, and that in each period or age there has been systems and schemes brought forth which have attracted the clamoring admiration of the unthinking multitude, whose fidelity only endures until a new pretense raises them from that which preceded it. These notions have existed in every age, making the same claim, presenting the same evidence, sustained by the same enthusiasm, and pointing among their followers to persons of rank and respectability.

When an individual representing position or station in society is asked to give his name and influence to the support of quackery or any new system, let him remember that while he may be flattered by his importance in the estimation of charlatans, quacks and pretenders, science looks in pity and contempt to see him

registering his name among the list of those who have certified to their own ignorance and folly.

Without referring to special delusions or schemes which have flourished during the brief period that we have been on the stage of active life, and have now passed away, there are none now that has more general, more respectable, or more unprofessional advocates than had those past medical schemes which all unite now in calling follies and delusions.

There are a very large class of credulous persons who believe in all medical novelties and pretensions, while there is another class who repeat the maxim, "Nature is the best physician," and refuse all aid for their maladies. This class imagine that they are sustained in their position, because they hear the most intelligent teachers of medical science say that our wisdom is derived from the observation of the laws of nature. The physician well understands that there is no relation whatever between the popular opinion referred to and scientific obedience to the laws of nature. An acquaintance with these laws implies a vast amount of information, and teaches the natural means by which their irregularities are to be corrected, and teaches also the certain danger which permits the aberrations of nature's laws to go without correction. If one of these persons should receive a severe wound of an artery he would not trust to "nature as the best physician," but would apply to one who, from the observation of the processes of nature, has learned how to stop the flow of blood. As great and as fatal injuries from the progress of disease may be going on in the organs, and this truster to nature does nothiug and dies from a curable disease, which would be very apparent to the skill of the physician, who had been taught by experience and learning to search it out. We admit nature is the best physician, but nature requires an industrious and devoted work, to secure its co-operation and attendance in preventing and curing disease. Where her laws are neglected, she is apt to visit by disease as a penalty upon those who are daring or unmindful of her requirements. So the best advisers to nature's laws are those who most assiduously study them in all their relations to man, and to be competent in this requires extensive learning. We may here claim and assert that the physician is then the vigilant observer, faithful follower and intelligent assistant of nature in preventing and curing disease. Those most learned in the profession know that while their chances of arresting disease depend upon the extent of their acquirements, yet they know that there is nothing attainable by human intellect which gives the power of certainty. For he who is learned in his profession will not promise certain cures, for he well knows that under the mysterious agency of vital laws, which are hidden by Providence from the scrutiny of man, death may result from the slightest derangement or injury. The physician may have confidence in his ability, and prescribe the best means for his patient, and then wait with cautious hope rather than express bold assurance. Persons may infer that there is an uncertainty in our profession which does not exist in other pursuits of life. No more so than in other avocations which are connected with the laws of nature. The agriculturist, with a knowledge of his business, sows his seed in season in good cultivated soil, and expects to reap a harvest. Before the harvest time comes his hopes are blasted by an unexpected drouth, flood or frost. The navigator, though skilled in his science and has carefully studied the currents that noiselessly sweep through the ocean, and knows well the laws which govern the winds, and is perfectly acquainted with all the machinery of his vessel, and which may be manned by the best and most competent crew; yet this noble ship may be cast a shattered wreck on the shore, or she may be brought into harbor in a crippled condition as a trophy of nautical science, which would never have been known if she had made her trip unharmed.

Such considerations apply with greater force to our profession; for the icience of medicine deals not only with nature in its physical law, but in the moral and intellectual constituents of man. Here is exhibited that wonderful combination which works in such beautiful harmony, pointing the mind to the wisdom of Providence in His creation.

Our profession alone has to deal with these combinations and laws, and for these reasons the conscientious practitioner of medicine is stimulated to add to his professional attainments, and feels it to be a moral duty to go from one acquirement to another until the end of his professional life.

Contrast this with the pretender to medical science, who is ready to meet the

popular expectation by promising infallible remedies for all disease—guaranteeing cures for a stipulated fee, and the like inconsistent promises, which are made the trap for unsuspecting persons. These pretensions are characteristic only of an impostor, and strange to say our profession alone pronounces the alarm to the people. It is not because these men hurt professional men in their business that they denounce it, for by such practice it becomes a cause of more disease and suffering than fevers or epidemics, and is a source of greater pecuniary aid to the physician than all others.

In this review I cannot in justice to our cause let pass unnoticed the great influence the public press has upon the profession of medicine to degrade it. I need not tell you that the press is a mighty power; that it is the exponent and controlling influence of public opinion, and that individuals and nations are led to shape their course and actions under its teachings. Personally, our political character is moulded by the press, so that one conscientiously supports General Grant with a zeal, another Mr. Greeley, and a third one somebody else.

This power thrown broadcast into the community, must of necessity exert its influence upon the profession of medicine as well as upon other subjects. We do not complain, however, of fair discussion or criticism, when conducted in a scientific way, and for purposes of investigation. Neither do we complain of the dignified editorials of respectable journals, or the stately essays, for such journals generally pay a tribute to scientific principles, institutions and men. These columns contain noble instruction to the people, and cautions them against humbug, deceit and imposition.

This trait of character was forcibly illustrated by the editor of one of the daily journals, who wrote, in reply to a letter he had just received from a judge of a neighboring county, inquiring is the causes, symptoms and treatment of cerebro spinal meningitis, which had been published in his paper just before, were reliable and to be followed. The reply: "I am not a doctor; I cannot answer your question, but advise, if you have the disease, send immediately for a competent physician, and do not rely upon any newspaper remedy for this or any other disease."

This sound and common sense reply is commendable, and it deserves a place among the editorial brevities, and should always be hung out in full view for all mankind to read.

As we turn from this side of the paper to the advertising columns, we read with astonishment and disgust notices of pills, potions and cards of reputed doctors of such palpable impositions as to have no influence with the educated and discriminating, but intended to deceive the ignorant and unsuspecting. Most of the cards call special attention "to diseases of females." This is done as a "bait" to entrap a certain class of persons, who read these notices with delight and wonder, and are ready to drug themselves with *new remedies*, or to apply to the advertising doctor. The moral and physical injury done to mankind by these means are known to none but to the professional man, whose avocation brings him into association with this class of persons. They are not only robbed of their money, but their health. Not unfrequently these notices are on subjects that never should be brought to the public eye, for they convey improper ideas to families, and propagate the vice for which effect they pretend to offer a remedy.

We feel confident that if publishers of newspapers knew the moral and physical harm done to the people by these advertisements, they would not for the money paid for their insertion allow them a place in their columns. In our disapproval of these advertisements we do not screen the religious press, for by its professed standard of moral teachings it should be first to discountenance them, and last to give them an insertion.

I will mention only one other popular means adopted by the irregular practitioner to sustain his own "system," and to dishonor scientific medicine. I will call it by its proper name, "*deception*." Without specifying any class of practitioners who adopt a system as their basis, all who by pretensions, either in means used as remedies, or by naming the disease what it is not, done with a view to deceive, are alike dishonest. and deserve censure and punishment. The man who says his patient has a malignant disease, or a complication of dangerous ones, when they do not exist, is guilty of base deception; or he who pretends to use imported remedies, with the declarations that no others of the kind are found this side of Germany, places himself before the profession and the community as a notorious quack and a vile deceiver.

To illustrate, allow me to cite a case which you are familiar with. A lady of distinction and wealth was attended by a competent and conscientious physician, who pronounced this lady's ailment to be hysteria. The name of the disease did not satisfy her, and she dismissed her doctor and sent for an irregular practitioner. This man said the woman had inflammation of the brain. The name of the disease satisfied the patient, and was a source of great profit to the doctor, for he made frequent visits for a long time, besides being eulogized for his great knowledge and skill.

A little bright seven-year-old girl came into my house a few days ago. Inquiry was made as to the health of the baby (a child less than one year old). The reply: "It is very sick; the doctor has just been to our house; he says it has inflammation of the brain and inflammation of the bowels, with a very severe attack of dyspepsia." It is not strange that the little girl was deceived, but it is strange the parents and sympathizing friends were! I need not say to you that child recovered.

Men who prescribe for disease and rely on symptoms or indications are most liable of all to inexcusable error. For instance, a patient has pain in the head. His doctor calls it inflammation of the brain. Next day he has pain in the bowels. He now has inflammation of the bowels. The third day he has shortness of breath and palpitation. He now has heart disease. All these several pains may be the result of a debauch or some irregularity, and no pathological symptom of any disease. On the fourth day he has pains in each of the organs named (the cause functional entirely), and the patient and community are gravely told by this "indicator" that he has a complication of these three terrible and usually fatal diseases, inflammation of the brain, bowels and heart.

After a few days the patient is fully restored to health, amid great rejoicing and praise to the skillful deceiver.

To illustrate further how common for system doctors to claim all diseases to be some important and grave malady, however simple in their nature. For instance, an ordinary sore throat, from a common cold, it is called diptheria; a chill with slight fever, it is called typhoid or typhus fever; a functional disturbance, it is an organic disease; a convulsion caused by gastric irritation, it is an epilepsy; and so on through the catalogue of diseases.

A distinguished lecturer came to this city not long since, and was suddenly taken with a *sore throat*, caused by a slight cold. He at once called in a "system" doctor, who pronounced the difficulty to be "*an attack of diptheria.*" This man either administered a high or low attenuation, and in a very brief period of time the eloquent lecturer was fully restored to health from this severe disease. He appeared upon the rostrum at the appointed time, and prefaced his lecture by an eulogy upon the skill of his physician. The presumption of the doctor and credulity of the patient are alike wonderful in the minds of scientific men, and even common intelligence.

Cases like this are constantly presented to the people who are not familiar with the pathology and nature of disease, and who are led into error by such deception, and really believe they have been cured of these maladies, when no such disease existed. These are placed in contrast with the skill of the scientific investigator and practitioner of medicine, and a verdict rendered in favor of the quack, because of the *name* of the disease.

Without pressing this thought further, the inquiry is often made, how are the people to be rescued from these dangers and impositions? I answer, first, by a high moral and scientific standard of the profession. This has so often been said that its repetition seems almost superfluous. But, like other important truths, it cannot be too often repeated, until we see all who enter our honorable profession aiming and directing their course to the highest mark in professional learning and acquirements. When this is done we shall see what all true men of the profession desire, and what the science of medicine demands. We are to be men of integrity and honor; men of character that our profession may be reflected through us to the people; men of charity, that it may be loved; men of study and learning, that a healthy influence may be exerted; men of research and application, that to the general fund of knowledge may be added to the common stock through individual effort.

I do not advocate, and you will not infer, that we are to keep in the beaten tracks of our fathers—running in the ruts of past ages; but to be living, active

men--men up to the improvements of our art, and bringing out new discoveries, as this day's proceeding happily demonstrate.

My second method for correcting these abuses into which the community so constantly fall, is general education in the primary department of learning.

Goether, a distinguished German scholar, says: "Next to being a great man is the ability to understand him."

No matter how scientific or intelligent the profession may be, unless the people have ideas of scientific matter it will continue to be misunderstood.

I cannot better convey my views on this thought than by quoting the language of Dr. E. M. Moore, who, in speaking on this subject, says:

"As these abuses are largely due to the fundamental weaknesses of human nature, there can be no absolute remedy; but, like other abuses, there is some prospect of abatement. Astrology found its abode in the palace of princes, but astronomy has long since banished it, and now it is practiced and consulted by the most profoundly ignorant alone. The remedy is not to be found in literary culture. This sometimes seems but to sharpen the nerves to the most exquisite of absurdities. I find my remedy in the cultivation of natural science; and I cannot but think that more breadth of views and solidity of intellect will be obtained in this way than any other. There has been, and there is now raging, a controversy with reference to the position of scientific studies in a liberal education. The ordinary college curriculum is too short to allow much innovation upon the classical studies. Now I would not have these reduced. I cannot bear the thought that the wells of language should be closed to educated men. But we live in an age that is especially blessed with the results of scientific inquiry; and the methods that such inquiry demands should be taught the young—and they can be. The name of science should not be a bug-bear; and if the classics must suffer, let them. But I think some knowledge of the ways of the chemist, astronomer and geologist should be taught in the common schools. The number of general scholars are necessarily few; and they are inexcusable for the small amount of scientific knowledge they possess. I have looked around my friends in vain for a man of scientific attainments who seeks aid from a quack. But of mere literateurs the number is abundant."

He defines a liberal education to be that which places its possessor in relation to the intellects of great thinkers in all forms of knowledge.

Such education but few possess. Science then must have the *pas*, and if once begun, it would diffuse itself and leaven the whole lump.

ESSAY ON CHOLERA.

BY W. S. ELY, M. D.

GENTLEMEN:

As the last named member of your "Committee on Cholera," I beg to state that I assumed that the gentlemen preceding me on the Committee would furnish you exhaustive reports. I have therefore endeavored only to give in brief the conclusions reached from reference to the most recent and trustworthy published views, upon—First. The origin and nature of cholera. Second. Its propagation. Third. Its salient pathology. Fourth. Its treatment. Fifth. Its prevention.

First—Its Origin and Nature.

Cholera is known to have existed epidemically and endemically in India for hundreds of years. Though generally supposed to have first appeared in Europe and America in the present century, there are those who believed it prevailed in Europe two or three hundred years ago, while a few medical historians think that the disease was known to Hippocrates. All are familiar with its history in the past fifty years, which embraces its progress from the far East, westward, and the invasion of this country in 1831 and 1832—its subsequent disappearance—to reappear in 1849, 1850, 1851 and 1852—and again in 1866. With regard to the nature of cholera, speculation is abundant and facts are few. Though nearly all investigators believe in a specific poison, which is (material) organized—all potent—its essence has not yet been grasped. The *germ* theory has intelligent propounders, and may be said to be in favor. Prof. Hallier, of Jena, is its most strenuous advocate. Having found in cholera stools certain microzymes, he builds his castle thus: Rice grains steeped in cholera discharge germinates, but the plants are sickly, and become covered with one of the fungi known as "smuts." Cholera originates on the banks of the Ganges, where the rice plant abounds. The contagion of cholera is developed in a peculiar fungus, parasitic on the new plant, and the same material which, brought into contact with germinating grain, produces a smut, when introduced into the intestines generates cholera. This beautiful discovery seems not to have been corroborated by Hallier's co-workers.

Aitken is afraid to commit himself and simply says: Cholera is a disease of miasmatic origin—probably now indigenous in Great Britain. Neimeyer don't like to experiment with the fertilization of rice with cholera discharges, and so says he won't dwell on Hallier's views, as he is not competent to decide them; but he does not hesitate to add; "Cholera with us is never miasmatic or indigenous, but always due to an exotic parasite, brought us by cholera patients and finding for a time a suitable soil and favorable circumstances for increasing." Pettenkoffer, in his latest work, affirms that cholera has its origin in a specific infective substance, which certain regions in India have produced for centuries. As it does not develop to the same extent every year nor in every region, dying out and reappearing, you must assume not only the existence of a specific germ or infective substance, but of an actual determinative local and periodical substratum, without which the specific cholera germ cannot produce cholera in the human subject. Neither the germ alone nor the local and seasonal conditions can produce the disease. It is only the product of the action of one on the other. We may accept it as a scientific probability that the cholera germ, the local and seasonable substratum, and the real cholera poison, the resultant, are of organic origin.

Second—The Propagation of Cholera

includes the question of its contagious or infectious properties—about which there has been much dispute, due to misuse of the terms *contagion* and *infection*. These words have no clearly defined signification, often being employed synony-

mously. It is admitted that cholera is not contagious—in the sense of being communicated immediately from the sick to the well. Fresh cholera discharges have been fed to animals, and swallowed by men, without injury; those caring for the sick are not especially affected. The dissection of the dead is not dangerous. In short, there is no immediate contagion. How then is the disease propagated! An easy question to put—a difficult one to answer. Earth, air, water, fomities, human intercourse have separately and combined been implicated—and I am of the opinion that all may be concerned in its transmission. The learned Graves very early said that "cholera seemed regulated by no common physical circumstance except human traffic and human intercourse." Hours might be spent in elaborating this statement, by tracing epidemics along great routes of travel, their progress marked by the decimation of cities, pilgrims, armies. Our observation is as constant as it is significant, viz.: that the disease has been most destructive when there has been the greatest disregard of hygienic laws. We are forced to believe, provisionally, that cholera is propagated by indirect contagion —through the medium of the discharges—conveyed either through drinking water (Snow's theory, exemplified in London in 1849, and again in Brooklyn in 1866,) or through dry discharges blown about, or through exhalations from earth saturated with discharges. (Pettenkoffer's view, with abundant observation to confirm it.) Mr. Simon, of England, reviewing the epidemic of 1866, says: "It cannot be too distinctly understood that the person who contracts cholera in this country is demonstrated with almost absolute certainty to have been exposed to excremental pollution. That which gave him cholera was mediately or immediately cholera-contagion discharged from another's bowels; that the causes of cholera in England are excrement-sodden earth, excrement-reeking air, excrement-tainted water," to which may be added excrement-soiled clothing, bedding and utensils of the sick. Niemeyer plants himself strongly on this doctrine. In a small epidemic at Griesswald, the investigation of every case showed that the patient had used a privy of some house containing cholera patients, or indirectly communicating with it. He affirms that a person with simple choleraic diarrhœa may infect a district through which he may be passing. Abundant proof of the value of this theory of propagation is found in the efficiency of preventive measures indicated by it. C. M. Namara, of Calcutta, in a large treatise of 527 pages, issued in 1869, based on extensive study of cholera in India, says that "every outbreak of the disease beyond the confines of British India may be traced back to Hindostan through a continuous chain of human beings similarly affected, or through contaminated water or fomites. He entirely ignores all other causes—never finding the disease to spread more rapidly than can be explained by this view. The New York Metropolitan Health Board in 1866 acted most successfully upon the conclusion which it deemed previous epidemics had established, viz.: "that the discharge of cholera patients impregnating soil, water, privies, sewers, constitute the positive, and as far as now known, the only means of propagating Asiatic cholera."

Third—What Its Salient Pathology.

The poison which produces the profound disturbance in cholera has been supposed to act primarily upon the blood as a rapid disorganizer or primarily upon the nervous system, derangement of which excites blood changes. A few hold that we have to deal with a local intestinal disease. (Snow's theory.) Everything points to a specific poison of intense energy, which rapidly takes from the blood its water and salts, early affects the kidneys, causing suspension of urinary secretion, and as the algid state is developed, lowers the temperature. I purposely omit symptoms and pause not to detail frequently observed appearances of intestines, liver and kidneys, but desire to point especially to the pulmonary circulation, with reference to a theory of collapse now largely accepted. Collapse is not chiefly due to the drain of liquid from the bowels, as supposed, because collapse and discharges are often in inverse ratio. Stimulants do no good, and recovery is at times too rapid to be consistent with this view. What then is the explanation? It is that the essential cause of cholera collapse is an impeded circulation through the lungs, due to the contraction of minute pulmonary arteries upon poisoned blood. Autopsies of those dying in collapse show always the left heart empty, while the right heart and systemic veins are distended. There seems to be a "stop cock" action of minute vessels upon the poisoned current by which it is arrested before it can reach the capillaries. A scanty

oxygen-bearing stream results, and consequent lowered temperature, with suppression of the secretions dependent on oxidation, bile and urine. It is this pathological observation of the pulmonary condition that gives the strongest coloring to Johnson's "eliminating treatment." The discharge from the stomach and bowels being the means by which the poison is thrown off, we must aid them; but, alas! the poor patient can neither withstand the poison nor the shock to his system which its expulsion imposes.

Fourth—The Treatment of Cholera.

With diverse views as to the causation and pathology of the disease, we expect a corresponding difference in methods of treatment. As in well established cases about as many have died under one plan of management as another, not much encouragement can be offered for any particular line of practice. If you wish to give calomel in doses of twenty grains or one-fourth grain, if you make opium or epecac your sheet anchor, or from a malarial stand point give quinine, if you rely on castor oil and cold water, after Johnson, or decide to inject saline solutions into the veins for the deceptive improvement it will furnish, or finally, if you fold your hands and employ no medicine, I will furnish you respectable authority for any of these plans. This is not encouraging, and should stimulate our efforts to improve our therapeutical resources. The judicious treatment of symptomatic indications will save lives, and in the absence of more definite knowledge should be our rule.

Fifth—Its Prevention.

Sad, indeed, gentlemen, would be the whole history of cholera did not great encouragement come to us under this head. Though study and research have confessedly added nothing to our ability to cope with the fully formed disease, they have resulted in incalculable benefit by pointing out the practicability of its prevention. The arrest of the premonitory diarrhœa is, in the large proportion of cases, possible, and in every cholera epidemic the public should be instructed in reference to it by published statements or house-to-house visitation. Remember that Fary, the great English statician, believes that "the evidence of cases of algid cholera without premonitory diarrhœa is imperfectly established." A cholera scourge is always preceded and accompanied by an increase of intestinal disorders, and these are produced and aggravated by unsanitary conditions. It is now established beyond question that crowding of population, filthy streets, decomposing organic matter, and, above all, foul privies and defective or clogged sewers, when taken with high temperature and moist air, are productive of diarrhœal disorders, and in cholera years favor the rapid spread of the epidemic. New York city has its "diarrhœal fields," as they are called, where the above conditions prevail every year, occasioning great mortality. Witness the cholera epidemic of 1866. It invaded these districts nearly exclusively, and was only controlled by a thorough police and lavish use of disinfectants. It is not my aim to cite proof for these assertions; it is furnished in abundance in recent reports on cholera epidemics. Let one instance suffice. In the 1866 epidemic on Blackwell's Island there were 123 deaths in nine days. On the fourth day, when the epidemic was at its height, Dr. F. H. Hamilton gave his pledge to the Board of Commissioners that he would drive the cholera from the workhouse in from three to five days if certain instructions were carried out. On the fifth day the pledge was redeemed, and not another case occurred. Turning all the inmates out of doors, and disinfecting every stool, every latrine, every vessel, accomplished this result. Of the epidemic in New York city it was said that "events proved that vigilance was the price of safety. If any one doubts the necessity and usefulness of thorough cleansing and disinfection, the experience of September would remove such doubts." The problem of disinfection, then, is the one we should address ourselves to in anticipation of cholera, and in its actual presence. Thorough use of Sulphate of iron, the chlorine and bromine compounds, carbolic acid and coal tar agents, and fumigation of houses, conjoined with organized inspection, will rob the epidemic of its terror and its fatality. Quarantine should be enforced, but not regarded as an absolute safeguard.

In the foregoing brief abstract of views no complete discussion of any branch of the subject has been attempted, and reference to diagnosis, symptomatology and sequelæ has been purposely omitted, because upon these heads text-books are in full accord.

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