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Achievements in medicine Incentives to its scientific study —

Compliments of

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ACHIEVEMENTS IN MEDICINE---INCENTIVES TO ITS SCIENTIFIC STUDY.

Read before the Lansing City Medical Society, July 7, 1876, by George E. Ranney, M. D., of Lansing, Mich.

I AM informed that at your last meeting, during my recent absence from the city, you appointed me to read an essay at this time. That proceeding on your part was somewhat "summery," in view of the warm season, and the many hindrances that have beset me since that time—circumstances which I urge as a partial justification for what I am about to afflict you with.

Permit me, then, to discourse upon a less laborious topic than an abstract, didactic or scientific subject, while in my rambles I forage upon the border lands of medicine, and briefly mention some of its achievements, and discuss also the common interests and duties of the responsible and honorable profession to which we have dedicated ourselves, and in the pursuit of which we have embarked, for a life voyage, our hopes and aspirations for the attainment of whatever earthly reward or honor is to crown our struggles on this tempestuous ocean of our being.

I but recently returned from the meeting of the American Medical Association, where, with fraternal spirit, we gathered around the throne of medicine, from the forests of Maine and New England's snow-clad hills, from the Pacific slopes, "where rolls the Oregon," from the golden gates of California, from the silvery lakes of the northern frontier, and from the Southern coast, fanned by the breezes of eternal summer. We extended the right hand of fellowship to members of the profession from foreign lands, who knew not our language, except the common one of medicine, familiar to the scientific physician throughout the world. We

were brought together by the same motives that bring us together to-night—to go deeper into the mysteries of disease, to learn more of the means of preventing it, and when unsuccessful in preventing, to perfect our skill in the use of the weapons of defense and offense with which to cripple its march, or to arrest and humiliate it.

Organization is the great want of our profession. Though unable to take part in your previous meetings, permit me to congratulate you upon the formation of this society, and to commend the act looking to the enlistment in our ranks of the younger disciples of Æsculapius in our midst.

"When bad men combine," says Burke, "the good must associate, else they will fall, one by one, an unpitied sacrifice, in a contemptible struggle." When our country, and especially our State, is overrun with ignorant pretenders and charlatans, who are anxious to assume the office of "doctor," at the risk of their patients' health and lives, for a mere pittance, and while a portion of the press employed in their interest is clamoring for their recognition by us, it is well for our honor that we associate for the protection of that professional code, both written and unwritten, adopted by the educated physician and gentleman everywhere—a code not founded upon commercial policy, or carried out in view of political expedients.

Certain papers—let us hope through an ignorance of the principles of medicine, which has always prevailed to a large extent among the laity—are constantly misrepresenting us in language apparently borrowed from the quack himself, who utters it to deceive and prejudice the minds of the people against scientific medicine.

The high moral ground our profession has taken scorns the cheap notoriety sought and obtained by the quack in his newspaper advertisements—a fact which has not, perhaps, had a tendency to bind us to a portion of the press with "bands of steel." Our profession furnishes to the press and public rich repasts, upon which they feast and nourish their intellects, and in return, because of our attempt and firm purpose, individually and through our organizations, to be the custodians of our own

honor, and choose our own professional associates, the press have applied to us such choice appellations as "bigots," "asses," "fools," "pigheads," "hide-bound," and such other "pet" names as their fertile brains could invent. We are the "bigots" that have "harnessed the wisdom of the world," and carried the brilliant torch of science through the dark ages, from the age when "ignorance was the mother of devotion," to the age when "knowledge is power." We are the "fools" that wrested the medical mysteries from the priests of the dark ages of necromancy and the witches' cauldron, and spoiled the special charms of the numerous pretended crowns of thorns of the Saviour and sundry original lances that pierced his side, and abolished those religious establishments that speculated in the professed bottles of milk of the Blessed Virgin, which they sold at enormous sums to those afflicted with disease.* We are the "hide-bound" that do not believe in magic, amulets, incantations, alchemy, nor in the visionary though sublime abstractions of the Neo-Platonic philosophy of the middle ages. Having never yielded to phantom authority, nor consulted the spirits of gods, demons or oracles, we have stubbornly refused to recognize as our professional equals the natural bone setters and self-styled eclectics, old "sands-of-life," the clairvoyant or the second-sight types of humanity, and all the "leperous and abominable heretics that prey upon the prejudices and fears of men, and flaunt 'doctor' on the red flag of their festering commune."

We admit that we have not found the philosopher's stone, the veritable elixir of life, or the El Dorado of perpetual youth; but we have controlled the plague and the leprosy through quarantine and hygienic measures, instead of resorting to the futile effort to drive them away by putting up prayers in the churches or trusting to the prayers of the priests for deliverance. I will mention briefly a few of the important things which have recently been done by our profession for the good of mankind. As we view our medical temple, and walk through its galleries, and behold the work of its master builders, what an array of illustrious names greet our memory.

* Draper.

"In this 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 Velpeau stands,
The stone yet warm from his uplifted hands."

We behold the statue of Jenner, who only seventy-eight years ago announced his discovery of vaccination, which has nearly banished a disease from the land which in England alone claimed 45,000 victims annually and disfigured as many more. Small-pox attacked young and old alike, and nearly all were expected sooner or later to have it. Those not disfigured were exceptions to the rule.*

We have passed the statues of Hippocrates, Galen, Ambrose Pare and others, and now linger for a moment near the bust of Lænnec, with the stethoscope in hand. The chest had its language that no human ear could understand until Lænnec, applying the principles of acoustics, took a cedar tube, and, putting it to his ear, asked the chest a thousand questions, which were correctly answered through the vibrations of the air in the lungs, and the heart murmured in his ear its long-hidden secrets. His discovery has rendered it possible to diagnose with wonderful accuracy the diseases of the heart and lungs, and enables us to determine upon their rational treatment.

Passing along, we see the bust of Sanctoria, and are reminded of the thermometer, and the wonderful story that it tells us at the bedside of our patients. Among those who have placed the world under obligation to them, and whose portraits we might expect to find, are the Hunters, Bells, Cooper, Abernethy, Bright, Forbes, Simpson, Sime, Pereira, Ferguson, Erichsen, Paget, Wells, Bowman, of Great Britain; Lobstein, Bouillaud, Broussais, Richerand, Cloquet, Cruveilhier, Desmarres, Sichel, Dupuytren, Bichat, of France; Hebra, Gruber, Rocitansky, Virchow, Langenbeck, of Germany, and those of many Americans who occupy conspicuous places.

Anæsthetics have uncrowned "old King Pain," and the patient afflicted with tumor, necrosed bone, or lacerated limb, by it is

* Quackenbos.

wrapped in unconsciousness, while the surgeon, with knife, scalpel, and saw, does the work which is to make him well. When the patient emerges from the vale of Lethe he can hardly realize that the operation has been performed, as he had experienced no anguish or pain; and if Esmarch's bandage and the ligature have been used, he may look in vain for evidences which blood might reveal, for during his sleep an important though painless and bloodless operation has been performed with a deliberation and confidence unknown to the surgeons of the eighteenth century.

Through the delicate needle of the hypodermic syringe we convey to the very seat of pain, the torture of disease, an appropriate antidote. The ophthalmoscope reveals to us the internal chambers of the eye, the mote, enlarged blood vessel, fiber, or opacity that obstructs the vision. The laryngoscope enables us to see and touch and put in tune the vocal chords. With the aspirator we enter the pleural cavity, the abdomen, the bladder, the liver, and even the heart, with safety, and empty them of morbid effusions or retained secretions.

By transplanting skin to parts extensively denuded of integuments, we have rendered it possible to make them sound, and avoid the contraction and deformity that would come from an otherwise extensive cicatrix. Ingenious instruments and the wonderful skill of the surgeon have made man a toy in his hands. We have not been able to arrest "old Time" and make him retrace his steps, but we have dulled his scythe and impeded his destructive march, and added new spaces to the dial of man's chronometer of life. During fifty years ending in 1844 we decreased his harvest of death twenty-two per cent in certain parts of England, and wherever statistics have been kept, equally gratifying results have followed in other places during and since that time. There was fifty per cent less mortality in London during the same years of the nineteenth century than during similar years of the seventeenth century—the difference being as great as the difference between an ordinary year and a year of the cholera.

Typhoid fever is now considered a preventable disease and under the control of sanitary laws. Scurvy has been nearly driven from the ocean, and the wilds of India have been reclaimed. The eti-

ology of cutaneous diseases has been studied and classified, and in the treatment of most of them we have achieved a triumphant success. We cannot always, as desired by Macbeth, "minister to a mind diseased, and pluck from the memory a rooted sorrow," but we can often attack those diseases once deemed incurable and bid the leper be clean.

Among the manifold sufferings with which man is threatened, in consequence of the tenderness of his nature, irritation of the mind is one of the saddest; but thanks to the efforts of our profession and the munificent coöperation of State and municipal governments, asylums have been established for these unfortunates, where, under scientific management and treatment, from seventy to eighty per cent are restored to health. In the United States alone 26,433 insane persons are receiving treatment in State asylums, and 2,008 receive accommodations in private institutions. Aware of the molecular change that trains of thought and moral influence may produce in the brain, and regarding the pathology as taking place in the brain itself, the treatment has rationally resolved itself into psychical and medical. The various forms of insanity are without doubt as old as the human race. Our knowledge of them reaches back into the dusty past where its history is blended with mythology; to a time when insanity was looked upon as coming from an evil or divine spirit, and insane patients were accordingly treated cruelly or leniently, but always with a pious fear.

From the pressure of practical necessity which resulted in the development of medical science, the profession not only regarded and treated the insane as beings spiritually astray, but as beings afflicted with actual disease of the body; and now the same care is bestowed upon patients mentally deranged as is upon patients suffering from any other bodily ill. We look upon the external manifestations of insanity as we do upon symptoms of other bodily diseases, as found in typhoid fever, pneumonia, etc. Hence the insane person is not held morally responsible for wrong acts, as he is controlled by irresistible impulses. He is as likely to destroy his best friend, or himself, as an enemy, for

"He hears a voice we cannot hear,
Which says he must not stay;
He sees a hand we cannot see,
Which beckons him away."

In view of the achievements of the profession of medicine, which have so greatly inured to the benefit of the human race, it is with pleasure we contemplate the object of our profession, which is, as we have seen, to prevent, mitigate and remove the pains and sufferings caused to our fellow men by violence and disease; to restore them to health and enjoyment so far as is permitted to human agency to accomplish—an *object*, when we consider how the want of health renders all we possess besides of an earthly nature almost utterly worthless, and makes life itself a burden; that from sickness, disease and death no member of the human family can, by any possibility, obtain exemption; which places its importance, its value, its benevolence, its all-embracing charity, in a point of view so transcending as to awaken the highest admiration and elicit all the faculties which God has given us for its accomplishment.

This profession, to which we have dedicated ourselves, has for its *subject* the physical constitution of man, in whose mechanical structure his Creator has made an exhibition of wisdom not exceeded, perhaps, in any of the works of His almighty hand; a complete knowledge of which requires, if it does not exceed, the exertion of the highest faculties He has given us, is indispensably necessary to our professional success, rewarding the faithful and persevering student with exalted mental pleasure, and lifting his heart in adoring admiration to the Divine Architect who formed us from the dust and breathed into us the breath of life.

That such a piece of refined mechanism as the human body, of such numerous parts and members, holding to each such minute, definite, important and necessary relations, attached and connected by filaments of the most delicate structure and composition, and all material to the healthy and efficient operation of the machine itself, that it should be fearfully liable to disarrangement and decay might be most confidently assumed prior to any teaching of experience and observation. To the fact that it is thus liable—that it so frequently needs to be readjusted and repaired—our

profession owes its existence, and to do this is the mighty work to which that profession calls us. In contemplation of this work, who will not exclaim, with the prince of Latin poets, when describing the reäscending from hell to earth, "*hic labor, hoc opus est*" (this is labor, this is work).

The external framework of the body of man, in which the delicately formed and very complicated machinery is placed which sustains and constitutes the working powers of human activity, presents to the *anatomist* a subject of study of the richest intellectual interest, the mastery of which is absolutely indispensable to the successful reparation of the many injuries to which that framework is exposed from the violence incident to the operation of peaceful industry, as well as in the conflict of arms, in the field of agriculture, in the workshop, and in the manufactory, as well as in the "eminent deadly breach." To an exact, thorough knowledge of anatomy the surgeon owes, of course, his ability and skill to repair successfully all these injuries, and without this knowledge his operations, "while death surrounds the knife on every side," are scarcely less painful and destructive than Minie ball, the bayonet, rifled cannon or the bomb shell.

But if so much intelligence and skill are necessary for the surgeon in repairing the external framework of the body, how much more are demanded for the relief and cure of the diseases, "whose name is legion," that afflict and torment the internal machinery of that body! For here we have to contend with a formidable host of unseen enemies, whose numbers, position, strength and reserved forces are sometimes masked from our *reconnoisance* so effectually as to defy observation and render it impossible to discover the best point of attack. Here, then, a field opens to our labors of almost boundless extent, and to explore it thoroughly requires the expenditure of the most exhaustive study and research—all the aids which the treasured experience of the master minds which in all past time have gone before us can furnish, joined to the application by ourselves of the most inquisitorial, scrutinizing observation, and sober, fearless, manly, independent judgment.

But when we have discovered his position and strength, a

task almost as difficult, and one which requires the best knowledge and experience that unwearied study and judicious practice can bring to our assistance, remains to be accomplished: that is, the choice of the weapons by which the enemy can be most effectually routed and overcome. Without the ability to make this choice wisely all our previous attainments in medical science cease to be of value, and we are as powerless for the encounter as is the puniest infant to combat with a giant. Of course, then, a knowledge of the appropriate remedies is indispensable. And here opens another field of labor, the extent of which can be measured only by the all but innumerable ills which mortal man is heir to. But this field must be explored with diligence and care, or our professional labors will result only in defeat and sore mortification. And yet our most extended and indefatigable researches in this field, however honorable to our industry, must fall, alas! far short of complete success. For richly as the labors of the profession in this direction have been rewarded, ignorance only will assert that a certain and efficient remedy has been found for every distinct disease. And how constantly is the best medical skill baffled and thwarted by the ever-varying forms which diseases are constantly assuming, and by their vexatious complications with each other. Yet a limited measure of success in this conflict cannot fail to cheer our hearts with the hope of an ultimate triumph, and stimulate us to renewed and unyielding exertions to overcome the enemies of our humanity.

In these several departments of our professional study and labor how grateful should we be for the generous aid and encouragement which medical science proffers us from her abundant stores, made up of the accumulated contributions and offerings with which her distinguished sons, in the revolution of centuries, have delighted to honor her temple, and thereby to signalize the devotion with which they knelt at her altars. How greatly should we rejoice for whatever opportunities she has afforded us to enrich ourselves with these treasures in order that we may be her almoners to distribute their benefits for the amelioration of the pains and sufferings of our fellow men under the visitation of sickness and disease. The fountains which she has opened to us, though

forever overflowing, are never exhausted. The deeper we drink at them, with the greater sobriety shall we climb the mountain hights where stands her temple. These springs, while they refresh and exhilarate us, do not enervate, but only endue us with renewed vigor. They only gratify our thirst to increase it, till our minds have imbibed the *fullness* of knowledge. The oftener we repair to these fountains, and the longer we there quaff their pure waters, the greater will be the joy and energy with which we shall press forward to the goal of our calling, and the more certain shall we be of securing its high prize.

The field of medical inquiry is endless, but those branches usually called collateral, such as mineralogy, chemistry and botany, in particular, should demand our attention, For they proffer to our aid means and instrumentalities the most necessary and efficient for prosecuting our labors with success. The boundless domains of nature spread themselves out before us, and invite our wide-searching exploration. They welcome us to enter her dark and most secret chambers, the "*abdita ima penetralia*" of her temple, where her profoundest mysteries are waiting to unveil her charms to the inspection of her ardent worshiper. The earth, like a fond mother, opens her bosom to our embrace, and solicits us to draw from it the restoring aliment of life and health. She adorns her face and crowns her head with herb and plant and flower of every hue, fragrant with odors, and waiting the process of distillation that may furnish us with means of assuaging the pains and renovating the health of her children. Hence the student may say, not in the arrogance of conceited pride and pedantic ignorance, but in the modesty of true science,

> "For me kind nature wakes her genial power,
> Suckles each herb and spreads out every flower;
> Annual for me the grape, the rose renew
> The juice nectareous and the balmy dew;
> For me the mine a thousand treasures brings;
> For me health gushes from a thousand springs."

But to descend from the poet's enticing descriptions of the beauties of nature to our humble prose, we may remark, that to read her many volumes aright, and to possess ourselves of their profound teaching, we have a far more difficult task to accomplish

than the practitioner whose encyclopedia of knowledge is contained in his list of "specifics" or book of recipes—a mere duodecimo dispensatory, which any disciple of St. Crispin, tired of cobbling and ambitious of the title of doctor, with the ability to read English "without spelling more than half the words," may commit to memory in less time than it would take to manufacture a pair of boots. For the secrets of nature utterly refuse to disclose themselves to the ignorance of the empiric and quack, and cannot be unlocked but by the keys of science. Hence it is that in our most strenuous efforts for the attainment of true professional *excellence* we must forever fail to reach it, unless these efforts are guided and regulated by the sound principles of philosophical investigation. The vain hope of arriving at scientific truth by *a priori* theories and speculations originated by the imagination, "that most forward delusive faculty, the mother of all error," must be utterly abandoned, unless we are content to wander eternally in the mazes of false science and forever conjecture, "which leads only to bewilder," and dazzles to blind us by its tinsel glare.

All true art is built upon true science, which sternly forbids our remotest approaches, unless they are made through the avenues which sound philosophy has opened for her children to walk in. These avenues are "*a careful observation drawn from these by the most cautious induction.*"

"The province of human knowledge," says Abercrombie, "is merely to observe the facts and to trace what these relations and sequences are." Hence, if we ascertain all the laws and the results which attach and follow from a particular thing in itself, and in any variety and combination, and in every position and under every influence it can be placed, we know for practical results all that is necessary for us to know. If, however, we do not know the laws and qualities of the simples which make up a compound, we are always in the dark, and might add another which would destroy the compound.

The object of all science is to ascertain the established relations of things or the tendency of certain events; in other words, the aptitude of certain bodies to be followed by certain changes in other bodies in particular circumstances. The object of all *art* is

to avail ourselves of the knowledge thus acquired by bringing bodies into such circumstances as are calculated to lead to these actions upon each other, of which we have ascertained them to be capable. *Art*, therefore, or the production of certain results by the action of bodies upon each other, *must be founded upon science*, or a knowledge of their fixed and uniform relations and tendencies. *This principle applies to all sciences and to the arts* or practical rules which are founded upon them, and the various sciences differ only in the practical substances or events which are their more immediate objects.

But after all, there will be mysteries unfathomable by man, for all science can do, at best, is to separate compound matters into the simple elements, and ascertain the qualities of the simple and the effect it produces in combination and relation to other things, either in a simple or compound state. But why such qualities should or do exist, or why such results should follow, must forever remain secret to man.

In the physical sciences we investigate the relations to one another of different bodies, and their actions upon each other either of mechanical or chemical nature. On the relations thus ascertained are founded the mechanical and chemical arts, in which we produce certain results by bringing bodies into such circumstances as are calculated to give rise to their peculiar actions.

In *medical science* the objects of our researches are chiefly the relations between external things and the living powers of animal bodies, and the relation of these powers to each other; more particularly in regard to the tendencies of external things to produce certain changes upon living bodies, either as causes of disease or as remedies.

The practical *art* founded upon this science leads to the consideration of *the means* by which we may avail ourselves of this knowledge, by producing in the one case actions upon the body which we wish to produce, and in the other by counteracting or avoiding actions we wish to prevent.

These are the teachings of philosophy, and by them we are brought inevitably to the very important conclusion that "he who

follows certain arts or practical rules, without a knowledge of the *science* on which they are founded, is the mere *artisan* or empiric; he cannot advance beyond the precise rules which are given him, or provide for new occurrences and unforeseen difficulties."

And how constantly has the physician to encounter these "new circumstances and unforeseen difficulties!" But if he is indeed a scientific physician, when his practical rules fail him he can fall back upon the science itself upon which his art is founded, and from that deduce new rules better suited to meet the peculiar necessities of the case before him. As these new occurrences and unforeseen difficulties present themselves, he can vary his remedies as a scientific judgment may direct. This is his only resort, and in case he fails of success he may rightfully enjoy the consolation that his endeavors have been directed by intelligence, instead of the blind conjectures of the quack, who owes his little success to luck and chance. He may weep that he could not save his patient, but he feels no self-condemnation when he has employed the best means for his relief that medical science and art could suggest. He may then rest upon his established reputation and wait with confidence for the approbation which in the end will seldom fail to be awarded by the intelligent and just to wise and judicious endeavors.

Happily, in the pursuit of our very arduous and responsible profession we are not compelled to rely altogether upon our individual and solitary efforts. The generous sympathies and friendly counsels of professional brethren, kindly extended, inspire us with strength and confidence in the discharge of our duties; we cease to feel like single combatants, but rather as members of a well compacted phalanx, whose unity gives it a power to resist every onset of the enemy, setting defeat at defiance, and assures us of victory. The young physician, like the young soldier, standing shoulder to shoulder with the veterans who have seen service in the hardest fought fields, joyfully participates in their self-possession, coolness and courage, discards his fears, and advances with firmer step to the encounter of arms. Such a phalanx do our societies present, and we welcome their assembling as the sons of Mars do the trumpet's sound for order of battle. For they assure

us of union of purpose and of effort. In these reünions—this marshaling of forces—we see our strength. It reminds us of victories achieved and points to victories yet to be won. It tells us of our progress and triumphs gained, and of greater progress and triumphs yet to be reached, and animates, therefore, with a courage and invincibility never to submit or yield. Nor can we forget for how much aid and pleasure we are indebted to our medical periodicals, which every returning month spread the tables of our studies with a rich repast of medical literature and science provided by their able editors and the learned brethren who contribute their generous assistance. Does not the service thus rendered demand for them who render it not only our gratitude, but our liberal patronage and support?

And lastly, but not least, of other agencies which give support to our cause, how much do we owe to our State University for the instruction from its various departments it has imparted to our profession, through the faithful and assiduous labors of her learned and able faculties! In the success of these labors rest the highest hopes of Michigan for intellectual, moral and social advancement. And with grateful confidence and assurance may we predict that these hopes will be proudly realized; and when this prediction is fulfilled may we not indulge the grateful anticipation that some rays of light may then penetrate even the dark halls of our Legislature, and that it will be inspired with nobler purposes than that of degrading a profession in whose advancement the lives and happiness of the people of Michigan are so deeply interested to a level with quackery and imposture?

But be that as it may, let us not falter in our duty to our fellow men, to ourselves, and to our honorable vocation. Animated with an ever-enduring zeal and energy in its pursuit, let us labor and strive to *merit* the rewards due to *well-doing*.