

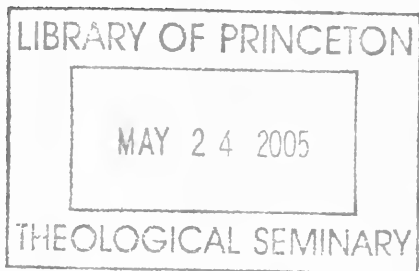
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AN

INTRODUCTORY ADDRESS

DELIVERED TO THE STUDENTS OF

WASHINGTON COLLEGE,

ON TUESDAY EVENING, MAY 14, 1850,

BY JAMES KING, M. D.

LECTURER ON COMPARATIVE ANATOMY, PHYSIOLOGY & HYGIENE.

WASHINGTON, PA.

PRINTED AT THE COMMONWEALTH OFFICE.
1850.

CORRESPONDENCE.

WASHINGTON, PA., }
May 17, 1850. }

Dr. JAMES KING,—

DEAR SIR: The Lecture which you delivered on the 11th inst., as Professor of **PHYSIOLOGY** and **HYGIENE**, in Washington College, should in our opinion, be laid before the public. To those who feel an interest in whatever pertains to the welfare of the Institution, the publication of the Address would afford peculiar gratification, not only on account of the instruction and entertainment which it will give, but because it may be regarded as a fair index to those Lectures which are to follow, on the important branches connected with your Professorship. Would it be presuming too much upon your kindness, or imposing too great a tax upon your time, to ask of you a copy for publication?

Respectfully, yours,

R. F. COOPER,
TH. H. BAIRD, Jr.,
MARCUS W. ACHESON,
P. H. DRENNEN,
R. H. KOONTZ,

W. S. MOORE,
NORTON M'GIFFIN,
JAMES H. HOPKINS,
A. M. GOW,
ALEX. MURDOCH.

WASHINGTON, May 17, 1850.

GENTLEMEN:

In compliance with your very complimentary request, I herewith furnish you a copy of my Introductory Lecture, delivered before the Students of Washington College. If, as you imagine, its publication will tend to promote the interests of the Institution, I cannot hesitate to place the manuscript at your disposal.

I am, very respectfully, your ob't serv't,

JAS. KING.

To R. F. COOPER, W. S. MOORE, TH. H. BAIRD, Esqrs. and others.

ADDRESS.

GENTLEMEN :

For the purpose of adding to the advantages and the proper accomplishments of every scholar educated in this Institution, the Board of Trustees have provided, by the establishment of two Professorships, for brief courses of lectures, upon certain branches of Law and Medicine. The intention in creating these chairs, was not, that the instructions imparted should be extensive enough to make you either lawyers or physicians; but merely, that so much general information, on these subjects, should be communicated, as ought to be possessed by every gentleman enjoying the benefits of a liberal and polite education. The design was, that, while acquainting yourselves with the languages, customs, and manners of the Ancients; while traversing an extensive range of the difficult and abstruse studies of the Mathematics; while investigating the laws of the Material Universe, as developed in your text books on Astronomy, Geology and the kindred sciences, you might not remain wholly ignorant of the laws of your own physical being, or the laws of that society which affords you protection, and claims, in return, your allegiance.

The Medical Chair, if I may dignify it by such a title, has been assigned to me.

Before commencing a second time, my series of Lectures, I propose, on this occasion, to invite your attention to some remarks introductory to the Course. I propose to demonstrate the utility to all classes of persons, but more especially to educated men, of a general acquaintance with the rules of preserving health, and as essential to this—with the principles of Physiology and Comparative Anatomy. This done, a plan will be briefly sketched, exhibiting the prominent points of these matters of knowledge, which, it shall be my best endeavor, but by no means, my presumptuous engagement, to teach.

When we consider that health is of inestimable value, and that its preservation depends upon a mode of life in conformity to the established laws of the human organism, does it not appear strange that a total ignorance of these laws, should so extensively prevail? Is it not singular, that men distinguished for

their varied attainments and profound researches, in matters of miscellaneous knowledge, should in their acquisitions, so commonly pass by the complex structure of the human body with its multifarious actions, as a subject affording nothing to attract the inquiries or gratify the tastes of the curious mind? Is it not surprising that a considerable knowledge of Theology, of Law, and of Politics, should be deemed requisite to the formation of a character for general intelligence, whilst an acquaintance with Anatomy, Physiology and Hygiene, is considered as fit only for the Doctors! But after all, these things are not more wonderful, than is that gross and mischievous presumption which the prevailing ignorance on these medical subjects, begets: for it must be a presumption mischievous indeed, however differently intended, which leads men to the administration of active and dangerous drugs, the composition and effects of which, are as unknown to them, as the mechanism and functions of the living system upon which they operate. Yet, when did any of these things excite wonder? How many are astonished that our good grand-mothers, without the knowledge to distinguish between an artery and a bone, or at least, between the offices of a lymphatic and a gland, should nevertheless essay, with an assurance becoming, perhaps, a Madame Lachapelle, to discharge the responsible duties of a practitioner of Physic? Who is surprised that many eminent gentlemen of the Bar, although required by times to investigate the most intricate and subtle questions of Medical Jurisprudence, upon the right understanding of which, may depend the liberty or life of the citizen, are, notwithstanding, so little versed in the normal and abnormal conditions of the human organization, as to be incapacitated for a thorough and searching examination of a Physician, when testifying before a Jury? Again, how small is the number of those who consider it out of place, however limited may be their knowledge of the subject, to obtrude their views in regard to the complaints of friends and neighbors, and even to prescribe the means of cure—and this remark applies, in many cases, to the conduct of men of intelligence as well as to the multitude! Even Doctors of Divinity, wanting proper information in matters of this kind, and actuated by a mistaken philanthropy, have boasted of the virtues of certain “Elixirs and Catholicons,” and extolled them as superior to prescriptions founded upon a careful survey of symptoms and a scientific diagnosis.

This misguided interference with the business of Physicians, would be much less frequent, were a knowledge of the general

principles of Physiology and Hygiene sufficiently diffused among the various classes of community. If men could see in the structure of the human body, how complicated is the arrangement of the organs and how various are the functions which they severally perform—if they could look even superficially at the nice adjustments, mutual dependencies, and unnumbered sympathies of which the body is made up—if they could appreciate the manifold influences exerted upon it by the various agents employed as remedies, they would be far less disposed to venture their suggestions, for the cure of its complicated maladies. They would perceive that the rightful application of curative means, can alone be expected of those who make it the study and business of their lives. For any but the Physician, the faithful Priest of Nature, to take upon himself the ministrations pertaining to the temple of the spirit, they would regard as no less than the crime of sacrilege.

It is a practice with many men, both educated and illiterate, to provide for their private use a variety of medicines, some of which are swallowed at random for every morbid sensation felt, whether real or imaginary! Such medicines too, are usually selected from the class of secret remedies, as if their virtues were more likely to be enjoyed, when mysteriously concealed under the cover of a patent. This hap-hazard and suicidal practice is too often pursued in the forming stage of serious disease—that stage in which a judicious and well-timed remedy is most required and most likely to arrest the progress of the malady. The true corrective of this pernicious custom, must be sought in the diffusion of sound information upon the subjects in which I propose to instruct you. Those who understand the healthy actions of their bodily organs, can form some idea, when morbid processes are set up, of the parts involved and of the character of the attack. They are thereby enabled to judge with some degree of correctness, whether the case should be left to Nature, with abstinence and rest, or whether there exists a necessity for seeking medical advice. And should they err in judgment, the mistake will be committed, most likely, on the safer side. At least, the evil of self-drugging will be avoided—in the one case, because seen to be unnecessary—in the other, because of the danger, likely to arise, from a misapprehension of the proper remedy.

The same knowledge which will enable the indisposed to judge of their need of medical advice, will capacitate them, to a great extent, for judging of the qualifications of the adviser. This is a matter of so much importance, that I feel constrained to speak

of it particularly, and more for the purpose of protecting you from the evils of quackery, than of venturing on any defence of the Profession of Medicine.

In this day, characterized by the number and variety of shrewd and daring pretenders in Physic, it is necessary that men should have some criterion of a Physician's attainments, if they would be certain, that, when taken sick, they may not become the victims of the most gross and shameless empiricism. There is so much plausibility in the arts of the empirick—in his knowing look, his winning manner and graceful nod of recognition; his gentle whisper in the ear, of sympathy and affection; his friendly shake of the hand and kind familiar "how-d'ye-do," that when associated with unscrupulous boasting of marvellous cures, it is not strange if, by them, the credulous and unsuspecting are readily led away. As long as we remain incapable of estimating a Medical man's acquirements and, at the same time, easily captivated by wild and extravagant pretensions, so long will there be those, who will take advantage of our weakness and practice upon us their impositions.

How, then, without some knowledge of the laws of health and disease, shall we discriminate between the man of skill and the Quack? How shall we distinguish between the true and the false system? Shall we decide according to the results furnished us in practice? The Hydropathist will tell you of bed-ridden patients upon whom were wrought cures so nearly miraculous, that after a few applications of the "dripping sheet," wet friction," "pail douche," "sitz bath" or "wash down," were enabled, if not to "take up their beds," at least to "walk." The Chrono-Thermalist will tell of his alarming cases of Apoplexy, or of violent inflammations, successfully treated, without resort to the lancet, the cups, or the leech! The Homœopathist will refer to "pains so severe as to cause cries and groans, and yet totally relieved in twenty minutes by a portion of dulcamara, of the sixth attenuation"—that is, in the dose of the billionth of a grain! Allopathy can boast of nothing more wonderful than this! Perhaps, of nothing half so wonderful! If then, we are to judge by the apparent or recorded results of practice; if certain sequences are to be regarded in the light of consequences; or, in the language of learned doctors, if we are to take the *post hoc* for the *propter hoc*, we shall have insuperable difficulty, in distinguishing between the true system and the false. But if we judge by the reasonableness of the practice, as well as by the results of it—that is, if after learning what are the living actions

of the bodily organs; what is the nature of their departures from the healthy standard, and what is the *modus operandi* of medicines in correcting such departures, or in bringing back the actions to the healthy state, we can, by thus looking at the working of the practice, judge if there is between it and the apparent results, the relation of cause and effect.

In contemplating after this manner, the theory or *ratio Medendi* we may see that such simplifications in medicine, as are attempted in the systems of Homœopathy and Hydropathy are utterly impracticable. We may see that the phenomena of health, and also of disease, are like the physiognomies of men, infinite in kind and manner of expression. We may see every variety of morbid action that can arise from the combined operation of vital, chemical, and mechanical laws. We may see diseases of *Mechanism*, consisting in dilatations of organs, in contractions, ruptures, lacerations, contortions, compressions and displacements. We may see diseases of *Structures* consisting in diminished, increased or perverted nutritions, in the indurations of parts and softenings, in the transformations of textures, morbid deposits and malignant growths. We may see morbid changes in the different constituents of the blood; in the excess or deficiency as to the proportions of its discs, its fibrin, or its serum. We may see diseases of *function*, such as the perversion of irritability, tonicity, sensibility, of voluntary and involuntary motion, and such as excess, deficiency, or perversion of secretions too many to be adverted to. For the correction of any and all of these, varied as they are, the Homœopathist doses with infinitesimals and the Hydropathist applies water! This application of a single rule or expedient in restoring the harmonious play of all the organs of the body, cannot appear less preposterous than an attempt to tune a harp, by regulating the tension of a single string!

But here, I would not be misunderstood. I would not deny that any benefit may be derived from these systems, or that even remarkable cures have not been effected by them. I would not say that no good thing can come out of Nazareth! On the contrary, I am of the opinion, after due investigation, that many useful hints may be received from the results of such modes of practice; and that therefore, it becomes every Physician, at least, carefully to examine all that may perchance, come in his way, whether Hydropathy, Homœopathy, Chrono-Thermalism or any other *ism*!

It is true that these systems are founded on mere fancies, or at best, on but partial views of the laws of health and disease.

But the Homœopathic idea of *Similia Similibus*, is not more fanciful, than the *Anima Medica* of Stahl which constituted the foundation of a system that was long prevalent in Germany. Nor is the Hydropathic practice, which contents itself with applying water, or the Chrono-thermal, that attends only to the bodily temperature, founded on a view of the animal economy a whit more partial than the old doctrine of Brown, which regarded only the *sthenic* and *asthenic* conditions of the system, or that of Broussais, once so popular in France, that reduced all fevers to an inflammation of the intestinal mucus membrane. If, therefore, the exploded systems of Stahl, Brown, and Broussais, afforded valuable suggestions to the cultivators of Medicine in their day, it is surely not unbecoming the dignity of the profession now, to extract whatever useful lessons they may, from the modern systems of Dixon, of Hahnemann, and Priessnitz. This I think, may be safely said without endorsing any of these systems as a whole. This I could not do. I could suggest no such folly as the abandonment of the well established principles of medicine—those principles that have survived every change of medical fashion; that have been repeatedly verified by the facts accumulated upon the records of the Profession, during a period, extending through ages past, of more than two thousand years.

If these remarks are not strictly relevant to the point before us—that of showing the necessity of Physiological knowledge in determining the true system of practice and the skilful practitioner—they yet bear closely upon it. They are, at least, intended to aid you in forming upon this subject, a safe opinion. In the same connexion, I would add, that by a contemplation of the responsibilities and duties of the Physician you may be assisted in estimating his fitness for his calling. To illustrate the idea in a single particular: Into his hands is committed, in one sense, the guardianship of the health and lives of his fellow-citizens. Not unfrequently, the services to society of a valuable member, or the preservation of an unbroken chain binding the family circle, may depend upon the honest discharge of his solemn duty and his most watchful care. May we not judge from the interest he manifests in the welfare of others, especially in the hour of danger, and from his integrity in other things, how far he will be faithful in this—how far, willing to endure any sacrifice of personal comfort necessary, even if required for many nights, to give “neither sleep to his eyes nor slumber to his eyelids,” in order to perform fully his sacred trust. I well remember being placed, when a student, by my preceptor, to watch for the night by the

bed of a patient, upon whom he had performed a most difficult and dangerous operation. The case was critical in the last degree. Late in the evening my preceptor left, having first given ample instructions, as to the treatment to be pursued, and enjoined upon me strictly, to apprize him immediately, on the appearance of the least unfavorable symptom. At the hour of midnight, when not a sound was heard in the city, above the solitary footsteps of the watchman, imagine my surprise, on seeing the door of the sick room opened and the Doctor slowly entering, his countenance beaming with a benignant smile, that inspired hope, confidence, and strength, in him whose life seemed to hang suspended, as by a hair. His appearing at the bed side, was better than a medicine. It seemed as if he felt that to be the case, and, under such circumstances, it was his duty to be there. In such devotion, Gentlemen, to the duties of his calling—a devotion to which, no doubt, this distinguished Physician owes a part of his honorable fame, you may see an important qualification for your medical adviser.

But this devotion to the Profession, is not to be exhibited in attentions to the sick alone. The trust-worthy Physician will manifest it in his laborious and patient cultivation of Medicine as a science; in the preparation of his mind for the difficult and perplexing questions that will be submitted to his consideration.—He will be required to investigate subjects of the most intricate character; to sift the truth from the disjointed facts, imperfect statements, and doctrinal notions, of every theory. Oftentimes, with symptoms of disease before him, the most uncertain and obscure, he must form his diagnosis—decide, while doubts and difficulties of the most distracting kind perplex him; while the life of his patient, the happiness of friends, and his own reputation depend upon his decision. In such a strait what shall he do? What thread shall lead him, like Theseus, from such a labyrinth of dangers? What, but a mind well imbued with the principles of Medicine, and so trained as to be capable of embracing, comprehending, and acting on the most abstruse and complicated subjects—a mind, in which every feeling and faculty are under the control of a sound and discriminating judgment?

You perceive then, how indispensable to the Physician, is study. Pretensions to inspiration in medicine, at this day, are, *ipso facto*, false and unfounded. Whoever makes them, is surely an impostor. It avails nothing, that he is the seventh son of a seventh son, or, that he has any other singular or mysterious circumstance connected with his birth or education! No man has ever achieved

any thing valuable, in the way of developing great medical truths, without toil and patient elaboration. It was thus, that Harvey unraveled the mystery of the circulation of the blood; thus, that Sir Charles Bell and Marshall Hall unfolded the curious organization and complex functions of the nerves; thus, that Jenner demonstrated the prophylactic virtues of the Vaccine Virus; thus that Gordon succeeded in mitigating the terrors of a disease which, before his time, was regarded as the precursor of death to nearly every one attacked; thus, in short, that Hunter, Sydenham, Cooper, Armstrong, Physic, Rush, and an innumerable host of such worthies, were enabled to give to the world the benefits of an enriched medical experience, and to twine around their brows the wreath of imperishable fame.

From all this, the inference is clear. If you would seek advice, as to your health, from him, in whose hands your life shall be the most certainly safe, you will not consult the quack. You will be prudent in applying to him, who has, as thoroughly as possible for him, mastered his science; who, at the same time, imitating the bee in extracting honey from every variety of flowers, culls, from every system, whatever he may find useful in subduing disease, or assuaging pain.

Sometimes emergencies occur, as in cases of accidents or sudden sickness, when timely medical aid is not to be commanded. Under such circumstances, those present may be required to act. It is under such circumstances only, that they should be advised to act. But how shall they act aright? Here, a general knowledge of Physiology and the laws of health, may make all the difference to the sufferer between life and death. A simple case will illustrate the point. On a cold morning in January last, a large family were seated at a breakfast table, in a close, small room. Among the number was an aged lady, in about her 90th year. From her extreme age and enfeebled physical powers, she required all the oxygen of a pure atmosphere, to maintain the spark of life. But so many inspiring the air of the apartment, its oxygen was soon measurably exhausted, and, in consequence of this, the languid circulation of the aged lady, was arrested. She appeared to be dead. Being called in, I could perceive in the slightly livid countenance and other evidences of *apnœa*, that the seat of difficulty was in the organs of respiration, and the attendant circumstances at once suggested the causes, by which their functions were embarrassed and brought to a stand. A stream of fresh air was directed upon her face, and soon, its vivifying influences were discovered in the restored consciousness and return-

ing pulse. How slight a knowledge of the Physiology of the lungs, on the part of the persons present, would have speedily restored the patient, and quieted all agitation and alarm!

Frequent cases arise, where, unquestionably, life is lost from the want of such knowledge.

Persons in the act of drowning, have been rescued from the water in time to be restored, by the immediate adoption of artificial respiration, the application of warmth, and such other means as would suggest themselves to any one present, if acquainted with the function of the lungs. But those who have been submerged in water even a little while, are generally lost, and their fate often, more certainly sealed, by being rolled upon barrels, suspended by the feet, in the vain endeavor of emptying fluid from their lungs, and by such other treatment, as the by-standers in their well meant but unenlightened zeal, are wont to adopt.

Officious persons, without the requisite intelligence to relieve the present sufferings of the sick, frequently make misdirected attempts that only aggravate their diseases, and render them more dangerous. Very recently, in Pittsburgh, a child was severely scalded upon the face and breast, by the upsetting of a tea-pot. My friend, Dr. Hallock, who related to me the case, being called in, found the little sufferer writhing in an agony that sickened the hearts of the spectators. Upon inquiry, he was shocked to learn, that at the suggestion of a kind neighbor, the wound was bathed in corn-meal and whiskey, with the view to kill the fire! It killed the patient!

The advantages of a general knowledge of the human organism and its functions, in preventing the evils of quackery, and in rendering valuable assistance in the emergency of a serious accident, or sudden illness, might be further illustrated by reference to many facts. But, not wishing to trespass too long upon your patience, I proceed to notice another topic of this lecture—the utility of such knowledge, in leading to the employment of means that secure the most healthful development of the body, and fortify it against attacks of disease.

Upon this point, many, no doubt, will deem it superfluous to speak. Who, they will ask, is not aware of the benefits of exercise, of temperate habits, and of a judicious physical training; who, not aware of the dangers of “wet feet,” of exposure, under certain circumstances, to draughts of air, to nights dews, and so on; and what knowledge of bones, and muscles, of nerves, or of other tissues, is required to understand these things?

It is obvious, however, from the common misuse of such means of Hygiene as are of admitted importance, that the laws controlling their operation, are not properly appreciated. All admit the importance of ventilation; but, by referring to a single one of its effects, you will discover that, if the subject were sufficiently understood, far different and better modes of ventilation, than we usually see, would be adopted. Let us inquire into this, a moment.

Many interesting experiments, in relation to the uses of atmospheric air, have been made by Sir Humphrey Davy, Lavoisier, and others, from which Professor Dunglison draws the conclusion, that a man of average chest consumes, in a day, rather more than 25 cubic feet of oxygen; and, as this element constitutes but one-fifth part of the air breathed, he must, in that length of time, (on the supposition that he could live in the air until all its oxygen were exhausted) render 125 cubic feet of air unfit for supporting the respiratory function. An estimate formed by myself, from a series of observations and experiments different from those taken as the data for his calculation, exhibits a far greater consumption of oxygen. I was led to believe, that a man of average chest, and at the middle age, will remove the oxygen of at least one cubic foot of air, in a hundred inspirations; which will occupy about six minutes; so that 12 cubic feet of air, on the supposition alluded to, will be rendered irrespirable in an hour, or 288 cubic feet in a day. But, of course, I here defer to the high authority of Prof. Dunglison, especially as, from the estimate which he has furnished, the importance of ventilation may be made appear to you in a light, perhaps, never before observed.

Taking it for granted, then, that each person present will consume 25 cubic feet of oxygen, in 24 hours, you may readily calculate how long you could live in this Hall, if entirely cut off from the means of ventilation. The dimensions of the Hall being 70 by 45 feet, and 15 high, it must contain about 47,000 cubic feet of atmospheric air. On the occasions of your contests and public commencements, there are usually assembled here, it may be safely assumed, one thousand persons, and this excludes a large quantity of air the Hall would otherwise contain. If, therefore, each individual, in the room deprived, as supposed, of ventilation, should continue to vitiate the air at the rate estimated, it follows that in the course of nine hours, if it could be breathed so long, it would not contain a particle of oxygen. But the air becomes irrespirable long before all the oxygen is con-

sumed. According to the experiments of Allen and Pepys, it becomes so, as soon as 10 per cent. of Carbonic acid is evolved; and as this does not take place, as has been ascertained, till more than half of the oxygen has been removed, it follows again, that before the exercises of a contest could be concluded, there would not be one of the audience alive in the room. This explains the reason of the great oppression and sickness frequently complained of, on these occasions, when the room is densely crowded; and I have thus referred to it, that the authorities may see the propriety of improving its ventilation.

Many instances are recorded of the destruction of the lives of persons, confined in apartments thus imperfectly ventilated. The most remarkable case mentioned in the books, is that of the soldiers incarcerated in the Calcutta Prison. This was a room 18 feet square, and the only entrance for fresh air to it, was through two small, grated windows situated on the same side. A few minutes after the confinement of the prisoners, they became much affected by the deterioration of the atmosphere. Soon great difficulty of breathing came on; then delirium; next stupor; and finally, of the 146 persons imprisoned, in ten hours, 123 lay dead upon the floor.

In France and England, the atmosphere of Lecture rooms, of Theatres, and of wards of Hospitals has been frequently analyzed, and it is surprising to what extent it has been found vitiated and, of course, in the same proportion injurious to health. A room regarded as tolerably well aired, after being filled by an audience that remained but two hours, was found by Mr. Dalton, to contain in the air one per cent. of carbonic acid. The vitiation of the atmosphere at the same rate, for twenty hours, would have rendered the room as fatal to life, as the most poisonous well!

Without referring, further, to these interesting facts, I would remark, that this subject is yet to be studied in the light of the laws of Hygiene: the chemical constitution and changes of the atmosphere and the physiological action of the lungs upon it, are yet to be understood, in order to the adoption of many useful improvements, in the modes of ventilating our dwellings, especially the sleeping apartments, of our school rooms, and of places erected for our public assemblies.

As to the other measures of Hygiene, to which reference has been made, much is yet to be learned, and a great deal of prejudice removed, before we shall see them properly employed. This will become apparent as we proceed with our lectures. For the

present, I will illustrate the position, by reference to some evils, calling for reform, on the subject of Physical education.

Here, we may notice, first, errors committed in the management of the tenderest infants—errors that affect the symmetrical development of the very framework of their bodies, and greatly hinder their healthful growth. The bones of children are not like those of the adult, completely formed and firmly consolidated. They consist, each, of several pieces united together by a material, soft and flexible; and, hence, they are capable of being pressed into various shapes. The elasticity of this soft substance being overcome, by a continuance of pressure, for a length of time, in the same direction, or by the frequent repetition of it, leads to permanent distortion and deformity. In the spinal column of the infant, we find each bone (its principal divisions only considered) separable into three distinct parts. This condition gradually changes, the column acquiring a more solid form, up till the fourth or fifth year, when, by the deposit of osseous matter, all the parts of each bone are united together. This union completed, we have but twenty-six pieces, instead of from eighty to a hundred, composing the column; but even then, there may be such deficiency in the solid material of the structure as to leave it, in some measure, flexible and incapable of sustaining moderate pressure, if long continued. Similar changes occurring in the bones of the extremities, but more slowly, and the whole muscular system being, as yet, imperfectly developed, we have abundant reasons, for a greater degree of care, in the management of children, than is commonly practised. Now, can it be supposed, if these things were generally known, that the tendency to deformity of the limbs and curvatures of the spine in the young, would not be counteracted? Think you, that the mother, the nurse, the kind and neighborly old lady, would take the delicate babe upon her knee, and placing it upright, dandle it there, as if its spine were composed of iron and its muscles made of cables? Think you, that parents in their anxiety to see its early manifestations of activity and strength, would teach it, by frequent efforts, too soon to balance its head upon the spine, or raise itself prematurely upon its legs? Would go-carts, leading strings or any other apparatus for promoting locomotion, be called into requisition, to teach the child to walk, long before it can do so in safety to its delicate organization? Think you, that the seats and desks of the school room would be so awkwardly arranged, that the pupil in study, must place himself in a variety of leaning and unnatural attitudes, by which is

formed not only the ungraceful habit, but often, the permanently rounded shoulder and contracted chest, with their consequent impairment of the health and power of the heart and lungs? It is true, much improvement has been made in late years, in the arrangement of the furniture of such apartments, but, it is pertinent to remark, this is the result of the increased attention bestowed on the subject of Physiology and the laws of health.

But, Gentlemen, as you are more likely to be interested with those things that, at present, concern yourselves, permit me to refer to some errors committed by those who have attained to that age, when the preservation of their health, depends upon their own discretion and care. Let me illustrate an occasional effect of the Collegiate course, on the health of the student.

You may have seen the young man at the plough, who, from having been accustomed all his life, to do his share of the work on the farm, and from the habitual use of plain and wholesome fare, has grown up with a well constructed frame and a vigorous constitution. We will suppose, such a one has presented to his mind, the beauties of learning and its inappreciable advantages. His soul is fired with a noble ambition, and he sighs to carve his name upon some monument of his intellect as enduring as time. His restless spirit allows him no repose. He submits to every physical privation, and labors incessantly, until the means are secured, to place him on the roll of the College classes. This point gained, his time is wholly devoted to study—that no part of it may be lost, he rises with the lark, and continues to pore over his books, far into the night and long after every other student is stilled in sleep. He outstrips his class, for which he is applauded by the faculty and advanced; thus the studies of ten months are crowded into five! But, during all this time, he heeds not the ravages made upon his health. Not understanding the rules of Hygienics, he conforms not in the selection of his food, to the circumstances of his new position. His digestive powers are impaired—he grows pale by the midnight lamp, and

“His languid eye; his cheek
Deserted of its bloom; his flaccid, shrunk,
And withered muscle”

attest the melancholy effects of the neglect of his customary exercise. The seeds of a terrible malady are fastening deep in the vitals of his system; and, in a few short months after leaving the Halls of his Alma Mater, crowned with her honors, and just prepared for entering upon his high career, his manly form succumbs to an attack of disease. His name is carved; but it is temporarily placed on a block of marble, in the church-yard. This, Gen-

tlemen, is no attempt at a fancy sketch. It is a part of the history of this College, within the last few years. It is a part, however, that never would be written, if the ambitious student could realize the fact soon enough, that such habits of study, as have been adverted to, can only be indulged in, at the expense of a broken constitution.

There are causes producing an increased tendency to ill health, in young men entering upon a College life, against which they should most particularly guard. Among these may be reckoned, a richer diet and more sedentary habit, substituted for the plain food, the lively sports, and active exercise of boyhood. At this critical period, let them beware, that they do not overlook these causes and contract those habits of imprudence and inattention to health, that will make them feeble, miserable invalids to the latest day of their lives.

This advice may be given, *en passant*, with ten-fold emphasis to persons of the opposite sex. The young girl just beginning to mingle in company, in the higher circles of society, is subjected by the requirements of fashion, to a change in her habits, which, at this age, is singularly prejudicial to her health. She begins to leave off her protracted walks in the open air, her former rambles

“O'er hills, through vallies and by river's brink.”

She must be delicate, now; and unless the weather should be remarkably pleasant and inviting, she must confine herself to the precincts of the drawing room and parlor, or if venturing out a square or two, she must be veiled and defended from every gleam of light and every breath of air. As the result of this, she does become delicate; she also, becomes fair! Like the plant confined to the darkness of a cellar, pointing and struggling towards the smallest crevice that may admit a sunbeam, she looks out on the loveliness of Nature—sees every thing smiling in light and freshness, and she grows pale and delicate, because excluded from those genial influences that impart life, beauty, and bloom.

Such are some of the effects of violating certain established laws of the human organism. They show the necessity of studying, to some extent, Physiology and Hygiene, in order, that a proper knowledge of these laws may be acquired. But there are considerations that indicate the importance of making these acquisitions early—even while studying the elementary branches of an education.

Health is so essential to our happiness, that we should know how to preserve it, before any pernicious habits are formed that tend to its destruction. To postpone the acquisition until such hab-

its are fixed, is to render the knowledge obtained, in most cases, valueless; because, it becomes then of difficult application.

Habit has been called a "second Nature." The propriety of this appears in the controlling influence it exerts over the conduct of a man, like that which instinct exercises over the acts of the brute. Its power is seen in the life of the drunkard, who clings with an invincible tenacity to his cups. It is felt in the experience of very many, in the use of tobacco. What, but the force of habit could induce a man knowing the effects of this weed upon the body, to continue the use of it? The judgment of intelligent men is violated, whenever they indulge excessively, in the use of the article, in any form. They cannot but know its depressing influence, both upon the nervous system and upon the powers of digestion. They have experienced this, not only in the effects which follow the first essay in chewing or smoking, such as the nausea and vertigo or swimming of the head, which soon pass off, and, after further trials, are no more felt. But, they have experienced it in those lasting disorders marked by the detestable odor of the pulmonary exhalations, by that peculiarly depressed state of the body, expressed by the phrase of "nerves unstrung," by a stupor approximating fatuity, by an entire indisposition to mental and physical exertion, and by a whole train of dyspeptic complaints which give a dark and sombre shade to every view they can take of life. But the devotee of the weed, with all this experience, finds it nearly impossible to surrender the indulgence. Nor will he abandon it, for any other consideration. You may reason with him, and produce before his eyes, a poisonous oil contained in the plant, a single drop of which, in a concentrated state, will destroy a dog in less than five minutes. You may ridicule the indulgence or denounce it like King James, who attempted, in this way, to banish the plant from his dominions, declaring it to be "loathsome to the eye harmful to the brain, hateful to the nose, dangerous to the lungs and in the black fume thereof, nearest resembling the horrible Stygian smoke of the Pit that is bottomless." In addition to this, you might (if in a free country it were possible,) visit the tobacco user with the severest penalty; but, as in Persia, he would escape to the mountains, that in solitude he might enjoy his luxury; he would smoke, as in Russia, before the *Chambre au Tabac*, a tribunal erected to try his case; and, as in Turkey, he would puff his "scafarlatti," at the risk of being made to "ride through the streets upon an ass, with his face towards the tail, and his nose transfixed by a pipe."

How great is the difficulty of overcoming the force of this "second nature." It is the same, in different degrees, in reference to improper habits formed, in the use of food, drink, sleep, and exercise. Is it not better, therefore, that, in these things, you should know how they ought to be formed, at first? As the virtuous, moral character of the man, is the result, usually, of the inculcation of proper sentiments in the youth, so those habits of life, which ensure health of body, are dependent upon an early training in the principles of Hygiene. It is as true of man's physical as of his moral tendencies, that

"Just as the twig is bent, the tree's inclined."

One other suggestion might be presented, as a sufficient reason, of itself, for your giving to Physiology and Hygiene, a due share of your attention. These subjects are finding their way into the courses of study, in other Colleges, and in many schools of an inferior grade. Hereafter, the educated man will be expected to possess a knowledge of them, at least, equal to that often acquired in College, on such subjects as Natural History, Mineralogy, and Chemistry. If, in conversation, he should manifest a total ignorance of the beautiful mechanism of his own body—and especially, if, in speaking of its organs, he should employ such unscientific technicalities as "lights," "milt," "midriff," and "leaders," he will be esteemed illiterate and vulgar! It is hoped, however, that this estimate may never be formed of any of the present or future students of Washington College!

While on a late visit to Philadelphia, I had the gratification to be invited, to an evening's entertainment of an intellectual character, at the house of the learned Professor of Anatomy and Surgery in the Philadelphia College of Medicine. An enthusiastic investigator of Microscopical Anatomy, from Europe, was present, with two superior instruments, and a large collection of specimens of ultimate structure, admirably prepared for examination. What I wish to notice in relation to his exhibitions, is the deep interest manifested in them, on the part of those having no concern in the subject as Medical Professors. I refer to the ladies, with whose presence the company was honored. On witnessing them stretching their eyes deep down into the pulmonic cells, hepatic lobules, and follicles of Lieberkuhn, and tracing the delicate arrangements of fibres, capillaries, and vessels by which vessels are nourished, or, as they were heard very properly to term them, of the "vasa vasorum," the thought occurred to me, that when a similar spirit for anatomical and physiological researches shall be infused into the minds of all the intelligent

classes of community, great and important will be the results.—Men will become enlightened upon a subject, in which they are deeply interested; they will realize, as they do not now, the fact that they are “fearfully and wonderfully made”; they will understand the laws of their physical being, and derive health and happiness from habits of life adopted in conformity to their operation. Before their ability to scrutinize medical subjects, all the pretensions of the empirick will stand naked and exposed, and every system of quackery will flee away. Delightful consummation! Fortunate generation that shall live to enjoy its fruits!

Having thus considered the importance of the subjects to which, in my subsequent lectures, I shall more particularly invite your attention, it only remains to state briefly the order or plan of our course. So far as it can be done conveniently, I shall take up the organs of the body in groups, sometimes considering together, those that are alike in structure, and, therefore, belonging to the same system; at others, contemplating in connexion, those that concur to a particular function without reference to structure—that is, those that are united in the same apparatus. Whether a system or apparatus be under consideration, I shall first notice the anatomical arrangement of its parts, next speak of the uses they fulfil, and lastly, explain the laws and conditions that influence their actions, both healthy and morbid. In this manner I shall treat first of the apparatus of loco-motion, and beginning with the bones, exhibit their composition, show their conformation, define their relative positions in the body, point out their uses, contrast them with the corresponding bones of inferior animals, and indicate the means of preventing their disease and deformity. Passing to the muscles, I shall also notice their structure, their uses, and the conditions affecting their healthful development. Here I shall have to speak particularly, on the subject of exercise; not only pointing out its happy effects upon the muscles and the body generally, but the kinds and amount necessary under various circumstances, and the proper times for its employment. The Nervous system will next receive attention, and in connexion with many practical suggestions to be made in regard to it, I shall take the opportunity to examine, briefly, the merits and the claims to the favor of scientific men, of the doctrines of Gall and Mesmer! Our fourth topic will be the apparatus of digestion. This, like some of the preceding ones, will afford subject-matter for several discourses. We shall find it interesting to dwell upon many points, in its Comparative Anato-

my and Physiology, as well as refer in detail, to the means of preventing the various complaints that arise from errors of diet. From this we shall proceed to the skin, and dwell at sufficient length upon the subjects of clothing and baths. In continuation of the lectures, we shall take up successively, the subjects of Respiration, Circulation, and Secretion, and after considering in their proper order the Anatomy and Physiology of the organs concerned, such practical suggestions will be submitted, as may be regarded important. Thus, I shall comment upon every important system and apparatus of the body, with one exception which, for obvious reasons, will be omitted; and while treating these subjects, as fully as may be possible, in a brief course of twenty lectures, I shall aim, by familiar illustrations, to suit my remarks to your easy comprehension, and make them, for the most part, practically useful.

In conclusion, Gentlemen, I would invite you to go with me to the investigation of these subjects, with the disposition to learn. After receiving the little instruction which I may be enabled to impart, you will find it easy to derive information from the books you will be advised to consult. Besides the mere pleasure you will enjoy in pursuing an interesting study, you will thus be enabled to adopt understandingly, a system of regular habits, the best calculated to ensure you health, and with the blessings of Providence, to extend the period of your existence to the "three score years and ten" allotted for the life of man. What, then, shall be your course? How shall your future history be written? Shall it be said, that you gave yourselves up to dissipation, idleness, and folly, and thus dug for yourselves premature graves? Or, that your course of life was one marked by "temperance in all things;" that by knowledge and prudence you had attained to the full development of all your faculties, physical and mental; and that you remained usefully and honorably engaged upon the stage of action, until overtaken by the natural infirmities of age, when, having reached "the end of earth,"

—————"like a time worn clock,
Your weary wheels of life at last stood still."



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