

An address to the graduates of the medical department of the St. Louis University, session 1851-52 / by Charles A. Pope.

Contributors

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AN ADDRESS
TO THE
GRADUATES
OF THE
MEDICAL DEPARTMENT
OF THE
ST. LOUIS UNIVERSITY.
SESSION 1851-52.

BY CHARLES A. POPE, M. D.,
Professor of Surgery.

ST. LOUIS:
MISSOURI REPUBLICAN PRINT.

1852.

AN ADDRESS

DELIVERED

BEFORE THE

AMERICAN

ASSOCIATION

OF SCIENTISTS

AND ARTISTS

AT BOSTON

ON THE 10TH OF SEPTEMBER

1850

CORRESPONDENCE.

ST. LOUIS, FEB. 28TH, 1852.

PROF. CHAS. A. POPE.—*Dear Sir:* At a meeting of the Graduating Class of the Medical Department of the St. Louis University, held in the College Hall, the undersigned members were appointed a committee to wait upon you, and solicit for publication, a copy of your Valedictory Address, delivered last evening at the close of the session.

Permit us, while expressing our regard for its merits, to tender through you, our unreserved thanks to the Faculty, for the honest and able discharge of their arduous duties.

With great respect, we remain yours, &c.

THOS. P. HODGES,
BEAUFORD ALLEN,
J. G. MEAGHER,
J. R. HENRY,

Committee.

ST. LOUIS, FEB. 28TH, 1852.

GENTLEMEN: Your note of to-day is received. I feel gratified that your appreciation of my Address has been such, as to lead to a request for its publication. The manuscript is herewith placed at the disposal of those for whom it was written. Please accept for yourselves individually, and express to the class my warmest wishes for their personal and professional happiness and prosperity.

Very sincerely, your friend,

CHAS. A. POPE.

MESSRS. HODGES, ALLEN, MEAGHER, and HENRY.

PROCEEDINGS

ST. JOHN, Jan. 1891.
The first of the series of lectures was given by the Rev. Mr. [Name] on the subject of the [Topic]. The lecture was well attended and the audience was much interested in the subject. The speaker was very clear and concise in his presentation of the facts and principles involved. The lecture was a most successful one and the audience was much benefited by it.

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ADDRESS.

GENTLEMEN:—The proud name of Physician is now yours. It is significant of an acquaintance with all Nature's physical laws. But who, whether physician or other, can lay claim to such eminent knowledge? Who assert that he is Nature's high priest?

The greatest achievement of human intellect has been to discover but a part, and a very small part, of the order which the Deity has established in his works. There are, then, mysteries of the material universe which, to finite man, are unfathomed and unfathomable! How much more difficult of solution, therefore, the mystic union of mind and matter, of soul and body! How passing strange and mysterious, the phenomena of life, and of living beings!

All sciences, even the exact, so called, have their deficiencies and their lacunæ—none are perfect; no, not one. He who is most profoundly versed in the learning and lore of any one of them, will be the first to acknowledge its incompleteness. The modesty of Newton, who had gathered but a few shells on the shore of the great ocean of Truth, attests the declaration. How true the saying, that he is the wisest man who knows his own ignorance.

But Medicine, more than the other natural sciences, is generally deemed a chaotic mass, without form and void—and, as an art, incompetent, uncertain, powerless.

Time was, when an instinctive faith was reposed in medicine, by neophyte as well as patient, and an almost idolatrous worship was paid to the priest physician. Much of this feeling of respect and veneration is still exhibited to the great medicine-man, among the savage tribes of our own land. The union of medicine with religion, besides its typical signification, was well calculated to inspire a belief in their mutual infallibility.

But how changed the times! There is now a wide-spread scepticism in relation to its claims and benefits—the public every where appearing to have almost discarded their former faith, and to consider our profession as one of mere guess work, and of more than doubtful utility. Here in the West, particularly, it seems to have labored under a reproach ever since its introduction. Has it been the fault of the profession, or of its followers? Perhaps the latter, for it is reasonable to suppose that

the attainments of the pioneers were as limited as their opportunities were meagre. The blame lay more, perhaps, in the means, than in the men.

The profession, indeed, is beset on all sides. Every body thinks himself competent to form an opinion in medicine, and straightway becomes his own doctor, or sets himself, or herself, up as an oracle in the case of others, whether having read a line on the subject or not. Yet, by the mass of mankind, more prudence and judgment is shown in the daily affairs of life, in matters affecting their immediate interests. The man, who will discourse by the hour on medicine, shows a becoming modesty on the Newtonian philosophy; yet he is generally as ignorant of the one, as of the other. The explanation of all this can only be found in the intimate relations which our profession sustains towards the public; and that a lurking confidence in the benefit of remedies yet remains, is evinced by the popular fondness for empiricism and patent nostrums. The profession, in truth, is in a false position in its relation to the public, and the principal cause of the success of quacks, is the ignorance which generally prevails as to the scientific nature of medicine, as now taught, studied, and practiced.

But many there are, who, not content with charging medicine with uncertainty, attempt even to ridicule and assail it. As well, however, might they ridicule religion or philosophy. Who of the sages, from Aristotle to Bacon, has not regarded medicine as an essential and all important branch of philosophic study? The Molières and Le Sages, poets, novelists, and wittings, may then spare their shafts, for, in assailing medicine, they but liken themselves to those feeble sea-birds, which,

———blinded in the storms,
On some tall light-house dash their little forms,
And the rude granite scatters for their pains,
Those small deposits that were meant for brains.
Yet the proud fabric, in the morning's sun,
Stands all unconscious of the mischief done.

Now every intelligent physician will be the first to admit and lament the incompleteness of his science, and, at times, the inefficacy of his art. The admission of ignorance is generally the first step towards knowledge, but in our profession, unfortunately, it seems no proof against reproach. It may reasonably be asserted that if the concentrated power and genius of all the mental giants who have ever lived, had been directed to its pursuit, it is doubtful whether the science would have been much more advanced than it is. How much more true, then, the assertion, if applied to those shallow minds who are loudest in their accusations. Because there are admitted uncertainties, these are arrayed as an insuperable argument that all is false. A few undeniable truths are selected, and these being perverted and taken alone, are made to prove the total uncertainty of medicine. But the Devil himself may quote scripture.

On the other hand, the newly fledged graduate in medicine is apt to entertain false and exaggerated ideas of the power of his art. His youthful and ardent mind, having been strongly impressed with the many facts he has seen and learned, which prove that medicine is capable of achieving an undoubted good, he is likely to start forth, on his career; flushed with confident hope, and, panoplied with the armor of his profession, is eager to grapple with the destroyer. Sanguine of his power over disease, and trusting in his ability to cheat, for a while at least, Death of many a victim, his overweening confidence and red hot haste are liable to meet a rude and early shock. This feeling of conscious power is but natural. Nor would I chill your devotion to our noble art, or curb the enthusiasm which animates your bosoms in behalf of suffering humanity. Far from it—but to be forewarned is to be forearmed, and I would timely prepare you against disappointment, so that, in that sad hour, you may not altogether despair, and be induced to think that medicine is but little more than a mere meditation on death. I would not have your hopes misplaced, your confidence blasted, your minds deceived, but rather that you should know the reason of the faith within you, in order that you may observe the happy medium of truth, which, in medicine, as in other things, lies midway extremes.

It may not seem amiss, therefore, nor altogether inappropriate to devote the short moments still remaining before we part, to a consideration of the charge of uncertainty, so often, and now more than ever, urged against our profession. For your sake and mine, I would employ the allotted time, not in fluency of words or eloquence of speech; but in behalf of that noble science guiding a nobler art, whose disciples and admirers we are, I would fain speak a last plain, sober, and earnest word.

The necessity of defending medicine at all, may seem both strange and humiliating. Its high aim and venerable antiquity ought, at least, to inspire respect, if they even fail to secure acknowledged belief. If it be all that we contend for, why, it may be asked, imply a doubt of its truth by an appeal in its behalf? Have not the experience and observation of more than two thousand years sufficed to establish its claims? So we think; but, from numerous causes, the public do not feel the force and importance of the profession, as they should. As philanthropists, however, we should rather be disposed to reason with objectors, than to turn a deaf ear to their cavils. Our science can lose nothing by investigation. Truth courts the light—nor have we any fear that medicine will suffer from an impartial enquiry. This is rather desired than discouraged—for a science and art, so deeply rooted in nature and truth, can, by a candid investigation, only acquire a stronger hold in the deep convictions of the mind.

As already stated, we do not claim that medicine is an exact science: nor from its very nature can it ever become so. Though amenable in part to the charge of uncertainty, it is not on this account, however, all

speculation and guess work. Because there are uncertainties, it by no means follows that there are not many truths. These uncertainties are inherent to the very nature of the subject, and they mostly lie in regions beyond the true limits of science, and without the bounds assigned to the finite mind of man. They exist, and ever will exist. The phenomena and properties of fixed matter, although far from being known, are yet of comparatively easy comprehension and elucidation—but when we would seize those of the living, ever-changing organism, and unfold its workings, and the vital chemistry of its secret and hidden processes, the task becomes one of vast difficulty.

In estimating the degree of positiveness in medicine, our objectors lose sight of the intricate and complex nature of the subject, and, in their reproaches, forget that there is a limit to human enquiry. Not that, in medicine, we have by any means reached this limit, but yet it is expected that things should be known, which we never shall, nor can know. Of what subject, indeed, within the grasp of man's intellect, can it be said that all is plain, settled, and defined—and that there remains no uncertainty? Of what can we say, that all is known that can be known? Can it be said of astronomy, when new worlds are being added to our system, and new laws developed?—of geology, while the ages of earth's strata are unknown?—of chemistry, and witness its hourly discoveries?—or can it be said even of the mathematics themselves? when there are relations and powers of numbers beyond the stretch of imagination to conceive. There are connected with these, and all other sciences, things not dreamed of in our philosophy, which may never, in this life, be compassed by human ken, in its highest state of gradual perfectibility; but which the Creator, in his goodness, may perhaps reveal to us in a future and higher state of intelligent existence. For wise purposes has it been decreed, by a Benificent Parent, that we should, by diligent labor and patient thought, acquire knowledge of those things which we are allowed to comprehend. And this is a gradual process, for things are not revealed to us all at once, save when, by gracious accident or happy inspiration, we burst the fetters of the unknown, and make giant strides in the pathway of science.

We declare, then, that although to a great extent based on the calculus of probabilities, there is much certainty in medicine, both as a science and an art—that it is a profession founded on correct general principles, and guided by scientific rules of action. There is enough, amply to repay its zealous cultivators, enough to maintain its claims to the respect and confidence of mankind, and even to justify its title of divine. The ancients so thought, in associating it with light, and wisdom and music, and placing them all under the care of Apollo, the god of the sun. Sanctioned, too, by the example and precept of the Saviour of man, its claims to our gratitude and love are surely binding and eternal. Being so accustomed to its aid and benefits, the public are hardly aware of the great good our profession is capable of conferring. But some idea of its

proper appreciation may be formed, when we observe the consideration paid to the scientific physician by nations who are uncivilized. By such he is regarded as an almost supernatural being, in whose hands are the issues of life and death. And who is bold enough to deny that such is not often the case? Even among less barbarous people, he is often looked upon as wielding power almost superhuman. See, during the sixteenth century, the French soldiers at the siege of Metz, refusing to fight, until "our Pare is with us," then, with this, their war-cry, rush to conquer. See Grant, the surgeon missionary, among the benighted nations of the East, armed with his needle for cataract, and winning his way through contending hosts and guarded passes, where armies dare not venture.

An argument in favor of the alledged uncertainty of medicine, is frequently derived from the differences among physicians themselves, in respect to the nature and treatment of a given malady. It were easy to show the utter fallacy of such an objection, but without entering into a labored proof on this point, I will merely state that what, to the public, may appear discord and opposition, is but apparent only, and to the scientific physician perfectly reconcilable and rational. As in mechanics or mathematics, the same problem will scarcely ever be regarded in precisely the same light, by any two minds, so in medicine, the same end may be reached by different means. There are many ways to Rome.

The saying, however, that doctors disagree, which has nearly passed into a proverb, is not more true of doctors of medicine, than of doctors of law, or of divinity. Have we not also heard of the glorious uncertainty of the law? And I doubt if any one here has been unfortunately engaged in the business of the courts, but that he has fully felt the truth of the allegation. Take any case, or any number of cases, and there is the same difficulty in law as in medicine; for no two cases are in all respects identically similar—there is, if I may so speak, an idiosyncrasy in both professions, which lies equally at the bottom of the difficulties to be encountered in each, in arriving at positive conclusions.

Far be from us, that ignoble spirit which would prompt the members of one liberal profession to detract one iota from the merits of another. We are willing to allow that law, pronounced as it has been by one of its brightest luminaries, the "consummation of human reason," is a science, based on principles and correct rules of action. Our object is merely to show that if this be conceded to the legal, it should also be granted to the medical profession. There is fully as much certainty in the one as in the other.

In theology, too, we may observe discrepancies which no more affect the truth of religion than do those of physicians disprove the certainty of medicine. There is but one true faith, as there is but one true science—and as the many different sects in the one do not militate against the truth of religion, neither do the different by-systems followed by charlatans afford any argument against medicine. I would not pronounce

any creed, founded on the bible, entirely false, nor would I say that there are not a few grains of truth to be found in every false system of medicine, but would rather note the contrast which exists between the genuine and the false. As the barbarism and idolatry, the error and superstition of Paganism, Mahomedanism, or Mormonism, but serve the better to exhibit and enhance the simple beauty and sublime truth of christianity, so the dignity and solid truth of medicine are only the more apparent, when contrasted with the flimsy and groundless pretensions of empiricism, whether in the shape of Thompsonianism, electro-thermalism, hydropathy, or last, but not least, homœopathy—that double distilled essence of humbug and quackery. The quack in medicine is the counterpart of the hypocrite in religion.

But to return. We have in our possession the written and revealed word of the Most High; and if men differ, as do theologists, on what is visible, as the book of faith, how shall they agree on the hidden and invisible phenomena of life? As in the former, so there are in the latter, things past finding out—for the Almighty “maketh darkness his pavilion,” and “dwelleth in the thick cloud,” as does the vital spark, that portion of his own divinity. Who shall fathom all the mysteries of life—who trace the many and subtle causes of disease—who assert his unlimited power over the destroyer? I am neither sceptic nor materialist, but have wished to show that if doctors do disagree, the allegation lies as much at the door of the professions of law and theology as at that of medicine.

Within the last half century our profession has made more substantial progress than during the ages of its prior existence. I do not mean that nothing was done during that long period—far from it, for from Hippocrates to Bichat, medicine, though sometimes seemingly stationary, has always advanced. Like all natural sciences, its very nature is ever progressive.

It is a common idea, and one even not uncommon in our own ranks, that the history of medical doctrines is nothing more than a tissue of contradictions and absurdities—that theory has succeeded theory, each holding sway for a while, culminating in the zenith, and then been eclipsed by some later, though equally false and untenable doctrine, destined in its turn to share the same fate. But this is not so. The true theories have stood, and, like every thing founded in nature and truth, will stand steadfast forever. Even those which, at first sight, appear the most false and absurd, include always a portion of truth. These apparently conflicting doctrines are, in fact, seldom or never in entire and direct opposition to each other. They are rather narrow and partial glimpses of the great field of truth, defective mostly from being too exclusive. The humoralism of Hippocrates, the iatro-mathematics of Borelli, the theory of Themison, the archæus of Van Helmont, the anima of Stahl, the doctrines of Brown, of Cullen, of Rush, of Rasori, and of Broussais, are, so far as they go, and in many respects, true.

They frequently agree, when seeming to diverge, and the difference is oftener in words than in things. We cannot fail, on the most cursory examination, to perceive that, in their promulgation, each author had his eyes bent and his attention rivetted on separate or particular points in the great expanse of nature and of truth. Now and then, it is true, some genius greater than the rest has appeared, whose comprehensive mind, taking a wider range, would seem to have embraced the whole science in one universal theory; but even then, more stress would be laid on some one point than it deserved, in the estimation of another genius equally great. It could not be otherwise, for the field is wide, and the subject, in its very nature, vast and complex.

Among the phenomena of life are many that are purely and unquestionably physical, and this serves as a ready key to explain the views of the medico-mathematicians and chemists of former ages. But the fact is also important as showing that there exists in the human body a variety of problems which can be legitimately solved by physical means alone. Whenever, indeed, these can be applied, the results are often just as certain and exact as if the investigation were made exteriorly to the organism. The sciences of mechanics, acoustics, optics, chemistry, hydraulics, and hydrostatics, find in the animal body their most beautiful and perfect illustrations. In health, as well as in disease, we cannot, if we would, dispense with the knowledge of their existence and influence. The application of physical instruments, enlarging, as they do, the boundaries of the senses, should be fostered and promoted. Whenever the means of investigation adopted in the physical sciences can be brought to bear on the human economy, they have been rewarded by the most satisfactory results—nor can they fail still further to assist in increasing our knowledge, and in imparting to our science a yet higher degree of certainty and precision.

Of the different causes which tend to render medicine an uncertain science, the profession, at the present day, are well aware. It is no longer in accordance with the hypothetical systems of past ages that advancement in medicine is expected to be accomplished; but rather on the leading principle of the inductive philosophy, that the last object of science is to "ascertain the universality of a fact." "The study of nature," says an eminent writer, "is the study of facts, not of causes." In conformity with this truth, the objects of science may perhaps be defined to be, to observe facts; to trace their relations and sequences; and to ascertain the facts which are universal. It consists in simply tracing the order which is observed by the phenomena of nature; the efficient causes of these phenomena being considered as beyond the reach of the human faculties, and, consequently, not the legitimate objects of scientific inquiry. It is strikingly opposed to the old philosophy, the constant aim of which was the explanation of phenomena, and which has, therefore, received the name of "the philosophy of causes."

To medical enquirers the laws of life and of mind appear to be con

stantly disturbing the facts we observe, and the consequent want of uniformity in the sequence of events, constitutes the great difficulty of just conclusions in medical science. If the same diseases, in all persons, exhibited the same series of facts, and the remedies applied to the same disease, in different persons, exhibited the same effects, medicine might speedily be reduced to an inductive science. But the ever varying influence of peculiar conditions of the living principle, and the operation of the mental faculties and moral emotions are so difficult to be estimated and controlled, that our facts are too often uncertain, and our inferences necessarily based on mere probabilities.

We have not merely to deal with what is visible and material, but we have also to do with the feelings and emotions of the soul. Hope, joy, anger, revenge, every passion and emotion of our nature, are so many subtle, antagonistic, and oftentimes purposely hidden agencies, which may thwart the action of the best directed remedies. Who is ignorant of their effects in health, as well as in disease? Yet, how guard against or control their consequences, or turn them to advantage?

To but one other cause of uncertainty in medical science, and of difficulty in its progress, I would briefly allude. It is that we cannot control the conditions of the phenomena presented to our observation, as in certain of the physical sciences. Thus in experimenting on inanimate substances, we can often vary at will their conditions, and arrive at speedy and positive results; but, in the living and diseased organism, we must take things as we find them, and endeavor, by observation, reason, judgment, and comparison, to trace the mysterious sequence of events. Now, in medicine, on account of the inward disturbing influences already mentioned, to compare requires time, and to accumulate facts sufficient for a just and exact conclusion, is often the result of years of toil and application. Our experiments are made by nature in her laboratory of diseases, and long years, sometimes ages, are necessary for the establishment of a single principle. Hence, from haste to generalize, the origin of so many crude theories, which often require as much or more time to disprove them as they did to gain credence. The inductive philosophy is nevertheless as applicable to the medical, as to the other sciences. Its use, however, in our profession demands perhaps more time and caution than in any other. But the difficulty of its application is surely no argument against its value, and thus the numerical method, with all its admitted difficulties, has conferred undeniable benefits on medicine. Cautious arrangement, and accurate analysis, are unquestionably necessary; but, when properly tabulated and guarded, statistics will go far to give to medicine greater precision and certainty. Nay, from the judicious use of figures, we may reasonably hope that our science will steadily and surely advance towards even a high degree of perfection.

In view, therefore, of the vast and complex nature of medicine, and of the greater difficulties in comparison with the other natural sciences

with which it is environed, so far from there being any room for reproach that so little has been done, we should rather marvel at the vast mass of knowledge which the medical mind has extorted from the arcana of nature. It what other department of science can be shown greater zeal, labor, and perseverance, than were evinced by Haller and Hunter, and a host of other patient investigators in our science?

But let us look more closely into the certain good accomplished by medicine.

Anatomy is a branch, to the advanced perfection of which, the physician may point with exultant pride and satisfaction. Here there is no want of positiveness and certainty. The rare accuracy and minute investigation of man's corporeal structure will challenge comparison with the labors in any department of human research. Not only the more coarse and patent parts have been scanned, but every delicate fibre has been carefully studied in its absolute and relative position and influence. The tiny filaments of the nerves have been minutely traced through all their intricate windings and commissures, and the labyrinth of the brain, in its connections and relations, has been threaded with the certainty of Ariadne's clue. But what are these to the discovery and elucidation of the primordial cell, the embryonic, atomic molecule, which, seized in its very incipency, has been carefully watched and studied, through all its manifold phases and combinations, up to the complete development of man's fearful and wonderful organism! Aided by the microscope, the globules of the blood have been measured, and it would seem, from the depth of our penetration, as if we had reached the last limit of the infinitely minute, and that beyond there was nothing more to be learned. Time was when coarse special anatomy was deemed sufficient for the requirements of both physician and surgeon. Towards the close of the last century, the genius of Bichat, by the discovery of general anatomy, or that of the tissues, revolutionized the face of medicine as completely as did his illustrious countryman and cotemporary, the political aspect of Europe. But Bichat himself has been eclipsed by Schleiden and Schwann, and the theory of cells, which has stood the scrutiny of talent and the test of time, now stands among the last and most important discoveries of modern medicine. How simple and yet how beautiful the explanation which it affords of many heretofore inexplicable phenomena! The life-force, the vital principle, it is true, still eludes our grasp, but what more do we know of the essence of electricity or of gravitation? May they not all be but properties of matter? At any rate, "a corner of the veil which hides the mystery of the creative energy has been raised." All this, and more than this, is true. Not content with a knowledge of man's mechanism alone, the anatomist has descended the scale of being, and with transcendental eye has studied the whole series of animated existences, from the simplest monad up to the lord of creation. The astronomer, by his calculations, is not able with more unerring certainty to assign to the planets the exact places which they

respectively held in the heavens thousands of years ago, than is the comparative anatomist, guided by the light of certain correspondences and harmonies in the animal organization, from the mere fragment of a bone, to reconstruct the entire skeleton, clothe it with muscles and tegumentary covering, replace its various organs, trace its habits and economy, with the certainty of a cotemporary Buffon or Cuvier, and almost, as it were, endow it with life—the mastodon or megatherium, rising at his call from their rocky tombs, sealed by the hand of unnumbered centuries. “A geologist,” in the words of a poet and physician, “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 second great branch of medical science is physiology. All improvements in our knowledge of the functions of parts, flow directly from our knowledge of their structure, and it consequently follows that the advances in physiology have kept a corresponding pace with the discoveries in anatomy. Had our researches been confined to man alone, in his superior and perfect development, it is probable that physiology would yet be far behind its present advanced state; but such has not been the case, the physiologist having, with commendable and patient zeal, compared the various organs of the different classes of animals, with the view of interpreting their functions. Thus, aided by nature's analysis, he has been enabled, from the more simple form and action, characteristic of the inferior species, to ascend step by step to the solution of most of the difficult and wonderful processes of the human organism. The uses of nearly every organ of the body has been quite accurately ascertained. The strength and solidity, combined with grace and symmetry, of the bony frame-work, with its levers and arches, its cylinders and dome, are all well known. Whilst representing the general outline of the body, it also affords attachment to the moving powers, and protection to delicate and important organs. The whole system of animal mechanics is thoroughly appreciated and understood. The muscular force has been calculated. We have noted the constant and ever-ebbing tide of reparation and waste—we have followed the progress of the food, through all the various changes in digestion, the nutrient particles mingling with the blood to become incorporated with the tissues, and after having fulfilled their temporary but important mission, are dislodged by the circulatory torrent, to be finally eliminated from the body as effete, by their appropriate emunctories. The beautiful round of the circulation, with the red and purple hue of the blood, whether fanned by the atmosphere in the lungs, or undergoing different chemical and vital changes in the distant capillaries, the systole and diastole of its

multi-chambered central organ, and the play of its delicate valves, are all perfectly understood, as though the heart were naked and beating before us. Indeed, as if in recompense for his labors and obloquy, it was vouchsafed to the great Harvey once to see and examine the uncovered heart, situated as it was externally to the chest, through a deficiency in its walls, and thus, along with the sovereign of England, to behold the truth and exemplification of his brilliant and immortal discovery.

We have contemplated, through the microscope, the waving cilia—the last stronghold of life, bending to and fro, as a lilliputian forest, before the breath of a zephyr. Though we cannot tell what the immaterial something, which presides over the mind, is, we have yet traced thought and passion and emotion to the gray matter of the brain; and shown that changes in this, derange the mental functions. We have shown that sensations are conveyed to this gray or vesicular matter by certain *afferent*, and that the mandates of motion pass to the muscles by certain *efferent* nerves.

We have no hesitation in saying that we have advanced as rapidly, and as far in this, as in the various other departments of natural science. We do not, however, deny that in these subjects, as well as many others, there are limits which the intellect of man can never pass. “Thus far shalt thou go and no farther,” bounds as well the restless mind of man as the dashing billows of the ocean. But we neither think nor say that our investigations have gone as far as they can go. A vast space, yet unexplored, lies between the outworks of what has been done, and the advanced barriers which bound the wide field of the possible; and we may rest assured that human industry and intellect will go on to grasp and comprehend all that is within its range. In the language of another, we may truly say that “every passing month furnishes its contribution to the work; some new discovery is made, or some old truth is strengthened and illustrated, or some error or delusion is corrected or dispelled; a thousand microscopes are prying into the deepest and darkest recesses of organization; a thousand laboratories are busy with the chemistry of life; myriads of patient scalpels are plying their careful and laborious dissections, and as these, like all other branches of human knowledge, are carried slowly but steadily forward in their interminable career.” True, we are yet ignorant of the functions of the spleen, the thymus and thyroid bodies, and the renal capsules; but an approach to a knowledge of their uses has indeed been made. *Lacunæ*, however, exist in all sciences, and when the uses of Saturn’s rings shall be told, we too may have unfolded the mysteries of the spleen.

The improvements in anatomy and physiology, and the certainty of our knowledge in these sciences, afford of themselves abundant proof of the advances in medicine, and of our power over disease.

Medical science has also been accused of incompetency in the recognition of diseases, and their distinction from each other. Is there any

certainty in diagnosis? This is an important question, for as is the diagnosis so is the treatment. It is plain that we must first know what is the disease, before we can apply the proper remedy, else we practice a dangerous empiricism. It is an oft repeated, and, to some extent, true saying, that a correct diagnosis is half the treatment.

To those at all acquainted with the subject, it is needless to say that by the accumulated labor and experience of past ages, and the discoveries of modern times, we have reached a high degree of certainty and precision in diagnosis. By a closer observation of the phenomena, as manifested in the living healthy and deranged organism; by a comparison of symptoms with autopsic appearances; by tracing their connection and dependence; and above all by the application of physical means in the investigation of morbid changes, we are enabled, with wonderful precision, and almost mathematical accuracy, to tell wherein the human machine is at fault, what wheel is disordered, what organ defective. It will suffice, for our purpose, to allude to but a single class of diseases—for example, those of the chest. What physician is ignorant of the desponding exclamation of Baglivi: *O quanto difficile morbos pulmonum curare! O quanto difficilius eosdem cognoscere!*—Oh! how difficult to cure the diseases of the lungs! Oh! how much more difficult to diagnosticate them! Thanks, however, to auscultation, this proposition is precisely reversed. It is far easier to diagnosticate, than to cure the diseases of the chest. All honor to Lænnec, whose discovery constitutes the most brilliant ornament of modern medicine. By it we are enabled to make eyes of our ears, to lay bare, as it were, before us the organs of the chest, and to trace as surely and certainly as an external wound, when daily followed by sight and touch, both the progress of disease and the effects of remedies. By the physical signs alone, we can often announce the convalescence of a patient days before his amelioration is evinced by the rational symptoms.

But it is not only of the chest, but also of the other great cavities of the body, that the science of diagnosis may be said to have attained a high degree of certainty and perfection. Time does admit of even a bare mention of these, but there is one subject to which, in this connection, I cannot but allude. The microscope has not only been of vast service in the progress of anatomy and physiology, but it has also materially aided us in diagnosis; and in a matter, too, where chemistry and all other means had failed. Without stopping to speak of the light it has shed on certain diseases, which are revealed by peculiar and characteristic chrystals found in the various secretions of the body, we would refer to its last most interesting and important application in the diagnosis of cancer. What ideas of suffering and death does the bare name not awaken in the mind! In times gone by, and even in the present day, we hear of cancer doctors—quacks who pretend to cure this formidable disease by some secret single caustic, or escharotic compound. They call all tumors, and intractable ulcers, cancers, and ignorantly or

intentionally confound the benign with the malignant. We know now, alas ! that genuine cancer never forgives, and that the hopeless victim must be abandoned to his fate, mitigating what we cannot cure. As since the discovery of auscultation, the distinction has been made out between chronic catarrh and true consumption, we hear no more of cures of confirmed consumption, so now, by the use of the microscope, we distinguish between the cancrioid and the truly cancerous growths. We are thereby enabled to say, with positive certainty, which is curable and which incurable. A mere drop of fluid, taken by means of a grooved needle from a suspected tumor, is subjected to the infallible lens, and at once the unerring glance of a Lebert or a Paget, decides on the fate of the sufferer. According as the specific cancer cell is present or not, so will be the issue of life or death. But, it may be asked, what use is there in knowing the nature of the disease if we are unable to cure it ? I answer that there is much use in such knowledge, both on account of its negative advantage, and as saving the patient an unnecessary operation, and enabling him to arrange his affairs both for time and eternity. As the astronomer predicts an eclipse of the sun, without the power of changing even for a hair's breadth the fixed and immutable laws of nature, so does the physician with equal certainty predict the fate of his hopeless patient. Who shall alter the fiat of the Almighty ? The father of medicine long ago proclaimed that physicians do not pretend to cure all diseases.

It is in the diagnosis of diseases that the physician's mind finds its powers most employed. It is not the giving of a pill here, or a powder there, that constitutes the chief attraction in the practice of medicine. True, the relief afforded enhances much the gratification of the practitioner : but it is the active exercise of observation and of the reasoning faculties requisite to a correct diagnosis, which, to the intelligent, scientific physician, affords high enjoyment and unalloyed pleasure. The nature, seat, and extent of the lesion, is a problem often hedged with the greatest difficulties, and which requires for its solution the highest effort of the mind.

It were an easy and pleasant task to show the advances and certainty of diagnosis in general, but we pass on with the remark that it is not in anatomy, physiology, or diagnosis, that medicine is chiefly reproached with uncertainty. It is in the departments of pathology and therapeutics that the charge has been most strenuously urged. In reference to the first of these branches we would simply cite the wonderful accuracy of our knowledge of the pathology of pneumonia and of consumption, as examples which may serve to illustrate the almost mathematical precision which reigns in medicine on these subjects. Many similar instances might be adduced—but however easy to bring together all the information and proof bearing on these points, it is wholly beyond the limits of our present space, and we must therefore content ourselves by stating a few facts which may serve our purpose.

In no branch of medicine is our power over disease more strikingly exemplified than in therapeutics, or the application of remedies to the cure of disease. Now the proof of certain good accomplished, in the examples to which I shall refer, is not founded on mere assertion, but is of daily observation, even to the unprofessional, and rests on general observation and experience. The facts are susceptible of absolute demonstration, and they occur so regularly and unerringly, that the most wilfully blind are forced to admit their truth and validity.

We are not the advocate of specifics in medicine, as we consider that doctrine already too rife, and likely to retard the progress of medical science. The fact that disease has its natural history, which must be studied in order that it may be successfully treated, is not sufficiently recognized and acted on. We are, however, far from denying that certain remedies are especially applicable in certain diseased conditions of the economy; but that they are also beneficial under many other circumstances, and in other diseases, is also true; and if, in this sense, they be called specifics, no harm or contradiction can result.

Quinine, in intermittent fever, is of magical efficacy in arresting the periodicity of its paroxysms, and of cutting short the disease. Think, for a moment, of the long train of direful and often fatal disorders, of which an uninterrupted continuance of this affection may be the foundation, and let any one say there is no certainty in medicine. In this malarious region, where intermittents are endemic, both the profession and the public are aware of the fact. That now and then a particular case may resist its effects, and seem proof against its virtues, is true, but, even admitting the fact, the exception would but prove the rule. Besides if, as rarely happens, failure should occur by quinine in one form of administration, in another it will often succeed, either alone or in combination with other agents, as arsenic and the like, which will effectually control the complaint.

Behold the pallid, bloodless features of beauty. The ex-sanguine frame drooping under debility, becomes listless and inactive. But art can increase the red globules of the purple tide, impart strength to the body, and convert the lily of disease into the roses of health—Mars bringing a blush to the cheek of Venus. The fact of iron being beneficial in anæmia and chlorosis, is as old as antiquity, and as certain as proof. Then there is blood letting in pneumonia, that type of a frank and genuine inflammation. Who, competent to judge, doubts its beneficial effects? The statistics of Louis and others, coinciding with the observation and experience of all ages, have conclusively proved the ability of venesection, not only to mitigate, but in many instances to cure pneumonia. And if this be true in inflammation of the lungs, why may we not assert it as true of inflammation in general. Now the same remarks are also applicable to mercury and antimony. These metals do possess an unquestionable power in controlling inflammation wherever situated, and when wielded with prudence and skill, are capable of

achieving vast benefit to suffering humanity. In certain ophthalmiæ, where best inspected, and in a multitude of other inflammatory affections, the intelligent and conscientious physician, sees and knows and feels the fact of their power.

Pain is the great antipode of comfort, the destroyer of life, the enemy and terror of man. But the Great Physician has furnished a balm in Gilead, an antidote with which we may strip it of its sting. Well has opium been termed the greatest remedy, and more valuable than all others beside. Pain, if severe and continued, will of itself kill, and by its subduction, art with opium alone, may sometimes save life. Under what circumstances is the patient more grateful to his physician than when promptly relieved from the torturing agony of spasmodic cholera?

Again, poisons or other noxious substances are often swallowed either through accident or design. By the speedy exhibition of an emetic or an appropriate antidote, the foreign and offending body may be dislodged, or its toxic properties by chemical means be rendered harmless and inert. With what promptness and certainty are these effects produced, and how many lives have thus been saved! Emetics in catarrhal croup, cathartics in some intestinal obstructions, wine in typhoid fever, sulphuric acid in lead cholera, iodine in scrofula, sulphur in psora, arsenic in cutaneous eruptions, citric acid in scurvy, the iodide of potassium in certain periostitic and chronic affections, as well as mercury in peculiar secondary forms of disease, are equally potent and striking in their effects. What physician is ignorant of the fact that the treatment not unfrequently enlightens and confirms an otherwise doubtful diagnosis?

With all these and thousands of other agents, embracing the whole science of remedies, at hand, and ready to do our bidding, have we then no power over disease? The attesting experience of a truthful profession, as well as the thousands who have been saved from death, and restored to health and happiness, will respond trumpet-tongued in testimony of the vast good and certain benefit of medicine.

The animal organism, it is true, is so constituted that in very many derangements it works its own cure, a fact recognized from all antiquity, and of which quackery takes advantage to boast its numerous pretended cures. We are utterly indisposed to deprive nature of the least credit for her *vis medicatrix*. On the contrary, we recognize it to the fullest extent—the physician but assists nature. But again—there are cases of disease which are, in their very nature and constitution, of a fatal tendency, endowed, as it were, with an unconquerable proclivity to death. In those, medicine makes no pretensions to cure—they are necessarily fatal, and the physician must needs fail. Intermediately, however, to these extremes, there is a great variety of diseases in which the physician can greatly assist nature, and by the judicious interposition of art and enlightened skill, turn the scale in favor of the sufferer. Under all circumstances the physician can be of eminent service—in the one case facilitating convalescence, in another cutting short the disease, or even

thwarting death of his victim, and lastly, as in consumption, tetanus, epilepsy, hydrophobia, and cholera, by palliating what he cannot cure, and smoothing the pathway to the tomb.

Let us, however, for a moment glance at that other great division of medical science, to-wit: Surgery. Here there is but little need of vindication. But yet it is too much the habit of those who depreciate the real value and certainty of medicine, to place an exaggerated estimate on the good accomplished by surgery. It would surely ill become me to detract one tittle from that branch which I selected through choice, and have cultivated with passion; still I cannot but observe that the division of our profession into medicine and surgery, is altogether arbitrary—and made only for the sake of convenience. A strict line of demarcation cannot be drawn between them. As the physician but assists or imitates nature, the surgeon in the vast majority of cases does but little more. They are parts of one great whole, and what has been said of the one, applies equally to the other. The results in medical, as compared with those of surgical practice, are, it is true, less obvious and striking to the public view, yet to the experienced observer they are equally potent and satisfactory. An emetic or cathartic dose is often and unquestionably just as efficient for good as is the knife itself. In the praiseworthy conservatism of his art, as well as for the success of his operations, the surgeon, equally with the physician, relies on the valuable agents of the *materia medica*. He wields, in addition, the sharp-edged steel. The scalpel, in the hand of bold and skilful daring, has indeed accomplished wonders, and its keen blade, guided by knowledge and wisdom, has done much to raise our science to the very acme of repute and glory. Who will deny the good it is capable of conferring? There are operations which, for delicacy and difficulty, should and do rank with the highest achievements of human hands; whilst for real usefulness, they perhaps stand peerless and unapproachable.

Behold the sad victim of darkness, who for long and weary years has been shut out from the light of heaven and the fair loveliness of nature. Fame, opulence, intellect, genius, these cannot compensate for the loss of the pleasures of vision. The soaring fancy of a Milton, that swept the proudest heights of the brilliant heaven of invention, could not lift him above the sad thought of his "quench'd orbs." Well might the blind but immortal bard, chant in notes of melancholy and plaint:

Seasons return, but not to me returns
Day, or the sweet approach of ev'n or morn,
Or sight of vernal bloom, or summer's rose,
Or flocks or herds, or human face divine;
But cloud instead and ever-during dark
Surrounds me, from the cheerful ways of men
Cut off, and for the book of knowledge fair
Presented with a universal blank
Of Nature's works, to me expung'd and raz'd,
And wisdom at one entrance quite shut out.

But yet, in cataract, if not the "drop serene," art, by a magic touch, can unseal those orbs, and restore the inestimable blessing of sight. Recently I operated on a case of the kind in an old lady of four score years and two. As the welcome light was admitted to her long curtained eyes, her thankfulness broke forth in prayers and benedictions, which might have melted a heart of stone.

So, too, the throbbing aneurism, where the patient sees and feels the living, beating tumor, whose gush is death—may be stayed, or even cured by a bloodless operation. The reduction of a dislocated bone, the immediate arrest of the spouting torrent of blood from a wounded artery, the removal of foreign bodies from the air passages, the strangulated bowel, the grinding calculus, and the shocking deformity, are but a few of the many instances of the power of the surgeon. Here the results are easily apprehended, and are such as often to excite our delight and admiration. Still the degree of certainty in medicine is much the same as in surgery, great and unequivocal as it is. The processes and operations of the surgeon, like the remedies of the physician, are the means of his power over disease, there being no essential difference between them.

And here let us recall the fact that all these hitherto painful and agonizing operations, together with the sundering of the largest limbs, and the ablation of mighty tumors, can be done whilst the patient is "steeped in unconsciousness or lapped in elysium." Add to this, the great mitigations of the loathsome smallpox by the power of vaccination, and the prolongation of human life by improved sanitary and hygienic regulations, and I ask what greater and richer gifts could science lay on the altar of humanity? Surely the ministry of him who can wield such power in the alleviation of human misery and the annihilation of pain, is heaven-born. What enthusiastic attachment should we not feel to our profession! Its science should be the object of our highest admiration, whilst its mockeries and quackeries should be the objects of our ineffable scorn. As a pure science guiding a noble art, all trade trickery and affectation, and every ignoble device should be as far removed from it as are the poles asunder.

Yes, gentlemen, our's is truly a high and noble profession. Although not as perfect as we could desire, and as it undoubtedly will be, still enough has been vouchsafed to us for wonderful and great good. Although the subtle and mysterious causes of disease often elude our grasp, and we know not the *modus operandi* of many remedies, still such knowledge is not always necessary to the successful application of our art. Who knows the causes of gravitation or chemical attraction, why an apple falls or a blade of grass grows, any more than why calomel ptyalises or wine inebriates? To know such, and a thousand other analogous facts, is nevertheless useful, and we often advantageously avail ourselves of them for great good. It may even be reasonably asserted, that were there not a single principle in medicine, the important

facts in our possession would yet be of incalculable service. Many of these, both in the science and the art, were promulgated and established by Hippocrates, twenty centuries ago, and the experience and observation of succeeding ages, have but added to their strength and proved their validity. True, the temple of medicine, like that of the other natural sciences, is yet unfinished. Being a co-operative work its incompleteness is no reproach. The slower the growth, the more enduring the structure. Its foundations, laid in primeval time, are based on the observation of immutable nature. The sage of Cos gave shape to scattered and discordant materials, and planned the future edifice. Gifted minds, philosophers, presided over the ceremony of its corner stone. Through revolving cycles, different laborers have added their contributions, not in incongruity, but to the elevation of one grand and symmetrical whole. All ages and nations and people have yielded a helping hand, to the advancement of the glorious work. Greece and Rome and Arabia, gave the spoils of their learning, and the labors of their greatest and best. Like the temple of Solomon, its parts have been gathered from places widely various and remote, and fitted together without sound or noise. Awhile stationary through the night of centuries with which the barbaric hordes shrouded ancient civilization and learning, the structure again advances. Here and there, in the lapse of ages, a master spirit arises to add another stone, or to shape the rough hewn mass of another. Ignorance and false philosophy may have occasionally retarded its growth, but false theories, like rotten stones, have crumbled by their own weight, or yielded to the remorseless touch of time. Truth is the only solid material. This cannot die. It grows brighter by use, and shines as the stars, eternal as they. Every stone of the temple must bear its stamp, or else it will not fit its place, and must be rejected amid the pile of aged rubbish that encumber its erected walls. And now, after the lapse of twenty centuries, late-born time, with its thousand laborers throughout the world, comes—eager for the preservation and perpetration of the seemly fabric, hoary and venerable with age. Permit me again to quote from the physician poet :

See where aloft its hoary forehead rears!
 The towering pride of twice a thousand years.
 Far, far below the vast incumbent pile,
 Sleeps the gray rock from Art's Ægean isle;
 Its massive courses, circling as they rise,
 Swell from the waves to mingle with the skies;
 There every quarry lends its marble spoil,
 And clustering ages blend their common toil;
 The Greek, the Roman, reared its ancient 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, oh! Science, shall thy life blood freeze,
 When fluttering Folly flaps on walls like these?

In every field of knowledge the mind of man is awake, and his intellectual genius is making daily conquests over the material world. The most subtle, as well as the most potent, elements of nature are alike subject to his will. The tendency of the age is onward. Medicine, like the other natural sciences, is ever progressive. It will go on improving forever. As every generation is pre-eminent in succession, and in turn becomes ancillary to the pre-eminence of its successor, and as our own has risen on the labors of generations past, so the labors of the present may serve as stepping stones to generations, and to still mightier achievements, yet to come. We have no reason to doubt that in time, medicine will reach a high degree of perfection. We, as the latest heirs of time, owe the profession a vast debt, which we should hasten to cancel. Time flies swift-winged, and "improve the day" should be our motto. We shall hereafter be judged as we now judge the generations that have preceded us—happy, if in any wise we may merit the approving plaudit, "well done thou good and faithful servants." To be diligent in our day and generation is, in truth, a moral obligation, alike binding on all men, and so also is the improvement of the mind. All duties are religious duties, whether professional or otherwise, but we are perhaps never more religiously employed than when cultivating those faculties which the Almighty, for the wisest purposes, has given us. Combine, therefore, morality with intellect, religion with science—the one will prosper best with the other. Make your profession a part of your religion, and cling to both with death-like tenacity. Piety is the only solid wisdom. It will chasten ambition, direct aright and sanctify your efforts. Indeed the highest and noblest advantages of the study of medicine consist in the intellectual advancement and moral improvement which it is so well calculated to promote, and in its invigorating the mind, and purifying and chastening the feelings of the heart. It makes us wiser and better, and advances us in the scale of moral and intellectual being. What study, indeed, can be more instructive and improving than that which, by teaching us look into the mysteries of ourselves, the beautiful, harmonious, and wonderful mechanism of our own organization, represses any overweening opinion of ourselves, and substitutes more just, because more exalted, views of our great and infinite Creator. Its pursuit is a combination of all those studies, which have the harmonies and beauties of nature, and the welfare of man, as their object, and the perfections of our Divine Author as their ultimate end. From the magnitude and importance of the subjects which it contemplates, medicine may be considered as viewing with the most exalted of the natural sciences in grandeur and extent, whilst in the varied and attractive character of its investigations, and especially in the usefulness

and philanthropy of its aims, it will be found to surpass them all. If the eutomologist be delighted in tracing the number of rings, and in discovering new stripes on the bodies or wings of minute insects;—the botanist, in pointing out the variations of a leaf, or in the form and number of the corolla and stamina;—the chemist, in adding a new element, or in the production of a new compound;—the geologist, in studying the relations of earth's strata, and their peculiar vegetable and fossil remains, as well as the revolutions on the surface of the globe;—the astronomer, who treads the heavens, in search of a new planet, and the discovery of unknown laws, or with plummet and compass sounding the remotest and profoundest depths of infinite space, how much more exalted the study of proud man himself, who, by his superior wisdom and endowments, is thus enabled to soar beyond his own narrow and contracted sphere, measure the infinitudes of space and time, and scan the vast machinery of the universe itself! Made a little lower than the angels, in the image of God himself, he is next in grandeur and sublimity to that Infinite Wisdom who planned and contrived all things, and who upholdeth them by the "word of his power." Well has it been said that the proper study of mankind is man. In his triune relation of physical, moral, and psychological being, he is next in dignity and importance to Him who created and hath so wonderfully endowed us. No pursuit, therefore, stands nearer that which teaches our redemption from the Fall. It yields to none in the extent and variety of its objects, the depth of its problems, the utility of its purposes, the philanthropy of its aims. It grapples with questions which the mightiest intellect cannot solve, the greatest wisdom cannot unfold. It is adorned by the names of those dearest to Fame, by the highest achievements of human intellect. Its literature is rich and varied as any other; its pursuit attractive in every respect, its vocation full of opportunities for charity and benevolence. What more gratifying reflection in the hour of death, than the recollection of the good done, the lives saved, the example presented! We are impelled by every consideration that can move the heart, or nerve the arm; by a sense of duty and the peace of conscience; the hope of reward, the prospect of fame, the attainment of happiness. If Napoleon, to stimulate his soldiers at the battle of the Pyramids, invoked the ages that rested on their summits, how much rather we the antiquity of our noble profession. He invoked them for the destruction, we for the salvation of men. Medicine is older than the pyramids. It will stand, blooming in undying youth, when they shall have fallen, and their last fragment been mingled with the sands of the desert—like its divine archetype, eternal and immortal.

Pursue your profession with a holy and lofty ambition, as a matter of duty more than of interest. Fortunately the two are here united, but let your aspirations be exalted, and your souls fired with sacred love to our great mission. Go in the spirit of charity and benevolence—go as the incarnation of Christ, and in fulfillment of a divine duty, devote

your souls and minds to the alleviation of human suffering. Your reward may not be the applause of shouting multitudes, nor social nor civic honors, but a holier and higher inheritance. The benefactors of mankind, whether through philanthropic exertions, or their labors in science, literature, or art, shine as bright stars in the firmament of fame, when the time-serving notabilities even of yesterday shall have been forgotten. The sciences you cultivate, and the benefits you may confer on others, by the labors of your lives, are productive of loftier and more solid gratification, than can attend on mere worldly distinctions. Let not the unknown in medicine deter you from its earnest study—let it, on the contrary, heighten as it should your devotion and stimulate your exertion. What would be thought of the man who would forego learning the ascertained and sublime truths of astronomy, because so little comparatively is known beyond our own system of the vast macrocosm of the universe? Be assured that the disturbing influences in the diseases of the lesser microcosm, like those of the planet Leverrier in the greater, will sooner or later be discovered and brought to light, to be accurately measured and weighed in connection with other great and dependent truths. Enough remains for the exercise of the mightiest intellect—enough to inspire you with a fiery zeal to thrust back the limits of the unknown, and thus, whilst conferring lasting benefit on humanity, gain immortality for yourselves. Attach your names to the discoveries of Nature's laws, and your fame will run parallel with time itself. This is the great secret of lasting renown—this the reason why Hippocrates and Newton, Harvey and Kepler, Hunter and Herschel, will live forever, for their discoveries will ever be considered of consequence to mankind. What name of Grecian hero or statesman is more endeared than that of Hippocrates, to human sympathy and human gratitude? It is inscribed on Time's adamant tablet. Need I point to his gigantic intellect, his bright example, his fresh and ever blooming memory, his incorruptible integrity;—an integrity and patriotism which spurned the gold of Xerxes, and taught by a shining lesson to his followers of all ages, the lofty principle of professional honor.

Years ago, I stood upon the tower of the Capitol, and in the midst of the seven-hilled city's pride, mused by the hour on the backward stream of years, the wreck of empires, the ruins of temple and palace, the triumphal procession, graced by the victor's spoils, which once climbed the ascent below, and the glories of men and deeds that whilom adorned the spot and the world. My mind revelled with sad delight on the images and reflections that rose thick and fast on memory's page. Amid all that wondrous scene, my eye rested with peculiar fondness on one neighboring spot more dear than all the rest. It was not the Tarpeian rock, down whose steep virtue and patriotism were hurled, nor the forum, where chafed the passions of the people; nor the dungeon, whence Cataline heard the terrible voice of Cicero, and in which Jugurtha died—a reproach to Rome; nor the ruined arches of the palace

of the Cæsars, now haunted by the bird of night; nor yet the coliseum, with its reminiscences of glory and of crime, and its once mad shout of an hundred thousand spectators of gladiatorial shows and human sacrifices, long since hushed in death.

Under the shadow of the giant ruins of the temple of Peace, fit emblem of his mission, and safe refuge from the gory and maddening precincts around, stood the house of Galen, beside the *via sacra*, where oft he beat his *theriacum*, and indited his ponderous and immortal folios. It may to many seem strange, but no spot, nor arch, nor column, nor ruined temple, in all that wonderful and soul-stirring scene, more fastened my gaze or absorbed my heart. There Galen lived—there he died. Tell me who, of all the great in Roman fame, so long exerted so resistless a sway over his cotemporaries and succeeding generations? Forthirteen centuries Galen reigned supreme, while Cæsar and Pompey, warrior, poet, statesman, and emperor, knew no followers like his. Hippocrates, Galen, Sydenham, Franco, Vesalius, Pare, Harvey, Hunter, Bichat, Cooper, Rush, Dupuytren, Jenner, and Morton, the benefactors of mankind, will live when the memories of the conquerors of the world, and their bloody deeds, shall have sunk into merited oblivion. The august forms of those sages and fathers of the profession, yet hallow the sacred precincts, and guard the holy portals of the medical temple. None but the worthy may hope to rank with their bright array, and whilst they silently but encouragingly beckon on the zealous and faithful cultivator of our science, with stern rebuke and cold, they turn aside from him who, by mockery or quackery, would mar its beauty or soil its purity.

GENTLEMEN GRADUATES: The broad field of life now stretches wide before you. Henceforth, quitting the pleasant shades of *Academos*, you become participators in the active duties of society; and take your stations on the stage of life, to enact your special parts, for good or evil, in that great drama. You appear on the stage of your profession at an auspicious epoch. The accumulated labors of the past are within your reach; and the improved instruments and engines of further discovery, are accessible to you. The flame of emulation will be enkindled in your bosoms by a devoted host of choice spirits, who will march before you and with you, in that great exploring expedition undertaken by intellect and good-will, for the sake of science and humanity.

The good that will result from your labors and your zeal, will be more enduring and precious than the golden sands which sparkle far away in the regions of the setting sun. Guided by the steady lights of science and common sense, and distinguishing the truths of nature from the phantasies of imagination; searching after the probable and attainable, and not the unreal and utopian, you will not be doomed to disappointment, as were the entranced alchemists of bygone ages, in their search for the bright and starry stone of the philosopher, and the life giving fountain of youth.

I would not, however, even for a moment, buoy you up with the idea that you will have a pleasant, primrose path, and a smiling and cloudless sky in your journey to the goal of your hopes. You may expect clouds as well as sunshine—obstacles, mountain high, will have to be surmounted. But remember, that in every department of human enterprise, faith is the mountain mover. Exercise faith—medical faith—reasonable faith, that only labor can confer excellence—that only arduous study, joined with honest and upright conduct, can secure the lasting homage of the good and the great, and the priceless treasure of a spotless and undying reputation. Ah! how mistaken are they who suppose that, as medicine is a rather occult science, which the public cannot understand, humbuggery and quackery will succeed as well as arduous and honest toil! for the public instinct, though wheedled for a time:

Enshrines the virtuous in the light of day,
And damns the vicious brood to darkness and decay.

Let us trust that public sentiment will fast change for the better; and that it will become more and more favorable to our calling—that the time is not far off, when even the multitude will be more disposed to honor the life-saving mission of humanity, than to lick the gory dust from the heels of revolution and war. Be assured that life preservers will, sooner or later, be in the ascendant, and that life destroyers, will fast decline towards their merited zero. Be assured that medicine is as sure a road to those serene heights,

Where Fame's proud temple shines afar,

As any other you could select. I have freely told you that you will have difficulties—I as freely say that you should never despair, if, amidst your difficulties, you are sustained by an unfaltering trust, and the giant upheavings of a consciousness that you have done your duty. Lasting failure and ignominy are the doom alone of the unworthy.

The high and mountain majesty of worth,
Should be, and shall, survivor of its woe.

The zealous—the toiling—the honorable members of a highly scientific and eminently humane profession, must in the very nature of things, succeed in this world, and they are, in virtue of their profession, favorably circumstanced for securing in the world to come, a still higher and holier inheritance. In bidding you adieu, gentlemen, permit me to express the inmost wish of my heart, that you may all be crowned with this two-fold success—embracing in its compass earth and heaven—the mortal and the immortal—the temporal and the eternal.

The first of these is the fact that the human mind is not a blank slate at birth. It is filled with a vast amount of information, much of which is inherited from our ancestors. This information is stored in the form of neural connections in the brain, and it is this information that we use to make sense of the world around us. The second point is that the human mind is not a passive receiver of information. It is an active participant in the process of learning, constantly seeking out new information and trying to understand it. This is why we are able to learn from our experiences and to adapt to new situations. The third point is that the human mind is not a single, unified entity. It is made up of many different parts, each of which has its own functions and responsibilities. These parts work together to create the complex, integrated system that we call the human mind.

THE HUMAN MIND AS A COMPLEX SYSTEM

The human mind is a complex system, much like a computer or a biological organism. It is made up of many different parts, each of which has its own functions and responsibilities. These parts work together to create the complex, integrated system that we call the human mind. The first part of the system is the brain, which is the physical organ that houses the mind. The brain is made up of billions of neurons, which are the basic units of the nervous system. These neurons are connected to each other in a complex network, and it is this network that allows the mind to process information and make decisions. The second part of the system is the mind itself, which is the non-physical aspect of the human being. The mind is what allows us to think, feel, and act. It is the mind that gives us a sense of self and a sense of purpose. The third part of the system is the environment, which is the world around us. The environment is what provides the information that the mind needs to function. It is the environment that shapes the mind and that gives it meaning.

THE HUMAN MIND AS A LEARNING SYSTEM

The human mind is a learning system, much like a computer or a biological organism. It is able to learn from its experiences and to adapt to new situations. This is why we are able to learn from our mistakes and to improve ourselves. The first way that the mind learns is through direct experience. When we do something new, we learn from the results of our actions. If we do it right, we learn that it is a good thing to do. If we do it wrong, we learn that it is a bad thing to do. The second way that the mind learns is through observation. When we watch someone else do something, we learn from their actions. If they do it right, we learn that it is a good thing to do. If they do it wrong, we learn that it is a bad thing to do. The third way that the mind learns is through teaching. When someone teaches us something, we learn from their knowledge. This is why we are able to learn from the experiences of others and to avoid their mistakes.

THE HUMAN MIND AS A CREATIVE SYSTEM

The human mind is a creative system, much like a computer or a biological organism. It is able to create new ideas and to solve problems. This is why we are able to invent new things and to make progress. The first way that the mind creates is through imagination. When we imagine something, we create a new idea in our mind. This idea can then be used to create something real. The second way that the mind creates is through problem-solving. When we have a problem, we use our mind to think of a solution. This solution can then be used to solve the problem. The third way that the mind creates is through innovation. When we have a new idea, we use our mind to develop it into a new product or service. This is why we are able to create new things and to make progress in the world.



