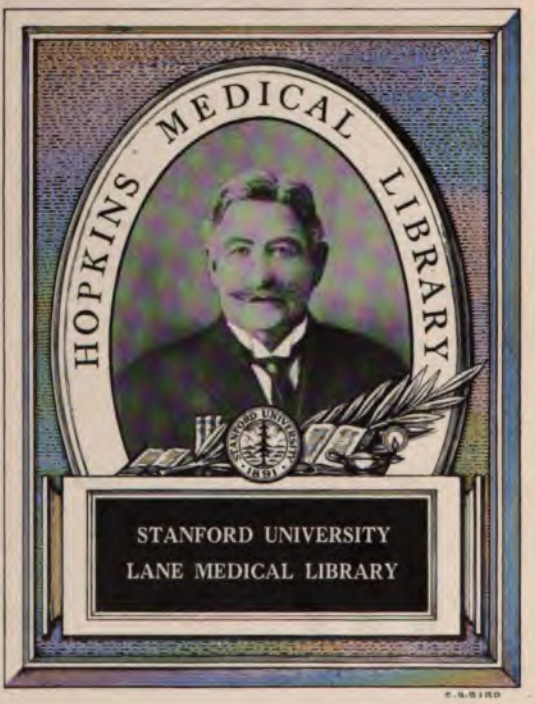
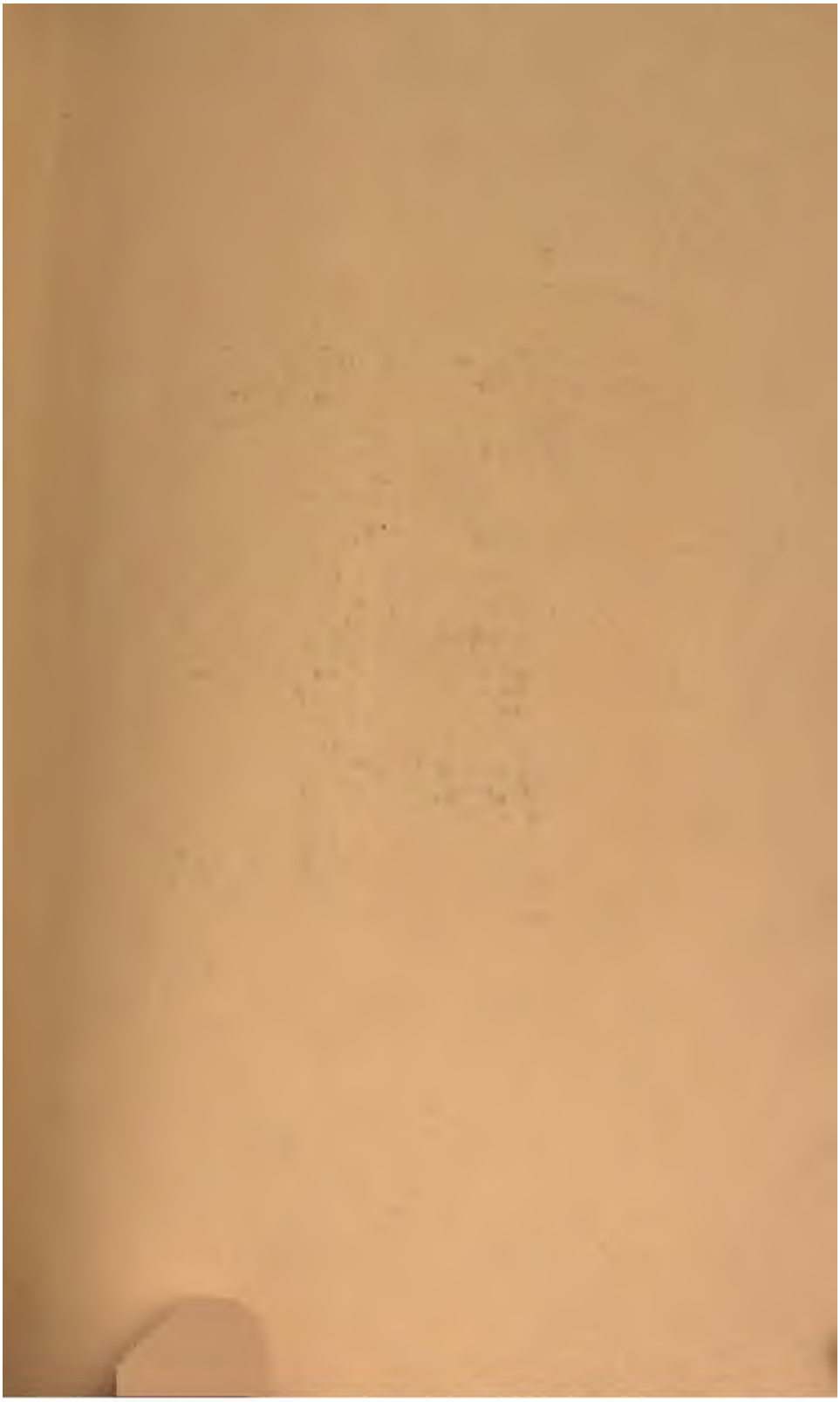

HOPKINS MEDICAL LIBRARY
STANFORD UNIVERSITY
LANE MEDICAL LIBRARY



L. C. Lane

Introductory Address, Univ. of Pacific, Nov. 4, 1861.

Opening Address, Toland Medical College, June 4, 1866.

Valedictory Address, Toland Medical College, Nov. 4, 1869.

Valedictory, University of the Pacific, Dec. 7, 1871.

Address, at the Commencement Exercises of Medical College of the Pacific, Nov. 2, 1876.

Inaugural-Dissertation, Friedrich-Wilhelms-Universitat, March 7, 1876.

Address, Medical College of the Pacific, Sept. 6, 1879.

Addresses, Cooper Medical College, 1882.

Guatemala 1883

Ligations for the Cure of Aneurism, 1884.

Shadows in the Ethics, International Medical Congress, 1885.

Dr. Henry Gibbons, In Memoriam, Cooper Medical College, Jan. 2, 1885.

Memorial Wreath for the Prosecution in the Graves Mal-Practice Suit, 1886.

Address, Cooper Medical College,
Nov. 13, 1890.

Cremation, 1891.

Address, the Opening of Lane Hospital,
Jan. 2, 1895.

Dr. Augustus J. Bowie, In Memoriam.

lacking from this copy

Memorial Exercises in Memory of Levi
Cooper Lane, 1902.

Exercises in Memory of Levi Cooper Lane,
1902.

INTRODUCTORY ADDRESS

DELIVERED AT THE

OPENING OF THE COURSE ON

PHYSIOLOGY,

FOR THE SESSION OF 1861-2,

IN THE

Medical Department of the University of the Pacific,

AT

SAN FRANCISCO, CALIFORNIA, NOVEMBER 4th, 1861.

BY DR. L. C. LANE,

PROFESSOR OF PHYSIOLOGY.

SAN FRANCISCO:

PAINTER & COMPANY, BOOK AND JOB PRINTERS,

1861.

INTRODUCTORY ADDRESS

DELIVERED AT THE

OPENING OF THE COURSE ON

PHYSIOLOGY,

FOR THE SESSION OF 1861-2,

IN THE

Medical Department of the University of the Pacific,

AT

SAN FRANCISCO, CALIFORNIA, NOVEMBER 4th, 1861.

BY DR. L. C. LANE,

PROFESSOR OF PHYSIOLOGY.

SAN FRANCISCO:

PAINTER & COMPANY, BOOK AND JOB PRINTERS,

1861.

Professor L. C. LANE:—

Dear Sir: Your able and beautiful address, delivered Nov. 4th, as an introductory to the course on Physiology for 1861–2, has excited the admiration of all the members of your class, and, at a meeting of the same, the undersigned were appointed a committee to address you requesting the favor of the copy for publication in pamphlet form, in order that it may be more widely disseminated than could otherwise be the case. By conferring this favor you will greatly oblige each and all of the students composing the Medical Class of the University of the Pacific.

Respectfully, your obedient servants,

CHAS. E. HOLBROOK,
JOHN E. KUNKLER. } *Committee.*
WM. C. JONES,

San Francisco, Cal., Nov. 6, 1861.

SAN FRANCISCO, *November* 6, 1861.

GENTLEMEN:— Your note, soliciting a copy for publication of my introductory lecture, delivered on the 4th inst., at the opening of my course on Physiology, has been received; in reply, allow me to say that a copy of the same is at your disposition, and, at the same time, I beg leave to tender you my thanks for the honor which is thus unexpectedly extended to my first essay as a lecturer upon this noble department of medicine — the science of Physiology.

I am, very respectfully,

Your obedient servant,

L. C. LANE, M. D.,

Professor of Physiology, Med. Dep.
of the University of the Pacific.

Messrs. HOLBROOK, KUNKLER and JONES,
Committee in behalf of the Medical Class of the session of 1861–2.

ADDRESS.

GENTLEMEN STUDENTS:

The science of Physiology, in which I shall give you instruction during the ensuing course of this institution, is both interesting and important; considered in these respects, there is no department of the study of medicine that possesses higher rank. As evidence of its importance, we may state, in the outset, that without an accurate knowledge of many of its principles, no one would ever be able to arrive at eminence either in the practice of medicine or surgery. It teaches and sets forth the laws which govern the body in health; without a knowledge of these laws, it is evident that it would be impossible to judiciously discriminate disease, which is but a deviation from them, and the ushering in of an abnormal condition of the body. Hence its importance in the practice of medicine. So, too, without a knowledge of those principles which obtain in the reparation of parts—which principles are but the laws of Physiology in a modified form—how soon would operative surgery become lost in a labyrinth of obscurity, profound and inextricable? So great is its influence in this respect, that within a few years past the science of surgery is assuming an entirely different character from that which it formerly had. Through the lights and aids which physiological observation and vivisection have furnished us, surgery has assumed a far more conservative type. In modern times, it has been learned that almost all the tissues of the body may be reformed when lost through disease or accident. This is eminently so, in reference to bone. The discovery of this fact has had a great influence upon operative surgery. Limbs which were once sacrificed by amputation, are now preserved to the patient. And this circumstance, which is due to the physiological

fact that bone, muscle, ligament, and even joints themselves, when destroyed, may, in a great measure, be reproduced according to their original type, will prove of infinite good to humanity. The glories which have been won by the cautery and saw have passed: they are wholly eclipsed by the far greater triumphs already, and yet to be, won by the conservative chisel and scalpel. The achievements of the modern surgeon in the preservation of diseased limbs, should be reckoned among the most splendid triumphs of our period, compared with which the *eclat* which attached to the former methods of mutilation sinks into insignificance.

Every department of medicine is interesting. Indeed, so high did the healing art stand among the ancients, that they could not believe it a human invention, but they referred its origin to the gods. The last bequest of the immortal Socrates was a sacrifice to Esculapius. Yet the science of that period was infinitely limited, compared with its modern developments: and in none of the departments of medicine have greater advances been made than in the one we have under consideration. The department of Physiology now, of itself, stands as a vast colossal science, grand in its dimensions, and with so much that is strange and marvelous in it, that some of its enthusiastic admirers have applied to it the titles of the "*soul of medicine*," its "*poetry*," its "*flower-garden*." Notwithstanding these titles, borrowed from fancy and enthusiasm, it presents enough of stern material and that class of things called *matter-of-fact*, to give it an abiding place quite out of the sphere of romance, and as a study, for a thorough comprehension of all its principles, severe, rigorous, and close application will be required.

So much importance of late has attached itself to this branch of science, that some of its simple and leading principles have been incorporated in school books, designed for popular instruction. If then a knowledge of Physiology is requisite to the young lady, in order to give elegance and completeness to her education, of how much higher importance must they be to you, prospective practitioners of medicine, to whom the duty will be assigned of alleviating disease in its protean forms, so numerous in fact, that, far outnumbering the Homeric hosts;

> "To count them all would need a thousand tongues:
> A throat of brass, and adamantine lungs."

It is your especial province, privilege and duty, to study the countless strange and wondrous laws which govern the human body. This body is more varied and complicated in its structure than any machine that art has ever devised. In it, the Theist sees the evidences of creative wisdom; in the contemplation of the form possessed by this microcosm, —the mere imitation of which has given a fame ever-during to Raphael and Michael Angelo,—and in view of the miracles which are constantly being performed in the maintenance of the living organism, the Atheist is involved in perplexity, and doubts whether fortuitous action can account for such a combination of wonders.

It is to explain the laws which control this marvelous piece of mechanism, that my efforts during the pending course, shall be devoted. Though often our inquiries may conduct us

"Through dark and devious paths of speculation wild,"

yet at all times, we will find something valuable along the wayside, and however rugged and thorny our path may be, still, ever and anon, our labors will be crowned by the discovery of some flower of truth, which, though it may not have the grandeur and gorgeousness of a Victoria Regia, nor the tropical luxuriance of the elegant Urania, still, amaranth-like, its tints will be more perennial in nature. In studying the object of digestion, in which the crude materials of the external world are so metamorphised as to become part of our living bodies, or in studying the mysteries within the cranium,

"The dome of thought and palace of the soul,"

we shall meet things as wondrous and extraordinary as can be found in any domain of nature. The brain, with its motor-force, its power of feeling, its coördinating faculty, its connection with the thinking principle, with the immaterial, imperishable, *It* presents a field for greater admiration and wonder than do all the orbs which glitter in the evening sky. As a piece of superior mechanism may be mentioned the eye, of which the workmanship is so exquisite, and the adaptation of its various parts to the purposes of vision are so complete, that no device of art can be compared with it; and it was only by having the eye as a model of reference, in which the tendency of light to

undergo decomposition in passing through a lenticular apparatus is counteracted, that Euler, the illustrious mathematician, found means to solve the problem of achromatism, which, by Newton, had been regarded as insusceptible of solution. And again, so great is the design exhibited in the structure of the human hand, that Bell considers that it alone affords proof of a divine author, and for his capital treatise on this subject, he won one of the "Bridgewater Prizes."

Hence, from what has been said it is manifest, though our department may be abstruse and dry at times, still, in the details of the "strange, eventful scenes" in which the living organism figures, from its primitive state as a microscopic cell through its varied stages of growth and ultimate decay and death, there is enough to requite the fullest longings for admiration and marvel. The struggle between life and death of which our world is the constant scene, is a drama of deep and momentous import to any one, but preëminently so to him who is conversant with the laws which govern them. To the medical scholar who comprehends all the laws which control the living organism, who sees and understands this vital fabric in all its varied changes, from its primordial commencement as an infinitely minute cell, a mere *macula germinativa* or germinal spot, then its embryonic and fœtal life, then its transition from aqueous to aerial existence, this monument of life has a thousand things more wondrous interwoven in its history than had the Memnonian of old, and its contemplation should enkindle in the student a profounder admiration than could be awakened by a view of the Pyramids, the broken remains of the Parthenon or Karnak, or any other architectural wonder of the past.

It has been argued as an objection against Physiology, that it is beset with too many theories and hypotheses, and that, upon the whole, it furnishes little that can be placed under the head of absolute and positive fact. Now, if hypothesis were to be wholly discarded in the establishment of a science, then some of the prominent departments of knowledge would have to be abandoned, for they rest on scarcely any other basis than theory and conjecture. This is especially the case in respect to geology; divest this science of the substratum of theory which lies at its foundation, and this grand fabric, the glory and boast of the

present century, would sink into insignificance. Yet so evident are the results which have followed the adoption of certain hypotheses in geology, and so wholly convincing to those who will thoroughly examine them, that this science has almost obtained a place as enduring in the field of knowledge as that occupied by pure mathematics. The same is now to some extent, and must eventually be entirely, the case in Physiology. Those theories which are at present employed for the illustration of its truths, may be compared to so many scaling ladders to the citadel into which we are seeking entrance, and which, when they have once fulfilled their purpose, may be dispensed with. So remarkably ingenious, however, have been some of those theories, that they still survive as monuments of the shrewdness of their inventors, though the idea imbodied in them has ultimately proved to be erroneous. This may be said to be the case in respect to the hypotheses invented by Liebig and Mulder for explaining the transition from venous to arterial blood.

Our science has engaged and occupied the attention of the illustrious and learned of all ages. In far-off antiquity, where the first faint beams of science are dimly perceived struggling with the clouds of ignorance which enshrouded the human mind in the earlier periods of human society, our science was the first to claim attention. Soon after Homer had composed his immortal verse detailing the woes that befel Greece, in consequence of the wrath of Achilles, and the dangers and adventures of the "toil-worn" Ulysses, in his homeward voyage from Troy to Ithaca, there arose a new light in Greece, whose mind being deeply imbued with the truth of the sentiment,

"*Felix qui causas rerum cognoscere potest,*"

devoted himself to the quiet pursuits of philosophy, and gave an impulse to philosophical research which continued for centuries afterwards. This was Aristotle. Among the subjects to which Aristotle gave special attention was that of the phenomena exhibited by living beings. Availing himself of the aids furnished by dissection, he strove to enter the penetralia of organized beings, and thereby penetrate the hitherto sealed arcana of life. It is surprising how many truths Aristotle brought to light. The experience of modern times has indeed, found that certain

things which he advanced were erroneous. This is not at all to be wondered at, when we take into account the profound ignorance which at his time had enshrouded the whole subject of animal life. Greatly to his credit, however, be it said, that certain ideas which he advanced, which were doubted by subsequent examiners, have, on more mature research, been found to be correct. This is true in respect to certain of his assertions concerning generation among the Crustacea.

Among its cultivators of the present time, Physiology ranks some of the most eminent minds of the day, both in Europe as well as in our own country; on this side of the Atlantic, it is with pleasure that we refer to such names as Dunglison, Paine, Leidy, and Dalton. Dalton is, perhaps, to-day in advance of all those engaged in physiological research, on this continent. The correctness with which he has studied the nervous system, and the mysterious subject of generation, augurs well for much new light on this hitherto but partially understood subject. Adopting vivisection as a lamp for his guidence in the daedalian mazes of the nervous system, he is compelling the vagus to reveal some of its complicated functions, as well as some of the other cranial nerves whose office has hitherto been involved in doubt.

In England, the names of Carpenter, Paget, Brown-Séquard, are models for emulation in this department of medicine. Crossing the channel, in France the famous Milne-Edwards, noted for his many classical works on this subject, as well as the distinguished Longet, and the venerable Chevreul, are busily engaged in Physological research. Indeed, Chevreul, though a septuagenarian, seems still as devoted to his chemico-physiological studies as though he were not satisfied that his researches in regard to the harmony of colors, and his discovery of oleine, stearine and margarine would not enbalm his memory among the never to be forgotten illustrious names which are treasured up in the imperishable archives of medicine.

Germany stands preëminently high in medical scholarship; and I am safe in saying that there we may find today, a greater number of devoted scholars engaged in solving the hitherto unexplained questions of Physiology, than in any other part of the world. The Teutonic character is eminently fitted for patient investigation. The Ger-

man investigator can labor for weeks, or even months, in the examination of a single subject, never once becoming tired or forsaking it, until he has thoroughly acquainted himself with every feature of the subject, and everything else that can have a bearing upon it. This method of investigation is difficult for the American student, accustomed, as our people are, to do everything with telegraphic velocity. Still, the Teutonic method is the proper one to lead to ultimate success, and it is to be hoped that it may be adopted more and more by the American scholar. A union of Teutonic patience with the practical element of our countrymen, would, if adopted in literary research, soon yield a rich harvest of scientific discovery.

The principles of Physiology are interesting on account of their perpetuity and unchangeableness; they remain to-day, and in future, constant and fixed as they were a thousand years ago. Similiar to the Draconian laws, they are engraven in blood, though unlike them in brevity of existence, their duration is coëval with organized life. Though laws, customs, manners, tastes, and language, together with the objects and pursuits of human ambition are ever changing, still the laws which control life and organic existence remain forever the same; more enduring than the granite and sandstone on which our mountains rest. The note of the nightingale, which singing "darkling," enraptured the ear, or the rainbow-tinted plumage of the humming-bird, which hovered around and sipped the mellifluous sweets of the convolvulus which spread its floral munificence over the azaleas and rhododendra of Eden, were governed by the same laws of vibration and reflection as to-day, govern the same objects. The same appetites and functions, the same demand for carbonaceous and nitrogenous aliment, the same need of oxydation of the tissues have always existed.

Geology in the numerous contributions which it has made to Comparative Anatomy, in bringing from the chambers of the earth, where they had been concealed for ages, the relics of numerous animals, some of which do not now even exist, has furnished ample evidence of the constancy and continuity of plan that has been adhered to in the introduction of the varied forms of animated existence, on the part of the Author of nature. In the fossilized eye of the Trilobite, that exists abundantly

in the Silurian formations of the Ohio Valley, when its various facets and general conformation is studied with reference to the reflection, refraction and transmission of light, it is discovered that the light-wave was governed by the same laws myriads of years ago as to-day. And though no Newton was there to note the relation of equality between the angle of incidence and that of reflection, or to observe that when a ray of light passed from a rarer into a denser medium, it was bent from its original course, and though the cone had been cleft by no mathematical hand to learn the figure of its sections, and to apply the principles of the ellipse and the parabola in the construction of lenses, still the mathematical laws in accordance with which the eye is constructed, then existed, and were obeyed by every ray of light that painted its image on the retina. The fish of that period, with his hemocercal tail, shows, by the form of his jaw, and triple row of teeth, that he had a shark-like appetite, and must have fed on living beings. The mammoth reptiles of that period, demonstrate by their coprolites the same fact. Hence, death has ever been coëval and coëxtensive with life. The pterodactyle of the early geological periods enjoyed his morsel reeking with fresh blood, quite as much as does the cat or the Abyssinian of the genus *homo*, of the present time. Indeed, by a reference to the remains of organized life, which nature has preserved as if it were in a vast *hortus siccus*, where they have been laid up between the pages of the vast volume of creation for the benefit of modern times, there is demonstrated an antiquity for organic life that startled the first investigators in this field so prolific with prodigies.

Though man in his pride stands at the head of creation, and looks down with complacency on the inferior grades of being, still, if he search through the vast domain of vertebrated animals, embracing the mammals, birds, reptiles and fishes, then let him examine the articulated beings, the lobster, the ant, the leech, and the vile worm itself, thence, still descending, let him survey the molluscs,—the mussel, the snail, and the cuttlefish,—and finally closing his survey, let him look through the realm of the star-fishes, and after his thorough examination of these four grand departments of animated nature, he will be compelled to confess that there is not a living creature that in some feature of organization he is not akin to.

Indeed, if a careful comparison be instituted, many animals, in certain respects, are much superior to man. This is especially true in regard to the development of the senses; for example, the perfection of the olfactory sense in certain animals, is well known; also, the sense of sight in certain birds, is far superior to that of man. But, in intellectual endowment, man occupies an immense superiority over all other created beings. It is to his superior brain that he owes his supremacy over the living world. Notwithstanding this superiority, he does not possesss an organ that does not have its analogue in the mammiferous animal. The vertebrata, with man at their head, have been constructed according to one common type. Hence it is, that in studying the functions of the different parts of the human body, we resort to experiments upon the lower animals; indeed, it has been by the aid of vivisection made upon the lower animals, that Physiology has made such rapid strides during the last half century. By means of vivisection, the Physiologist has been able to step into the inner temple of life, and to gaze upon the hitherto unveiled mysteries that have been hidden within the sacred adytum,—the sanctum sanctorum of living existence. Over the threshold to this inner sanctuary there is no need of inscribing "*procul, O procul este profani,*" for none but the patient and labor-loving student can recognize and read the import of the *penetralia* which nature has veiled there in an obscurity far more profound than that which shrouded the Eleusinian mysteries of olden time.

Besides the aid which vivisection has lent to the Physiologist in modern times, he has received an additional one in the microscope. With the assistance of this instrument, he is able to follow the primitive cell from the period in in which it is vacillating between inorganic and organic existence, through the numerous stages of metamorphosis, till it finally receives the stamp and impress of vitality; then, having duly fulfilled its mission in the living organism, by the help of the microscope, it is seen to assume a retrograde march towards the external world, which having reached, it assumes again its inorganic condition. The microscope further shows us, in the various crystalline products which it reveals to us in the living organism, that many of the processes in our bodies are purely chemical in character. This is especially so in regard to the renal

and biliary products. Even the blood itself, with a little manipulation, is capable of yielding crystalline forms of most elegant shape and outline.

Again, the science of Physiology is most intimately associated with that of Anatomy. Without a knowledge of Anatomy, the principles of Physiology can never be well understood. Before the function of the brain, the heart and the lungs,—the so-called tripod on which life rests,—can be comprehended, the structure of those parts must be well known. Hence, these are kindred sciences, which must ever march, hand in hand, together. Separated, each becomes of little use; both well understood, will furnish the surest guidance, and become the unerring pole-star to a future brilliant professional career. To the surgeon, a thorough knowledge of both is indispensable. Confidently relying on nature's power of reproducing parts, which Physiology has taught him, he boldly removes the diseased bone or offending joint, and true to what vivisection has demonstrated, he finds his operation crowned with success. Hence, Physiology, with its sister science, Anatomy, are twin diamonds in the hilt of the scalpel that "lights its blade" in the surgeon's hand, and give hopeful tokens of recovery to the patient and unerring promise of an enduring reputation to the operator.

In the pursuit of your Physiological studies, I would strongly recommend you to avail yourselves of the aids which are furnished by a knowledge of Natural History. As before stated, nature has adopted a uniformity of plan that prevades all departments of creation, and, as it were, by a chain of adamant, binds together the material universe. The world, with its countless forms of life, whether living in the air, on the earth, or in the depths of the ocean, is but a materialized utterance of a thought of Deity, in which are combined identity, unity, and harmony. These cardinal principles, which may be perceived even on a limited view of nature, become more and more apparent in proportion to the comprehensive view that we take of her objects.

By a careful examination of the laws which govern the production of plants, and of the impossibility of mixing even those genera which are nearly akin, as well as from observations made on the *hybridation* of the inferior animals, the Physiologist has learned the immutability of

form which nature has stamped on every living being. The pollen of the rose, sprinkled on the hyacinth can never produce a hybrid between the two. Nor can the germinating dust of the elegant amaryllis, applied to the homely bloom of the ambrosia, produce a floral type, midway between the parent flowers. The forms of nature are eternally stereotyped. Though art may modify the form of the rose, nay, even convert each stamen into a petal, still the essential form retains the original characteristics of the primeval archetype that bloomed in the early dawn of creation. The same may be said of the animal forms. No hybridation, no human device can alter the forms in which each creature was primitively moulded. Now, it has been from a comprehensive and careful study of these facts, in reference to the incapability of any plant or animal undergoing any essential metamorphosis, that Anthropology has derived its strongest proofs of the identity of origin and unity of the human race, a point to which we hope, in future, to be able to refer to again.

Finally, gentlemen, we will express the hope that some of you will study this department of medicine to an extent beyond that which is merely necessary to secure the collegiate honors vested in a diploma. This science, though vast in facts, andprolific in discoverise and researches which have been made in it, is still incomplete. There are many Physiologlcal questions which yet remain to determine, in the human organism; enough indeed, to confer an enduring immortality upon the future laborers who shall solve them. The true nature of the nervous principle,—whether it is electricity, as the Electro-Physiologists contend,—also, the offices which are performed by several parts of the brain; likewise, the functions of the spleen, are all matters involved in the utmost obscurity, the discovery and elucidation of which, will secure unfading laurels, and a lasting reputation to some future investigators. He, however, who would gain such laurels, must remember that their achievement is only possible through hard labor. As Hercules gained admission to the abode of the Olympian Celestials, through the accomplishment of the severest tasks, so the only price of professional eminence is hard toil and vigorous study. In the practice of our profession, one is constantly reminded of the brevity of human existence. Hippocrates, the illustrious and ever

to be venerated father of medicine, commences his Aphorisuses with the following sentence: *Vita brevis, ars verò longa;* that is, "life is short, but art is long," or of vast extent. Still, with proper application and industry, it is wonderful how much may be consummated within a limited period of life. This was illustrated in the career of the immortal Bichat, one of the most successful cultivators of Physiology, who died at the age of thirty-one years. So highly are his discoveries estimated, and so profoundly reverent are his countrymen of his genius, that, as an imperishable evidence of their admiration, they have assigned him a conspicious place in the illustrious group which, in the marble frontispiece that emblazons the front of the Pantheon, are placed as the first representatives of the glories of France, and as such, are receiving from the Goddess of Fame crowns of immortality. Besides this marble monument, erected by a grateful people to the memory of Bichat, he has left his name upon a still more enduring monument, viz.: the fissure of Bichat, engraven by the temporal bone on the human brain, where it will remain imperishable and indelible, and secure against the revolutions which at times have threatened the destruction of the Pantheon, and have disturbed the repose of the dead that slumber beneath it.

OPENING ADDRESS,

DELIVERED BY

DR. L. C. LANE,

—AT—

TOLAND MEDICAL COLLEGE,

SAN FRANCISCO,

JUNE 4th, 1866.

CORRESPONDENCE.

San Francisco, June 6th, 1866.

PROFESSOR LANE:

Dear Sir—

We, a Committee, appointed in behalf of the Class in attendance upon the Third Course of Lectures in Toland Medical College, would respectfully request a copy of your late Address, delivered at the Opening of the Session, for publication. A compliance with our request will be kindly appreciated by

Yours, respectfully,

A. FINE,
J. R. PREVOST,
R. H. PLUMMER,
Committee.

San Francisco, June 7th, 1866.

MESSRS. PLUMMER, FINE AND PREVOST:

Gentlemen—

In granting the request made in yours of the 6th inst., allow me to thank you for the compliment therein conferred upon me.

I am, very respectfully,

Yours,
L. C. LANE,
Professor of Anatomy,
Toland Medical College.

ADDRESS.

LADIES AND GENTLEMEN:

The honor has been conferred upon me by my colleagues of delivering the Opening Address of the Third Course of Lectures to be given in this Institution. In announcing this fact, allow me to extend to you, in behalf of my colleagues, a cordial welcome, and also to tender you thanks for thus having honored our hall with your presence; for your audience must be considered as an evidence of the interest you take in our cause, rather than an expectation, on your part, of being participants of a rhetorical banquet; for I suspect that none of you are ignorant of the fact that eloquence is a field in which Medicine has won but few trophies; for the sick, with whom we have most to do, have no delight in the flourishes of rhetoric, since to them the sum of all eloquence is the simple word "health." And, indeed, the several sections which are comprised under the general head of Medical Science, are not of that nature to readily popularize. To elucidate this assertion more in detail, were I to indulge in an enunciation of some of the formulæ of Chemistry, as, for example, how salts result from a union of an acid and base; or how Oxygen is the grand composing, as well as decomposing agent, in the material world; or to step into the field of Materia Medica, and there detail to you the curious and quaint old names of the various weapons which we use in our warfare against disease, as the Aquila Alba,

or "white eagle," or, as we usually call it, Calomel—a bird which, now-a-days, is fast losing its plumes;—or, to pass thence into the domain of Clinical Medicine, and there portray the thousand forms of decay and final death to which poor human nature is at length destined, from the slowly withering touch of consumption to the instant death-stroke of heart-disease; or to make one more shifting of the scene, should I display to your gaze the wonders of Surgery, how, for instance, the great branches of our bodies may be lopped off and still the trunk survive, or how the life-wave, gushing from the wounded artery, may be staunched by a simple cord of silk;—these, I repeat, are topics of the grandest interest to us as Physicians, as well as to the Students who are here to be educated. But to you who are here to witness the opening of our course, I suspect they would prove as dry as the sand on our neighboring hills—nay more, perhaps you might not unjustly consider us remarkable examples of perverted nature, who could find interest, or, perhaps, beauty in the outlines and location of a tumor, or in a well developed case of Erysipelas, or could hear music in the discordant notes of a diseased heart-valve.

Leaving, then, to my colleagues the task of fully detailing these matters in their lectures to the Students, I will not advert to them further, but will first take the liberty of making allusion to the Institution, upon the inauguration of whose Third Course we are to-day in attendance; and I do this with the greater propriety, and without rendering myself obnoxious to the charge of adulation to the gentleman whom the facts to be mentioned most concern, for the reason that I find many persons ignorant of the manner and auspices under which this school was founded and established.

Some seven years ago, there was founded in this city a

Medical College, known as the "Medical Department of the University of the Pacific." This School, which, for a season, had a severe struggle for existence, to which it would have succumbed had it not been for the indomitable energy of its founder, finally outlived the opposition which had been waged against it, and attained to what seemed a permanent foothold among the literary establishments of this Coast. Under its auspices a number of young men were invested with the toga virilis of medical manhood, whose subsequent careers bear ample evidence of the correctness of their teaching, and whose professional success would be a flattering testimonial to any Alma Mater. But, unfortunately, as the first sunbeams began to fall upon this infant edifice, the finger of death snatched from it the master spirit to whom it owed its foundation. The ashes of its founder, the late Dr. Cooper, now repose beneath a simple obelisk in the adjacent city of the dead;—the structure which he had reared, no longer sustained by his inspiring energy, like an arch bereft of its keystone, did not long survive him.

At that period, now near two years ago, a gentleman of this city, whom fortune has singularly favored in his profession, and who had long ago conceived the plan of founding a Medical School on this Coast, now deemed the occasion a fortunate one for executing his long-cherished project. The experience of the previous school had already demonstrated the fact that such an institution was one of the wants of the Pacific States; and in establishing it, he determined that, in thoroughness and completeness of teaching, it should leave nothing undone to fit young men for the practice of Medicine; in fact, that it should rival the best of similar institutions in the Atlantic States.

As pecuniary embarrassments have frequently blighted the

prospects of several of our Eastern Medical Schools, to forego all misfortune from this cause, and set an example which few could and will never would imitate, he erected a building at his own expense, which could not have been little, from the memorial character of the edifice we to-day occupy. This done, he chose a Faculty and a Board of Trustees, and to the latter confided the care of the Institution, which, in justice to him as founder and donor, has been named Tulane Medical College. And further, as evidence of his disinterestedness, he has remitted all the fees pertaining to his Chair—that of Surgery; and, besides that the school should bear everything of a private character, he has bequeathed it wholly to the State of Louisiana, a magnificent gift to her and to the Science of Medicine; and, I predict again, it is destined to be, in the future, the cherished mark of the young men of our State, who may desire a public connection for the practice of our noble profession.

[illegible]

[illegible]

sings of an Apollo with his clanging darts rattling in his quiver, "going forth like Night," to scatter disease in the Grecian camp, for our profession has taught mankind that disease is governed by as fixed and unalterable laws as those to which the material world is subordinate. The magical charm, the mystic touch, or the sorcerer's art, has long since disappeared and vanished, as it were, like the snow before the sun of a superior intelligence. Instead of relying upon those subterfuges, by which the mind of a former world was held in chains, the physician of the present day must be a man of great and varied attainments; a perfect and accomplished scholar; and among his qualities, not the least is modesty.

The Physician or Surgeon who performs the most cures is the man who *speaks the least* of them: his work has a tongue which speaks with an eloquence and potency that satisfy him. His leisure hours are with his books, whose silent counsels he is ever happy to have an occasion to make a rehearsal of. His name will never be seen on the broad poster, alongside of, or beneath some Aristotelean face of lavishly bearded endowments, as a specialist; nor in the less pretentious place of an *extended* newspaper advertisement. Nor is he one whose voice is heard in the public bar-room, haranguing upon Medicine, detailing there some wonderful cure, or never-before-performed operation, which he has recently done. Nor is he one who will indulge in innuendoes in reference to the treatment of some case in the hands of some fellow practitioner, wondering why the limb was not sooner cut off, or why such and such medicines were not administered in the case, which recently cured just such a one in his own hands; I repeat—the well-educated physician will never resort to any of these artifices, all of

which constitute and make up parts of the armory of the [illegible] prohibition.

It is [illegible] seemed to me a thing strange and inexplicable, [illegible] presence with the possession of fine understandings and su[illegible] intelligence whose judgments, for example, may be [illegible] in matters of trade, finance or commerce: or who [illegible] especially [illegible] thousands with their elo[illegible] which would dictate common and sagacity, can elude [illegible] a mind, a view, or whose minds are [illegible] the lessons of the past: and [illegible] with [illegible]

then would any one forsake a system which has for its recommendation an age of almost countless years, the grand old embodiment of the thoughts of thousands whose lives have been spent in its elaboration—a science whose founders were not only immortalized, but were given a place among the Olympian Celestials? Or, to particularize, to one single physician alone, the gratitude of the present as well as all future generations will be due, for having grasped and restored, as it were, to its original resting-place, in Pandora's box, the greatest plague of our race. That was Edward Jenner, the discoverer of vaccination.

By the simple discovery of chloroform, blessings will accrue to our race which never can be paid for, nor even estimated. By its aid our race can smile with complacency amid the agonies of death itself—indeed even more than realize the vision of Cato, of "smiling at the drawn dagger and defying its point."

It is certainly wonderful that a system which has won for itself so many claims for reverence and respect from the world, should be neglected, while those baseless chimeras, which sprang but yesterday into existence, and into whose composition chiefly enter the irrational, inexplicable and mysterious, should obtain, for a time, such foothold! To detail an example, I may state that there was, in Sacramento, a few months since, a man, whose wisdom was so profound, that when a lock of hair was sent to him from a patient, from an inspection of the ashes procured by burning this, he could determine the nature and character of the disease, as well as the mode of treatment to be pursued in the case. For a period this impostor had a grand run of practice, so that, in his pecuniary returns, he had what would be called a brilliant career:—in that particular, leaving the honest physician far behind him.

The class of professional men who live by pretension, are characterized by loud, clamorous and vehement harangues upon Medicine, when in the presence of those who are unacquainted with its principles; but who, when questioned by the intelligent physician in regard to the fundamental elements of Medical Science, for example—in regard to the structure and exact location of the heart, or the minute structure of the various parts of the human body, to become acquainted with which requires years of hard study—I say, when these men are interrogated in regard to any of these points, they are dumb as marble statues, in manner and mien lapsing into a solemnity so grave, that you might almost suspect that you had carelessly touched upon the name of some dead relative whose memory was too dear to speak of.

One of the leading aims which is had in view by this institution is, to prepare young men to practice Medicine on this coast. Every climate and latitude have their specific characteristics as regards the nature of the diseases which prevail in them: and here let me say, that the young man who studies disease here as elucidated by the Surgical and Medical Chairs devoted to these departments in this school, will enjoy great advantages over those that have been educated elsewhere, and have had no experience here. Not that we have essentially new diseases here, but those diseases have features peculiar to the Pacific Coast. As illustrative of this statement, I might cite the fact that the cool air of this coast, constantly acting on the surface of the human body, greatly lessens the action of that surface, and, as a consequence, the office of the skin is transferred to the internal organs—to those at least which can act vicariously for it; and hence a greater burden being thrown upon the internal emunctories, they become the more frequent seat of

disease than we find elsewhere. It is evident that facts like these can only be learned by an extended series of observation by those who, having been educated elsewhere, seek this coast as a sphere of medical practice.

In discharging the duties which pertain to the several Chairs, the members of the Faculty have assumed to themselves, individually, very heavy tasks—work which for years hence will be unpaid for; still the ambition to establish an institution of learning that will rank alongside of the Eastern schools, and one which will not fall behind the high standard which California is assuming in every particular, will ever furnish an enduring stimulus that this work shall be well done; so that, if I mistake not, the noble and commendable zeal manifested by its donor, in so magnificent a gift to the State, will in some degree be rivaled by the industry of his co-laborers in the discharge of the duties pertaining to their Chairs.

We well know that nothing short of thoroughness of work can long satisfy the demand which is made upon the teacher here. We have a population which is unusually intelligent. Notwithstanding the hurry and bustle which life demands here, we have a people which do more reading than can be found in any other part of the United States. Our State, as is well known to all, is made up of persons who are by nature possessed of more than ordinary energy and courage, who have left their homes of ease and comfort elsewhere, to seek new ones here. To risk the dangers of the ocean, or the perils from savage or famine on the plains, demanded a large share of native courage, linked with a love of adventure and a daring spirit—qualities which none but men in some degree superior to their fellows, possess. Now, of those who were endowed with a sufficiency of these qualities to enable them to surmount

the dangers and hardships of reaching here, it is none but the most persevering, the most energetic, the most shrewd and enterprising who have been able to succeed here. Those not so endowed have returned again to their homes, yielding the palm to their superior rivals.

Our community, then, is composed of elements of great determination of character, and unusual powers of endurance and native resources, such, as I am sure, from extended observation, can be found nowhere else. Now, these same traits are eminently apparent in our youth, whose sterling health, robustness of constitution and mental character, promise, when the maturity of adult life is reached, to furnish a harvest of genius which will control the destiny of the scientific and political future of our country.

In order, however, that such an element of promise may accomplish that destiny, it must be prepared by a thorough training—a training in which the plain and simple principles shall hold the chief place rather than those which give polish and elegance.

In the course of teaching to which our young men are subjected by the Medical and Surgical Chairs of this School, they are instructed not only to see but to touch, handle, and in every wise familiarize themselves with disease in its multiform varieties. They are taught that a day thus spent in the wards of the adjacent hospital to which they have access, is worth more than a week's study without such examples of illustration before them. Also, that a day's labor, while clad with with the anatomist's homely apron and protective sleeves, amidst the reeking odors of mortality, is worth far more than many days' employment with his books and microscope in the pleasant repose of his parlor.

Likewise, besides this fundamental tuition, they are taught that the principles of our science are not fixed and stereotyped, but are ever progressing. Theology and law have their principles, derived from the authority and precedent of the past, from which the correct teacher cannot essentially vary. The Mosaic Decalogue and Justinian's Pandects will serve a thousand years hence as the never-varying compasses within whose span will be contained the length, breadth and depth of theological and legal lore. But not so with our science. A Virchow, a Hughes Bennett, and, may I not add, a Salisbury of our country, have lately added, and are still adding, new treasures to Medicine; so that, to keep pace with its advancement, not the Student alone, but the Professor himself, must be a man of close and constant study. Without this we would not only be recreant in duty to ourselves, but especially so to those whose medical destiny it has been confided to us to shape.

VALEDICTORY ADDRESS,

DELIVERED AT THE

CLOSING EXERCISES

— OF —

TOLAND MEDICAL COLLEGE,

NOVEMBER 4th, 1869.

BY L. C. LANE, M. D.,

PROFESSOR OF ANATOMY.

Published at the Request of the Class.

VALEDICTORY ADDRESS,

DELIVERED AT THE

CLOSING EXERCISES

— OF —

TOLAND MEDICAL COLLEGE,

NOVEMBER 4th, 1869,

BY L. C. LANE, M. D.,

PROFESSOR OF ANATOMY.

Published at the Request of the Class.

SAN FRANCISCO:

SPEAR & CO., PRINTERS, N. E. COR. CLAY AND MONTGOMERY STS.

1869.

ADDRESS.

GENTLEMEN OF THE GRADUATING CLASS:

The task has been assigned to me by my fellow Professors of delivering the lecture which concludes your medical collegiate course; and in the outset of my address, allow me to offer you my sincere congratulations upon your having reached the goal of your hopes, the aim of many years. To-day is to be one of the chief epochs in the calendar of your lives; on the grand dial-plate of your professional careers it will mark the birth-day; towards it, in the weary hours of past labors, you have looked with fond expectation, and back upon it, in the distant future, when the toga with which you are to-day invested has been well worn, you will gaze with delight, and feel a fresh heart-throb as the whole scene rises up, illuminated by the "tender moonlight of memory."

To-day, you are released from the guiding bands which your Alma Mater girded about you as she taught you to take the first steps in the world of Medicine; or, to borrow language and figure from the seaman, the last timber has been laid, the last spar has been hoisted into place, sail and rigging all in order, and we are here to witness the sliding down of your bark from the platform on which she has been built, and her launching upon the ocean of your future professional career.

At such an epoch, and on the eve of such a voyage, a few reflections on what has already been accomplished and what remains to be encountered and experienced on this, to you, untried sea, will be in proper place. In preparing yourselves for the practice of Medicine, you have made sacrifices and incurred personal dangers, to which no parallel can be found in the whole list of human em-

ployments. In the annals of olden time, we read of a celebrated personage, Mezentius, king of Cere, who was a model tyrant in his day; not content with the ordinary punishments in vogue at his time, his chief delight was to refine and improve upon cruelty, and among the most noted of his plans, one which, by its infamy, has given immortality to his name, was to chain a living man to a dead body; now you, in your very entrance upon your course of study have voluntarily imprisoned yourselves with the dead, and, for day after day, week after week, and month after month, have wedded yourselves to the decaying forms of mortality. The world turns its face from the dead, and with quickened pace flees the charnel-house,—but you, endowed with the same aversion, have been forced to unlearn and outlive it; indeed, these instincts of nature, of horror for the dead and aversion to disease in its unsightliness, you have been required, by stern self-discipline, to rase out from the tablets of your hearts, and to implant in their stead, new ideas, new loves and new impulses.

The diseases of the human body are so various, so unique and so deeply hidden and completely masked from one untrained in observation, that no description, let the pen describing them be ever so gifted, can so portray them as to render the original recognizable; hence the resort to clinical teaching,—a study of disease not from a master's description, but at the bedside in nature's own unerring book. The germs of this precious method of study are to be found in the customs of the Greeks, among whom the temples were the resort of the sick and unfortunate, and the priests were the nurses and physicians, and besides, the duty was enjoined upon them to record upon tablets descriptions and remedies resorted to in the cases which came under their care. Thus, from personal observation and careful comparison, were laid up those facts which the great organizing mind of Hippocrates knew how to gather up and present to the human race, as the first rational work upon Medicine, of which parts have been left amidst the cataclysms which have swept from the field of human civilization so many precious monuments during the last three thousand years,—yet of the labors of the great Asclepiade, the ruthless axeman, Time, has spared one, the "Aphorisms," in which, as in miniature photograph, are epitomized the countless lineaments of human disease,—and, to

avoid the tedium of unvarying conciseness, Hippocrates has interspersed, here and there, philosophic generalizations, which, like flowers clinging to, and partially veiling the rock-work of the main structure, have been the admiration of saint, sage and bard of every succeeding generation. For example, Goethe deigned to gather from this exhaustless mine such gems as, "Art is long," "Life is short," "The Occasion is fleeting," and added these to the singular armory of his Mephistopheles, the half-Christian Satan of modern times.

From the temple, however, the clinic was by the Romans transferred to the home of the sick man himself, whither the medical master accompanied by his students repaired, and subjected the patient to a most minute inspection and severe examination. In fact, to borrow the language of the great epigrammatist, Martial, in detailing his own experience of such clinical visits, the examination was conducted with far less delicacy than would be, or even ought to be submitted to by a sick man. For, says the Roman wit, "On a time, I was suffering with a slight illness; the physician came with his retinue of students; a hundred cold hands touched me; on their arrival I had no fever, but they left me with one."—It was a Roman Matron, Fabiola, who has the honor of having founded the first hospital: thus, by the hand of woman, was intwined one of the fairest flowers in the wreath of human benevolence, and Medicine made to advance one step further, since, for nearly twenty centuries, notwithstanding whatever errors may have been written in books, the hospital has furnished, through its inmates, the unmistakable truths of Pathology. To read these great truths, as written by Nature's own right hand, you have daily followed your Professors through the wards of the neighboring hospital, and, as I said in the outset, have thus made sacrifices of ease, comfort and natural feelings, such as are demanded in the preparatory training of no other human profession; nay, more than comfort and ease must be sacrificed,—personal risk of life must be incurred. From the statistics of the Philadelphia Medical Schools, it appears that scarcely a year elapses, that one or more students do not die from typhus, contracted from exposure in the hospitals.

Aside from hospital exposure, the dissecting-room offers perils quite as great. Do we not know that one drop of erysipelatous, or puerperal poison, engrafted on a healthy person, will bring death quite as surely as the Minnie ball? Also, that other matters to which the dissector is exposed, in quantity of atomic minuteness, when once they find ingress through the slightest wound into the human body, can never again be eradicated, but, as it were, with fangs of steel grapple hold of and cling to the very hearth-stone of existence, thence mingling, day by day, with the life-current of the unfortunate one, venom from an exhaustless chalice of death.

But these perils, these risks, and these sacrifices, which, as unsightly pictures, perhaps, I have dwelt upon too long, I will now shift from the scene, in asking if they have not brought with themselves a noble reward. Your studies have had for their object the "strange, eventful history" of life in its widest extent and compass. Your experience and knowledge of life, in its wealth of change and mutation, as opened to youby your studies, enable you to comprehend the momentous words of Goethe's "Spirit of Life," where the poet, touched by the finest key of inspiration ever reached by his genius, makes her exclaim—

> "In the flood of life, in the storm of action,
> I am moving to and fro.
> Here, bringing into life,
> There, rearing a tomb;
> An eternal sea,
> An ever-changing weaving.
> Thus seated on the loom-stool of time,
> I weave the robes of Divinity."

Of the essential and inherent nature of life your teachings and studies have given you no knowledge. Like the mathematician, who actually knows nothing of the nature of number, space and time, and yet is constantly occupied with calculations relating to them, so life, in its essence, is a sealed mystery, of which no genius has yet discovered the key;—still the laws and order according to which its phenomena are regulated and take place, are the leading objects of medical study, and, as you well know, the wonders which investigation is constantly unfolding to the student, well repay him for his risks, toils and discomfort. To

every true lover of nature, and every honest student of life, the inherent reward which invariably accompanies such research is far higher and more to be prized than anything in a material sense which can be realized. And hence, instead of the study of Medicine tending, as is often said, to freeze out the finer feelings of human nature, the effect truly is the reverse.

Ossian, in speaking of one of his heroes, gave, as one of his noblest qualities, his love of blood ; for, says he, "blood to him is a pleasant summer stream, which brings joy to the withered vales, from its own mossy rock." The opinion of the world is, that our profession have similar sanguinary tastes and endowments. Perhaps an exceptional one may be so, who, having stolen into our ranks illegitimately, retaining his savage, uncultivated manners, loves to display, as "trademarks," hands and clothing stained with blood ; yet no one, who has had the humanizing influence which the long course of study requisite for entrance into our profession imparts, can tolerate such violations of ordinary de corum.

For the sake of my hearers, who are here to be witnesses of the honors with which this day you are invested, permit me to cite some points, already familiar to you, but which, when first presented to your minds, awoke the highest feelings of admiration and mental pleasure. For example, in the continual metamorphosis and shifting of matter from the material world to the living body, and there, having temporarily undergone an apotheosis, it soon slips from the godlike summit of life adown the precipice of death, to become a part of Nature's vast inorganic magazine, we have one of the sublimest phenomena. Take, for example, iron, phosphorus, lime, which are integral parts of our bodies, and study their transmutations and changes, ere they reach the living being. First, we find them in the rugged unbroken rock, which makes the mountain side, or perhaps intrenched more deeply in the bosom of the earth; from these hidden recesses they are brought to light by the foaming, noisy stream, the unresting wave of the ocean, the thundering cataract, the ponderous glacier, which, beneath its mighty foot, reduces the granite and basalt to dust, and to these grand powers, which, as eternal forces in the hand of Nature, accomplish her mighty hammer-work, we may add the cleaving thunderbolt,

and even the earthquake itself, as the grand leaders of the mighty host of natural forces, which, as in a vast mortar, reduce the trap, basalt, old red sandstone and granite which make up the skeleton of our earth, to microscopic dust, and thence dispense them to the rootlets, stalk, blade, flower and grain of wheat, which is plucked by the human hand, as building material for human blood, human bone, human muscle, nay, even the brain itself, the instrument of human thought. The thoughtless delver in guano, upon the isles of Peru, hands sustenance to the plant, thousands of miles away, which, in its turn, passes on its precious elements to the brain of wit and genius; and thus the miner, whose intellectual scope is but a few degrees beyond that of the sea-bird which has its haunts there, becomes the unconscious furnisher of the oil which burns and keeps alive the lamp of intellect. Or, if from this microcosm in which the mind is suspended in wondering awe in its contemplation of forces immensely great and those infinitely small, we pass to the microcosm, or lesser world of man himself, where the aid of the microscope must be invoked to enable us to penetrate and see what transpires, we encounter, at each step, that which is no less novel, strange and admirable. As before said, no one has yet been found worthy to enter the inner temple of life, and gaze upon its *adytum* and *penetralia*;—mysteries exist there more sacred than Eleusinian or Masonic, which Nature, with her own hand, has placed the veil around, and has inscribed thereon, in unfading letters, KNOWN ONLY TO MYSELF;—still, with the crucible, retort, lamp and blowpipe, which chemistry has furnished us, the scalpel of the Anatomist, and, above all, the microscope, we have here furnished keys which have opened to us the outer doors, and we are already beyond the threshold, in fact, have a dim insight into this temple, and here and there have glimpses of its "majestical roof, fretted with golden fire"; in fact, so thoroughly are we intrenched therein, that it will require but a few generations more, should each one have a Van der Kolk, a Virchow, a Moleschott, a Robin and a Beale vouchsafed as leaders, ere this grand problem of life shall be solved. By the aid of the microscope and the helps before cited, we know now, that the drop of blood that exudes from the prick of a needle contains in solution every element which enters into ·stitution of our bodies. In it are to be found the elements

which solidify into bone, which become the contractile particles of muscle, which may be converted into the elastic chord whose vibrations are syllabled into the countless sounds of human language, or into nerve-structure, by which we see, hear, taste and feel.

In the contemplation of these phenomena of our being, with whose study you have been so long occupied, every student finds his labors a thousandfold recompensed,—for not only does he acquire facts which aid him in the first of human vocations, viz. the alleviation of pain, but, at the same time, his intellectual nature is continually enlarged by pictures of sublimity of the highest order. From the study of man, as required in Medicine, we learn that our bodies are a part of the material universe, related to and dependent upon it in many ways ; for to the sun we look for light and heat, and to the moon for the purification of the vast bodies of water upon our globe by tidal influences,—and upon the earth's diurnal motion we depend for sleep ; in fact, the farther we push our researches, the more do we find that our bodies are governed by the same laws as those which obtain in all material nature, and, to adopt the language of the great poet,

> According to laws
> Fixed and eternal,
> Must we, one and all,
> Unerringly accomplish
> The circuit of our being.—GOETHE.

Your reading, Gentleman, has long since shown you that our Profession is one of progress and continued change. If we be permitted to look ahead, into the far-off cycles of futurity, it is probable there will arrive a period, when all the problems in reference to our bodies will be solved, whether in health or disease ; for this purpose, observation and experimentation must unite their forces, and with that sharp logic that detects and eliminates the faintest shadow of sophistry, like two opposite mirrors, they must mutually reduplicate and correct the work of each other. Theory, which has served as a valued aid at times, has often planted insurmountable walls across the pathway of truth, which, from the sustaining power of the high authority whence they emanated

conjoined with that religious sanctity which age imparts, have seriously impeded the advance of medical truth. For example, the opinions of Galen, in part true but in many points erroneous, were the sacred and unquestionable canons of our profession for over a thousand years ;—none dared oppose or add one principle ; finally, a mind arose in the firmament of intellect, which was gifted with such rare quality of originality and self-reliance, that it not only dared to question the authority of Galen, but it threw overboard all the dogmas and ideas of the past, and created for itself a new arena of thought ; as Columbus opened to humanity a new world for colonization and liberty, so the iron-headed old Swiss, Paracelsus, called also Theophrastus Bombastus, broke the shackles which for centuries held in thraldom the medical mind, and like the great navigator, opened up a new world, where coming generations of thought might find a new home, a new sphere of action, where no name, authority or precedent of the past would prevent progress or discovery. Though this undaunted innovator, Paracelsus, in his ruthless and sanguinary tirade upon the ideas of all others, whether past or cotemporaneous, often fell into extravagance, yet to him must be conceded the honor of having introduced the methods of observation and deduction, by the aid of which Medicine can alone make unerring progress.

What I have said to you, thus far, portrays, in a brief and cursory manner, some of the characteristics of your past studies,—to-day, as I have said, your student-life undergoes a change, you become practitioners of Medicine, and we are here to witness the launching of your barks upon the ocean of professional life ; but this epoch, so noted in your careers, is it to be the day that shall, in future, record the perpetual closure of your books of study, the repudiation of these old friends to whose faces you have looked so earnestly for advice and instruction during so long a time ? Indeed, is the noise and pageantry of to-day to be like that rattling sound in the ears of the patient who is inhaling chloroform, and like that last echo of the senses that salutes him as the anæsthetic bears him from the conscious world of life to that of Death's half-brother, Sleep ; shall the "pomp and circumstance" of to-day but be as the funeral cortège that shall attend and consign the last remains of your ambition for study to that

Lone Mountain that knows no waking? If such is to be your future course, then it requires no prophet to foretell that your coming lives will be but a career "full of sound and fury, signifying nothing." I am sure, however, there is not one of you but that resolves that such shall not be the case. Time, however, like the Arabian Night's magician, too often, by the waving of his hand, effaces such resolves, and consigns them to oblivion. That the recollection of these resolutions may remain and have a constant abiding-place in your minds, is the earnest wish and parting request of your Alma Mater; thus, in the honors which thereby you are sure to gain for yourselves, she, like the parent of an illustrious child, will feel herself fully rewarded for her cares in your behalf.

In entering upon your career as practitioners of Medicine and Surgery, you will have opened to you new fields of thought, observation and action; you are to have as objects of care and study diseased humanity,—sick men, sick women and sick children. You are to have insights into human character, which no other vocation of life can offer: man in his weakness, frailties, foibles, irresolution, whims, caprices, fickleness, miserly meanness and querulousness, on the one hand will be presented to you; on the other hand, man in his courage, resolution, bravery, generosity, indifference to pain, and firmness of character which nothing can move, will also be presented to you; yet the former class so greatly outnumber the latter, that, with the great satirist, Boileau, you will be inclined to agree, where he says:

> "Of all the animals who move in the air,
> Who walk the earth, or swim in the sea,
> From Peru to Paris, from Japan to Rome,
> To my mind, the most foolish of all is man."

The examples, however, where your patient will display those qualities which so eminently dignify human nature, will, as I have said, be the exceptions; but as a single beam of light can illumine a darkened chamber, so the occasional meeting with such cases of noble virtue will not only render you content with your profession, but inspire you with the highest admiration of human character.

Another subject of observation and reflection to you, will be

the examples of human intellect wasted, worn, and, perhaps, quite blotted out by the influence of age, care, or sorrow ; nay more, that such influence may not only make a wreck of intellect, but may likewise sap the very foundations of life itself. Schiller, who had a thorough medical education, in fact took a premium for his inaugural thesis, has traced the picture of a wretch, who, to destroy his father, sought to do so by the fiendish methods of mental torture. As this picture delineates, in language never surpassed, the influence which passion, emotion and affection may, when fully aroused, have upon the body, I will take the liberty of quoting it, and though the quotation may be a long one, I am sure it will interest you, especially when I tell you, that, when Schiller wrote it, he was a student of Medicine, and not yet twenty-one years of age.

Franz Von Moor, alone in his room, absorbed in deep thought, exclaims :

" It lasts too long for me ; the Doctor intends that he return to youth again ; the life of an old man is indeed an eternity. Oh, that there were free way to the ruin of this troublesome, tenacious lump of flesh, who, like the magic mole in the story-book, by his work under the earth closes the pathway to my treasure.

" Must, then, my schemes bend beneath the iron yoke of mechanical device ? Shall my high-aspiring soul be chained to the snail-like, creeping action of matter ? My task is nothing more than to blow out a light, which continually seems to acquire new strength, as it consumes the last drops of oil. And still I would not like to do the deed myself, on account of what the world would say. I do not wish to kill him. I would like to do the work like a skilful physician, or rather the reverse of what his art aims at. I would not interrupt, in an outright manner, the course of Nature, but I would only hasten her speed ; and as we have the means of lengthening out life, so we should, in like manner, know how to abridge it.

" Physicians and philosophers teach me how admirably the conditions of the soul correspond with those of its bodily machine. Painful sensations ever accompany a discordant vibration. The passions handle the powers of life roughly ; the overburdened soul crowds the body to the earth. Whom do I know, then, who can teach me how to open a way for Death into the citadel of

Life? Or, through the gateway of the soul, to admit death? Ah, what an original work! Who can do it? A work without parallel! Think for a moment, Moor. That, indeed, were an art that would merit to give thee honor, as an inventor. The art of poisoning has been carried to such a grade of perfection, as to give it the rank of a science; by it Nature has been forced to yield up the secret of her power of endurance, so that, for years before hand, one can tell the strokes which the heart has still to beat, and say to the pulse, Thus far and no farther shalt thou go. Who would not try his wings here?

"And how must I now go to work, in order to dissolve this sweet alliance between the soul and the body? What kind of sensations must I select, which will most violently attack the foundations of life? Anger? The fierce hunger of this voracious wolf is soon satisfied. Care? This worm gnaws too slowly. Grief? This adder creeps too slowly for me. Fear? Hope does not allow it full compass. What! Are these all the executioners of man? Is the arsenal of Death so speedily exhausted? How now, what? No! Terror! What is there Terror cannot do? What can Reason, what can Religion do against the icy embrace of this giant? And still, if the old man should withstand all this, then what? Oh, then come to me Sorrow, and thou Regret, thou infernal fury, thou undermining serpent, who ruminates and consumest thy own excrements, eternal destroyer and eternal creator of thine own venom; and thou, howling Self-accusation, who layest waste thy own house, and woundest thy own mother. Come also to my aid, ye kind Graces, thou gently smiling Past, and thou, flowery Futurity, with thy overflowing horn, present before him, in your mirrors, the joys of heaven; and then, with swift feet, fly from his greedy hands. Thus will I attack, stroke upon stroke, and storm upon storm, this fragile life, and finally I will close the list of my destroying troop, by adding Despair. Triumph, triumph! The plan is finished; profound and cunning, as no one ever devised before; certain, sure, since no dissecting-knife can find a wound, or a trace of poison."

As Franz von Moor thus calculated to destroy life with the invisible poison of mental torture, so, with equal certainty, in your

future mission of benevolence, you will find that you hold the magic power of releasing, by purely moral force, the victim of disease and impending death. For, besides the changes which the human body undergoes by disease, which, thus far, have been your chief study, your coming career of practice will open new fields for your observation and study, viz.: the changes which the mind undergoes under the influence of disease. We hear, now-a-days, such novel questions as the following: "Will the coming man drink wine?" Or, "What will be the religion of the coming man?" If the question should also be asked, "What will be the character of the coming sick man?" The reply must be, "The same as of the past." Disease, as a rule, saps the foundations of courage, and makes the hero irresolute, timid and cowardly. One of the bravest men I ever knew, said, after a long illness, "I have been sick so long that I have become a perfect coward." The man who, under the inspiration of perfect health, recklessly exposes himself to the greatest perils, when sick, shrinks from the merest nothing, "a shadow of a shadow," in fact, is truly a child again. An imperial Cæsar, when languishing under a fever, exclaims:

"Give me some drink, Titinius, like a sick girl."

Not less, therefore, than his bodily pains must you study the moods, the humor, the whims, caprices and notions of the patient.

Most sick persons look to their physician for courage, inspiration, in fact, for both mental and physical support. The patient is standing upon the narrow bridge that spans the river of Death, of which Disease is undermining the feeble supports; the whole structure, with its trembling victim, threatens each moment to fall; his eye is fastened dependently and beseechingly upon you; if, with unwavering courage and unfaltering confidence, you can but hold his eye from the destroying flood that rolls beneath him, you will rescue him; he will regain the shore of life, and live again. Or, to borrow another figure, life is like a candle, which, exposed to the tempest of disease, threatens each moment to be blown out; the physician's duty is to offer a screen of protection to that light; and if he can but preserve the flame alive, though it be reduced to the very verge of expiring, it will live and soon regain its

wonted proportions again ; but, once allowed to perish, he might well exclaim with Othello :

> " I know not where is that Promethean heat
> That can thy light relume."

The physician will find but few endued with that native resolution of which Charles the Twelfth of Sweden offered so heroic an example, who, when wounded and requiring an exsection of one of the bones of hisancle, held the foot himself, and told his surgeon to cut boldly. Few are possessed of a courage equal to that of a Benton, who, when an insatiate cancer was gnawing away at the very inner posts of existence, could lie and assort from his memory the materials of a "Thirty Years Annals," the last lines of which were dictated in a whisper,—thus transferring, as it were, the undying treasures of his mind from the falling citadel of life to the imperishable archives of History ; few are like the young and noble Körner, who, when mortally wounded, could dip his pen into his wound, and, with the blood that was flowing and bearing his soul with it, could write, as he did, the following lines :

> " My wound burns, my pale lips tremble,
> I feel, in my heart's weakening pulse,
> That I am standing on the shore of death.
> Courage, Courage! That must still live with me,
> Which has been so faithfully enshrined in my heart.
> Before me, Love, Liberty, I see,
> Standing, like Seraphs, as one breath bears me
> To the mountains tipt with the morning-flush
> Of Eternity. "

Few, I say, are the examples which you will meet of this kind, yet you *will* meet them, and, when seen, they will inspire you with pride for your race, and renew your love for your profession. As examples of moral sublimity, they will riva not surpass, in the emotions which they will awaken within your heart, whatever is great within the domain of Art or Nature.

The profession to which, this day, you are admitted, does not unreservedly and unconditionally receive you ; in giving, it again expects something in return ; it exacts from you bonds, that you will honestly use its treasures ; bonds in which the consideration

stipulated is not in currency, silver or gold, but a material far more valuable, which cannot be coined or engraven, viz.: *honor*. For thus confiding to your guardianship the keys to her treasure-safe, in which the uncounted wealth of the intellect of twenty centuries has been stored, she demands from you an incorruptible, ever vigilant honor. There is no profession where there are more temptations and opportunities to act unjustly than in ours. Let me here notice a few of these. Often you will hear the name of your professional brother assailed, and his character unfairly dealt with; in such a case, you will not be a silent listener, thus tacitly sanctioning what you hear, but, if you are endued with that true spirit of honor which is always found in the just and upright physician, you will repel such imputations, and thus, as a champion of truth and fair play, you will not only lose nothing, but will be a double gainer, since, thus acting, you will win the esteem of both assailed and assailant. Trophies won by unfairness will bring no satisfaction to yourself, but, in the eyes of others, will, in the end, render you despicable. Turn your eyes to past history, or even to the immediate present, and many instances arise to prove what I have here stated.

Again, all that which is great, good and enduring is the slow product of years. Jenner was half a life-time in collecting and comparing observations which led to the discovery of vaccination; the poet Gray revolved his "Elegy" many years in his brain ere it took the grace, form and beauty with which he gave it to the world. The same law has governed and still governs the successful career in Medicine. The majority of eminent medical men have had a period of severe probation during the early years of their practice. To avoid the trials of this early period of waiting, the seducer, Charlatanism, hangs out its allurements, and whispers in the ear of the young man that there is a nearer pathway than the old road to success. Why double the Cape when you can so readily steam through the Straits? Get your name before the public by illegal advertisements, as the discoverer of some remarkable medicine, or the performer of some wonderful operation. This is a second method of disgracing your vocation. When such temptations knock at the door of your heart, give them no admission. When wealth bids you come by these paths, and pluck golden apples which she enticingly waves before you,

remember that a serpent lurks amidst them, ready to sting him who plucks; for, as Boileau says:

> "Honor is as an isle with insurmountable banks,
> Which, once abandoned, never is reached again."

In the practice of your profession there will be many opportunities and occasions offered to take advantage of your professional brother; for example, if a series of ill luck, of disastrous cases has fallen to his lot, where no skill, art or science could foresee or prevent a fatal termination, it will often occur that importunate friends will use every means to induce you to array yourself against the unfortunate physician. But if you will follow those promptings of honor which have a home in every honest breast, you will spurn such offers, and, in so doing, you will not only have that satisfaction which invariably accompanies upright action, but, measured by far-seeing policy, such a course will always be found shrewd and sagacious, since it is a rule, with few if any exceptions, that he who injures, surely places himself in a position to be injured; for the scales of justice do not always sink on one side alone, since an unbiassed Nemesis stands beside them, and with a severe equity that knows no compromise, reverses weight and article weighed, and thus, sooner or later, vindicates the side of right.

Your future success will depend not alone upon your scientific attainments; you must possess all the qualities which make the gentleman. As this is a large field, I will touch but a few of the leading objects which it presents. From extended observation, I would select, unhesitatingly, as the cardinal virtues of the medical man, patience, industry, temperance, and a due respect for the rights of your professional brethren. The careers of the most successful among you will be but a series of victories and defeats; victories so great, so brilliant and complete, that an Alexander might be envious of them—where, as the leader of the forces of life, you have met those of disease, and have thoroughly routed them, and conducted the imperiled patient back to health again; but, on the other hand, it will often happen, that where you have used every effort, and with untiring vigilance have done all that medical art could do, yet you have been baffled, disappointed and defeated, so that an inconstant

public reaches forth its hand and plucks from your brow the laurels it had but yesterday entwined there ; hence, need I tell you that, in a profession where disappointment is ever an accompanying shadow, infinite patience will be needed? The sick man and his friends look anxiously for your arrival ; the hour of your coming is impatiently looked for,—hence you should be prompt and punctual in your visits,—that is, be industrious ; and besides, I would say, that if industry be needed in the outset of your career, it will be quite as much so when you have reached the summit of success, in order that you may retain your laurels ; for the old Roman Æmilius was not far out of the way, when he adopted the practice of praying the most earnestly to the gods when he had just won a victory.

Intemperance will steal from your purse your earnings, will sour your temper, will harden your heart as well as your brain, and bring you the unenviable compliment, "He is a good fellow—it is a pity he drinks ;" on the the other hand, temperance will give you a smooth temper, a steady mind and a steady hand.

In your office-book of duty and virtue, I have pointed to and underscored *patience, industry* and *temperance ;* I now call your attention to another, viz. : A DUE REGARD FOR THE RIGHTS OF YOUR PROFESSIONAL BRETHREN,—and this virtue I will underscore twice ; and if the former three be cardinal points of your future professional voyage, the last one should be the main one, the starting-point from which the others are reckoned, and, truer than the pole of the mariner's compass, it should be immovable and without variation.

Equipped, then, Gentlemen, with these principles of science and virtue, you will go forth to the world upon no uncertain mission ; a high and noble sphere will be yours, since to you suffering humanity will ever turn its eyes for aid and relief. Now, as your Alma Mater bids you adieu, she would fain say, as she clings to you in parting, never prove unworthy of the great profession into which, this day, as equal members, she has introduced you ; and, though Fame as yet sounds no note in your behalf, still, if you will turn your ears and listen closely, you will catch the sounds of her trumpet echoing from the early-coming years.

VALEDICTORY

DELIVERED AT THE

NINTH ANNUAL COMMENCEMENT

OF THE

Medical Department

OF THE

UNIVERSITY OF THE PACIFIC,

AT MERCANTILE LIBRARY HALL,

December 7th, 1871,

By L. C. LANE, M.D,

Professor of Surgery, &c.

PUBLISHED BY THE GRADUATES.

SAN FRANCISCO:

PRINTED BY J. F. BROWN, No. 534 COMMERCIAL STREET, NEAR MONTGOMERY.

1871.

VALEDICTORY

DELIVERED AT THE

NINTH ANNUAL COMMENCEMENT

OF THE

Medical Department

OF THE

UNIVERSITY OF THE PACIFIC,

AT MERCANTILE LIBRARY HALL,

December 7th, 1871,

By L. C. LANE, M.D.,

Professor of Surgery, &c.

PUBLISHED BY THE GRADUATES.

SAN FRANCISCO:

PRINTED BY J. F. BROWN, No. 534 COMMERCIAL STREET, NEAR MONTGOMERY

1871.

MEDICAL DEPARTMENT

OF THE

University of the Pacific.

FACULTY.

A. J. BOWIE, M. D., Emeritus Professor of Surgery, and President of Faculty.
J. F. MORSE, M. D., Emeritus Professor of the Principles and Practic of Medicine.
HENRY GIBBONS, M. D., Professor of the Principles and Practice of Medicine, and Clinical Medicine.
L. C. Lane, M. D., Professor of Surgery and Surgical Anatomy, and Clinical Surgery.
EDWIN BENTLY, M. D., Prof. of Descriptive and Microscopic Anatomy and Pathology.
CLINTON CUSHING, M. D., Professor of Obstetrics and Diseases of Women.
C. N. ELLINWOOD, M. D., Professor of Physiology.
L. C. LANE, M. D., Acting Professor of Ophthalmology and Otology.
THOMAS PRICE, M. D., Professor of Chemistry and Toxicology.
HENRY GIBBONS, JR., M. D., Professor of Materia Medica and Therapeutics.

STUDENTS.

J. O. HIRSCHFELDER,
JAMES GYE,
CORNELIUS SCANNELL,
BENJ. T. MOUSER,
EMMET L. WEMPLE,
HENRY BERGSTEIN,
JNO. MILLINGTON,
G. EUGENE DAVIS,
DAVID POWELL,
W. D. JOHNSTON,
CHAS. P. FAULKNER,
S. E. KNOWLES,
ALBERT H. PRATT,
SAMUEL McCURDY,
GIDNEY WORTH,
HENRY E. NEIL,
A. L. LENGFELD,
W. W. STILLWAGON.
MARK PIETRZYCKI,
GEO. CAMPBELL,
JOHN WAGNER,
ALFRED S. DANA,
JAS. W. KEENEY,
ALBERT J. HOWE,
FRED. CRANSTON,
GEO. H. JACKSON,

GRADUATING CLASS.

S. E. KNOWLES,
JNO. MILLINGTON,
W. D. JOHNSTON,
DAVID POWELL,
GEO. H. JACKSON.
A. L. LENGFELD,
JAMES GYE,

AD EUNDEM GRADUATE.

W. W. STILLWAGON, M. D.

VALEDICTORY.

GENTLEMEN OF THE GRADUATING CLASS:

The occasion which your Alma Mater this evening celebrates—the marriage of five of her sons to the profession of their choice—the launching of their barks upon the sea where the great battle of life awaits them—is one of such importance that she would fain ask you for one more audience—ask to speak a few parting words. The young man on the eve of leaving his home, to take part, as an individual, in the struggles of life, often finds long, tedious and prosy, the words which parental caution whispers in his ear, but ere the career of life is finished, his mind runs back to such words, and memory holds fast to them as precious treasures, As your Alma Mater invests you with the battle-cloak and shield, she expects you so to wear them as to bring no dishonor upon the lineage and escutcheons of the old and noble race to which, this night, you are legally wed.

Methinks I hear some of you ask, *how* may we so wear the chlamys and bear the shield, as to satisfy the hopes of the institution which now grants us its highest honors, of the profession with which these honors affiliate us in the future? I will endeavor to answer your question.

First of all, a physician is expected to be an educated gentleman. He is expected to be *educated*, not in the trite meaning of this term, but in a manner universal and encyclopedic in character. Some imagine the physician's attainments to be a kind of seven-toned harp, whose several strings shall ring individually a chemical, anatomical, physiological, obstetrical, therapeutical, surgical, and chemical note; such notes, indeed, his harp should give, clearly and without defect, but his learning should *reach* much further—it must and does *embrace all the objects* of nature and their phenomena.

Hence a lifetime is but a short period for such a curriculum. But of this anon.

The physician must be a *gentleman;* nor do I mean this in its modern, ill-used sense; but in its primitive meaning, before conventional usage or affectation had disfigured and perverted the term; when it implied character in which courage was wed to gentleness, heroism to humanity, broad intellectual culture to simplicity, self-respect to a sacred respect for the rights of others; in fact, as the great dramatist has it:

> "A form and combination, indeed,
> Where every god did seem to set his seal,
> To give the world assurance of a man."

The profession to which we introduce you, expects from you earnest work; thorough, untiring and undivided devotion; a fixed resolve, an unflinching purpose to add something to the common treasury of medical knowledge. With a determination like that of Alaric of old, who, when repulsed before the gates of Rome, vowed that either as a victor he would give the land as a heritage to his people or it should give him a grave, you should resolve to give to the future for a heritage at least one new fact; such determined resolution cannot be baffled; sooner or later triumph crowns it; for though Rome gave to Alaric an unknown grave, yet, to his followers, full of inspiration drawn from their leader, it gave a realm. You who are full of hope, of enthusiasm, and of the future, let the great ones of the past inspire you, and never rest till you have added one truth to the public domain of medical science.

One apparently unimportant observation may bring with itself immense results; witness that of Galileo of a swinging lamp in a church at Pisca, his deduction therefrom of the laws of the pendulum, the consequent construction of accurate time-pieces, and finally the chronometer, which, next to the compass, the mariner takes for his guide on the deep. Witness the observation that a frog's legs were convulsed when two different metals were caused to touch its sciatic nerves, thence *the construction* of the Voltaic pile, thence of a ma-

chine which enabled Davy to revolutionize chemistry, and finally gave mankind the means of transmitting thought more rapidly than thought itself; such the gift conferred upon the world by the simple observation of an Italian physician. Science, in return, has immortalized him by giving to one of its most noble sections the name of *Galvanism*. And still again, the apparantly trivial observation that the milkmaids in the rural districts of England were comparatively exempt from small-pox, was the first link in the chain of facts which led to the discovery of vaccination, thereby shielding mankind from the mephitic breath of the most cruel of plagues; for as Chalcas the sage,

> "Whose comprehensive view,
> The past, the present and the future knew,"

By his wisdom taught how to appease the plague-god, who, "going forth like Night," breathed death among the Achaian forces before Ilion, so did Jenner, by the magic touch of the lance-point upon the arm, teach his generation to escape this most loathsome disease; and the boon did not, like the services of the sage, expire with his own generation, but will continue to be the inalienable heirloom of all future ages.

The instances cited are enough to show how the slight suggestion of a cause may teem with great results, and as monitors on the highway of time, they inculcate the importance of observing, noting and recording every new fact; for such observation may, like the attractive force which the rubbed amber acquires, or the curve which the swinging lamp makes, become as the germ of a tree which, springing up, bears flowers and fruit, for the cheer and sustenance of generations present and future.

And to *you*, gentlemen, whose years yet rejoice in youth, and whose minds, fertile as an alluvial soil, and warmed by enthusiasm as by a tropical sun, are destined, if properly cultivated, to yield a rich harvest, to *you*, standing face to face with such monitors as incentives, we *look with* confidence for a kindling in your *hearts of an ambition* to work and struggle for a place

by the side of the great and the worthy of your profession.

In these remarks do not understand me as urging you to seek only for an immortality, and especially would I admonish you not to expect it too early. Young men are often too anxious to leap into the sphere of the immorta's. To such I would say, remember Icarus, who vaulted too far aloft on the wings which he himself had made; his pinions were melted by the sun and he tumbled down into the sea; and it is not probable that you would be so fortunate as to have, like him, a sea named for you. Neither would I have your flight too low, lest, Gambetta-like, you might be wounded by an enemy's shot, and, less fortunate than he, your balloon also might be wounded.

But now, if ever you are to do it, is the time to make your resolves, to lay your plans, and to launch yourselves each into an individual orbit, in which, like a planet with permanent momentum, and well-poised motion, you will ever move with an individual identity, undisturbed by any agency internal or external.

In such a character the world looks for something more than a gentleman with educate dintellect. His heart must likewise be educated; and in such a heart the passions and emotions will be found of vigorous development, but thoroughly subdued. For if these be absent then the man might live, and even wear the imperial purple as did the sons of great Theodosius of old, for two or more decades, and yet scarcely leave a trait of personality to which the historian could point. But if the passions are given the ascendant, their unhappy victim is even worse than a planet freighted with internal detonating elements, which, if bursted, leaves monuments of a former existence in surrounding asteroids, while the man, sinking in the vortex of ruin, leaves naught save a dark and charred image in cotemporaneous memory.

For this training and discipline of the emotional *nature, your* professional career will afford a rich

field. The young physician soon learns that he cannot please every one. To some he will find himself personally disagreeable; others dislike to see a young man advancing so rapidly, and such would seem to look upon themselves as having a special mission to throw impediments in his way. Such love to throw his character on the gridiron of criticism, the bars of which have different degrees of temperature, varying from ice-cold, through fever-heat, up to red-hot; the first represents those who say he is a very learned man but we don't think he will make much of a physician; and from the same ice-point comes the wily, left-handed thrust of the old professional brother whose vision is somewhat jaundiced by envy, whose apprehensive ken fears being displaced, who says, he would be a good physician or surgeon if he were not so unlucky in his cases. The second grade of censure is represented by those who have a tolerably well-defined aversion, as shown in the pretty placidly spoken remark that they would not have you to treat their canine. And lastly the red-hot type of censure will appear in the shape of keen, bitter hate, and will come with wasp-like venom in the words, I wouldn't have him to doctor a sick feline for me.

Again, the very nature of the practice of medicine is of a character calculated to develope all the higher moral virtues, those, in fact which distinguish the refined gentlemen from the coarser man. Need I recite the prosperous and adverse endings of human ailments, giving alternate shadow and sunlight to the practice of every physician. Like a pendulum his life vibrates between victory and defeat. The vanity which might arise from the one, runs no risk of extraordinary development, since the envious hand of the latter quickly plucks it up by the roots.

One of the most talented young physicians I ever knew, as one of his earliest operations had a case of ovariotomy; much depended on the result; all the energies of *his mind* were bent to throw around the pa-

tient every circumstance which could favor recovery. Not recovery—but death—came and lifted to the lips of the unfortunate woman his cold chalice as the only reward for her daring. I have never seen disappointment touch more cruelly on the heart of any one, than did the loss of that patient this young physician; but with that philosophy which springs from a well disciplined mind, he said, "For me perhaps it was better that it failed, for such a triumph at so early a day in my career, might have made me inordinately vain."

Besides the discipline which the practice of medicine, from its inherent nature, will give your minds, the examples of noble character which the sick-bed will present, will be of a nature to widen and lift up the moral sentiment. The battle-field with its wild clash of arms, the roaring cannon, the trampling of cavalry, the sounding drum, the commander's approving eye, and the hope of victory, all conspire to lift the wounded man above his anguish, and, like the hero of Corunna with his left arm nearly torn from his body by a cannon shot and his ribs all crushed, he may die with a smile of triumph on his lips. But it is far different with the wretched consumptive where death is hammering away incessantly, week after week and month after month, ere he makes a successful breach in the vital ramparts, through which he may leap and raise his pale ensign over the citadel of life. Yet through these long days of pain and still longer nights of weariness, there is often presented to the physician's eye a patience and a bravery greater than war can boast.

We may safely assert that there is no profession which requires higher intellectual culture, than the medical; and this culture must be carried to such proficiency that it can act almost automatically or intuitively. The study of months or even years, is often, in its practical sphere of action, circumscribed to a few moments. Instance, spasm of the glottis, or a foreign body falling into the windpipe, requiring instant

performance of tracheotomy. In such a case, how infinitely asunder stand the medical and the legal man; the former has no time to overhaul his tomes to learn whether the statute has changed, whether a recent decision of the Supreme Court will justify him in adopting this or that course, or whether the case may not be adroitly disposed of by a plea of *demurrer*, or whether the client may not be released on a writ of *habeas corpus*, or, worse coming to worst, if the Court may not be induced to grant a stay of proceedings;—I say the medical man has no time for anything of this kind, but his reading must have been done, and every fact so engraven on his memory, that as he runs he may read it. In fact, the young physician, borrowing the words of the greatest of Earth's bards, should thus apostrophize the study of the principles of his profession:

> "Remember thee?
> Yea, from the table of my memory
> I'll wipe away all trivial fond records,
> All saws of books, all forms, all pressures past,
> That youth and observation copied there;
> And thy commandment all alone shall live
> Within the book and volume of my brain,
> Unmixed with baser matter!"

In the practice of law, there is a charm which often fascinates the young man, and more than one medical student have I heard say, that he was sorry he had not studied law. There is, indeed, something captivating to the mind of most persons, in the very manner of conducting legal business. For example a Judge, full of dignity and self-possession, sitting in front of his Court, every eye of which is fixed upon him,

> "With eye severe and beard of formal cut,"

Holds the scales of justice in his hand; a couple of legally indisposed persons, known as plaintiff and defendant, present their cases for treatment, and to aid them detail their complaints, one or more lawyers are arrayed on each side. To see that the scales of justice are impartially poised, twelve men, known as jurymen, are chosen as aids, and after the complaint

has been thoroughly illustrated and set forth, these twelve men then pass upon the character and amount of medication proper to be resorted to in the case. Meanwhile a large number of spectators are witnesses of the whole affair, and, as an item last mentioned though not the least in importance, large sums of money have been given or pledged to counsel. But what a contrast when we step from the domain of Law to the practice of Medicine! The physician, especially in the beginning of his career, finds many of his cases summoning him to the squalid haunts of poverty; no convenience—no comfort—but poverty and want, in all their wretched forms, have here found habitation; while disease, a near kinsman to them, has in addition, added its quota to fill up the cup of misery. This is the character of the court where the physician is often called upon to practice his vocation. No Judge here to dignify the scene; no jurymen, perhaps not one spectator, to be a witness of the eventful drama enacted; and for all his work, more arduous than is ever done by advocate before court and jury, not one farthing will ever be received, nor was one expected when the task was undertaken. Nay, more, the physician who undertakes such labor, often does so at extreme personal risk, at the peril of his own life. For example, the great Howard, in his earlier years a merchant, afterwards a student of medicine, spent the remainder of his life in visiting prisons, finally dying in the Crimea while there on a mission to investigate the plague. On his death-bed he asked that no monument save a sun-dial should be placed over his tomb; yet his native land has given him a monument among her worthies, and were it not so, his name would be immortal, since in all cultivated languages the name of Howard is a synonym for benevolence. Before Howard fell a victim to the plague, he had visited all the prisons of Europe except that of Rome and the Bastile; to these two he was *denied* admittance. The French people, excited to des-

peration by the heart-sickening tales of poor Latude and others who spent a great part of their lives in the Bastile, razed the latter to the ground. Rome has long since abolished her Inquisitorial dungeons, and the prisons remaining all bear traces of the benevolent touch of Howard's spirit.

The case of Howard is but one of a thousand noble hearts, that have thrown themselves into the waves of death, and have gone down while trying to rescue suffering humanity. And if I again refer to the legal profession, it is with no desire of casting a satirical shaft that I ask, where is the advocate who would undertake the case of a criminal, did he know, in defending him, that he drew upon himself as great a risk of being hung as threatened his client.

Again, young gentlemen, there is a great duty which our profession imposes upon each of its members. Let me, in this connection, quote the great George Forster, to whom Humboldt acknowledged that he owed his first impulses to Natural History, and whose name German naturalists are to-day canonizing, though in his life-time, on account of his advocacy of human rights, he was driven from his native land and a price set on his head. George Forster says, writing from exile to his wife:

"I have no home, no fatherland, no more friends; all who were once my friends have forsaken me to form new connections and associations. My misfortune is the work of my principles, not the offspring of my passions. I cannot act otherwise—I would not were it to do over again. Had I been willing to act contrary to my convictions and feelings, I might now have been a member of the Academy at Berlin, with a handsome salary; but to whom then could I sell the shame of having betrayed those principles which I have so often proclaimed." Forster believed in an innate excellence of humanity; he trusted that this would, in the end, gain the ascendancy and render him justice; the future was true *to his hope, and* one of Germany's leading

literary periodicals lately deemed itself honored in giving place to an illustrated engraving of Forster's birth-place.

In an essay on Art, Forster has uttered a sentiment which is so applicable to the physician's career that I cannot forbear giving it to you. He says: "If the recognition of personal merit depended upon others, or were the only reward for which a great artist labors, I doubt then whether a single master-work would ever have been given to us; but like the Divinity himself, self-satisfaction in his own labor must be his chief reward. The artist must find his recompense in this, that in the bronze, the marble, the canvas, or in letters, his own great soul is laid out to view; let him who can, comprehend it there. But if the age be too small, if there be no co-temporary who in the work can discern the artist, in the artist can see the man, and in the man the creative genius, indeed, if the age can produce no heart in which the great work of art can awake a responsive echo, still the stream of time will carry the work along on its bosom, until it meets a kindred soul in which this rapture shall awaken, there to live forever."

He who understands these precious words of this poor exile, driven, for his defence of human rights, from all that he cherished most dearly, can understand how the physician is content to visit the hovel of poverty, to endanger his life at the bedside of pestilence, and to spend days and nights too, in unpaid toil and fatigue, in which limbs, heart and brain are taxed to their utmost; but he who cannot understand such sentiments, or who would scoff and throw stones into this fountain, whence the great, the pure and the good of our profession in all time, have drawn their inspiration, have found their solace, he, I say, should stop and read the words inscribed over the portals of the temple of Medicine: *Este procul profani*—for they were written for him.

To him, likewise, who expects the profession of

Medicine will pour wealth into his coffers, I would say, beware of disappointment. Had the classic epigrammatist lived in our days and scrutinized the purses of the majority of medical men, he would never have written *Galenus dat opes*, unless in irony. This is certainly so in the early career of nearly every medical man, and you, gentlemen, can hardly expect to be exceptions. But still, be not discouraged; patiently work and patiently wait; the harvest, though not a large one, will finally come. There is no more noble sight, no more sublime spectacle, than an honest man earnestly struggling in the line of duty, undismayed by whatever misfortune may overtake him. For as Sue has well said: "Behold a spectacle in which God himself takes delight—a just man struggling against adversity and overcoming it by his courage."

I would not, however, place proverty as one of the aims of your life, nor advise you to endeavor to sacrifice your lives on her altar by way of martyrdom. The Spartan custom of not mourning for those who had fallen on the battle-field, but for those who were so unfortunate as to return home, has much moral sublimity in itself; but the mode of our times of rejoicing with those who have won our victories and have been lucky enough to return home, is probably more consonant with the character of our utilitarian age. You should look to it that your services, when meritorious, be paid for by those who have the means. Between the upright physician and the charlatan there is here a wide gap, which, too often, is not seen by the unwary public, until they are forced to leap it. The quack makes the unsuspecting patient believe that he has some extraordinarily dangerous disease, and when he has thoroughly awakened the fears of his victim, he extorts from him a large fee. I know of no baseness equal to that of obtaining money in this way; highway robbery is more honorable, since it does give its victim a slight chance of defence. The man who will condescend to engage in this species of robbery, has a heart

in which every sense of shame has been extinguished, and every feeling of honesty and rectitude burned out by the remorseless and pitiless passion for money. In every city of our land there are scores of men who live thus and go on unscathed in their plundering career, notwithstanding the vaunted protection which our laws claim to furnish to the people. These men may be compared to Satan, as depicted by the fancy of Poe, who built himself a palace in Hell, adorned with every dainty touch of art, with walls

"Of fabulous price and beauty,"

But so cunningly constructed that the very sighs, moans and cries of the damned, as they traversed these walls, were transformed into tones of the most delicious music. And hence I would say to you that even as in Art, it is the form and not the material which commands admiration, so in your professional career, it is not the amount you have gained but rather how you gained it, that will command respect.

But whether your purses, like that of Fortunatus, shall always be well filled, or the scarce, well-worn pence of poverty be your heritage, remains written on a page of the future, and we will wait for the hand of Destiny to turn to it; but the intellectual pleasures which your studies heretofore have brought you, as well as those which your daily professional experience are to bring, will prove a priceless capital which no hand can wrest from you; this is a capital which no fall in stocks can depreciate, no rush upon the banks can lessen in value. The great temple of Natural Science, with its inalienable rights, its privileges and its freedom of thought, is yours. Natural Science, that which embraces universal nature whether organic or inorganic, is the offspring of Medicine. It is here, untrammeled by dogma or shackle of the past, that human intellect developes its highest power and strength. This is the intellectual freedom for *which* Galileo longed, for which the noble old anatomist *Vesalius sighed*, who, chased from city to city and from

island to island in the Mediterranean, at last died almost of starvation. Vesalius undoubtedly thought it a strange world, where men would cut up and burn up their fellows for the sake of an opinion, and yet, for the sake of suffering humanity, would not allow their bodies to be dissected after they were dead. It was for this same liberty of thought that Michael Servetus sighed, as, bound to the stake, he refused to recant the doctrines contained in his book entitled *Restitutio Christianismi*; it is in one of the chapters of this very book, that he plainly enunciates the circulation of the blood from the right heart, viz: that it goes to the lungs, traverses them, and then returns to the heart; and this was a long time before Harvey's discovery of the systemic circulation. In the Imperial Library at Paris, is the work *Restitutio Christianismi*, bearing the marks of fire on it; for when the Council of Geneva sentenced Servetus to be burned, they ordered his books to be burned likewise; but this volume, more fortunate than its brave old author's body, escaped the flames, and now more venerable than the deciphered hieroglyphics of Egypt and Assyria, and more illustrious than the half-burned parchments of Herculaneum and Pompeii, it still lives, and in it lives the spirit of Michael Servetus, while on its scorched face fall the sunbeams of civil, religious and intellectual liberty for which he died.

But this great charter of intellectual liberty, which, as a symbol of faith, hovers over the altar of Natural Science, does not unloose you from the ties of morality. Those great principles of justice and right, vaguely shadowed forth by Plato as the Beautiful and the Good, by Socrates as the teachings of his *daimon*, and which have been venerated by the great and upright of all ages, must still bo preserved and made the corner-stone of this modern Temple of Freedom. And you, young gentlemen, to whom I have said that in adopting Medicine as your profession you are expected to be educated gentlemen, *no less strongly* would I impress upon you

the necessity of presenting a character tarnished by no immorality. The very spectacle which your profession will daily offer, of what results from allowing immorality to assume the helm, will ever whisper into your ear "shun vice, for it brings poverty, disease, dishonor, and premature death." Nature in her simplicity ushers all upon the threshold of life equal and in a similar manner, yet man, by his perversity, has opened a thousand gateways by which he may escape from life.

Among the aims of a physician none should stand higher than that of a long life. But the engineer who stands by the boiler forgets, in the midst of danger and death, that he too is mortal. But this should not be so; the great hygienic lessons which our practice opens to us should be brought home and used. There is no profession where the power of usefulness is so much augmented with age as ours. Years are required to master its principles. Many more years are required to acquire great aptitude in its practice; and that aptitude, different from knowledge, can never be imparted to others. It is like a treasure that cannot be purchased, nor sold, nor bequeathed. It is a product of individuality, and dies with the man; hence, as long a life as possible is requisite for its exercise. Hippocrates has left us a good example in this respect; he lived to the ripe age of ninety years. Few men, however, could reach that period, but almost all might come much nearer to it than they do. To reach a mature age, much must be done, and still more must be shunned. To run far the horse should have a slight burden; no useless girth or gear should trammel; so we, in like manner, who would run long in life, should cast off as useless baggage, all gnawing cares concerning the future. Ill-humor, like rust, as a source of friction, wears out the mind. Depression of spirits is to be avoided as the
—st of evils, while cheerfulness and active occupation
ntiring wings to our spirits.
lred years ago, De Soto and Ponce de Leon
ntinent in quest of gold, and likewise

of a fountain of which it was said that those who bathed therein would be restored to youth. The former, after traversing a large portion of the New World, found, as Bancroft says, nothing so remarkable as his burial place. To-day, were De Soto alive, he would know that the fountain of youth is not hidden away among the rhododendrons which adorned the land of the Chicasaws among whom he wandered, nor on the banks of the great river which gave him a grave, but that it is in every man's heart in whom the passions have been kept in control, in whom the moral sentiments have taken deep root, and, having matured, are covered with the white flowers of purity, and in whom the intellect, with wealth gathered from every field of nature, becomes itself a creative power. Such a man, I say, though an octogenarian, has not left youth behind, but has brought it with him. Such a man, greater than earthly king or emperor, has an empire more secure than the Imperial domain of the Cæsars which fell a prey to Goth, Visigoth and Hun; the throne upon which his intellect sits is insulted by no Alaric, scourged by no Attila, while age itself weaves a chaplet of immortal youth and crowns his brow therewith. When Humboldt was visited by Bayard Taylor, he said to the latter, "You have traveled and seen many ruins, and now you look upon one more." "No," replied Taylor, "not a ruin, but a pyramid, and more perfect and enduring than the Parthenon." Hence, as a long life thus affords you ample sphere for cultivating and developing all your higher powers, and bringing to a successful conclusion all your hopes and plans, so it should have high place among your aims. I believe there is much truth in what Emerson says, that no man can die who has yet some high purpose unfinished.

Finally, gentlemen, with such laurels to be gained, with such far-reaching consequences depending on your own exertions, how it behooves you to be well prepared for this great drama of life—a drama which, though of *varied acts, can be* played but once. An error once

made, is made for aye. No prompter stands behind the scenes to impart what you do not know or have forgotten. Fortune, stern, immovable and relentless, looks coldly on each act, allows no mistake to be made, or, if made, with one hand she writes it down to stand forever against you; but, as a word of cheer, the same Fortune holds a crown in her other hand, ready to place it on your brow, if you perform well the eventful acts of this momentous drama.

In conclusion: A sad duty devolves upon me, which, although by no means akin to the matters in which we are this evening engaged, is yet not inappropriate to this hour, viz: paying a tribute to the memory of your late teacher, whom death so prematurely snatched from his profession. And in this matter I will be brief, since the words of sorrow are few and simple, and when they become many and elaborate, they are but a flimsy veil through which the absence of true and heart-felt feeling may be detected.

The late Dr. Isaac Rowell was possessed of a genius great, rare and original; of an intellect brilliant, fertile and inventive; of a heart noble, generous and brave. To the bed-side of the patient he brought a rare amount of practical good sense, which was trammeled by no forms of affected technicality, nor cramped by any inflexible, stereotyped authority. His mind, like a tropical field of boundless luxuriance, now and then found time to wander away from medical themes, and to open up new paths of quaint invention and rare device; had he lived I am sure that future art would have owed to his genius more than one curious invention or discovery. But these wanderings never bore him away from medicine; in behalf of its best and noblest interests his heart ever warmed with the highest enthusiasm; and it was his genius, and his intellect, and his hand, which seconded that kindred master who laid the foundations of the first medical institution on tho Pacific coast, the school which this night enrolls you among its foster sons; nine years ago science and humanity shed their tears over the tomb of the one; to-night our institution brings a chaplet of *immortelles* as a token of remembrance and a badge of grief for the other; and, as one of her servants, she has honored me in allowing me to bring and entwine this simple leaf in the chaplet consecrated to his memory.

5

ADDRESS,

DELIVERED BY

DR. L. C. LANE,

PROFESSOR OF SURGERY,

At the Commencement Exercises of the Medical College of the Pacific,

November 2d, 1876.

SAN FRANCISCO:
BONNARD & DALY, Book and Job Printers, 610 Merchant Street.

PACIFIC

Medical and Surgical Journal.

VOL. XIX.—DECEMBER, 1876.—No. 7.

ORIGINAL COMMUNICATIONS.

Address Delivered by Dr. L. C. Lane, Professor of Surgery,

AT THE COMMENCEMENT EXERCISES OF THE MEDICAL COLLEGE OF THE PACIFIC, NOV. 2, 1876.

Gentlemen Graduates—About the first of March of the present year I received a letter from the Dean of our Faculty announcing that I had been selected to deliver the valedictory address to the graduating class of this year, and he wished to know if I would perform the task. Such a request, I may here note, was presuming considerably upon the future, both as regards you and myself. My reply to him was *yes*, if railroads, steamship, oceans, rivers, would safely return me to our own dear California; dear I call it, since I am sure that if biblical commentators had had the precious memories which I have of a fifteen years' residence in it, they would, by unanimous accord, have placed the garden of Eden here. Your Dean also wrote that I would be expected to narrate something of what I had seen abroad, and thus, that I might give some "freshness" to the occasion. Now, as you see, I am here, the elements having consented to my safe transport hither; and moreover, I see that his acumen as Health Officer gathered from so many years' experience in compiling reports *mortuary*, has given him some expertness in kenning the *vital*, thereby enabling him not only to foresee my safe return, and you will excuse me for

hinting at it, seemingly to have acquired thereby a yet deeper insight into the undeveloped future, since he did not presume too much in calculating upon a graduating class.

It is a very common thing on the occasion of a marriage that the newly-wedded party make what is called a bridal tour. This custom, though I remember once to have seen it sharply criticised in a medical journal, is so much in vogue that I propose on this occasion, which is to commemorate your marriage to the great Profession of Medicine, to accompany you on a short bridal tour abroad; though in doing so I must say on starting, that if we see much of Europe in so brief a space, we can only do it by running and reading at the same time; and that, too, with the volubility of a Westminster Abbey guide, whose tongue does its task with the speed of a Thibetian prayer—well, crowding into one's head, in a few minutes, a compend of English history from Alfred the Great until William the Third. Yet I hope that in my capacity as guide, I may be more successful than he, for after his work is done, so rapidly have his ideas traversed your head, that like the transit of an electric current, they have not left a vestige behind.

Let us, then, shutting our eyes to the wealth of art, industry and material development which crowd upon the traveler's vision the moment he enters Europe, direct our attention to medical matters and things cognate thereto. Thus narrowed, our field becomes reduced to mnemonic capacity; and besides, I am sure that you must be most interested in learning something of the great family of which, in future, you are to be the kinsmen.

We commence our journey by landing in Ireland; we begin here very appropriately, since it is from here that America has received many of her noblest sons. From Queenstown, our landing place, we hasten up to Dublin, where Porter, Churchill, the venerable Stokes, Corrigan, Butcher, Colles and others reside, and will greet us with an open, genuine and unstudied warm-heartedness, which we must make the most of; for I regret to have to add, that we shall not find its equal again while abroad. I do not mean to say that we shall meet no more true friends on our journey; but from my experience, hospitality, as a rule, is like some of the springs in our mountains, which in mid-winter freeze over and in mid-

summer dry up, while in an Irish gentleman's heart it is a perennial fountain, and like his wit, ever gushing forth, warm, deep and unfailing. From the quick and expert Porter we learn the happy results which he has obtained in the treatment of aneurism by moderate compression indirectly applied, by means of a simple and inexpensive apparatus which he himself has invented. The aged Stokes salutes us most cordially, and though partially paralyzed, so that our sympathy is awakened as we see his tottering step and trembling hand, yet we soon perceive that there is no halt in the tread of his intellect, nor in the vibration of his heart, which is brimful of love for America. As an evidence of the former, and as a compendious formula of a life's experience, he tells us "the present generation are making a great mistake in their endless subdivision of disease, insomuch that the student is greatly puzzled to decide to which he must address his remedies;" and an equal proof of his affection for our country is his parting message to us: "Bear from us kind words to your countrymen, for they have ever been kind to us, and have always been just to us."

Churchill and Colles will receive us with equal cordiality. The latter is exclusively a physician, though his name is inseparably attached to one of the troublesome fractures of the forearm, from the fact that his father was the first to accurately describe the injury and to suggest an appropriate treatment. From Churchill, the noted obstetrician, you will learn a lesson of patience which I hope you may not be called upon to endure, when he tells you how many years he had to wait before he attained a successful practice.

From the land of the quick, impulsive and ready-witted Celt, we will pass over to the home of Brown, who, for a generation, by the force of his genius, led the medical world captive with his specious theory of irritation—of Cullen, whose comprehensive mental power seized in its grasp the entire domain of internal medicine and reduced to brief axioms, easy to be remembered, the tangled and shapeless mass of facts which his predecessors had been storing up in the common magazines—of Simpson, who, if he was not the founder of obstetrical surgery, at least made

some of the most valuable additions to this branch of medicine, and whose brilliant success as a practitioner attracted so many strangers to Edinburg for treatment, that his death was acknowledged to be an important financial loss to his native city; for the practical Scotchman does not forget to weigh even the fruits of genius in the scales of finance, as shown not alone in the instance here cited, but in another which I heard of more than once, viz: that the value of all real estate in the north of Scotland had risen forty per cent. through the influence exercised by the writings of Sir Walter Scott. Besides what Simpson did in obstetrical surgery, he won for himself immortality in the applications of chloroform.

As we come from Ireland to Scotland, we first enter Glasgow, the great northern emporium that is rapidly becoming the rival of Liverpool. On our arrival our ears are filled with the clamor of a thousand hammers which are moulding into shape the iron clads of all nations, destined not only to bear "those mortal engines, whose rude throats immortal Jove's loud clamor counterfeit"—messengers of death between nations in combat—but also those intended to carry the civilizing cargoes of peaceful commerce. Now, in a modest laboratory, within hearing of this din of hammers, we might have seen a few years ago a modest man quietly studying and working out a surgical problem, which, when solved, was destined to carry blessings further, wider, and in nature far more precious, than any cargo which your iron clads will ever bear abroad. Blessings not limited like an Oceanic fountain, that [illegible] but ever as the Nile, whose fertilizing influence is confined to a single continent, but blessings that are to be co-extensive with humanity. And should humanity be so recreant as to forget its [illegible] like the Nile though its source be unknown, still the [illegible] to the ocean through whose mouth it flows. The modest man of [illegible] was Joseph Lister, and his study was the antiseptic [illegible]. The discovery of such a principle was sufficient to rescue [illegible] but to a great extent he has solved it, so that now the surgeon has it in his

power to perform the majority of surgical operations without any of the risks of inflammation, which formerly hung like the sword of Damocles over every grave surgical procedure. Much remains to be done to perfect the method of Lister, yet, in its present state, its excellencies are so great, that it has been introduced into the majority of the great hospitals of Europe. Scotland was not long forgetful of her distinguished son. She soon gave him a chair in her leading University, and for a wife, Scotland's greatest surgeon, Professor Syme, gave him his daughter.

In the Royal Infirmary of Edinburg we must not fail to visit Prof. Hernandale, who, though a most unpretending man, is one of the most clever operators whom we shall see abroad. This is especially so as respects resections of the joints. These operations performed in the Lister spray are attended by a minimum of mortality that is astounding when we compare it with the deaths from the old modes of procedure.

It should be remarked, that though Lister has been the subject of applause from all the surgical world, except a small section just south of the Tweed, yet in the chaplet which encircles his brow, the flower modesty has not been crowded out by the laurel; for on our visit to him we shall find him a quiet, retiring man, and free to communicate with us, and even to give us the recent improvements which he has made in his antiseptic formulæ.

From Scotland I will next conduct you to London. This great metropolis of English commerce and centre of Anglo-Saxon culture, though eminently, I might say, intensely English in character, is still in many respects cosmopolitan in population; for though the Briton essays in every way to maintain his hitherto isolated situation, yet the commercial ties which he has with every civilized nation are making great inroads upon his insulated state; and, at the same time, the gold laden vaults of Threadneedle street, with their glitter, have caught the eyes of, and are inviting the visit of the merchants of all nations. Hence in traversing the streets, the polyglot sounds which continually greet our ears, remind us forcibly of our own metropolis of the Pacific. On inquiring in regard to medical institutions, we learn that instead of one or two great schools, London has eleven medi-

cal Colleges, the eleventh and youngest being the Female Medical College, established two years ago. Besides these metropolitan institutions, there are a few Provincial medical colleges, viz., one at Liverpool, one at Manchester, one at Leeds, and one at Birmingham. Yet none of these has the power of granting diplomas; this power being invested in two boards, resident in London, and known respectively as the "Royal College of Physicians" and the "Royal College of Surgeons." The former confers the title of M. D.; the Royal College of Surgeons confers merely the title of Member or Fellow. It is claimed that this isolation of the power that confers degrees from that which teaches, is a great improvement over the system which now obtains in America. This would be so, were the two really isolated; but unfortunately, such separation does not exist there; and, I may remark here, that it does not exist anywhere in Europe. In London, both of the corporate bodies which confer degrees, are composed mainly of men who are professors in the medical schools. Such is the case in France, and such is the case in Germany; so that in these respects, I regret to say we do not differ materially from the Old World; for it would be a great improvement if teaching and examining were in part, at least, committed to different persons.

If I be permitted to continue this digression a moment longer, I will remark that there is one respect in which we are much behind the European institutions, and that is, in not requiring a thorough preliminary examination of every student before he commences the study of medicine. The objection offered by the partisan of the present plan is, that thus many a genius whose early advantages have been few, would be debarred from entering the medical ranks; to which I would reply, that the facilities for acquiring a moderate knowledge of the lingual and physical sciences, are so numerous and easy of access in our country, that there is no excuse for him who does not avail himself of them. And furthermore, as to the loss from genius being debarred at the threshold, it is a matter which in most cases need not be much mourned over. Plodding, or better named hard work, is more demanded in medicine than the waywardness and brilliant sallies of so-called genius. Molière could conceive a Tartuffe, Goethe

a Faust, Dante a Divine Comedy, and Shakspeare a Hamlet, the greatest of tragedies, yet none of them possessed the patience to master the infinity of details, which would have enabled them as physicians to successfully treat a typhoid fever, or as surgeons, to heal an indolent ulcer. During my visit, I have seen and heard the leading medical men in Europe, and with all due deference to them, I must say, that if all the geniuses were withdrawn from their ranks, it would fall far short of decimating their number. A tiresome journey on foot carried the Listers and Liebreichs to the eminence which they have reached; eagles' wings never bore them there.

In ending this brief allusion to medical education, I will express the hope that the American Medical Association will soon take some steps which will lead to our schools adopting a uniform system of preliminary study and examination, for all who engage in the study of Medicine.

But let us return to the English Medical Schools, which we strayed away from a few moments ago. Of the eleven metropolitan medical schools, but two have large classes, the University Medical College and King's College. Guy's Hospital School and St. Bartholomew's have tolerably large classes. The remaining schools have small classes, some, in fact, not having as large an attendance as we have in our San Francisco schools.

University College may be considered rather the offspring of King's College; and as might be expected the two are sharp rivals, and differ in many respects. Old King's School in which is found the great surgeon Fergusson, also Wood, Smith, Beale, and others, is eminently conservative. She prefers three per cent. consols, and to "sleep well o' nights," rather than to disturb the world with innovation. Her ruling head, Canon Barry, thinks Buckle's History of Civilization an unsafe book for young men. The University School, on the contrary, is more Cassius-like, "lean and hungry," in which the radical, reformatory and innovating element finds a congenial home. She opens her arms to students of every nationality, color and faith.

The general demeanor of the English medical classes, whether in the presence or absence of their professors, I will not hold up

to you as a model. Though one sees a number of hard-working students, yet besides these, there are many wild, extravagant, noisy and reckless blades, whose chief ambition is in fun and frolic. And this, too, in the pupils of staid old King's, where, despite all the drilling in the thirty nine articles, two years ago, at the opening of the course, Fergusson's address was interrupted with such remarks as this: "Dry up, old fellow;" "Sir William, you had better stop now, and go out and take a drink;" and to such a pitch of riotous turbulence did they reach, that finally the lecturer closed his manuscript, and told them that if he could not have better order, he would close the meeting. This succeeded in partially quieting them, so that he concluded his address. It should, however, be remarked that Sir William Fergusson is far more at home in the use of his hands, than in the use of his tongue. Since, while as an operator, he has, for one of his age, no superior in the surgical world, he has, perhaps, no inferior as a speaker. As you are carried away with his tall form, commanding presence, intelligent face beaming with good nature, and the grace with which he uses the scalpel, your admiration is mingled with real sympathy as you witness his ineffectual efforts to explain what he is doing. But, notwithstanding this, as soon as you see the man you will love him, and you will love him still more when I tell you that in a long life of surgical practice, he has not been guilty of one unprofessional act. Search his career of half a century, and one fails to find it sullied by one spot of malignity towards, or jealousy of, a professional brother. I am sure that the remembrance of a life so spent brings more joy to his heart, than the recollection of the splendid trophies which his surgical genius has won; and beautiful as a wreath of heather from his own Scottish hills, will it long encircle his memory when the work of his life shall close. Though probably none of you will ever reach the summit of professional eminence which has been attained by Sir William Fergusson, yet in the untarnished integrity which has distinguished his life, you are able to become his rivals. Will some future biographer make the same record of your finished career as you have just heard of him?

In each of the London schools we find one or more distinguished men. In making our visit, besides those mentioned, the following deserve especial mention. In St. Mary's, Walton and Lane; in St. George's, Holmes, Hewitt, Lee and Carter; in St. Thomas'; Jones, Murchison and Liebreich; in Charing Cross, Barwell and Hancock; in Middlesex, Watson and Greenhow; in the University, Erichsen, Heath, Reynolds and Sir Wm. Thompson; in St. Bartholomew's, Paget and Holden; in Guy's, Bryant, Cooper, Foster and Birkett; in London Hospital, Hutchinson; in Westminster, Holt. Besides these, others might well be mentioned, as the list given is far from exhausting the famous names of the medical profession in London. For example, Spencer Wells, who, by his successful results in eight hundred cases of ovariotomy, has restored this operation to surgery, from which it had hitherto been excluded. And particularly should we not fail to visit the Royal Orthopedic Hospital, and St. Peter's Hospital for Stone, since we shall be kindly received at each place, and especially so at St. Peter's, where Mr. Teevan and Mr. Coulson, the operating surgeons, extend such hospitalities to American visitors as might almost lead them to think they were in Dublin again. Besides these courtesies, the visitor is sure to carry away with him a uumber of interesting ideas, from the varied practice which he there witnesses. Yet the list given must suffice, as soon as two other great names are mentioned.

In the southwest quarter of London, not far from Hyde Park, we find grounds on an extensive scale, covered with large and in some cases elegant buildings, which are dedicated to the reception and conservation of a number of the rarest and most valuable treasures of English science and art. This is known as the South Kensington Museum, which we must visit, as we find there many things of the greatest interest to the scholar and the lover of art and industry. To the latter nothing can be more curious and attractive than the first rude models of the early essays of Watt in the construction of the steam engine, and of George Stevenson in that of the railroad. These quaint and awkward contrivances are kept as sacred treasures, and rightly too, since they are the stepping-stones on which England has marched to the front of na-

tions through culture, commerce and industrial progress. Alongside of this building of old models is one which interests us greatly also. This is the Gallery of National Portraits, where we find almost every distinguished personage who has furnished material for the imposing fabric of English literature, or who, by his actions, has shed lustre on English annals. But in the pile of buildings which cover the grounds of Kensington, there is one which, to the student of natural science and of medicine, is more cherished than any which I have enumerated. This is a tall building, with Pompeiian and Etruscan adornment, and built firmly, as if to endure forever. In the upper story of this, we find a rare museum of natural history, and the unpretending lecture room and physiological laboratory of him who is England's greatest scholar in natural history, viz: Thomas H. Huxley. To reach him, we must climb eleven flights of granite stairways, which, fortunately for those of feeble limb and short breath, are neither steep nor long, yet, as he says, are enough so to prevent all from visiting him who have no business there. We will find him a plain, simple and unostentatious man; in every word, movement and act presenting that modesty and want of display which always indicate and reveal the scholar. If we stop and hear one of his lectures, the qualities mentioned shine forth even more manifestly. Once having heard him, no one asks for further evidence of the universality of his knowledge in his department. From having attended his six months' course of lectures, I was happy to find, for once, a man who is not over estimated. He knows more of organic, animated nature than any one living; he has but to open the "book and volume of his brain" to find a true picture of any living animal; and its homologies or analogies with any other species or genus, he is as familiar with as a linguist is with the conjugation of verbs. If at the close of a lecture he be asked a question concerning some animal, as is often the case, even though the point be far removed from that which he has been considering, his answer is as clear and ready as if he had just studied the matter—and not verbally alone, but with his chalk in his hand, he follows it through the winding mazes and varying phases of its evolution, with an ease, rapidity and artistic truthfulness, until

one almost forgets the extemporized creation before him, in his admiration of this great interpreter of the laws of nature. And this admiration is kept continually aglow, as one follows him in his search for the hidden links of the chain of being which lie buried in the geological and pre-historic ages.

I must not take you away from London without introducing you to one other noted personage in our profession; since in reading his works I am sure that you have already learned to admire, if not to love, the man. This is Sir Thomas Watson, Baronet. Nature conferred knighthood upon Sir Thomas a long time before Queen Victoria did. Years have much bowed down his person, yet he still looks the great and kind-hearted gentleman. At the evening meetings of the Royal Institution, at which were delivered lectures by Tyndall, Huxley, Gladstone, and other celebrated British scholars, Dr. Watson was a regular attendant. On his earnest, straightforward and honest face one could catch traces of that practical and pointed good sense which lends such a charm to the pages of that capital work which every student of medicine should read, entitled: "Lectures on the Practice of Physic." A long life of noble and upright purposes has left its impress on his brow. In unmistakable lines patience, energy, and the love of the right are written there. Such a face in an old man presents more genuine loveliness, even though the fingers of time have blotted out its primitive lineaments of beauty, than the most matchless picture which has ever been conceived and executed by the fancy and pencil of a Tiziano or Murillo.

My notice of the medical celebrities of London has been almost an uninterrupted eulogy. The note must change when we touch upon the hospital buildings. Though erected with the purpose of lasting forever, yet in their construction and internal arrangement they are far behind similar institutions in America. Sprung from a period that antedated modern hygiene, one often finds them lamentably deficient in the facilities for ventilation. Air, now regarded as a thing almost divine, in fact, the major and minor premises and conclusions of modern medical reasoning, seems to have been deemed by the former generation as something diabolical, an evil spirit which must be hedged and barred out in

every possible manner. In all the old cities of Europe, this doctrine has left monuments of its former hold on the medical mind, in the miserably lighted and still worse ventilated wards of all the old hospitals. And in reference to the selection of a site for their erection, the policy would often seem to have obtained that land that was too low, or too much of a marsh for any other purpose, was quite good enough for a hospital. As examples of this may be cited the London Hospital for Cancer, and the Consumption Hospital at Brompton, London. So, also, King's College Hospital is situated in a part of the city most illy fitted for the purpose. With such hospitals around him, it was no wonder that Professor Erichsen found so much to praise in reference to American hospitals. Besides their guidance by the enlightened ideas of modern sanitary science, the Americans have, by nature, a large share of talent in adapting whatever they make or construct to its ulterior purpose.

After this hasty visit we must bid England farewell, and next turn our steps towards France.

The wildest storm in its work of devastation usually does something which man, in his philosophic pride, reckons a blessing. This finds its popular expression in the oft-repeated proverb, it is an ill wind that blows no one any good; and this may be applied to the French Revolution of 1793. For while the Angel of Death was writing this chapter of French history in characters of blood, the humane genius of science was laying the foundation of one of the most thorough systems of University education which the world has ever seen. While the guillotine was baptizing the Place de la Concorde with the blood of Lavoisier, Roland, and the noble Girondists, in the National Assembly near by was being organized the great Medical School which has rendered Paris, ever since, famous as a centre of medical education. It was in this dark and eventful period, when France overturned her altars, lengthened her week into ten days, altered the names of her months, and adopted a new era dating from the so-called birth of French liberty, that the present school was born, and in a few years became so eminent that it has, ever since, attracted students from every quarter of the globe. For one sees there young men

from Russia, Greece, Egypt, Spain, Brazil and Chile; in fact, from every cultivated nation.

To this school, which has produced a Bichat, a Louis, a Laennec, a Cruveilhier, and a Velpeau, I beg leave to now introduce you; and since we have spent so much time with our kindred north of the Channel, we shall be able to make but a brief stay among the gay, sprightly and polite Frenchmen. Let us first go to a lecture at the School of Medicine. We find the large room crowded with attentive listeners; for though there are other medical schools in France, the Parisian institution remains ever the great luminary to which nearly all French students are attracted. We have scarcely listened a minute when the thought arises in our minds, what a difference there is between an English and a French professor. Our speaker here surprises us with his matchless elocution, his ready command of language, his power of illustration, his grace of manner; in fact, we find that we are in the presence of an accomplished orator, a personage whom we failed to find in Scotland or England. Whether the Frenchman got his mercurial or movable character from Mercury, or his jovial disposition from Jupiter, or whether his insular neighbor got his opposite and somewhat saturnine character from the planet with rings, we have not time to investigate. Yet the fact strikes us most forcibly that never were neighbors more the antitheses of each other; and in this circumstance we find an explanation of their mutual hates and wars during the last thousand years.

Over the speaker is placed a splendid painting on which the famous Ambrose Paré is represented in probably the most important act in which any surgeon ever figured, viz., the application of a ligature to the bleeding vessels of an amputated limb. You will recall that up to Paré's time bleeding was staunched by plunging the stump into hot pitch, or applying a red-hot iron to the cut vessels. In this painting, on a battle-field, a soldier has had his leg cut off, and the attending surgeon is in the act of applying the burning iron, when Paré, who is standing by, reaches out a few silk threads to be used as a ligature. The careworn and haggard face of the wretched soldier as he cautiously scans what is being done, and the noble serenity of countenance

of the old surgeon as he performs the act which in all future is to relieve amputation of half its horror, makes a picture which commands the admiration of every one who visits this lecture room. And just above the speaker's head is a bust of Ambrose Paré, and which, I may be excused for saying, has some resemblance to the senior member of our Faculty; but whether the latter would have written the pious sentence that is escaping from old Paré's lips, viz., "I dressed the wound, but God healed it," I do not know, though I think it probable that he would, when I remember how ready he is to apply the lash to young men, and anon to old ones, who leap out of the traces of temperance, or let down the bars and stray out of the field of good morals.

After this lecture closes, let us stroll for a few minutes about the famous fabric which for so many years has been consecrated to the study of Medicine. As we look at its front, a few bas-reliefs strike our attention, but soon our eyes rest on a remarkable bronze statue which stands in the open air of the court. It is remarkable on account of the intellectual expression of the face, as well as for an awkwardly formed body, which supports the noble head. When we enter the building and ascend the stairs to the library and anatomical museum, there we meet the same figure again, in plaster, and beside it the figure of a child, the body of which he is gently touching, while he appears absorbed in intense thought as he looks at the child. At his feet one sees a book half-opened, in which we catch a view of the words, "La Vie et la Mort."—that is, *Life and Death*. The statue is of Bichat, of whom France is as proud as we are of Franklin, or England of Newton: and to show its appreciation of his talent and what he had done for science, the French Government ordered that his statue should have a prominent place among the group which adorns the front face of the Pantheon. This group represents the goddess of honor distributing awards to the most famous men of France. Bichat died at the early age of thirty-one, an age at which few men have really commenced their work: yet in his brief life he accomplished that which has made a new epoch in Medicine. As the historian of civilization has put the matter, it was Cuvier who introduced accurate study of the organs of the

animal body; but it was the wonderful merit of Bichat that he carried over science one stage farther, viz., he was the first to accurately study the tissues which compose the organs, and to study them in their normal and abnormal conditions. There remained but one more stage to be passed, in order that medical research should reach its final goal. To the pioneer of the latter stage, we will make a visit presently, after we have said a word or two more in regard to French Medical Institutfons.

To the great disadvantage and loss of time to the student, the hospitals of Paris, like those of London, are scattered over a large area; so that to go from the most northern to the most southern one, we must traverse a route of some three miles, and a like distance to pass from the most eastern to the most western. They are all worthy of a visit, as each has a medical or surgical attendant who has reached his place through a gauntlet of *concours*, in which he has outstripped some score or more of talented rivals. In this contest for place the candidate is examined as to his qualifications as a scholar, as a teacher and as an elocutionist. Hence we find among French medical teachers more fine speakers than elsewhere in the world.

In our circuit among the hospitals, I shall direct your attention to the excellent judgment that has been used, as a rule, in their construction. They are so arranged as to afford free inlet and outlet of air, and the whole building is quadrangular, or so disposed in rectangular sections, that a free space of open ground is left within, which is laid off in small lawns, and intersected with rows of lindens and maples, and adorned with borders of bright flowering plants. In warm weather these well shaded grounds are thronged with groups of convalescent patients; some of the feebler ones being carried there on their beds. Such a transition from the never-varying monotony of the walls of his ward to the enlivening beauties of nature, excites a most happy influence upon the patient laboring under a chronic ailment. Such an intimate contact with the inspiring views of nature enables the waning physical forces to rally as did the contact of the wrestler of old with the strength-giving earth.

The most interesting of all the Parisian hospitals for our visit

is that of Hotel Dieu; old enough to have witnessed that most curious of dramas which centuries ago was enacted in the Garden of Cluny near by, when Julian the Apostate was forced by the Roman legions to either accept the imperial purple or death at their hands; and not unlike the most of men, he chose the former. Grand old fabric, worthy of its name, God's sojourning place! parent of French hospitals, and the birth-place of the French medical schools, since it was here that students were first gathered together in Northern Europe, and where, surrounded by a cordon of police, they first listened to anatomical lectures. Here Guy de Chauliac, whom history records to have divided his time about equally between medical research and professional wrangles, delivered the first systematic lectures upon surgery; and the auditory which we now visit has resounded with the voices of Bichat, Desault, Dupuytren and Trousseau. But venerable Hotel-Dieu which has been the scene of so much that is remarkable, is now playing its final act. Time and sanitary science have decided that it shall exist no longer. But phœnix-like, it is rising anew in one of the most magnificent buildings which has ever been consecrated to hospital purposes; a structure in which convenience, hygiene and beauty, such as can only be born of French taste, are all united.

As our visit everywhere must be brief, partaking of the character of panoramic transition, I shall next conduct you to Berlin, the great centre of Teutonic power, and the seat, to my mind, of the greatest of German medical schools. As it is my purpose only to point out some of the leading features and prominent excellences of the great medical centres which we are visiting, I will after noticing the hospitals, introduce you in Berlin to but one or two distinguished personages.

The hospitals associated with, and used for the purposes of teaching, by the medical school of Berlin are two: the Charité and the Klinicum. The Charité contains medical and surgical wards; the Klinicum is devoted wholly to surgical treatment, and when compared with other famous European hospitals, it may safely be assigned the first place as a model where one finds a total disregard of all that falls under the head of sanitary and hy-

gienic. Had the Imperial ruler of Germany, or rather his Chancellor, devoted a fraction of the French indemnity to the erection of a new surgical hospital, he would have left a monument that would survive the military fortification on which most of that ransom has been spent; and besides, in so doing, he would have pleased and done honor to his much-loved surgeon Langenbeck, who is heartily ashamed of the present structure. But Berlin, though possessing the most learned body of men in the world, has failed to make use of the most common and universally known principles of sanitary science. Sewers which elsewhere are bridged over, are there open canals or ditches, whence foul effluvia continually mingle with the air.

Langenbeck, the surgeon at the Klinicum, though advanced in life, is one of the most expert operators now living; and you will not be surprised at this when you learn that for many years he has repeated on the cadaver, at least twice annually, all the principal operations in surgery. Besides, when we hear a few of his clinical lectures, we shall be convinced that he has more unwritten surgery in his memory, the mature fruit of years of diligent work and observation, than any surgeon whom we shall see in our travels. I once was present at a national fete, when, in the old Castle of Frederic the Great, there were assembled the leading titled and order-bearing personages of the German Empire. The Emperor and his family, those high in command in the Army and Navy, the Order of Superior Merit, Eagle-bearing Knights, black and red, were gathered there. In casting my eye over the moving sea of gold and colors, I observed the slender, nervous and graceful form of Langenbeck. He was literally covered with orders, the gifts of his sovereign, with whom he is a great favorite, his last order having been conferred for a difficult operation on the Emperor's daughter. And though, seemingly, one of the most cheerful of that titled company, I could not but suspect that anon a shadow of sadness stole upon his heart, as that military display awakened the memory of a brave son, who, as an officer in the late Franco-Prussian war, fell pierced with a dozen bullets on the battle field.

Alongside of Langenbeck was place for another great man of Prussia. But the place was unoccupied by him, though his sove-

reign had conferred an order upon him which entitled him to be present. It would not have been consistent with the life and character of Rudolf Virchow to be there, since he is too intimately associated with the party opposed to the Government. Besides, his time is so precious that he cannot give a moment of it to any work which will not advance science or the rights of humanity.

In order to see Virchow, we must go to the Charité, the hospital above named. Casting our eyes about this great pile of buildings, we find less to complain of in a sanitary point of view, than we met with at the Klinicum. Its well-shaded grounds remind us of what we saw at Paris, or what we might see at Vienna, had we time to visit that city. Among the many buildings comprised in the Charite, I wish to direct your eyes to one of imposing appearance and ample proportions, bearing the unique name on its front, *Pathologisches' Institut.* This is the great workshop of Virchow. Here is his collection of crania which have furnished him some keys for the solution of the anthropological problem Here is his immense collection of pathological growths and general morbid anatomy which has guided him in the classification of tumors, and especially in the preparation of that remarkable work which has made a new epoch in medicine, viz: Cellular Pathology. Bichat, as we have seen, traced disease to the tissues: it has been reserved for Virchow to trace it a step farther, viz: to the cell. This work, which he has performed in part and pointed out the way in which it is to be done, has carried the science of medicine a long way towards that completeness of knowledge which is its ultimate aim.

Of all the men now living I can cite no one who exhibits so many phases of mental character united in one person as he. For example, he possesses most wonderful powers of analysis, as shown in his unfolding the complexities of disease, until he has found the specific cellular aberrations which have caused it. Witness the fatty change which he was the first to detect, or at least, to correctly interpret. Witness his discriminating sagacity in distinguishing the multifarious offices subserved by the connective-tissue which, till Virchow's day, was regarded as somewhat like the explanation of the spleen—something introduced into the

animal organism as a kind of expletive, to fill up vacancies which had been left in the formation of the body. Virchow claims that instead of being mere packing material, the connective-tissue cells are important instruments to which are due the healing of wounds, and many other physiological and pathological processes. Many other examples might be adduced as illustrative of his powers of analysis, but the instances cited are sufficient. His powers of synthesis, or of regrouping together the sundered facts of disease, are shown in his wonderful work upon tumors, which, before his time, may be denominated a territory unreclaimed from chaos, but which, by his generalizing powers, has been reduced to a domain of such order and simplicity, that the cardinal principles of it may be mastered by the student in a few hours' study. As another instance of his synthetic faculty may be cited the matchless formula of Heterochronia, Heterotopia and Heteronomia, which is really an epitome of all books written upon general pathology, a kind of logarythmic key that enables the pathologist to take a short route to the solution of his pathological problem. Or, if I am allowed another mathematical illustration, this formula is like the binomial theorem of Newton, as it enables the pathologist to combine the multifarious phenomena of the morbid tissues into easily legible forms.

Besides this work, which, as we know, can only be done by the quiet, retired and thoughtful scholar, we find him daily acting another part, requiring character and habits of mind quite the opposite, viz: as an active debater and leader of the Democratic party in the National Assembly of Prussia. Here, as the champion of human rights and the firm opponent of the Bismarckian policy of military aggrandizement, I have often known his voice to be heard a half hour after he had delivered a two hours' lecture in the Pathologisches Institut.

I think it is much to be regretted that Virchow devotes so much time to political matters. Though it may serve as a recreation to his many-sided mind, yet it has probably deprived our profession of many additional discoveries which he might have made, had his undivided attention been devoted to original research in medicine. The vast store of facts which experience and observation have laid up in his memory, give him a range of vision over the field of our science farther than that enjoyed by any living person. Standing upon such an Alpine summit, he would be able to plan out and lay open routes of exploration into the domain of the unknown, which, without such a master, must long remain undiscovered. I do not wish here to imply that medical men should

take no part in matters of legislation. On the contrary, I think it highly necessary that medical men who have talents suited therefor should take part in the councils of Government. There is no subject which more closely concerns the welfare of society than public hygiene, and all legislation which has this for its object is in danger of taking very absurd routes, unless shaped and guided by those who have been educated in medicine. The three great nations which we have visited are beginning to open their eyes to sanitary matters, and especially so England, in whose legislative halls subjects pertaining to State medicine are among frequent matters of discussion. The need of intelligent representatives of medicine was fully illustrated there recently, in the unwise laws that were attempted to be enacted with the view of restricting, I might almost say of suppressing vivisection. As an example of the lamentable ignorance of one of the leading commoners, he urged as a reason for suppressing vivisection, that there is nothing more to be learned by it, since medicine has already reached its ultimate term of development. How little did that Honorable Member know that, during the time which our race has existed, empiricism, in groping blindly across the long and dark lapse of ages, has stumbled on but a minimum fraction of the truths which must ultimately be encompassed in the domain of medicine, and that the untraversed ocean of the unknown is only to be explored in the bark of vivisection, in which some future Columbus is to cross and discover the new world of ample light and knowledge. To combat such error as that before mentioned, there is a need of medical men in our legislative councils; and, if I would not have a Virchow there, it is because he can illy be spared as a laborer in that field which he has already enriched with so many discoveries.

When, however, we see Virchow, we almost fear that the best work of his life is done, since it is only too plainly visible that over-work has consumed the most of his energies. Years and the self-imposed tasks of a relentless will have impaired the working powers of the great master. Ashes are beginning to form on the once vivid coals of his enthusiasm, and one almost fears that the "sides" of his mind have become insensible to the "spur" of ambition.

In Virchow's personal appearance one discovers many striking and characteristic features, but the one which stands prominent beyond all the others may be expressed in one single sentence, viz: *Stand up boys, and don't give an inch.*

* * * * * * *

If I be permitted to conclude my address with a brief deductive summation drawn from the characters of some of the personages whom we have seen in our tour, allow me to point out as eminently worthy of imitation, the plain and practical good sense of Sir Thomas Watson, the unblemished professional career of Sir William Fergusson, and the never-resting industry of Virchow.

FRACTURES OF THE FEMUR
AND
THEIR TREATMENT.

INAUGURAL-DISSERTATION
ON
RECEIVING THE DEGREE
OF
DOCTOR OF MEDICINE AND SURGERY
PRESENTED TO THE
MEDICAL FACULTY
OF THE
FRIEDRICH-WILHELMS-UNIVERSITÄT
OF
BERLIN
AND
PUBLICLY DEFENDED
VII. MARCH 1876
BY

LEVI C. LANE, A. M., M. D.
AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS
in LONDON.

OPPONENTS:

AD. SOHIER, DR. MED.
F. HAY, DR. MED.
E. S. PECK, DR., PROF. ADJUNCT. OPHTHAL. & OTOL.

BERLIN,
PRINTED BY A. HAACK.
Dorotheenstr. 55.

The fracture of the os femoris, on account of the proximity of the thigh to the trunk, as well as of the large size of the femoral bone, and also of the indispensable office which the latter performs in locomotion, is to be reckoned among the gravest of injuries: owing to this fact, its minute study has, in modern times, become a subject of emulation and sharp rivalry among the great names that have figured as practitioners of, and writers upon, surgery. Thus it called forth the thought of England's greatest surgeon, Sir Astley Cooper, whose Essay on the Fracture of the Neck of the Thigh Bone will charm every reader of the work entitled Fractures and Dislocations of the Joints, in which book it is now incorporated; not only has the intrinsic merit of this chapter given it a place among medical classics, but its clearness of method and practical character must ever remain an evidence of the talent of this great man and a monument to his genius.

It is perhaps proper that the writer of this dissertation should state, at its commencement, that he intends herein to exclude all consideration of the phenomena exhibited in the reparative processes of fractured bones, and strictly to confine himself to the special surgery of the subject. Furthermore, the ideas contained within this paper are not of theoretical origin, but are the result of his own observations in over one hundred cases of fracture of the thigh-bone that

have fallen under his surgical treatment, partly in private practice but more largely as patients in St. Mary's Hospital, San Francisco, which institution is the leading hospital for accidents, on the Pacific Coast of the United-States of America.

As preface to the surgical part of the subject, we will first notice some of the anatomical features of the femur, which have a bearing on its fracture: its globular head; its constricted neck flattened antero-posteriorly and perforated with a great number of orifices; the superadded trochanteric processes — the greater one with its muscular force pulling the femur outwards, the other being a point to which force, that can flex either the limb or the body, is applied; the foregoing are all dynamic agents directly or indirectly influencing fracture of the femur. For example, the head, inserted air-tight into the innominate bone, becomes thus, as it were, part and parcel of this bone and hence shares with the latter comparative immunity from injury. Between the head, thus protected, and the trochanteric expansion of the shaft, lies, isthmus-like, the neck; the latter is, in youth, tolerably well fortified against either direct or indirect violence, since, in early life, it deviates in direction but slightly from the shaft, while, in later life, it becomes so bent upon the shaft as to approach a right-angle; firstly, from this flexion results hampered vascularity and nutrition interfered with from the constant transit of indirect violence across the neck; secondly, in the aged, the osseus structure having become more porous it has less resisting power; here, then, we have two predisposing causes to the fracture of this bone in old age. Not only does the angular relation of the neck to the shaft break the uniformity in the transmitted violence, but it also causes it to concentrate more at certain points; thus the violence ascending would act more on the upper part of the neck, while, on the contrary, the violence from the acquired impetus of the

body in falling, would act more on the lower section; so thus, again, does angularity predispose to fracture. In the two sexes there is a notable difference in regard to the conformation of the femur: the increased pelvic expansion of the female results in almost rectangular flexion of the femoral neck.

The study of the lines of direction in which is accomplished the muscular function of the adductors, of the ileo-psoas or forward flexor, and of the group of external rotators, will materially assist the surgeon in the solution of the abstruse problem of the position assumed by the limb after its fracture: in all cases the position will be found to be the necessary result of the composition of the forces just enumerated, eliminating, however, such muscles from the calculation as may have been paralyzed by the causal violence. The coxo-femoral capsule, immensely strong in front where it is strengthened by Bertin's ligament, but far weaker behind, must be taken into account in certain fractures of the upper portion of the femur.

Sites of Fracture. The femur may be fractured in its shaft, neck, lower end, and, lastly, either of the two trochanters may be separated; thus named, the fractures stand in order of frequency, that of the shaft being the most common.

We will first take for consideration the fracture of the neck of the os femoris: this fracture may be wholly inside of the articular capsule, in which case the line of detachment may approach a transverse direction; or, the line of fracture may commence inside and, running obliquely, may pass through the attached insertion of the capsule and end extra-capsular; and, lastly, the upper fragment may be caused to glide, cap-like, over the pointed end of the lower fragment thus constituting impaction. The symptoms in each case are similar; viz., there is shortening of the limb with outward rotation, that is, the foot is everted; the

trochanter major is moved from its normal place, being lifted upwards and outwards so that it is unnaturally prominent. The amount of shortening is influenced by the direction of fracture; for example, it is greater where the direction is oblique, it is much less where the direction is transverse, and, finally, if there is impaction, the shortening is often so slight that great skill in the admeasurement of the limbs is required to detect any difference in their length. Crepitus is a general accompaniment of this fracture. By means of the diagnostic points just given, the surgeon can, as a rule, readily determine the character of the injury. There are cases, however, where the diagnosis is not so obvious; for instance, eversion of the limb may be absent, and crepitus likewise [illegible] the case [illegible] impaction [illegible] where crepitus exists the normal [illegible] and [illegible] by it, may be muffled by [illegible] mass beneath which the [illegible] the double-tubed [illegible] States of America, becomes [illegible] There is, however, [illegible] when the femoral [illegible] bone; but [illegible] site where [illegible] luxation is [illegible] which [illegible] the femoral [illegible] Here, in [illegible] and [illegible] the [illegible] the extensive [illegible] from [illegible] head is mis- [illegible] or [illegible] over the head

of the femur from its shaft. In jumping from a height, when the descending body is arrested by the striking of the feet upon the ground, the momentum of the body suspended on and between the femoral necks, tends to continue onwards, and thus fracture may take place on whichever side receives the greater part of the shock. In the case supposed, one can readily see how the fractured end of the shaft would pass upwards and outwards, while the broken end of the neck would pass downwards and inwards; thus the capsule would be ruptured and spitted, as it were, upon the sharp or ragged ends. The same may arise from muscular violence. While the aged subject is walking, running, or, especially, ascending steps, (hence the cognomen, curb-stone fracture,) should the foot slip backwards, trip, or be caught, then, as the ileo-psoas becomes stretched like a tight cord from the pelvis to the lesser trochanter, the gluteal muscles being likewise in a similar state of tension, the sudden action of the dorsal erector muscles to rescue the falling trunk, could detach the shaft from its neck. In a similar way, if the toe be caught as the body is advancing, then the strong and unyielding ileo-femoral (Bertin's) ligament would favor a like fracture of the femoral neck. Excessive abduction of the leg, as where the limbs slip asunder, may also break the bone at this point.

The shortening, where the fracture is wholly intra-capsular, varies from one-half an inch to one inch; in this case the capsule, if not opened, confines the broken ends in such a way that they cannot pass much beyond each other; but, if it is partially ruptured, the ileo-psoas and still more the gluteal muscles, will then draw the shaft upwards and outwards; thus the shortening is increased and the greater trochanter becomes more prominent. Where the fracture is partly intra- and partly extra-capsular and very oblique, the conditions are such as to favor a very

considerable degree of shortening which may even exceed two inches; but when the shortening does not exceed one inch it is safe to infer that the fracture is wholly intra-capsular.

The displacement of the shaft in oblique fracture will vary according as the line of fracture passes from without inwards, or from within outwards; in the former case the neck, with the attached trochanter minor, will thrust the shaft outwards, but, in the latter case, with the attached trochanter major, it will thrust the shaft inwards. As before said, fracture of the femur is almost always accompanied by eversion or outward rotation of the leg; this is the case whether the bone is broken through its neck when all the femoral muscles are able to act upon the shaft, or where the injury is near the condyles whereby the distal fragment is placed beyond the sphere of those muscles whose action is usually invoked to explain eversion: hence we must infer that eversion occurs, in some cases, independent of muscular action.

It has been reserved for the ever ingenious and talented Hyrtl to discover that the axis of rotation of the thigh does not correspond to the axis of the femur, but lies internal to that line; thus the greater mass of matter lying outside of this line, tends to roll the leg outwards when abandoned to its own weight; this accords with the common observation of every one that, in swooning, sleep, and death, the limb when unacted upon by any muscular force whatever, always rolls outwards, doing so in obedience to the common law of gravitation. Unfortunately, this eversion is not universal; in a small number of cases observed, the foot did not turn outwards, and in such instances there is danger that the surgeon may commit the serious error of mistaking the case for one of luxation; on the other hand, in luxation of the femur the inversion that, as a rule, characterizes the injury, is wanting in at least

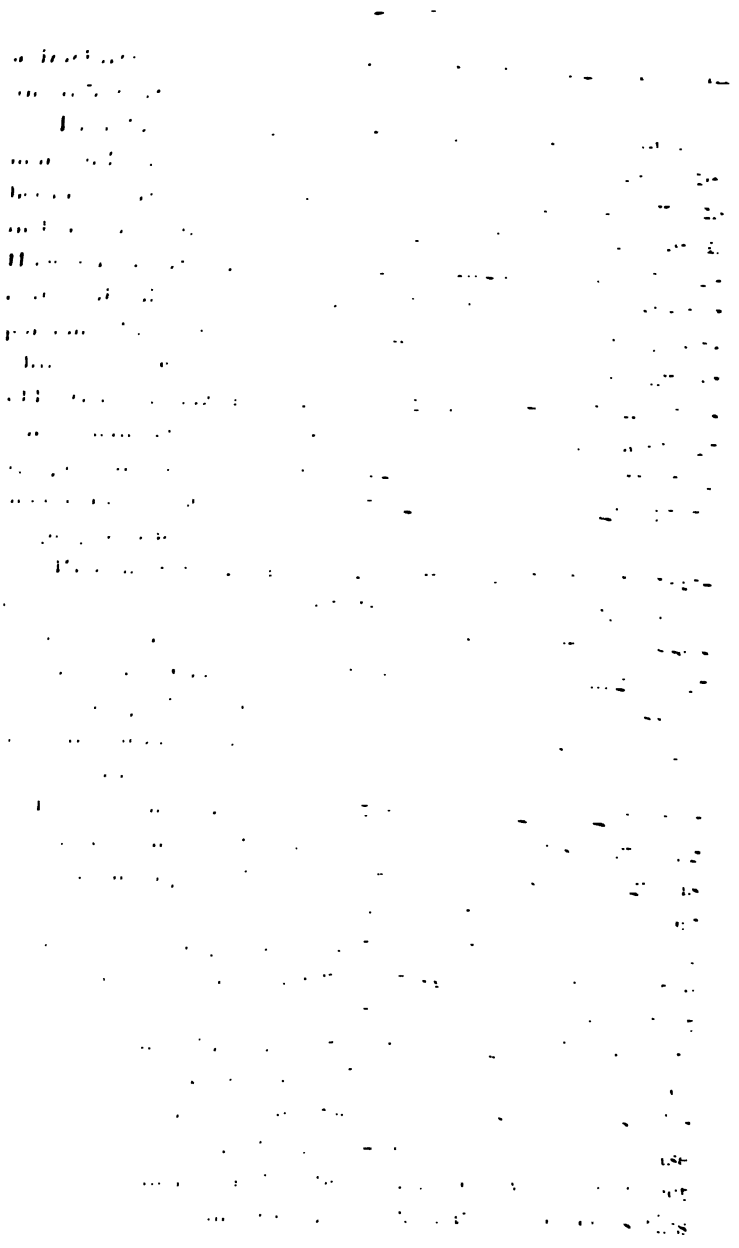
one species. Hence, though most valuable symptoms, inversion and eversion cannot always be relied upon; other conditions must co-exist to render the diagnosis decisive. For example, in the prae-cotyloid luxation where the foot is not inverted, the leg is lengthened, the trochanter is depressed and, often, the head of the femur can be felt on the pubic bone — all being conditions which distinguish the case from one of fracture. Again, if a fracture is accompanied by the anomaly of inversion, the facility with which, by traction. the shortened limb can be restored to its natural length, together with the accompanying crepitus, will enable to distinguish the case from one of luxation. Besides the explanation just given of the anomalous inversion, others have been offered by surgical writers: viz., many have referred it to the direction of the fracture, the bones being so placed in respect to each other that eversion becomes impossible. In such cases as those described by Guthrie and other writers, may not the muscularity of the inside of the limb have been abnormally developed so that, left to itself, the limb would necessarily fall inwards? also, if muscular action be allowed to figure in the phenomenon, may not the gluteal rotators have been paralyzed by the fall so that the adductors were left without antagonism and hence drew the limb inwards?

Prognosis. The prognosis of fracture of the neck of the femur varies exceedingly according to whether the injury is wholly inside the capsule or not: when entirely intra-capsular, the recovery is most difficult and, in many cases, ends in ligamentous union; the explanation is the defective supply of blood to the part, since, the femoral head being separated from the shaft, it is almost isolated from the vascular system; the only vessel from which it can derive any reparative material being that to the ligamentum teres; but, according to Hyrtl's researches, this vessel does not penetrate the bone but, after reaching it,

returns again; hence, like that of the cornea, the nutrition of the detached femoral head is limited to a scanty serous transudation; so from this side of the fracture no proper reparative process can take place, the ossific restoration being limited wholly to the shaft. Non-union was formerly so frequent an occurrence that, among the old surgical writers, the advice was found not to attempt union; more recent authorities advise that some effort be made aiming at union, yet, in terms usually intermingled with so many misgivings that no one under their guidance would act with much zeal or hope. There have, however, been a sufficient number of cures with bony union, to justify the surgeon in resolutely aiming at such a result; and it is the more incumbent on him to do so since, if the subject is left with an un-united fracture, he is hopelessly crippled; a condition wretched and pitiable in the extreme and adding greatly to the discomforts of waning age. Therefore, in all cases where the vital powers have not been exhausted, it is the imperative duty of the surgeon to spare no pains in carrying out a course of treatment having, as its object, bony union. It is probable that in almost no instance is the surrounding capsule left perfectly intact; the fallen patient in whom such fracture has just occurred, is pretty sure to try to rise to his feet and thus the fractured ends can become entangled in the adjacent capsule, and, remaining so, the consequent adhesions may form a bridge of transit for nutrient matter to the upper fragment. Besides this circumstance favorable to repair, if the bones are so adjusted that the broken surfaces fit well upon each other, then the callus forming about the broken end of the shaft can reach upwards and grasp the neck and thus restore bony continuity. The possibility and even probability that one of the contingencies enumerated may be present, is sufficient to stimulate the surgeon, as above said, to neglect no means at his disposal looking towards a cure by bony union.

To avoid repetition, inasmuch as the same modes of treatment are applicable to the different fractures of the femur, we will now, before proceeding to the subject of treatment, briefly notice fractures of the shaft.

Fractures of the femoral diaphysis may arise either from direct or from indirect causes; in the former, the violence acts immediately upon the thigh; in the latter, it may be transmitted from the trunk above or from the leg below. In the United States the accident occurs the most frequently to men whose avocations expose them to entanglement in machinery. The line of fracture may be transverse but more often it is oblique in direction; viz., from above and behind, downwards and forwards. When the fracture is in the upper third of the bone, the strong muscles inserted into the trochanteric prominences, are at once given unrestricted control over the upper fragment while the distal portion of the bone is pulled upwards and backwards by the biceps and adductors. Hence arise extensive displacement and change of figure resulting in loss of the normal anatomical form of the front surface of the limb; there is likewise present a degree of shortening much greater than when the fracture is at the neck of the bone. The diagnostic hints already given in regard to fracture of the neck of the femur, are of equal import in determining fracture of the shaft. The accessibility of every part of the shaft, except that near the knee, to manual examination, renders the diagnosis of fracture a comparatively easy matter in almost every case; difficulty arises only where the soft parts are greatly swollen; where the injury is near the knee, fracture can generally be detected by the crepitus which is perceptible to the hand and audible to the ear by the stethoscope; confirmatory evidence of the same can be obtained by the surgeon firmly grasping the suspected site of injury, while his assistant makes a lateral movement of the leg below; in doing this



much, the apparent subsequent elongation of the leg through the tilting of the pelvis, will compensate for, and practically remedy, the defect; but if the shortening exceeds this amount then the patient is left with an imperfect limb for life. To prevent this shortening, surgeons have not been idle, nor has their ingenuity been unfruitful of invention and device; if proof of this were needed, the numerous plates of splints which adorn modern works on surgery, are ample evidence. On each one has been inscribed Eureka, and this inscription has remained on it until transferred to its successor. In reviewing these appliances and attempting to classify them, three modes of treatment may be thence deduced: first, that of the double inclined plane; second, the gypsum dressing; third, that of the extending and counter-extending splint.

The cardinal characteristic of the first method, is maintenance of the limb in a constantly flexed position, and, for this purpose, numerous modifications of the inclined plane have been resorted to. For reasons presently apparent it is unnecessary to enter into any minute details of the mechanical contrivance of this apparatus. In favor of the mode of treatment by flexion, it is claimed that, the thigh and leg being on opposite sides of a double inclined plane they thus balance each other, and the action of the muscles of the upper leg is thus counterpoised, and extension of the thigh is thereby secured. But is the leg an exact counterpoise of the thigh? weighed in the scales, the former would, I suspect, be found wanting; and even were the two, exact counterpoises of each other, whence would come the force that is needed to draw asunder the fragments of the femur? Likewise it is asserted that the disturbing femoral muscles are rendered incapable of much action by reason of the flexion of the thigh upon the trunk; but these muscles are inserted mainly upon the upper part of the femur which lies at the beginning of the plane, the

slight elevation of which at that point can exercise but slight influence upon the muscles; furthermore, as these muscles have a constant amount of contractile power in them, if this be excluded from lifting the fragment through the first part of the arc of elevation will it also be excluded from the remaining part of the arc? Is it not more logical to infer that the muscular power acting with undivided energy, might cause more displacement than if the limb were extended in a right line? It is claimed besides that there is less anchylosis of the knee left by this plan of treatment than by that of extension. Yet the anchylosis that does occur is coupled with some angularity, a condition of limb more unfavorable to locomotion than if the leg were straight. It is likewise evident that the numerical and structural superiority of the flexors over the extensors, will enable the former to overcome anchylosis conjoined with extension more readily than the extensors can overcome anchylosis coupled with flexion. Hence, examined critically, the arguments for the double inclined plane are, on this ground, unsatisfactory. Again it is claimed that the condition of flexion is more comfortable to the patient; this is a difficult question to decide, yet, I imagine, were the choice left to the patient, that whichever he should choose he would soon wish he had selected the other. To decide the question we might carry it to the Court of the Ancient Order of Knight Templars who, for punishment of offenders, constructed a cell of such dimensions that in no position was it possible to straighten the limbs at full length. If additional evidence be required to convince of the impropriety of this course of treatment, there is also to be cited the silent protestations of the numerous thigh-bones which the double inclined plane has transformed into semi-lunar curves, and of the thick-soled boots, canes and crutches — the numerous offspring of this treatment.

A second mode of treatment of this fracture is that

known as the gypsum bandage. This plan of treatment I observe is in general use in the hospitals of Germany, and seems particularly applicable to the treatment of said injury in children. In France and England, on the contrary, it is not used. Some five years ago it was introduced into Bellevue Hospital, the leading hospital for accidents in New York City; although the Profession there are somewhat divided in opinion in regard to its use, yet the results thus far speak most favorably in its behalf.

The third mode of treatment may be designated in short as the extending and counter-extending plan. The germ of this mode of treatment may be found among the early classical writers upon medicine, particularly in Celsus in his chapter concerning the treatment of fractures of the extremities; therein, although in language somewhat vague, is found allusion to a method of this kind in vogue in the times of the Caesars. There are two modes of applying extension, one by means of a weight and pulley, the other by the so-called extending and counter-extending splint. I prefer the splint, though the other method is in very common use, and in the hospitals of Edinburgh and London I have observed a number of patients in process of treatment by the weight and pulley.

When called to a case of broken femur the surgeon should first adjust the fracture as nearly as possible and then give directions for the bringing of the patient to the place where he is to remain during treatment, and in carrying him, care must be taken that the injury be not increased by incautious movement; for example, in lifting him from the ground or by jolting of the vehicle, the fractured ends may be thrust into the soft parts and thus vessels and nerves be severed; hence, in raising him from the ground let one person grasp the limb at the site of fracture while the leg is borne by a second person; thus lifted, if he be near his room he can be carried most easily

upon a plank or a stretcher if the latter be at hand. Next, let directions be given about the bed on which the patient is to lie; an iron bedstead is the best, but if this cannot be procured a firm wooden one may be used; upon this a hair mattress should be placed, or if this cannot be obtained one stuffed with straw will answer the purpose; in either case the mattress should be so constructed that a transverse section of it can be withdrawn when the patient's bowels move; thus the vessel can be placed under him without deranging the fracture; the bed being thus arranged the patient is now to be placed upon it; if it is decided to treat the case by extension and counter extension, for which the writer has an especial preference, the surgeon has next to procure a splint adapted to the carrying out of these indications. The various forms of apparatus that have been employed for this purpose are either models or modifications of the so-called splint of Desault. If, as may happen in private practice, the surgeon be not supplied with such an apparatus, the following is a form which can easily be constructed by any mechanic who may be at hand: first a board of pine or other light but firm wood should be obtained, somewhat less than half-an-inch in thickness and, according to the size of the limb, from four to ten inches in width; the splint is composed of two pieces united together; one, a long part that shall reach from ten inches beyond the foot to mid-way between the iliac crest and the arm-pit; the other, a short part which is to be fastened to the lower end of the first, and both must be of the same thickness and width; the short piece must be perforated with two holes two inches apart and situated laterally opposite to each other; if the foot-piece is nailed to the longer piece then, to fix it more firmly, a small block may be nailed in the angle between the two. The long piece should also have holes laterally opposite and two inches apart, corresponding to the iliac crest;

a series of such may be made so as to fit the splint to different cases. Next prepare twelve strips of adhesive plaster (emplastrum plumbi adhaesivi) two feet long and three inches wide; also a like number of strips of the same width but only one foot long; lastly a few cotton rollers and a quarter of a pound of cotton wadding.

These things being in readiness the surgeon proceeds to re-adjust the fracture if need be, and then to apply the splint so as to retain the limb at normal length and in proper position; to adjust, let an assistant grasp the foot and slowly but firmly extend the limb; while this is being done the surgeon should place his hands about the site of fracture and bring the broken ends into as accurate co-aptation as possible; simple traction in a right line and coupled with a slight eversion of the foot, suffices, in most cases, to place the fractured ends in proper relation with each other. If there be great difficulty in accomplishing the adjustment, the patient may be put under the influence of an anaesthetic; if, however, the co-aptation can be accomplished without the aid of the anaesthetic, it is preferable to do so, since the intoxicating influence of the latter often leaves the patient for a time in an irrational, ungovernable state in which, by his disorderly movements, either the soft parts are in danger of being lacerated by the sharp ends of the bones, or, if the limb is already dressed, such movements may derange it. After co-aptation next apply on each side of the leg three long adhesive strips so attached as to reach six inches beyond the foot; the ends are to be tied in a knot close to the sole; next, on the front of the leg on a line corresponding with the femoral vessels, and also behind on a line with the sciatic nerve, apply the remaining strips, viz., three before and three behind: these strips we have supposed to be twenty-four inches long, but in a large subject they should be longer so that when applied the upper free or unattached

end may be at last ten inches long and these free ends are to be twisted into a cord-like form. Next apply half of the short pieces transversely above the ankle so as to firmly fix the strips which have been applied there, and in like manner let the remainder be applied; next bandage the limb from the toes to the groin; while the strips and the roller are being applied, the limb, should be retained in extension by one or more assistants. Next place the splint on the outside of the limb the foot-piece being a few inches beyond the sole, interposing, meanwhile, cotton wadding between the splint and the limb wherever any bony prominences may be endangered by pressure. Next through the noose at the sole, pass a short extending cord and then, through the holes in the upper end of the splint pass the coiled counter-extending strips and tie them together; now pass the ends of the extending cord through the foot-piece and then having drawn the foot out fully to the length of its fellow, tie the cord outside of the foot-piece. To prevent pressure upon the outside and the inside of the foot, from the adhesive plaster, let a wooden block be interposed so as to hold the cords asunder: for this purpose a small section of a shingle may be used. Besides having the limb of proper length, displacement of periphery must likewise be avoided: the foot must be placed at a proper degree of eversion but, in this respect, there is more danger of having an excess than a defect of eversion. From neglect of this precaution I have seen recovery of limbs which were of proper length, injured by the limb being allowed to turn too much outwards during the period of reunion; to prevent this, make a hole through the long splint beyond the foot-piece, through which a cord may be passed and tied; then one end of the cord may be fastened to one side of the foot of the bed, the other end to the other side; thus secured, lateral deviation of the limb cannot occur. Next, at distances of ten inches

from each other, strips or portions of a roller should be passed under the limb and tied, thus including both limb and splint. Lastly, around the body and the upper end of the splint, let a roller or broad bandage be passed making a few turns: thus fastened, the splint is fixed more securely and, what is more, the patient cannot raise the upper part of his body, as many are apt to do when unrestrained. The dressing being now completed, if the patient be restless or suffer pain, give to an adult one-third of a grain of sulphate of morphia; if the pain be not controlled let the dose be repeated in four hours.

Instead of such a foot-piece as here described, it may be movable and so made as to slide in a groove of the long splint, and then be moved back and forth by means of a screw; or, being fixed, the foot-piece may be traversed through its middle by a long screw and then, the extending cord being fastened to this screw, by turning the latter, extension can be made at pleasure. These latter forms are preferable to that first described, but when not to be obtained the other may be used; I have thought proper to describe the first because it is so simple in construction that there is no place where the surgeon could not readily have it made.

If it be objected that the adhesive plaster can not always be procured, it may be answered that even this is not indispensable, since by means of a band passed around the upper part of the thigh and in contact with the perinaeum, the splint may be fastened above and extension can be obtained at the lower end by means of an attachment to the ankle; in fact, until recently, the splint was always applied to the limb in this manner. For the perineal band a large handkerchief or, what is better, a soft towel may be folded into a cord-like form and, to render it still softer, a small quantity of cotton wadding may be folded within. The ends of this band are next

passed through the holes in the upper part of the splint and then tied together. For counter-extension let a broad circular band be put around the ankle, to which band lateral extending straps are to be attached. These straps being passed through the foot-piece, are to be tied tightly after the limb has been drawn out to its proper length. The disadvantages of the ankle- and perineal-bands are that the pressure from them in subjects of delicate texture and especially where it becomes necessary to apply much force, will finally produce serious abrasion of the surface. This abrasion is often present ere the surgeon is aware of it, since the compression of the sentient cutaneous nerves acts as an anaesthetic, and, when discovered by the dresser, the patient himself wonders how such a breach of surface could have arisen without his knowledge. If the bands be well invested with or filled with cotton or wool, the tendency to abrasion will be lessened: yet, despite this, some excoriation at the perinæum will result from the pressure no matter what kind of a band be used.

To avoid the lesions mentioned from pressure, over twenty years ago Dr. Dixi Crosby an American surgeon, resorted to the use of adhesive strips to form the extending band, and, since that time, the old appliance for the ankle has fallen into disuse in the United States. In 1865 in a case of fractured femur in a subject of remarkable softness of tissue and where a well-made perineal band had produced a frightful laceration of the cruro-perineal fold, I was forced to abandon the ordinary means and, in seeking for a substitute, made trial for the first time of adhesive plaster applied after the mode above described in the text. The results obtained were so favorable that I soon afterwards wholly abandoned the perineal band using the adhesive plaster in its stead: and now, after having used it in every variety of femoral fracture, am prepared to give it an unqualified recommendation.

When the adhesive plaster is of good quality it may retain its hold so firmly that the limb will not require redressing for some weeks. The yellow plaster is much better than the white on account of adhering more firmly; yet it should be stated that the permanence of adhesion does not depend wholly upon the plaster since the disposition of the patient to perspire, has an important influence in the matter; for as the plaster prevents the escape of the perspiration, the accumulation of the latter beneath, must finally result in the detachment of the plaster. Of course when thus loosened, the dressing must be renewed being re-applied according to the details already given.

As elsewhere mentioned, the objection sometimes urged against the treatment of the limb in a straight direction, is that the limb is left partly anchylosed; but this malposition is not inevitable as we always have a remedy which if properly used will reduce the anchylosis to a tolerable minimum; this is passive motion. This must be practised with care and if the surgeon has had but little experience it is much better that in its employment he have the assistance of another surgeon. To practise passive motion, first untie the extending cord and also the strips encircling the limb and splint; next let the assistant grasp the thigh about the site of fracture so that he can hold it securely, and then the surgeon is slowly to flex the knee at least half a dozen times. This should be repeated once a week during the period of treatment. In this manner I have secured recovery with but a slight amount of stiffness at the knee, and this disappeared soon after the patient began to use his limb.

The period of time necessary to secure bony union, varies from eight to twelve weeks: in the young adult union is usually completed in eight weeks; in those over forty years, at least ten weeks should be allowed; and for the old and feeble three months is often required.

A very important caution to be borne in mind is, that though union has apparently taken place, yet, in cases where the callus is extensive, owing to the bone having been broken into several pieces, a much longer period of rest should be enjoined than where the fracture is simple: where this rule is neglected, early locomotion is apt to be followed by a gradual bending of that portion of the shaft enveloped in callus. In a few cases of excellent recovery I have seen the limb subsequently shorten in consequence of the patient's premature attempts at locomotion.

And how should locomotion be commenced? The first essays are best made upon crutches: when the patient has acquired confidence he may be allowed a cane: after a short time the latter also may be dispensed with.

Where it is decided to treat the fracture by means of a weight and pulley, then a bed must be prepared similar to that used with the long splint. At the foot of the bed an upright piece bearing a pulley must be fastened: next, with adhesive strips, a cord is to be fastened to the foot in a manner similar to that described for extension with the long splint: this cord is next passed over the pulley and attached to a weight destined to maintain extension. This may be of iron, stone, or any substance of which the weight is known. For children from four to six pounds' weight suffices, but for adults, from twelve to fifteen pounds must be used: the criterion in all cases being that a weight must be used sufficient to maintain the injured limb at proper length. Finally, to prevent the body from sliding downwards, let the foot of the bed be elevated somewhat higher than the head: thus the body of the patient will act as a counter-extending force. To prevent anchylosis, passive motion as above described should be practised from time to time.

Along with fractures of the diaphysis may be reckoned those of the condyloid extremity of the femur. But as

these are more grave and complicated in character than the former, I have thought best to reserve their consideration for a separate section of this dissertation.

The condyloid extremity may be detached in toto from the shaft, or both condyles may be detached separately from the shaft, or one alone may be broken off.

Where the condyloid end is separated in mass from the shaft, the resulting displacement is apt to be very considerable and of a character extremely hard to correct. This displacement occurs in obedience to the following muscular forces, viz., the gastrocnemial heads pull the condyloid end downwards and backwards, while the adductors and extensors unite in lifting the broken shaft forwards. Such a displacement as this is extremely difficult to overcome and in spite of the best efforts of the surgeon, pseudarthrosis may ensue. To treat such a case after the adhesive strips have been applied, the limb should be accurately bandaged from the foot to the groin and then extended as already described. To carry out the advice of Pott, elsewhere given, a sustaining cushion should be applied so as to support the lower fragment.

Contrary to the advice given in reference to re-dressing the fractured shaft, in this fracture the dressing should be frequently renewed. Thus proceeding, the surgeon will find that at the successive dressings he can gradually correct the displacement; in the end he will have the satisfaction of gaining the ascendant if his vigilance has had more endurance than the refractory muscles. Passive motion should not be attempted under three weeks, and then the leg should only be flexed through a small arc; for if much motion be practised, the coalescing fragments will be separated and the foundation laid for a false joint.

The fracture may involve one or both condyles, and in such case the joint is seriously compromised, since one or both crucial ligaments are implicated. In fact the

injury becomes one of great gravity inasmuch as recovery cannot occur without some anchylosis, and although this cannot destroy, it must impair the future use of, the joint.

For treatment of fracture involving one or both condyles, let the limb be well bandaged from the foot to the body: should there be shortening, the long extending splint must be used; but as there is often little or no shortening, it suffices then after the limb is bandaged, to retain it at rest by means of two long sand-bags placed one on each side.

But whether the surgeon decides to employ the splint or the sand-bags for the maintenance of rest, he should constantly bear in mind that the time for obviating or reducing the anchylosis to the smallest limits, is during the period of healing. The passive motion should be commenced early after the fracture and repeated at least once in every two days, provided always that the joint be not much inflamed: this task is a difficult one, and there is danger that the surgeon may accede to the patient's entreaties and thus fall short of what is possible in the way of cure. But he should recollect that the most rational sympathy is that which does not circumscribe its vision to the transitory pains of the present but takes in a more comprehensive view of the patient's future. An early resort to passive motion is attended with the beneficial results that thus we prevent the formation of, or thrust aside, the reparative ossific matter from between the articular surfaces of the joint and so obviate the first conditions of anchylosis.

If it be objected that this passive motion and also the subsequent voluntary motion, would prevent ossific union with the condyles of the shaft, the answer is that though fibrous union may result, it will in no wise interfere with the articular function of the part: further, the modicum of movement that such fibrous tissue would permit, added

to the limited movements of the joint, would tend to enlarge rather than limit its sphere of action.

Fracture of the Trochanters. Fracture of the trochanter major may arise from direct violence, as from a heavy blow, the kick of a horse, etc. This injury when isolated and unconnected with lesion of the adjacent joint, is less grave in character than other fractures of the femur; but if the joint be simultaneously implicated, the case becomes one of much greater gravity. If a part or the entirety of the trochanter be detached from the shaft, then the gluteal muscles would lift the fragment upwards and outwards; the displacement, however, is not always easily recognized since the extensive contusion and accompanying ecchymosis, along with the thick muscularity of well-formed subjects, are serious obstacles in the way of verifying the condition of the parts.

Fracture of the smaller trochanter has rarely been seen. One cannot conceive of its occurring otherwise than from violent action of the ileo-psoas muscle; the detachment having thus occurred, contractility of the muscle would be given unlimited sway, so that the fragment would be drawn upwards towards the groin in a position where it could be felt.

Treatment. In fracture of the great trochanter, the chief thing to be aimed at, is to counteract the action of the gluteal muscles; for this purpose the limb should be everted and extended; to maintain the leg thus, it may be fixed between two sand-bags reaching from the foot to the middle of the thigh. Where the lesser trochanter is fractured, the patient should be placed in bed with the limb resting upon a cushioned inclined plane, the foot being raised through an arc of at least thirty degrees; the foot should be placed in eversion. Not less than eight weeks should be allowed for the cure of either fracture.

Pseudarthrosis or non-union following fracture of

the femur. Sometimes it occurs that from defective treatment, or from the absence of any treatment, or, finally from the want of reparative effort on the part of nature, imperfect union ensues. In such case the fractured ends are either united by a tendinous structure, or large masses of callus may form; the latter from the limb not having been retained at rest, results in the formation of two articular surfaces admitting of more or less motion; the latter mode of union more especially deserves the cognomen of pseudarthrosis or false joint.

For the cure of pseudarthrosis many plans of treatment have been proposed, among which the following may be mentioned as the principal: rubbing the ends of the bones together, a plan suggested by Celsus; passing a seton through the soft parts between the fractured ends: (Physick:) resection with union by means of ivory pegs, by which the ends are literally nailed together: (Dieffenbach:) boring through the fractured ends with the view to excite an ossific inflammation: (Brainard:) and lastly resection and subsequent union by means of silver wire. The latter method was used as early as 1855 by the late Elias S. Cooper, surgeon of San Francisco, U. S. A.: from that time until his death in 1861 he successfully used it for the treatment of a large number of cases of pseudarthrosis. Cooper's method, somewhat resembling that of Dieffenbach, consisted [illegible] upon the fractured ends, dissecting away the intervening fibrous tissue, next sawing off the [illegible] in a manner that they would fit [illegible] apposed being then bored [illegible] passed through them: finally [illegible] firmly twisted together, a [illegible] the limb and the case [illegible]

[illegible] pseudarthrosis of the [illegible] successfully treated

by Cooper's method, I have also treated two of the femur. The first case was one where the false joint was at the middle of the shaft and arose from the fracture having been very oblique as well as from the muscles upon the one side having been so transfixed by the spear-like fragment that co-aptation was impossible. At the end of six months, there being no union, I was consulted by the patient and advised the metallic ligature. The operation consisted in making an incision upon the outer side of the limb at a point which would favor the free escape of pus during the future healing process. The fractured ends when exposed were found to be united merely by fibrous tissue which was carefully dissected away; next the obliquely fractured surfaces were applied to each other, a hole drilled through them through which a wire was passed and so twisted as to retain the ends firmly in contact. The traumatic fever resulting from the operation, was very severe for a number of days and placed the patient's life in extreme jeopardy; this, however, finally subsided and without further trouble the case slowly proceeded to a recovery completed at the end of about four months. During treatment the limb was maintained both at rest and in extension by means of a long lateral splint.

In the second case the man had already lost one leg and, there being no necessity for co-equal length, the surgeon in attendance seemed to have abandoned the fractured limb wholly to the efforts of nature, as, according to the patient's statement, no extension whatever had been practiced. The result was, gliding and mounting of the broken ends upon each other and the formation of immense masses of callus which finally ended by assuming a hinge-like disposition, the one end loosely interlocking with the other. This fracture was at the union of the middle and lower third of the bone. The limb had been twelve months in this condition when the man applied to me for surgical

treatment. On examination I found that the false joint admitted of nearly as much movement as did the knee. The only means of locomotion was creeping, infant-like, upon the floor; for, as the man had lost the other limb by amputation the existence of a false joint in the remaining leg, rendered it impossible for him to move in any other way than by crawling.

Having found by experience in the treatment of several cases of pseudarthrosis of the humerus and tibia, that a much simpler treatment than that above described answered equally well, I determined to try it in this case; it was as follows: On the outside of the lower or distal fragment, the bone was reached by means of a small incision; next, a drill was applied at this point and directed obliquely both upwards and inwards so as to traverse both bones, emerging at a point sufficiently high to not endanger the femoral vessels; as soon as the point of the drill could be felt a small incision was made down upon it; a strong silver wire was then made to traverse the drilled canal and then to return over the upper part of the bone to the point of entrance where the ends were united by being twisted together; to return the wire over the bone, a large blunt needle was used. In cases of the tibia and humerus where no such needle was at hand, I have found the common silver probe with an eye at one end, to answer equally well. After the wire was fastened, a number of canals were drilled into the fractured ends; finally, to fix the limb at rest, a long splint was applied to it on the outside. No febrile re-action and but slight pain, followed the operation. Union occurred at the end of four months, and at the end of six months after the operation, the patient, by the aid of an artificial limb upon the other leg, was able to walk, if not gracefully, at least very satisfactorily to himself.

VITA.

The following biographical sketch of the author of the foregoing Dissertation, in compliance with custom here, is appended:

He was born and received his early education in Ohio, United States; received the Medical doctorate from Jefferson College, Philadelphia; was commissioned in 1856, a member of the surgical Corps of the U. S. Navy, after an examination in which the position of number one of candidates examined was assigned him, and more recently, he was admitted a Member of the Royal College of Surgeons, London; and now, as he is on the eve of being invested with the doctorate from Friedrich-Wilhelms-University, he begs leave to thank Professors Virchow, Langenbeck and Frerichs for the courtesies received from their hands, and especially for the ideas learned from their teaching.

THESES.

1. Ad membranam in faucibus e diphtheria ortam amovendam adhibitio, alcoholis localis remedium potens est.

2. Ossis fractura in obliqua pseudarthroseos causa solita est.

3. Urethrotomia externa in perineo potius quam dilatatio violenta in strictura admodum angusta optanda est.

ADDRESS

DELIVERED BEFORE THE

CELSIAN SOCIETY,

OR

STUDENTS' ASSOCIATION

OF THE

MEDICAL COLLEGE OF THE PACIFIC.

September 6, 1879.

By L. C. Lane, M. D., Professor of Surgery.

W. M. Hinton & Co., Printers, 536 Clay St., S. F.

ADDRESS

DELIVERED BEFORE THE

CELSIAN SOCIETY,

OR

STUDENTS' ASSOCIATION

OF THE

MEDICAL COLLEGE OF THE PACIFIC.

September 6, 1879.

By L. C. Lane, M. D., Professor of Surgery.

[From the Pacific Medical and Surgical Journal.]

In traveling in the Orient one is continually annoyed by the importunities of mendicants who desire to sell him "antiques." While standing on the plains of the Nile, before the towering obelisk which alone remains of the once famous city of Heliopolis, and which as an imperishable gravestone marks the tomb of a once living city—while standing and admiring this noble shaft of granite, whose elements have proved harder than the tooth of time, or than the hammer-blows of thousands of departed centuries, a little child of the desert stole up to me, with eyes sparkling as a serpent's, and face from which the strong forces of early life beamed out, and with tongue which had not learned to fashion and deliver its Bedouin language "trippingly," and yet had mastered one word intelligible to the ear of the pilgrim from the North—viz., "antique," and as the word fell from its lips the child lifted towards my eyes a piece of colored pottery, which it desired to exchange for a penny.

Among the strange thoughts which arose on the spot where Egyptian science was once taught, and where Plato was a student and gathered those germs of philosophy which, returning home, he planted in his own Athenian garden, where they grew

into as enduring forms as the Parthenon which casts its shadow on their birthplace, this incident still survives; and when I look upon the picture which memory has preserved of that day, in the foreground of which stand the pyramids, the obelisk of Heliopolis, the fountain of Mary, where in her flight from Herod she washed her infant's clothes, in a corner of the background stands the Bedouin child lifting its relic towards me and lisping "antique." Neither the Cheops, nor the Sphynx, nor the School of Plato, nor the City of the Sun shall be the theme of my discourse to you, but the Bedouin child suggests my subject, as I hold up to you this, the noblest of all antiques. This quaint antique is full of interest to the student of natural science, so much so that he is quite a stranger to the feeling which Yorick's skull provokes in Hamlet's breast when it makes him exclaim, "My very gorge rises at it;" but rather he would indulge in that poetic enthusiasm which warms the apostrophe of the Pilgrim of Childe Harold, when he exclaims, "Remove yon skull from out the scattered heaps"

But dropping the poetic and religious side of this bone, let me draw your attention to some special points about it. Your curiosity will be much awakened when you learn that the surface of this skull is marked with certain letters — in fact, that its surface has been chosen by some one as a tablet whereon to inscribe a series of hieroglyphics. And when these characters are studied in relation to their position and relations I find that the placing has not been done at random, but has been so done as to correspond to, and indicate the original segments of development of the skull.

A study of the history of science and philosophy shows that [illegible] to [illegible] might [illegible] knowledge [illegible] which [illegible] the [illegible] Things [illegible] which [illegible] Nature [illegible]

vidual whose unions and disunions account for all the phenomena of Nature, whether past or present; and after this comes the school of Zeno and others who dived far down into the ocean of metaphysics, and thought they had found the long-sought-for secret—viz., that what we see does not exist, that all that we see is but a series of deceptions, the whole being symbolized in the nonsensical statements that the "swift-footed Achilles cannot overtake the tortoise," and that "the flying arrow is at rest."

In such efforts as the preceding, the human mind vainly expended its energies for many generations, until finding that limited power cannot compass the illimitable domain of Nature, now limited their generalizations to narrower fields—fields in which facts had so been studied, connected and classified, that they could be marshaled in support of a general truth. Thus, in the field of Plants, Goethe found in the metamorphosis of the leaf, that from it are derived the bract, the sepal, the petal, the stamen and the pistil. And so, too, in the animal kingdom, Goethe, with Oken and Reichert as collaborators, discovered that the vertebra is the archetypal epitome of all the "backboned" or vertebrated class of animals; and carrying out this truth to its furthest conclusions, as the leaf is transformed into the components of the flower, so the vertebræ, by a change of form, furnish elements for building the cranium. As you have been taught that there are nine caudal and sacral, five lumbar, twelve dorsal and seven cervical vertebræ, so I will surprise you by telling you that you have not learned all, and that there are three more which constitute the skull, and which we might name the three capital vertebræ; and to individualize these, they may be called the posterior, middle and anterior capital vertebræ. Or, to retain the old names with which you are familiar, they may be named as the occipital, spheno-parietal and frontal bones. In the spinal column the vertebræ are fastened together by the upper and lower faces of their arches and bodies, the arches lying behind; in the erect position, the whole being piled upon each other. On the contrary, the vertebræ composing the skull, in standing, are placed alongside of each other, their arches being above, and their bodies forming the cranial base, and completing the inferior wall of the skull.

The curved expansions of these capital vertebræ are fused into a vaulted arch, which as an architectural wonder is more vener-

able than any structure of the past. The columns of Karnak, the dome of St. Sophia's, the matchless vault of the Pantheon at Rome dedicated to all the Olympian Celestials, sink into insignificance when compared with this faultless arch. And why not? For did not the latter, once with lines more graceful than Saracenic or Gothic, form the incomparable arch of a living temple, beneath which intellect sat enthroned and moved the keys of this strange, eventful life?

In the development of anatomical science, as a reward for the labors done by preceding discoverers, posterity has given their names to certain parts of the animal structure. Thus, in the heart, the fetal foramen through the inter-ventricular wall will forever hold the name of Botallus; and in the "book and volume of the brain," the lesser wing of the sphenoid has written in imperishable characters the name of Sylvius, standing there in isolated majesty, "unmixed with lesser matter;" and, finally, in the skull, gratitude towards the openers-up of new wells of knowledge has shown itself in the names of Dugrassias and Blumenbach affixed to parts of the sphenoid, while immortality has chosen as the guardian of two of her favorite sons, the temporal bone, on the stony pyramid of which she has chiseled the names of Fallopius and Eustachius.

Now, as science has chosen to perpetuate the names of some of her children by inscribing them on the base of the skull, so some more recent hand has chosen the vault of this bone as the tablet whereon to write certain characters; and whether this hand was moved to this work from gratitude towards the past, or whether like youth it was full of the future and longed only for that which was to come, I will not attempt to decide. Yet, if I venture on conjecture on the subject, it is that this trilogistic enigma, Janus-like, is both retrospective and prospective in meaning, embracing within its compass, like the mind of Chalcas, both the past and the future. For when I examine these characters and group them together, I get the symbol C. E. L. S.—S., which, unmistakably refers to the famous old Roman, whose name you have chosen to designate your society. But behind this self-evident reference, if a commentator were to subject these characters to critical analysis, and to pull aside the veil which obscures them, he might find an additional meaning hid in them. With-

out a Damietta stone, I think these hieroglyphics may be translated to read: Courage, Excellence, Love of Self-Sacrifice. And with a reasonable license, much less than commentators often assume to themselves, as the three capital vertebræ, by their fusion constitute the encephalic vault in which the sun of intellect rises and shines during the day of human life, so these cardinal traits by their fusion make up the character of the physician.

On the anterior capital vertebræ, stands the symbol of courage, and so on the front outworks of a self-sustaining manhood or womanhood, this sentinel must hold sleepless watch; and not only here, but his influence must be felt in the heart of the citadel of life, otherwise, the Homeric taunt would hold true: "Thou dog in forehead, yet in heart a deer."

And we would add, this trait when genuine is joined to quietness; when counterfeit, it would fain impose on us by noise and ostentation. Without courage, the student could never overcome his natural aversion to flowing blood, the putrid wound, the reeking contents of the abscess; and a large share must be on hand to enable him to bear the fetters which bind him, Mazentius-like, to a dead body, while with forceps, fixing-chain and scalpel, he unravels the decaying tissues, in order to catch a glimpse of the hidden wheels of life. Courage, indeed, is needed in order to steel his heart and steady his hand, when in his duty as necropsist he coolly cuts and explores tissues saturated with death-bearing ichor, one atom of which engrafted in his own person would fatally poison him.

On the middle vertebra we find the symbol of excellence, having place there like a crown-jewel. When the business of a medical man is subjected to analytical examination, it will be found to consist mainly of work or works which at first sight appear unimportant and insignificant; but it is directly here that we find the amplest field for exercise of the aim of excellence. For example, to check the increasing curve of chronic deformity in the child, demands months of watchful care; and so, too, to palliate cough and the exhausting night-sweats of the consumptive, the faithful physician will ever find work enough to do. In labors such as these, units of excellence can hourly be treasured up, which, finally, will reach an enviable aggregate.

In the background of courage and excellence, we find the third cardinal trait whose symbols are written on the occipital vertebra of our cranium—viz., love of self-sacrifice. Along with the traits before-named, to complete the list, a third is needed which differs from them in this—viz., that while they are largely tinctured with selfishness, this is wholly involved in self-abnegation, looking entirely to the interests of others.

Chinese religion teaches its votaries to do not unto others what you would not that they should do to you. Reversing the form of this, we have the golden rule of Christian ethics; and as a modification of the latter, Compte, the oracle of modern positive philosophy, banishes the *ego* in teaching to live wholly for others, regardless of self. Altruism, as Compte designates his system of morals, figures largely in the daily duties of the physician. Personal sacrifice of the gravest character is often exacted of him; sacrifice of time, sacrifice of money, sacrifice of labor, and, anon, sacrifice of life. Within the last few years, Savannah, Norfolk, Memphis, and other plague-stricken cities, have given graves to many a brave son of Medicine, who had volunteered his services to battle with the yellow pestilence; thus exhibiting the highest example of self-sacrifice, thus realizing the possibility of putting into practice the altruistic doctrine, which by Shiel and others has been declared impossible. Nay, more, altruism has been carried beyond what was demanded by its author: not only to live for others, but to die for others has been the rule of action put into practice by many noble-hearted ones in our profession.

Besides the instances given of self-imposed exposure to pestilence and contagion, I take pleasure in citing as praiseworthy and most admirable, those devotees to therapeutic science, who to determine the action of untried remedies, instead of trusting to the equivocal results of administration to the lower animals, have chosen their own bodies for trial, and in a few cases have lost their lives in the experiment. The action of Calabar bean was first intelligently learned through the experiments of an Edinburgh physician upon himself, and in his final essays in which the maximum dose was tried, the effects were so violent that for a number of hours his colleagues despaired of saving his life. And in our own country, about eighteen years ago, a young American physician of

Davenport, Iowa, in his enthusiasm in regard to chlorate of potash as a remedy in affections of the air-passages, determined to test the maximum dose which can be tolerated by the human body; and with that utter abnegation of self which the faithful in our profession impose upon themselves, he threw his own body into the fatal alembic, and death was the answer to his question. And as he heard this answer, and saw the dark shadows coming, destined to eclipse the sun of his life at midday, as Sir John Moore, though in the face of defeat and in the grasp of death, hoped that England would be satisfied with what he had done, so the hero, Fountain, hoped his experiment would not be lost to his profession. Nay, more, while standing in the chilling waves of mortality, he looked back to his professional brethren and asked them to carefully examine his body, even giving orders how this should be done, and where the lesions should be sought for, and that a record should be made of the same for the advancement of that science which he loved so earnestly, and on whose altar he had sacrificed his life.

In closing this lecture to an assemblage composed mainly of those but a few years the juniors of this youthful physician, I am glad to have had this opportunity of holding him up as a noble example of the love of self-sacrifice; and if I have aroused a respect for his devotion to our science, may the reverence awakened in your hearts be laid as a memorial wreath upon the gravestone of Fountain!

ADDRESSES

DELIVERED ON THE OCCASION OF THE DEDICATION OF COOPER MEDICAL COLLEGE BUILDING,

BY

LEVI C. LANE,

A. M., M. D. (JEFFERSON AND BERLIN), PROFESSOR OF SURGERY, AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON;

AND BY

EDWARD R. TAYLOR.

A. L. BANCROFT & COMPANY, PRINTERS, SAN FRANCISCO.

1882.

ADDRESSES

DELIVERED ON THE OCCASION OF THE DEDICATION OF COOPER MEDICAL COLLEGE BUILDING,

BY

LEVI C. LANE,

A. M., M. D. (JEFFERSON AND BERLIN), PROFESSOR OF SURGERY, AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON;

AND BY

EDWARD R. TAYLOR,

A. L. BANCROFT & COMPANY, PRINTERS, SAN FRANCISCO

1882.

ADDRESSES

DELIVERED ON THE OCCASION OF THE DEDICATION OF COOPER MEDICAL COLLEGE BUILDING, BY LEVI C. LANE, A. M., M. D. (JEFFERSON AND BERLIN), PROFESSOR OF SURGERY AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON; AND BY EDWARD R. TAYLOR.

The exercises were commenced by conferring the Medical Doctorate upon the Students who had recently graduated in Pacific Medical College, (the name which the institution bore prior to its recent incorporation under the name of Cooper Medical College,) the formula used by Dr. Lane, (the donor of the property, and President of the institution,) being in language as follows:

Candidates for Graduation:

In the olden days of scholastic learning, the approach of the candidate to the baccalaureate threshhold was the scene of severe contest between him and the guardian authorities; and the witnesses to that occasion were entertained by the clangor of lances sharply wielded in dialectic battle, in which the candidate was compelled to prove himself fitted for the honors in question. Dismantling this famous ceremony of its ancient dress, I will still preserve the spirit of the same by formally announcing to those who are present to witness your graduation, that

you have complied with all the regulations of the Pacific Medical College; that you have successfully passed the annual examinations of a three years' course of medical instruction in that institution; in fine, that you have well run the appointed curriculum. As a reward therefor, the directors and faculty of the Cooper Medical College, under which name the former institution is now incorporated, have instructed me, its President, to confer upon each of you the degree of Doctor of Medicine, and to give to each of you the diploma of this institution as perpetual and universal evidence of such promotion.

DR. LANE'S ADDRESS.

Afterwards Dr. Lane delivered the following valedictory address:

Candidates for Graduation in the Science of Medicine:

There are times when it is well to forsake the usual road and to pursue a pathway hitherto untrodden. The present occasion in the history of our school gives such license, and permits me to cast aside the ceremonious dress with which the valedictory address is usually invested. During your long training of three years, medicine enough have you had, and mingled therewith a due amount of moral axioms and monitions; for your Faculty strongly believe, and diligently teach, that the professional character is sadly incomplete, unless high scientific training be conjoined with equally high morals. Besides, in the classic words of your diplomas, the same fact is reiterated. Leav-

ing, therefore, in a measure, these things aside, I invite you to accompany me in a journey which I recently made to the Sierras. There let us breathe afresh, and learn something new from the high as well as from the humble forms of nature, for we find the two commingled in the closest society. As examples of the lowly, I will first invite your attention to a blade of grass beneath a pine-tree, a leaf from the pine, and a hillock of ants near the root of the tree.

Near the eastern end or head of Lake Tahoe, and near the foot of the mountains which form there the wall of the lake, now stands an aged pine, if some covetous axe has not been laid at its root; and as I saw it a year ago the dense foliage of this tree did not allow a broken sunbeam to reach the earth around its huge trunk. In this sunless shadow a single blade of grass had sprung up, battling, as it grew, with a constant shower of missiles, yet defiant of javelin and Minnie-like cones, it had risen to a respectable height, and bending to and fro seemed to be bowing a welcome to me. Without the stimulus of noiseless sympathy, or the encouragement of approving applause, unaided by any but its own innate powers, this child of Nature had fought the battle of life well, and won the palm of successful existence. Napoleon-like it had survived a missile warfare where danger was as rife as at Lodi and Marengo, and was waving the banner of unscathed life. But its kinsmen, the scattered remnants of which were visible, had been less fortunate; destiny had assigned to them the lot of defeat, yet one was moved with sympathy for their misfortune, and

felt like applauding them, as once did Napoleon when meeting, on the road, wagons of the wounded which his own army had defeated, he turned his horse out of the way, and lifting his hat, he said: "Honor to the unfortunate brave." But, turning to our victor again, I observed that it had not only lived, but the numerous flowerets adorning its purple crown gave proof that, obedient to the laws of its being, it was providing for an ample succession. Whether these children, emulous of parental example, have equaled their mother in dogged struggle against adversity, or whether they have fallen in the pitiless warfare waged against them; whether they have drawn fair or dark lots from the urn of Fate, is not known; yet the sight of that one victorious stalk of grass remains with me as a pleasant memory, teaching what perseverance, even on a small scale, can accomplish; and the example taught by it is deserving of your imitation; for in the lower as well as in the higher walks of your professional lives, adversity must come; amidst its javelins learn to stand unflinching—unyielding.

Besides this lesson learned from this frail endogen, it teaches yet another, for growing from the inside, and sending out its shoots from the centre, so that the young and tender ones are surrounded and protected by the older and stronger leaves, it offers a perfect instance of self-development; thus growth and defensive fortification keep pace with each other. So in man, as in this little plant, permanency of character arises rather from inward than from outward growth, and if such character be your aim, start from the inside and thence grow. In the solution of life's

problem all depends on starting aright. Further illustration of this is the following incident: Some years ago, when in Berlin, I was an occasional listener to the lectures of the famous Helmholtz. On one occasion his hour was occupied in the solution of a problem of physics on the blackboard. The work consisted of a long series of algebraic quantities, presented in the form of equations. The final result reached, showed that an error had been made in some part of the work, when the professor started back and sought for the mistake. It was only after much worrying review that he found that a slight error had been made in the very commencement of the solution, and this little blunder had not only clung to the succeeding links of the work, but it grew as it progressed, and at the end wholly vitiated the conclusion.

In another stroll, while reading an epitomized summary of philosophy, in which a plea was made for philosophic study, and the utility of the same defended against the encroachments of natural science, the author showing in the work that the conclusions of Leibnitz were singularly close to and coincident with the discoveries of Newton; in the midst of these abstract reveries, my attention was called to something more concrete, in the form of a pine-leaf that dropped on my page, and for a time became the subject of thoughts, which are here offered.

Looked at, the fallen object was needle-shapen, half faded and quite in the sere of leaf-life, and not half as long as a line of my philosophic lecture; an insignificant, diminutive thing apparently, yet if one lifted it up and listened to

its story, he heard there much that is curious and instructive. This story is as follows: A few months ago it lay with a number of its fellows infolded in a brown bud, its destiny then being decided by its position on the parent-stem, for according as it occupied basial or apical site, it might become leaf, sepal, petal, stamen, pistil, or germ of a future tree; but it was assigned a position in the first class, leaving the other destinies to its superjacent brethren, viz: it became a leaf, and consequently part of the breathing apparatus of the huge organism to which it belonged; a breathing organ like that of the fish, unfolded instead of infolded; but unlike that of animals, there is an alternation of function here, that of the day being the reverse of that of night. This pulmonic vesicle of ever-acting chlorophyl has intimate affinities for air and light, and through the interchanging interaction between the subject and these media, the marvellous processes of plant life are maintained. This is an enviable and admirable breath-cell, since in the meshes of its delicate histology the hand of disease does no marring by the planting of tubercle cells; nor are its perfect walls disfigured by distending emphysema or collapsing atelectasis. Hence the pine with its incomparable breathing apparatus does not prematurely languish with phthisical decay.

The nutritive elaborations accomplished in this tiny workshop, were done noiselessly by the genius of organic life; in that laboratory no clashing was heard of the crucible, mortar, blow-pipe and furnace; the attentive ear could have caught no sound of bustle or confusion, as the chemist

was building his part of the colossal fabric; but with unerring aim he plied his craft, now selecting this, now rejecting that piece of building material, and so thoroughly accurate was he in all the details of his art, that without redundance, defect or mistake, he accomplished his task perfectly and without ever recurring to the archetypal sketch; and with equal accuracy and even more marvellous detail, the task was done when the workman's hand fashioned the floral leaflet, the staminate crown, the pistillate utricle, or the microscopic germ of a future conifer.

Besides, this leaf, though so insignificant in form, and in power apparently so feeble, had been more successful than the Titans of old, since it had caught the divine sunbeams and moulded them into chains, whereby the organic elements of the pine are held together in ever-enduring matrimonial union, and as forms of potential tension they become the equivalents of so much force in Nature's exchequer.

The fallen pine-leaf has had but a brief existence, measured by a few months of time only; but during this time it has done its work so well, that it has contributed to the growth of its parent, and affixed there a tablet that, untarnished by storm, season or time, will last for generations.

Hence, the tiny pine-leaf falling on the page of Fichte's subjective idealism, when one unfolded its scroll and read the curious history written there, was more replete with wisdom than I could find in the abstruse formulæ of mental philosophy; and thought, going a step further, told me that the great life-tree of humanity has likewise its leaves, of

which each one of us is a representative, each destined, if he works well, to leave upon the parent-trunk a little tablet.

From the fallen leaf, my attention was next called to a hillock of ants near by; but, as its story is rather a long one, and also to follow the order of Nature in which the little and the great are equally commingled, we will next stroll to a cluster of pine-trees, seven in number. These natives of the forests, each one several centuries old, had grown to their present strength and stature within a few square yards of earth; nay, more, may grow for ages yet to come.

The savant Flourens, from a study of the life-time of animals, and deriving his rule from the period which is required for the animal to become fully grown, taught, in regard to the measure of human life, that the normal limit of man's life should be one hundred and twenty years. Tried by Flourens' rule, which, I regret to say, he failed to illustrate in his own life, the pine should live unendingly, since it never ceases to grow; it remains always in the freshness of youth—life and growth being coeval. The lover of antiquity need not go abroad to find objects to which he may do homage, for these trees have records of years upon them which antedate English civilization; but, unlike man, in whose face the markings of the years are traced, these trees have folded up the records of by-gone centuries, and buried them deeply in their hearts.

When one contemplates these trees, as examples of constructive skill, the study is full of interest and novelty.

This union of strength and majesty of form is the product of two factors—time and molecular force—and these, in magnitude, are inversely proportioned to one another, the factor time being the greater one. In a lecture which I once heard delivered by Becquerel, Professor of Physics at the Museum of Natural History, Paris, the idea was rendered probable that the processes of growth resident in the radicles of the plant are dependent upon electrical action. As in the animal body it has been demonstrated by Du Bois Reymond that there are constantly playing electric currents between the centre and circumference of living muscles and nerves, so it is probable that the terminal radicle of the plant is but a galvanic cell, consisting of two fluids—one the fluid of the adjacent earth holding numerous saline materials in suspension, and the other the organic fluids of the plant, the two being divided by a thin wall of vegetable substance. By a similar arrangement we know that electricity is set free and matter precipitated on the separating wall. In the plant the material thus precipitated from the outside, traverses by endosmosis the wall upon which it has been precipitated, and, being once admitted, becomes plastic matter. This galvanic element, superior to the chemist's, dispenses with amalgamation in order to constantly work, nor does it need cleansing, since the precious matter deposited on the plate is food for the plant, destined to be converted into bark, wood and leaf tissue. The latter, as before shown, becomes an ulterior refining and finishing workshop, in which the cruder matter, passed up from below, undergoes its final elaboration and refinement.

Thus we see that from materials abstracted from the earth, and which are so minute that no tactile corpuscle could appreciate them, nor auditory ossicle be moved by them, though they had fallen from a mountain height, nor could retinal rod perceive their impact—I resume—from such minute stones this edifice has been created, and in height made a peer of the Pyramids.

The voyager of the Rhine never fails to visit Cologne; or, as the Romans called it, Colonia, or Colony. If he remembers his Tacitus, this spot is remarkable to the traveler for having been the witness of a victory of words over swords, for it was near here that Germanicus quelled, with a few well-chosen words, a dangerous mutiny of the Roman army. But, besides this and other associations, mediæval architecture draws most persons here. Some centuries ago it was proposed to build at this place a cathedral, which, in architectural grandeur, should surpass anything then existing, and all the famous architects of the world were requested to furnish plans for the same. Among those competing was an ambitious builder, who, desirous of outstripping all the others, made a league with Satan (a personage, probably, not a little interested in the matter,) that if he would aid him in devising plans that would excel all the others, he should have his soul after death. Satan accepted the offer, and furnished a plan which, being the wonder and astonishment of all, was accepted as the best. But, like most fraudulent transactions, the architect's secret leaked out, and the faithful of the church were much mortified at the ill-plight in which the builder was placed; and

for the purpose of finding some refuge for him, they consulted Saint Ursula, who told them if they would secure the thigh-bone of Saint Peter, and place the same in the builder's hand when he came to die, it would nullify his pact with Satan. Thereupon an embassy was sent to Rome, the bone secured, and given to the builder. Satan, having discovered the trick that had been devised to defraud him of his rightful plunder, visited the builder, snatched the plans away from him, and, venting maledictions on his head, declared that thereafter no one should know the plan, nor in future should anyone know the architect's name; and, true to Satan's prediction, the plan of the original architect is not known, nor does any one know his name.

But a better fate awaits our temple-pine than has befallen the old Cathedral of Cologne. The architectural plan, according to which it was built, has been revealed to us by Galvani and Volta, the quivering foot of a frog touching the opening-spring of this great revelation.

How profoundly impressive, then, the thought, when seated among this group of pines, that countless electric batteries are at work under one's feet—countless forces, infinitely little, which the hand of Time applies slowly but incessantly upon the long arm of the lever that hoists the building material to the summit of this lofty fabric. As motive weights, Time silently adds hours and days to his arm, never ceasing until he gains the ascendant over the counterpoising material. But whence comes this building material? This introduces the lake and the mountain—

two other great objects of nature, to which we will next direct our attention. But before doing so, let us make a short diversion from the high to the lowly, and study a hillock of ants which have chosen the shadow of the pine as the site of their home; and as we do so, the intense activities of this busy community rivet both eye and thought to the spot.

Coming nearer to the ant-hill, and questioning one of the outstanding sentinels as to the polity, counsels and government of this little commonwealth, one learns not a few lessons of practical instruction. Though this insect occupies a low step in the scale of animal life, its neural centre having neither convolution nor other mark of intellectual ascent, yet one soon learned that what brains the ant does possess are well used. As proof of this, the wise of all times have borrowed instruction from the ants, and held them up as examples worthy of imitation. The Hebrew sage counsels the sluggard to go and learn wisdom of the ant; but the sluggard of our day, who has learned something of natural history, says that nothing can please him better than to have such an example to follow, as it has been observed that ants do not commence their labors until late in the forenoon. Perhaps the ant of Palestine was an earlier riser, as it is not probable that Solomon would have made such an error.

The ant can also boast of having suggested to Virgil one of his finest lines, and to La Fontaine one of his most popular fables. In this fable we are told how a light-hearted and frivolous grasshopper spent his precious sum-

mer hours in song and merriment, taking no lessons from passing time or current events; with no fear of a coming hour which would weigh with remorseless balance his uttermost garnering; nay, more, even smiling, when allusion was made to the future. Finally, the frosts of winter came, and found his storehouse empty. In his direful necessity, the profligate repaired to the castle of the ants, begging for food, but received as answer, that as he had sung during summer, so now he might during winter.

Besides these examples of wisdom for practical guides in life, chosen from the many which have been furnished by the ant, you will be pleased to learn that chemistry has received no trifling aid from its labors; moreover, that this little insect has been an indirect co-worker with us in the healing art, viz: it has furnished man with a delicately compounded substance, to-wit, formic acid, which needed but the addition of one element to it to render it the most perfect of pain-annulling agents. This gift of the ant to man was unheeded, and remained in the chemist's laboratory, a useless thing, until a Frenchman, by accident, added chlorine to it and gave the world chloroform. But man, with his wonted nature to ignore favors and obligations, as if to blot out all recognition of the favor which has been done him by the ant, has changed the nomenclature of chloroform from the terchloride of formyle to the terchloride of methyle.

Besides what we have learned from these insects, allow me to repeat the apostrophe which one of their sages made to me, as I sat musing at his side: "To quote the language

of your great Heyne, concerning the markings of the salamander's tail, there is more wisdom in the hieroglyphics chiselled on my sides than in the combined philosophy of Spinoza, Kant, Schelling and Hegel; the substance of the first, the subjectivity of the second and third, veiled under the mystic forms of the I and the not I, and the reason of Hegel, are mere vapory words; and though the metaphysical student may find pleasure in them, yet these are but useless words and intangible fancies; but if the hieroglyphics on my sides be truly translated, the true wisdom of life consists in useful occupation, whereby prudent provision for the future is made, avoiding all occupation where shadow is mistaken for reality."

The formic sage retired, and left me to reflect on the lesson which he had given; and to none is the lesson more appropriate than to you, whose hearts are full of youth, hope, and the future; for, when the frosts of winter have come, it will be of incalculable import to each of you, whether as the grasshopper you have idly sung the summer away, or, like the ant, have filled your storehouse with stores.

As we made our digression to the ant-hill, we were on the eve of considering the sources whence is derived the building material of the pine-tree, and this introduces the lake, on whose shores these meditative ramblings were made.

As one stands beside Lake Tahoe, and endeavors to form, in its diverse features, a conception which may be given in words, these features are so numerous that one

knows not how to commence the portrayal so as not to distort the picture, and he stands in that wavering uncertainty with which Scott has described one of Scotland's lakes:

> "The mountain shadows on her breast
> Were neither broken nor at rest;
> In bright uncertainty they lie,
> Like future joys to Fancy's eye."

At the foot of our group of seven pines, with one shore lying in our State and one in Nevada, lay this emerald gem in a framework of mountains, whose sides were covered with pine forests, and whose crests, here and there, were crowned with snow; emerald gem I have called it, yet it rather deserves the name of the most precious of stones; for, as Kepler conceived the fixed stars to twinkle like diamonds, because of their revolution, so the face of this lake, borrowing hue from sky, sun and cloud, presents a play of colors not excelled by a moving diamond, and as such, constitutes the brightest jewel in the diadem of two sister States; and securer than the Koh-i-noor, or the crown jewels of England, it will glitter there forever, since no prince's gold nor despoiling conqueror can ever wrest it from its Sierra casing.

Besides its matchless charm of coloring, our lake is equally remarkable for the purity of its waters; the water taken some distance from the shore is free from all admixture of foreign matter; a grand crucible in Nature's hand, where hydrogen and oxygen exist alone. "unmixed with baser matter." These waters, like a peerage jealous of a long and unalloyed lineage, are recruited only from ice and snow

on the surrounding mountains, the ice and snow in their turn having sprung from clouds that arose from the lake; water, cloud and snow being the links of a never-breaking chain; for existence, whether in the form of organic or inorganic phenomena, moves in fixed circles or orbits, which, according to Goethe, and more especially as elucidated by the master-mind of Moleschott, are governed by fixed iron and eternal laws, and this chain of recurring action originates in the heat of the sun, or, as Helmholtz would have us believe, from bodies falling on the sun; hence, in the face of the lake, with its many-colored features, along with the overshadowing cloud, and the snow on the mountain, we have glimpses of that conserved force which, born among the stars, disappeared in the fields of space, and, Arethusa-like, reappeared in these forms.

In the lake we have a true picture of the medical practitioner's life in its varied experiences, for, as it at times has its smooth unruffled face, so he has his days of smooth, even tenor, in which not a ripple occurs to vary uniformity; while these, again, are succeeded by those of rude and disastrous misfortune, in which failure and disaster mock each effort of the professional hand. In the midst of such shocks the man stands stupefied and dejected, half ready to believe that the principles of his art are valueless. In such trials the physician may receive comfort from the reflection that a certain amount of error is inseparable from all human effort, and that to reduce such failure he must ever be ready to meet it with renewed and more vigilant toil, for the storms on the lake of life will not continue always, but, perhaps,

even to-morrow, its frowning waves will sink to repose. From the lake, too, examples of this may be taken, that amid the fiercest tempests, the deep water underneath remains unmoved; and, as the waves of Tahoe are broken and brought to rest by their fixed Sierra wall, so the adverse billows which harass human life fall harmlessly when they strike against a well-disciplined mind.

A remarkable quality of the waters of this lake is their nearly uniform temperature; and though this degree in the deeper points approaches freezing, yet, except at the margin near the shore, it never freezes. This is accounted for by the absence of organic or other matter; hence is learned that purity of character gives independence; and, though winter is so near, yet these waters, secure in their incorruptible freedom, mock his efforts to place his hands upon them. Hence the lesson to you of adorning your professional mantles with the pearls of independence and integrity; adorned with such qualities, dishonor will vainly essay to grasp you in its wintry hand.

From the many-colored waters we turn our eyes to the mountains, which are a framework in which our lake picture is contained. As evening approaches, strange, weird shadows lie on their rocky summits; distance, sunlight, shadow, resting against a sky of peerless purity, all making a picture of such sublime character that words, let them be never so carefully chosen and cunningly mingled, can never reproduce its correct tintings. Colors, not words, and a master-hand like that of Bierstadt and Hill only can represent this scenery.

To increase, if possible, the strange sublimity of the scene as the sun sank behind the mountains of the western shore of the lake, numerous fires were seen that had been lighted by the native Indians. The smoke and flames of these fires, gleaming among the evergreen forests, resembled watch-fires and reminded me of Uhland's lines:

"When the tower-bell tolls once below,
And the watch-fires on high do glow,
Then I'll descend the ranks among,
Brandish my sword and sing my song.
I am the mountain boy."

When the sublime impulses awakened by the view of this scenery have given place to cooler reflection, or, rather, when ecstasy has given place to analysis, one finds that nature here has indulged in forms of architecture in which Byzantine, Gothic and Moorish forms appear; nay, more, as the uncertain light of evening renders the view less distinct, one can easily conceive that he sees in the distance the many-pinnacled cathedral of Milano, with its towers and chiselled statues; but this Sierra cathedral, with its towers and statues chiselled out of gneiss and granite, escapes the discoloring touch which time has left on that at Milano, since draped in a snowy mantle, the former remains white forever.

The less imaginative chemist and geologist see in these rocky masses the building material of all plant and animal life. These are the primitive elements, cast up by volcanic force, from which plant and beast derived their solid constituents. These elements in Nature's treasury are far more valuable than gold and silver; the latter are mere

glittering baubles that she has formed to amuse her infant, man; while the former constitute the coin, current at her treasury. In the book of organic life, Nature traces with a pencil composed of these elements, the primordial sketch of every living thing. Yet as these mineral principles exist in yonder rocky turrets, they are locked up faster than ever miser's chest was closed against burglar's hand, and their security is still increased, since even in their fastnesses they are moulded into crystal forms of adamantine hardness.

But how unlock this iron safe, so securely barred against intruders? The keys thereto are tempest, wind, and ice, and released from its prison, this precious dust takes shape as bird, animal, forest meadow, leaf and flower. Hence the tiny grass-blade, the group of pine-trees, the hillock of ants, and all this landscape of beauteous forms, are the offspring of yonder mountain; and when this landscape, with all its inhabitants—having accomplished its destiny—has vanished from existence, then Nature, re-combining the scattered elements and adding new ones from her mountain storehouse, will produce again a new landscape to delight the eyes of other generations.

In our visit to the heart of the Sierras, we have seen some of the architectural wonders reared by the hand of Nature. I now call your attention, as I close, to another, reared by the hand of Art—in this building. To render her work enduring, and to erect a fabric that would defy the wasting touch of years, Art has borrowed from the Sierras, blocks of granite, and from the earth, indestructible

building material. As such, it now stands complete in all the matchless perfection which care and study could devise —a monument to Elias S. Cooper, the prime originator and ardent promoter of medical education on the Pacific Coast.

In the last days of his fatal illness, I accompanied Cooper to the heart of the Sierras, with the hope, as he thought, that the breath of the pines and the mountain view might bring some relief to him; when, finally, it became plain that all was in vain, and that the fatal shaft could no longer be eluded, he spoke calmly of his impending dissolution; it was manifest that premature death was arresting but half finished much that he had purposed to do, and, at various times, during his illness, the destiny of the school which he had founded, was the matter of intense solicitude.

As Time, on a recent occasion, realized the wishes of a French patriot, who, dying before the establishment of the Republic, for which he had toiled and suffered so much, bade his old servant come and proclaim it over his grave, whenever that event should occur, so this audience, here seated, twenty years after Cooper's death, in sight of his last resting-place in Lone Mountain, in doing intellectual homage to his memory, announces that his work still lives. The granite tablet over the portals of this building, lasting as that of the Pantheon, whereon the memory of Bichat is emblazoned, announces the same truth; and the trained hands and cultured minds, who annually shall depart from this temple of learning, bearing scrolls on which his name is inscribed, will widely proclaim the same, and bear evidence that his work was not in vain, but that

"He builded better than he knew."

Could he have foreseen this, as mortality was laying its cold fingers on his heart, it would have caused it to beat for a moment again with freshened life, and would have thrown a beam of pure light athwart the gloomy shadow that coming death was projecting over him.

EDWARD R. TAYLOR'S ADDRESS.

Ladies and Gentlemen:

The occasion of our assembling is most auspicious and interesting. Not alone are we here for the purpose of bidding God-speed to those who have just been honored with the Doctorate of Medicine, but we are here as well for the purpose of dedicating this edifice to the sacred cause in which these graduates are now enlisted. And how appropriate, how beautiful this structure! Solid, yet not heavy; simple, yet not plain; costly, yet not pretentious. Being the work of a sincere heart, it is itself sincere. It tells no lie. It is exactly what it pretends to be. Its brick are not of the common sort, covered with plaster, and made to stand for what they are not—a wretched counterfeit; but they are of the finer sort that can afford to look into the eye of the world with the serene gaze of truth. Here we have no tawdry, meaningless ornamentation; no disjointed effects; no inharmonious relations; no ill-adaptation to purpose; but we, happily, as is rarely the case, have the reverse of all these. This edifice, the construction of which has excited so much public interest and curiosity, is, in truth, as a piece of architecture, a credit to the city—a thing of beauty and a joy forever, as every work of true art always is. Here, indeed, will Science find a fit abiding-place;

here, indeed, may she, surrounded with all things needful, delightedly work out ameliorations for suffering mankind.

This building is not the result of a sudden impulse. It has been the dream of a life-time ; an object to be attained, if attainment were humanly possible. There is nothing in connection with it that has not received the most thoughtful, the most affectionate consideration. There is no stone here that is not cemented to its fellow with the love of humanity and of science; and so cemented, may we not justly hope that this fabric will endure so long as man shall feel for man.

He who has wrought this work, has long lived among us. No name in this part of the world is more closely interwoven with medicine and with medical teaching than his. He has pursued his favorite studies with a persistence and self-abnegation which only those can appreciate who have had the honor of his intimate acquaintance. But nothing has been permitted by him to stand in the way of his duties as a teacher. In truth, these duties have ever been first in his thoughts, and it was solely at their call, that he caused the barren sand-hill of a twelve-month ago to bear the architectural flower whose blossoming we now celebrate. From the very beginning of his connection with medical teaching, now many years ago, such a structure as this, with fullest equipment, became one of the great aims of his life. That aim he has pursued steadily and unswervingly to its final achievement. That he has lived to see this day, is to him the supreme blessing. From the resources which have resulted from his professional labors, these stones have

risen ; and they, together with the ground on which they stand, have been conveyed, as an unreserved donation, to a corporation but recently organized—the COOPER MEDICAL COLLEGE—organized without capital stock, and with no view to pecuniary profit, and for the sole purpose of making the gift effective. This munificent donation is burdened with no condition whatever, except the single one that the property shall be solely devoted to the purpose of medical instruction. Should it ever be diverted by the corporation into any other channel, then the City and County of San Francisco are to take possession of it for public purposes. On behalf of Cooper Medical College, I am here to say that the corporation accepts this noble gift, and in its own name, and in the name of Medicine, to thank the donor for this, the culminating deed of a great career—a deed which is itself so eloquent that commendatory words seem lifeless in comparison. The money value of the donation is indeed great—for it bears the singular distinction of being the costliest gift of the kind ever made to medicine in the United States—but why speak of dollars and cents; for as compared with the spirit which prompted the offering, and which now vitalizes it, millions are as dross.

The name—"Cooper Medical College"—is significant and highly felicitous. It tells a story worth hearing and worth remembering. ELIAS SAMUEL COOPER was one of the most remarkable men among the many remarkable men that illuminated the early life of California. He was born with an ingrained love for the things of medicine, and early took to the scientific study of the human body, with a zeal

that knew no abatement till death cut prematurely short his brilliant career. Almost from the hour of his graduation he began to give private lessons in anatomy ; and from that time up to the hour of his fatal illness, he continued a teacher. Like thousands before him, his labors in the interest of his fellow-man were unappreciated, and against him was raised the hand of ignorant persecution. But he "still toiled on, hoped on," content if he could but gain the approval of his own conscience, and extend the domain of his medical knowledge. In the midst of his labors, the star of California, then blazing in the far west, caught his eye; it seemed to call him ; he obeyed the call ; and here he landed in the early spring of 1855. He had scarcely set foot upon the soil before he recommenced his professional labors with increased ardor, for here he found the climate particularly well adapted to successful dissection and the operations of surgery. It followed, as a matter of course, that he should soon become widely known, by reason of his great knowledge and skill as an operating surgeon. Being a man of great force of character, and endowed with exceptionally strong faculties for organization, he became the leading spirit in the formation of the State Medical Society, which, after some years of vigorous life, fell, only to rise again to renewed usefulness. These natural abilities, coupled with an energy that knew no relaxation, and a geniality of temperament that drew his friends to him as with "hooks of steel," enabled him to draw around himself an able band of teachers, who, catching the spirit of their leader, at once embraced their labors with the utmost en-

thusiasm. And thus, in this unpretentious but earnest way, was organized the first Medical College ever organized west of the Rocky Mountains. What these men lacked in equipment, they made up in zeal and knowledge, and in that close contact with the student, which is impossible in large institutions. The classes were small, as, under the circumstances, they could not but be; but the teaching was thorough and conscientious, and the students singularly earnest and high-minded. Some of them are now among the most reputable practitioners of medicine in this city, and one of them has long been an active constituent of the present Faculty—an honored son of an honored father. These pioneer teachers worked faithfully and well. They "scorned delights, and lived laborious days." They did good work—the one imperative thing for man to do in this world—did it not in the open blaze of day, but in quiet seclusion, and with no hope of pecuniary reward for the time and labor spent. Not for them the greed of gain, or the hand-clapping of the multitude, but simply the luxury of quiet hard work in the way of self-appointed duty. The world knows nothing of such labors; scarcely ever hears of the men who perform them; but what treasure the laborers lay up!—treasure "more to be desired than gold, yea, than much fine gold; sweeter, also, than honey and the honeycomb." The majority of them have passed away to "the silent halls of death," leaving memories we love to linger over, and names which are a precious heritage. But some of them, happily, have been spared to meet with us on this memorable evening, and, as we greet them, our welcome

swells to rejoicing, seeing them, as we do, still earnestly cultivating the vineyard which has known their labors for so many years.

There seemed to be something inherently vital in this pioneer school. There was, it is true, the break of a few years following Dr. Cooper's death; but, with that exception, it has pursued an unbroken course, until to-day we see it taking possession of this valuable property, and entering upon a new career resplendent with promise. The early days of the school were days of hard struggle; but to the intense nature of Cooper, difficulties were but incentives;

> "And as Æneas * * * * * *
> Did from the flames of Troy upon his shoulder
> The old Anchises bear,"

So did Cooper, upon his strong shoulders, bear this infant school through every peril that threatened its life. But with his death, disintegrating influences set in, and ere long its voice was heard no more. For a few years only this silence continued. The school was not dead; it did but sleep. It lay with all its potentiality still within it, and awaited, like the spell-bound beauty, but the touch of the proper hand, to spring once more into the whirling circle of busy Life. That touch came from the hand of two of those who had been with it from its birth; and at the touch, it arose from its slumber, and, like a giant refreshed by sleep, it entered with new vigor upon a course which it promises to hold as long as this city shall exist.

How fitting, then, that this College should bear the honored name of COOPER! It is, in truth, his monument,

and a monument he well deserves—deserves, not alone for the peculiar reasons already indicated, but deserves, as well, because of his great anatomical and surgical attainments, and because of his unfaltering devotion to the cause of medicine. He was, undoubtedly, an original man; his nature was essentially creative. He naturally disdained the beaten paths that mediocrity can, with moderate industry, tread with ease, and, plunging into the forest, he opened up new paths. It was his to lead, not to follow. Many of his operations were so bold as to startle even those accustomed to audacious surgery; and yet they were tempered with a prudence, and were carried to such favorable results, as to prove him a master of the first order. His knowledge of coarse anatomy seemed absolutely perfect, and he kept it so—as it can only be kept—by constant dissection. Nothing was left to chance in an operation. He saw his way clearly from beginning to finish, and never made the slightest incision without knowing what was under the point of his knife. He was never carried away by over-confidence, nor daunted by unforeseen difficulties. To him the human body was an infinitude, which could not be exhausted; and to the study of it he devoted himself utterly, thoroughly. It was, in sober truth, the altar of his self-immolation; for his labors were incessant. They felt no pause. He scarcely knew what it was to sleep as the ordinary man sleeps. The fires of his brain were constantly burning. No wonder that an intensity such as this did not last—wonder is it that it lasted so long. And so it was, that in the midst of his labors, while yet dreaming of a thousand things that remained

to be done, in October, 1862, and in the thirty-ninth year of his age, Death closed the book of his life.

He fell, as falls the hero, in the front rank, with blade in hand, and battling to the last gasp. And yet, he resigned his life without regret or complaint, speaking to his latest breath of triumphs yet to come, as glorious visions of the life beyond flitted before his fading sight. Thus died this gifted man, not rich in gold, except in gold of priceless deeds.

So also fell, at the early age of thirty-one, and from like causes, the great Bichat—the glory, in the last century, of French medicine, and one of the glories of the human race. These intense natures soon burn out, it is true; but what splendor of light they emit while living, and what radiant glories spring above their graves!

Though Cooper lived in California less than eight years, it is doubtful if any man here has influenced the course of medicine to anything like the same extent as he. And in this new College, the successor of that which he founded, and which will ever bear his name, the name of Cooper will not only be a potent influence, but a watchword to lead to high endeavor, to quenchless zeal, to tireless labor. Here, the torch that fell from Cooper's lifeless hand, will burn with increased splendor, and cast its illumination far beyond these walls. For it is as certain as anything human can be, that this institution is destined to a great future. If with all its previous difficulties, with insufficient accommodations and facilities, this school has grown to its present great development, what summit of excellence may it not reach,

with equipment such as, in a few years, the best Eastern colleges cannot hope to surpass, and with a faculty, such as it is sure to command, able, zealous and harmonious?

Medical instruction in San Francisco not only stands upon a firm basis, but it is, and will be, equal to every demand made upon it. The college, founded by the generosity of the late Dr. Toland, is now affiliated with the State University, and between the faculty of that school and of this, the most cordial relations exist. There is ample room and verge enough for two such institutions in San Francisco, and their only rivalry in the future promises to be as to who shall do the greatest good in a common cause.

Looking at this edifice, then, in the light of what has led up to it, how more than grand do its proportions seem! What a story it tells: A story of pure ambition, of self-sacrifice, of unfaltering devotion to a single aim! Looked at with the eye of sympathy, it becomes imbued with sentient being, and its beautiful turrets seem like human arms upraised in thanksgiving. It is not, no, it cannot be, so much stone and mortar cunningly designed and put together by the hand of the architect and builder. Even were it that, and nothing more; even had it been created in the grossest spirit of mercenary gain, still it would greatly please the eye, for it is indeed most excellent work. But it goes beyond the eye; it penetrates to the soul, and delivers a message there, that awakens the whole being and attunes it to music. In the presence of such as this, we stand with uncovered head, while Passion's rageful voice is

stilled, and Heaven's own peace fills all the air. In such a presence, the selfish, heartless struggle of man with man for worldly precedence; the accumulation of wealth for the mere sake of accumulation; the mad ambition for place and power, seem like the bitterest of mockeries, the vainest of delusions. In such a presence, what pessimist asks the question: "Is life worth living?"—what heart so hard as not to be touched until the waters of its better nature gush forth? In such a presence, do we not feel that self-abnegation—the doing for others in preference to the doing for oneself—is the one thing on this earth which overtops all other things? Ah, yes! it comes to us again and again, that it is worth all the rest; yea, a million times all the rest. For is it not the only *real* thing we possess—the one thing which gives the only pure, the only unalloyed satisfaction we can have? Do not all selfish pleasures cloy? Is there one in the whole list that does not? Is there a more unhappy creature on the face of the earth than the aimless dawdler, with wealth enough to satisfy every appetite, and whose sole thought is to meet each whim that in turn arises before him? Or who more pitiable and to be pitied than the one whose home is his bank vault, whose literature is his ledger, and whose daily circuit is round the rim of a dollar; "whose heart is dry as summer's dust," and whose unceasing cry is gold! gold! more gold!

"To the very verge of the churchyard mould."

Compared with such, a persecuted Spinoza, feeding on crusts in his fireless garret, while devoting himself to the

spiritual betterment of his kind, is a God seated on high Olympus, and living on nectar and ambrosia.

Take any one with a passion for accumulation, whether it be of money, or of rare books, or of pictures, or of pottery, or of coins, or of stamps, does he ever have enough? The more he gets, the more he wants, and the more he wants, the more he becomes dissatisfied. As Carlyle puts it in his rugged, forcible way:

"Will the whole Finance Ministers and Upholsterers and Confectioners of modern Europe undertake, in joint stock company, to make one shoeblack HAPPY? They cannot accomplish it above an hour or two; for the shoeblack has a soul quite other than his stomach, and would require, if you consider it, for his permanent satisfaction and saturation, simply this allotment, no more, and no less: *God's infinite universe altogether to himself, therein to enjoy infinitely, and fill every wish as it rose.* Oceans of Hochheimer; a throat like that of Ophiucus; speak not of them; to the infinite shoeblack they are as nothing. No sooner is your ocean filled, than he grumbles that it might have been of better vintage."

Paradoxical as it may seem, yet it is nevertheless true, that the more one does for others, the more one does for oneself. The more numerous the points at which man comes in sympathetic contact with his fellow-man, the broader and deeper his life. The most contracted boundary conceivable is that of Self; the most extended, the altruism of Jesus and Gautama—impossible of realization, doubtless, but the noblest ideal ever held up before man; the

striving toward which is the one only means whereby we can be saved from the world, the flesh and the devil. Far more than a half truth lies in these words, sung by the modern poet of Boodhism:

> "Ho! ye who suffer! Know
> Ye suffer from yourselves—none else compels;
> None other holds you that ye live and die,
> And whirl upon the wheel, and hug and kiss
> Its spokes of agony,
> Its tire of tears, its nave of nothingness."

That the desire for accumulation is natural, and when stimulated not for itself alone is worthy, and that to this desire we owe much of our progress and civilization no one will dispute; but that our present civilization is not deserving all the encomiums sometimes lavished upon it, there will likewise be little dispute. It is not a *real* thing—and by a real thing is meant a thing which bears the elements of permanent satisfaction; which holds within the heart of it no false pretenses; a sincere thing—neither sham nor counterfeit. Are the great masses of the people satisfied with this civilization? Is anybody entirely satisfied with it? Does any thoughtful person believe it will last unless it be subjected to the most heroic surgery? It is dominated by Self in the grossest form in which Self can be asserted—in laws made for the Few, and by the Few, at the expense of the Many. It is stained through and through with injustice. It is beginning to present those tremendous contrasts which have been the precursor of the death of so many previous civilizations:—palaces, luxury, and ever-increasing wealth at one end of the scale; and at the other end of it squalor,

slums, want, and ever-deepening poverty. It is a fearful fact to contemplate, that in the city of New York there are men who have added to their wealth as much as a million of dollars in a single day, while in the self-same city there are hundreds and hundreds who, hour after hour, hang upon the very verge of starvation.

How true are the words of Gœthe, that "It is only with Renunciation, that Life, properly speaking, can be said to begin." When a man steps out of himself, forgets himself for some one else; denies himself a comfort that some one in more need than he shall be benefitted, then he does the one great thing; then his heart runs over with silent joy; then he receives a pleasure such as nothing else under heaven can give him. This is the *real* thing; the rational pleasure; the pleasure that never cloys; and the pleasure that each of us can in a measure enjoy, if he will. To be sure, we cannot all build Medical Colleges out of the earnings of our labor, as gifts to suffering humanity; nor need we

" * * * * Wander lone,
Crownless and homeless that the world be helped;"

but the demon of selfishness, that lies in the heart of us all, can at least be scotched if it cannot quite be killed. If, out of our superabundance, and without any self-denial whatever, we give a penny to a homeless outcast in the street, for the moment we are exalted, for the moment we feel the breath of Heaven; but when, in the interest of humanity, we put Self under foot—Ah! then we walk the empyrean heights, and gather flowers that can never fade.

I once heard a true story which is worth repeating: An old fellow, without wife or child to bless him, who had, as every wealthy person has, a number of poor relations, but never thought of any of them, from one year's end to another, had shut himself up so within himself that his whole world became bounded by his own being, and his never-satisfied desires. One day, while sitting in his library, thoroughly miserable from self-tormenting thought, —the very books appearing to glower at him—a strange light, as from an angel presence, seemed to flash suddenly upon him. It illuminated his soul as it had never before been illuminated. He went to his desk, took from it his check-book, and, with a feeling he had never till then experienced, he drew checks for large amounts to the order of various of his needy relatives, and one of larger amount than all the rest, he filled in for a meritorious institution that long had in vain solicited him for aid. After the checks were signed and enclosed in their respective envelopes, he drew a long breath of great relief, and turning on himself, said:

"You old rascal! you dare to grow so selfish again, and I will give away your whole fortune!"

What is the essential difference between Byron and Burns, who, as poets, have so many points in common? Simply this, that the latter loses sight of himself, the former, never. The one had a genuine affection for every created thing—his heart was a welling spring of sympathy and love; the other spent his great powers in depicting his own miseries, and seemed to have no genuine love for any-

thing outside of himself. And so it is, that the universal world clasps Burns to its bosom, while it does but stand off at a distance, and coldly admire Byron.

Can we ever repeat Leigh Hunt's famous lines too often?

"Abou Ben Adhem (may his tribe increase!)
Awoke one night from a deep dream of peace,
And saw within the moonlight in his room,
Making it rich and like a lily in bloom,
An angel writing in a book of gold.
Exceeding peace had made Ben Adhem bold,
And to the Presence in the room he said:
'What writest thou?' The Vision raised its head,
And, with a look made of all sweet accord,
Answered, 'The names of those who love the Lord.'
'And is mine one?' said Abou. 'Nay, not so,'
Replied the Angel. Abou spoke more low,
But cheerly still, and said, 'I pray thee, then,
Write me as one who loves his fellow-men.'
The Angel wrote and vanished. The next night
It came again with a great wakening light,
And showed the names whom love of God had blessed,
And, lo! Ben Adhem's name led all the rest."

True to the associations that cluster around these college halls, we may be assured that no false doctrines will here be taught. There is but one practice of medicine, and the "old school," so-called, is its prophet—there can be, in the nature of things, none other. The public have been falsely educated to believe that there is an old-school of medicine as contra-distinguished from the new-school, and that the former, like the latter, is a system. But the difference between the two is immeasurable, and lies in this: The legitimate and only practice of medicine consists in doing anything and everything morally and scientifically right which the physician may deem to be of benefit to his patient. So long as he knows what he is doing, so long as

he can intelligently see his way, so long he is at liberty to use any element of earth, air or water, and any and all appliances whatever, and in any manner, quantity or form, that he can reasonably believe will meet the condition of the patient and conduce to his recovery. On the contrary, the new school (what the term may mean is hard to tell, for it embraces all modern respectable quackery) is bound within the rigid rules of certain systems, outside of which the practitioner is not permitted to range. If he be a homeopathist, he is honestly compelled to the observance of the rule of *similia similibus curantur*. That is, he must in every case administer that drug which will, in the well person, produce the same apparent symptoms observable in the sick; no other drug is admissible; and, furthermore, the medicine must be exhibited in certain prescribed dilutions or triturations. If the practitioner be an Eclectic or Thompsonian, he is confined to the vegetable world for his remedies; and if a Hydropathist, he is indissolubly wedded to cold water. And so on, through the whole list down to the chap who cures every conceivable ailment by the simple laying on of hands. The members of each of these classes are specialists as to remedy; they are hedged round, and bound in, by their respective systems, and if the case of the patient cannot be brought within the enclosure of the system, so much the worse for the patient. At all events the sufferer will have the satisfaction of having been done to death according to rule, and can take consolation from what was solemnly remarked, on a memorable occasion, that it

would never do to violate the eternal laws that govern such things, for the mere matter of saving human life.

If it be said that, practically, these followers of systems do not keep within their lines, and that, as occasion prompts, they go outside of them, then it is plain they are insincere; then it is plain they pretend to be one thing, and are, in reality, another thing; then it is plain they are not fit to practice medicine under any circumstances whatever; then it is plain they are pretenders, pure and simple.

But again, these systems have no scientific basis whatever; they are built on the sand. Nor have their promoters ever contributed to mankind anything of scientific value; while on the contrary, legitimate medicine is founded on the very rock of science, and her followers have, in every age, been such great discoverers, that the history of medicine and of medical men would well nigh constitute a complete history of science.

Thus it is manifest that that practice which is founded on scientific principles, and which looks only at the relief of the sick by any honest means attainable, is the one and only legitimate practice of medicine. And it is furthermore plain, that all strictures against the regular practitioner, for refusing to consult with these system-mongers, are made in ignorance of the subject. For there can be no intelligent relief devised for the patient, where the parties to the consultation hold such fundamentally different views. At all events, such relief could only be devised at the expense of honesty.

Legitimate medicine never stood firmer than she does

to-day. Her Past is glorious, her Present, bright, and her Future, secure. Holding fast, as she does, to the revelations of science, as science becomes more certain, so must the processes of medicine become more certain. She and science are so closely connected, that if one falls, the other must fall. But they will not fall, for they bear the seeds of invincible life. Linked arm in arm, they have marched grandly down the ages, and so will march on and on, for the spiritual and material betterment of mankind, "to the last syllable of recorded time." To them, with grateful hearts, we dedicate this College Edifice, rich in all blessed memories, and consecrated by the purest love for science and humanity; and consecrated, as well, by the undying affection of the founder for him, who in life held that affection dear, and whose bright name will ever shine resplendent on these walls. To-night we do, indeed, rejoice with exceeding great joy. Our hearts keep time together in sweetest music. We walk with those great souls who in every age have lived and toiled for man. In such blest hour the senses swim in spiritual seas and spurn all baser matter. In such blest hour Christ reigns in every heart.

And to him, LEVI COOPER LANE, who has so wrought in the cause of humanity, whose gift in that cause we are here to acknowledge, do we not all turn, and fervently pray that every hope in connection with this institution may be more than fulfilled; that he shall live long in the land as the presiding genius of these halls; and that when the final summons comes, as come it must, it shall find his work complete, and exceeding peace within his heart.

And to you, graduates, who are probably expecting some parting monitions from me, I am spared the pleasant task of delivering a labored address to you, for I have but to point to the circumstances attending the erection of this building, to find the leading elements of the professional career—Concentration, Reticence, Prudence, and Self-sacrifice. Concentration, as shown in the unfaltering purpose of him whom we now honor; Reticence and Prudence illustrated in this, that despite the urgent inquisitiveness of a curious public, his purpose remained an undisturbed secret in the breast of the founder; and, as illustrative of that Self-sacrifice which your profession will often demand of you, none can be more impressive, none can be more eloquent, than the crowning act of the donor, who, not content with erecting this edifice out of the earnings of his own hands, makes his Renunciation complete, by writing on its walls the name of another in preference to his own.

Let the lesson of this hour remain with you ever and always; let no necessity compel, no temptation seduce, your feet to devious paths; but with onward stride, through every difficulty, danger and trial, may you "press toward the mark for the prize of your high calling." And remember, with the poet, that

> "We live in deeds, not years; in thoughts, not breaths;
> In feelings, not in figures on a dial;
> We should count time by heart-throbs. He most lives
> Who thinks most—feels the noblest—acts the best.
> Life's but a means unto an end—that end,
> Beginning, mean and end to all things—GOD!

9

GUATEMALA.

AN ADDRESS

DELIVERED AT THE OPENING OF THE

CALIFORNIA STATE MEDICAL SOCIETY,

APRIL 18, 1883.

By the President, DR. L. C. LANE.

M. R. Beard & Co., Stationers, 424 J St., Sac.

GUATEMALA.

An Address delivered at the opening of the California State Medical Society, April 18, 1883.

BY THE PRESIDENT, DR. L. C. LANE.

Believing the facts might prove of interest to the most of you, and add something to the knowledge of the medical topography of a region but imperfectly known, I herewith offer the following observations, recently made during a visit to the Republic of Guatemala.

Guatemala is the most northern of the five States which geographically comprise the region known as Central America; the remaining four being Salvador, Honduras, Nicaragua and Costa Rica. Guatemala lies between 14 and 18 degrees of northern latitude, and hence it is situated wholly in the tropics. Besides, it lies in the northern portion of that singular constriction which the hand of Nature has impressed on a portion of the equatorial region of the western continent, presenting a varying breadth of from three hundred to four hundred miles, between the Atlantic and Pacific oceans. South of Guatemala, the constriction becomes lessened in space until, at the Isthmus of Darien, it is but forty-seven miles wide. All old Californians remember the Isthmus, and carry in memory an unfading picture of a journey across it;

and no matter how many shadows departing years may cast over us, this picture hangs untarnished in the background of our lives, and as we turn again to it,

> "Where o'er hill and valley plays
> The sunlight of our early days,"

I am sure there is awakened in each of our hearts an indefinable thrill of pleasure.

For recreation, as well as to escape the unpleasant season of mid-winter in San Francisco, on the 30th day of last December, accompanied by my wife, I embarked on board the steamer Granada, for Central America. Bi-monthly trips are made thither by vessels of the Pacific Mail Steamship Company. These vessels touch at two Mexican ports and four in Central America, finally arriving at Panama; thence they connect with a line on the Atlantic side, so that in this way the passage can be made from San Francisco to New York, the whole journey being made in about one month. On boarding the Granada, I was struck with the wonderful difference in the accommodations of the present steamers and those of former times. The demands of commerce have banished from use the magnificent side-wheel steamers, so well remembered by all who made this trip twenty years ago. Instead of a floating palace, where all was arranged to afford the highest comfort and luxury to the traveler, we were ushered aboard a screw-propeller, where state-rooms are narrowed to petty closet-like quarters. Though these steamers are more comfortable than the famous Cunarders that cross the Atlantic, still they have but little to remind one of the sumptuous quarters which once floated on these waters, and still less to alter the definition which Dr. Johnson gave of a sea voyage, "imprisonment, with the chances of being drowned superadded." Though the voyage has been bereft of many of its olden attractions, still there

are some persons in whom the desire to hasten in life's feverish struggle is so far absent that they prefer this way of reaching New York. It were well that more of our care-worn business men would take this journey when they return to their old homes in the East; they would thus slow the hand that is measuring off the hours on the dial plate of their lives.

Though our departure was in the season when storms usually lash our coast, still our steamer floated out through the Golden Gate in as smooth a sea as the most solicitous sea traveler could wish. As if to chronicle the approaching conclusion of 1882, the hour of sailing was shifted from morning till late in the evening; so that before we had reached the ocean outside, the sun was sinking in the watery horizon, and casting its last rays on the retiring city and the magnificent coast range of mountains which lie at the entrance of the Golden Gate, and farther beyond encircle our Bay. Around Tamalpais floated those fleecy clouds which are so characteristic a feature of the landscape, and which as "phantom ships" have been so eloquently described by Pollock, one of California's most gifted verse writers. How many argonautic adventurers of every profession and grade of humanity, including even the talented Pollock himself, after all their struggles in our new State, have in the end grasped nothing but gilded clouds, which proved cold and empty forms of bitter disappointment!

The ocean that received us with so placid a face, in less than twenty-four hours assumed his proper wintry dress, and during the remainder of the voyage treated us to continuously rough weather, and on one occasion to a violent storm.

Most persons who have gone to sea, afterwards have their storm-story to tell; and as the stories are much alike, I will omit the narration of mine, except to state that it was en-

countered in crossing the Gulf of Tehuantepec, which seems to be one of Nature's great blow-pipes, through which is expelled from the interior of Mexico a huge blast of wind that reaches far out into the Pacific Ocean. This region is so notoriously the site of storms that every traveler who makes this voyage learns the fact from some older voyager long before he reaches the place. From the mild blow that is generally experienced in crossing the outlet of the Gulf of California, and the still severer one at the Gulf of Tehuantepec, it would seem that Nature has a special love for blowing over a tongue of water that projects into the land.

The storm off Tehuantepec tested the bottom of our steamer, as well as that of every passenger's stomach; the former lost none of her cargo—of the latter so much cannot be said. For over one hour, while the steamer was running before the storm, two sharks kept near her keel; whether these heterocercal monsters snuffed a bouquet ahead, or whether idle curiosity impelled and sustained their diligence, remained an unsolved problem, yet they did prove one thing: that muscle and fin can make as much progress in water as steam. Another observation made was that the phosphorescent agent in a calm, when the water is moved diffuses itself like liquid fire—but during this storm the luminous principle seemed to aggregate itself in isolated centers, so that the amount of light emitted was lessened.

In Hyrtl's Topographical Anatomy—a book in which the student will learn much anatomy and be entertained with much that is witty, quaint and sparkling—the author tells us how, in crossing the Mediterranean Sea, he spent his time in studying the action of the abdominal muscles in the act of vomiting. If Hyrtl had been a voyager on this passage and shared the fate of most of those on board, I am certain that paragraph in his Anatomy would not have been written, since

both his head and his stomach would soon have been empty.

Many attempts have been made to offer a scientific explanation of sea-sickness; to the numerous ones found among medical writers, I will add one more:

In the last few years the German cerebro-vivisectionists have plainly demonstrated that in many instances of cerebral trouble the cardinal condition is that of anæmia, instead of hyperæmia, as was formerly taught, and as the concomitant of such anæmia, nausea may arise in a perfectly sound stomach. In intra-cranial circulation two factors figure— the movement of the blood and the movement of the cerebro-spinal serum. The affluent blood-wave displaces and causes the serum to escape from the skull; the returning blood-wave again acts reversely, and, as it escapes, it is replaced by the entering cerebro-spinal serum. Such efflux and reflux of the serum can be seen in the animal's neck, when the occipito-atloid ligaments are laid bare. The ascent and descent of the subject on shipboard tend to interrupt the uniform movement of the reciprocal currents—both by virtue of their inertia sink as the vessel rises, and rise as the vessel sinks; thence arises disturbance in the equilibrium of the supply of blood to the brain, and, as a further consequence, sympathetic nausea. Long continuance of the cause finally begets a tolerance, and hence a disappearance of the sea-sickness. Should this explanation share the fate of its predecessors, and require that *non sequitur* should be appended to it, let the discoverer of the fallacy refrain from concluding, *propter inscitiam propriam*—(lack of individual experience.)

To get relief, or in a measure to avoid sea-sickness, secure a berth "amidships," and during rough weather maintain the horizontal position, use a light and easily digested diet in which there is no excess of liquids, and remain in bed during the period requisite for digestion. As constipation sooner or

later occurs, this should be relieved by proper remedies; and this latter hint should especially be attended to at the end of a protracted voyage where there has been a transition from a cold to a hot climate. This little precaution, and especially if the traveler will take old Rush's "ten and ten" of submuriate and jalap, will often ward off an attack of fever. Sea-sickness, depending as it does upon causes outside of the body, is not curable by any internal remedy. Chapman's ice-bag, with which many English travelers provide themselves when they cross the Channel, nitrite of amyl, the bromides, etc., are all useless ballast in a sea voyage.

The lines of Byron—

> "Of all the seas the traveler pukes in,
> None is more dangerous than the Euxine,"

plainly point to the universality of sea-sickness; and he who travels by sea may safely include this in the expenses which he must incur in order to see other lands, for none are exempt except a favored few—very few—in whom the partial hand of nature has so cunningly adjusted the elements of the cerebral circulation that they never get adrift, but remain *chock-a-block* during wind and storm.

During our progress southward we were generally in view of land; the western coast of Mexico, consisting of hills and low mountains that were nearly destitute of trees and living vegetation, made a landscape of which the eye seldom grew weary. And this view became doubly interesting when it reminded one, as was often the case, of the Coast Range of mountains of our own State, and recalled those picturesque lines of beauty which nature has so happily traced in the face of California. As in art, one finds different schools with distinctly characteristic methods and styles, so in sketching mountain forms, uniformity has not fettered the hand of nature; such liberty she indulged in while tracing our coast

mountains and foothills, developing a style elegant, distinctive and peculiar. The mountain of Norway with its sombre brow of pines mirrored in the lake at its foot, and the Alpine peak with the green meadow at its base bestarred with yellow flowers, have each their special charm—yet the traveler who has not seen the mountains of California has yet in store for himself a pleasure which the former can never awaken in his heart. And this same originality of character is found from the Columbia River to the tropical region of Mexico, reappearing again, as I have seen in the Andes of Peru. Hence the Sierras, the Cordilleras and the Andes are one and the same sketch made by the hand of Nature—a sketch in which the devices of concealment with which Art often disguises her defects are rigidly avoided, since each outline is distinctly traced on the sky, and is as clearly visible as if seen in a miniature picture held in the observer's hand.

On the eleventh day of our voyage we arrived at Champerico, a small port on the coast of Guatemala. Champerico has commercial importance on account of the large amount of coffee produced in its vicinity and thence shipped. From this point the two distinctive physical characteristics of the State of Guatemala become plainly visible, viz: high lands and low lands. The low lands comprise a highly fertile belt of soil that reaches some thirty miles inland from the Atlantic and the Pacific; between these level plains lies the high land, which rises here and there into mountains of high altitude. The greatest elevation reached is between two and three miles above the sea level. Among the summits that especially attract notice are those of Santa Maria, El Agua and El Fuego, the latter two being volcanoes which have not lost their function of occasionally disgorging their fiery contents.

During our stay at Champerico several of the travelers

were entertained by an excursion upon a short portion of the railroad that is being constructed from the port to a town which is situated about thirty miles inland, and when finished will serve as an outlet to the immense crop of coffee grown in that region. The passengers who enjoyed this short ride were quite carried away in their transports of wonder at the tropical scenes which were thus suddenly opened to their view; and I am sure that each one bears with him many kind remembrances of the hospitalities of Captain Douglass and others who are managing the construction of this road, which is being built by the money and enterprise of a San Francisco company.

From Champerico, a few hours steaming brought us to San José, the leading port on the western coast of Guatemala. Here, as the early morning opened, we found ourselves lying almost in the shadows of the volcanos, Water and Fire, which, though some miles inland, seemed very near, owing to the clearness of the air. From the nostrils of El Fuego (fire) a cloud of white vapor was slowly escaping and idly wreathed, like grey locks, this slumbering Titan's head. As he lay there in his placid sleep no one would have thought that in that quiet form were concealed the earthquake and Force and Might, more than a match for Promethean divinity.

The tumult and bustle consequent upon disembarking are illy consonant with the musing which otherwise such a morning and such scenery might have favored; thoughts of a more practical nature occupied our minds, viz. to go ashore and see that none of our effects were left behind. From the steamer we were carried in barges to the end of a long iron pier, which has been built from the shore into the water about one-eighth of a mile.

To digress here. Nature has been very unequal in her gifts to the eastern and the western sides of the continent.

The eastern coast has been favored with well sheltered harbors—great pockets, as it were, inviting commerce to shelter there its stores. The Pacific side, on the contrary, is remarkably wanting in such resources. Any one who has easily walked on or off a vessel lying at one of the wharves of San Francisco, and who debarks at a Mexican, Central American, or South American port, in a small boat that is compelled to land on a harborless, unprotected beach, has learned that our land-locked bay is a natural gift beyond all price. And these advantages will take a still higher rank, if he should ever land at San José de Guatemala, where the debarkation is done in a basket that is suspended to a crane some twenty feet above. The hoisting of the basket and its swinging shorewards are done by steam. The tossing of the small boat which carries him to the pier, and the swaying revolutions of the balloon-like basket, for the first hour of his advent, will quite absorb his attention.

Among the fellow passengers during the voyage was General Butterfield, a man well known in the history of our country as a fearless champion of the cause of our Government during the late war. His present mission hither was as the representative of, and shareholder in, an American company that has purchased the control of a railroad which has lately been constructed from San José to Escuintla, a town nearly thirty miles inland. General Butterfield, accompanied by Mr. George Crocker, son of the well known capitalist of San Francisco, came for the purpose of completing this road to Guatemala City, the point of its final destination. Besides this work, they are now occupied in making topographical surveys preliminary to building other railroads in Guatemala, and the adjacent State of Salvador. The great energy, unusual powers of endurance, experience in the field, and personal ability of General Butterfield, and above all, his

self-denying devotion to the enterprise which has been delegated to him, shows that Northern capital has exercised keen discretion in the selection of its management; and if a prediction be allowed, it requires no special acumen to discover that the hand which led martial hosts to success in war, will conduct peaceful legions here to no less signal victories in their battles with tropical nature.

On arriving at San José, General Butterfield invited a number of the passengers to accompany him in an excursion from the port to Escuintla, the present terminus of the road. The strange novelty of the tropical flora of the country traversed by the road, many of the shrubs and trees being in bloom, and others being quite covered with the rich flowers of the trailing convolvulus, was one of those rare spectacles which falls on the traveler as a new revelation, that remains as an unfading picture forever afterwards, giving delight as often as the hand of memory unveils it. In that panoramic scene which was rapidly unfolded to view, as the train sped on its course, were now and then caught glimpses of fields of coffee and sugar cane, and of the thatched huts of the Indians, under the shade of cocoa palms and orange trees. At Escuintla, the party was the recipient of a choice collation, in which the wine of the North mingled its gift with that of the passion-flower and a half dozen other tropical fruits. This finished, the party next visited a church built over two hundred years ago, and ascending its half-ruined tower, looked on one of the most beautiful landscapes of Guatemala—a scene which the artist's pencil, not written words, can portray. Thirty miles away lay the Pacific, of which the moving waters, mirror-like, gave glimpses of reflected light; while nearer by, cloud-shadow and sunlight disputed dominion over vast scopes of evergreen forests and fields, whose verdure rejoiced in unending Summer; on the other side,

close at hand, rose the huge forms of Water and Fire, their bases enriched with a zone of forests, interrupted now and then by cultivated fields of cane and coffee; these green fields could be descried reaching far up toward the summit, and seemed to hang, like emerald gems, on the mountain's side.

In the evening, after the rest of the party had returned aboard, we drove to the plantation of Concepcion, which lies at the base of the volcano of Agua. This large estate, which is devoted to the raising of sugar cane, is the property of Baron Duteil, who came to Guatemala many years ago. This place, which is in a high state of cultivation, besides its wonderful natural endowments, shows in the rare felicity of its improvements that its owner has kept even pace with nature; for one is surprised at the rare combination of comfort, luxury and elegance which blend in the appointments of its manorial mansion. From Escuintla, there leads to it an excellent road, the latter portion of which passes through an alameda or avenue of cocoa palms, bordered on each side by a broad expanse of sugar cane, all of which was overlooked from the cool piazza of the front of the house. In the rear was another open piazza where meals were served, and where long vistas of field, forest, gorge and volcano, took the place of the ordinary wall pictures. A third side looked on a fountain of playing water and on a short avenue of trees that ended near a swimming bath. This bath was constantly replenished by pure water from a neighboring stream, the water constantly falling, cascade-like into a stone reservoir some thirty feet long, that was overarched by a bower of roses and passion flowers; the perfume of these flowers, and their tints yet visible in the moonlight, the faultless temperature of both air and water, made a picture of oriental luxury such as will recall to the reader's memory Irving's sketches of the Alhambra.

The amount of sugar produced at Concepcion was so enormous that upon the item of spirits distilled from the waste material the government receives a tax of over five thousand dollars a month.

Leaving Concepcion on the following day, we next proceeded to Barcenas, a large coffee estate that lies somewhat off the main road which leads from Escuintla to the City of Guatemala. This place is owned by Señor Samayoa, who is the Minister of Agriculture, and is reckoned among the wealthiest men of Central America. Our late arrival prevented us from seeing much of the estate that night, but early the next morning the most of the party were on the grounds, eager and curious to see growing coffee. One saw there this precious shrub in every stage of growth, from the nursery plants, which were just peering through the earth, under cover to screen them from the hot sun, to the full grown shrubs, some ten feet high, which were laden with nearly ripe fruit. This shrub resembles somewhat a cherry tree in foliage, though the leaves are more glossy. The fruit grows in crowded clusters, without stems, in the axils of the branches. Each berry, when ripe, is of purplish tint, and if perfect, it contains two hemispherical grains with their flat faces opposed. The pulp of these berries is of a sweetish taste, and possesses none of the qualities of coffee. From the growing shrub we were next conducted by Mr. Klee, the manager of the estate, to the mill where the coffee berries were being hulled or threshed. During the short time that we regarded this work, several hundred pounds of coffee passed through the mill. The consumer of coffee in the North will value his cup still more when he learns that the annual product of a shrub is never over four pounds, and on an average is not much more than one pound; that the producing period of a shrub is not more than fifteen years; and that each grain of

coffee, from planting until it reaches the sack, receives the labor of over a dozen persons. The coffee which commands the highest price in the market, known as the pea coffee, but here called "caracolillo," from its resemblance to a snail shell, is of small, round form, like a miniature egg, and would appear to be a dwarfed product, where the berry, instead of two grains, contains but one grain.

From Barcenas we proceeded to the City of Guatemala, the first hour's ride being through coffee fields belonging to the estate of Samayoa. In many places I observed that the shrubs were partly shaded by the plantain or banana shrub. After some four hours ride we reached the City of Guatemala, situated on a large plain about one mile above sea level. On arriving here nearly all persons are rendered sensible of the high altitude through the increased demand made by the lungs for more air, owing to the rarity of the atmosphere.

The City of Guatemala was originally built about thirty miles from the present location, close to the base of the volcanos, Water and Fire, and at a slightly less elevation than that of the new city. The old city, now named Antigua, was twice destroyed by the adjacent volcanoes —once in 1541, and again in 1762. In the first disaster, on a dark night when rain was rapidly falling, there gushed forth a flood of water from one of the mountains, which was quickly followed by an eruption of lava from the other; and these destructive forces were soon reinforced by earthquakes, so that the town was utterly destroyed, burying in its ruins the families of Alvarado and others of the primitive conquerors. The old Castilian conquerors, shrinking from no peril and dismayed by no disaster, rebuilt the city, to suffer a similar fate from earthquakes two hundred and twenty years later.

A visit to Antigua shows the traveler a wonderful pile of ruins, surpassing anything of the kind to be seen elsewhere

in America. I saw there the fallen, or half fallen walls of over one hundred and fifty churches, of which enough remained to show their former greatness. Walls cleft and partly or wholly fallen, fragments of broken columns, ruined arches, broken statuary, fallen altars, shrubbery and trailing vines disputing with mutilated figures for place in the weather stained niches, and beasts stabled on floors where once the worshiper knelt, are the characters in which the earthquake and volcanic violence have left record of their advent of ruin.

The country around Antigua is of unsurpassed richness. As in the fertile fields around Ætna and Vesuvius—so here in these volcanic crucibles Nature has compounded a soil most favorable to vegetable growth; here the coffee shrub bends under its richest harvest, and fruit trees so numerous that their names would fill a half page, with slight toil offer their luscious products to man; here all plant-life revels in riotous luxuriance. No wonder that in such an Eden numerous warnings passed unheeded; and only when the demon of destruction had converted the place into one vast tomb did the inhabitants forsake this paradise—and lest there should be a return thither, the fallen city is more securely guarded than if sentineled by a flaming sword turning every way at its gates, since not a week passes there without an earthquake, nor a day without some tremor, as revealed by the sisometer.

The present City of Guatemala contains sixty thousand inhabitants, and is located on a large plain that is surrounded on the east, north and west by ranges of mountains. When the city is looked at from an eminence it presents a very imposing appearance, owing to the walls of the houses being of snowy whiteness and many of the churches being models of architectural beauty. The streets, crossing at right angles, are of good width and paved with stones of two forms—one of flat blocks, placed at regular intervals, while the other,

smaller and more irregular, fill the spaces between the blocks —and the whole is so disposed as to slope towards the center of the street, there forming a shallow gutter. The sidewalks, sloping towards the street, are paved with square blocks of stone. The city is provided with a system of sewerage which, though imperfect, is superior to that of San Francisco.

To digress to the important topic of sewers, I would here say, that when abroad a few years ago, I made a careful and laborious examination of the sewerage system of London, and from the Board of Works of that metropolis procured drawings and description of the same; also, a description of the Paris system; all of which is contained in a biennial report of the California State Board of Health. An examination and comparison of the system of San Francisco with that of London or Paris convicts us of egregious ignorance and stupidity, and will cause every lover of our city to wish that he he could blot out this page from the municipal history of San Francisco; yet, so long as official position, votes, and sewer builders and cleaners are so closely articulated, so long will mismanagement prevail and epidemic pestilence make its recurrent visitations.

The houses of Guatemala are built of adobe, stone, or brick, the walls being from two to three feet thick, to afford security of escape in case of earthquakes. To have sufficiency of room, they must occupy much more space than even large houses do with us. The floors are made of half-burnt brick, resting on a concrete foundation, and are covered with a thin straw matting. One great pest of the country is fleas, which are not confined to the untidy houses of the poor, but they hold sway in every household. While Nature has added to the size of other insects in the tropics, she has amply compensated for diminished volume of the flea by increased activity, and, as if to favor this commonwealth of insects, men-

tha pulegium has been omitted in the flora here. I would advise one of those enterprising Dalmatians who are growing flea powder in the neighborhood of Stockton, California, to come here and plant the flea-driving pyrethrum. If he will do so, he will enrich himself, and win the praise of this flea-ridden people.

The water used here comes through time-worn and rickety aqueducts, from a natural fountain, some miles distant. Arriving in the city it is conducted to one or more reservoirs in each block, which are constructed in a corner or side of a house, in which the rattling sound of the falling water is heard, as one passes near it. From such a reservoir, several houses are supplied. The water, before its use as drinking water, is caused to pass through the porous wall of a large filter that is made from *tufa* or volcanic rock. Besides cleansing, this stone filter cools the water. Such filtration might be adopted with advantage in San Francisco.

As public institutions for the indigent sick, one finds two in the City of Guatemala, one for soldiers, and the other for civilians. Through the courtesy of Dr. Joaquin Yela, I was enabled to see and inspect each; also from his annual report I was able to get much information respecting hospital management here.

The Military Hospital is located on elevated ground, three miles from the city. The diseases seen there were those resulting in the main, from dissipation, the largest contingent being furnished by the Guard of Honor. One found that the Southern sons of war are nearly akin to those of the North, in making frequent pilgrimages to an unlawful shrine; and as Vulcan caught in a net the war god during an unlawful visit to his own household, so the followers of Mars often re-enact his role, insomuch that their *follies* cost the State as much as their wounds in its defense. Hygienic

philanthropy has here a hard problem to solve. Who has the wisdom to do it?

A visit to the Hospital General for civilians showed me an institution as well conducted as similar ones in the United States. Disease here is classified as internal, or medical, and external, or surgical; and each of these sections is under the charge of an intelligent corps of medical attendants: The whole number of patients treated here during the year 1882, was five thousand four hundred and ninety persons; of these there remained on hand January 1st, 1883, two hundred and forty patients; whole number of deaths in 1882, four hundred and thirty-three. The medical and surgical service is rendered gratuitously, with the permission of the service utilizing the hospital for medical instruction. Internes, chosen by the faculty of the medical school, reside in the hospital, and to some extent replace the regular physicians during their absence. The physicians and surgeons attending the hospital are mainly graduates of the Guatemala school, who have been abroad and added to their qualifications by a period of study in Paris.

In the treatment of the sick, Dr. Yela told me that they had abandoned the use of stimulants. This course had been adopted after a trial of Todd's mode of treatment by stimulation, under which it was found that more died than under the present non-stimulant method.

A striking feature in the building is that the main portion of it is constructed in the form of a Greek cross; the effect of such an arrangement is singularly impressive, as, standing in the center the eye wanders along the four avenues, each lined with two rows of beds for the sick. Suffering in its many forms seemed strikingly in place there, and to re-enact the great scene whence sprang this sacred symbol, which devotion and self sacrifice have carried to every clime and

planted on every shore where throbs a human heart.

The immediate attendance upon the patients is rendered by Sisters of Charity; and to this is due the remarkable order, the scrupulous cleanliness and the faultless system which characterized the internal management of this institution. A large range of observation, embracing nearly all parts of the globe, has proven to me that such management is the best, and it is quite inexplicable why the French authorities have lately become so hostile to it, and are so determined to abolish it. Armand Despres, of resolute heart and great readiness as a writer, firmly resists this change in the Parisian hospitals, and though in the minority, he is giving his opponents much trouble. Besides observation abroad, personal experience at home, while acting as surgeon to a hospital in San Francisco, under the care of the Sisters of Mercy, has fully proven to me the excellence of this system, for one sees that untiring devotion to the wants of the sick, utter extinction of self, and final death at the altar at which an unchangeable purpose had been pledged, find there their fullest realization.

The sources of maintenance of the Hospital General are novel and worthy of mention. These are moneys derived from the sale of lots for the burial of the dead, income from bull fights, a lottery established for this purpose, a certain percentage of bequests left by will, also bequests occasionally made to the hospital, and a part of the collections made in the churches.

The burial of the dead is under public management, and is an expensive matter, costing those of average means from five hundred to one thousand dollars. The interments are made a few hours after death. The body is deposited in a stone or brick receptacle that is on a level with the earth, while about this there is built a somewhat pretentious mauso-

leum of brick or stone masonry. And these houses for the dead are of such uniform similarity, that when one has seen one, he has seen the whole. The old cemetery is now nearly full of such vaults.

In a part of the burying grounds, there is a portion separately walled off, over the entrance to which is the inscription, "Creencias Varias," meaning, "dissenting creeds." Here one finds a number of vaults containing the bodies of those who, wandering to this remote land in quest of fortune, have found a tomb instead. On reading the inscriptions, one learns that these unfortunates have wandered hither from almost every country of the Protestant North. As a rule, Art has given them tombs of more simplicity, and absent Friendship places fewer votive offerings thereon than one finds over the graves of their Catholic brethren. Yet for the absent wreath and cross, Nature has made amends, in replacing the one, by the trailing passion flower, and the other, by rearing one constructed of stars, in the Southern sky, for the Southern Cross, as a faithful sentinel, nightly watches their ashes.

The largest sum of money derived from any source is that received from the hospital lottery. This mode of raising money, which would awaken scruples with many of us, is here regarded as strictly legitimate. Since I have been here the hospital has received the proceeds of a concert in which there were two hundred players on wind instruments. But of all the means of amusement whence money is procured for hospital support, the most famous is bull fighting. As this is a national entertainment of the Spanish, I am glad to be able to furnish a description of what I saw of it. There is a special amphitheater here for this diversion, where standing room, plain or choice seats may be had, according as the visitor is willing to pay. The central arena is fenced off by a

barricade from the spectators. Though this barricade is strong, yet a few weeks prior to my visit a bull broke it down, and added to the fete by tossing some of the spectators. From two to five thousand persons witness the fights. An hour or two before the spectacle it is announced by a number of persons, dressed in a grotesque style, parading the streets with dancing and shouting. The show commences with music from an excellent band, among whom is one who plays upon an instrument of aboriginal origin. This instrument resembles in sound that of the wooden pianist on Kearny street, San Francisco. A company of soldiers are drilled, and display evidences of good training. In one act there is an intention to represent and personate a party rapidly growing here that has as its ultimate purpose the union of the five Central American States into one confederation. There next follow some creditable equestrian feats. One rider is especially a favorite, and as he appears your neighbor at your side is sure to tell you that he is the best rider in Central America. This prelude having concluded, the fighters of the bull, partly on foot and partly on horseback, take their positions for the combat. These men are dressed in colors calculated to madden the animal. All being ready, the gate opens, when to the sound of music the bull is ushered into the midst of his persecutors. He is first teased, enraged, and chased by those on horse, who goad and annoy him in every possible way, taking care, however, not to seriously wound him. This is the most exciting and critical period of the show, since as soon as the bull is well maddened, he may make an unexpected dash at a horseman, and throw both man and horse to the earth. Whenever the bull accomplishes this masterly feat, he follows it up by attacking the unhorsed rider. The first time I witnessed a fight this occurred, and for a moment the man was in extreme jeopardy; yet through the aid of

his comrades he escaped, being more fortunate than a man who two weeks prior to this was so thrown and killed by the bull thrusting his horn through his chest. After a short time of chasing and teasing, during which the footmen flung red blankets in front of the bull, and paper-winged darts which fixed themselves in his sides, the animal became tired, and seemed to lose his spirit. As soon as he gave signs of this he was allowed to escape, and a new one allowed to enter. After a half dozen bulls are thus treated, in which, as a rule, neither man nor beast is much hurt, the show concludes by a bull being caught and haltered, when two men mount his back and ride him, to the infinite merriment of the spectators. In bull fighting as practiced here, no charge can be made of foul play, since it is never permitted to kill the animal, though that privilege is conceded to him; and should the latter catastrophe occur, most naturalists would agree that the great law of evolution would not be violated, since there would be a *survival of the fittest.*

From Dr. Yela's annual report we learn that of the five thousand four hundred and ninety patients treated there were but sixty-three who had had tubercular consumption, and of these but about one-half had died. A striking difference from what one finds in England or in the United States; here deaths from tuberculosis amount to less than eight per cent. of all deaths, while in the North a large proportion of deaths in hospital practice is from consumption. Guatemala contains a population of one million and a quarter of inhabitants. Nearly half of these are Indians, the descendants of the aborigines who are civilized. The remaining population consists of Ladinos, who are a mixture of Spanish and Indian, and, besides these, a small number of foreigners of various nationalities. Pulmonary consumption almost never occurs among the pure blooded Indians, but is chiefly found among the Ladinos.

Goitre is of common occurrence, being seen chiefly among the Indian women. As there is a prevalent opinion here that the cure of a goitre tends to develop scrofula, hence those subject to it seldom apply for treatment. Cretinism, closely associated with goitre elsewhere, does not occur here. The prevalence of goitre renders this a good place to test Chatin's theory in regard to the origin of this disease. According to him there is an absence of iodine in the water, air and food in regions where the disease prevails, and the general absence of the disease is owing to the fact that the most of the world is daily taking, in some form, a small dose of iodine, at least enough to retain its thyroid glands in decent limits. This subject is treated of exhaustively in Moleschott's "Circle of Life," and the reader of that section is surprised at the vast array of observations which the last twenty-five years has brought in support of this theory.

In the vicinity of Guatemala there is a small colony of lepers, some fifteen in number, who are kept apart from the remaining population. The cases are found among Spaniards who are thought to be descendants of the Moors. The disease consists of a hypertrophy of the skin and the subjacent tissues, which finally ulcerate and slough. The disease is not considered to be contagious.

Among those connected with the surgical service of the Civil Hospital Dr. Monteiros holds leading rank for learning and for ability as surgical operator. His recent return from a professional tour abroad was the subject of special comment by the daily press, as well as the occasion of an ovation on the part of his medical brethren. On the day of his return several of his friends, as is the custom here, took carriages and went out several miles to meet him. The ovation, however, had an abrupt and melancholy termination, in this: that one of the teams ran away and seriously if not fatally injured two medical students.

The Practice of Medicine is better fortified here against charlatanism than in the United States. No one can practice unless he is a graduate of a school of recognized standing, and then if that school be a foreign one, permission to practice is only given to those who pass a satisfactory public examination, and present a thesis written in Spanish, the whole costing the applicant about one hundred and fifty dollars. In passing along the streets here one is struck with the almost total absence of medical signs; and even if one is seen, it is in characters so small as to be illegible at a short distance.

There is a medical school here that was founded many years ago. It is located in a picturesque building, one story high, and contains a large number of lecture rooms, among which was one very handsome apartment, for use on public occasions. In the dissecting room I found tables much like those to be found in one of the medical schools of San Francisco. The number of the tables, as well as the receptacle for dissecting material, seemed quite inadequate to the wants of one hundred students who are in attendance. The building is partly surrounded by a botanical garden, which, however, contains more ornamental plants than those used in medicine. The museum contains an excellent collection of specimens of natural history—better than one would find in connection with any medical school in our country. So much however cannot be said of the pathological collection, which was sadly meager. In the pathological museum one finds a rare example of a deformed infant, resembling closely that of Ritta and Christina, in Buffon's Museum, Paris. This child has a double head, one trunk, four arms, and four legs. Professor Meigs, of Philadelphia, never failed in his course of lectures to deliver an eloquent discourse on the Sardinian monster, in which there seemed to be duality of mind working in unison. The exhibition of Ritta and Christina brought money to the

parents; but this luckless Guatemaltecan died at birth, and its Indian father, believing its mother to be a witch, abandoned her.

Before admission to the medical school, the candidate must pass a satisfactory examination in the common branches of education; he must also possess some knowledge of the French, German, and English languages. A knowledge of Latin, once required as a prerequisite, has been dispensed with. This is singular, when one remembers the close relation existing between medical literature and that language; and besides, the Spanish is the most direct descendant of the old Roman tongue. The words of that ancient people, as a sacred *heirloom*, have been passed from lip to lip across the bosom of twenty centuries, and in many cases with slight change, except that in their transit they have acquired more precision and harmony. So close is the kindred that if Livy and Cæsar were to appear in this picturesque land of the Cordilleras, they might readily fancy they were in a Roman colony.

The curriculum of study here embraces the same subjects as in our schools; there is, however, far more time given to natural history and the physical sciences, but much less to pathology and practical discipline. The curriculum embraces six years of about ten months annual study. As seen, the time of study exceeds that of England, France or Germany.

As before said, one finds two different climates in Guatemala, the one of the coast or low lands, which is intensely hot, and the intermediate high lands, in the midst of which the Capital is located, and where one finds a mild or cool temperature; and these physical differences lend their respective impress to disease, engendering fevers of extreme virulence in the low lands, while those of the higher plains have a milder type. An approximate notion of the tempera-

ture of the high lands may be formed from the following figures taken from a table of observations made by Mr. McNider, during his stay in the City of Guatemala:

	MORNING.	NOON.	EVENING.
January	56°	68¾°	65°
June	63¼°	73°	66¾°
Yearly average	61°	73°	67°

Mr. Hall, resident American Minister, tells me that at midnight he has observed the thermometer to stand as low as fifty degrees. The average rainfall for the year is fifty-five inches. The rain commences in May and lasts for about six months, the largest fall being in September. Slight showers occur during the remaining so-called dry months. During my stay, which lasted from the 16th of January until March 16th, there were a number of showers.

Owing to the unhealthfulness of the coast, wealthy land owners seldom live there; in fact, their visits there are brief and infrequent, knowing, as well they do, that such visit is at the risk of life. On the contrary, they spend the most of the time in Guatemala City. During my stay in the city, Mr. Ramon Aguirre, one of the prominent men of the place, found it necessary to visit the coffee region adjacent to Champerico. On his arrival there he was attacked with pernicious malarial fever, and died in four days. This fever, evidently of miasmatic origin, is called here *amarillo* or yellow fever. The person attacked vomits violently, becomes intensely yellow, and as a rule, soon dies. These are the characteristic features of our Southern yellow fever, but as the disease is not contagious, and is often curable by large doses of quinine, physicians here do not regard it as identical with black vomit, or yellow fever. The experienced physicians of this country claim that they can nearly always cure the disease here, if they are called in time. Sometimes, however, the attack falls with such fulminating violence that

no remedy can stay it. Such was the case of Aguirre, who died, though he had skilled medical service constantly at his side. Those persons whose business compels them to pass much time on the coast, as a rule, find immunity from disease by constantly using quinine. For this purpose, from eight to ten grains daily, should be taken.

The traveler here soon learns to duly appreciate the value of cinchona. Take away its alkaloid extract, quinine, and in less than two generations the low lands of Central America would relapse to barbarism; without this precious safeguard, steamship lines would never have been established here, nor would Northern engineers have been able to penetrate the tangled fastnesses of the dense woods, to survey routes for railroads. Hence medicine, in the discovery of the virtues of Peruvian bark, has contributed the most potent factor towards the advancement of civilization in these regions where nature so stoutly resists its progress. Humboldt, in his "Ansichten der Natur," shows that this discovery is wholly due to our profession; for instead of its being an aboriginal remedy, he found in his travels among the Andes that the Indians, when attacked with fever, could not be persuaded to take this Peruvian bark.

As epidemic diseases, cholera and small-pox occasionally present themselves in Guatemala. In a village not far from the Capital, a few years ago, there was an invasion of cholera. As such a thing had hithertoo been unknown its appearance on this occasion was attributed to the foreigners having poisoned the water, and this belief took such strong hold of the native mind that several of the foreigners deemed it prudent to leave the place for a time. Small-pox, during my visit, was prevailing epidemically in some of the northern villages, yet owing to the medical profession encouraging vaccination, and likewise to the assistance rendered by the

Government in the same direction, the disease was arrested.

The advantages of vaccination have received further proof and illustration in this country. Among the Indians it is difficult to accomplish vaccination, the same prejudice existing among them concerning it as one finds in certain places further north; hence where small-pox appears among the Indians it is very fatal, while the most of foreigners who have been vaccinated escape the disease. Still, despite these plain facts, which are in accord with European and ~~Mexi~~American experience, one finds in all parts of the world a few minds who will not accept them. As instances of such recalcitrant minds are Hammernjk of Vienna and Guerin of Paris. The former headed a deputation a few years ago that petitioned for the abolition of compulsory vaccination, while to-day the French Academy of Medicine often hears a harangue from Guerin against vaccination; and, true to his convictions, I saw that Guerin did not isolate small-pox patients from others in his wards, showing an indifference as though he thought that the disease was non-contagious. As analogues to these malcontents are those who claim that Shakespeare did not write his plays, who deny that Newton discovered the law of gravitation, or Harvey the circulation of the blood, or Columbus America. Such men would fain steer against the irresistible stream of truth, and hope to gain notoriety from the consequent wreck of their puny barks. Latin America, notwithstanding its intense devotion to orthodox medicine, has recently been favored with the advent of such an illy compounded genius, who indulges his pen in occasional diatribes against vaccination, and advises as a preventive to take homeopathically prepared pillets of vacinia. Instead of going with the Vicar of Wakefield across lots to the church he would with the Vicar's wife reach thither by a road three miles around—that is, on his wall-eyed infinitessimal colt

he would reach the blood through the circuitous route of the stomach and bowels. Those who accept Hahnemann's sacred Trilogy, that all existing disease originated in itch, barber's itch or syphilis, will probably not find it hard to believe that the vaccine germs which are launched on this eventful pilprimage down their throats will be lucky enough to find a point at which they can debark somewhere along the winding shores of the alimentary canal.

Some years ago there was erected in the City of Guatemala a monument to commemorate Jenner's discovery of vaccination. Is it not an opprobrium to the north that only in this remote corner of the earth has there been just recognition of this great discovery.

A singular fact, and which has been the subject of much study by Dr. Stoll, a very intelligent physician of Guatemala, is that the art of mesmerism is known and practiced by the Indians of Guatemala. Dr. Stoll is preparing a work upon one of the Indian races here, in which this subject will be thoroughly treated of. This is another fact to be added to those which Figuier has collected in his "History of the Marvelous," in which it is shown that sorcery, witchcraft, somnambulism, hypnotism, table-rapping and mesmerism are branches of one common tree, in the trunk of which are bound up all the races of humanity.

Among Americans who deserve special mention in connection with the west coast of Central America, is Captain J. M. Dow. This gentleman, now agent of the Pacific Mail Steamship Company, at Panama, about 1856 commanded the Columbus, a small steamer that made monthly voyages along the coast, stopping at the leading ports. Through the intelligence and industry of Captain Dow, commercial relations were inaugurated with these States, which, small at first, have grown to large proportions, and have been the means of giving to the United States those advantages which England

has had the shrewdness to grasp and monopolize on the west coast of South America. As an example of the development of trade, may be mentioned that in the commencement the yearly amount of coffee exported from Guatemala was but thirty thousand sacks; now there are annually shipped three hundred thousand sacks. Besides his services to commerce, Captain Dow has made valuable contributions to natural science in the discovery of new species of plants, fishes, and animals. As an addition to botany, he has discovered in Costa Rica one of the most beautiful orchids of tropical America, which has been named after him by foreign scientific authorities. In the Gulf of Fonseca he has found a fish having four eyes, and which is viviparous; and finally, he has found a species of tapir previously unknown. Such work on the part of one so busily occupied with other matters so foreign to scientific pursuits, is in the highest degree praiseworthy. His work has been duly recognized both at home and abroad. In England, where proper caution is exercised in awards to merit, he has been admitted to membership of one or more of the learned societies.

This article would be incomplete without special mention of Dr. Fenner, who came from New Orleans to Guatemala a few years since, and through his high attainments in medicine has reached the first position in his profession. Besides being the consultant usually asked for where especial skill is required, Dr. Fenner has had the rare fortune to reach a near place to the government, so that no one is on more intimate terms than he with General Barrios --that remarkable man whose fearless heart, upright character, and unfaltering patriotism have safely conducted Guatemala through so many perils, and at this hour are causing most eyes to turn towards him as the one most competent to rule, in the event of these five republics entering into one common union.

COMPLIMENTS OF THE AUTHOR.

LIGATIONS

—FOR—

THE CURE OF ANEURISM.

By L. C. LANE, M.D., M.R.C.S.

Professor of Surgery Cooper Medical College, San Francisco, Cal.

STANLEY & DAVIS, Printers, 543 Clay St., S. F.

LIGATIONS FOR THE CURE OF ANEURISM.

By L. C. LANE, M.D., M.R.C.S.

LIGATIONS

—FOR—

THE CURE OF ANEURISM.

By L. C. Lane, M.D., M.R.C.S. London,
Professor of Surgery, Cooper Medical College, San Francisco, California.

The following cases of arterial ligation, done for the cure of aneurism, are submitted for publication:

FEMORAL ARTERY.

1. A grocer much addicted to beer, in 1863 presented himself for treatment for a large popliteal aneurism; aged 35, and of fat and plethoric habit. Femoral tied in the Hunterian site, with ordinary silk, one end of the thread escaping from the wound. Alcoholic dressing. Ligature detached about the nineteenth day, followed on the twentieth by a violent hemorrhage from the site of ligature. Bleeding repeatedly occurred, until, as a last resort, the thigh was amputated at its middle. Death, finally, from exhaustion.

2. Mulatto: subject of popliteal aneurism; had the femoral tied in the middle of the thigh. Ligature detached near the end of the third week, when, though the wound was unclosed, to cancel his surgical obligation, he fled the city. I learned afterwards that he was cured.

3. A saloon keeper of lymphatic temperament; aged 28; had the Hunterian ligation done for cure of a popliteal aneurism. Ligature detached on the seventeenth day; three days afterwards violent hemorrhage from the unhealed wound, which despite com-

pression, both proximal and distal, continued to recur, until, as a last refuge, the limb was amputated. Stump healed wholly, except that the ligature on the divided femoral remained until the fifty-fourth day, when it came away. Two days later, there was a severe bleeding from the sinus left by the ligature. The bleeding recurred at short intervals, until at the end of nine weeks after the amputation the man died from exhaustion.

4. A young man, aged 24, of very dissolute habits, was the subject of Hunterian ligation for the cure of a popliteal aneurism, caused by violent jumping. Two weeks after the ligation, there was a slight bleeding from the wound, induced by copulation. The ligature dropped a few days afterwards, followed by immediate and complete recovery.

5. Hunterian ligation for popliteal aneurism, in a man aged 40 years, who was the subject of general vascular atheroma. Silver metallic ligature was used, tied, and cut short. The wound healed immediately, and an early cure was promised, when, owing to coldness of the limb, hot bottles were applied, yet so incautiously used that the leg was badly burned; thence resulted gangrene, for which amputation was done, from the shock of which, with ichoremic complication, death resulted.

6. Hunterian ligation of the femoral, in a miner, for relief of popliteal aneurism. Silk ligature was used, in the passage of which the femoral vein was wounded and bled a few drops. There arose no ill from this mishap. The ligature dropped early, and in eight weeks there was complete recovery.

7. Hunterian ligation for the cure of a popliteal aneurism in a robust miner, aged 40. Patient was uncontrollable, frequently turning in bed. Complete recovery in ten weeks.

8. A baker, fat and plethoric, was the subject of Scarpa's ligation for the cure of a poplitèal aneurism; ligation of the femoral just below Poupart's ligament. Secondary bleeding near the end of the third week, which for some days was restrained by proximal and distal mechanical compression; compression finally proving ineffectual the external iliac was tied. After this there was no hemorrhage, though the foot became gangrenous and was amputated. Recovery. Five years afterwards the man died from apoplexy.

9. Scarpa's ligation was done in a youth, aged 18, for the relief of a vascular growth, twelve inches long and three inches wide, on the anterior side of the thigh; aneurismal thrill and blowing sound were audible in all portions of the tumor. Secondary hemorrhage near the close of the third week, which was controlled by digital compression. That was continued for two weeks, when the wound had healed. The pressure was made by a single index on the proximal side of the wound. For some months the growth of the tumor was arrested; later, however, development was renewed, when successful coxo-femoral disarticulation was done. The tumor, which was sarcomatous in species, afterwards reappeared in the pelvis and ended the patient's life.

10. Patient aged 17 years, was the subject of arterio-venous aneurism, of traumatic origin, located in the upper and outer part of the lower leg, the fibular head marking the tumor's upper border. Hunterian ligation with carbolized silk, the ends being cut short. The wound, closed by metallic suture, healed in one week. Soon after the tying, the soft parts of the dorsum of the foot were the seat of stasis, and in a few days became gangrenous, the gangrene ultimately involving all the soft parts lodged in the anterior interosseous space. An amputation below the knee was followed a few days later by secondary bleeding ad deliquium animi. Re-amputation above the knee, with simultaneous transfusion of six ounces of defibrinated blood, introduced by means of a Dieulafoy aspirating syringe. So nearly was life extinct when the transfusion was done that the median cephalic vein, prepared for opening, remained collapsed and bloodless. Speedy improvement followed the introduction of the blood, after which the patient quickly recovered.

11. Was called to a noted charlatan of San Francisco, laboring under popliteal aneurism. The surface of the tumor was inflamed, of livid hue, threatening to rupture externally at an early day. To favor this event he was poulticing it, for the purpose, as he said, "of drawing it to a head." Femoral artery was tied below the profunda with carbolized silk, cut short, and wound closed. Recovery without suppuration in the tumor, though several points on the leg, of limited extent, became gangrenous, and were slow to heal.

EXTERNAL ILIAC ARTERY.

1. For the relief of an aneurism situated in the left femoral artery, just below Poupart's ligament, in a longshoreman, the external iliac artery was tied through a curved incision in the iliac fossa. The vessel was reached through the usual retro-peritoneal route, tied with silk, one end of the cord remaining external. Recovery, and return to his work in three months.

2. For a similar aneurism in an engineer, employed on the Columbia river, Oregon, similar ligation was done. Recovery.

3. For a large aneurism in the femoral artery, the dilatation involving the lower portion of the external iliac, in a farmer from Napa county, Cal., the external iliac was tied near its origin. Recovery.

4. In case number 8, above reported, of ligations for the cure of popliteal aneurism, the external iliac was successfully ligated.

5. In a glover, aged 40, of Alameda, Cal., a fusiform aneurism in the upper third of the femoral artery was treated for some months with direct mechanical pressure. This failing to cure, the external iliac was tied. Recovery.

6. A mechanic, aged 60, was the subject of aneurism involving the lower portion of the external iliac, and the upper part of the femoral. The external iliac was ligated high up; detachment of ligature at the end of four weeks. The man was the subject of urethral stricture, and on the day following the detachment of the ligature, while straining to urinate, secondary bleeding ensued. Later, another severe hemorrhage from the distal end, as shown by the fact, that proximal compression did not control it. An unsuccessful attempt was made to reach the bleeding ends for the purpose of re-ligating. Death at the end of six weeks from exhaustion.

7. Frenchman from Stanislaus county, aged 36, presented himself with a large aneurismal tumor, involving the upper part of the left femoral artery, and which reached as far up as Poupart's ligament. The external iliac was tied in its upper half with carbolized silken cord, cut short, and wound closed. Complete cure in four weeks, when the tumor was reduced to half its original volume.

SUBCLAVIAN ARTERY.

1. An engineer from a Sandwich Island plantation, was brought from the Islands in an ambulance litter, afflicted with aneurism involving the termination of the left subclavian and the entirety of the axillary artery. The tumor, large as a fetal head, had apparently only the cutis for external wall. Through a quadrangular cut, the flap being attached above, the subclavian was reached in its trans-scalene site, and tied close to the muscle. Ligature was of small silk, carbolized, ends cut short and wound closed. The wound healed in two weeks and recovery was complete in two months. To-day, eighteen months after the ligation, the man writes that the tumor has disappeared, his arm is restored, and he is doing his work as engineer.

2. A miner from Alaska, with similar aneurism, though one-third less in volume, had the left subclavian ligated similarly, except that the vessel was reached through a vertical cut. In one week, primary union of the wound. The man, of obstinate temper, near the end of the second week, though cautioned to maintain quiet, rose from his bed and used the close stool. A slight bleeding ensued through the re-opened wound; later, another violent bleeding occurred. On the fourteenth day the wound was opened, and, while the blood that gushed from the distal end was controlled by sponge used as a tampon, the artery was exposed by severing the sternal leg of the st. cl. mastoid muscle, and a thread thrown around the subclavian just as it emerges from the thorax. This so arrested bleeding that a ligature was passed around the vessel close to the aneurism on the proximal side. Though there was no more hemorrhage, and the vitality of the arm was well maintained, yet the man died from exhaustion on the nineteenth day after the first ligation. It should have been remarked that before this man came under my care, there had been made an unsuccessful attempt to cure him by indirect-compression digitally applied, at the point where ligation was afterwards done.

DISTAL LIGATION FOR THE CURE OF INNOMINATE ANEURISM.

1. In a laborer, the subject of innominate aneurism, the subclavian for one-half its course being implicated, the latter vessel was ligated near its termination. Some relief from dyspnea was gained during the week that the man survived the operation.

2. In November, 1882, M. Laurent, Frenchman, applied for treatment for an innominate aneurism. The visible part of the tumor, large as a hen's egg, was encroaching on the jugular fossa, and the patient was harassed with cough and dyspnea, and could not utter more than three words coherently, without gasping for breath. He had last been treated by a *charlataness*, who, mistaking the tumor for an abscess, had tried to puncture it to "let out the matter," the unhealed mark of which remained when he came to me.

Eager to escape from his sufferings, he gladly accepted the proposal of ligation. To do this, anesthesia was twice attempted, yet he was so intolerant of it that he begged to be operated upon without chloroform. Besides, for some time, he had not been able to lie down, as the recumbent posture induced suffocation. Hence, yielding to his entreaties, the ligation was done as he sat in his chair. The subclavian was first tied, in its trans-scalene site; immediately afterwards the carotid was also tied below the omo-hyoid muscle. As immediate result the dyspnea was much lessened, so that with Gallic enthusiasm he announced himself much better, (*beaucoup mieux*). His cough also nearly disappeared.

Carbolized silk was here used, cut short, and the wound closed. Each wound speedily healed, though that for the carotid afterwards reopened and suppurated for a few days. No encephalic symptoms resulted from the tied carotid. In two months, pulsation had nearly vanished in the tumor, and the man had so recovered normal health that he resumed his former duties as a watchman. This work he continued for a number of weeks, when he began to be troubled with cough again. On examination, it was found that the subclavian branch of the innominate was dilating on the proximal side of the ligated point, and was inducing the wonted accompaniments of phrenic, pneumogastric and sympathetic irritation. This man lived nearly ten months after the operation, during a portion of which time, as said, he pursued his work as watchman.

Farabeuf, in his "Ligations," cites but six cases of simultaneous tying of the carotid and subclavian, all of which ended fatally in a few days.

AORTIC LIGATION.

A gardener presented himself with an aneurism in the upper portion of the abdominal aorta. Thrill and blowing sounds were present on the left side of the precordia; the same were perceptible behind and on the left side of the spine. The man had been confined to bed for nearly six months. For some weeks previous to my visit he had suffered great pain in the anterior and outer portion of the left thigh, doubtless due to pressure on the roots of the lumbar plexus. This pain had become so acute that existence was a burden, and the patient was ready to submit to any procedure which might offer a conjectural shadow of relief.

The annals of pathological anatomy containing numerous cases of gradual closure of the aorta with subsequent continuance of life, it seemed to the writer possible that Art following closely in Nature's footsteps, might reach the same end. With this view, (Brasdor's) distal ligation was decided upon, and done as follows: An incision was made in the median line, the navel being in the center of the cut. Owing to meteorism, the vessel could not be reached without allowing the intestines to escape. A sacculated aneurism umbelliferous in form was found arising from the aorta near the diaphragm. During arterial diastole, the tumor was thrust against the soft parts in which lies the lumbar plexus. The aortic sheath was seized between the superior and inferior mesenteric arteries, and the apex of the uplifted cone was severed obliquely, thus exposing the front wall of the vessel. Through the elliptical opening thus made the sheath on each side was carefully detached; through the route thus prepared, a medium sized carbolized silken thread was passed around the vessel, and so tied as to allow one-half of the interior calibre (lumen) to remain unclosed. The thread was knotted and cut short. The distended bowel was returned with extreme difficulty, a difficulty that can only be truly appreciated by the laparotomist who has operated for intestinal obstruction. After much forcible manipulation the bowel was restored to its cavity, and the parietal incision closed. Before the end of twenty-four hours peritonitis appeared and rapidly developed, ending the man's life on the third day.

Upon subsequent reflection I am convinced that had the patient been bled prior to the operation, the possibilities for his recovery

would have been much increased, for it would have relieved the blood-vessels of their surplus fluid, and have increased the fibro-plastic element of the blood, thus, on the one hand, removing fuel for inflammation, and on the other, creating more material for the occluding clot.

By this new method of ligating, original with me, and which may be named that of *gradual occlusion*, the aortic canal was reduced at once to one-half its normal diameter; the femoral pulse was reduced to the volume of the radial, while that of the tibials was correspondingly diminished. The pulse at no time disappeared from the femoral arteries, and the lower limbs retained their normal sensation and temperature.

Necropsy showed that in the plicated constriction of the aorta, some coagulation had occurred, the small coagula being adherent in the crevices of the inner tunic. From the point of ligation to its bifurcation the aorta was found reduced to less than half its normal calibre; and the primitive iliacs were correspondingly lessened. The constricting ligature had caused no cutting in the wall of the vessel. Above the ligature the aorta was of normal size.

Though this case terminated unfortunately, yet enough was accomplished to justify its adoption in both distal and proximal ligation of the abdominal aorta; distally, for aneurism in the upper part, and proximally, for that in the lower portion, or in the primitive iliacs. The selection of the site of ligature between the mesenteric arteries ensures an ample vascular supply through the arcade of anastomosing trunks even though the aorta should become immediately occluded.

Too sanguine expectation usually accompanies each new procedure or innovation in surgical art, and experience becomes guarded in its predictions; yet when we remember that in the operation of gastrostomy, twenty-eight failures preceded the first successful one, and that innominate ligation defied our art for nearly a score of trials, then there is hope for this new mode of arterial closure, though failure has attended, and may again, attend the first essays of it.

The foregoing ligations were done during a surgical practice reaching through a period of twenty years; each one was witnessed by physicians yet living in California. In several of the cases, it

should have been remarked, that indirect compression had been unsuccessfully tried.

In the later ligations there was a radical departure from classic rule, in this, that no attempt was made to divide the inner and middle coats by tight tying; in fact, that was avoided, as contact of serosa with serosa suffices for ultimate adhesion. And this was rendered possible by the use of antiseptic cord, which could at once be cut short, and the wound closed. The period of healing is thus reduced to days, where weeks were formerly required, and the tedious waiting for the cord to drop becomes a thing of the past. And this new revision of this chapter of surgery is due to one man —JOSEPH LISTER—upon whose ears the salutations of immortality have already fallen too often to be flattered by this tribute.

Dr. Henry Gibbons

In Memoriam

COMPLIMENTS OF THE AUTHOR

DR. HENRY GIBBONS

IN MEMORIAM

FIRST OF THE "LANE LECTURES" OF 1885, DELIVERED IN COOPER MEDICAL COLLEGE, JANUARY 2ND.

BY PROF. L. C. LANE

SAN FRANCISCO
HOWARD & PARISER, PRINTERS AND PUBLISHERS
429 Montgomery Street
1885

DR. HENRY GIBBONS.

Ladies and Gentlemen: The Directors and Faculty of Cooper Medical College having desired to give some public expression of the great loss they have sustained in the death of Dr. Henry Gibbons, the following address has been prepared for that purpose, and more especially is it an offering on my part, to the memory of one to whom I have been joined in friendship for many years.

Upon the highway of life, along which we are passing, a fellow traveler has fallen; ere the wheels of time carry us onward, it becomes us to pause and turn our eyes to our fallen companion, and, as we take leave of him, to recall the great points of his character, in order that these may serve as guides in the moral struggles of our own lives; such guiding lessons, besides giving cheer to those who survive, rescue from oblivion the better part of him who has ceased to live, and realize for him the hope which all good men have, that they "shall not altogether die." As the Roman bard quoted, looked forward and saw his precious thoughts, the children of his mind, yet surviving him and clad in the vesture of immortality, so the good of all ages have wandered in anticipation beyond the limited circle of their own lives, and caught some echoes of the tribute which the coming years would bring them; and as their fancies have wandered into the future, and caught glimpses of their own renown in the many colored years, they have, in some degree, shared in the victory that crowns a well spent life. We trust that such hopes and such visions delighted the mind of our dead friend, as his feet neared the bounds of life, and the long shadows told him that his setting sun would soon be followed by the night in which he should rest forever from his toils. To sketch

a life at this near period, when the sun though sunken, has yet left some of its evening purple on the mountain tops, and a halo of light on the last steps of the dead, is not always an easy task, for affection sways the friend toward exaggerated eulogy, and too much resentment yet lurks in the heart of an enemy to permit him to be impartial. In unfolding the scroll of my friend's life, it will be my aim to shun the errors here alluded to, into which friendship usually falls.

In human history it has often occurred that even cotemporaries have been puzzled in the interpretation of the motives and actions of the men of their times; in fact, certain well known historic characters yet remain unsolved enigmas, one generation perhaps, quite reversing the opinion of its predecessors. As in the ancient classics the text is often obscure, and the meaning of a page often hangs on the sense of a line or even a word, so in deciphering the life-volume, the biographic translator has often encountered similar difficulties. No such trouble, however, besets the present undertaking, for the acts of his life stand in a bold, unmistakable handwriting; each utterance there, is clear and manifest, direct and outspoken.

Henry Gibbons was born in 1808, in Wilmington, Delaware, that little State of three counties, so small that more than twenty such States might be included in the county of San Diego, in California. As is known, this little State is one of the oldest of our Union, and was originally peopled by a hardy race of men, whose ancestors of giant stature and wonderful courage struggled for life among the mountains and chilling floods of Scandinavia, and sang there the wild chants of the Edda, the epic of the North, in which are promiscuously sung courage, virtue, war, storm, wind, the eagle and the raven—the raven as a seer rejoicing in the birth of heroes who are to strew battle-fields with dead heroes, for his food—such were the Swedes and Finns who peopled Delaware, among the descendants of whom the early life of Dr. Gibbons was spent. But along with these people, who as soldiers had fought under Gustavus Adolphus in the thirty years' war, came a

no less bold and determined band of men, who, though their fathers had fought for toleration and freedom of thought, themselves announced a new faith, viz., that of universal peace. This innovation and revolt against the established church of England had as leaders three men of very different rank in life, viz., George Fox, William Penn and Robert Barclay; the first was a peasant, uncouth, unlettered and untaught in everything except his Bible which he knew well; the second was from a family of rank and high social position in England, his father an Admiral, whose services had won for his sovereign the island of Jamaica; the third, Robert Barclay, whose knowledge of the Bible in the original tongues gave to his pen weight, and to his tongue skill, as a religious controversialist. These men whose guides in duty and practical life, were the inner light, intellectual independence and the promptings of conscience, soon gathered a large number of adherents among the low, the humble and the deeply religious men and women whose social position and relations with society offered no barrier to their boldly announcing their convictions. Such men, though subjected to fine, stocks and imprisonment, were rarely reached by the former, as they seldom had property, and as for punishment and imprisonment, these but added to the fervor of their religious enthusiasm; so that when Fox was released, he quickly found his way to the Steeple-houses as he mockingly christened the churches, and again, more fiercely than ever, denounced the hypocrisy and empty forms and usages of the established church.

Penn, whose life was rendered especially miserable, through the alienation of his family and aristocratic associates, longed for a home where he and his friends could find rest, and peacefully worship as their consciences directed them. For this purpose, he sought and obtained a grant of land in the New World, on the banks of the Delaware river. In this grant was included the future state of Pennsylvania, as well as that of Delaware. The English ancestors of Dr. Gibbons were among the early followers of Penn and Fox, and as soon as the grant was confirmed to

the proprietary, as Penn was named, John Gibbons, the founder of the family, crossed the Atlantic and purchased of Penn a large tract of land in what is now Chester County, Pennsylvania. At a subsequent period, the father of Dr. Gibbons moved to Delaware, and became one of the early settlers of Wilmington. From traditions as well as from published accounts which have reached us, it is evident, that the members of the original family had a full share of those traits of inflexible purpose, purity of life and simplicity of manners, which stamped and made a distinct individuality of every follower of William Penn. Of all the colonists who left the old world and sought the new, as a refuge from religious persecution, no people were more quaint and peculiar than the Quakers. They carried to the extreme of feeling their hatred of the false, the crooked and the unreal; and their external humanity in its abhorence of pretence, disguise and fashion, adopted as cardinal rules of life "plainness in dress, address, deportment and apparel." The names of the months and the days of the week on which a shadow of idolatry was thought to lurk, were shunned, and ornament without some use was reckoned an abomination. In fact, their religion was simplicity itself, reduced to a small number of self-evident truths, which a child could comprehend, or a Socrates marvel at. Indeed, the inner light which directed the Quaker's conscience was but the reappearance of the demon that sojourned with Socrates, and the Athenian philosopher whose wisdom was treasured up by Xenophon and Plato on the steps of the Parthenon, was one in spirit with the simple people that worshiped in the wild forests of the New World, and the serenity with which the former quaffed the fatal cup of hemlock, was equally the characteristic of the latter in every event of fortune.

The early Quakers were almost without exception, poor farmers and poor mechanics, and as such, were men of strong, robust bodies, which had received none of the enervating legacies of weakness and disease which a profligate aristocracy often bequeaths to its descendants. Persecution and struggles with

adversity gradually developed in them a strong mentality, so that the descendants of the race are both physically and intellectually strong, and possess a character which has enabled them to take a high position in both England and America, and to number in their lists, such men as Bright and Whittier. From such blood Dr. Gibbons derived his lineage, and his intellectual personality was the outgrowth of accumulated ancestral tendency, which both paternal and maternal hands moulded according to the highest models of excellence; example leading precept in the work. His childhood had also the fortunate privilege of being the member of a large family of children, each one like himself endowed with a strong nature, obstinate, self-asserting and self-reliant. In such a family, the events of each member's daily experience are but the rehearsals of life when its sphere of action is transferred to the broader domain of mature manhood.

Both the grandfather and father of Dr. Gibbons were highly educated, being unusually well instructed in the ancient and modern languages, and in natural science. He received careful training in the same directions, in which there was that union of classic and natural science which ever gives the highest type of scholarship. For as an old Sanscrit physician compares the medical man who is trained in medicine or surgery singly to a bird with one wing, so the modern tendency to drill the student in natural science only, is equally imperfect. Dr. Gibbons was wont to recount conversations with his father, in which the latter often quoted from his favorite Horace, drawing from the poet some of those choice gems of satire, that so often are found in his verse. From the character of these quotations, one readily sees that in the solid marble of the old man's rugged nature there ran a rich vein of that humor which was so striking a feature of the son.

In natural science, Dr. Gibbons early showed a strong bias toward Botany and Meteorology, and for these in after life, he ever cherished a lively interest. In a conversation with him, I well remember the enthusiasm with which he recalled the cloud-

forms of cirrus, cumulus and stratus, which in panoramic glory delight the naturalist's eye in the older States, but which are so rarely seen in the formless vapors which becloud our sky. For many years he faithfully chronicled every prominent point concerning our San Francisco climate, such work, finally, becoming almost an intuition or unconscious act in his daily routine. The record of these observations is now in the Smithsonian Institute. An unusual phenomenon, as an eclipse, made the night to him one of sleepless vigil; and on one such occasion, thinking to give a friend a treat of witnessing one of Nature's great plays in the form of a meteoric shower, he called and rang through error a stranger's bell, whose only thanks was a grunt of disgust at being roused from his sleep.

An equally strong taste was his love of plants, in the knowledge of which, at one time, he was so proficient that the Flora of Delaware was very familiar to him. In a conversation with him a few months ago, he acknowledged his indebtedness to this knowledge, for much pleasure in life. For he had found, as every Botanist finds, that whether in the well planned garden, in the field, the shadowy nook, or the mountain solitude, these gentle children of Nature's first essays in life, delight, cheer and instruct the trained eye, that knows them. For many years past, it was the habit of Dr. Gibbons to make a visit, once a week to the rural home of a daughter, where he could indulge his taste for natural scenery; there amidst green trees, where no month gives the rose rest from blooming, surrounded by the "eternally new, and the eternally beautiful," as Virchow says of Goethe, he sought and found new energy and new life. Such diversion often turns over a page in life's volume, and thus hides its tiresome memories.

The father of Dr. Gibbons was a physician, having studied and graduated in Medicine, at the University of Pennsylvania. At that time, but few of those practicing had graduated, an allusion to which is contained in the language of the diploma itself, viz., that it "separated the holder from the literary rabble." Our

medical ancestor confessed that in his studies for the degree this clause was a strong incentive. This medical school in Philadelphia was founded in the latter part of the last century, and, for a long period, held precedence in this department of learning. In its corps of teachers were Rush, Physick, Hartshorne, Hare, Chapman, Horner, and Hood, names which have become venerable in American Medicine.

In this case as often happens, the father's profession became that of his son; the latter likewise studied and graduated in the University of Pennsylvania. He enjoyed the rare privilege of instruction from most of the famous teachers before mentioned. From the lips of these men, each an oracle in his department, the young man received his first lessons in the healing art. If it be a favor to have such men as teachers, the latter enjoy an equal honor in having such material as our young man, for disciples, for the thought-germs sown by the former, often return manifold fruit. On this occasion the student acquitted himself so successfully, that his inaugural dissertation written upon vaccination was selected for publication. Certain points in this paper illustrated the careful thought and sagacity of the writer, for though contrary to received opinion, the future verified their correctness. The great truth of the prevention of small-pox through vaccination which the young man defended, remained, in after years, one of his most earnest convictions, as accumulated observations united to confirm it, and for such obstinacy as continues to close its eyes against the united findings of experience, he had no patience, but often launched against it a keen shaft of satire.

For some years, the son was associated with his father in the practice of medicine, in Wilmington. At this period, began his first essays as a popular lecturer, in which he soon acquired that readiness which distinguished him in after life. He frequently delivered addresses upon scientific and moral topics, in which his aim was to instruct, and impart useful information. To those who have been witnesses of his ready ease in speaking, it will be a matter of surprise to learn that, in the beginning, he

labored under extreme embarrassment; his first address, though carefully written, cost him a great effort in its delivery; at times, he could hardly see the lines he was reading. In his early years, he was in the habit of submitting his written addresses to his father for criticism, and on one occasion thinking he had composed something very remarkable, the main feature of which was a profusion of rhetorical flowers, the father ruthlessly stripped the composition of all its ornament, with the chilling consolation, that these were faults which he would avoid as he grew older.

The talent for speaking which this early training fostered and matured, soon found ample room and scope for work in warfare against the use of alcoholic drinks. The followers of Fox and Penn in their complete code of morals, included abstinence from ardent spirits as a cardinal rule of conduct. Not content with making this a rule of his own life, Dr. Gibbons soon become the public champion of the cause of temperance, and, with ready pen and fluent speech, he became an enthusiastic propagandist of the same. A friend of his who knew him in those early days, told me that in his earnestness in this work, he outstripped all others; in fact, that in his crusade against intemperance, he overturned the State of Delaware. In his case, different from what often occurs, the matter did not vanish as an ebullition of youth, but seemed to grow in intensity, with advancing years.

From Wilmington, where he practiced fifteen years, he moved to Philadelphia, whose broader field, gave ample occupation for his varied talents. In a small town, the relations of men differ materially from those existing in a large city; in the former, each man knows the exact measure and worth of his neighbor; every one becomes a coin of well known value, and if flaws and defects exist in him, rigid scrutiny has long since detected them, and no one is more sharply tested than the young physician; each patient lost is well known, and the death is referred to the inexperience of the youthful doctor. Having passed through such a furnace of trial, and which in his case was unusually severe, as he was ever the object of comparison with his father,

he next became a member of the medical profession in a large city, where social life and professional life moved in their most spacious orbits. The experience which he had gained in his smaller sphere, greatly aided him in his new one; the lance which had been trained and disciplined in the old one, did good work in the new. The competitors who met him at the threshold and disputed his admission, early discovered his merits and soon acknowledged him their peer. For in that primary tournament, they found no gaps in his moral and professional equipments; he was no weakling whom the merciless spectators consigned to destruction, or ignominious exile.

In Philadelphia he soon secured a large medical practice, from which he derived a remunerative income, and one from which a man of close business habits might have become wealthy. Had financial thrift been the leading incentive in him to work, as his business increased, he would have neglected his poor patients; yet here, the humane side of his nature was ever prominent, for his feet never forgot to walk among the lowly and worthy poor. In addition to his duties as a physician, he found time, here, for the exercise of his gifts as a writer, public speaker and debater. In this, both his pen and voice were ever active in defense of public and private morality. This latter work was done quite regardlessly of pecuniary profit; indeed, it was often detrimental to his interests, as his outspoken manner provoked hostility toward him. Where truth or right was in jeopardy, no man ever stepped more fearlessly into the breach in their defense.

At this period, an eventful one in the history of our country, from the sunset side of our Continent, there came rumors of the discovery of a new Hesperian garden, where not one tree alone, but every one was laden with golden fruit. Ambition, with a voice more commanding than that of Juno to Hercules, bade the daring and adventurous of our land go thither, and share in the possession of the prize. Yet to enter the gates of that garden was no easy task, for they were guarded more securely than if a flaming sword turned in every way before them; infinite toil,

danger, disease and death lay in the way of the traveler, and only those who scoffed at such obstacles dared the essay, and of those who dared, fortune smiled only on the fearless and the stout-hearted, for instead of wealth, some found a grave now unmarked beneath the waves, or an unepitaphed resting-place in the tangled woods of the Tropics.

Dr. Gibbons was then forty-two years old, a period in life when the cooler accents of conservative prudence usually hush the voice of ambition when it whispers of schemes attended with toil and danger. Not so with him as he decided to cast his lot with those who were seeking homes in the farthest West. Probably, his love of nature and taste for natural science turned the scales on the side of departure, as he weighed the ease and comforts of home, with the toil and privations of the contemplated change. The heart of the Northern naturalist is never content until he has seen the gorgeous Flora of the Tropics; he who has only seen the palm, the passion flower, the musa and the orchis, in the stunted form which they assume as exiled exotics, longs to behold them in their wonted luxuriance in their native land. Such realization of long cherished wish, Dr. Gibbons enjoyed in his transit across the Isthmus of Panama, in which he was delayed some time, owing to the irregular connection of the ocean steamers. His written account of this transit, reveals the same exaggerated emotions of astonishment and wonder, which took possession of Humboldt when he first opened his eyes on Tropical America, and caused the great traveler to indulge in a rhapsody of feeling, for which he begs an excuse from the reader.

The journey finished, he appeared in San Francisco, where he engaged in the practice of medicine. Among the many hardy adventurers who came here to seek a fortune, no one was better adapted both by previous training and native character, to calmly meet and conquer the difficulties which all new comers here encountered. His previous experience in a small as well as a large city, had invested him with a panoply that enabled him in his new home to fearlessly enter the ranks of professional competition.

He opened an office in the lower part of this city, and more fortunate than most beginners, but a short time elapsed ere he had a call from a miner whose dissolute habits made it necessary for him to seek medical aid, and as requital for the same, he dropped an ounce of gold dust on the doctor's table. He at once realized that he was in a new land where gold was given as lavishly as it was found.

Soon after his arrival here, an invasion of cholera gave active employment to those physicians who were not afraid to meet this pestilence. Having already seen the disease in the East, Dr. Gibbons was not afraid of it, and offered his services to a hospital which the authorities of San Francisco had extemporized for the reception of patients, the subjects of the epidemic. His fearlessness of cholera was shown in the fact that he resided in the hospital, and to some extent, personally cared for the victims of the epidemic. From this period, Dr. Gibbons was engaged in medical practice, in which he enjoyed more than the average share of public favor. And in this work, no one was ever more free from mercenary purposes, as many a nameless sufferer could bear witness to. The sufferer not only received relief from his skill, but he bore away with him the precious memory of having met a heart full of sympathy and pity, and if the patient were one of the devil's poor—whose knock is not an unfrequent one at the physician's door, besides gratuitous remedies for his physical ills, he received kindly words for his moral healing, so that the morally oblique never failed to leave him somewhat straightened in character and purer in heart and purpose.

In 1856, there appeared here, in the ranks of medicine, a bold, adventurous and original spirit, Dr. Elias S. Cooper, whose strong and tireless hand essayed the task of shaping the heterogeneous and discordant elements of the medical profession on the Pacific Coast, into a definite organization. Through his agency, an affinity was established between these elements, and the result was the California Medical Society, the foundation of the present

prosperous State Association. In this work, Cooper was ably seconded by Dr. Gibbons, who in 1857, was honored with the presidency of the society, a distinction with which again he was honored, in 1871. His long experience in public assemblies, admirably fitted him for such a position. Though medical associations are organized for the consideration of matters wholly peaceful in nature, yet such assemblages, have often been the scene of fierce individual strife. On such occasions, Dr. Gibbons, as presiding officer, by address and impartial rulings, soon conciliated the tumult, and restored order, and both as presiding officer and individual member, when from a thoughtless or hasty course, the association in his opinion, was doing injustice to any one, he was always found in the small minority, whose prudent hands stay the wheels of precipitate action.

Cooper, to whose efforts was due the State Medical Organization soon after his arrival, three years later planned and laid the foundation of the first medical school on the Pacific Coast. The establishment of such an institution was a plan of Cooper's long before he came to California; in 1851, he repeatedly conversed with me on the matter, in terms of enthusiasm that showed that his heart and mind were wholly in the matter. Eight years later, his hope found realization, in the foundation of the Medical Department of the University of the Pacific. Here, again, he was early seconded by Dr. Gibbons, who took the chair of Materia Medica and Therapeutics, in 1861, in which position he was an interesting and instructive lecturer. The students who heard this course, still remember the teacher's careful instructions, in which the value and action of remedies were carefully explained, with constant illustrations drawn from the teacher's own practice. Soon afterward he passed to the chair of the Theory and Practice of Medicine, for which his extensive reading eminently qualified him. His lectures were characterized by clearness of thought, and directness of expression, which left no doubt or indistinctness in the minds of his hearers. Either from early discipline or from innate mental constitution, his mind never became involved in

those webs of obscurity which occasionally becloud the thoughts of most men in public speaking. As in all matters, whether public or private, he took a stand where he believed truth to be, so his utterances as a teacher, besides being clear and logical, ever bore the stamp of honest and earnest conviction, and these as well-proven verities, which a truthful heart had tried and proven, carried belief also to his youthful disciples, with whom they remained as enduring rules for future action, and whilst he was infusing technical knowledge into the minds of the students, he never forgot, as occasion offered, to drop a moral precept into their hearts. This moral training has borne excellent fruit in the classes which have graduated in this school, who almost without exception are models of sobriety and correct habits, and that his work had thus been fertile in good was to him a source of great satisfaction, and occasional allusions to the same on his part was a vanity which few would not pardon him. Though his didactic lectures were patterns of simplicity, where facts were linked together by common sense, and in which tawdry ornament and false embellishment were carefully avoided, yet to fix the facts in the minds of his hearers, or to awaken attention when the matter was tedious, no one had an ampler fund of humor to draw upon. At such times the lecturer had but to recur to his ample magazine of anecdotes, where an apt illustration was found, and in such illustrative story or anecdote, there lurked no double-meaning word or obscene allusion, which long after the fact sought to be taught had been forgotten, is wont to remain as an indelible filth-spot in the memory of the listener: for as the accusation has often been justly made that Juvenal, in scourging vice by his indecent allusions, also taught it, so many a famous medical teacher has left a name beclouded with similar fault.

The facility of Dr. Gibbons as a medical lecturer was more than equaled by his readiness as an extemporaneous speaker in public assemblies. Any utterance there, contrary to his convictions, never failed to call from him a prompt reply. At such

times he was apparently a careless hearer; his manner seemed to betoken almost a studied indifference as to what he was listening to; yet no sooner had the speaker concluded than he was on the floor, and, singling out each fallacy and inconclusive statement which had been made, rapidly controverted them. Such skill and readiness in controversy often tempt their possessor to abuse his talent; yet no one who knew Dr. Gibbons ever accused him of such misapplication; his intensely sincere nature ever saved him from falling on such a rock.

In 1864, he began his career as one of the prominent medical journalists of our country, in assuming the editorship of the Medical Press, a periodical that had been established by Dr. Cooper. This periodical was soon afterward fused with the Pacific Medical and Surgical Journal, and issued as a monthly, under the name of the latter. During the last twenty years of his life, with some aid from his son, he published this paper, giving much labor to the same. This work was nearly always done at night, and often reached well into the hours of the morning, and that, too, after a day busily spent in professional visits. It was rare that a patient desiring a night visit must arouse him, as the doctor was nearly always found in his toiling vigils, reading, writing and selecting for the coming issue of his paper, and the action is still more meritorious, when it is told that the work was wholly one of love, for as a financial enterprise, the journal never half paid for the work given to it; the readers, in fact, were much more benefited than the editor, since the periodical rendered them familiar with what was being done in the profession, both at home and abroad. But the charming part of the journal was the editorial department, where the reader never failed to find a treat of varied composition in which were commingled racy wit, deep humor, piquant criticism and fine satire. He was specially happy on those occasions, where, as unfortunately sometimes happens, medical opinion or practice was straying from the broad road of common sense: at such times his pen was not content with gentle rebukes, but often indulged in a cutting sweep of piercing sarcasm.

In a pithy, biting, unanswerable epigram, the fallacies of a book were exposed, scourged and turned into ridicule. Whenever in morals or medical practice, common sense was outraged, it provoked an attack from his pen, of severe indignation; for in his nature there was none of that apathy, sometimes called philosophic serenity, which without emotion quietly contemplates evil, as a normal component of human action. In defending what he believed to be right, and in chastising injustice, he reminds one of those determined and fearless combatants among the followers of Cromwell, who were ever foremost in the assault, and whose swords won those victories announced by the protector in the brief dispatches in which he said, "we have met the enemy and many thousand of the ungodly are slain."

On the organization of the California State Board of Health, Dr. Gibbons was appointed a member of the same, which position he held during the remainder of his life. As President of the Board, he was a most active laborer in the cause of public health. The published proceedings of this organization contain numerous contributions from his pen, which attest his thoughtful industry, as well as personal work in journeys through the state, to gather information respecting the climate and sanitary advantages of different sections. The reports of his observations, contained in the biennial reports of the State Board of Health, the proceedings of the California Medical Society, and the Pacific Medical and Surgical Journal, have contributed largely to diffusing correct knowledge concerning these subjects. As co-laborers in this work were Drs. Logan and Hatch, to whose industrious pens also our state is much indebted, for the diffusion of information concerning the excellence of its climate. While traveling once in Scotland, a gentleman told me that the writings of Sir Walter Scott had enhanced the value of real estate there forty per cent. The quiet and unostentatious work of our State Board of Health has done even more for certain sections of California, and yet, a few years ago, a short-sighted Legislature proposed to abolish this Board, the aggregate expenses of which do not

exceed thirty five hundred dollars, annually. Thanks to the energetic efforts of Logan and Gibbons, a step backward was averted, and the Board remains as one of the most valuable of our state institutions.

As we have seen Dr. Gibbons a strong partisan in the cause of Temperance in the East, so we find him here equally active in every movement looking to the advancement of this cause. Among the Good Templars, Sons of Temperance and similar organizations, he was a prominent leader. He assisted in the foundation of the Home for Inebriates, as well as in the organization of the Dashaway Association, likewise established in the interests of the Temperance cause. Whether in the lists of controversy, on the rostrum, or at the editorial desk, this subject was ever most dear to him. He espoused it with ardor in early youth, and the fire of enthusiasm then kindled in his heart only expired with its last pulsation. Though with one hand he was ever dealing such telling blows against intemperance, yet he was equally ready to extend the other with kindly tenderness to the erring victims of excess, and his busy life was robbed of many a precious hour, and his purse of its earnings, by the demands made upon him by those who were trying to break the shackles of drunkenness.

Few men ever stop to consider how much we are indebted to the lower animals, which having been domesticated, have become such important factors in human civilization. To none is man more indebted than to the horse, and no debt has been so little recognized. Instead of gratitude, this noble animal is too often the victim of ill treatment or extreme cruelty. The call with which nature has enabled the dog to beg for mercy when illy used, has been denied the horse. In unanswering silence the latter bears outrage and abuse. To correct such abuse, the humane of our city, a few years ago, organized a Society for the Prevention of Cruelty to Animals. In this association Dr. Gibbons was an active worker, and several times during professional visiting he stopped his carriage and stayed some brutal hand that was beating a beast of burden.

He was for several years a member of the State Prison Commission. No man ever more radically hated vice or detested crime, yet when brought face to face with its victims in their penance, the sight touched him with pity, and placed him in the ranks of those who implore executive clemency. In fact, if we be allowed to record his failings, we must include as a prominent one among them his readiness to forgive offenders—a trait rarely found in one of such inflexible temper. The same marked his personal relations with men in private life; for whilst his pronounced opinions, utter detestation of wrong, unshrinking denunciation of the same and natural love of controversy, often awakened enmity towards him, yet no one was more ready to extend the hand of reconciliation, and as he did so, he forgave and he forgot.

On the reorganization of the Medical College of the Pacific, under the name of Cooper, Dr. Gibbons continued in the chair he had formerly occupied, and though in poor health, he listened with impatience to any suggestion of lessening work. He always took extreme interest in the course of popular lectures established in connection with this institution, and, as you remember, during the last two years delivered each year a lecture. Though these lectures were full of thought, energy and humor, yet one caught in them touches of that sadness which is seldom wanting in the mental efforts of age.

He was an active worker in the establishment of the Mercantile Library of this city, although his early teaching against "prize goods and lotteries" prevented him, at a later period, from participating in the huge game of chance evoked to aid this institution in its financial difficulties.

In reference to the use of tobacco, most medical men are in accord as to its ill effects on health. To counteract the habit which is so general, societies have been formed and essays and disquisitions written. Even King James of England did not deem it beneath his royal position to write on this subject, and in his "Counterblast against Tobacco" he compares the fumes

involving the smoker to the "smoke of the pit which is bottomless." As a writer, Dr. Gibbons gave his testimony against the habit in an essay which was selected from about fifty manuscripts for the prize of the Methodist Tract Society.

In connection with his profession he held the position of Visiting Physician to St. Mary's Hospital, in this city. The sick of that institution received daily the gratuitous ministrations of his humane hand for eight years. For a still longer period he was one of the Visiting Physicians to the public hospital of San Francisco. In this work he was generally accompanied by a class of medical students whom he instructed in Clinical Medicine.

Dr. Gibbons was always an active member of the San Francisco Medical Society, and from its first organization no member can present a record of more punctual attendance. He always shared in its discussions, and occasionally read papers on current medical topics, and his last communication was upon Cholera, which he read before the Society some four months ago, just before he started East for his health. This Society, as well as others to which he belonged, have passed fitting resolutions announcing the great loss they have sustained by his death.

He was also a member of the Academy of Science of our city, and for many years was a regular attendant and participant in the deliberations of that learned body, occasionally presenting and discoursing on some object of natural history which he had found in his travels.

Some years ago an eminent political writer of our country proposed to some of his aged literary friends that each should gather up the select thoughts from their writing, and publish the same in compendious book form; that unless they did so, death would leave scarcely a vestige of their lives to which posterity could point. As is often the case, the proposal of the great journalist died as an unfinished plan. So in regard to Dr. Gibbons, it will soon be a difficult task to form a correct estimate of him as a writer, for though his pen was an industrious one, its productions in the form of essays, criticisms and lectures were so scattered in

the ocean of periodical and fugitive literature, that already much that he wrote is disappearing from view, for if printing embalms thought, it often buries it too, so profuse is the mass of published material in this age.

As I was once walking through Pére la Chaise cemetery, I was suddenly surprised by coming upon the monument of La Fontaine, bearing on it the forms of the fox, lion, eagle and other animals which the great fabulist has made figure in his moral lessons. If such a monument were reared over Henry Gibbons, what a variety of objects might it not bear, were his various services to the world emblematically represented, and yet in all this work, one hardly finds a trace of selfishness; in fact, his life was consumed in doing for others, leaving the ending half of the golden rule quite out of the question.

Eight years ago, his health began to fail, and from that period until the time of his death, he was frequently ill. His affliction had no well defined character; at times it caused him to suffer greatly from violent pains of a seemingly neuralgic nature. His disease was doubtless due to over-work of body and mind, for age found in him no disposition to abate the exacting duties which had been the accustomed task of earlier years. In his busy career, upon his ear fell unheeded the whisperings of time that the sixth age had come, when men should shift into the penultimate act of repose, for one saw him still, more dead than alive, pale, feeble and suffering, pushing his course among the crowding throng of our city.

At length exhausted nature clamored so loudly for rest, that for once he listened to it, and, consulting with his friends, it was decided that he must make a journey for his health. But whither should he go? As the dying Greek of old, remembered and longed to see his native Argos, so he longed to revisit the home of his youth. Early last autumn he repaired thither, and enjoyed the warm greetings of many old friends; met and addressed those kindred to him in faith in the meeting-house where his father had worshipped. That scene of silent worshippers, or

rapt listeners to the aged speaker, as he told again the old story of simply piety and plain virtue, would have been a fit subject for the pencil of the Quaker artist, Benjamin West.

The season of the year was eminently suited for such a visit, for the frosts of October had already clad the poplars and maples in their mantles of yellow and purple, and thrown over the woods their many-colored robes of transient beauty, and if his feet were tempted to stroll along the paths which in olden times had been witnesses of his botanic excursions, his eyes were again gladdened at the sight of purple aster, blue gentian, and other plants which had been the objects of his study fifty years before. The fields with their well-known Flora, the skies with familiar cloud-forms, no doubt awakened in his heart many an emotion of mute rapture, but it was in the home of his father that the sight of old-remembered objects awakened the deepest feelings. Amidst such surroundings, where every object opened a volume of recollections, and the hall of memory was lighted with the recollections of childhood's innocence, there stood before him, as of old, father, mother, sister, brother; once again he drank from the fountains of his youth, and with renewed sense and revived faculty he again gazed upon vanished faces, and heard familiar voices. As the old man beheld these visions with which kind nature is often wont to irradiate the closing act of dissolving life, he fell asleep, and was visited by two messengers; one, that of Death, who having touched his heart gently and painlessly, gave it rest, and hasted away; the other, that of Peace, who, having placed upon his brow a chaplet of the white flowers of purity, remains by his side forever.

SHADOWS IN THE ETHICS

OF THE

INTERNATIONAL MEDICAL CONGRESS.

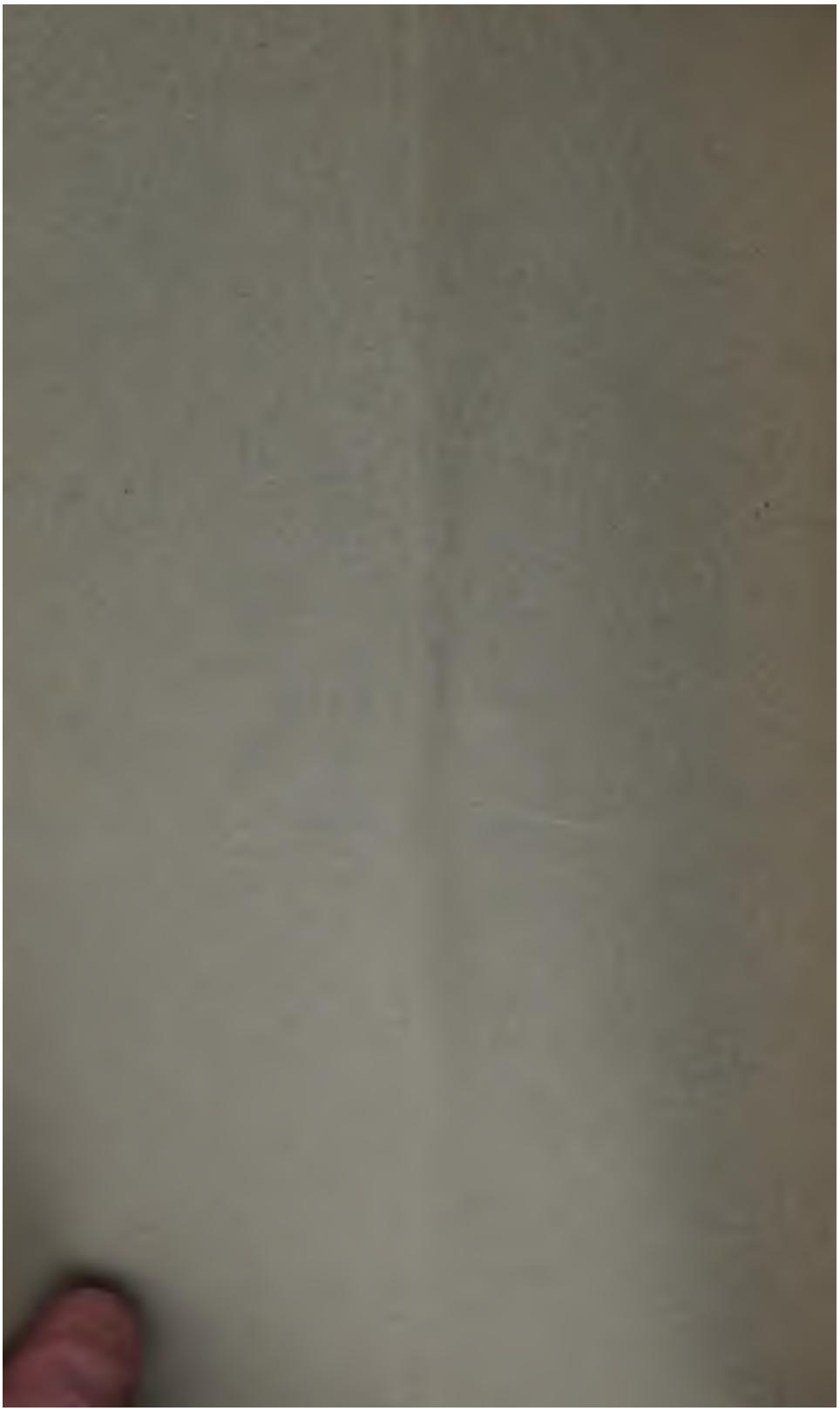
BY

LEVI COOPER LANE,

A. M., M. D. (JEFFERSON AND BERLIN), PROFESSOR OF SURGERY IN COOPER MEDICAL COLLEGE, AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

WITH COMPLIMENTS OF THE AUTHOR.

SAN FRANCISCO:
A. L. BANCROFT & COMPANY, PRINTERS.
1885.



SHADOWS IN THE ETHICS

OF THE

INTERNATIONAL

MEDICAL CONGRESS.

BY

LEVI COOPER LANE,

A. M., M. D. (JEFFERSON AND BERLIN), PROFESSOR OF SURGERY IN COOPER MEDICAL COLLEGE, AND MEMBER OF THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

SAN FRANCISCO:
A. L. BANCROFT & COMPANY, PRINTERS.
1885.

PREFACE.

The author of these pages believes it the duty of every man, when wrongfully attacked, to defend himself; and knowing, too, that the world has enough to do, to be not much concerned with the personal contention of individuals, it has been his aim to render this paper as nearly impersonal as possible, in avoiding the fallacy *et tu quoque:* had he chosen the personal method, he could have used a number of choice arrows that remains untouched in his quiver.

LEVI C. LANE.

SAN FRANCISCO, CAL., July 10, 1885.

SHADOWS IN THE ETHICS

OF THE

INTERNATIONAL MEDICAL CONGRESS.

For the information of readers who have not followed the International Medical Congress through its phases of change since it was decided to hold the next meeting in this country, it may be stated that the original committee of seven men, to whom the American Medical Association in 1884 gave the matter in charge, being invested, in accordance with the Act creating the committee, with full powers to perfect such arrangements as would secure a successful meeting, proceeded to outline the work that was to be done, by the creation of nineteen sections, representing in detail every department in the Science of Medicine.

This division of the work, copied mainly from the method pursued at the preceding sessions of the International Medical Congress, was assigned to a like number of committees, composed of medical men selected from different sections of the United States.

The American Medical Association, at its recent session in New Orleans, declined to accept the work done by the committee appointed the previous year, and created a new one, with instructions to revise and change the work of the former committee in whatever way it might see fit. No impartial mind will admit that there was need of revision and change of the work done by the first committee; and it is greatly to the credit of nearly one-third of the delegates at New Orleans, that they strenuously opposed it. What a chaplet is this discord to place on the grave of Dr. Thomas, who, in the discharge of his duties as a co-laborer with the old committee, lost his life! What a recompense to Drs. Flint and Billings, through whose personal efforts at the last meeting the Congress was induced to hold its first session in the New World! Their scourging finds an analogue in the fate of Columbus, who was borne in chains over the ocean across which he was the first to lead the Old World. How edifying this spectacle to the eyes of the Pasteurs, Charcots, Virchows, Volkmanns, Esmarchs, Listers, and Pagets, who are expected to honor with their presence the coming Congress!

The new committee lately met in Chicago, and under the Chairmanship of Dr. R. Beverly Cole, Professor of Obstetrics in the Medical Department of the University of California, has accomplished its work of revision, of which, at the time of writing this, I have no knowledge except of the action taken in reference to myself, and hence I know not whether local envy in that convention has invested itself with similar infamy, by cowardly attacking others,

whose absence rendered them helpless to defend themselves.

In my case the action taken was in direct violation of that in use before the common tribunals of Justice, where no one can be condemned without a hearing; and especially was it out of place in a convention sitting within that sacred circle of Ethics, whose laws aim at a higher model of right and equity than can be found in the Justinian Pandects, or in any modern code of law.

Besides the denial hereafter given of the charges against me, I will here say that no one has ever been more loyal to Regular Medicine than myself, whether professionally as a consultant, or didactically as a teacher. And this loyalty has sprung from a study of Medicine in its Greek and Latin sources, and in its later growth as contained in four prominent weeklies, published respectively in America, England, France, and Germany, a Spanish monthly, and a twenty years' reading of Canstatt's Jahresbericht, "An Annual Review of Medicine in all Lands." This reading will teach any one that there is but one Medicine, and that the Old School is its Oracle.

WAR DEPARTMENT,
SURGEON-GENERAL'S OFFICE,
WASHINGTON, June 29, 1885.

DEAR DOCTOR:

You will see the doings of the Chicago Committee in the Journal of the American Medical Association. It

made Cole, President of the Committee of Organization, and Shoemaker, Secretary. All New Code men were dropped. You were dropped at Cole's instance, as being New Code.

Drs. Hays, Browne, and myself have resigned from the committee.

It's a bad piece of business.

Regretting the results of our efforts, I remain,

Yours very sincerely,

JOHN S. BILLINGS.

DR. LEVI C. LANE, San Francisco.

I am not now, nor have I ever been, connected with the New Code movement, either here or elsewhere; in fact, the subject has never been a matter of division on this Coast. I am a member of the American Medical Association, and as a duly accredited delegate, I represented that body not long since in the British Medical Association, and my mission was not dishonored by ostentatious show there or elsewhere, during a sojourn of over two years, during which I met the leading men connected with the medical institutions of Great Britain, Sweden, Russia, France, and Germany. I am a Member of, and very recently President of, the State Medical Society of California, from which Dr. Cole was sent as delegate to New Orleans.

But my offense was quite outside of the New Code. Four years ago I reorganized in this city the first medical

school ever established on the Pacific Coast, and to increase its efficiency and permanency, I gave it a property of value greater than any sum ever before given by any physician in this country for the advancement of medical science. This school, by winnowing out improper material; by an enforced preliminary examination, and by the thoroughness of the instruction given in it by an educated faculty working in harmony, has naturally become the rival of another medical school in this city, Dr. Cole being connected with the last-mentioned school. Would it not be distrusting the reader's acumen to add further words to connect this paragraph with the subject here in question?

LONDON, Sept. 30, 1881.

MY DEAR DOCTOR LANE:

Your very kind letter of the 8th was received but yesterday. You cannot imagine how much pleasure it gave me to learn directly from you of the permanent improvement of my son-in-law, as also your expression of approbation of the conduct of my dear child in the case. A better child never lived, and in my experience, good children make good wives, and I believe she is one of the best.

It is needless, dear Doctor, to presume to attempt to express my gratitude for your unremitting attention. I feel, from what my child has so often repeated—as well as the patient—that you could not have done more had she been of your kin; and to venture to say all I would under the circumstances would result in an utter failure, hence I

will only request that you reverse our positions, and what you would feel *I do feel!* With kind remembrances to all mutual friends, in which Mrs. C. unites with me,

I remain, dear Doctor,

Yours,

R. Beverly Cole.

In addition to this letter, two others were received of tenor so similar that I will limit myself to this quotation from one of them, viz.: That, although he has his peculiarities, he is a man of heart, and, besides gratefully acknowledging the favors done, hopes the day may come when he can give some proof of his gratitude.

The services here referred to began in response to a transcontinental telegram to the daughter from the father on his way to the International Congress in London; they embrace a period of nearly three years, of which nine months consisted of nearly daily visits up many tiresome flights of stairs; for in large cities, worthy* penury is forced to take such refuge in its misfortunes. Besides these visits, frequent consultations were given at my office, in which the patient always received preferred attention. In addition to the husband, the wife also was often under treatment, and the attention to the latter reaches to within a few weeks ago.

In thus striking my name from the Committee of Arrangements, from the list of Vice-Presidents of the com-

---

* Worthy, for heredity, here presents a notable variation.

ing International Congress, and from the Section of Surgery, he has paid his debt. Stones—and only stones—have been received for the life saved.

One seeks in vain for words to describe such action, since such action has been so nearly unheard of as to have rendered it unnecessary to create words for its expression.

The honors conferred on me by the original Committee of Arrangements were given unasked for. I had already sketched out some work as a contribution on a topic of surgery, in which I have had much experience; besides, I was in negotiation with a man of wealth for the establishment of an international medical prize for researches upon typhoid fever. These facts are here mentioned to show that I had not entered on this labor with an idle hand.

But my retirement has the solace of most excellent company; retirement with such men as Drs. Hays, Browne, and Billings can be borne. The first, the worthy heir of an illustrious name in American medicine, is the editor of the veteran mouth-piece of American medicine, viz.: *The American Journal of Medical Sciences.* The second has long been an ornament to the Surgical Corps of the United States Navy—a body of men second to none in refined culture and scientific attainments. As to the third, he and Dr. Cole were both at the Congress in London, 1881; and while Dr. Cole, conspicuous in his livery of bombast, was bringing derision on himself* and odium upon American

* As he also did upon himself in this State, where the only effort in his department destined to live is to be found in the proceedings of the State Medical Society, in which he dishonored the character of every mother and daughter of California.

medicine by his exaggerations and incredible statements; while he was squandering the golden moments of that learned body, in the parade of his vaginal mechanical jim-cracks, which adverse criticism has already consigned to the lumber-room of oblivion (where a lover of antiquities might have found them years ago)—while this man was strutting and filling the learned ears from all nations with his "sound and fury." there stood there another man of unpretending demeanor, whose learned escutcheon bore the simple inscription, *Modesty;* and whose able papers, besides partially atoning for his countryman's parade and superficiality, won for their author an enduring place in the literature of the Congress, as well as in the memories of those present, and caused him to be recognized as the tongue, voice, fame, and honor of American representation in that august assembly; and this man was—JOHN SHAW BILLINGS.

MEMORIAL WREATH

FOR THE

PROSECUTION

IN THE

GRAVES MAL-PRACTICE SUIT.

By LEVI C. LANE, M. D.,

Professor of Surgery in Cooper Medical College, San Francisco.

"Quæ medicinæ non sanat, ferrum sanat; quæ ferrum non sanat, ignis sanat."—Aphorism of Hippocrates.

(Reprinted from the "Pacific Medical and Surgical Journal and Western Lancet.")

W. A. Woodward & Co., Printers, 522 California st., S. F.

MEMORIAL WREATH

FOR THE

PROSECUTION

IN THE

GRAVES MALPRACTICE SUIT.

By LEVI C. LANE, M. D.,

Professor of Surgery in Cooper Medical College, San Francisco.

"Quod medicina non sanat, ferrum sanat; quod ferrum non sanat, ignis sanat."—Aphorism of Hippocrates.

The medical profession of California have watched with special interest the case in which Dr. G. W. Graves, of Petaluma, was sued, over a year ago, for alleged malpractice. The cause of action was based on the charge of improper treatment of an injury to the ankle of an old woman—one of those injuries where, despite the utmost care and skill on the part of the surgeon, the perfect use of the joint can never be regained. Though it was proven by written authority, as well as by prominent expert evidence, that the doctor had treated the case properly, and had obtained as good results as are ever gotten in such injury; yet the legal managers of the prosecution, uninfluenced by these facts, of which they became cognizant at the very commencement of the trial, have waged against the defendant during this long period a most merciless legal warfare, and one that has had but one parallel in the medical annals of this coast. And the outrage was further intensified by the fact that the plaintiff's family had received unremunerated services, during many years, from Dr. Graves.

Early in the case a compromise could have been effected, but the defendant, with more regard for his professional honor than for his purse, refused every overture of the kind; and, aided by

the moral as well as the financial support of the profession, and inspired by the principle which guided our forefathers in their struggle, viz., *millions for defense, but not a cent for tribute*, he has made a resistance that deserves all praise, for a compromise, though it would have saved him money, would have been the signal for many similar suits against others.

The case has been tried three times, the first trial resulting in a verdict for eight thousand dollars against the defendant. This verdict, so at variance with what should have resulted from the evidence, awakened in the mind of almost every physician in this State a feeling of intense indignation and the determined resolve, that the outrage should not be submitted to. At once, contributions were freely offered for the defense, amounting in the aggregate to nearly two thousand dollars. With this money additional legal counsel was employed, viz.: Hall McAllister, Esq., and Dr. E. R. Taylor of this city; and, after no slight effort, the shameful verdict was set aside, and the case re-opened for trial.

At the second trial no decision was arrived at, the jury being divided; but at the third trial justice was triumphant, and victory crowned the side of right in a full acquittal of Dr. Graves.

This verdict, so gratifying to the defendant, is almost as much so to the general profession, of which several of the leading members, besides liberally contributing money, spent some days of precious time in attendance at court, to reach which, the most of them were compelled to travel long distances. But all will now feel more than repaid in the consciousness of having aided in rolling back the flood of injustice which was threatening to ingulf in ruin a professional brother. And besides this feeling of happiness, their united action has taught the lesson, that should a like instance recur, they will be quite as ready for concerted defense again; for, though the lance which they have lately so successfully wielded is laid in its rest, yet all will see to it, that its point is kept sharp, and ready for action. All may be assured that this serpent, the foul offspring of communism, as often as it may be evoked from its slimy pool by legal incantations, will be returned again to its festering home without doing other violence than leaving its fangs in those who may conjure it forth. Whenever this Hercules, in the form of a mal-practice suit, is sent forth in quest of golden apples, the profession are determined that he shall return, as on this occasion, laden only with apples of Sodom, whose bitterness will

leave an interminable writhing in the mouths of those who sent him on such mission.

The fancy of Schiller has painted a strange scene, in which young Moor is studying how he may shorten the life of his father; he decides the surest plan would be to suddenly fill the old man's heart with intense happiness, and then, in a moment, to overwhelm him with grief and despair; in the course of this suit, this experiment, instead of in fancy, has been exhibited in reality. What wild joy the actors in this prosecution must have tasted when they obtained a verdict for eight thousand dollars; and with what heart-aches they must have been tortured when they saw the last glitter of those ducats returning to the pocket of their rightful owner! Some curious psychologist would do well to chronicle how much their life-span has been shortened at its distal end by such experience.

Great praise is due to the attorneys who aided in the defense: Mr. McAllister, too long ago recognized as *facile princeps* at the bar of California, for any new salutations of praise to touch his ear, deserves thanks for snatching some time from his overworked hours, and ably co-operating in the management which led the way to final victory in the case; and, especially, is high credit due to Edward R. Taylor, who, though a graduate in medicine, has chosen the law as his profession; to his untiring work the final result is mainly due; for, besides bringing that special knowledge, which is so valuable in such a case, he threw his heart and soul into the matter, and worked with the zeal and enthusiasm of a personal friend of the medical profession.

The history of this case would be more satisfactory if it could close without reference to certain medical men who allied themselves with the plaintiff, and, as far as it was possible, aided in the prosecution. Some of these men are residents of San Francisco, and gave their evidence by deposition; but the two who were especially active in this work—unnatural as throwing stones at a mother—were present at the trial, and mingled in their evidence an amount of malevolence which has brought on them the universal contempt of the medical profession. Their position now finds a proper parallel in the case of the traitor Benedict Arnold, who, after the close of our Colonial war, being asked by some European for introductory letters to the New World, replied, that he was the only man in Europe who had no friends in America. As Ulysses, in his visit to Hades, being repelled by his old enemy Ajax, learned that the resentments of the dead

are eternal, so these men will find that those of the living are no less so. Should they desire to return to the profession, whose altar they have sullied, ignominy, as a flaming sword, will forever prevent them. Such action, whithersoever it may turn, will find no rest; for should it think to find a screen for its offences in the flight of years, it will search in vain, since in the untrodden labyrinths of futurity, there will be found no hidden recess where the finger of infamy will not follow it; nay, more, death itself will give such action no refuge, since DISGRACE and DISHONOR will carve their initials upon its grave-stone as an unfading epitaph.

SUPPLEMENT.

The above was written and intended as a memorial offering to the defeated in this important trial; but while it was in the hands of the printer, and on the eve of appearing, information was received that the plaintiff had asked for a new trial. But as a pleasure deferred is not a pleasure lost, so the solace which might have been theirs at an earlier hour, has been but briefly deferred.

Not content with a verdict which has given satisfaction to all fair-minded persons, not satisfied with the unmerited scourging with which they have tortured the defendant for many months, yet unconvinced that the support which the profession had given the defense was founded on the knowledge that he was wholly innocent of any neglect of duty to the patient, the prosecution, finding it hard to relinquish a prize, which at one time seemed plainly to be theirs, have asked for a re-opening of the case. And thus they would add another scene to this merciless drama, in which honest thrift and prudent industry have so long been held the counterpoise in the scales of justice, of dissipation and improvidence. But this last menace must expire as a menace, for death has too effectually touched the vital centers of this many headed serpent to admit of resuscitation, in fact, this final effort has evidently been made, more for the purpose of annoyance than with any hope of success, since it has been the boast of, at least, one member of the prosecution, that a purpose of the suit was to humiliate the profession which had so persistently defended one of its members. To what a depth of moral degradation the spirit must have fallen, that can indulge in such fiendish malice. The espousal of the cause of Dr. Graves by the profession was, without doubt, the most

praise-worthy movement which can be found in the medical history of the Pacific Coast. Men who have repeatedly declined tempting fees to make professional visits in the country, on this occasion, forgetting every selfish interest, abandoned their business, and made great personal sacrifices. And forwhat object? To defeat justice as the prosecution cunningly put it in their argument? No, it was to promote justice and prevent its miscarriage. And all this was done without a single hope of reward, either direct or contingent. In fact, the thought of profit and gain entered the minds of the medical witnesses who testified in behalf of the defense, quite as little as it did the head of Dr. Graves, when he went to the house of this misguided woman to treat her injury. And were those witnesses now sued for their pains, the outrage would find a parallel in the treatment which the physician has received from the hands of this woman.

Indeed, the errands of mercy and charity in which the physician's feet are daily wearied tend to banish from his heart that selfishness which is so prominent an element in human nature; nay, more, to lift and place him on a plane of self-abnegation, quite unknown to those who have not been so tutored. To support this assertion by pertinent proof, what greater example of altruism and extinction of self can be found than the fact that no physician is permitted to conceal or patent any discovery in medicine, and if he does so, he is guilty of an ethical offence which excludes him from all association with his fellows. Adherence to this rule, which goes a step beyond the golden, has cost many a medical inventor and discoverer a prospective fortune. Had Jenner patented vaccination, to-day his heirs would have the wealth of Rothschilds. And yet of this profession, whose cardinal principle has ever been to work for the world rather than for itself, a member has been singled out whose excellent attainments and skill, acquired in civil and military practice, have never been questioned, and were especially illustrated in the good results obtained in the treatment of this woman; and because he sought to vindicate his honor as a physician and refused to surrender his purse when parties, brigand-like, were seeking, under guise of law, to wrest it from him, he has been pursued with fell diligence, and, for month after month, scourged with a whip of scorpions. Unmoved by the sight of this "man of unsubdued spirit, bravely struggling against adversity, a spectacle in which God himself takes delight," to

quote the words of Eugene Sue, the prosecution have added to the enormity of their offence by declaring that they intended to humiliate the profession who, at the call of their victim, came to his aid. They have probably learned that the seeds of humiliation, if they would flourish, must be planted in far other soil.

As the parties of the prosecution have failed in every object for which they contended, the question arises, what have they done for themselves? If historic indifference, under the guidance of impartial criticism, cast its eye on the disconsolate group, and indulge in a few observations, the following facts will be learned. The plaintiff, no longer needing her crutch or malposition of the limbs, has won something, but her attorneys, after having worked with the energy that is inspired by empty maws and empty purses, and having seen the prize that was once won fall from their grasp, now stand as "men who have had their losses." Nay, more, the hostility which their envenomed action has awakened in the mind of every honorable physician in this state, has projected a long penumbral shadow athwart the orbit of their future lives.

As to the medical prosecutors, who listened to the temptation to gratify local envy and personal hate, and to do so, like the young of the spider, turned on and devoured their mother, but little additional need be entwined in the wreath already woven for them. None will envy them the satisfaction they have had in torturing a professional brother. To mitigate the bitterness of the cup, which the hand of retributive justice surely lifts to the lips of him who unjustly injures, they should hasten their repentance, and as visible evidence of the same, they should sprinkle their heads with the ashes of their burnt honor, and clothe themselves in sackcloth woven from the tattered remains of that once spotless robe with which they were invested when they were admitted to the profession of medicine, and took on themselves its vows.

How different in contrast stands the defendant! With arms well tutored in the practice of defense, with patience begotten of prolonged discipline, gladdened by the approval of friends, and the encouraging salutation of every upright member of the medical profession, with heart full of content, and warmed with emotions of triumph in a just cause, he now, with fearless spirit and armor well tried at every point, stands erect, and, come what may, he will go forth an assured victor in the struggles of life.

AN ADDRESS

Delivered to the Graduating Class of Cooper Medical College, Nov. 13, 1890.

BY

LEVI COOPER LANE, M.A., M.D. (Berlin), M.R.C.S. Eng., LL.D.

San Francisco, Cal.

AND

AN ADDRESS

Delivered on the occasion of the Unveiling of the Bust of Dr. L. C. Lane, at Cooper Medical College, Nov. 13, 1890.

BY

EDWARD ROBESON TAYLOR,

San Francisco, Cal.

SACRAMENTO, CALIFORNIA:

[Reprinted from the OCCIDENTAL MEDICAL TIMES, January, 1891.]

Reprinted from the OCCIDENTAL MEDICAL TIMES, January, 1891.

AN ADDRESS

Delivered to the Graduating Class of Cooper Medical College, November 13, 1890.

By LEVI COOPER LANE, M. A., M. D., (Berlin), M. R. C. S. Eng., LL. D., Professor of Surgery, Cooper Medical College.

Nullus argento color est, nisi temperato splendeat usu.—*Horace.*

Non quia intercedendum putem imaginibus quae marmore aut aere finguntur: sed ut vultus hominum ita simulacra vultus imbecilla ac mortalia sunt, forma mentis aeterna, quam tenere et exprimere non per alienam materiam et artem, sed tuis ipse moribus possis.—*Tacitus.*

Ladies and Gentlemen: Among recollections most valued by me, is that of a visit to Thomas Carlyle; he was in his eightieth year, and referring to this, he spoke plaintively of his advanced age, and quoting Ossian, said: "Age is dark and unlovely." Though time had made a ruin of his body, and his once clear, blue eye had become dry and lustreless, still in his remarkable conversational powers his intellect showed no impairment; among the glittering thoughts which fell from his lips, the following I most prized: "Yours is the greatest of all human professions; indeed, mankind would be quite as well off if the other professions were put to bed."

For three years, Cooper Medical College, your Alma Mater, has trained you with a teacher's arbitrary strictness, yet combined with affectionate tenderness; to-night she gives you the legal passports which admit you to that profession declared so great by Carlyle. You have long looked hopefully towards this hour, for it completes the discipline for a life's labor in the field of humanity. From your course of studies you have come forth victors; the spectre, Failure, which, in fearful outline, has so often hovered in your horizon, and chilled your breasts with doubtful apprehensions, has vanished forever. The twelve sentries who guard the

honors of your Alma Mater, have rigidly challenged you, and have failed to find cause to deny you admission. You are permitted to bear the palms, since you have proved yourselves worthy of them. Unceasing vigilance guards the prizes of this institution; and those who win them must be worthy of them.

The lover of ancient history who visits modern Rome will find much of antiquity to awaken his interest; and on a former occasion, when a pilgrim to that classic soil, the warmest enthusiasm was awakened in my breast when I touched the ground on which the ancient augur stood, and, by means of his arts of divination, he looked into futurity, and caught glimpses of coming events. In the field before him he placed his horoscope, and divided this into a right and left quarter, and according as birds were caught sight of on the left or right side, so the soothsayers saw portends of good, evil, glory, shame, success or misfortune. As said, this field and its incidents of olden memory awakened in me intense interest; on its far off limits I watched the flight of a bird, which, two thousand years ago, might have been the signal for starting on some military expedition or for the decision of some important matter of State: as the bird vanished in a distant wood, the current of my thoughts was broken, for the sight of the dome of St. Peter's church reminded me that the occupation of the augur had ceased, the ancient religion was a thing of the past, and that olden Rome had yielded her imperial power to her northern subjects. If deep interest was awakened by that famous plain of ancient augury, a far greater enthusiasm is kindled in me as I recall the fact that I now stand on the verge of a field, which is as rich in the secrets and unborn events of coming years as ever lay before the augur of olden time.

The ancient seer couched his prophetic utterances in equivocal terms, a license which his pliant language permitted; for example, the famous Delphic oracle could be truthfully interpreted either for or against victory. But the omens which appear in the horoscope of your future are very different, since they are involved in no ambiguity; their interpreter has no need of uncertain terms to conceal their import, since they are obvious, clear and self-evident. On the left, a quarter in which the old diviner sought for omens of good fortune, success and victory, instead of a plumed object, I observe a star-like pentagon, at each illumined angle of which stands an inscription in plainly written characters; these inscrip-

tions, glittering as if traced in light, read as follows: Earnestness, Sincerity, Cheerfulness, Willingness to Work, and Self-denial.

Freed from the embarrassments which shackled the ancient seer, I proceed, at once, to my task, and will commence with Earnestness, since I find it at the summit-angle of the pentagon and in largeness of character and illumination it is more conspicuous than any of the others, All great reformers who have stepped outside of the domain of accepted doctrines, whether in religion or science, have obtained a following through great earnestness; sustained by this virtue, such men have been steady in action, unwavering under opposition, unmoved by derision, faithful to convictions and undisturbed by danger. Such men in battle are found in the fiercest of the fight, animating their followers by example and word to stand firm and never give an inch. Even in a champion of error, such a quality commands admiration and attracts a following. This quality enabled Mohammed to convert, first his wife, then his brethren, and later, all Arabia, to the belief that he was a divine envoy; and thus one man was able to originate and propagate a new religion over a large portion of the earth. The Prophet was almost equaled by Peter the Hermit, whose wild earnestness awakened throughout Western Europe both peasant and prince to unite in a common expedition for the recovery of the Holy Sepulchre; a war in its strange and romantic character without analogue in human history. This was the instrument with which Cromwell cut his way through all ranks to the throne of England; and though he refused to ascend this, yet he grasped and wielded the sceptre at its side, with more force than any monarch. This commanding quality in our own Washington, won the hearts of his soldiers and enabled him to lead them through hunger, cold and untold hardships. It was this quality, woven ineffaceably into the texture of the Pioneers of California, which prompted them to leave their homes and meet discomfort and danger in every form; and after uncounted hardships to build up for us this wondrous home in the far West. These men were intensely earnest men. Countless examples of this virtue have been exhibited in the history of our profession; a mere citation of those meritorious names would occupy the remainder of this hour; it would compel me to omit the other inscriptions of our pentagon; this I cannot afford to do, and so I must limit myself to the mention of only two or three names. No

letter one of Jenner than that of Edward Jenner, whose earnest and untiring work in the study of vaccination has given the world the means of guarding men against small-pox, one of the foulest and most terrible of human diseases.

In an autograph letter which I have the good fortune to possess, Jenner gives a glimpse of some of the trials through which he passed before his discovery was accepted by the world: alluding to an investigation which was being made by the Royal College of Physicians of the subject of vaccination, he says: "This inquiry will lay open all those ridiculous pieces which have so long haunted the metropolis with their *cow-faces* and dismal hootings against vaccination. In this he thrust a gibe at the ridiculous theories which were urged against vaccination, that in time it would convert the human face into the likeness of that of the ox. And further he refers with great pride to the recognition of his discovery by the King of Spain. Little did Jenner then see, that when contemporary malice and envy had expired, he himself would be enthroned among the greatest benefactors of humanity, and wear a crown less mutable than that of Spain, which has since been the sport of political change, and once disappeared for a time in the vortex of popular revolution. Jenner's crown is more durable than one of gold, since it is composed of gratitude woven by hands which, through his discovery, have been protected from being marred by the spotted serpent which, before Jenner's time, was lurking in the pathway of every human being.

Another example of what an earnest purpose can accomplish is that of Lister, who has justly won for himself the title of Great Reformer in modern surgery. In the early announcement of his doctrine Lister, like Jenner, met with intense opposition and even ridicule. I recall reading in an English journal a mention of him as the fanatic of the North, who was endeavoring to charm away inflammation by doing his operations in mists and vapor. Arrows tipped with epigrammatic mockery, for a time fell quickly around him from every side. To the followers of the old modes, so abrupt a change could not be otherwise than painful. The greatly modest, but equally earnest man, continued his work, and established the doctrine, of immense value to mankind, that inflammation, once so fatal in any species of wounds can, with certain precautionary procedures, be avoided or safely controlled. Lister has triumphed, and his name has taken place among the great

benefactors of humanity. Like Faraday his name has been assigned a place in all modern languages; and in ours Listerism will endure coeval with Faradism. And even should our race, with its wonted ingratitude, forget his name, yet his good work is assured of perpetual continuance in the years which it will add to human existence; and from the heart of the wounded man whose pains are reduced to easy tolerance, the incense of gratitude will constantly ascend, though it be to an unknown benefactor.

In every place and position of life, earnestness commands attention; nay more, it becomes the object of reverent admiration, and in their admiration men have chosen it as a proper name. The hardy Teuton, whose military achievements recently placed him at the front of Europe, finds no fitter, no nobler name for his child than "Ernest."

Earnestness coupled with genius insures supremacy to the fortunate possessor; when combined with mediocrity it commands respect, and when united to dulness it exempts from contempt. Hence, viewed from every side, to this quality must be conceded the rank of noble among human virtues; and therefore, in words clear and prominent, in the heart of each of you who hopes for success, should be written the resolve, ever to be earnest. Such a resolve carried into action will give you a commanding power in the exercise of your profession; by means of it you will kindle new life in the faint hearts of those who shall appeal to you for relief from pain, depression and sorrow. In the perilous voyage through the unfathomed sea of disease, across which you are to serve as guides to unfortunate travelers, this quality will enable you to safely manage the helm and rescue from death the precious freight entrusted to your charge.

In our five-sided oracular figure, next to Earnestness lies the angle bearing the inscription, Sincerity; and although things which have been said of the former may be spoken of sincerity, yet there is so much difference between them that it can be said that one may be earnest and not sincere; still no person can be sincere without being earnest. To illustrate this, a man may be earnest in falsehood, and hence he is insincere; but if he be sincere in his profession of a belief, thence must he be in earnest; and hence, as a deduction, earnestness to be of value must be linked to sincerity. The word sincere, when traced to its primitive origin, means unmixed, whence by an easy transition, the idea of

purity is reached; no bad addition to the modern meaning of sincerity.

Sincerity always enforces respect, even though it be met with in one who radically differs from us in opinion. In common phrase the sincere man says what he means and means what he says; thus, paraphrased, sincerity is nearly akin to truth. Metals increase in value in proportion to their scarceness; thus uranium and platinum far exceed gold in value; in like manner the rarity of sincerity increases the world's appreciation of it. Fortunately, unlike uranium, it is not so scarce as to nearly exempt it from common use; and wherever found, it instantly receives the tribute of respect. Very differently do we listen to the utterances of the sincere and of the insincere man; those of the latter are despised even by the insincere listener. The statements of a sincere man always command our attention; and if they are made concerning a scientific subject, with which we are not familiar, they will probably be accepted and added as facts to our stock of common knowledge; statements, however, of the insincere man, are unwillingly listened to, and we hasten to forget them. The place of sincerity, whether in a friend or an enemy, is clearly known to us; while insincerity figures in the equation of life as the unknown and indeterminate x, y and z; surd quantities baffling final solution. Encke, the astronomer, from whom a comet is named, once delivered a lecture to which I had the privilege of listening, in which he dwelt upon the means of correcting, or allowing for errors made in mathematical calculations. To do this, he cast dice from the usual box on the desk before him, and having noted the numbers which fell uppermost in a number of throws, from these simple elements, born of chance, he constructed a corrective rule which may be used to eliminate the mistakes which may be made in a long calculation. No lecture which I have heard ever awakened in me more interest than did that of the aged astronomer, in which the summit of human wisdom was gained, where the fallible man forms rules by which he plucks fallibility from his mental acts and the wished for stage of perfection is reached. The old savant in his work of reaching so grand an end by a path so humble, seemed another Prometheus, bringing from heaven a spark of divine knowledge in a simple reed. But no Encke, endowed though he may be with superhuman sapience, utilizing the doctrine of probabilities, can ever formulate a rule

which will enable us to distinguish the true from the false in the utterances of insincerity; good and evil are there so intimately alloyed as to be inseparable. Such alloy, unfortunately, occurs in the utterances and publications of some medical men, who, to gain unmerited notice, disguise their insincerity and falsehood in the seductive dress of plausibility; for example, such men announce unusually fortunate results hitherto unattained in their special province of work, and thus they acquire an unearned reputation for inventive power or unusual skill. To prevent such perversion of fact seems to baffle all effort, and the only hope of remedy is in the philosophic reflection that the selective and conservative power of evolution is unrestingly at work, and that, in the alembic of unlimited time, this agency is tirelessly separating the eternal verities from the dross of untruth.

In the material interchange and exchange which, between well men, occur in infinite variety, insincerity is an occasional factor; and business men, who belong to the school of expediency, claim that it is unavoidable; but in the society of the sick where you are to be busied, insincerity is singularly out of place. The victims of pain and sickness demand and look for sincerity in those from whom they expect relief from their misfortunes. Man can tolerate some deception and misrepresentation in the purchase of house, land or furniture; loss there may be tolerated, but if he be cheated in regard to his health, the injury is irreparable. I remember no more eloquent words than were once said to me by a poor Italian woman whose child was fatally sick. Said she: "Come often; if money goes it can come back again; but if my child goes, she will never come back again." This language was never excelled in sublimity by any words spoken by Cicero; and that the pale messenger bore her child away never to return again, was one of those bitter experiences of which, if I minutely scan your horoscope, I observe similar ones traced in dark lines by the finger of destiny.

Insincerity by arts of disguise may for a period escape detection, and for a time it may pass its spurious coin; yet ultimately it will suffer exposure; anon it will forget its mask and expose itself. Insincerity long practised at length declares itself in form and feature. The possessor's character is slowly but unmistakably engraven by the passing years in his face, and so plainly is it engraven that it is legible even to the illiterate. These facts are

well-known to, and utilized by, the artist. The following instances are offered as illustrations of this: In the Frukirke, at Copenhagen, there is a number of the masterpieces of Thorwaldsen; and among these none is more remarkable than the scene of the Last Supper, executed in marble bas-reliefs on one of the inner walls of the church. Conspicuous among the characters is the figure of Judas, the traitor, in whose face insincerity and treachery are written in lines easily read. The mere sight of this face will immediately awaken distrust and dislike in the spectator's mind; and at the same time, he is seized with wonder at the skill of the chisel, which has so truthfully delineated the character of Judas. Cold, reserved, calculating insincerity has perfect expression in the face of him who is in the act of betraying his Master. I will offer another corroborative illustration: the admirer of German legendary lore is especially pleased by his visit in Munich to the Niebelungen-Hall, on the walls of which are the pictorial illustrations of the Niebelungen song, the early epic poem of the Germans. As the old Greek had his hero Achilles, so the old Teuton had his Siegfried, whose arm in equal combat was invincible. Unfortunately, however, Siegfried had a treacherous rival, von Hagen, who killed him with the stab of a spear from behind, while Siegfried was stooping and drinking from a fountain of water. Treachery is most faithfully portrayed in the features of von Hagen; and though painted by another artist, his face is an accurate reproduction of Thorwaldsen's Judas. In fact, it is clear that insincerity has everywhere but one face. And to the coincidence mentioned, your augur can add another; for he has known a face which had been molded by the great artist Nature, whose possessor had won notoriety by his insincerity and treachery. This face might have served as the original of that of von Hagen in the pictorial hall of Munich, as well as that of Judas on the church wall at Copenhagen.

On the other hand numerous examples might be cited proving that sincerity stamps its image on the human face; and such image, when seen, never fails to awaken in those who see it, trust and confidence. Such faces in countless numbers were those of the true, good and brave who have devoted themselves to the unselfish work of relieving the ailments of suffering humanity. Enough has been said in praise of this virtue; let it be firmly interwoven in your moral nature, so that it will quickly remold

itself in feature and face, and let it be there associated with earnestness, since, through their union, these virtues strengthen each other.

The third angle of our horoscopic figure bears the inscription, Cheerfulness. To-morrow you enter a sphere, where, on every side you will meet the subjects of pain, agony, misery, wretchedness, sadness, distress, despondency and despair. Breaking hearts will there pour out their sorrow to you. Humanity, struggling in the waves of unutterable anguish, will reach out its arms towards you, begging for rescue. For, as Virgil led Dante through the dismal abodes of the dead and displayed to him every degree of suffering, from the mild to the indescribably terrible, so your calling must lead you through every circle of suffering, from that which is merely fancied to that which is so terrible that the pen of a Dante would be unable to depict it. The strong frame, hitherto so powerful that it seemed proof against disease and pain, will summon you to its side, and with childish plaint will entreat your aid; the cry of the sick infant, and the more pathetic one of its anxious mother will, anon, touch your ear; the piteous cry of helpless old age, which, through years, has lost almost every attribute of its former self, will also supplicate the aid of your art, and beg for the boon of a few more days: (one such once said to me, he would give me a fortune if I would prolong his life a year.) Such are the scenes of misery and such the acts of woe, of which you are to be the accustomed observers. In your ministration to the wants of this wretchedness, no more potent instrument can be brought than that of a cheerful mind. This is particularly true in the treatment of the chronic invalid, whose malady is constantly nourished by the habit of morbid introspection, and which may often be banished for hours by a few cheerful words skilfully spoken by the medical attendant: thus, cheerfulness, by a little address, pierces the darkness which beglooms the patient, and is able, for a time at least, to dispel the clouds which darken his sky. The laggard heart of despondency is thus made to pulsate with new vigor; and the sick one lapsing downwards, as he imagines, towards the grave, becomes inspired with new strength, and is made to retrace his steps towards health again. Thus a mental tonic is administered, vying in its action with the best chalybeate; and in its work it awakens resolution and courage, before which vanish dejection and fear.

In the most perilous occasion or dangerous emergency of life an act of self-poised cheerfulness has given great solace; and where the cheerful person was the one imperiled, it has been the means of his rescue. Cases illustrative are the following: When, in 1857, the ill-fated steamer, Central America, which went down in the Atlantic freighted with so many Californians, had sunken and left more than a hundred men floating in the waves, one brave man cried out, "Three cheers for the Central America." The effect, as a participant has narrated to me, was magical; the call was heartily responded to, and for a moment all quite forgot the watery grave which was yawning beneath and in a few hours afterward received the most of them. That brave man merited a better fate than befell him, for, not being distinguished in that mass of struggling men, his name has been lost; his act, however, lives and deserves a lasting place among deeds of valor. Another case to the point was that of a surgeon in the Union army, during the late war, who on a certain occasion, having dropped his scalpel and taken up a musket, was taken prisoner by the Southerners. The offense of a non-combatant caught using arms, according to military law, is punishable by death. The surgeon was tried by a court-martial and sentenced to be shot; yet, to the credit of those who held him a prisoner, he was offered opportunities of escape, but which his delicate sense of honor caused him to decline. In accordance with the sentence, a file of soldiers was detailed to shoot the prisoner. As the surgeon stood before his executioners, he saw that some of them were barefooted, when availing himself of the ready cheerfulness which was a prominent element in his nature, the surgeon kicked off his shoes, and throwing them towards the soldiers, remarked that he would present them to one of them, since where he was going he would not need them. These lucky, cheerful words won the hearts of those who stood ready to fire, and lowering their guns they allowed him to escape. This story was told me by the one who was the subject of it, and to-day he is a worthy member of our profession in St. Louis. As a few words, the outburst of a cheerful temperament, turned the intruments of death aside and saved the surgeon's life; so you, by the timely exercise of this quality, may sometimes turn aside the arrows of disease, or cause them to fall harmlessly at the feet of their intended victims.

Cheerfulness, though such a jewel itself, becomes coarse when

it degenerates into levity; nothing is more out of place than the latter in the sick room; more than once have I heard a loose joke add to the sufferer's pain and fill him with disgust for the jester. The sick man longs for encouragement and hope of an early release from his confinement. The careless joke may hamper the key which might, otherwise, have opened the doors of his prison. The patient's heart is athirst for a cup of enlivening inspiration; and for this invaluable restorative, he makes great and constant demands on his physician; to supply this the physician should have a perennial fountain of cheerfulness in his own breast. If, however, nature has been churlish to him in this endowment and to the sick room he carries his melancholy face and cheerless action, and deals out to his patients portions of his own personal woes, then the small demand for his professional services will soon give clear hints to such a physician that he erred in his choice of a profession. The sick man must have cheering hope; for this he pays; and if in its stead he receives the gloomy prognostics of a Cassandra, then he is cheated in both purse and body. Enough has been said to prove the good value of the virtue which stands third in our angled symbol of presages. Cultivate this quality, and if you fear that nature has not been generous in this gift to you, then enter not the household of human suffering where cheerful benevolence and not toxic melancholy has work to do; or, if you do enter this household, as a preliminary, delve more deeply into your heart, if perchance there may be found there some undiscovered fountain of cheerfulness.

The next virtue of which I catch a glimpse in the prophetic field is humbler and less brilliant than those already mentioned. This is Willingness to Work. Man is not disposed by nature to idleness, yet most men dislike continuous work; especially in the young do we find an element adverse to occupation in which there is constant sameness. Though busied, they desire frequent change. The great discipline of childhood consists in overcoming this desire for the ever changing and the ever new. To accomplish this, both the teacher and the taught have arduous labor; though the efforts of the teacher are often crowned with success, yet sometimes, his tasks are like the labor of the daughters of Danaus, who were condemned to fill with water, buckets which had no bottom. But through diligent effort in youth, a habit and love of continuous occupation may be firmly planted;

and when once so disciplined, the fortunate youth is most unhappy when his accustomed occupation is interrupted; to one so molded, constant employment brings the sweetest enjoyment. These are strange words to the idler and the loiterer, who are searching in every quarter for mutation and distraction. The disciplined son of continuous and regular labor is happy, and he adds to the happiness of those around him; he has reached the highest position attainable in human existence. But those who enroll themselves in the army of idlers and loiterers, who march in quest of diversion and distraction, will soon be captured by disappointment and misfortune; or, should they attempt escape by retreating, there is no rescue for them in that direction, for in starting they burnt their ships behind them. A millstone about the neck of such would do good service, both for them and the world.

For you, perhaps, this moral excursion was scarcely necessary, since I have learned that you are disciplined workers, and that the pleasant custom of labor is established in each of you. I hope, however, that the excursion has not been made in vain, and that though the habit may have been well planted, perhaps the fostering words I have spoken may cause it to take deeper root. I remember, too, that the ceremonies of this night mark a great change in the current of your work, both in character and direction. To-morrow you offer your services to the world, yet the world will not be in haste to accept these services, for, before doing so, the world for a time, will composedly scan, criticize, and at length, leisurely weigh you in its scales. Your position to the world is similar to one who has business with some high dignitary of State who, insolent in his office, at the time of the visitor's call, is reading his newspaper; the dignitary will not turn his face towards the visitor until he has finished his paragraph, and then he only does so condescendingly. Meantime, while the world is reading its paragraph and weighing you in its scales, how are you to be employed so that you will not lose the habit of work? This time may be valuably occupied as follows: The first thing you should do will be to read the numerous notes you have taken during your studies. The clinical history of the cases which you have studied in the hospital or dispensary, should be read and re-read until they are indelibly written in the "book and volume of your brain,"

whence as unerring guides they can be invoked for future use. With these histories you should become so familiar by rehearsal that they become enduring elements of your conscious self. Nothing is more unsatisfactory than to meet a practitioner in consultation whose knowledge in scattered, fragmentary incoherence, avails him nothing for practical use. As the bee which gathers crude sweetness from many flowers, carefully elaborates his materials before they become honey, so the knowledge which you have gathered from many sources must be carefully assimilated in your mind, before it can properly aid you in your professional work. This mental assimilation, consisting of correlation and union of the facts, which lie sundered in memory into one harmonious whole, is a work quite as important as was the acquisition of those facts. And in those days of probationary waiting, should the world through sympathy with you deign to entrust a few of its indigent sick to your care, diligently study such cases, and compare them with the types which during your studies, have been observed; and if the cases presented to you differ from any of the types which you have observed, then you should place them as near as possible to those you have seen; thus doing, as Celsus says, you will not err in your treatment.

As nutrient material, when consisting of a variety of things, best accomplishes its purpose, in like manner the understanding reaches its best development, when the mind is not always directed in one channel of thought. Hence, along with the review of your notes and the reading of a journal containing periscopic selections of current medical literature, excursions may be profitably made into the domain of science and literature. As books which may be usefully read, are Grote's History of Greece, Gibbon's Decline and Fall of the Roman Empire, Buckle's History of Civilization, and some of the leading plays of Shakespeare. And if you are fortunate enough to know and remember Greek and Latin, employ two or three hours every week in reading some choice selections in these languages. A few lines read in Homer and Thucydides, each week, will enable you to retain the Greek, the most wonderful tongue in which the human mind has ever voiced itself. In the Latin language, of which every medical student must know something, I commend Celsus as the most useful and interesting of classics. One finds in the work of Celsus an epitomized summary of the essentials of medicine, told in a

style of force and terseness which cannot be reached by any modern language. The Celsian quadrangle of *rubor et tumor cum calore et dolore*, tell more about inflammation than one often finds in a hundred pages of a modern writer on this subject. And likewise his few pages containing a review of the doctrines of the old sects in medicine, contain facts enough to make a modern octavo if they were presented in the dilute verbiage in which the modern writer too often dissolves his paucity of facts. And besides Celsus, Tacitus and Horace should have their half-hours; in the former, more eloquent lines can be found than exist in any other author, ancient or modern. A Welsh proverb says, "as honey flows from the honey-comb, so does music flow from the strings of the harp;" the music of the lyre of Horace excels honey in its sweetness, since in the varied measures of ode, carmen and satire, it can awaken all the emotions of the human heart, whether of mirth, gaiety, sadness, solemnity or sublimity. No wonder that Condorcet, when concealing himself to escape the threatening guillotine, stole at night from his hiding-place to a friend's house and begged for a copy of Horace. And if your linguistic acquisitions have taken in, as should be the case, some of the modern tongues, then in French and German you will find inexhaustible stores which offer their treasures to you, both in medicine and literature. Some one may say, why not read translations of works in other languages; that might, in a measure do, in the modern languages, but it will not do in respect to the ancient ones; no translator has yet been able to give the spirit and beauty of the writings of antiquity. Though the artificer's skill be ever so cunning, yet in his transferring of the gems of thought from their primitive setting to a new lingual casting, the jewels receive some flaw, and immediately lose some of their original lustre. The thoughts of Horace, as rendered into our language by the able English translator, Smart, seem mutilated as birds which have been stripped of their plumes. To accomplish the task which I have sketched out for you, the work can only be done by those who are willing to labor, and who work systematically; by those in whom work has become an immutable habit. As can be inferred from what has been said this habit is not the product of spontaneous generation; the germ of it must be planted, and the rising plant must be shapen with wisdom and foresight; it must develop with depth and root and

breadth of base; thus formed, like our Sequoia, it will not be disturbed by storm or time, but lasting coeval with its possessor through the many-sided enjoyments which it brings, it will repay many times, toil spent in its planting and culture.

We have at length reached the last angle of the figure which has given so many oracular hints for your guidance in future; and this bears the simple inscription, Self-Denial; in the idea of self-denial is also contained that of self-control and discipline of the temper and passions. If man be compared with the lower animals, it is seen that in the latter self-gratification is the ruling principle of their lives, while in the former, the aims and objects of human cultivation are the domination of the selfishness naturally innate in man. Man's appetites and passions, excellent as servants, if admitted to mastery, at once become pitiless tyrants. In art, science, and all the means which contribute to human comfort, the century has made admirable advancement; yet in all our vaunted progress and in the boasted inventions and discoveries of recent years, no means have been found which will release the shackles which ungoverned passion places on its victim. Terrible is the burning heat of him whose consuming fever will seek your professional aid; and the appeal to you will not be in vain, for the recent advance in medicine has given you the means to reduce the devouring heat of that fever, but the thirst which the uncontrolled indulgence in intoxicants finally kindles is unquenchable; no known antipyretic, moral or medical, can repress or control it. In the entire range of chemical elements and physical agents composing the universe, nothing can be found from which such a remedy can be made. Yet the prophylactic remedy is common enough; it is in the possession of every youth; it is within the keeping of each of you; it is contained in the virtue self-control and in the discipline of your appetites. Let this work now be done and thoroughly done; if you fail to do so, then farewell hope, farewell honor, farewell ambition, for with your own hand you will pluck from the book of life the page on which your name is written and cast it into the waste-basket of oblivion.

Most students of medicine are poor and pursue their studies under great difficulties, and such well know the full value of every cent, dime and dollar which they possess. Yet to you, to whom these words apply, such privation has not been without its advantages. For the stony path of self-abnegation which you have

been forced to travel has hardened and strengthened your feet for the coming journey. The bitter cup of need which has often pressed your lip like a lasting tonic will give you enduring strength for the contests in the arena of life. With such training the combatant always proves a victor. Cameron, the wealthy statesman of Pennsylvania, a few years ago, said: "My son starts in life with many advantages which I did not have; but I had one which he did not have, and that was poverty." Said the great Goethe: "He who never sat weeping on his couch and never ate his bread with tears he knows you not, ye heavenly powers." I, therefore, especially congratulate you who have been the subjects of this experience, and who have not yet wholly finished with it, for your well-trained arms, disciplined by many struggles with adverse fortune, will surely gain the prizes awarded to the best work.

After the period of probation has been finished, through which, as before said, each one of you must pass, the world will accept you in its confidence; but, even then, the work of self-abnegation will have ample room for its exercise, for the world will then stand before you with a full purse in each hand ready to shower bounteous gifts on you. One of the purses, often the larger one, is that of bribery and corruption, and it offers to recompense you generously if you will aid it in accomplishing its dishonorable purposes. Among such purposes may be mentioned the slaying of the unborn, the promotion of suits of damages against corporations and individuals for feigned injuries, the creation and treatment of imaginary disease, and other dishonest action in which the medical man may become the deciding factor. When the siren of temptation salutes your ears with the music of gold in the purse of corruption, let Self-denial bind you to the mast of unswerving rectitude, and like Ulysses of old, make safe your escape; thus doing, the world will double its gifts to you from the other purse which contains ample rewards for honest dealing; and these rewards will be sullied by none of the shame and regrets which, like an inseparable shadow, ever follow gold from the purse of dishonor.

In antiquity medicine had shrines and altars erected to its tutelary divinities. At the foot of the Acropolis in Athens, I was shown where once stood a temple of Æsculapius: on the altar in this temple, Socrates, as he was on the eve of swallowing the fatal cup of aconite, directed his friend to make a sacrifice. Within the domain of the profession which you are entering,

there stands also an altar on which you will make many sacrifices. To this fane you will bring as gifts hours of night consumed in anxious watching while other men are reposing in sleep; on this altar you must sacrifice days of unpaid-for labor; loss of personal comfort and ease must furnish unceasing contributions to keep alive the fires on that altar, and anon, the brightest flames here, will be kindled at your expense by unfair and unjust criticism of your professional work. This altar which will demand incessant offerings from you is constructed of the costly materials of self-denial; on it is inscribed the word *Duty*. At the foot of this altar you have appeared to-night to make your final vows, vows in which self is laid aside and service to human suffering is everlastingly promised.

I have finished my work of interpreting the inscriptions of the prophetic symbols which should serve for your guidance in professional life. I am glad that I have found so much trustworthy instruction in the augur's field; let the figure found there, ablaze, as it is, with monitory jewels on every side, have the first place in the hall of memory; where, whithersoever you may turn, its radiant beams may strike your mental eye. Truer than the mariner's needle, these rules without deviation or error will guide you towards the star of success: for so surely as you are governed by them, against your name in the chronicles of human action no syllable will ever be written by the hand of Failure. Now, if with the further license of the seer, I turn aside the veil which conceals the coming years for a moment, both ear and eye are delighted: for, in the near hereafter, I hear the world greeting you with salutations of applause for work well done; and I see it crowning you with laurels gathered by the sister virtues to whose tutelary care I have commended you; and with the enthusiasm which this hour permits, if I look still farther down the vistas of coming time, afar off I descry other alumni who, though trained by another generation of teachers, yet as the children of the same Alma Mater are akin to you; I see that they, too, are victors, and from the Genius of Success they are receiving coveted prizes woven by Earnestness, Sincerity and their sister virtues.

Human memory has its limitations, and we scarcely have a right to chide it for lessening its burden by dropping its distant links in the past; and it is probable that sharing the

common fate of all things, the footsteps of coming years will obliterate the individuality of the work of which you now are witnesses; yet the work itself will not perish. Cooper Medical College, of which this occasion is the complementary and final dedication, through its recent endowments is insured of perpetuity, and of a lasting place in the diadem of learned institutions which adorn the brow of California. And to you, the lesson of self-denial so enjoined by precept to-night, is in its long history, still more forcibly taught by example, since over the portals of this edifice one seeks in vain for the donor's name.

The fleeting pageant of this hour has nearly ended; its counsels, its greeting, its joy, and perhaps I may add its sadness, will soon have departed and passed into the vanishing echoes of memory; a short time ago you stood before me and received scrolls on which is recorded testimony of your attainments and qualifications; you now stand before a greater personage, Futurity, who has gifts for you of occasion, opportunity and the priceless privilege of living; she reaches, also, to each of you another scroll on which no word has been written, but on which each of you must record the actions of his life; do your writing well and faultlessly, for no erasure or change there is ever permitted; very precious is the material of which it is composed; so precious, indeed, that in the great treasury of nature time finds but one such scroll for each human being.

Eight years ago in an address to the graduating students of this College, I conducted the class in an imagined excursion to the Sierras, in which the eastern shore of Lake Tahoe was visited, and from objects in nature seen there, materials for a valedictory address were drawn; that occasion was a momentous one in the history of this institution, since the original building of Cooper Medical College was just completed and was then donated by me for the purposes of medical education. The present time is a no less important one, since it is the occasion of the completion of an addition to the original building, which greatly increases the capacity of the former one, and has been constructed at a cost of a greater sum of money. This structure, which, in its space and internal arrangements is equal to any edifice of the kind in the old or new world, has been built by me, wholly, through means earned in my profession; those means have not been derived from bequests, inheritance, or trust from the one whose name the

institution bears, or from anyone else. I make this public declaration since the contrary has been stated. Any doubt upon this matter will be silenced by a reference to the archives of the Probate Court of San Francisco. It is certain that of the authors of this falsehood, the Virgilian half-line,

Sic vos non vobis * * * * * *

would never have been written; since so far from being the agents of impersonal work, they cannot concede its possibility in others.

It is a source of great satisfaction to the friends of Cooper Medical College, that since the original building was erected the school has been successful beyond anticipation, the attendance having doubled in numbers. And this is due to the excellent work which has been done by the several professors; they have done their parts with punctuality, industry and faithful earnestness; they have been free from jealousy and forgetful of self; in brief, they have done their duty and still intend to do it. This work has been recognized by the Royal College of Surgeons of England, the highest English-speaking authority; this learned body has recently given Cooper Medical College full recognition; an honor shared only by a few medical schools on this continent.

The completion of the work which establishes Cooper Medical College on a sure basis has been the chief object of my life; it has been the animating inspiration of twenty-five years of professional labor.

Completed as the edifice now is, it is conspicuous for its architectural beauty in the far distance: as the Parthenon once loomed up on the Acropolis to the voyager on the Ægean sea, so this edifice fixes the vision of him, who entering our Golden Gate gazes on our many-hilled city; and as Minerva's temple and statue awakened rapture in the beholding Athenian's heart, so this fane must become a precious image in the hearts of those who, in the future, shall here be disciplined for their mission to suffering humanity.

To medical science, which is inseparably linked to all other sciences, and to the healing art, the greatest of all arts, this property is now given by me as a perpetual dedication.

AN ADDRESS

Delivered on the occasion of the Unveiling of the Bust of Dr. L. C. Lane, at Cooper Medical College, Nov. 13, 1890.

By EDWARD ROBESON TAYLOR.

Eight years ago, with appropriate word, there was dedicated to the cause of Medicine the college edifice so well known to us all, and in which has been successfully carried on by Cooper Medical College the work of medical instruction. In fact, so successful has been that work, and so promising the future in connection with it, that the same self-sacrificing hand, which eight years ago reared the original structure, has now made an addition to it of such large proportions as to double its capacity. The college structure proper, as it now stands completed, whether considered from the standpoint of architectural beauty, or from the standpoint of adaptedness to purpose, is not surpassed by any medical college building in America, and indeed there is perhaps but one which can be said, in these respects, to at all equal it. And in its appointments and appliances for the work to which it is destined, the future will not be far distant which will see it in that regard the rival of the very best our country can boast. In the new annex the work of practical chemistry will be much extended by increased laboratory facilities, and physiology, pathology and bacteriology will have an entire floor devoted to their practical study. This annex was indeed a necessity. The classes here in attendance on medical instruction had become so large, that there was no room in the original building of sufficient dimensions to comfortably accommodate them, short of the hall used for the winter course of public lectures; and large as the original building was, it was yet incommensurate to that ever widening stream of instruction which must necessarily flow through such an institution as Cooper College. And so it is, that the original public lecture hall has been turned over to the students, and the public accommodated instead in the commodious and beautiful hall where we are now assembled.

But not only has this institution increased its facilities, but it has as well increased the quantity and quality of its work. The members of the Faculty, who here devote themselves to the cause of medical education, are not laggards who perfunctorily run the same round year after year, content with present intellectual ac-

quisition, and wishing for nothing beyond a comfortable income; but, on the contrary, they do their work for sheer love of it, and in the spirit of the purest emulation; they zealously keep themselves abreast of the science and learning of their day, and with undiminished ardor labor with those who here flock for instruction at their hands. Some of them are original investigators and authors of acknowledged authority; while not a year passes but you shall see some one of these devoted men lighting his torch anew at some great medical centre in Europe, that thereby the illumination of his instruction may not become weak or dim. And, indeed, one of them was not an inconspicuous member of the International Medical Congress, whose session at Berlin was by far the most notable event which occurred in that city during the present year—presided over, as it was, by the incomparable Virchow.

In these halls Practice walks hand in hand with Theory. The student is not turned out, diploma in hand, knowing nothing but that which he has learned from lectures in the lecture hall, and being compelled to acquire the practical part of his profession after he shall have left college. On the contrary, he is taught at the bedside as well, and in the wards of the City and County Hospital receives clinical instruction in both medicine and surgery, while here at the College he receives a like training of the most useful character, there having been treated at this institution during the past year no less than two thousand cases, each one of which was personally brought to the attention of the students in attendance. But the student is not alone taught clinically by lectures, for the seniors have cases put in their charge under appropriate supervision and criticism, so that by the time they handle their much coveted diploma, they know something of what it is to be a doctor. So complete is this method, that each case in charge of a senior is diagnosticated and treated by him in the presence of the others of his class, and in the presence as well of the clinical instructor, who comments, as occasion requires, upon the case and its treatment by the student, and intervenes, when necessary, to hold that treatment to its proper course.

In addition to the student life which animates these halls, there is a feature which is of quite singular distinction—that of the "*Lane Lectures.*" These lectures are delivered every winter in the public hall of this College, at intervals of two weeks, by the

various members of the Faculty, and treat, in a popular manner, of those subjects which deal with the structure, environment, and health of the human body. They have covered a wide range, and have been attended by such large audiences, as at times to render the original hall too small for the attendance. These lectures will be continued every winter in the hall where we are now assembled, and will doubtless, in the future, as in the past, be kept up to the highest standard. In fact, their perpetuity has been provided for by the founder of this College, who in this, no less than in his strictly professional benefactions, has combined his love for medicine and humanity with such wisdom and resource, as to illustrate anew the versatility of his superabundant nature.

This institution is so flourishing, and is attracting to it so much of the best in student life which seeks medicine as an outlet for its energies, that we may reasonably anticipate not only the graduation from its halls of men and women well equipped for the every day round of practice, but men and women as well of original research, who will open up fresh paths, and by their connection with their Alma Mater, add new pearls to her crown of glory. This thought must be strongly pressed upon us all, as we scan the appearance of the graduating class now before us. From such as these there will surely arise, from time to time, some son or daughter of this nourishing mother, whose hand shall pluck out the heart of more than one mystery.

Of course, a college like that of Cooper has a history. Being the valuable thing it is, it must have grown—such things never can be manufactured; invariably they grow from very small beginnings. And so has this institution Its origin lies back of the sixties in the private medical instruction given by Dr. Cooper—that eminent man whose name this College bears, and which name, inextricably linked with that of Lane, is registered with his on the beadroll of Medicine, there to remain indelibly forever. This private instruction of Dr. Cooper's led to his being joined by others, among these coadjutors being his nephew, Dr. Lane. These men were nearly all enthusiasts, and until internal dissention unfortunately severed their relations, labored with a success that sweetened many an hour of professional toil. But the true men of the school had that within them which would not let them give up the work; and hence it was, that the school, after a suspension of a few years, took on renewed life, affiliating, under its

renaissance, with the University of the Pacific, and maintaining under that affiliation constantly increasing vigor. Some of the best known physicians in our city were graduated from it, the Dean of this College being one of its most honored alumni. When Cooper Medical College was founded, the Faculty of the Medical Department of the University of the Pacific transferred their allegiance to it, and thus it is that Cooper College stands in line of direct succession to the first medical school ever organized west of the Rocky Mountains. Much could be said by way of detail in regard to all this history, if time sufficed, for it is rich to repletion in those things which go to make up all that is of any real worth in this selfish life of ours.

The work this College is doing and promises to do, has naturally drawn to itself the thought of some observant ones, who are moved to travel beyond the boundaries of mere material gain in search of the higher things of life; and pecuniary aid from such, for the future advancement of the interests of the College may confidently be hoped for. Indeed, fruition in this respect has already been reached in the case of one person—Capt. James M. McDonald. This well-known citizen, whom to know is to honor and respect, of his own motion, and without even hint or suggestion from any one, has, within a year, bought and denoted to the College for college purposes, the fifty vara lot adjoining the College premises on the north—a noble benefaction most nobly bestowed.

And Dr. Lane himself, not content with his former benefactions to the College in the shape of lands and buildings, has, in addition, made a deed of gift to the College of the two fifty vara lots which adjoin the College premises on the east. Thus, this corporation, devoted solely to medical instruction, owns, by free gift, a piece of land two hundred and seventy-five feet square, fronting on three important streets, and a college edifice architecturally imposing and beautiful, and possessing every present facility and resource for a complete medical education. And this has been done so silently, so unobstrusively, so far removed from the trumpetings of the newspapers, that this new building seems almost like an Aladdin's Palace, risen in a night.

And all this is the work, substantially, of one man—Levi Cooper Lane, who, for twenty-five years, untiringly, unswervingly, and with every energy of thought and action, and despite

every temptation and obstacle, has pursued this one aim—this supreme object of his life. This man helped to lay the very foundation stones of medical education in this State, and from that time to this, he has pauselessly continued at his work, until we see this mighty architectural tree now bending above us, and beneath whose branches thousands of students for many generations yet to come are destined to find intellectual nourishment to the healing of the nations. He has never sadly "mused and said," with Browning's Paracelsus:

> "I had a noble purpose, and the strength
> To compass it; but I have stopped half-way,
> And wrongly given the first fruits of my toil
> To objects little worthy of the gift."

No, but having the noble purpose and the strength to compass it, without stop, without pause, he has pursued that purpose to a marvelous achievement, and has not only given the first fruits of his toil, but the fruits of his years of toil, to one of the noblest objects which can command the attention of man.

This life work of our beloved friend may, without indelicate or excessive laudation, be truly called sublime. Take its worthiness, its undeviating constancy, its singleness of purpose, its unselfishness, its heart-abundance, its exceeding modesty, the expenditure made by the donor in proportion to his resources, and then finally consider his wisdom and practical good sense in matter of detail, together with the great success achieved, and it stands without parallel in the history of medical benefaction. Indeed, in the combination of its qualities, it may well challenge comparison with any benefaction of which we have knowledge. But more than this, we have not here a man grown rich by speculation, who throws to public charity a few millions, for ease of his soul as it were; but we have instead, a man toiling laboriously at his profession, year in and year out, and carefully laying away his professional gains, until the accumulated store is sufficient to meet the one great desire of his heart, and then appropriating that store, as we now see him, for the satisfaction of that desire—to the extent in money value of at least a quarter of a million dollars. Ah! precious indeed is such benefaction, for every stone in this great building, aye, every inch of ground covered by the donor's gifts is lovingly bedewed with the sweat of professional labor. Had he inherited this wealth so abundantly bestowed, or had he gath-

ered it in the field of some fortunate enterprise, we would have taken it approvingly and have worthily honored the donor; but it would not have come to us as it has now come. It would have lacked something which it now has—that soul-satisfying essence which makes the gift not only unique of its kind, but precious beyond all price. And what a harmony of parts the whole discloses! How the life work of the man, the results of that work in material gain, and the crystallization of those results in the cause of medical education, harmonize with each other, and satisfy not only the ethical, but the esthetic sense, as well. And how entirely fitting it is, that all this should have been brought by him who is concededly at the head of his profession in this State, and who justly stands at the fore-front of all that is best in medicine.

In the presence of these reflections, well may we say with Festus, as he soliloquizes by the bedside of his dear, dying friend Paracelsus:

> "Ay, here!
> Here is earth's noblest, nobly garlanded—
> Her bravest champion with his well-won prize—
> Her best achievement, her sublime amends
> For countless generations fleeting past
> And followed by no trace—the creature god
> She instances where angels would dispute
> The title of her brood to rank with them—
> Angels, this is our angel! Those bright forms
> We clothe with purple, crown and call to thrones,
> Are human, but not his: those are but men
> Whom other men press round and kneel before;
> Those palaces are dwelt in by mankind;
> Higher provision is for him to seek
> Amid our pomps and glories; see it here!"

And she, who has stood at the side of our friend these many years with every aid that sympathetic encouragement could give, so presses upon my thought in connection with him on this occasion, that my remarks would be far incompleter than they are, without at least some mention of her name. This man has labored beyond what we may know; he has had his many discouragements; he has not always been well; there were times, doubtless, when the end seemed beyond all hope of achievement; but there never was a time when he failed of helpful sympathy and encouragement from her, whose interest in his life-work seems to be as

great as his own; and never a time when with her, the College was not first, and all things else second.

Ah, great, indeed, is the glory of woman! How wondrous and of what deep significance is that which Goethe so profoundly and poetically characterizes in one word of his own coinage as *Ewig-Weibliche!* Dominated by this, the essential element of her being, what sacrifices woman makes in the secluded groves of her appointed work; but from the altar of these sacrifices what grateful, love-compelling incense ascends to Heaven! What salvation issues thence for the perpetuity and advancement of the race! As George Frederic Parsons so eloquently says in his introduction to Balzac's "Seraphita." this *Ewig-Weibliche* of Gotehe "is the force which *zieht uns hinan*, which lifts us toward higher spheres and inspires us with nobler aims; which on the physical plane keeps before our dull and earth-drawn eyes constant examples of self-sacrifice, altruism, patience, compassion, and love stronger than death; which is most effective in subduing and extirpating the sordid animal tendencies and inclinations from our nature, and in substituting impulses and aspirations which may give us foothold in the path that leads toward a life better worth living."

Ah, great, indeed, let it here be repeated, is the glory of woman! With what ineffable refulgence she shines when we view her as illuminated by the genius of Goethe and Balzac! Fame writes not her name on bronze and marble, but the deathless names which are there written have blossomed in her heart. Pardon this digression, if digression it seems; but with such a text more might well have been said rather than less.

The Faculty of Cooper Medical College have, more than others, as was natural, appreciated at their high value the great services rendered to medicine by their head. They have been his worthy and zealous coadjutors for years, and no word of appreciation to him is richer or weightier than theirs. But they have deemed it altogether fitting and appropriate to go beyond mere words, and to set up in this hall a lasting memorial to the friend they love to honor. To that end they have had his bust cut in the purest Carrara marble by that celebrated sculptor, Rudolph Maison, of Munich. Much of its success is due to the kindly supervision of Toby E. Rosenthal, as the sculptor had never seen the original, bat was guided only by photographs. The bust has been appro-

priately mounted upon a colored marble pedestal, and placed within a niche in this lecture hall, where it is to remain forever, the perpetual embodiment of the guardian spirit of this place. Upon behalf of the Faculty, who have deputed me to perform this kindly office, it gives me one of the greatest pleasures of my life to speak for them on this deeply interesting occasion, and in their name to formally present this truly beautiful work of art to Cooper Medical College, with the hope that "Time's eflacing finger" may never mar its pristine beauty and purity. The artist seems to have been inspired by his subject, for he has here produced the living, breathing man in his habit as he lives, and with such power and delicacy as to leave nothing further to be desired. Art here joins hands lovingly and rejoicingly with Science and Beneficence, to crown with imperishable laurel this glorious son of Medicine. And may we not venture to add our prayers that he who has done those things of which we have spoken so inadequately to their importance, may still maintain his present vigor for many years yet to come, so that all his great projects for medical education may in his lifetime be so far realized, as that his last gaze on earth may rest on no single unfinished fragment, but on a rounded and harmonious whole, in which Medicine shall have the noblest habitation our country has ever seen. And as we unveil this marble, and you look for the first time upon the work which Art has so perfectly achieved, there is no one here present but must deeply feel, that marble never served a nobler purpose and never shone with a richer lustre; but while contemplating the sculptured form which shall thus be transmitted to future generations, our thought cannot but rise from the perishable stone to the character and life work of the man which may not perish but shall endure forevermore.

CREMATION.

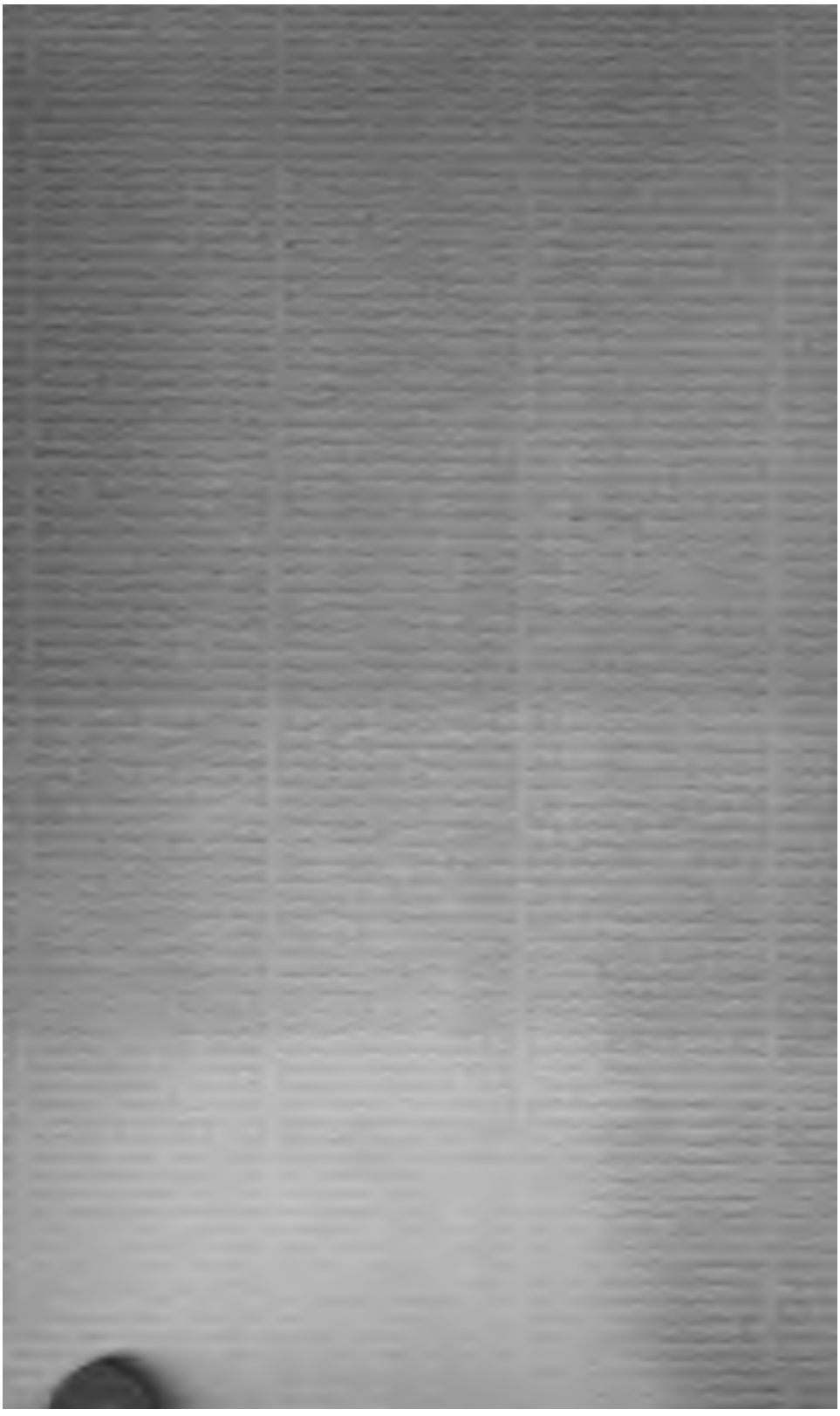
By L. C. LANE, A.M., M.D., M.R.C.S., LL.D.

Professor of Surgery, Cooper Medical College.

An Address Delivered in the Ninth Course of the Lane Public Lectures in Cooper Medical College.

Reprinted from the PACIFIC MEDICAL JOURNAL, January, 1891.

WOODWARD & CO., PRINTERS, 502 CALIFORNIA ST., S. F., CAL.



CREMATION.

BY PROFESSOR L. C. LANE, M. D.

An Address Delivered in the Ninth Course of the Lane Public Lectures in Cooper Medical College.

(Reprinted from "Pacific Medical Journal," January, 1891.)

Feralem urnam tenens, egressa navi defixit oculos.—Tacitus, Lib. III., C. I.

Among persons of note, who figured as patriots during the Colonial history of our country, was Henry Laurens, of South Carolina; he held the conspicuous place of President of the Continental Congress, for some time. Laurens was a man of fortune, and was distinguished for his education and high social position; he was captured by the British, and the indignities to which he was subjected in England give him an enduring place among those who fully redeemed the pledges, which, in behalf of liberty, they made of their lives, fortunes and sacred honor. In his will are contained the remarkable words: "My body is too good to be eaten by worms;" and he directed that after his death it should be burned; and in minute details, he directed how this was to be done, and how the ashes were to be disposed of. His body was subjected to cremation in 1792, nearly one hundred years ago; and I believe was the first example of the kind among civilized men on our continent.

A feeling deeply rooted and universal in the human race is sorrow for the loss of kindred and friends; tears, which are the visible expression of this pious sentiment, have a formation in every breast. The universality of grief is attested in every manner, from the elegant elegiac verse of Moschus and Bion, to the touching act of the American Indian mother, who sprinkles the milk of her breast on the grave of her infant.

Inspired by this sentiment, one of the deepest and noblest in our nature, man, early in his history, sought to rescue from decay, and preserve the form of his deceased friends and kins-

men. A primitive method of doing this was by desiccation or drying the dead body. This was practicable in regions in which there was little or no rain; and, as a consequence, putrefaction was tardy, or did not occur. Such climatic conditions existed in Egypt, and antedated and suggested embalming the body, by which decay was more speedily and effectively arrested. The nature of the soil was sometimes an ally of the air in preventing decay. This is the case on the coast of Peru, where the soil is saturated with mineral salts of an antiseptic nature. Thus, in the vicinity of Lima, I have observed that the earth is laden with nitrate of soda, in crystalline form. In walking over the earth there, one feels the mineral matter crushing under his foot, similar to what is felt in walking over slightly frozen earth. In the suburbs of Callao, there is a cemetery, in which bodies, which were interred long previously, were said to be in excellent preservation. Unaided nature there, has proved a successful embalmer. In the Cathedral of Lima the traveler is shown the body of the old Spanish conqueror, Pizarro, in a large room under the church. The tradition was that his body had been buried for a time in the preservative soil of that region. However that may be, the dried corse of the old hero has well resisted decay; in fact, the elements have treated it more sparingly than man himself; for, the stranger from abroad, I observed, had pilfered almost all that could be plucked or torn from the mummefied remains; and though the old warrior's remains, which furnished proof of a once grand physique, had well escaped the worms, yet it was only to fall a victim to the relic-gatherer; as was well attested by the handless and footless trunk which remains of him. To such depths of profanity the seekers for curios may sink!

All history agrees in the fact that in the early ages of the human race, the usual mode of disposing of the dead was by burial in the earth, and this was commonly near to, or beneath, the habitation of the deceased. But how this usual disposition came to be superseded by that of burning the remains, has proved a difficult problem to the antiquarians. Some think it had its birth in the doctrines and teachings of the old philosophers; of their four elements, earth, air, water and fire, the latter was the most important one, and was viewed as something sacred; and certain anthropologists teach that, as the highest of devotional acts, the dead were disposed of as burnt offerings.

This explanation is far from satisfactory; for the doctrines of the philosophers were held by a limited number of adherents; in fact, they were unknown to the uneducated who constituted the major part of society. And besides, the reverential attachment to their dead, which has always prevailed among men, was utterly opposed to any treatment of the dead that would quickly annihilate the human form and reduce the body to its primitive elements.

Some other motives than that of the inspirations of philosophy must have been instrumental in originating cremation. The method of burning the dead obtained among the Greeks, Romans, Hindoos and the Aztec race of Mexico. And these nations, except the Hindoos, were almost continuously engaged in warfare; this was especially the case in Rome, where the temple of Janus was never closed except in time of peace. Writers report that this temple was closed for the second time in the reign of Augustus. The Greeks, too, were constantly at war. After battle, both victor and conquered must dispose of the bodies of the slain. To accomplish this, it is believed that cremation was often resorted to as the speediest and easiest way. This is the explanation that is offered by archæologists who have endeavored to trace cremation to its causal motives. As the slain were as often buried as burned, this explanation is but partially satisfactory; and I think it is to be sought rather in the religious sentiment, which, in one form or another, is so intimately inwrought in man's nature; whether it was done for expiation, purification or deification, is now a question difficult to answer; yet it is believed that each of these had a share in the origin of this rite.

When the Roman Empire was at its highest summit of power, cremation was in special favor, particularly among the wealthy class; in fact, the poor man had not the means to indulge in this luxury. The combustible materials required to consume the body involved an outlay far beyond the purse of poverty. That this is so, is apparent from the following description of the rite as practiced among the wealthy citizens of Rome in the time of the Cæsars.

As among us there are undertakers who bury the dead, so among the Romans there were those who burned them. Also, in their list of divinities they revered one who presided over the disposal of dead bodies. This goddess, who, from the doubtful

compliments paid her by Horace, was no great favorite, was named Libitina. In her temple was kept an outfit and furnishing for funerals; also, a register of the names of those who had died was preserved there; and for each funeral, a piece of money was contributed to this temple. The funeral director was named from his goddess libitinasius. This personage, of whom there must have been many, on the death of some one, sent a slave to wash and anoint the body of the deceased. If the dead one were a person of high distinction, his body was dressed in his official costume, and placed on a couch of parade; and this was exposed to public view for seven days. The funeral then took place, which consisted first, of a band of musicians who played on a special instrument named the funeral flute. Behind the musicians followed a band of mourners, who, with bare heads and disheveled hair, counterfeited sorrow in the most lively manner; these mourners, also, sang funeral hymns which abounded in praises of the deceased. After these followed the sacrificer whose office it was to sacrifice favorite animals, as horses and dogs, on the occasion. After these came the dead person, borne on a costly bier, alongside of which were carried the images of ancestors, and objects with which the person had been honored during his life. Next came a buffoon or actor, who endeavored to imitate the deceased in person and action, and behind this man followed a file of servants who brought along the animals which were to be sacrificed during the burning of the body.

In case the deceased was a man of great distinction, the funeral pomp was an event of great magnificence. The body of such a one was first borne to the forum, and there the son, or, if he was not of age, a near relative pronounced a funeral oration. And to add to the eclat of the occasion, there were placed around the tribune the images of the ancestors of the deceased, which had been brought from his home, and were placed in the forum on seats of ivory. These images were dressed in costumes corresponding to the dignity of the deceased, and were summoned there as if to listen to the praises of their descendant. And as if these mute witnesses were really alive, lictors bearing axes and official insignia, were stationed before them.

When these preliminary acts of honor were finished, then the body was carried to the Field of Mars, the suburbs, or to the Esquiline hill, according to his rank in life; and the final work was done there. The Field of Mars was reserved for the nobility.

The pyre was chiefly of wood; yet to disguise its purposes and to hasten the flames, there were placed on the pile waxen images and drapery; on this, the body in rich dress was placed; but before the torch was applied, a near relative came and opened the eyes of the corpse, in order that it might look towards the sky; and then having called aloud to the dead one, the eyes were re-closed, when friends and relatives cast precious oils and perfumes on the body, and the consuming flame was lighted. The perfumes tended to conceal somewhat the smell of the burning flesh. While the flames were doing their work, a most exciting spectacle was enacted around the pyre; a band of gladiators was engaged in bloody combats; and thus was represented, in some measure, the immolation of prisoners who were sacrificed at the funeral of the warriors of olden times.

The work of cremation, as done by the Romans, was imperfectly done; an entire day was often spent in it. The remaining fragments of the body, often imperfectly charred, were then collected, washed with wine or milk, and then placed along with perfumes and flowers in a funeral vase.

Along the highways leading from ancient Rome were edifices, monuments and crypts in which were deposited the urns containing the ashes of the dead. Some of these were costly; the most were simple jars of earth, with a cover on which was inscribed the name of the deceased. Some of the funeral edifices erected by the wealthy Romans resembled palaces or dwelling-houses; alongside of the room destined to receive the urns, there were constructed other chambers, one or two stories in height, which were decorated with stucco and paintings. In such house the owners lodged when they came to perform funeral ceremonies. Such was the manner, and such the accompaniments of the cremation of the wealthy Romans; it is clear that such an event was the occasion of noisy festivity, rather than of the sober solemnity becoming death. And like all fashions which have sway among the opulent and higher ranks of society, this custom finally became universal, though it was done very unostentatiously by the poor; and instead of being preserved in expensive vases, their ashes were soon mingled with common earth.

Homer has given us a picture of cremation with all its extravagant accompaniments, as practiced among the early Greeks; this is the famous funeral of Patroclus, the friend of Achilles.

The description of the rites practiced on that occasion is so nearly similar to that given by historians of the way in which cremation was later done, that it is probable that the Homeric description served as the ritual for funerals, for a number of centuries. For at the funeral of Patroclus, an entire forest was used in constructing the pyre; and enough of oxen were slain to feed an army of men. Besides, we learn that it was usual to present the hair of friends as an offering to the departed one. Achilles, who had a rich array of locks, had pledged them as an offering to a favorite river, in case of his safe return to his native land. The death of his friend brought a stronger claim for these locks; and Achilles in his mad sorrow exclaims: "That was a rash vow; for I shall return no more to the plains of Thessaly; and this hair destined for an offering there, shall be borne by my friend Patroclus to his tomb." Besides, there were added to the burning pile the bodies of four swift coursers, two favorite dogs, and twelve slaves, all immolated by the pitiless sword of Achilles. The ceremony ended with a series of games. At a later period, the laws of Solon regulated funerals among the Greeks; these laws forbade the sacrifice of all animals; yet the practice of games was permitted, and for centuries remained as the noted feature of a Grecian funeral. From the festivities practiced on such occasions among the Greeks and Romans it is plain that though sorrow was an element of their nature, yet the desire to extinguish it was quite as prominent a characteristic. Like the sexton in Old Curoisity Shop, they thought it was well that the mourners who first came daily to the graves of their dead, gradually ceased their visits, and at length, came no more. Fortunately for humanity, the wounds of sorrow finally close, or, if they remain unhealed, their pain becomes less.

The Hindoos, at the present time, burn their dead. And the custom probably arose from the fact that Boodh, the founder of their religion, was burned at his death. Among them the common layman is cremated in the prostrate posture, while the priestly order is consumed in the sitting position. When the Hindoo is near death, his body, placed on a sacred couch, is carried out of his house, and placed on the earth. Meantime, leaves of a certain plant are strewn on him, while prayers are being recited. If he live near the Ganges, their sacred river, he is carried to its banks. And should the person thus treated

afterwards recover, he then does not return to his family; and there are said to be villages along the Ganges which are peopled by those who have thus escaped death. Should the individual die, then his body is washed, perfumed, covered with flowers, and carried to the place of burning. In Southern India, the face of the dead is painted with carmine, and is left uncovered during the time that the body, accompanied by musicians, is carried to the site of cremation.

The pyre is a pile of wood four or five feet high; and for the rich, the material is sandal wood; but for the poor the basest material is used. The body is decorated with flowers, and during the time of burning, there is thrown into the flames, cleansed butter and perfumes. To the place are borne as oblations, rice, fruits, and the betel nut. Some one of the deceased person's relatives touches the fire to the pyre, and having done this, he goes to a neighboring stream, and cleanses himself, and remains sitting there until the cremation is completed. Their religion counsels the Hindoos not to weep, but advises them to soften their sorrow by repeating certain sacred verses from their holy books. They rarely erect tombs except to their warriors; and likewise to their wives, who have been burned with their husbands. The funeral of a Hindoo of fortune is an expensive affair; on the occasion of one in 1824, there was given in alms a half million of rupees, equal to two hundred and fifty thousand dollars.

Before proceeding to cremate the body, the Hindoos apply tests to determine whether the individual is surely dead. In this, they pinch his nose, press his stomach, throw water on his face, and blow a trumpet in his ears; and lastly, they fill the mouth with sand. It is pretty certain that after all these tests, if no signs of life are shown, there is not much danger of burning the person alive; an event which, according to Pliny, occurred several times at Rome; a consul and two prætors were recalled to life on the funeral pile.

Among the Aztecs in Mexico, cremation of the dead was practiced. And the ceremony was remarkably similar to that which prevailed among the Greeks and Romans; enough, indeed, to show that the rite sprang from elements which are common to all races of mankind. In Mexico, as in ancient Greece, the cremation of a chief or high dignitary, was sullied by human sacrifices; those, who were thus slain, were thought to accompany

the dignitary to the other world, and to become his servants there. The Aztec priests sang funeral songs around the dead body, and lifted the latter with various ceremonies. They likewise burned incense, and played on instruments of music. A noble person was dressed in the robes of the idol which he had worshiped while alive. If an emperor, he was dressed in the most costly dress, and an emerald was placed in his mouth. The official who had charge of the royal lamps was next sacrificed, in order that he might carry a light for the monarch in the world of darkness. The body was then placed on the fire already burning in the temple. Among the most famous of the temples was that at Cholula. This was a quadrangular pyramid, occupying several acres at the base, and had a flat summit above, on which the dead were burned and human victims sacrificed. This vast mound of earth lies near the base of the volcano of Popocatapetl, and from its summit, the traveler, as I have personally verified, has a view of one of the grandest landscapes in the world. And the interest is still more intensified, when one recalls the events which have once transpired there. The sun, which four centuries ago was the chief object of worship, now shines as lovely as then, obscured by no cloud arising from human sacrifices. And near-by the traveler sees the quaint form of Malinche, a mountain so named from the Indian girl who served as guide and interpreter to Cortez; and far to the eastward lies Orizaba, like a snowy pyramid resting against the sky, around the foot of which peasants are tending their fields, who claim kinship with the Montezumas. After the Mexican monarch had been burned, the bones were carefully collected, and borne with special pomp to Chapultepec, and buried in the tomb of the kings, which was situated in the famous summit in a grove of cypress trees, some of which still remain, and are probably the oldest and largest of this species on the globe.

The custom of cremation so generally practiced by the Greeks and Romans in antiquity, fell into disuse as these nations became converts to Christianity. The burial of Christ and the belief of his followers in a material resurrection from the grave doubtless caused the discontinuance of cremation. The veneration and preservation of relics of the bodies of those who had been famous in the Christian cause, were promoted by burial; and hence the funeral pyre soon became a matter of history, and scarcely known except to the classic scholar.

In modern Europe, the revival of cremation as a method of disposing of the dead, appeared during the eventful period of the French revolution, near the end of the eighteenth century. The Directory, which managed the ship of state in France during that stormy period, attempted to revive this rite; and in the enactments passed, it is clear that the advocates of cremation had in view the custom of antiquity. In the year V. of the Republic, the following laws were proposed: "It is permitted to every person to cause to be buried or burned the bodies of his kinsman, or those who are dear to him, provided he always conforms to the laws of police and health. The law of health forbids that the body shall be burnt or buried within the enclosure of residences." The proposed enactment did not become a law: two years afterwards it was called up again and then it was not intended for all France, but to be limited to the Department of the Seine. The project then proposed by citizen Cambry was as follows: "The Field of Rest shall be at Montmartre, where twenty acres of land shall be bought for the purpose, around which there shall be built a wall two and a half feet thick; and in this wall shall be constructed receptacles for funeral urns. The enclosing wall shall have four great portals, dedicated respectively to Infancy, Youth, Manhood and Old Age. From each of these gates there shall pass a winding road, emblematic of the course of life, towards a central monument in the form of a vast pyramid. This pyramid shall be so arranged in its interior, that the bodies of the dead can be burned there without the public being able to see the cremation. The contained furnaces are so constructed, that the ashes from one another will not commingle. Wood shall not be used as fuel, but the bodies are to be consumed by the means of modern chemistry. On the pyramid, there shall constantly be burnt fragrant plants and perfumes."

These proposed measures were never realized; the sceptre of the Republic passed into the hands of Napoleon, who had the shrewdness to see that his power would be strengthened by a return to the old order of things. The wandering priests, whose exile is charmingly told by Lamartine in his Jocelyn, were recalled by the First Consul; the temple, modeled after the Parthenon and dedicated to Glory, was consecrated to the Magdalene; the churches were reopened, and funeral rites were performed as they had formerly been done, by inhumation.

Montmartre did not witness the proposed monumental mound arise for cremation; France returned to her old customs, having enough of Liberty, Equality and Fraternity. She made the fatal mistake of inaugurating changes before her people were prepared for them. The social system, like the human body, cannot tolerate too abrupt changes. A century afterwards, and France is ripe for a republican government; and the seeds of cremation planted by her a hundred years ago are now springing into life.

Cremation was made most extensive use of in the late Franco-Prussian war. A vast number of dead were buried after the battle of Sedan. The heat which afterwards followed caused foul exhalations to arise from the imperfectly buried dead. The Belgian government, seeing that the neighboring population was menaced with danger, concerted with the French authorities, and found a remedy in the cremation of the illy interred dead. Mr. Créteur, a chemist, was given the charge of the matter, and he decided to do the work without exhuming the bodies. It was done as follows: the superficial earth was removed, and the surface saturated with carbolic acid, and over this a stratum of chloride of lime was strewn. Then the whole was inundated with coal-tar, such as is obtained in the preparation of illuminating gas. Over this was placed straw that was impregnated with petroleum. This was lighted, when a most intense heat was generated, and there was heard within a sound similar to that of boiling oil. A great column of black smoke then arose, which contained no ill odor. If the young Prince, as Napoleon ostentatiously telegraphed to Eugenia, had his first baptism of fire, the dead soldiery found there, their last one; and they had not the solace of the laurels which victory places on the tomb of her heroes. After this vast cremation was completed, the calcined bodies of the dead, coated with resinous matter, were found at the bottom of the pit. M. Créteur calculated that the cost of cremating each body did not exceed three cents. The Germans attempted cremation of their dead in the battle fields around Metz; yet their essays were not so successful as those of Créteur, at Sedan. In the recent war between the Turks and Servians, they disposed of their dead by cremation.

A noted instance of cremation in this century, was the burning of the body of Shelley, by his friend, Lord Byron.

During the last twenty years, in Italy, France, Germany and England, there has been a movement, more or less general, towards the adoption of cremation. The ideas of its advocates may be briefly summarized in the language of a friendly writer, as follows: " If cremation, an ancient and noble procedure, replace the present dangerous and repulsive mode of putrefaction by burial, then there would be a gain in the respect for the dead, as well as in morality and hygiene. The present system of burying the dead is bad and unsatisfactory, under every point of view; it is an attack on the dead, on the rights of the living, and repugnant to civilization and the feelings of humanity. On the contrary, cremation is a funeral rite that is consonant with morals and religion, and comports with hygiene and domestic economy."

In 1857, a movement in behalf of cremation was made in Italy. This was initiated at Padua, by Professor Coletti, in an address before the Academy of Sciences there, in which he put the subject briefly and bluntly, by saying that " Man must vanish at once, not putrify." In 1869, the Medical Congress assembled at Florence, voted in favor of cremation. A similar movement occurred also in Venice, Genoa, Milan and Naples. Scientific men as chemists, physiologists and hygienists were its warm champions. The horrors of the body decaying in the earth were dwelt on in essays and lectures; and this unsightly picture was compared with the pure, rapid and brilliant transformation that can be made by fire. In verse it was told how man's body might pass into nonentity without passing through the frightful road of putrefaction. In 1870, an Indian Prince, the Rajah of Killapore, happened to die at Florence, and in accordance with the custom of his country, his body was burned. A wealthy citizen of Milan, Baron Keller, left his city a sum of money for the erection of a crematory, on the sole condition that his body should be the first one submitted for cremation. This was done in 1876, in a crematory constructed in accordance with plans furnished by Polli and Clericetti, advocates of the new method. This event was the occasion of joy and mutual congratulations among the advocates of the method in Italy.

From Italy the doctrine soon passed into Switzerland, where, in 1874, it reckoned in Zurich alone, more than 2,000 partisans. And associations were formed for popularizing the method in the country.

About this time, Sir Henry Thompson, an eminent English surgeon, became a warm partisan of cremation; and soon afterwards, Thompson had an equally earnest ally in T. Spencer Wells. A society of cremation was organized at London. Also, at this time, the municipal authorities of Vienna unanimously supported a proposition for the establishment of a location in which cremation could be done.

Whilst in these different quarters, a movement was being made in behalf of cremation, the matter attracted attention in Germany, and societies for its promotion were organized. At Dresden, Professor Richter became its advocate. Lectures were given, and pamphlets published; and scientists were vying with each other to find the best way of doing the work. At Dresden, Siemens constructed a crematory, which, in 1875, had the honor of consuming the body of Lady Dilke, of England. In 1876, there met at Dresden, an international congress, held in the interests of cremation. A committee was appointed to promote the cause throughout Europe, consisting of eminent men from England, Holland, Germany, France and Switzerland.

Such concert of action among men of scientific importance throughout Europe has had the effect of popularizing cremation, so that during the last twenty years there have appeared many advocates of it in all quarters of the civilized world. Mechanical scientists have vied with each other in inventing methods by which the bodies of the dead can be consumed speedily, effectively, cheaply, and with the least offense to the living.

I will briefly call your attention to the changes which occur in the dead body, when the latter is committed to the processes of decomposition. The physical and chemical laws, which are controlled or modified in living matter, now assert absolute control, and the organic compounds are reduced to more simple forms, and in their stead, there appear water, carbonic acid, carbureted hydrogen, ammonia; besides these, there are saline compounds, such as salts of lime, magnesia, soda, and iron; the acids united to these bases are chiefly carbonic and phosphoric acids. On an average, water constitutes three-fourths of the weight of the body. In our brains, on which man so prides himself, the amount of water is more than three-fourths. Few of you, perhaps, knew that your brains were so highly watered. The products of the animal body become food that is eagerly

sought by the plant. On the plain of Waterloo where blood had flown most profusely, for years afterwards, the grain grew most rankly. This grain was probably converted into milk and flesh of domestic animals, and became the food of man. And thus the elements in an unending circle accomplish their tasks; and as they do so, they solve the problem of transmigration; for man's body is converted into the plant; this becomes an animal, and the latter again reappears in the human form. It is as if the great Genius of Life in sportive mood was amusing himself by taking a handful of elements from the treasury of Nature, and molding these into some form; and after tiring with this form he breaks up his toy and shapes it into another.

But the reduction of the human body to its simple elements by unaided nature is slow, and in its characteristics and accompaniments, it is revolting to the living. Besides warmth and moisture, nature commonly has powerful allies in the work of disintegration; few soils like that near Lima are antiseptic. If there could be lifted, but for a moment, the veil with which the grave hides from our eyes the work of putrefaction, so that the world could view there horrors which defy words or pencil to depict, there would, probably, not remain one anti-cremationist. The spectacle of armies of worms busy at their foul work, would leave no doubt as to a choice between being burnt or devoured by vermin.

An objection urged against cremation is that it is prejudicial or destructive to the cult or veneration of the dead. As answer to this, it may be said that no people ever showed more sorrow for their dead than the Greeks and Romans, among whom cremation obtained. Patriotism, which, it is claimed, springs from the soil of the grave, and ancestral veneration, were sentiments which lived in the hearts of these ancient people quite as much as they do in ours. The urn with its revered treasure symbolizes mortality and the solemnity of death more faithfully than does the grave on which grow green grass and tinted flowers; the inspirations to duty, and the forming of resolutions for better action would probably be prompted more by the former than by the latter. One of the most sublime pictures traced by the classic pen of Tacitus is that of Agrippina landing at Brundisium with the urn in her arms containing the ashes of Germanicus. As she bore her precious burden thence towards Rome, a countless concourse of mourners attended her journey.

A marble statue representing Agrippina carrying her funeral urn is to be seen in the Palace of Luxembourg, in Paris.

Another reason for seeking some other disposition of the dead than that in present use, is the tendency of civilization to concentrate population in great centers, cities containing a million or more of people are not rare. It is difficult to obtain land adjacent sufficient for burial. In a city of a million of persons there die annually about thirty-two thousand. To inter these, a grave six feet long and four feet wide is required for each person. This requires a large space of land, which amounts in a few years to a very extensive area of surface. To make the land serve the greatest purpose, it is the custom to bury the dead in superjacent tiers, with but a small quantity of earth interposed. And after a certain number of years, when the bodies have decayed, the same earth is used again; and this process, in some of the old European cities has been continued so long, that the soil has become super-saturated with organic material, so that the earth refuses further duty of absorption. And such soil can only do its office again by depletion of its contents through growth of plants. These facts, added to the increasing need of land for building sites, have led large cities like London and Paris to recently select land for cemeteries, many miles distant. London has now her necropolis that is growing rapidly apace with herself. A serious disadvantage arising from the remote location of a cemetery is, that it is inaccessible to the poor who bury their dead there; and hence they are precluded from making these visits to the resting-place of their dear ones which tend to help keep alive those religious sentiments which are associated with the memory and reverence of the dead.

While on the matter of place for the dead, I wish to say some words in reprobation of the prevalent irreverence of the public towards the dead, and the disposition to drive them from homes where affectionate hands had lately placed them. Under the plausible pretext of hygiene, but more properly expressed, to secure land to build houses on, our cities, and even some small towns, are unearthing, in their precincts, the bodies of those whose hands planned and built these towns. And sometimes, even the trouble of disinterment has been partially neglected, of which there is a most pertinent example in our own city, where, by legislative enactment, Yerba Buena Cemetery was but partly

emptied of its dead tenants, and to add to the effrontery of the act, the palace of justice was created there. Nor is the infamous desecration yet completed, if one can judge by the occasional bombardment from municipal quarters of the walls of Calvary and Lone Mountain cemeteries. Even rural villages which have countless leagues of empty verge around them, sometimes, find the dead too near them. During the last year, I was in a country village of less than one thousand inhabitants, which was moving the dead from a cemetery, a half mile distant; for the reason, to quote the words of a citizen, "that there were some beautiful building sites there." Shakspeare, whose comprehensive mind had not overlooked this irreverent trait in humanity, to guard against it in his own case, directed that there be inscribed on the slab covering his body, these lines:

"Blest be the man that spares these stones,
And cursed be he that moves my bones."

Though these words have thus far saved the grave of the great dramatist from impious hands, yet they would be powerless to do so in reference to those buried in our cemeteries. Nothing less than the flaming sword which guarded the gates of Eden could protect them from the onslaught of the living invader. And thence we draw another plea in favor of cremation, for the handful of ashes to which it reduces the human body lessens greatly the space needed for their preservation—a space so little that the living, with all their greed and irreverence, can scarcely begrudge it to the dead.

An important problem for the friends of cremation to solve has been, how the work can be best and inexpensively done. In this new field of invention a multitude of hands have been busy during the last twenty years. The greater number of these inventors have been Italians, since cremation in Italy has the greatest number of adherents. Among the numerous models for crematories which have been prepared there, that of Polli and Clericetti has been decided to be the best. About the same time Siemens of Dresden invented one which seems superior in some respects to the Italian crematory. And finally a Belgian inventor, Hyacynthe Kueborn, has presented the model of one which has the advantage of being transportable.

The apparatus of Polli and Clericetti is constructed in an edifice in the cemetery of Milan. Within this is the apparatus, having the exterior outlines of an ancient sarcophagus. The

incinerating chamber, closed at one end and open at the other, is divided by a horizontal partition into an upper and a lower portion, viz.: one in which the body is burned and another part into which the ashes fall. The horizontal floor is composed of two iron grates; the upper grate is movable, and on this the body shrouded and veiled is laid, and carried into the cremating chamber; to the lower grate are 217 tubes carrying illuminating gas, which, being lighted, furnishes an intense heat. The chamber of combustion is surrounded by an air chamber on all sides, by which loss of heat is avoided. There is provision made for the admission of air so that it circulates freely, and combustion is maintained. Through a conical tube the progress of the work can be observed. In the roof of the chamber of combustion there is an opening into a flue or passage connected with a chimney, through which the smoke and gases escape. The entire apparatus is composed of thin sheeted iron and brick; that is, materials refractory to high heat. Besides the 217 gas burners mentioned, there are two large jets in the sides of the room of combustion, which direct heat on the parts of the body most difficult to consume.

In this apparatus the body of Baron Keller was cremated. The body weighed 110 pounds, and the ashes which remained weighed nearly six pounds; that is, nearly $\frac{1}{18}$th part of the weight of the body. The time needed for the work was one hour and a half. The work cost twenty-one dollars. The most of the expense was for heating the furnace, which required seventy-two (72) hours to accomplish. Whenever this temperature has been attained, the apparatus might be used to consume other bodies, thus greatly reducing the expense.

Gorini has proposed to do the work of cremation by means of chemicals; and the work which he did before a commission was satisfactory, yet as he kept his process a secret, the commission declined to adopt it. The agent he employed is thought to be chromic acid.

Siemens of Dresden has invented an apparatus which is pronounced preferable to the many others which inventors have offered. This consists mainly of three parts: a chamber for combustion; one to receive the ashes, and a third one in which heat is generated and retained. The chamber for heating is provided with three openings: one to admit air, a second for illuminating gas, which, burning, generates heat; and a third opening for the passage of the heat into the cremating chamber.

The cremating chamber has an outlet for the escape of smoke. There is provided a movable platform, or bier, on which the dead body is placed and rolled into the chamber of cremation; and beneath this is a receptacle for the falling ashes.

The heat in the furnace is not permitted to rise over 750 degrees centigrade; for a greater heat than this would melt the mineral elements of the body. Combustion can be effected by this apparatus in from 60 to 75 minutes. To generate the necessary gas, nine hundred pounds of coal are needed. Instead of by gas, the retaining reservoir of heat might be heated by coal, charcoal or other combustible material, burned around and under it.

Kueborn, a Belgian, presented to the exposition at Brussels a crematory constructed according to the principles of the two described, yet it was on wheels and transportable, either on roads or railroad tracks; its portability being claimed as an advantage over those which are stationary.

Within the past few years, crematories have been erected near some of our large cities. In that near Philadelphia, the body of Dr. Gross, a leading American surgeon, was cremated in accordance with his request.

It is an interesting fact that from time immemorial, some of the Indians of California have disposed of their dead by burning. In 1862 a resident of Yubá county told me that he had witnessed the burning as practiced by a tribe in the vicinity of Camptonville. The combustion was effected by placing the body on a pile of dry pine wood. As the burning proceeded, a number of men chanting a death song danced in a circle around the burning pile. After the body was consumed the Indians turned their eyes to the sky and pointed to a small cloud which they said, was the spirit of him whom they had burned.

There is a crematory near Los Angeles, in which the bodies of a few persons have been cremated. San Francisco, however, has no place in which those preferring this funeral rite can adopt it. An association has been formed for the purpose, but from one cause or another, the work has been delayed. Yet what men have failed to do, will, it is probable, be accomplished by a woman. While men have been heralding their purpose through the press and boasting what they were going to do, a lady with the great modesty characteristic of her sex, has been quietly maturing her plan of giving

this city a crematory. She is an invalid, and at times suffers excruciating pain from a chronic ailment. In fact, so precarious is her existence, that at one time I was summoned as a consultant to decide whether she would live months enough to finish her work; and fearing this might not be so, she has arranged with her legal adviser, that in the event of early death, her means shall be devoted to the erection of a crematory within or near this city, where the work of funeral combustion can be done so inexpensively that even the poorest citizen can avail himself of it. She yet lives, and though feeble and suffering constantly, with unfaltering zeal she pursues her great purpose, and like all those who have some strong wish or great aim unaccomplished, her life is almost certain to be prolonged until she has completed her praiseworthy work. This lady is a person of unusual character, in which it is easy to observe indomitable energy, enterprise, fearlessness and originality. These qualities have sustained her in her sadly invalided condition, and will doubtless enable her to realize the hope, which for so many years, has lived in her heart and animated her life.

Since writing the above, a capitalist of this city has informed me that he intends to build a crematory for San Francisco. As this gentleman has the sterling endowments of public spirit, and is determined in whatever he undertakes, we may safely predict that he too, at no distant day, will have an honored place among the public benefactors of California.

I see in my audience a number of persons who, like myself, are friends and advocates of cremation, and have requested that when the pitiless fingers of fate have severed the thread of their lives, that some friendly hand will light for them the flames of final purification; let me hope, however, that sombre hour is far distant from each of you, and that there yet remains for all of us many pleasant draughts in the cup of life.

[The writer desires to express his indebtedness to the *Dictionaire Encyclopedique des Sciences Medicales*, for materials used in the preparation of this lecture.—L. C. L.]

AN ADDRESS

Delivered at the Opening of Lane Hospital, January 2, 1895.

BY

LEVI C. LANE, M. D.,

San Francisco, Cal.

SACRAMENTO, CALIFORNIA:

Reprinted from the OCCIDENTAL MEDICAL TIMES, January, 1895.

however, expected that donations will finally reach such an amount, that the worthy poor can receive gratuitous attention.

The building is of brick, faced with granite; and a system of heating and ventilation, perfect in all its details, has been provided at great cost. Besides the arrangements for ventilation, purity of air is further insured by the position of the kitchen, which is placed in the upper part of the building, on a story above all the patients. There are one hundred beds for patients, for each of which provision has been made for a space of air ranging from 1,700 to 2,000 cubic feet.

The medical and surgical service will be rendered by the Faculty of Cooper Medical College; yet the hospital will be open to all regular physicians, who may desire to place and to attend their patients there. Physicians sending patients to the hospital will be permitted to charge such fees as may have been agreed upon between them and their patients.

With the advantages and facilities, which are here hastily and briefly enumerated, there is no doubt, that for Lane Hospital there is a successful future; and that in this case, as in that of Cooper College, the founder and donors' hopes will be abundantly realized. —OCCIDENTAL MEDICAL TIMES, January, 1895.

AN ADDRESS.

Delivered at the Opening of Lane Hospital, January 2, 1895.

By LEVI C. LANE, M. D., Professor of Surgery, Cooper Medical College, San Francisco, Cal.

The ancient Roman and the ancient Greek when on the eve of an important undertaking, began the work by the consultation of an oracle and by the effusion of blood on the altar: a sacrifice that was made to conciliate the Genius of good Fortune. Sometimes in place of the rude and repulsive act of the burnt offering, there was substituted some other rite of more agreeable nature. This was often an address, in which, for the urgent prosecution of the proposed undertaking and for animating inspiration of its actors, the speaker marshaled in the brilliant periods of sublime eloquence the great and admirable examples of the past.

Greek literature, which, through its innate excellence, has outlived the destructive agencies of time, fashion, change and revolution, contains some of the best examples of such eloquence. The

addresses of Isocrates, stimulating to noble action, remain as imperishable parts of Grecian literature, in the same marked and prominent outline, as in the Athenian landscape stands forth the Acropolis crowned with the temple of Theseus and the immaculate Parthenon, What could more deeply fire the heart and urge on to determined action than the words of Isocrates addressed to the Lacedæmonians, when he exclaims: "Think how illustrious it is to exchange this mortal and fragile body for deathless renown; and with the few years of life which yet remain to us to purchase that celebrity which will endure through the ages."

In opening the way for peace, after a long period of domestic strife and civil war, what could touch the Roman heart more deeply than the last words of Otho, who to win the contest was on the eve of sacrificing himself, when he said: "I want neither revenge nor commiseration; some may have held the empire longer, but it will be said of no one that he has left it with more courage; let this struggle depart with me; even as though you had perished for me, but be ye still survivors." These words of self-renunciation, it may be remarked in passing, have found occasional illustration in the patriot who died before the eyes of the world, and quite as often have they found illustration in the physician who died in the camp of disease, not only unseen, but diligently forsaken by the world.

The Roman consul celebrated his entrance into office by a studied oration. A remarkable oration of this kind is that of Pliny the younger, which is devoted in the main to a panegyric of the character and prominent events in the life of Trajan, then emperor of Rome. In this address, efflorescent with painted phrase, the martial exploits of the Roman chieftain are extolled; the subjugation of nations and the extension of Roman power are portrayed by a partial pen. The character of Trajan, as delineated by his eulogist, besides furnishing to the soldier constant incentive to courage and action, reveals, also, an element which delights the son of medicine, as shown in Trajan's care for the sick and wounded. "O, Trajan, what comfort didst thou bring to the weary and what assistance to the sick! It was thy custom to never enter thy tent until thou hadst visited and surveyed those of thy fellow soldiers'; nor didst thou ever rest until all others had been provided for." And a Greek historian says that Trajan actually treated the wounded, and that when material for dressings was exhausted, he took off his own clothing and cut it into bandages.

The foregoing citations from the annals of antiquity show that the ancients, in entering on an important enterprise, as war against

an enemy, or other matter of public moment, inaugurated the undertaking by an address in a public assemblage. In these orations the civilian, the statesman and the soldier find stirring incentive to action; and the physician finds in them ample instruction for his work of self-sacrifice; yet, in his work as minister for the relief of pain, he seeks in vain there for instruction, guidance and encouraging inspiration. Patience, endurance, tireless action, unsparing retribution for wrong done and contest to victory or death were the doctrines of the bard, seer and orator of olden times. The epitome of character, which commanded the greatest admiration when Rome ruled the world, is contained in the line, *Impiger, iracundus, inexorabilis, acer*, which anglicized is "Tireless, wrathful, inexorable, harsh." Excepting the quality of tireless, how remote are these characteristics from those of him whose mission it is to alleviate the sick and afflicted; for the patience, mercy and compassion of the physician have no place in the harsh picture of the model soldier depicted in the Horatian line.

In strong contrast with these barbarous traits, are those which the physician should have, as one learns from the counsel which Hippocrates gives the medical man when he enters the sick man's chamber. "On entering his room be careful in your manner of sitting; be reserved; appear in proper attire; be serious, and use brevity in speech; have cool self-command, which cannot be disturbed; be diligent and industrious in the presence of the patient; use care; if the patient objects to what is being done for him, listen to him and answer his objections properly; never lose your self-possession in the presence of an unexpected act or contingency; be prompt to meet and repress any disturbing emergency; always have a good will to do that which is to be done. And above all things, remember that nothing is to be omitted that can be of benefit to the patient." And further, the physician is to act with calmness and address, and infuse into the patient serenity and cheerfulness. Sometimes the patient should be reproved with firmness and severity; and at another time he should be consoled by kindness and careful attention.

These precepts, and the character which the physician should have as indicated by them, though many centuries old, embrace, in the main, the characteristics which the medical men of to-day should have. Summarized, these traits are a love of work, patient attention to details, ability to control one's self, as well as the whims and freaks of the patient, an exhaustless fund of the sunlight of cheerfulness to dissipate the clouds of melancholy which often surround the patient, and a flexibility to meet and provide for exigency and emergency.

Hippocrates says that medical art consists of, or is concerned with three things, viz: the patient, his malady, and the physician. And to-day, if our art be thoughtfully studied, these things are its prime components. Each patient is an isolated entity, and though he is akin to others, yet he has his own distinctive individuality—individuality which is shapen by his physique, his mentality, his habits, and his heredity. Each of these is to be a matter of study, and must be taken fully into account in the successful accomplishment of medical art. The disease also, though akin to others and susceptible of being grouped with them in a common class, has a special character of its own which marks it off from the members of its own kindred. These individual differences are so great that not unfrequently they confuse and mislead him whose powers of discrimination have not been trained and perfected by experience. The third constituent mentioned is the physician himself, into whose charge the sick man is committed, and whose province it is to study the patient and his disease. That medical art may have its highest and best accomplishment this third element must have the highest endowments which a theoretical, didactical, and practical training can impart.

When the physician is thus moulded and informed, or as the logician would say, is fully formed in extension and intention, then medical art will reach that excellence by which it was illustrated in the character of a Sydenham, a Frerichs, a Trousseau, or now is seen in an Osler. In the institution of which we are opening the doors to the sick world, to-day, I permit myself to hope and predict that some names equal in greatness to those mentioned will appear and give to the healing art its noblest consummation. As further guidance for the best care of the sick, Hippocrates says that the physician should have as his aids students of medicine. Such student should be placed as a watch over the patient, and directed to see that the latter does not take his medicine at improper hours; and thus watched the medicine will accomplish its purpose. The student should already possess some knowledge of the action of remedies; knowledge which will enable him to meet an emergency which may supervene during the absence of his superior. The student should also be entrusted with the nourishment of the patient, and should see that this is taken in proper amounts and at proper times. The student must also note everything that occurs, and report the same to the physician, so that the latter may be ignorant of nothing that is transpiring. Nothing should be committed to attendants who are ignorant of such duty. The care of the sick should be carried out attentively and knowingly; thus done, no blame will attach to ill

success: and if the issue be fortunate, the event will be crowned with honor.

Thus far the art of medicine, or that which is contingent to it, has mainly been considered: but medicine has another important domain, and that is its science. Medical art is chiefly concerned with the cure of disease: instruments, apparatus, medicines, and all curative agencies. On the other hand, medical science searches for the cause of disease: it studies the abnormal combination of normal cells; the appearance of the latter at unusual times and unusual places. And to do this work well, this science must know equally well the tissues both in their sound and unsound states. In its development this science has proceeded by the pathway of analysis. Thus Bichat studying the structures by dissection found that they can be reduced again to a few simple membranes and tissues. These tissues are resolvable into cells of various forms and diverse groupings. This was believed to be the inmost recess of life into which the fiend of disease, unseen and of unknown form, penetrated and threw confusion into the beauteous arrangement which these cells have in health. Science, with tireless foot and unsleeping eye, has pursued this fiend of disease and detected him in the infinitely minute form of the pathogenetic microphyte.

For centuries this infinitesimal agent in the diseased organism ran riot, unseen, unsuspected, unknown. But science grasped a little beam of light, bent this into a key which opened this chamber in which the germ of disease has hidden himself, and solved the enigma. This solution has given immortality to the name of Robert Koch. Koch, like Columbus, has discovered a new world. This new world, like our own America four centuries ago, has opened a boundless field of undeveloped resources in which medical science and medical art may labor side by side. Here science is discovering and indicating the means by which human disease may be cured, and, what is yet more important, the way is thus being learned by which menacing disease may be averted. The researches of medical science are now promising the human race immunity against many diseases. In this field scores of diligent hands are at work, and from what has already been done there is promise of discoveries which will greatly change the methods of the practice of medicine. It is probable that we will inoculate against and prevent, or render mild and harmless, all contagious and infectious diseases.

The Latin language was a rich store-house, from which we have borrowed many words. The English, opulent in words of concrete nature, and forcibly expressive as far as the things of material nature

are concerned, in its early growth, had few words of abstract character; and among the many which it derived from the Roman tongue, one which especially interests us here, is "immunity." In the Latin we find the word "immunitas," which meant an exemption from duties, taxes, and other obligations; it was limited to this meaning among the Romans; and also with us it had no wider range of significance until the last few years. How little did the Roman dream when he was coining this word that, in its transit from tongue to tongue, it would pass to remote centuries and would then represent the method by which man would elude the grasp of the great taxer—Disease, and stay the entrance of his still greater enemy—Death.

The wards in this hospital in which the sick and afflicted will seek for relief will furnish countless opportunities for the solution of these great problems which remain yet unsolved, or for the further verification of what is yet but partially verified. And in this scientific work nothing will contribute more to successful result than painstaking accuracy; there must be accuracy in observing morbid phenomena, and accurate record made of them; and at length from such a fund of facts truthful deductions can be drawn. Such a stony, tiresome path was long trodden by Koch and Pasteur before they received their crowns from the Genius of discovery.

An error sometimes committed by the scientific explorer is, that he often mistakes the unreal for the real; and impelled by his desire for renown, he announces a discovery, which subsequent investigation disproves. An example of this was Richardson's announcement of the cause of the coagulation of the blood. Richardson received a prize for what yet remains to be solved. A better example to follow is that of Edward Jenner, who withheld from the world his discovery of vaccination for nearly seventeen years; it was only after proof and counter-proof, and repeated verification that he ventured to announce it. It is sincerely to be hoped that nothing will be announced as discovered within these walls, which has not thus been proven and incontrovertibly established.

Among the duties of the interne, an important one is to make a careful record of the cases treated here. Such record does two things; the chief one is, that it insures careful work; for thus the work is committed to the pages of history, where it will be legible to many eyes. He will work the best and with the fewest faults, who knows that each act will be delivered to open, unchanging record. A second purpose of such record is, that it gathers facts, which become an addition to the general fund of medical knowledge.

The record kept may be brief, or it may be in elaborate detail. If the cases be those of usual occurrence, containing only what has often been observed, then the history made of them should be brief; and such record in epitomized form becomes a magazine, whence facts can be taken and tabulated into statistical computation. Many modern writers decry statistics, to my mind very wrongly; since the statistical is the equivalent of the inductive method of reasoning, which can be compared to a ladder of which each round is a fact similar to its fellows, and by the aid of which one ascends to a general truth. If error mar the conclusion, this can always be traced to, and found in the faulty observation and inaccurate record; or it may be in the improper grouping of the facts.

A few cases will present themselves of unusual or remarkable character; of such the history should be recorded in diffuse and elaborate detail. Such misnomers are not classifiable, and hence, are of no aid to the statistician; but they are important to the medical man, since they teach him the weighty lesson that new problems in pathology may arise at any hour, which will require new and unused principles for their satisfactory solution. In such cases the physician will proceed most wisely, if he follow the precept of Celsus, to compare such anomalous disease with other known forms, and to adopt for its management the treatment proper for the one to which it conforms nearest in character.

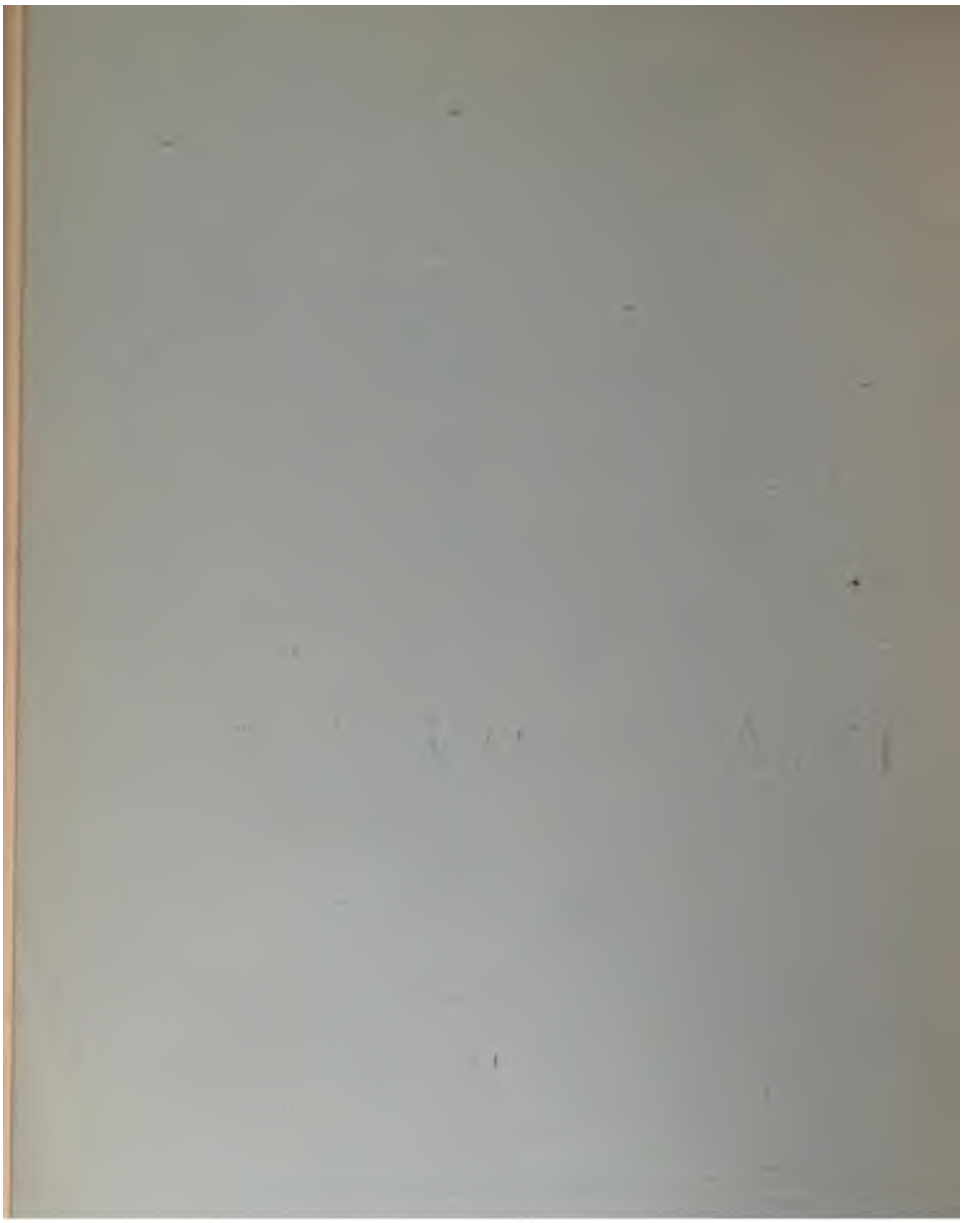
The purpose which has inspired the erection of Lane Hospital is two-fold in character; one great object is to furnish the medical student the opportunity of pursuing his studies to the greatest possible advantage, and of fully fitting himself for his future vocation. It is intended that he see medical and surgical art practised with that excellence, which will serve him as future model for guidance and imitation. A second object is, that the sick who seek this retreat for alleviation of their sufferings, will here find the best of skill and service, which can be planned by thoughtful intellect, and inspired by earnest sympathy. If, as has been stated, superiority of work will be promoted by the fact that the act of each physician and surgeon will pass into unmistakable and lasting record, so much more will it be insured by the presence of a medical class, which transcending the Argus of Juno is both many-eyed and many-eared in its guardian service. With such provisions and precautions, one finds a ready explanation of the fact, which has been observed, that the mortality of hospitals, which are under the charge of collegiate medical service, is less than that which is not supervised by such management.

If thoughtful care, vigilant attention, and trained skill be needed for the cure of the sick man, they are not all, and they will be sadly defective if they are not reinforced by another great quality—sympathy. Sympathy, like the quality Mercy, "is twice blessed: it blesses him that gives and him that takes." Sympathy is planted in every human breast, and like every natural virtue, it may grow and become the prominent characteristic of the individual; or it may be dwarfed, and in certain conditions this precious quality may be almost or quite extinguished. These conditions, I have observed, are constant contact with suffering, and is often best seen in the medical attendant, either physician or nurse, who has become exhausted from long continued and anxious work; in fact, unfitted for duty. I often recall what was said to me once by a lady, who for months was overburdened and worn by attention to an invalid parent: "It is my daily prayer that I may not become impatient and falter in my duty to my mother." Sympathetic care goes far in the cure of a patient. A harsh word, a petulant answer, or a frown in reply to some question or request of the patient, cuts more keenly than the surgeon's knife; and such petulance and impatience may fatally reinforce a lingering disease.

Briefly summed up, then, the cardinal qualities necessary for the successful management of our hospital, are good heads, good hearts, and willing hands; a determination on the part of each attendant to do superior work, and a fixed resolve to live and labor in harmony with his fellow workmen. All thus doing their duty, the work done will represent a picture, in which is portrayed a legion of busy laborers bearing a standard, inscribed with the words: *Self-sacrifice and Humanity;* and such a picture will realize the donor's hope, chiseled in marble at the threshold of this edifice, that the Healing Art may here be given an opportunity for the exercise of its humane skill, and that suffering Humanity may here find refuge and relief from its afflictions.

Dr. Augustus J. Bowie.

IN MEMORIAM.



DR. AUGUSTUS J. BOWIE.

IN MEMORIAM.

BY DR. LEVI C. LANE,

Professor of Surgery in Cooper Medical College, San Francisco.

(Reprinted from the "Pacific Medical and Surgical Journal and Western Lancet.")

"Los amigos que tanto le querian, la familia que tanto le adoraba; los pobres y los desgraciados de quienes era consuelo y providencia, saben cuanto han perdido en el insigne varon, cuya vida, compendio de todas las virtudes, debe quedar como recuerdo eterno en la memoria."—D. EMILIO CASTELAR.

(Which in less eloquent lines may be rendered as follows: The friends who loved him so dearly, the family who so adored him, the poor and the unfortunate of whom he was the comfort and defence, know how much they all have lost in this distinguished man, whose life, a compend of all virtues, must remain as an eternal picture in memory.)

* * * * * *

Death has recently deprived San Francisco of one who, for many years, was a distinguished member of the medical profession, viz.: Dr. A. J. Bowie, who died early in the month of July, in his seventy-second year.

Owing to ill health, for some years past, the deceased has been compelled to almost abandon the practice of his profession; yet, at an early day, he occupied a most prominent position among those famous medical pioneers who came here in

1849, and who, by their energy and personal talents, contributed much toward the new Commonwealth that has since risen to such proportions on the Pacific Coast. Those men, as a rule, were young, and had the endowments of youth, viz.: bravery, fearlessness, tireless energy, and passion for adventure. Those early medical men were bright stars in their respective spheres, ready to reach eminence wheresoever their lot should cast them, and to no one did this more aptly apply than to Dr. Bowie. For had there been a competitive examination among them for the first position, in which learning and personal ability were made the test of superiority, there is no doubt but that the award would have been to the subject of our obituary. In fact, without such examination, this rank was conceded to him, here, by nearly all persons, whether in or out of the medical profession.

Dr. Bowie had the advantage of a thorough, early education; an education in which the "humanities" had full place. This was at a period when, as yet, there had not dawned the new order of things, now rapidly obtaining sway, in which the study of the classics is nearly discarded, and the student is taught that the learning of antiquity is effete, and that time given to it is sadly wasted. It is possible, that, at that day, the fault was committed of devoting too much attention to these subjects, to the exclusion of the physical sciences. The modern method, however, is quite as much of an error in the opposite direction; for the exclusive study of the natural sciences will surely fail to bring that harvest of intellectual fruit, which can be realized where the classics have equal share in moulding the youthful mind. The scholar, trained in natural science alone, will be as a bird with one wing broken, whose flight will ever be crippled and irregular: instead of lofty soaring, its wings will never rise beyond humble circlets.

In his collegiate training, our friend was conducted by skilled guides to the Castalian source, and his delighted mind drew thence a rich store of the priceless treasures there to be found. And what he then learned, his marvelous memory retained ever afterwards. The weary toils of the busy professional life which, in later years, so engrossed him, never dimmed the lines which "youth and occupation had copied" in his mind. One had but to mention the name of some ancient author, and it seemed as if the pages actually stood before him, so accurately did he

recall the text. This was especially true of Virgil, Ovid and Horace. Once, during a short journey we made together, allusion was made to Ovid, when, without hesitation or the lapse of a word, during a number of minutes, he recited from that author. On another occasion, taking up a volume of Virgil, he turned the pages over at random, giving translations of choice lines which met his eye, and rendered them into English, which in its elegance and beauty rivaled the faultless original. On reaching the fourth book of the Æneid, as he was rehearsing the charming dialogue between the Punic queen and her sister, the musical cadences of his voice, as he read the original hexameter and retold the same in his native tongue, made an impression on the writer, which though a quarter of a century has since elapsed, remains vivid as a thing of yesterday; and which like some old melody, or a tale of the olden times, such as every thoughtful heart has in its keeping, is destined to remain as an enduring recollection; and which when awakened in memory, unfit for expression in common language, is best told in the words of Ossianic metaphor: "It is like the morning dew on the hill of roses, when the sun is faint on its side, and the lake is settled and blue in the vale."

But it was when Horace was introduced that the Doctor especially awakened the wonder of his listener. Not only was he familiar with the ideas of the odes and satires of this prince of Latin poets, but his knowledge of the prosody was as if he had lately learned it; and the complexities of Sapphic, choriambic and other meters were recalled, on any occasion, as readily, as if he had just prepared for a recitation.

With such a storehouse of the choicest gems of literature ever in his mind, it was no wonder that as a conversationalist, he was without rival. Among his various intellectual gifts, this one transcended all the others. When in one of his better moods, and it was rare that he was not found in one of them, this sparkling talent quickly bore away captive all who had the good fortune to be within the compass of his voice. His language, even on the most common topic, was ever interesting; but when the subject was one which awakened his best powers, the auditor remained spell-bound as he listened to the periods, which, without effort or study, flowed from his lips. It was a symposium at which Virgil, Mæcenas and Horace might have sat as rapt listeners! For with lavish hand he scattered liter-

ary jewels gathered from every source; one had there, keen edged satire, the choicest gems of sentiment, with occasional touches of sublimity which reminded the hearer of the stately grandeur, the matchless eloquence, and the majestic rhythm of classic antiquity. To this fund drawn from the old models, he added a no less rich one from the moderns; for Tennyson, Holmes, and especially Longfellow, were his household friends, whom he was often wont to quote and recite pages from.

And these marvelous acquisitions in the field of literature were not won, as sometimes is the case, at the expense of his medical and surgical studies. His reading in medicine was encyclopedic; and his knowledge was stamped with that accuracy which is begotten of patient and methodical study. Unlike those voluble talkers, who sometimes surprise one by how much they can expatiate about nothing, and who dazzle by their art of parading generalities, but are soon lost when forced into details, Dr. Bowie quickly convinced one that he had grasped the subject-matter of discourse, in its minutest parts. It was seldom that one met him in a medical consultation, that he did not carry away some new thought, or fact, which the doctor had gleaned in his recent reading. The standard authorities, as Watson, Brodie and others, were as liberally and textually quoted from, as his favorite classics.

As a surgeon he did much praiseworthy work, which, if published, would have placed him among the leading operators of our country. In his operative work he was cool, bold, self-poised and dextrous. Haste in operating he severely condemned; for, with him, the safety of the patient was ever paramount to surgical fame for celerity of work. In wielding his knife, the *tuto* far outweighed the *cito*. In fact, had he constructed the famous trilogy of *tuto, cito, jucunde*, he would have written *tuto* (safely) in each term. The pretext which often figures in operative adventure, that the patient should not be denied the hundredth chance, where, in fact, honest judgment sees no hope, was a fallacy that never vitiated his surgical logic. For he never became affected with the *prurigo secandi* which has so seized the hand of modern surgery, and which has levied heavy contributions on the Hellenic tongue to give title to the numerous "ectomies" which have lately been added to our nomenclature. Bloodless conservatism, when it promised more hope for the patient, was always adopted by him, even though it led

through a path barren of laurels, and exposed him to the reproach of Fabian caution and delay. The noble principle inculcated in the device of the French Academy of Medicine, *Morality in Art*, plainly never lost hold of his conscience.

Though the endowment of prudence made so large a part of his character, yet when once his judgment decided in favor of operative action, he proceeded to his task without hesitation and without faltering; and the scalpel once in his hand, guided as it was by the unflickering light of thorough anatomical knowledge, made no mistakes and never wandered from its aim. The pages of general anatomy, as well as topographical, were as familiar to him as the meters of classic verse. In surgical anatomy his favorite author was Allan Burns. His hand was one of the few which safely reached the subclavian artery in the first part of its course, and threw a ligature around it near the innominate. Still, so free was he from the ambition that inspires most men, that he has left in writing almost no record of his splendid achievements in the field of operative surgery.

Though he was a gentleman by birth, character and culture, and with a decidedly aristocratic nature, yet he dropped the latter characteristic when he was in the presence of the children of poverty. Into few human hearts have these unfortunates found a more ready admission. The writer has never seen anyone more considerate of the sick poor. In his relations to them as physician, he brought the solicitous care of a father and the gentle tenderness of a mother. With this class, where painful manipulation was needed to determine the nature of the disease or injury, his touch was as gentle, and his words as full of sympathy, as if the subject were one who would give him a princely fee.

To present the reader with a summarized view of the directions in which he worked, it may be briefly stated, that he held for some years a commission in the surgical corps of the United States Navy; acted in 1849 as commissioner to select a site for the U. S. Marine Hospital in this city; was a member of the Board of Regents of the University of California; held a professorship of surgery in the Medical College of the Pacific, and was surgeon to the St. Mary's Hospital in this city for many years; these several positions he filled with unusual credit and fidelity.

He was in recent years a careful reader of the modern authors upon evolution, and though much interested in their writings,

yet the tendency to rationalism towards which their doctrines logically lead, never caused him to swerve from his religious belief. He was a devout worshiper at the shrine of primitive christianity, and his undoubted sincerity won the respect of all those who differed from him on those subjects. He lived, worshiped, and died, in the fervent belief of the religion of his fathers, who were among those colonists who, with Lord Baltimore in the history of our republic, laid the foundations of the new Commonwealth of Maryland, on the shores of the Chesapeake.

In the character of our departed friend one finds fully displayed those qualities which, in any profession, most ennoble human nature; qualities too often overlooked, or, if seen, are not recognized at their proper value. For much of his work, like that of all good physicians, consisted of acts of kindness which will ever remain untold, unwritten; or, if written, it is in the hearts of the humble and lowly, where they will remain unseen.

In the language of his favorite Horace, the pale messenger has knocked at his door bearing the last summons; and from the urn of Destiny, the fatal lot has leaped forth which has borne him into irrevocable exile; yet he has not wholly died, since he has left us, as example, the peerless heritage of a spotless professional life, faultless in action, untarnished by dishonor.

As funeral offerings, kind hands brought many floral gifts to lessen the sadness of his journey to the narrow house; many of these were of exquisite beauty, and in forms designed to symbolize the faith which had cheered him during life, and lent him its consolations in the supreme hour. And besides these, there was another gift, which could he have seen, he would have prized the most; this was from the fingers of poverty, the only one it could give, woven of the simple flowers of gratitude, which the angel of good deeds brought and placed as an eternal offering at his tomb.

19

Memorial Exercises in honor of

Levi Cooper Lane

held in Lane Hall, Cooper Medical College, San Francisco, Sunday, March 9, 1902

Programme

"LACRYMOSA" - - - - - Mozart

INTRODUCTORY - *Dr. Henry Gibbons, Jr.*

ADDRESS ON BEHALF OF THE STUDENTS OF COOPER MEDICAL COLLEGE - -
Mr. W. D. Blake, Class of 1902

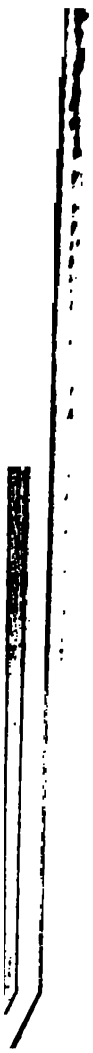
ADDRESS ON BEHALF OF THE ALUMNI
Dr. Chester Rowell

ANTHEM - - - - - Mendelssohn

ADDRESS ON BEHALF OF THE FACULTY
Dr. Charles N. Ellinwood

"GREAT IS JEHOVAH" - - - Schubert

DR. LANE AS SURGEON AND MAN - -
Dr. Edward R. Taylor



IN MEMORY OF
LEVI COOPER LANE

EXERCISES IN MEMORY OF LEVI COOPER LANE

L. C. Lamr.

[illegible]

LEVI COOPER [illegible]

[illegible]
OF [illegible]
LEGE ON [illegible]
THE N[illegible]
THE [illegible]

[illegible]

PRINTED FOR THE
FACULTY OF COOPER MEDICAL [illegible]
BY THE STANLEY-TAYLOR COMPANY
SAN FRANCISCO 19[illegible]

L. C. Lamr.

EXERCISES IN MEMORY OF

LEVI COOPER LANE

HELD AT LANE HALL OF COOPER MEDICAL COLLEGE ON SUNDAY AFTERNOON THE NINTH DAY OF MARCH IN THE YEAR NINETEEN HUNDRED AND TWO

PRINTED FOR THE
FACULTY OF COOPER MEDICAL COLLEGE
BY THE STANLEY-TAYLOR COMPANY
SAN FRANCISCO 1902

EXEGI MONUMENTUM ÆRE PERENNIUS,
REGALIQUE SITU PYRAMIDUM ALTIUS;
QUOD NON IMBER EDAX, NON AQUILO IMPOTENS
POSSIT DIRUERE, AUT INNUMERABILIS
ANNORUM SERIES ET FUGA TEMPORUM.

HORACE, ODE XXX OF BOOK III.

EXERCISES IN MEMORY OF LEVI COOPER LANE HELD AT LANE HALL OF COOPER MEDICAL COLLEGE ON SUNDAY AFTERNOON THE NINTH DAY OF MARCH IN THE YEAR NINETEEN HUNDRED AND TWO

Dr. Levi Cooper Lane, the founder of Cooper Medical College and of Lane Hospital, and the founder and endower of the Lane Course of Medical Lectures, died in San Francisco at a quarter to eleven o'clock in the evening of the eighteenth day of February, 1902. At two o'clock in the afternoon of the ninth of March following, a large audience assembled at Lane Hall of the College for the purpose of doing honor to his memory, the Hall having been profusely decorated with greenery and flowers appropriate to the occasion.

The exercises were opened by the rendering of Mozart's "Lacrymosa" by a quartet of mixed voices. Dr. Henry Gibbons, Jr., the Dean of the College, then spoke as follows:

"Over forty years ago I heard Dr. Lane deliver his first lecture in this city, in the lecture room of the medical department of the University of the Pacific. He

had recently resigned from the Navy, and had spent some time in Europe in study preparatory to accepting the chair of physiology in that college, of which his uncle, Dr. E. S. Cooper, for whom the present college is named, was the leading spirit. My recollection is almost as clear as though it were yesterday — a slender man, dressed in the conventional suit of black, much the same as he dressed in all the succeeding years — concise in speech, clear and accurate in statement, master of his subject, as he was of everything he undertook. During all the following years I have been proud to call him 'guide, philosopher and friend,' and surely no man had a better. For over thirty years it was my pleasure and profit to be associated with him in the affairs of this medical college and its predecessor; and while others will give a detailed account of his life, his aims and his achievements, I cannot let the opportunity pass without a few personal recollections and a more than willing tribute to the many elements of character that raised him above his fellow men. Dr. Lane was the most indefatigable, painstaking and thorough student I have ever known. There was scarce a field of learning that he had not to some extent explored, and his knowledge was accurate and full. One was often surprised at his wide range of information. Studious habits had been formed in youth. German and French were to him familiar tongues. His knowledge of Latin was scholastic. Even late in life it was his custom to read daily a page from some favorite Latin author. His impromptu

thesis, when under examination for the navy was, to the surprise and consternation of his examiners, written in Latin. Remarking once to a surgeon of the navy that Dr. Lane had been in that service, he replied, 'I am well aware of it. It is a tradition in the navy that Dr. Lane passed the best examination of any man who ever entered the service.'

"For many years Dr. Lane devoted a number of the morning hours to reading, investigation and writing. This employment, together with his professional work, was his business, his occupation, his pleasure, his vacation. He needed nothing outside. A year ago, having suggested a vacation and referred to Coronado as a most restful resort, especially in a mental sense, he replied, 'I have never needed recreation to escape work. My work has always been a pleasure to me.' On another occasion he said: 'I once wrote eight pages every day; then I wrote six, then four, then two, then one, and now none.' This told the sad story of his gradually diminishing physical powers, for his mind was as clear and his memory as faithful as ever. It has been a marvel to me that with a far from vigorous physique, he was enabled to accomplish so much. A few months since, referring to a recent work on surgery by Dr. Senn, he remarked that it indicated an immense amount of work. Upon my suggesting that *he*, Dr. Lane, had also accomplished a great amount of work, he replied, deprecatingly, 'Yes, for a man who has never been entirely well. In my childhood,' added he, 'I was

subject to attacks of asthma, and I remember my mother calling me into the house, when running briskly, and saying, "You will pay for this tonight."' Yet the half is not thus told, for like a stoic he rarely spoke of himself. Who has heard him complain? Who knew how often with him the mind triumphed over the body?

"As a surgeon, Dr. Lane realized his own statement of Sir Astley Cooper, that he never operated on an important case without previously performing the operation on the cadaver. Having a fine memory, this assisted in making him an accurate and thorough anatomist. In his knowledge of these two branches he had not his superior on this Coast, and I doubt if he had his equal. He was easily the best read surgeon. As an operator he was competent for any undertaking — resourceful to a degree, and with that admirable courage and self-command that comes of perfect knowledge. Dr. Lane's interest in medical education was persistent and untiring. For at least a decade he had in contemplation the endowment of a college, and I look upon it as one of the most remarkable features of his character that through these years he could have bent his energies to the accumulation of means for that purpose, have matured all plans and even erected the building without the knowledge of his colleagues that he had such a plan in contemplation. This was characteristic of the man. He was absolutely without ostentation; free from all desire of parade or display.

"Dr. Lane was as great in his declining days as in his

prime. In the days of his greatest activity the necessity of economizing time in consequence of his very large practice had imparted a certain brusqueness of manner, almost a necessity in the transaction of much business. And yet in all my experience I never saw him hurried; I never saw him excited; I never heard him raise his voice. His manner was uniformly calm, dignified and impressive, indicative of great reserve force. His decision was remarkable. There was no wavering. A colleague said that he could say 'no' more easily than any man he ever knew. And yet he was never obstinate. No man could have been more reasonable. But now, as he withdrew from more active work, a lessening contact with the world and a greater leisure softened his sharp decision and replaced it with a more indulgent humor, a more genial spirit, and a more reminiscent mood.

"Thus my years of close association with Dr. Lane have shown him to be a man of vigorous and untiring intellect and high attainments; of sturdy, upright character, rigid in his ideas of right, noble in his aspirations, wise in counsel, clear in prevision, prompt and decisive in judgment, steadfast in purpose, firm and unyielding in action, and withal modest and unostentatious, as becomes a wise man. These are attributes of greatness, and like Hamlet I say, with all my heart,

> "'He was a man, take him for all in all,
> I shall not look upon his like again.'

"No memorial column reared in some city of the dead shall mark his final resting-place for a time, then

crumble into dust and be forgotten, but these stately edifices, which through his energy, self-denial and munificence have been erected for the stimulation and betterment of the noblest of professions and the better care of the sick; the lecture courses that he has inaugurated; and above all, the grand example of a useful, well-spent life — these will be his monuments — more enduring than marble.

"Peace be unto his ashes! His spirit has risen with the immortals."

At the conclusion of Dr. Gibbons's introductory, Mr. William Ford Blake of the class of 1902 spoke on behalf of the students of the college as follows:

"It is eminently gratifying to us as students to be able on this occasion to give some expression of our sorrow over the passing of this great man. His death has been a common bereavement to us all, and we deem it a privilege to offer our tribute of admiration and affection to his memory.

"It has not been our good fortune to know him intimately, to feel the inspiration that comes with close association with so great a man. Nor has it been our good fortune to enjoy that gentle fatherly guidance in the class room that our predecessors in these halls received from him and hold in affectionate memory.

"It has rather been our painful experience to see him gradually failing with the passing months, to realize

that his physical strength, so incommensurate with his vigorous mind, was slowly raising a barrier between him and us.

"But while we have seldom had the opportunity of seeing him in the operating room or of listening to him from the benches, we have known that his thoughts were with us, that his interest in our welfare never flagged.

"We were ever present in his life, in his plans, and our success and our development into honored members of his noble profession were ideals he hoped we might attain.

"What a monument he has raised to his memory! What an example of self-abnegation and self-sacrifice is this college with its hospital, its laboratories, its library and the ground on which it stands!

"When we stop to think of all he has done for us, how throughout a lifetime he has worked untiringly that this heritage might be ours, our appreciation of the greatness of the man becomes a real presence to us, our obligation surges upon us, and our hearts go out to him as a child's to an indulgent parent.

"It pleases us to think that it was for us and for the advancement of his profession that all this has been done, that our success and the futherance of his noble work was the labor of love to which he devoted the energies of a lifetime. It pleases us to think that he received us into his presence as his children, that he took us at that formative stage in our lives when by his example and his teachings he could mold us as he would have us grow.

"Had Dr. Lane left us no other remembrance than that of a life nobly planned and successfully carried to a glorious end, his example should have proved a stimulus to each one of us. But, when in addition to this, he has left to us all the fruits of his life's work, then his precepts become a sacred duty, his example a moral obligation.

"As we have honored and loved him while he was yet with us, as we looked upon him then as a public benefactor and as a foster parent who had received us into the circle of his affection, now when the sense of our loss is heavy upon us, we appreciate as never before the splendid manhood and scholarly attainments that won for him a place of pre-eminence among his colleagues, and we realize as never before the tender paternal feelings he bore us and the noble motives that actuated his life."

Dr. Chester Rowell was to have spoken on behalf of the alumni of the college but was unavoidably detained at his home in Fresno. Could he have been present he would have made the following remarks:

"As one of the early graduates of the parent school of Cooper Medical College and in behalf of the alumni, I offer a word of tribute to the memory of Dr. Lane. The occasion is not one for expression of grief, for death came to him calmly in ripe old age, his life's work accomplished, his ambitions satisfied, his hopes realized. His physical body, grown old by years of labor, no longer served the purposes of an intellect that never tired even to the end.

He went to sleep. His body was cremated in accordance with his wish and in approval of this method of disposing of the dead. His intellect, bright and unwavering till the moment of dissolution, still lives in these noble educational monuments dedicated to medical science and the healing arts,—lives in the record of his work, in the lasting impression of his teaching upon the many who have been his students, and in the silent but most important influence of his example upon all who knew him, and upon the profession at large.

"He was the friend of every student who manifested the spirit of the true physician and sought knowledge for its beneficient rather than its selfish uses. He was the associate, adviser and defender of every physician, however deficient or unfortunate, who gave to his work his best efforts with pride in his profession and an unselfish desire to help his patients rather than himself. Yet, while he led gently, guided wisely, judged charitably, dealt kindly, his dislikes were as intense as his friendships were strong, and he frowned upon the student who dedicated but half his soul to the profession he proposed to enter, as he spurned the physician who selfishly betrayed his brother physician. His example was one of lofty devotion to pure science and high art as exemplified in his profession, tempered by that most human of all human impulses, a feeling of charity for the unfortunate and of interest in the welfare of humanity. He said to me, after an operation, which, at the time was marvellous in its results, 'The patient got well, that is pay enough.'

He added, 'Whoever wants my surgery may have it, whether they have money or not.' He was charitable. Every day of his long life of labor he did something for the afflicted with no thought of a money recompense. He recognized his obligations to the poor as he recognized his obligations to deal fairly with, as well as treat properly, every patient. His charities were a part of his every-day work. Upon every student and upon every class he impressed the obligation to deal honorably with patients and to be kind to the poor. He was solicitous for the character and the welfare of his graduates long after they left the lecture halls, and felt keenly every evidence of their successes or failures. He entrusted the reputation of the school he had builded to its graduates, and he cherished the good will and kind remembrance of those graduates as much as his reputation in the profession at large.

"These were some of the personal characteristics that attracted students no less than his great skill and wonderful knowledge, and for these he will be remembered by the alumni. His generous endowment of this school and hospital for medical education will remain his visible monument, constantly reminding his successors of the names and the work of his venerated uncle, Elias Cooper, and his own. His contributions to surgical knowledge are the property of the profession. His teaching, his influence, his cherished memory, are his legacy to the alumni."

Following Mr. Blake's address, Mendelssohn's anthem, "Be Thou Faithful unto Me," was sung as a tenor solo, after which, on behalf of the Faculty, Dr. C. N. Ellinwood, President of the College in succession to Dr. Lane, delivered the following address:

"The guiding hand of the master has gone from us!

"Our kindly counselor, arbiter and ultimate referee in all our perplexities is no longer here!

"Sad, indeed, are these days when we have to part fellowship with Dr. Levi Cooper Lane—a good man, a great man, whose noble heart lovingly embraced the universe, the mysteries of which it was given his penetrating vision largely to see.

"In speaking of Dr. Lane I shall speak of him as we, his co-workers and his college faculty, knew him—in his daily work, in his life work, in his singleness of purpose, in his exalted ambition for the advancement of medical education and the welfare of human life, and finally, I shall speak of his achievements.

"In essaying an analysis of his strong character we note his early associations with kindly and gentle kinsfolk, in sympathy with all goodness, honesty and manly uprightness, maturing in him a supreme love for truth and justice which has grown stronger and deeper as his horizon expanded in his added years of thought and experience.

"His great attainments as a scholar, as a scientist and surgeon; his achievements of distinction in all these

and also in the practice of his profession, brought him rewards which enabled him to do what his beneficent inspiration prompted, the founding of a great school of medical education for the improvement of his loved profession and the good of his fellow men.

"The exacting conditions of his early life, imposed upon a youth of extraordinary mold, developed a man of great courage, self-reliance and strong will.

"He could fight like a lion for the oppressed and never surrender to wrong.

"Apparently insurmountable obstacles in his early education were overcome by industry, careful economy, self-denial, a well disciplined mind and an unswerving purpose to get an education and to do what he planned to do.

"LEVI COOPER LANE

Was born in Ohio, on a farm thirty-four miles north of Cincinnati, May 9, 1830. His grandparents were Jesse Lane, born in North Carolina; Hannah Huddeston Lane, born in Nantucket, Mass.; Jacob Cooper, born in South Carolina; Elizabeth Walls Cooper, born in South Carolina: all orthodox Quakers. His parents were Ira Lane, born in North Carolina in 1803; Hannah Cooper, born in Ohio in 1811. They were married in Friends' Meeting (Quakers), West Eberton, Ohio, in June, 1829. Their first-born was called Levi, Biblical names being common in the family and usual among the Quakers. He had two homes in his childhood, being nurtured and cherished by his grandparents as well as

by his parents, and his childhood and youth would seem to have been divided between the two.

"His early education was chiefly in private, being taught by his mother, but chiefly by his aunt, Ruth Cooper, who is yet living at the age of 85, with a heart full of affection and tender reminiscences of her nephew and pupil. Later he worked on his father's and his grandfather's farms and attended the common district schools. At the age of 16 he became a teacher and taught in the district schools of Butler County, Ohio, during three years.

"All through these years of childhood and youth his uncle, Jacob Cooper, a few months younger than himself, was his close companion and loving friend. They were playmates and schoolmates; both nurtured by the same kindly parents and exacting circumstances, both became great students, and the uncle, Jacob Cooper, is now and has been for many years a professor distinguished for his learning in Rutgers College, New Jersey. It is to his affectionate and painstaking care that we are indebted for these details in Dr. Lane's biography.

"After teaching three years the young man of 16, Levi Lane, began his college training in the spring of 1847 by a six months' course at Farmer's College, formerly called Cary's Academy, and, secondly, after an interval, six months at Union College, Schenectady, N. Y., in the autumn and winter of 1849–50, where he boarded himself and lived on twenty-five cents per week, but paid his college bills. Union College subsequently

gave him the Master of Arts degree, and in 1877 conferred on him, with pride, the honorable distinction of LL. D., Doctor of Laws.

"HIS MEDICAL EDUCATION

"As was the custom in those days, Dr. Lane commenced his medical education by *reading* medicine with his two uncles, Drs. Esaias and Elias Samuel Cooper, as preceptors, and later he entered Jefferson Medical College in Philadelphia, where he studied one year and graduated there M. D. in March, 1851, and in the same year he was appointed an interne or resident physician in the large New York State Hospital on Wards Island, where he remained an earnest worker with his hands and brain four years, until 1855, when he entered a competitive examination with thirty-one others for the position of assistant surgeon in the United States navy. He passed the examinations higher than any of his competitors and secured the appointment which he held four years.

"During this time, the ship to which he was assigned cruised in many waters, and on one of its voyages to Europe and in the North Sea Dr. Lane obtained a furlough and passed two months in study at the University of Gottingen. He pursued his studies in medicine and surgery with unremitting vigor while in the navy, and continued, as a recreation, the study of the Latin and Greek in which he became thoroughly proficient. He also taught himself the German, French, Spanish and Italian, in all of which he became able not only to read

and write these tongues, but had a ready command of them in speaking.

"ADVENT IN SAN FRANCISCO

"In the year 1861 Dr. Lane having resigned from the navy was induced by his uncle, Dr. Elias S. Cooper, to join him here in the practice of his profession, in teaching in his medical school which he had already started as early as 1858, the first medical school on the Pacific Coast, and also aid him in editing the journal of medicine which he was then publishing, *The Medical Press.*

"Dr. Lane became thoroughly identified in spirit and action with his uncle; he rendered him the most efficient aid. He gave him his confidence and love and received in return all that a rich, warm and energetic nature could bestow.

"This cordial and mutually helpful relation continued until broken by the early death of Dr. Cooper on October 13, 1862, and since that premature severance of these bands, Dr. Lane has followed up the memory of his uncle with superhuman zeal and affection.

"Opportunity was there! and Dr. Lane was there! with all fitness and capacity for the arduous work before him.

"Early in the year 1875 Dr. Lane, ever thirsting for all the knowledge to be obtained in his profession, determined to further pursue his studies in the great centers of learning in Europe, and taking his wife, his helpmate then and always the devoted sharer in all his aspirations, he visi-

ted London, Edinburg, Paris, Vienna and Berlin, spending two years more in diligent student work. After some months, in attendance upon the college courses in London, he was granted the M. R. C. S., England, and won many warm friends among the then distinguished professors of the schools. In Berlin he regularly matriculated as a medical student at that great university, and after six months' instruction in its laboratories, clinics and hospitals, he passed the examinations and received the doctor of medicine degree, *Summa Cum Honore*, the highest grade of the university, which carries with it the remission of all fees, a most unusual thing, especially in the case of a foreigner.

"Thus honored abroad and with a mind enriched by study and association with the greatest men in medical science and literature of the world, Dr. Lane returned to his home and to his fixed purpose of building up, on a broad foundation, a great medical institution. In 1880 architect's plans were matured and without public announcement, with no ostentation, the foundations were laid and the superstructure gradually grew, a great mystery at first to the people of this city as to its intended uses. Later, on suspicion of a hospital being located here on its present site, hostility was excited among many of the residents in the neighborhood whose ignorance of the nature of hospitals and absurd prejudices led them to many acts of opposition by court proceedings and even by threats of personal violence against Dr. Lane.

"He was undaunted by their hostility,—moved on

in true American fashion with his work in the most diplomatic way until his enemies were subdued, intelligence succeeded ignorance, and all were satisfied, and Lane Hospital is a great acquisition to Cooper Medical College.

"And so it was that the medical department of the Pacific College of Letters, which slumbered for a time after the death of Dr. Cooper, was reorganized and revived by Dr. Lane and his co-workers, passed through some vicissitudes, changed in name and affiliations, progress in methods and its sphere of influence, its successor was finally created and announced to the world in 1882, endowed by this magnificent property purchased and erected solely by the munificence of Dr. Lane and named by him, in grateful remembrance of his uncle, Cooper Medical College and dedicated to medicine. May God grant it all perpetuity, as a living monument to Levi Cooper Lane, an ever teaching memorial to the great soul of its founder who breathed into it his breath of life, his legacy to medical education, his boon to mankind!

"Subsequent to the original foundation this annex to the college building was erected containing this auditorium called Lane Hall and laboratories and class rooms above, and finally Dr. Lane added another grand gift to the institution, as a part of the original endowment, the Lane Hospital, which was opened to the public and dedicated to the relief of human suffering in the year 1894.

"To the work of the hospital and the college Dr. Lane devoted the last busy years of his life.

"His well earned fame and skill as a surgeon and

teacher have richly endowed the college with distinction among the educational institutions of the land.

"His methods were simple and direct with clear-cut precision in everything. He devised many original operations in surgery, always seeking the best ways of perfecting the surgeon's art. Medical literature of the past thirty-five years has recorded his achievements in this regard, and the many young men, his pupils and assistants, hold in grateful memory his teachings and his example.

"The latest endowment to Cooper Medical College made by Dr. Lane was the munificent fund which he provided for the perpetual maintenance of the annual course of the Lane medical lectures, a yearly course of instruction by some eminent authority annually selected for his noted ability in some department of medical science. The practical utility of such teaching strongly appealed to the founder, after many years of experience and observation in the methods of medical schools, as aiding the alumni in persistent study and progress after entering upon the active duties of practice.

"This idea and plan of instruction was entirely original with Dr. Lane, and so far as I know Cooper College is the only school which has this beneficent endowment.

"The purpose of the course is to bring from any part of the world the best equipped instructor in some department of medicine for a brief term each year as an addition or supplement to the ordinary courses given in

Cooper College for the benefit of the classes of students yet in regular attendance, its undergraduates and also for its alumni who are annually invited to this feast of knowledge offered by their Alma Mater. And also the members of the profession at large are cordially welcomed to partake of these great opportunities.

"It is now six years since this course was inaugurated and the busy practitioner from all parts of the Pacific States has derived great pleasure and advantage by attendance upon this instruction. By its opportunity the average man is brought into direct relations with the extraordinary man, old fallacies are removed by exact observations, and rational medicine is made to supplant empiricism.

"The success of this method of disseminating advanced knowledge among practitioners of medicine evinces the genius of Dr. Lane and merits the enduring gratitude of the profession.

"Dr. Lane lived to see the fruition of his work. Year after year he observed with great interest the going out from these halls of large accessions to the medical profession. He remembered the individual graduate with remarkable acuteness and followed his career with personal concern. Their success delighted him and he never wearied in well doing in their behalf.

"His relations to the faculty of the college were singularly harmonious. His self-sacrificing devotion to duty and earnest, conscientious ways in everything commanded the respect and admiration of all his associates;

his example was our ideal, his conclusions were our authority, his ways were our ways.

"His unselfish and magnanimous character has been given form and expression in the institution which he created and merits to endure while human sympathy lasts.

"The Rev. Dr. Horatio Stebbins, learning of Dr. Lane's fatal illness, pays him this tribute in a letter received here on the day of his death: 'Dr. Lane, gentleman, scientific man, scholar, philanthropist: If he is able to receive it tell him of my sincere sympathy and cordial respect.'

"It has been given to but few men to be great, to be great as Dr. Lane was great, to be the means in such eminent degree of progress in the development of that knowledge which saves human life and diminishes human suffering.

"Medical science, medical men and all humanity are bettered by the life of Dr. Lane.

"A few short weeks ago he realized that his end was near, that his work was finished, and in an unrestrained conversation he told me that his every wish and purpose had been gratified and he was content.

"He could see of the travail of his soul and be satisfied."

Schubert's "Great is Jehovah" was then sung by a double quartet of mixed voices, after which Dr. Edward R. Taylor, Vice-President of the College, pro-

nounced the following eulogy upon "Dr. Lane as Surgeon and Man":

"We are most worthily gathered together, for we are here to commemorate, as far as an occasion of this kind may serve to do so, the life and services of a man who deservedly won our admiration and love; a man who was one of the pioneers of medical teaching in this State, and who, from the early sixties till within little more than a year ago, was, with but few interruptions, industriously and lovingly engaged in that teaching; a man who, for more than forty years in this State, so devoted his great abilities to surgery and medicine that at the time of his death his was the most luminous name in Californian medicine; a man who produced a great work on surgery; a man who founded a medical college and hospital, and who, from the resources accumulated from his practice, caused to be constructed for them imposing piles of buildings of architectural suitableness and beauty; a man of great scientific endowment, of learning in many directions, of wide and deep acquisition, acquainted with the best in literature; cultured, refined and noble; a man who has, at his own expense, brought to us from time to time some of the very leading men in England and America to deliver courses of lectures on their particular specialties, and who has provided an endowment whereby such courses can be perpetually maintained; such a man, and more, are we here to commemorate.

"While we are thus engaged may his spirit vouchsafe

to hover over us; may it fill us with something of his own nobleness of aspiration; something of his own purity of unsordidness; something of his own feeling for the betterment of man. If this should come to pass, then, indeed, will these services be consecrate; then, indeed, will this hall and all the hearts that beat within it vibrate to the harmony of religion's own music.

"From what you have heard to-day of Dr. Lane's life, how consistent it all seems and how natural! You have seen how broad and deep he laid his foundations, and what noble superstructure he raised upon them; you have seen how carefully, yet surely, he proceeded from step to step, never once falling back, and never once losing heart or courage; and you have also seen, and have doubtless taken the lesson deeply to heart, what great things can be done by ceaseless industry coupled with undeviating concentration of effort.

"While Dr. Lane was physician as well as surgeon, yet it is as the latter that he is best known, and properly so, for this was the field wherein he reaped his richest harvests. And, in very truth, if ever man was born to be a surgeon, our friend was that man. By nature he lacked no quality necessary for the office, and to that he added an acquisition which furnished him with equipment little short of extraordinary. From his first entrance into medicine until past his meridian he persistently dissected the dead body, until he became so familiar with every part of it that not even its darkest corner was hidden

from his eye. He knew the processes and surfaces and curves of every one of its bones, their relation to each other, and to tendons, ligaments, muscles, vessels and nerves; he knew every foramina and what passed through them; he could visualize every organ and muscle of the body and their relations respectively to each other; he could follow each artery, vein and nerve through its entire track, and at every point of that track see with the utmost clearness what stood in relation to it. And yet, even in the times when he had attained to nearly his greatest accuracy of anatomical knowledge, he scarcely ever performed an important operation until he had first dissected on the dead body the parts to be submitted to his surgical knife. In this, as in all things else, he took no chances. Never in all his life did he undertake a task short of the most complete preparedness. It hence followed that in operating he had the reliance not only of his natural courage and skill, but of that which comes of fullness of knowledge, and that no emergency could possibly arise which he could not at once successfully meet. Many a time in his hospital practice would he make a demonstration of anatomy as he proceeded in the operation, pointing out from time to time what lay beneath the point of his knife. He never hurried; was always cool and collected; never cut twice where once would do; never bungled, and was graceful and dexterous at every step. In removing a malignant growth he cut with a wide margin and was careful to see that every affected gland in the

neighborhood was taken away. He saved all the loss of blood possible; and in his later years he effectually brought this about by ligating the principal artery that led to the part to be excised. In this way he amputated as vascular an organ as the tongue with scarcely any loss of blood by tying the lingual artery before he began the amputation. In plastic surgery he was not only an adept, but original, as will be seen by his treatment of that subject in his surgical book; while in the great field of fractures it is doubtful if he ever had a superior. He never recommended an operation in what he conceived to be a hopeless case, or except he felt, after careful thought, a reasonable assurance that the knife was the last resource. He was anxiously solicitous as to the after-treatment, and never, except under exceptional circumstances, left it to another.

"He was learned in both physiology and pathology, and to the end that he might become so he attended the lectures of the French savants, walked the leading hospitals of Europe, attended the lectures of Huxley, and worked in the laboratory of the great Virchow, who, in his venerability of age, still remembers his pupil of old and the untiring assiduity of his labors. At Berlin he was given the degree of Doctor of Medicine, and in England was made a member of the Royal College of Surgeons.

"With all the preparedness that came after years of toil in his own and foreign countries — toil that covered not only the theoretical but the practical — he began to devote some hours each day to the collation of notes as a basis

for a monumental work on surgery. It was his intention to treat first of the head and neck, then of the thorax, then of the abdomen, and finally of the extremities. For ten years he methodically pursued this labor. It took him just that long to collect and prepare his notes for the first part of his work; but not until they were complete did he begin the task of literary composition. The result was his monumental work entitled "Surgery of the Head and Neck." This is embodied in a large octavo volume consisting of 1,166 pages, and is exhaustive of the surgery of that region of the body. As might be expected from the nature of his mind and from the course of his preliminary education, the style of this book is lucid and elegant; and it might also be expected, as is the case, that the ancients of medicine would be drawn upon by way of elucidation and illustration. He left no field unexplored, either old or new, and the composition is so good in literary art, and the matter so interesting and clear, that an educated layman can open the book almost anywhere and become interested at once in the page that meets his eye. He had collated some notes for that part of the work to be devoted to the thorax, but illness supervened, and brain and hand refused longer to do his bidding.

"Dr. Lane was a man of character. Character is beyond all definition, but when one possesses it, it shines in that one so distinctly, so luminously, that there is no mistaking it for something else. So true is this

that all counterfeited simulations of it are of no avail; and this because it is immovably based on the rock of righteousness, lifting its head to the very heavens, unshaken by any storm of adversity and untainted by any breeze of prosperity.

"The Star of Duty ever lighted his way, and on that star he kept his eye at every step of his life. No circuities, no deviations were his, no idling in the by-paths of pleasure. Straight on he walked, no matter what hap might be, discharging to the utmost the task that lay at hand, and leaving it not till accomplishment was complete.

"Into his work he put not only his hand and head, but his heart as well. No task that he undertook was perfunctorily done; his love was in it, and that love gave it sublimity of life. Nor could he look upon anything as trivial that fell to his hand to do. Seriousness was so ingrained in his mental fiber that temperamentally every task was, in his view, important and could not be treated otherwise. This is not to say that he had no sense of proportion, but it *is* to say that to him life in all its relations was of such transcendent importance that not one of his own relations to it could be slighted or scamped. His every surgical operation was pondered deeply by him before he took his knife in hand, and by the side of the patient he stood as one anointed. Fullness of knowledge did not make him bold, but cautious, rather; yet so courageous and so well equipped was he that to those who knew him it was simply unthinkable

that any emergency could arise during the course of the operation with which he could not at once irresistibly and successfully deal. He had the highest respect for the human body merely as a body, and in all operations, and in dissections even, he paid it that respect which he deemed to be its due. No word of levity on such occasions ever escaped him, but all that he did was pervaded with a dignity which almost verged on the ceremonious. Indeed, he bore his dignity with him as a surrounding atmosphere. He was never stiff or formal, but there was a certain aloofness which not only did not tempt, but rather repelled, undue familiarity. Yet he was susceptible to the incitements of wit and humor, and was as fond of a quiet laugh as any one. And though his demeanor was sober, and one might say not at all demonstrative, to his friends and acquaintances it was never less than charming. He betrayed his feelings, it is true, by words, no less than by acts, but by words that were few and measured, and back of which there was an immaculateness of sincerity never surpassed. If sincerity be, as Carlyle says it is, chiefest of human qualities, then our friend was inestimably endowed; for he was sincere from the centre to the outermost rim of his being. No diplomatic or other concealments were his. To be sure, he was wisely reticent about his important undertakings, and shrank from obtruding his own personality; but when his feelings or opinions were properly challenged, they responded with a courage and truth that even the blind and deaf might see and hear. He was, hence, as well

might be supposed, a man who had no sympathy with compromises. He could not but be, from the nature of his organic structure, unequivocally one thing or its opposite. It would have been impossible for him to run with the hare and at the same time to hunt with the hounds, or to smile before a man's face and frown when that man's back was turned. Those who were at all acquainted with him knew full well that back of his every word and deed sat Truth enthroned in all the transplendence of her flawless purity.

"It follows from all this that in matters of friendship he was a devotee. The friends he had and their adoption tried, he grappled to his soul with hooks of steel. It really seemed that in his estimation his friend could do no wrong, and that what his friend did was better done than any one else could by possibility do. This devotion, this almost religious loyalty to his friends, was so great, so deep, that those who fell under the influence of its graciousness will ever hold it as among the richest of their treasures and far beyond all power of language to express.

"In all his life he leaned on no one, but was completely and entirely self-reliant and self-possessed. Nothing daunted him, nothing opposed him he did not overcome. Up and up he went, no matter how rough the way or steep the ascent, until he stood upon his chosen peak, triumphant;—and there he fell, with Death alone his conqueror. He grew up on the open prairie, and as a doctor, night as well as day, he dared its then

almost trackless paths to reach the side of some sufferer. His was one of those exceptional natures whose own well of strength furnishes all that is necessary to great achievement.

"His conversation was a satisfying pleasure to all who were brought within the sphere of its influence. He had drank deep of the classics, he was acquainted with much that was best in various literatures, he had traveled in many countries and always with an observant eye that delighted in the beauty of natural aspects, and he had served as an officer in the navy for four years. The knowledge and experiences thus gained furnished him with a superabundance of material for conversation, all of which he used with rare discrimination and remarkable felicity. He never talked for the mere sake of talking, and he was a good listener when others talked, but what he said was interesting and to the purpose and was frequently drawn from the seemingly exhaustless stores of his memory. In fact, his memory remained with him to the very last, not alone his memory of past events, but his memory as well of passages from favorite authors. Scientific man though he was, he had no patience with the educational clamor against the classics and in favor of science. He knew well enough that from the classics as from a welling fountain had flowed the streams which had so fed every literature that those literatures are to a great extent non-understandable without a knowledge of the classics; he knew well enough that man cannot live on science alone, dealing as it does almost entirely with externalities, and

that if he is to be truly nourished he must look to the food which will feed his soul; he knew well enough that exclusive devotion to science would cause the best springs of being to run dry, with the almost sure result of arrest or distortion of development; he knew well enough that while facts and their relations to each other with their governing laws are necessary to be ascertained, co-ordinated and made useful, yet that ideals are not to be found there, nor religion at its deepest, nor those aspirations which at times make us as the very Gods themselves; he felt that all these spiritualities lay at the very core of being, while facts and their relations lay only at its circumference; and he likewise felt that while science can measurably explain our environment, and can indeed do much to change it (and how miraculous her achievements!), yet that within its environment each soul must work out its own salvation, and that by no external mechanism merely can man ever hope to be saved. Thus it was that he valued the Past while at the same time knowing and feeling that the golden opportunity for each of us is the Present. Full well he knew that to tear up the Past would be to obliterate the Present, and that every flower now growing sends its roots deep down to the nourishing grave of a flower that was. This intelligent love of the Past led him to find valuable suggestions in the medical works of Hippocrates, Celsus and others, and to keep him to the old practice of bleeding in some of the cases not now usually thought to need such remedy. And this it was that led him to view with impatience the scholastic efforts to a supposed better

translation of the Bible. He loyally adhered to the King James version, that incomparable work of the incomparable Elizabethans, and he would have none other.

"He was not only accomplished in the Latin and Greek, some of which when in health he read nearly every day, but he was a French and German scholar, reading and speaking both with facility, and he had considerable acquaintance with the Spanish and Italian. Yet none of these linguistics ever stood in the way of his keeping abreast of medical and surgical progress. He took and read the leading American, English, German and French periodicals, and made copious notes from them when working on his 'Surgery of the Head and Neck.'

"He was well read in the American and European literatures, but in this, as in everything else, he showed the most distinguishing trait of his character—concentration of effort. He never scattered in anything. Hence his reading was *multum* and not *multa*. Only the masterpieces he really cared intensely for, and with these he had a familiar acquaintance. The Iliad was to him a perpetual delight, and although he could follow it in the original, he took great interest in reading its many English translations and in comparing the one with the other in the rendering of admired passages. The same may be said of Dante's 'Divine Comedy,' of Moliere's plays, and of Goethe's 'Faust.' As for the dramas of Shakespeare, he knew much of them by heart, and not long before his taking off he repeated long passages from them, and in one instance

corrected the misquotation of a friend. He cared greatly for Heine, but most of all apparently because of that wonderful man's penetrating appreciation of Shakespeare. Horace was his favorite among the Latins; he had some rare and interesting editions of that poet, and the best things in him he knew by heart. Indeed, outside of Shakespeare, Horace seemed to be his nearest literary friend. Many of the passages of the 'Paradise Lost' he delighted to read and to hear read, while among American authors Emerson and Holmes were his favorites, as Carlyle was among the moderns of England. For novels he seemed to care but little, his love in that line of literature having been mainly concentered on Dickens.

"Dr. Lane's mind was of wide compass, vigorous, serene, and not to be shaken by disease or even by death itself. Throughout his last illness no complaints or regrets escaped him; he bore his enforced helplessness with the resignation of a saint; and on one occasion a few weeks before he left us, something having been said to him about his career, he exclaimed with a slight tone of exultation mingled with one of resignation, 'I am satisfied!' And well he might be! His mentality was clear and alert till his last expiring gasp. He followed acutely and intelligently the course of his malady; and a few minutes before the fatal event, having told the nurse that he felt very weak and needed a stimulant, she suggested calling one of the attending physicians; this he declined; but scarcely had he swallowed the draught he had re-

quested, when throwing up his hands he exclaimed, 'It's death! death! death!' and almost immediately expired.

"Fond as he was of poetry and of the best in literature, yet his mind was essentially practical. Carlyle himself had no greater antipathy to metaphysics than had our friend. The problems of ontology, of determinism and freedom, and, indeed, the questions raised by Philosophy in her wandering, and not altogether luminous, course through the centuries, not only had no fascination for him, but they were positively distasteful. His view was that all such problems were insoluble, at least were insoluble by him, and being so, that he would waste his time by trying to solve them. Some may deem this to have been a defect in a singularly well-balanced mental organization, but if it be so how much do we owe to that defect! By reason of it our friend was kept straight on the course he had marked out for himself and which by nature he was best fitted to follow; by reason of it, no dream of piercing to the centre of things, with a possible consequent of despair at failure, palsied his energies; by reason of it he worked in the full glow of a rational optimism, and by reason of it he fronted full faced and with unappalled and irresistible courage the palpable realities that were clearly before him from day to day. And had one been bold enough to ask him what his religion was, he would have been likely to reply, as did Thomas Jefferson to one who had made the like inquiry of him: 'My religion is known to my God and myself alone. Its evidence before the world is to be sought in my life; if

that has been *honest and dutiful* to society the religion which has regulated it cannot be a bad one.' *

"The life that was close at hand was to our friend the one essential thing—to-day was his and to-morrow might never be; his task lay before him lit by the rays of an unclouded hope, and to the doing of that task he never ceased to address himself, leaving dreams to the poet and abstruse speculations to the philosopher. No siren voice could lure him as on he voyaged. If he halted from time to time to drink from the fountain of poesy, or to press the juices of nature to his lips, it was but as strengthening cordial that enabled him the better to keep on and on. And if genius be as Turner said it was, the capacity for hard work, or as another has said, the capacity for taking infinite pains, then indeed was our friend a genius.

"Dr. Lane was the simplest of men in his manners, though always dignified; and while for years he and his accomplished wife entertained their friends on Sunday evenings, yet he himself was not much of a social visitor and cared little or nothing for the conventionalities of society. His life was too concentrated, too earnestly bent on the accomplishment of his great plans, to yield to any demands except those he deemed imperative. While at times he may have seemed austere, he yet was the tenderest and kindest of men. His eye was not fixed on the fee but on the malady and the means to cure it. Many

* This extract is to be found in a letter of Jefferson to John Adams, dated January 11, 1817. In this letter Jefferson speaks of the inquirer as "one of our fan-coloring biographers who paints small men as very great."

an important operation he performed for no reward, and with no hope of reward, and never once did he refuse the poorest the benefit of his knowledge and skill.

"And yet this man who toiled so terribly, who accomplished so much, who ceased not till worn-out nature compelled cessation, was himself the victim of an incurable ailment. In fact it is truth to say that from early life he had scarcely known an entirely well day. The emphysema of the lungs which then developed, and for which there is no curative agency, necessarily weakened him, left him with a persistent cough and rendered him an easy prey to bronchitis, which several times came near to the ending of his life. And this it was that mainly contributed to his final taking off.

"With his other accomplishments Dr. Lane was a botanist, but he took more than a scientific interest in plants, trees and flowers. They were to him things of beauty which were joys forever. They always interested and refreshed him, and his home was in part made beautiful by the presence of flowers in abundance and variety, while no recreation seemed so to please him as his visits to Golden Gate Park. In fact that park was the subject of his last Lane lecture, wherein he exhaustively treated that incomparable pleasure ground in a manner not only surprising in its completness but delightful in its literary presentation.

"With all his sturdiness and strength he was a true gentleman born and bred. In fact we might truthfully say of him:

"He had completeness: Gentleman and man
Bloomed in his nature a composite flower;
The grace and elegance of mien that can
Alone assure us that the subtile power
Of pure refinement every action rules,
High culture, dignity and gentleness,
All these were his. And in the sterner schools,
Where none but souls that vigorously press
Forever onward win the world's success,
He was as sturdy as a man might be.
And with it all pretentious ne'er was he,
But went his way in charming modesty.

"Dr. Lane had no children but his works. Fortunately for him he united himself more than thirty years ago with a lady of rare accomplishments, who so fitted into his life that the two became spiritually one. The thought of the one was the thought of the other; together they planned everything connected with the college and hospital buildings; together they explored literatures; together they trod the shards as well as walked the flowery meads; and when the husband was doing work which by reason of its nature the wife could give no assistance in, he felt himself taking in at every breath the refreshment of her love and sympathy.

"Fortunate, thrice fortunate man! What fullness, what roundness of completion, what achievement following on concentration of faculty and effort, what heritage as result of all, rise before us here in the very sublimity of harmonious proportion! Why then should we grieve

for him, our brother? Why should we not rather send up our pæans of praise, that he was given to us for our enrichment and for the enrichment of those who will come after us? He had lived nearly two years beyond the psalmist's allotment of life, he had filled all the years of that life with labors that led to glorious results; nothing he touched that did not bloom in the full flower of abundant success; every step of his way, coruscating as it did with the jewels of his deeds, led him to the grand culmination of all — the founding of college and hospital, where he sits so securely throned that every stone of their structure would have to be annihilated before oblivion would dare to dream of making his name its own; and even then standing on the bare and barren spot it would beat the enemy off; yea, he lives more endurably still than in iron or stone — in the memory of man; and in that memory he cannot but live as long as Medicine can lift her glorious head among the glories of the world. We crown him with laurel that can never fade, and with that laurel round his noble brow we take earthly leave of his personal presence, and hail with jubilation his entrance into the company of the immortals."

JACOB COOPER, D. D., D. C. L., now and for long a member of the Faculty of Rutgers College, New Jersey, prepared the tribute which follows, but it arrived too late for utilization on the programme. Dr. Cooper, though

seven months younger than Dr. Lane, was his uncle, and was in the closest terms of intimacy with Dr. Lane in the latter's years of youth and early manhood. Correspondence by letter was always maintained between them and their mutual affection continued strong and unimpaired. The following is Dr. Cooper's tribute:

"The conservation of energy is the most important doctrine ever held by science. Its distinct enunciation is recent, and it was formulated by those who either ignored or were hostile to the belief that the world is controlled by a personal God. But, like all the weapons forged against supernatural religion, the evil purpose thwarts itself, since this doctrine is found to be a most effective iustrument in its support. For it teaches that every kind of energy, which necessarily includes man's spirituality, the greatest of all, is indestructible. This does its work in one place and under one set of conditions, then passes on undiminished to continue its service in new spheres of activity forever.

"There are evidently two kinds of energy at work in this world — one material, the other spiritual. The former serves, the latter directs. The one acts blindly, the other knows why it commands. Physical forces have no meaning save as they are controlled by something which knows why it acts. The latter may seem weak, the weakest in nature, but 'the thinking reed,' though bending before every breeze in apparent helplessness, sways the universe by its nod.

"As a notable illustration of these truths we have had among us a man who was the embodiment of energy. This was shown in every conceivable way. Power went out from the hem of his garment. His coming put away fear. His touch conveyed healing. His look calmed anxiety. His word inspired courage. His skill balked death. His presence rewarded our whole social life, and like quicksilver amid the rubbish it seized upon any grain of gold.

"He was the builder of his own character and fortune. In his youth he conquered poverty. He made a triumphal progress out from unsympathetic environment. He made circumstances his lackeys; and after he had achieved success superior even to envy, he did not forget the humble place from which he had risen. What he had won from the world by genius and untiring energy, he gave back like the clouds pour out to water the earth. Of most versatile character, and wielding every sort of energy, the whole was directed by the purpose to do right, the knowledge of the method and a will that was irresistible. His courage did not quail before audacious meanness. His sense of duty was not swerved by the flatteries of friends or the threats of enemies. He forgot his own vexations in the effort to console others. He arose from a sick bed to minister to those less ailing than himself. His will power controlled his own bodily weakness, his sympathy for others, his personal bereavements, his sense of public duty, all private interests. In him all energy was subservient to moral principle, illustrating the divine

utterance, "If thine eye be single thy whole body shall be full of light." Hence his power was so directed that it worked as a unit in a very marked personality. That personality has gone out from us, but continues somewhere as the embodiment of what he proposed, attempted and effected. In combination it formed the character which he had built up, and constituted the greatest force we had in this community.

"Has it perished? If so, then all science, which builds upon conservation, is false. Has this tremendous energy, which represented his personality, ceased its activity? Then the powers of nature which he touched, healed, increased, have ceased. Does physical force directed by moral still continue? Then Levi Cooper Lane is alive and expanding even as he did while in our sight. But we desire to peer into the undiscovered country and follow his movements.

"The border land between religion and science is full of analogies. The arc of a circle enables us to follow its course after it has passed beyond our sight. Our friend has crossed an invisible line. For this world and the next meet, and the place where they join is too narrow to be seen. Time and eternity are parts of God's day. Our Lord owns on both sides of the River of Death, and the two realms make but one sovereignty. Our friend, while he was in our sight, was about his Father's business without cessation, in sickness and in health, in joy and in sorrow. There was ever the same trend of the arc, and we have been privileged to see enough of it to calculate

its bearings and determine its future course. He will continue giving out light and love with increasing power forever; coming nearer to God, who was likened by Augustine to a circle whose centre is everywhere and whose circumference can be nowhere. His energy is conserved and his intense desire to do better service will find room for exercise in an unmeasured sphere of activity.

"But it is hard to walk our streets without seeing his earnest, kindly face. It is distressing to come to these institutions which he built up and not hear his cheery voice. It is agonizing to witness our loved ones grow sick without the hope inspired by his reassuring visit. Yet we should in thankfulness remember that by his will power he made that body which latterly was so full of pain and weakness the obedient instrument for the interests of benevolence, science, private friendship, public life. He was so patient, so courageous, so absorbed in his noble projects for the good of humanity that we thought he could never leave us. But there came a day when he 'had one clear call' from a Voice which he knew and from a country to which he would not go as a stranger. There was no fear to meet the last duty of Time. All that had preceded had been well done and Death was simply passing to a new scene, equipped by discipline with a character fitted for enlarged work. Hence there could be no cessation from activity or change of purpose.

"We look in the direction he went, but the tears so blind our eyes that we see darkly through a mist. We know that the marvelous energy, the loving sympathy,

the burning zeal for faithful service are safe beyond the touch of the Destroyer. We think too much of his removal from us and cannot quite sink our selfishness in the thought of his promotion. Love, that took a last lingering look at the shard which so lately was the abode of a choice spirit, desires to keep him still in sight.

"Nor blame we Death because he bore
The use of virtue out of earth;
We know transplanted human worth
Will bloom to profit otherwhere.

"For this alone on Death we wreak
The wrath that garners in our heart;
He put our lives so far apart
We cannot hear each other speak."

On Monday evening, the twenty-first day of April, 1902, the FACULTY OF COOPER MEDICAL COLLEGE unanimously adopted the following:

"The Faculty of Cooper Medical College, in grateful remembrance of our late President, our loved associate, our cherished friend and guide, makes this record in honor of Dr. Lane:

"Cooper Medical College owes its foundation and highest aspirations of its existence to Dr. Levi Cooper Lane, who gave of his wisdom and wealth, in beneficent love for his profession and humanity, the lands and buildings now known as Cooper Medical College and Lane Hospital.

"With deep sorrow we make record of the founder's death on the 18th day of February, in the year 1902, at the age of seventy-two years.

"May it be the will of God to grant and the gratitude of man to keep this College in all perpetuity as a living monument to Levi Cooper Lane, as an ever-teaching memorial to the great soul of its founder, who breathed into it his breath of life — his legacy to medical education, his boon to mankind!"