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The Medical Colleges, the Medical Profession, and the Public.

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ARTICLE III. *The Medical Colleges, the Medical Profession, and the Public.* By STANFORD E. CHAILLÉ, A. M., M. D., Professor of Physiology and Pathological Anatomy, Medical Department, University of Louisiana.

This subject will be discussed in reference to the three questions,

1. Whether the Medical Colleges of the United States graduate annually an excessive number of Doctors in Medicine?
2. Whether the supply is defective in quality?
3. What means can be successfully adopted to correct any such evils as may really exist?

DO THE MEDICAL COLLEGES OF THE UNITED STATES GRADUATE ANNUALLY AN EXCESSIVE NUMBER OF DOCTORS IN MEDICINE?

This question requires an estimate of the total annual supply of and demand for physicians. In 1873 there were in the United States seventy-four Medical Colleges. Of these, sixty-four were "regular," and ten were irregular (viz.: seven Homœopathic and three Eclectic) colleges. The fourteen Southern (formerly slave) States had nineteen of these colleges. The ten institutions of quackery are in Massachusetts, New York, Pennsylvania, Ohio, Illinois and Missouri. Although the "regular" colleges reported more than six, and the irregular colleges less than one thousand, making a total of about seven thousand students, it is not believed that the actual number of bonâ fidê students exceeded five and a half thousand. Of these, something less than half are graduated annually. In 1873 there were about 2660 graduates, viz.: about 2350 "Regulars," 188 Homœopaths and 122 Eclectics. This yearly contribution of 2660 is augmented by about 200 immigrant doctors. Therefore the total annual supply is less than three thousand.

In 1870, 50,000 practising physicians paid the United States Internal Revenue Tax, and the census enumerated 62,383 persons "occupied" as physicians. The annual loss of this professional army by death, disability, and all causes of retirement is prob-

ably not less than 2000. In addition to the demand to supply this loss, the population of the United States is being increased at a rate not less than 800,000 annually, and this annual increase requires, on the present ratio of one physician to every 618 of the population, a supply of nearly 1300 physicians. Therefore, whilst the total annual demand does certainly exceed, the supply does not equal three thousand. Hence, "self constituted and irregular practitioners, who do not seek degrees reach, at a low estimate, 200 annually.*"

Although the total number of persons occupied as physicians was 62,383, it is not probable that more than 47,000 were graduated in regular Medical Colleges; for about one-eighth of the whole were Homœopaths and Eclectics, and probably the number practising without any diplomas whatever was as great.

Some considerations will now be presented on the question whether the present ratio of supply—one physician to every 618 of the population—indicates, as to the public, a normal and favorable condition.

1. It is a much larger supply than have the civilized nations of Europe. France and England have one physician to about every 2000 people. In the cities, as Paris and London, where the conditions are such that one physician can attend the greatest number of sick, the supply is much larger, one to less than a thousand. The wealthy and prosperous cities, New York and Boston, have one to about five hundred, and impoverished New Orleans, one to about one thousand of the population.

Whilst it is true that cities contain more professional idlers than the country, it is concluded from the above and other facts that physicians abound in proportion to the material prosperity and freedom of the people from medical superstitions, and that these conditions being given there will be a diminution in the supply proportionate, in some degree, to the density of the population.

Therefore, if the people of the United States be as prosperous and intelligent as the people of France and England, it is not astonishing that the former with only thirteen inhabitants to the square mile should have a larger supply of physicians than the latter with some two hundred to the square mile; nor is it surprising that enlightened England and France should have a far

* This and some other facts were obtained from Dr. J. M. Toner's "Statistical Sketch of the Medical Profession of the United States."

larger supply than one doctor to every fourteen thousand people, as has Russia, with its large population of recently emancipated semi-barbarous serfs; for it is certainly true that the barbarously ignorant rest content with uneducated quacks, their priestly medicine-men.

2. Military surgery teaches that two medical officers to one thousand soldiers congregated together is an inadequate allowance even in times of peace. A general population of one thousand civilians will certainly furnish a much larger amount of sickness and mortality than this number of selected men of military age. Therefore, if one medical officer does not suffice for five hundred soldiers, it may with good reason be supposed that one doctor to every five hundred civilians of all ages would not be by any means an excessive supply.

3. What amount of medical attention does a healthy population of one thousand require in a healthy country, and during a healthy year? The year would average about fifty persons daily sick, and one death or birth every week. Under ordinarily favorable circumstances this amount of professional labor would require more than two physicians. Two would be altogether insufficient if the thousand inhabited a sparsely settled country; as also when epidemics prevailed, even if the inhabitants were congregated in villages or cities.

4. The present (1870) supply of one physician to every 618 of the population is said to be excessive. But if one to every five hundred be requisite then the United States needs fifteen thousand more doctors. And all complainants ought to gain hope from the fact that this decenniad demonstrates a large diminution of physicians compared with the preceding twenty years; for in 1860, as also in 1850, the supply was one to every five hundred and seventy people, and if this proportion be deemed favorable, then the United State now needs five thousand more doctors, and has over three millions of its people unsupplied. It is worth while to remark in this connection, that during the last decenniad not less than three millions of people, who had been remunerative to physicians, were transformed into a non remunerative free population.

5. All of the preceding facts, as to whether the present supply is favorable, deserve consideration. Others have not been forgotten which belong to the subject, but will not be discussed, because the data are wanting to enable an approximative esti-

mate of the amount of their influence. Among these unconsidered facts are those which would go to show the influence of healthy and sickly climates on the supply of physicians; the number of sick attended gratis; the number who are sick and die without a physician's attendance; the number who resort to the innumerable patent medicines which abound in every village; and the number who are content to trust their health and lives to those self-confident, natural born doctors, American women, one of whom blesses every household.

As to whether the Medical Colleges supply an excess of graduates, the following conclusions may be drawn.

The profession has good reason to urge that the number is large enough to diminish the profits of its individual members, and that if educational requirements were higher, there would be fewer doctors and larger profits for the diminished number.

The colleges can reasonably urge—that if graduates were not wanted by the public it would cease to supply medical students; that a large part of the sixty-two thousand three hundred and eighty-three persons occupied as physicians are not graduates, but ignorant, self-constituted doctors; and that they are doing good service in supplying substitutes for these. For, notwithstanding the more frank than courteous denunciation, by some foreign confrères, of American medical colleges, as bureaux “to legalize murder,” it must be conceded, that a nation supplied with physicians who do know *something* of medicine is better off than if supplied in corresponding degree with men who know nothing; and that the colleges have at least served to mitigate this greater evil.

The public can with safety leave the supply of graduates in medicine to the ordinary laws of trade. It is impossible that there should ever be, for the public good, too many citizens educated in a knowledge of the laws of health and life. No knowledge is more needed by the people, and they cannot have too many teachers. Any excess in quantity would necessarily tend to improve the quality. Those left unemployed would have been, by their medical education, improved as useful citizens.

In conclusion, if the present supply does not equal the demand, the public has the right to inquire—whether improvement in quality by higher requirements would not, by diminishing the

supply still farther, cause greater public injury by such diminution than would be compensated for by improvement in quality?

ARE THE M. D'S. GRADUATED BY THE UNITED STATES MEDICAL COLLEGES DEFECTIVE IN QUALITY?

Notwithstanding some antagonistic interests, there has long been agreement between the most influential of the profession and the best Medical Colleges that the requirements for graduation should be higher, and for more than thirty years futile efforts have been made for reform. Since the day when my too-easily earned diploma was conferred, I have been an incessant advocate for this reform. Twenty years professional experience, with twelve of these as a medical teacher, has modified my views; for it has increased my conviction of the importance of improvement, while it has destroyed my hope that I might live to see it realized. I, then, am no apologist for the Medical Colleges, but am a seeker for the whole truth. Therefore, as I think the symptoms in this case are too manifest to permit any competent judge to hesitate about the diagnosis, there need be no discussion except as to the proper treatment of that very sick patient—medical education in the United States.

WHAT MEANS CAN BE SUCCESSFULLY ADOPTED TO ELEVATE THE STANDARD OF MEDICAL EDUCATION?

There are but three remedies which can be applied, viz., voluntary action of the colleges, legal force, and public opinion. Let us examine each one, and first—

I.—VOLUNTARY ACTION OF THE MEDICAL COLLEGES.

As authority to grant diplomas is vested only in the colleges, these, if united, could accomplish a reform. But, medical education is not the worst evil which needs reform, and yet does not secure it because ignorance, jealousy and conflicting opinions and interests, bar the way to united action. It is a deplorable fact that not a few of the sixty-four "regular" Medical Colleges, like many machines invented by this enterprising people, are vying in the cheapness and rapidity of their execution without due regard to efficiency, and are engaged in a competition against each other,

which annually develops a shameful amount of under-bidding, trickery and unscrupulousness. The profession, which is disgraced by this, discourages it but little; and the public, which is seriously injured, witnesses it with amused indifference. So great is the influence of this competition that some of the most reputable colleges, assembled in convention at Washington, April 29th, 1870, to perfect long discussed measures of reform, did not dare to enter into agreement. So "miserable and humiliating" was the attempt at united action, that our delegate, Prof. S. M. Bemiss, officially reported, "there is not at this time, nor at any discernible period in the future, the slightest hope of any general coöperation on the part of the schools of the United States in measures for the advancement of medical education." Other facts could be given to prove, that whilst the united action of the colleges is an apparently simple and effectual remedy, its practical application is impossible. To secure it, medical professors must be reformed—to secure this the entire profession (for any half dozen doctors can constitute themselves professors, and found a Medical College)—and to secure a reform of both professors and profession the public must be first reformed.

It may be urged that though united action be hopeless, each college, convinced of the need for reform, should act upon this view separately and independently. This is done to some, but will continue to be done to a most unsatisfactory degree, because the Medical Colleges, with few exceptions, depend for their support upon the patronage of students, and this patronage would certainly be withdrawn, to such extent as to imperil their existence, from any small number of colleges insisting upon proper requirements.

The public is so incompetent a judge of medical skill, that it fails in large degree to discriminate in favor of the accomplished graduate, as against his more pretentious inferior, and generally remunerates tact and agreeable personal traits without medical skill, much better than such skill without such characteristics. Medical students are swayed by these facts, even unconsciously, and are influenced more by considerations of money, time and convenience, than by the quantity and quality of that medical education which their future clients inadequately appreciate. Like other men they sacrifice as little as they can to secure that which they are to depend on—popular favor. If this can be secured at small cost, and by perhaps less than two years study, why incur greater

cost and the loss of two or three years more? Medical students simply respond to the public demand, and colleges will always abound to respond to the students and the public. About one half of the "regular" Medical Colleges are now engaged in the discreditable business of underbidding the other half, striving thus to seduce impecunious students, urgent for a speedy diploma, to fill up their otherwise empty benches.

If, under these circumstances, any of the best Medical Colleges (which derive their revenues from the students) should elevate the requirements for a diploma to a proper standard, not only would they dangerously impair their own strength, but, worse still, the less worthy colleges would fatten on their failure. When sensible men see that an improvement is desirable, but that an attempt to accomplish it will certainly inflict serious injury upon their own immediate interests, they must stop to inquire what amount of good to others would follow in compensation for this self inflicted injury. Suppose this Faculty decided now to pursue such a course. Our class next session would be diminished at least by one half, and these students would seek and receive elsewhere diplomas significative of less knowledge probably than those now given by this Faculty. Therefore, in injuring ourselves we would not have benefited, but probably have also injured that large number of students whom we would have had. As to the much diminished number which would continue to come to us, it would manifestly consist of those, who desired higher acquirements and a diploma significative of this—in other words, of those who are now our best students. To estimate the good which might be conferred on these, it must be remembered that our best students are always those who best understand that their days of severe study by no means end with their diplomas, and that those who desire higher acquirements already remain with us three or more years and accomplish this desire. The attempt is made even to bribe all to do so, by furnishing every educational advantage free of cost, after a course of two sessions. The comparatively small number of those who avail themselves of these advantages, indicates how very few would patronize this college if it demanded those higher requirements which would render additional courses indispensable. Present advantages would be then modified, so that there would be added thereto the disadvantage of having to pay for these additional courses, and the advantage of receiving a diploma

somewhat more valuable in professional, but not of sufficiently greater value in public opinion to ensure more extensive employment or better remuneration. As to the amount of good which might be bestowed on the public by a limited number of thoroughly educated graduates, a higher estimate will be formed when it is found that this community, or any other, selects for employment only the competent, and ceases to prefer, as is largely the case, the popular man but incompetent physician.

It is therefore believed, that the independent action for reform of any of the colleges separately—say of this one—would result in a fatal reduction of its revenues, a diminution of the flow of money to this city, no benefit and probable injury to the many students who would abandon it, very little if any more good to those who would continue to patronize it, and an amount of good to the public which it would certainly fail to appreciate, and which therefore would be too slight to justify any enthusiasm.

That well-endowed Medical Colleges, with teachers independent of the patronage of students, might do good, is not doubted; but taking the facts as they are, it is certain that no reform sufficiently extensive to be of public moment will ever be accomplished by the voluntary action of the Medical Colleges, either unitedly or separately. As public institutions they satisfy the demands of the people, and of the people's students—therefore the public has no right to and does not complain; and as to the complaints of the profession, they will be little heeded until they gain such unanimity and strength as to influence favorably that ignorant public opinion, which is responsible for our defective medical education.

II.—THE LAW, AS A REMEDY FOR DEFECTIVE MEDICAL EDUCATION.

Why should restrictive laws, prohibiting by adequate penalties all from pursuing the occupation of a physician except those who have given satisfactory proofs of competency, be enacted as to the medical rather than as to other professions? There are two good reasons. 1st, Public ignorance of medicine is profound—much greater, for instance, than as to law and theology, and the public is restricted in wisely using the little knowledge it has by the fact that the medical profession enjoys the exceptional privilege of burying most of its failures, and of concealing its

errors between itself and its patient; therefore, as the public cannot protect itself adequately from the injuries inflicted by this profession, the law should protect it. 2d. This inability to protect itself occurs as to life and health, public interests of greater legislative importance than any others whatever.

But to justify legal interference, the proofs should be ample that laws could be not only enacted, but also executed, which would benefit the forty millions of people even more than the sixty-two thousand doctors. Searching for such laws as precedents, envious eyes are cast on France and other foreign nations, which have succeeded far better than the United States in securing a properly educated medical profession. This superiority is in part due to those conditions which render unprofessional labor less remunerative and less honorable than in the United States; for, these conditions tend to furnish a larger supply of those, neither ignorant nor needy, who seek a medical diploma for its social as well as remunerative value, than would be furnished by the United States under similarly restrictive requirements as to diplomas. But this superiority is chiefly due to the subjection of their Medical Colleges to the control and support of strong central governments. By this means two important ends have been accomplished. 1st. The professors are released from all dependence on students' fees, and thereby from a great temptation to augment the number of their students by relaxing their standard of requirements. 2d. Every physician is required to obtain his diploma from one of a few examining boards, all of which are forced to have an approximatively uniform standard of requirements. Thus the colleges are prevented from striving to surpass each other by unworthy means. Why cannot we adopt similarly simple measures? In consequence of our different government and people.

An influential profession, acting on a limited number of educated legislators, can secure the enactment for the general welfare of good laws, which, even though unappreciated by the people, the executors of the law, vested with more or less despotic power, can enforce in nations well policed by disciplined soldiers. But in a government which depends, in fact and not simply in name, on universal suffrage, public opinion not only makes the laws but also executes them. Therefore, although a few may enact laws which receive the indifferent acquiescence of the people, the execution of such laws as affect every indi-

vidual requires that the many-headed people should have such a conviction of their utility as to insure that this conviction shall be put in action. This people is extremely jealous of any restrictive laws whatever, and will not submit to limitations of that personal freedom of action to which they have been habituated, unless well convinced that the freedom lost will be more than compensated for by the benefits gained. In fine, to rectify the evils of a self-governing people, it must be so instructed as not only to recognize these evils, but also to cry out against and actively aid to suppress them. How very far this people is from any such conviction as to medical education let its chief teachers, the press and pulpit, bear witness. See how the knights of the quill encourage even those forms of quackery which inflict most injury on humanity. Look at the signatures of the reverend clergy in behalf of the secret nostrums of unblushing charlatans. Listen to the barbarous absurdities about disease with which even (so-called) educated gentlemen and ladies are prone to amuse or disgust the honest physician, and which the unscrupulous use to subserve their own interests.

Any laws desired can be passed by two authorities only—by Congress, to govern all the States, or by each State separately. The right to enact such laws is one of those which the most eminent constitutional lawyers assert unhesitatingly is reserved to the States. The right of the General Government to enact any such laws is certainly of such doubtful constitutionality that it would be jealously opposed by many of the States, as a usurpation. And although uniformity of action in this matter for all the States is manifestly most desirable, and although many deem that the present party in power will and should be overthrown because of its tendency to usurpation, it is none the less true that the present United States Commissioner of Education does not even suggest, when discussing this subject, any such exercise of power; but does tacitly disapprove of it, inasmuch as he strenuously recommends the separate action of each State. If all objections on the score of constitutional authority be waived, there would still remain the gravest doubts as to the expediency of such laws. Who can be sanguine that any board or boards appointed by, and therefore to consist of political partizans, would prove competent and satisfactory? Who believes that Congressional laws, prohibiting all those unauthorized by its boards to practice, would be executed? Experience justifies the convic-

tion, that the active opposition and inactive indifference of the many to the execution of any such laws would more than counterbalance their active enforcement by the few, and render them virtually inoperative. There is, then, in my opinion, no relief to be hoped for from the National Government so long as Republicanism, or rather Democracy, maintains its ascendancy over Cæsarism.

What relief can be expected from the State governments, each of which has the unquestionable right to control this matter within its own boundaries? Those advocating the separate action of the States ought to be informed what these have done, and the results. Many of the States have tried the experiment of enacting laws, so excellent, that nothing was needed to improve the medical profession, except their execution. In 1851 eleven States had had such laws, and had repealed them; four then had them, but subsequently repealed them. Among these four was the State of Louisiana, as to which, it was published abroad that "no State in the Union is better protected against impositions of all kinds than Louisiana." But distance lent enchantment to the view, for the facts were as follows: Louisiana did enact most excellent laws as early as 1808, wisely amended them in 1816, 1817, and 1840, and after forty-four years of experiment repealed them in 1852, without encountering the opposition of any. For such was the execution of these laws, that the State was infested with quacks and patent medicines, and whilst the laws imposed taxes and other burdens on the good, their penalties against the bad could not be enforced. All pronounced the law a "dead letter," and the most reputable physicians acquiesced in its repeal, even urging that this was much better than its unchecked and apparently unavoidable violation. Now the reasons why these good laws, which vested authority in examining boards, composed of our best medical men, were not enforced, should be sources of instruction and of serious thought to those who advocate another trial of State action. These wise and adequate laws were not enforced by the Medical Boards, "because public opinion would not sustain them;" and a most earnest and able advocate for medical reform reported in 1851—after investigating the subject as to the fifteen States which had, or had had such laws—that "it is in vain to look to Legislatures for relief or redress on this subject. The Legislatures reflect the public opinion and the public will,"

and these refused to enforce legal restrictions upon the practice of medicine.

Even without such experience I should have urged that it is idle to expect from ignorance in thought persistent wisdom in action; from inferior citizens superior conduct; and from institutions any more rapid improvement than those are improved who support them; for I concur fully with the distinguished philosopher (Herbert Spencer) who writes, "The belief that a faulty character can so organize itself socially as to get out of itself a conduct which is not proportionately faulty is an utterly baseless belief."

But ignoring general principles, and relying solely on facts to guide us, we may pertinently ask—if the above was the experience of conservative Louisiana, what can any good citizen hope from radical Africanized Louisiana, more than that if he lends his influence to accomplish a good purpose, it will certainly be used to increase officials and taxes, and most uncertainly to promote that good which he seeks? If the oldest and best governed Northern States have thus far utterly failed to reform medical education, what can the misgoverned Southern States hope to accomplish, more than to add to innumerable specimens of medical, some more specimens of legislative quackery?

For my own part, I have abandoned all hope of any extensive and effectual reform in national medical education until public opinion becomes sufficiently enlightened in regard to the benefits to be derived, and the evils to be suppressed thereby as to insist upon the enactment, and actively aid in the execution of any necessary laws.

It is, then, in my judgment, certain that two out of the only three possible remedies to secure medical reform have failed, and will always fail to prove successful, in consequence of their dependence on the third and last remedy, public opinion. From this results the inoperative laws, and the inaction of the colleges, and medical education in the United States can only be improved *pari passu* with improvement in public opinion.

III—IMPROVEMENT OF PUBLIC OPINION, AS THE ONLY REMEDY FOR DEFECTIVE MEDICAL EDUCATION, AS ALSO FOR THE GREATER PUBLIC EVIL DEFECTIVE HYGIENE.*

No kind of popular ignorance causes so much avoidable suf-

* The preceding portion of this address was delivered to the class; the succeeding portion to the graduates and a public audience on Commencement Day, March 20th, 1874.

fering as ignorance of the laws of nature, life, and health. No knowledge can surpass in importance that knowledge which teaches how best to preserve one's own body, for health is the parent of happiness and success, and a very near relative of practical morality. To the ignorance which prevails on this subject, this country owes not only its quacks and ill-educated physicians, but also a vast amount of preventable sickness and death; and since this evil of incompetent physicians, and this greater evil of defective hygiene are both due to the same cause, they require the same remedy. As the public is the culprit, it is unavoidably the victim; for the transgressor against nature's laws, though culpable by ignorance, cannot escape their penalties. And if an innocent, unconscious victim is to be rescued, it can only be by teaching him his negligence, its punishment and the means to avoid it.

What proofs are there of this popular ignorance, and of its evils; and what hope for the future can be derived from the past?

In estimating human progress, time should be marked by generations. It, then, is but a little while since public opinion was characterized by a general belief—in alchemy, astrology, ordeals, and ghosts—that horseshoes and old broomsticks had spiritual powers—that mystic incantations and charmed potions could insure good or ill fortune—that the waters of holy wells could by their sanctity rescue the sick from death—that a divinity did “hedge a king,” and, therefore, that a royal touch could cure “the king's evil”—that drugs were so mysterious that even the idiotic seventh son of a seventh son could best administer them—and that diseases were due to supernatural causes, even to Divine vengeance for sin.

Scarcely three generations have elapsed since it was deemed almost blasphemous to doubt—that a harmless fellow creature could be transformed into an accursed witch—that a pitiable brother afflicted with disease of the brain was possessed by a devil—for these beliefs were taught, as matters of religion, by Catholics and Protestants alike, who seemed (says an historian) to vie with each other, “to merit Heaven, by making earth a Hell.”

Civilization now shudders at these monstrous and cruel beliefs of our ancestors; and to find their prototypes, we must turn to such barbarism, as here in our midst, prostrates its trembling

form before the Voudou of Africa. Our emancipation from such ignorant superstitions is due to Science. Not to that kind of science, which is popularly believed, and has been humorously declared to consist—in knowing everything which nobody knows, and nothing which every one does know—but to that true science, which is synonymous with educated common sense, educated especially in a knowledge of nature's laws. To this knowledge, disclosing gradually the secrets of nature, and their superstitious misinterpretations, do we owe our progress. For human reason, whether savage or pseudo-civilized, whenever baffled in explaining any fact by natural causes, has ever sought, and does still seek refuge in the supernatural; so that the extent to which the mind has freed itself from this badge of barbarism is a measure of its culture.

But, though science, with daily augmenting proofs, teaches indisputably that nature's unchangeable laws permit only apparent and never real exceptions, it is none the less true that civilized nations do still continue to cling to superstitious exceptions, which, if not as cruel, are as groundless as those which the past has buried in dishonored graves. The public opinion of this generation evinces plainly its ancestral taint, and constantly presents not only traces of absurd beliefs, now generally renounced, but also proofs that that mode of thought which fostered such beliefs has been by no means eradicated. So that, the future will find abundant illustrations of the hereditary superstition and ignorance of this generation; and will cite them to prove, that our public opinion is the legitimate offspring of that which condemned eccentric minds to the witches' stake, and immured diseased brains in loathsome dungeons for criminals. Some of these superstitions, some of these proofs of the popular ignorance of the simplest of nature's laws, deserve our present consideration.

Spiritualism adds to its army of devout believers a vast host of hesitating disbelievers. Homœopathy enfolds in its saccharine embrace thousands to whom it teaches the belief that *force* is increased by the *diminution* of matter, and therefore that force may be generated supernaturally independent of matter. What wonder, then, that the infinitesimal science and spiritualism should prove such congenial brothers? The Welsh Fasting Girl has recently demonstrated how ludicrously, yet murderously ignorant the (so-called) most highly educated may be of the elementary

laws of life; for they contended, even to her death, that the fire of life could burn without the fuel of food, and therefore that the living machine could discharge its functions by some supernatural power. A majority regard the final evolution of man from the *highest organic living matter* as ridiculous,* and as much more incredible than his primary formation out of the *lowest inorganic dead matter*, "the dust of the ground." If some optical trick or deluded sensation puzzles reason, lo! the ghost of a man, yes, even the ghost of his old clothes; and if the vagabond imagination, wandering in riotous dreams, stumbles into a coincidence, behold! a spiritual warning. The traveller still lingers over "unlucky" Friday; and some, more remarkable for bigotry than sense, are wont to appall tremulous little sinners, by absurdly teaching that the inflexible laws of nature are prone to swerve aside, in order to inflict exceptional physical perils on the Sunday's pleasure seeker. To be one of thirteen at table inspires unpleasant dread; but to be one of the trebly fatal thirty-nine arouses no misgiving that one will be dead, as *is* extremely probable, before a year has passed. The public is fortunate, that though professing to believe that "murder will out," it does not relax its efforts to improve its police. "Old Probabilities" remains about as incomprehensible a personage as his Æolian predecessor, and the fables of the god of the winds are even better comprehended than the laws which control the official prognostics of the daily weather.

Idiotic seventh sons have lost popular favor, but many still act on the belief that feeble minded men may be strong minded doctors; and that a physician may secure better knowledge with his legs under the social board, than with his head over the sickbeds of a hospital. Two hundred years were expended in teaching the public to protect health and life from the terrible scourge, Scurvy; and notwithstanding seventy-six years' knowledge of Vaccination, Small Pox is still barbarously permitted to stamp its odious mark on, and to hurry to the grave thousands annually. Proposals to so dispose of the dead as to inflict no injury on the living have been greeted with howls of popular indignation. Few are able to appreciate the important distinction between disease cured by drugs, and health restored by nature's healing force; and although doctors have long shouted from the house-tops "drugs do little to cure, but hygiene can do much to

* A recent and able religious editorial refers to Mr. Darwin as a "made-up naturalist." No better illustration of superstitious prejudice is needed.

prevent;" yet the public persists in preferring a prescription to common sense, and fully justifies the wit's definition of a physician—"an unfortunate gentleman, expected every day to perform a miracle, to reconcile health with intemperance." It still cherishes the enervating beliefs, that diseases must be endured as unavoidable visitations, and that prayers may bend aside inexorable laws and restore the sick.

Passing from the general public to the so-called educated few, and what knowledge of nature's laws is here found?—so little, that the physician can seldom venture to avow to even his most intelligent clients ignorance, though it be unavoidable, of their maladies; and is often forced either to keep silent, or to pander to their nonsensical prejudices—so little, that he becomes accustomed to hearing the most learned and distinguished non-professional men display, as to the laws of health and life, a child-like ignorance, often skeptical as to well established facts, and credulous as to impossibilities—so little, that he is habituated to finding in the parlors of the élites, as on the public highways, instructing specimens of those, who by some occult process (surely supernatural?) have become self-confident proficient in that knowledge, to which he has given, with apparently less success, the devotion of a laborious life. Now, if such ignorance floats on the top, at what depth must public opinion be drowned, and in what evils must humanity be immersed?

Is any cause left to wonder, that medical skill should be often left unoccupied, whilst ignorant assurance secures profitable employment?—that starving doctors, shrewd enough to discover that credulity and suspicion are the children of ignorance, should find that by studying how best to feed the one and appease the other, less time is lost and more money is gained, than by studying medicine?—that medical students should be content to satisfy the public demand, and be anxious to accomplish this at the smallest sacrifice of time and money?—that colleges should abound to supply these students with the little they need, which little is a correct reflection of that which their patron, the public, demands, and therefore is all it deserves?—that when an intelligent few have succeeded in enacting wise laws to protect the public, it should refuse to enforce these laws?—and finally that honest men, fully alive to these evils, should despair of their correction by any means, except such as would rectify their cause, public opinion?

But why wonder at these lesser evils, when we witness the general recklessness as to all matters of health? That a Christian people should be enabled, when unavoidable death desolates its heart, to exclaim with resignation, "the Lord's will be done," is well; but why should a people, loving life and happiness, submit resignedly to such a vast amount of sickness and mortality, which are no more by heaven's will than that a hand should be thrust in the flame in order to be maimed? The one, as the other, results from the violation of physical laws, which have no clauses modifying their penalties, in favor of even their unconscious violators. Is it not reasonable to hope, that if these facts were appreciated, a large proportion of sickness and death would be remedied by adding to prayers the application of the proverb of a pious nation, "the Lord helps him who helps himself?"

Until the elementary principles of the scientific knowledge already acquired become more generalized, the public will continue to endure—the support of one in every seventy on the profits of sickness and death—the annual loss of an amount of productive labor* greater than financial panics ever cause—the addition to its miseries and burdens of numerous human runts, born loaded with the curse of a bad organization—the daily slaughter of innumerable infants by their ignorant parents—and the annual affliction of avoidable sickness and death† far greater in extent than dreaded war or epidemic pestilence ever inflict. Until the laws of health and life constitute a part of the knowledge of this people, there will be but little reduction in the number of its hospitals, asylums and prisons, of its incompetent physicians and redundant drug-stores, and of its sick-beds and grave-yards. These are the time honored remedies bequeathed by our ignorant ancestors; why expect similar ignorance to diminish or improve them?

Universal suffrage permits no hope that wise public conduct can ever emanate from an ignorant community; and therefore reasonable anticipations of reform must be based on enlightenment of the people. To accomplish this the public must be taught that there is no knowledge which would eradicate greater ills, and ensure greater prosperity, than a knowledge of nature's laws—

* Certainly not less, and probably much more, than one-fiftieth of the total annual labor.

† From one-third to one-half of the total annual mortality, and a larger proportion of the total sickness.

that of these none are more important than the laws of life, and of these none are so important as the laws of health. The nation which may excel others in this knowledge—recognizing that healthy morals depend on healthy minds, and these on healthy bodies, that there is such a thing as physical morality, and that violation of the laws of health are sins—is surely destined to surpass all others in health, happiness and morality. Agassiz, the great Christian savant, has bequeathed, among many noble truths, none truer than that “Philosophers and theologians have yet to learn that a physical fact is as *sacred* as a moral principle.” For certainly, the laws of nature are the laws of the Omnipotent, and if a knowledge of His Word deserves solemn consideration, what estimate should be placed on a knowledge of His works?

A future draws near which will find it difficult to believe, that Christians should ever have deemed ignorance of these works far less discreditable than ignorance of the mythical deeds of heathen gods—that our youths should be taught all about the nectar and ambrosia which such gods fed on, and nothing of that aerial ocean in which they live, and which they do at the same time feed upon and poison—taught to memorize the useless names, and to covet the pomp and power of kings and warriors, rather than to understand the daily phenomena before their eyes, and the causes of even those, as familiar as the health-giving wind and rain. If all this does not tend to exalt the thoughts and deeds of man above the thoughts and deeds of the Creator, I fail to comprehend its tendency; and I feel confident, that an approaching generation must decide that such an education could have been due only to the ignorance or prejudice of its teachers, and will declare that a savage armed with a bow is nearer civilization than when decorated with paint and feathers. The two chief causes of this prejudice and ignorance are manifest—too much reverence for the past, and too little appreciation of the present.

Emerging from feudal barbarism, our ancestors promoted their onward march by arming themselves with the superior culture of Greece and Rome. Their progress had its birth in, and for many generations derived its chief growth from this knowledge. And now, though modern languages have long since robbed the Greek and Latin of all their treasures, prejudice, transmitted from the Middle Ages, persists in misnaming the rusty contents of these pillaged coffers, the erudition of wisdom! Our ancestors wisely

honored this learning, for it was the most valuable they possessed, but human reason was not to be confined to the narrow limits of any dead past, however famous; and it has blazed a highway to a nobler development than Roman or Athenian ever hoped for.

Yet, we still have among us many of the (so-called) educated, who fail to appreciate, that even during their lives, Science has sprung from feeble and vacillating youth to vigorous and resolute manhood.* It has riveted our race into better union of hearts and brains by bonds of iron wires, bars, and boilers—has lavishly supplied those necessities of the body indispensable to higher mental culture—has taught us to convert to our pleasure and profit those physical forces which our forefathers trembled before as powers of the devil—and has not only rescued thousands of the victims of superstition from the dungeon, scaffold, and stake; but also pleadingly awaits to rescue myriads of the victims of ignorance from sickness, premature death, and other self-inflicted ills. It has substituted for the discouraging belief that man was the helpless victim of incomprehensible and capricious physical forces, the knowledge that he is subject to laws which are comprehensible and never-varying; injurious when disregarded, beneficial when rightly used. Inflexible and immutable, they leave the violator no hope of escape from their vengeance; they crush the unconscious as remorselessly as the conscious transgressor; they are as deaf to the prayers of the penitent saint as to the curses of the impenitent sinner; and as they do not postpone their hell of punishment for a spiritual future, so their heaven of reward blesses this life, and follows in the very train of obedience. To avoid their ills, and enjoy their blessings, it is indispensable that a knowledge of these laws should be popularized: and since popular education is one of the youngest of civilization's children, the noble birth of this century, there is good reason to hope, that time will teach how its power should be directed to effect the greatest good, and that the most important of all sciences to teach the young is Hygiene, the most important habits, those which promote health.

Objections are made to the popularization of this knowledge. Some inconsiderately urge that even its elementary principles

* Disraeli, the distinguished chief of the government of Great Britain, in a recent speech, testifies to his appreciation of the spirit of his age, thus: "Science, within the last fifty years, has had much more effect in moulding the world than any political causes, and has changed the position and prospects of mankind more than all the conquests, and all the codes, and all the legislators that ever lived."

are too difficult for schools. This will be found true—only in those frequent cases, where the teacher is incompetent, rather than the scholars stupid.

Others urge that all this laudation is the enthusiastic declamation of specialists, and that other kinds of education are more important; such, for instance, as the "arma virumque cano," the domestic life of Venus, the list of Henry the 8th's six wives, or the boundaries of Borrioboola-Gha. It is deplorable that these objections often come from those who are deservedly most influential, for gray hairs associated with eminent learning deserve our honor. But a critic cannot fail to observe, that their learning is after all only the product of a half-education which altogether neglected the better part of knowledge; for they were educated under that mediæval system which ignored science, of which they remain so ill-informed, that their opinion as to its importance deserves no consideration whatever. Their failure to appreciate science is in no wise more astonishing than—that those uncultivated socially should denounce the amenities of good society, as foppish mannerism; that those uncultivated in music should prefer "Captain Jinks" to the best opera; and that those uncultivated in literature should spend more time over the *New York Ledger* than with Shakespeare. The mischievous prejudice which underrates the importance of a knowledge of nature's laws deserves to be equally disregarded; for it is unanimously condemned by the only competent judges, namely, those who, in general and classical culture, are the *equals* of the advocates of this prejudice, and who at the same time are greatly their superiors in knowledge of science.

Other objections are, that education does not increase happiness or morality, and that those well informed of nature's laws do, nevertheless, recklessly violate them. The individual illustrations of the truth in these assertions are so frequent and impressive, that the observer neglects to associate with the striking facts, as to a few, the whole truth as to the many; and is especially prone to forget, that an estimate of any influence on human progress necessitates full consideration of facts which have escaped his personal observation, those relating to preceding generations. The fact that education has apparently not increased the health, happiness and morality of some, does not by any means prove the whole truth as to the many. There is no potent remedy, however beneficial to the many, that may not

equally well be proved ineffectual with, even injurious to some. Does any one believe, that a thousand men of education enjoy a smaller sum total of health, happiness and morality, than an equal number of the uneducated? Are they not more capable as citizens? Do they not better know their rights, and how to maintain them, and are they not far more efficient in the struggle to promote that common weal, which conduces so largely to morality? If education fails to increase happiness and morality, then how explain very many such facts as, that the uneducated colored population of this city suffers nearly twelve times more by Small Pox than an equal number of the comparatively educated white population? Manifestly, the one by its knowledge avails itself of that protection which the other ignorantly rejects. Now, none will claim that teaching nature's laws as to Vaccination is teaching morality; yet no one, unless ignorant of the frightful history of Small Pox, can deny that teaching Vaccination has augmented the health, happiness, and morality of mankind.

Whilst such facts indicate that education has already benefited the public, three considerations will be briefly presented to show why it has not accomplished, and how it can be made to accomplish much more.

One cause is, that inherent "weakness of the flesh" which yields to a present gratification, oblivious both to the penalty of self-indulgence and to the reward of self-restraint. Is such weakness so totally irremediable, that it would not be benefited by that knowledge which enforces a deeper conviction of the greater gravity and certainty of the penalty, as also of the greater magnitude and certainty of the reward?

Another cause, allied to this, is that "second nature"—habit—which so often becomes more powerful than the convictions of knowledge, or the strength of will, can control. But it should not be forgotten, that bad habits are often directly due to bodily suffering, to disease resulting from ignorant disregard of the laws of health! None can deny that self-punishing habits are usually contracted before a conviction of their evils has been acquired; and none can doubt that an earlier knowledge of these evils would have certainly tended to ameliorate them. It should also be remembered that, even though the knowledge be acquired too late to appreciably improve the habits of the individual, it would be used to favorably influence others, above all those most

loved, the generation to follow; and if a proper estimate is to be made of the total benefits conferred, then there must be added to the good bestowed on this generation, the much larger amount transmitted to succeeding ones.

A third cause why education has not yielded, but can be made to yield greater happiness and morality, is, that it has not been wisely directed to these special ends. Whilst it has largely promoted self-maintenance, it has almost ignored self-protection, ill-appreciating the importance of, as also the means to better secure, the blessings of health. Morality and happiness depend on many mental faculties, and on many conditions. These faculties, however high, are functions of the brain, requiring for their improvement, as do other cerebral functions, not only the proper instruction, but also the habitual use and healthfulness of the nerve-tissue. Of the many conditions none are more important than freedom from physical suffering. To ameliorate the causes of ill health is to diminish one of the greatest sources of pain and temptation, and therefore of unhappiness and sin.

Whilst the influence of health on *happiness* is generally admitted, its influence on morality has been most inadequately appreciated; so that, it was customary for churchmen—before the dependence of insanity on brain disease was established—to adorn their lessons with illustrations of what they denounced as “the innate depravity” of the insane. Similar beliefs still weaken the voice and hand of charity; for there is not yet a due appreciation of the subordination of the highest moral faculties to bodily conditions, and of the large proportion of sin which is due to disease and inherited physical defects. The proofs are readily found in such familiar phenomena, as the illusory hope and confidence of consumption; the timidity and apprehension of heart disease; the fretfulness and melancholy of alimentary disorders; the sullen moroseness, at times, of a naturally amiable and cheerful Epileptic; the moral perversions, which are often the earliest symptoms of cerebral disease; the overthrow of reason and conscience by the instinctive passions, when maddened by such causes as insufficient food; and the total demoralization produced by the habitual abuse of alcohol, and other blood-adulterators. In fine, statistical facts prove conclusively, that the conditions which attract disease repel religion, and that the community which is the most sickly is the least moral. Hence, no study is

worthier the attention of the clergyman, the moralist, and the statesman, than that of the laws of health.

Although convinced that health and prosperity could be more rapidly promoted by properly directing education, than by any other means, it must not be supposed that other means, which have done much and are destined to do more good, have been forgotten. Every discovery and invention which furnishes more certain and easily applied remedies for disease; every improvement in the arts, or other cause which tends to cheapen the means of healthful living, promote health and prosperity. To such causes is largely due our relief from ancestral scourges, the horrors of which are unknown to most, and are inadequately realized even by the best informed.

The Black Death, the Sweating Sickness, the Plague, Leprosy, Scurvy, Jail Fever, Variola, Lead-Colic and Palsy, are some of the monsters, "scotched if not killed," which devoured a greater number of our forefathers than gunpowder ever destroyed. If we still endure such fearful havoc by Fevers, Scrofula, Consumption, Cholera, Parasitic and other avoidable diseases, which hasten to the dreaded tomb not less than one-third of all who die (even in healthy countries) it is not because science fails to teach the means to prevent them, but because an ignorant—I had almost said *criminal*—public fails to protect itself by using these means. How long must humanity wait before that ignorance which characterizes the public, and therefore its laws and the executors of its laws, shall be justly denounced as criminal? Will an apathetic public, which ensures remuneration for a horse disabled by official negligence, continue forever to stupidly fancy that its *whole* duty has been discharged, when it has commended to the consolations of another world those whose families have been desolated by still grosser public negligence?

Five hundred lives sacrificed by New Orleans* in 1873 to Small Pox alone! What a blow to its material prosperity! What a proof of semi-civilization! Why speak with intolerance of the barbarisms of our own race in the past, or of other races in the present?

If the views presented be well founded, then it must be concluded—

* New Orleans is no more culpable in this regard than the other cities of the United States.

1st. That defective medical education in the United States will never be improved to such extent as to constitute a national benefit, until public opinion has become sufficiently enlightened to demand and enforce this improvement; and if, anticipating this, a hopeful few should secure the enactment of reformatory laws, these would remain inoperative; for legal remedies, like medical prescriptions, require for their success, not only that they shall be taken, but also that the receiving body shall be sufficiently healthy to respond thereto. 2d. That defective medical education is a great but not the greatest evil which concerns the public health; and since the causes of both are the same, therefore the remedies for both must be the same. 3d. That in no one way can the future of this people be freed from greater evils, and be rewarded with greater blessings, than by its education in the laws of health, life, and nature. By the gradual popularization of such knowledge, public opinion would become more and more able to estimate and secure the best measures and men to guard that health, and promote that physical welfare, which are indispensable requisites for moral improvement.

The good to be thus conferred cannot be over estimated. Its accomplishment must depend in greater part on the medical profession, and this day imposes on each of you the new-born responsibility of using your knowledge, not only to cure but also to prevent disease—not only to promote the health of those units, your patients, but also the welfare of the mass, your community—and not only to destroy the ignorant prejudices so prevalent, but also to build up over these prejudices rational ideas, founded on well known facts and laws.

Remember, that though the physician's toil be obscure, there is no knowledge so little understood by and so hopeful of benefits to the human race, as that knowledge which has its greatest culture and its most eminent representatives in our profession. For Science—notwithstanding any doubts it may entertain as to what is truth—fights, not less than Religion, against the devil of falsehood and error, and in behalf of the God of truth and wisdom; and the little army which aids its victorious march is surpassed by none in self-sacrificing devotion to, and unfaltering reverence for the *only* device on its banner—*Truth for the good of all!*

