Introductory Lecture.

Woman's Medical College of Pennsylvania.

PROF. RACHEL L. BODLEY, A. M.

October 7th, 1875.

GRANT, FAIRES & RODGERS, PRS.

INTRODUCTORY LECTURE

DELIVERED AT THE OPENING

OF THE

TWENTY-SIXTH ANNUAL SESSION

OF THE

Woman's Medical College of Pennsylvania,

October 7th, 1875,

BY

RACHEL L. BODLEY, A. M.,
PROFESSOR OF CHEMISTRY.

Presented by H. L. Ward Jr

(PUBLISHED BY REQUEST OF THE CLASS.)

PHILADELPHIA:
GRANT, FAIRES & RODGERS, PRINTERS, 52 & 54 NORTH SIXTH STREET.
1875.

Woman's Medical College of Pennsylvania,

NORTH COLLEGE AVENUE AND TWENTY-FIRST STREET,

PHILADELPHIA.

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The next Spring Term of the Woman's Medical College, of Pennsylvania, will open Monday, March 20, 1876, and continue ten weeks.

Introductory Address.

GREAT EPOCHS occur but seldom in the life of a public institution as in that of an individual; meet is it, therefore, that when, in the lapse of years, they do occur, careful attention should be bestowed upon them.

Through such an epoch, great, and blessed as well as great, this College is now passing. The special period began one year ago, when the steadfast friends of our cause, gathered with the officers and students upon the foundation walls of this building, and while the mason stayed his trowel, and the burden-bearer rested awhile upon his hod, the corner-stone was laid by reverent hands, under a glowing sunset sky.

A *second* stage was noted, when on the evening of the 11th of March, a cheerful company thronged these completed halls, and congratulations and good cheer were the burden of the hour.

Upon the third and last stage of this great epoch we enter, as on this 7th day of October, 1875, we assemble, Corporators, Faculty, and Students, to hallow this noble temple erected for the "advancement of woman in the science and practice of medicine," by the earnest work of the *Twenty-Sixth Annual Session*.

As the new friends gather around us we each one in thought, if not in open speech, tell over again the tenderly-cherished names which are so interwoven with the warp and woof of the life and usefulness of this college, that they can never be forgotten. The self-denying labors of these good men and women so fitly adverted to by the Senior Member of the Faculty,* last October, beside the newly-laid corner-stone, constitute a page in its history which can never be erased.

Who that knew her does not at this hour experience intense regret that Prof. Ann Preston, living, does not stand at this desk to address this waiting throng! We never, throughout the whole glad year, have missed her presence more than here and now, as around us, above us, beneath us, are realized her brightest anticipations. But absent in body, she is present in the abounding fruit of her labors; these we thankfully accept, with full appreciation of the fact that had she and they of whom we have already spoken, not lived and toiled as only martyrs toil, the fair vision of to-day had never been!

They, Corporators, Professors, Students, labored, and we have entered into their labors. "*Into their labors*," and therefore year by year, as the Autumn comes, we renew the toil, rejoicing the while in the opportunity to work while our day lasts, as they worked.

* See Page 15.

As I have revolved in my thought during the summer months the subject of this Introductory Lecture, I have experienced solicitude that the theme might be one befitting my audience and the occasion.

Only those whom stern duty compels on these annual opening days to bring forth from the treasure-house things new and old as a greeting to an incoming class, can realize how rusty the old garments of thought look as we unfold them, how faded the oft-repeated injunctions, how utterly insufficient both material, and the brain which would newly fashion the material, seem to weave the bright, cordial, inspiring greeting with which we would fain welcome the young women of the land to a course of professional medical study.

The inspiration came at last, where I sought it not, in our spacious, sun-lit Chemical Laboratory, and following its leadings I present briefly to the class as an earnest of the better things which their professors have in store for them during the lecture season, the *Progress made in the Science of Chemistry* since I last delivered the General Introductory Lecture, or since the year 1868.

Only seven years, you say, and yet, who that is cognizant of the facts will not respond, with me, Yes! the fruits of the last seven years may be garnered with profit and even with pardonable pride, by the student in many departments of the great domain of Science. One year earlier than the date proposed, or August 27th, 1867, Michael Faraday died in London, aged 73 years. The laboratory of the Royal Institution, the scene of his life's toil, had been occupied before him by Sir Humphry Davy, of whom he was the immediate successor. It assists us to realize the marvellously rapid development of the science of Chemistry, when we are reminded that within a period but slightly longer than the life-time of these two men, all has been wrought.

Humphry Davy, when a youth, attempting in his master's garret with a few phials, tobacco-pipes, plates and saucers, to repeat the recently performed experiments of Priestley, Lavoisier and Cavendish, saw Chemistry in its dawning as a positive science. Faraday, his pupil, likewise toiling through a long and useful life, at length fell on sleep—but as he departed—lo! through those same laboratory windows was streaming the full flood of glorious day. Faraday's death occurred in the very midst of a time of great activity among the students of physical science in England, the natural outgrowth of the careful attention given to this department of knowledge under the patronage of the Prince Consort.

But not alone in England; in the laboratories of Germany and France for twenty years had raged, so to speak, a furor for experimental investigation. The great master, Liebig, who was himself the inspiration of the Laboratory at Giessen, doubtless had much to do with this enkindling of enthusiasm; but it was an idea, not a person, which marshalled this host of workers, and this idea was born in the laboratory of Dumas in Paris, January 13, 1834.

At this date, while engaged in some line of experimental research with acetic acid and chlorine, Dumas discovered that chlorine could replace hydrogen in the acid, and yet the compound remain unchanged as to its distinctive properties.

From this wonder of wonders, as it was deemed at the time of its discovery —which afforded a glimpse entirely new into the composition of the ultimate particles of matter—arose the doctrine known in science as that of Substitution.

Standing upon this, working chemists now took a new departure, and immediately, discovery rapidly followed discovery, both as regarded individual chemical compounds and series of compounds. Soon, however, the air of the laboratory world resounded with a great intellectual turmoil, which originated in the variety of novel and original theories suggested respectively by independent workers for the explanation of the particular phenomena to which the attention of each had been mainly directed.

A few years earlier than the date at which our story of this afternoon commences, a few master minds in England and on the continent were able by the force of their genius to make themselves heard above the din of this conflict, and after not a little warring among these themselves, they began to see eye to eye, and the result was a profound transformation in the Science of Chemistry.

I hold in my hand a little book which is already historic. The interest which attaches to it in this regard is due to the fact that it gave to the English-reading world the earliest intimation in book-form of the radical revision of chemical truths already referred to. Its author is Dr. A. W. Hofman, a German Professor brought to London by Prince Albert, where he founded under the Consort's patronage the Royal College of Chemistry. Upon the title page of this little treatise of 233 pages, published in 1866, occurs for the first time the expression *Modern Chemistry*, since translated on this side the Atlantic *the New Chemistry*.

Let us, then, here record the introduction into our own country of this so-called New Chemistry as the marked event in the annals of *theoretic* Chemistry for the seven years just passed.

It does not become me to essay to teach in this lecture, but it will not be unacceptable, I am sure, to some before me, if I delay a moment to dwell upon this new phase of our science.

What is the New Chemistry? I have been accustomed through these intervening years to give to the class among others a definition not found in the books. For it, I am indebted to the lamented Prof. Edward Parrish, late of the Philadelphia College of Pharmacy. At a casual meeting on the street in 1866, he held in his hand a copy of Hofman's book, which he was about returning to the Mercantile Library, and which he placed in my hand as I walked beside him.

Glancing at the title, I inquired its meaning. He quickly replied, "The Modern Chemistry is an attempt to reduce to a Natural History classification the numberless compounds of Chemistry."

We were both at the time returning from a meeting of a Natural History Club, where during a delightful hour we had been engaged with others studying plants. The words of the definition had their origin in the occupation of that hour, but for comprehensiveness, as well as clearness of conception, I have never met with a better.

It brings definitely before us this truth, that the newness relates to theories, *not* to the facts of the science. It sets before us this attempt with balance and test glass to discover distinct family relationships among atoms—side by side with the successful attempt a half century earlier to discern by aid of the lens, glimpses of a divine plan in the Vegetable Kingdom amid the endless diversity of root, stem, leaf and flower which might serve as a basis of a natural classification in Botany. It permits also the sigh of relief with which, when wearied in possibly a vain attempt to comprehend the New, we sink back to give thanks that the grand underlying phenomena of nature, abide, that they are as impassive as the oaks, the palms and their kindred amid the storms of the New Botany: that they persist unchanged through all time, grand, silent, prophetic.

Let us understand, then, that the starting point of the New Chemistry is *the atom*. Not the old-fashioned atom of Leucippus, but the atom as revealed in these later times by the joint labors of the chemist and physicist, as they have scrutinized physical and chemical interactions especially among gases and vapors. The speculative assumption at which they have arrived is, that discrimination, severe and constant, should be made between the physicist's atom or the molecule and the chemist's atom, par excellence, the atom! When reminded that the definition of molecule and atom had long been the burden of research and experiment in the Laboratory of the Royal Institution, we are prepared better to understand the origin of that masterly discourse of Tyndall's, which delighted scientific circles in 1870, entitled the "*Scientific Use of the Imagination.*"

Not alone in comprehending the omnipresent ether as its pulsations surge upward to human senses now in heat—now in light, is the trained imagination needed, but also as Tyndall well knew in grasping that most infinitesimal of all finite conceptions, the modern chemist's atom.

The starting point being the atom, we go on to learn that this atom is endowed with properties not hitherto ascribed to it. Beside the power of uniting with other atoms, it has the power of selecting with which other atoms it will unite. We no longer speak of chemical affinity as of old, using the term vaguely to signify the marriage of matter, as Boerhaave, the Dutch Chemist, who imposed the unfortunate *affinitas* upon science would have it, but when we enumerate the forces which energize matter, we close the list of so-called physical forces with electricity a dual force, and then add chemism or the chemical force, teaching that this likewise is dual in its nature.

Its two manifestations we term Affinity and Atomicity.

Affinity or the ability of unlike atoms to unite to form a new substance unlike either of the constituent substances, and atomicity, or the ability of atoms to select among other atoms as to how they shall unite and with which.

This last, Atomicity, is the newest conception, and may be said to constitute the basis of all modern theoretical ideas.

It has been well paraphrased thus: *Atoms are not equivalent.*

I repeat—*Atoms are not equivalent.* Let my non-professional auditor today grasp firmly the idea conveyed by these words, and she will carry away

with her the key which will unlock more than one beautiful chamber in the new chemical edifice.

Such in brief is the *New Atomic Theory*. Theory only let us remember. Prof. Cooke aptly characterizes it as a temporary scaffolding around the incomplete building, which will be removed as soon as its usefulness is passed, but for the present it is the best staging upon which as chemical students we can stand.

The superficial view in point of time must precede the deeper scrutiny, but at length the old gives place to the new, and that which was new soon becomes the old, as scientists climb the stair, and more and more clearly discern the Great Architect's plan of creation.

The new chemical notation and nomenclature claim in passing a place on my record.

There came a day in the evolution of the new ideas when the speech of Chemistry faltered through lack of words to express the rapid progress of the science, and the written language grew too meagre to adequately portray discovered facts. It was a critical time. What should be done? A few daring spirits essayed to supply the want by devising a re-modeled language, written and spoken, or a new chemical notation and nomenclature.

These men, however, were no iconoclasts—they only sought to widen that which had grown too narrow and to lengthen that which had grown too short. They kept steadily before them those memorable words with which Lavoisier, in 1787, inaugurated before the French Academy, the for that time matchless achievement of the first chemical nomenclature the world had known. These were his words: "*Every physical science is formed of three things; the facts which constitute the science, the ideas which recall them, and the words which express the ideas.*"

"*The word should give birth to the idea—the idea should accurately depict the fact.*"

The notation of equivalents which had long prevailed was carefully considered. The notation of atomic weights due in the first instance to Berzelius, but modified in important particulars by Gerhardt, was patiently gone over, and as the result a system offered which agreed with the data furnished by the law of specific heat, isomorphism, and the laws which govern the combination of gaseous bodies. The best parts of Lavoisier's beautiful conception remains, but we may compare these relics as incorporated in the new language, to the insects which are found imbedded in the amber of the Baltic—the medium in which they are preserved enhances rather than detracts from their beauty.

I wish just here to utter a remonstrance against the idea popularly cherished, to-wit—the idea that the so-called new chemical notation and nomenclature aims utterly to overthrow and effectually to destroy the older chemical speech. Nothing can be more untrue than this. The old is labeled in the chemist's thought the Notation of Equivalent Weights, a time-honored and useful aid which amply expressed the secrets of nature as understood when it was adopted. No single lineament is marred—it is tenderly laid away if you

please, as we put aside one whose work is accomplished, but the *new*, which is known as the Notation of Atomic Weights, expresses the later insights into the same unchanging phenomena.

Both notations express each with a distinctness which is entirely its own, two separate views as to the constitution of chemical compounds. In order that either shall be intelligently used, the lips which utter the words and the hand which wields the pencil must alike be moved by a clear-thoughted brain. A consistent chemist in the simplest scientific speech which she can use, reveals, it may be, her whole faith in a single word.

It would be esteemed a strange phenomenon, if the good housewife in the pronunciation of the name of some familiar substance used in culinary art could reveal to her listener her particular shade of religious belief.

But this marvel is wrought in the chemist's case, substituting for religious conviction the shade of chemical belief.

Let me illustrate: Take a salt nearly related to the housewife's saleratus. If I prefer the dualistic definition of a chemical salt, and have decided to regard it as composed of two compounds, one of which plays the role of acid and the other that of base, I am careful to call my substance Carbonate of Potassa, and am still more careful in formulating the expression to oxydize the metal, and thus express the base which I separate from the acid by a comma, thus: KO, CO_2. She who comes after me and reads my formula recorded in the Notation of Equivalents, translates my belief without difficulty.

If on the contrary I prefer the so-called unitary definition of a salt, and regard it therefore as a compound formed of two parts, one metallic, the other non-metallic, each able to exchange itself by double decomposition, I express my belief in the carefully pronounced Potassium Carbonate, and I put the same on record, thus: $K_2 CO_3$, the notation representing the Notation of Atomic Weights. It will be observed that the two notations represent the identical substance, viewed, however, from two different standpoints. The latter standpoint being higher than the former embraces a wider range of truth, and the notation which represents it is the one accepted in the Modern Chemistry. The notation and nomenclature of each system go hand in hand, and neither can be substituted in the one couplet for the same in the other.

By a happy device, which in its latest application is due to the French Chemist, Wurtz, these notations can be readily translated, the one into the other, and thus harmonized, while neither is destroyed.

The nomenclature, or spoken language of Atomic Weights, while it is the stone of least importance in the whole structure, has provoked more criticism than aught else. Chemical symbols, as shown in the notation, now supply to a great extent the place of philosophical names, and hence the nomenclature is a far less important feature in the New Chemistry than it was in the old. I do not propose entering upon the defence of this new speech, because I should weary without enlightening.

I will only say that it is pre eminently accurate, and its application easy. Should any of you chance upon a Winter's lecture in which previous to

entering upon the methodical study of the properties and the application in medicine of a valuable chemical, its classification was given, the better to fix its chemical constitution, and should find the class soberly noting the name—*di-chlorinated methyl chloride*—you might go away with a sarcasm on your lips, ready to be launched upon the first opportunity at the folly of the new-fangled, horrid chemical names; but I am sure the ladies who contentedly mastered this genero-specific name, the congener of the botanical name of a plant, would understand *chloroform* better all their lives for having learned it.

In leaving this whole subject I would note that in all chemistry books issued by American publishers during the last three years, whether new work or new editions of old books, these modern views have either been wholly adopted or the teachings of the author have been greatly modified by them.

Turning to the practical page of my record, and taking a survey of the work accomplished in the Laboratories of Chemists since 1868, I am greeted by the wealth of an abundant harvest.

In the attempt to particularize a very few of these discoveries, I head my list with the change in fortune which has befallen Hydrogen, one of the six permanent gases.

"What do you think?" wrote the late Prof. Thomas Graham of England, in 1869, to a brother chemist. "What do you think of metallic hydrogen, a white magnetic metal?" And yet now through Graham's labors, the condensation of hydrogen in the solid state by metallic palladium, and to a less extent by other metals, has become a familiar fact to every chemical reader. This most subtle of all gases, newly-christened Hydrogenium, is in our latest text books enumerated among the metals.

Among newly-discovered chemicals which possess an interest, viewed from our present standpoint, might be enumerated several chlorinated Anæsthetics.

The new substances discovered by the chemist are each succeeding year with accelerated rapidity finding their way into the daily life of the people.

It is in this outer vestibule of the Chemical Laboratory that the physician achieves his triumphs, taking these chemicals, and with them questioning the animal organism, and carefully noting the answers it returns.

It was while engaged in this highest application of chemical knowledge, blended with the physician's skill, that Dr. O. Liebreich, in 1869, discovered the sedative properties of chloral-hydrate, a discovery which marks an era in medical chemistry second only to the discovery of the anæsthetic properties of chloroform. This substance, chloral had long been known to chemists as a valuable member of a chlorinated series, having been discovered by Liebig in 1832; but its mission to suffering humanity was unsuspected until the date of Liebreich's experiments.

This two-fold discovery, which pertains to many of our most valuable drugs, challenges our attention. If we take up the long list, we shall find in numbers of cases the chemical discovery antedating the medicinal application by many years, as in the case just cited.

To the young physician there is inspiration in the consciousness of the broad fields of inquiry which lie before her just here. In these almost endless lists of new chemicals which daily grow yet longer, what potent remedies may not lie concealed awaiting the touch of her skilled hand, and the wings of her faith, to awake to a life of larger activity?

Another sort of work, just the reverse of this, has likewise, during the last seven years, experienced a remarkable development. I refer to the synthetical work of the Laboratory following after, rather than preceding the applications of given substances.

Since Wohler in 1828 achieved the marvel of building up, atom by atom, the molecule of an organic substance, urea, whose production had previously been supposed to be the sole prerogative of the animal economy, very much has been accomplished in the production, in an absolutely pure condition, by the way of synthesis, of compounds, whose sole source earlier had been the intricate substances derived from the animal or vegetable Kingdom.

I can best illustrate what I mean by reference to one of the most brilliant chemical discoveries embraced within the limits of our record. This is the discovery by Graebe and Liebermann, in 1869, of artificial *alizarine*, the coloring principle of madder, which has been used as a dye from time immemorial.

The chief interest for us which attaches to this discovery aside from its historical significance, is the insight it affords us into the possible achievements of the future. If theoretic chemistry can yield such fruit as this in the field of a remunerative manufacturing industry, what may it not afford in other fields?

What a red-letter day in medical chemistry, for example, will that be in which the eye of some chemist, (which has been accustomed to view by the aid of a severely-trained scientific imagination the atomic constitution of bodies,) shall see to crown the structure of some long-worked-over but hitherto incomplete molecule, with its *last* constituent atom, and shall in the same moment give to the world the pure, artificially-prepared alkaloid Morphia or Quinia.

The coal tar or aniline colors, whose whole production dates back no farther than the year 1856, have known a wonderful development within the last few years.

The most casual observer of womanly attire, whether in shop-windows or on the persons of friends, cannot fail to have noted the variety of tints and the brilliancy of color which each season increasingly discloses.

What we see in the streets of American cities is the response in material form to the questions which the master-chemist, Hofman, in his magnificent chemical Laboratory in the University of Berlin, is daily asking of inert matter.

But death hides where beauty reigns! An enthusiastic sanitarian in Michigan, within the last year, has prepared and placed on sale a useful little work on the subject of arsenical wall-papers, which rejoices in the lugubrious title of "*Shadows from the Walls of Death.*"

A Philadelphia-educated woman physician might select the dry-good stores of Chestnut and Eighth streets as her field of scientific research, and in time produce a practical work of still greater value upon the Death which lurks in the dyes of silk and woolen stuffs used as clothing.

Not only are the acids of arsenicum in constant use in the production of these colors derived from aniline, which of itself is a deadly poison, but of late years picric acid also, in and of itself a strongly active poison—has played an important role in the production of some of our choicest shades of color.

Upon the page of a recent number of a German scientific journal is revealed a chemical reaction connected with picric acid, which interests us as women.

This is the production of a chemical precipitate, lead picrate, upon silk while passing through the dyer's vat—a process for which I have no English word—the technical German word being "*schweren*," which may be translated "the making heavy" of silks.

It affords a solution to a mystery which of late has perplexed perhaps more than one woman before me: the mystery of the transformation of a silk, stiff and rich in texture and appearance as shown on the store counter, but marvellously cheap for the quality as you thought—a transformation which occurred possibly before the dress-maker had bestowed the finishing touches and which rendered it limp and cheap-appearing.

This precipitate deposited upon the threads and filling the interstices of the goods, designed to deceive the purchaser as to true quality, might after the first annoyance of your disappointment, be passed with a smile as a good joke not to be perpetrated a second time were the weary fingers that toiled over the silk and the lungs of the needle-woman who breathed in the poisonous particles which permeated the air about the goods as handled, not to be taken into the account.

A knowledge of these toxic possibilities lurking on every hand in our pampered and luxurious lives, in the wall papers which adorn our homes, upon the toys of little children, in the bon-bons, in the brilliantly dyed ribbons and tarltans, in the sewing-silks which the needle-woman threads in her needle, a knowledge of all this, such as can only be gained from a chemical standpoint and by a chemical student will be a power for good in your hands in the near future.

Many obscure symptoms of disease may, with the clue which this knowledge affords, be traced to their true source, but only as the result of original research, for here we tread on ground quite new.

As we advance, the subjects which deserve notice at our hands as a truthful historian, so multiply that we must be content with the briefest possible enumeration.

The development of *Spectrum Analysis* as a valuable aid in medico-legal investigation during the last seven years has been marked and important.

The valuable and thoroughly practical revision of the whole subject of *Disinfectants*, which occurred in Germany and France during the wars of 1870-71, as the Science of Chemistry, humanely followed in the wake of carnage and deodorized the horrible pits of death and disinfected the abodes of the living, deserves especial mention.

The department of *Chemical Climatology*, which has been erected mainly within the last seven years by a Royal Commission in Great Britain, appointed to analyze the air of Mines and Close Places, cannot be passed over in silence.

Here an attempt has been made to so circumscribe the vague idea of climate as to teach men and women that each building site, each living-room and bed-room, each work-shop, each school-room has a climate which cannot remain uninvestigated with impunity. The great changes in climate arising from the condition of our civilization have been viewed from the chemical as distinguished from the physical standpoint.

R. Angus Smith, who has been the distinguished leader in these investigations, has devised ingenious methods for detecting the solid matter suspended in the air and has been most indefatigable in his researches, which have yielded some curious as well as valuable results.

The waning day reminds me that this record, already too long, must close.

I heed the warning as I make grateful reference to the fact that during the past seven years Chemistry has been awarded in the best Medical Schools throughout the land a place of importance never before conceded to it.

The department of Medical Chemistry now lends attractiveness to the curriculum of the schools in which it is erected, and experience has proven that cultivation of no other field has yielded a larger dividend to Colleges or their Alumni.

The researches of each succeeding year widen the possibilities and enhance the value of such toil.

The sub-department of Zoo-Chemistry is rapidly assuming the position its importance demands. The analysis of the Urine, of serous transudations and other animal fluids grows in significance to the medical practitioner day by day; and just here an instrument, in the use of which the ladies of our College under their gifted instructor are developing an aptitude, looms up as of the last importance.

Without the compound microscope, improved and perfected as it stands to-day, Animal Chemistry, in its present attainments, would not be possible.

Gorup-Besanez, in the introduction to his admirable work, entitled "A Guide to Qualitative and Quantitative Zoo-Chemical Analysis," remarks that what the blow-pipe is to inorganic analysis the microscope is to zoo-chemical analysis.

Thus, ladies, during the hour which is closing, have I sought to place you, our students, upon the high road along which Science is marching; and the patient attention which you have bestowed upon the effort assures me that you are quite willing to follow its recent advancements.

The activity which I have indicated as prevailing in one department of study comprehended in our College Curriculum, may be said to characterize all, and you, therefore, enter upon the acquisition of professional knowledge in a propitious hour. If propitious as regards scientific inquiry, how much more as regards womanly endeavor, *per se*.

Look about you and consider where you are! No class of women earlier in the world's history than to-day ever entered college portals which displayed grander possibilities than lie within your view at this moment!

It has been my lot to spend many hours during the past Summer in these silent halls. The impression which their silence made upon me has been as remarkable as it has been overwhelming.

In perfect order, Lecture Rooms and Laboratories awaited the coming of their occupants.

The twenty-five-year-old College, in material form, was here, enriched by the munificent gifts of her faithful friends, and holding in store for her daughters' use, against their arrival, every appliance and every convenience which the most advanced state of scientific research could demand. But the college which is not shapen of bricks and mortar—the college which is to be known across the waters and in far distant lands—the invisible, born of these superior opportunities—what was this to be?

The building itself, so light and cheery, and beautiful within, as to suggest the feminine element in architecture, seemed a favorable omen upon which my fancy might seize.

A medical college building, and yet unlike any other one elsewhere, so visiting friends have said, as frequently in leaving they have paid a grateful tribute to its unique character, and to the light and cheer which floods every apartment. So should the work performed within these walls be. Unique, bearing an impress quite its own.

Take to your inmost consciousness, Ladies, the solemn realization, that with you as a College Class rests in large degree the responsibility of deciding the tone and the character of this work.

You are the Twenty-sixth Class—the successor of twenty-five earnest classes who have improved to the utmost such opportunities as could be afforded them, and with richest fruitage, as the professional lives of our 200 Alumnæ show—but you constitute the pioneer class of the New Era—you are the first to enter upon these enlarged opportunities, and the attitude which you as listeners assume, the spirit of entire consecration with which you handle scalpel or test-glass will tell upon every succeeding class to the end of time.

The lady professor who, when a class shall gather in this lecture-room in the autumn time which precedes the next centennial year of our nation, shall stand where I stand to-day, ah! what names now worn by fresh young faces before me will she not in her record link with thorough investigation, with brilliant achievement, and with genuine progress in medical science, and her audience, seated where you sit to-day, will judge of the hundred years which have gone, and give answer, let us hope, thus: "It was not in vain that in October, 1875, a house was solemnly set apart for the professional studying of women, and for their advancement in the study and practice of medicine."

I have finished my introductory words, and yet there lingers a message upon my tongue. It relates to a matter of practical moment, and the message is one which comes from lips that shall not speak to us again.

On the 9th of June, 1875, Dr. Mary F. Seelye, a graduate of our College, missionary physician at Calcutta, India, died (aged 28 years), in the midst of a

professional career which, though brief, was as remarkable as it was brilliant, whether we consider the large amount of good she accomplished through her professional skill, or the admiration she excited in all classes among whom she labored.

The unsolicited tributes to the value of her four years of service in Calcutta, which appeared in the public prints of that great city, are precious to all who look with favor upon this department of labor in which American ladies have no competitors.

In the editorial column of a native (Indian) paper, these sentences occur: "Miss Seelye, it will be remembered by many of our readers, is the lady doctor who came out to this country about four years ago, in connection with the American Mission in Calcutta. In virtue of her profession and her sex, she found the freest access into a great many Hindu households, where she was most warmly esteemed. She was one of the most modest and retiring of women, and she was an honor to her profession and her religion. May many more like her come out to represent the humanity and enlightenment of America in this country!"

It is the echo to this desire, expressed by a native Hindu, coming from Dr. Seeley's folded hands and silent lips, which I am impelled to offer to this audience of ladies at this time.

A successor of Dr. Seelye is urgently needed. Dr. Swain, the pioneer woman physician in India, also a graduate of this College, requires rest after her arduous labor of six years, and a physician is sought to take her place.

Not only from these two localities have urgent appeals come to us, but two other missionary societies are soliciting suitable women for other fields. It is no exaggeration to say that were twenty-five women entering upon the study of medicine to-day with a view to foreign service, work ready to the hand would be clamoring for every one of them long before they could be adequately prepared to enter thereupon.

There is undoubtedly resting upon American women a solemn responsibility which they cannot lightly esteem. They have themselves, humanly speaking, inaugurated this divine work of carrying healing mercies for the body to the zenanas of the Orient, into which such relief never before entered.

This work, so wonderful in its rapid development, established at costly expenditure of money, time, and now of life—must not be allowed to languish.

Women of piety, of good education, and social culture are those needed. I appeal, therefore, not alone to the professional ladies present or even to the members of the class, but to all ladies in the audience, in the hope either that they may themselves be moved to action by this recital of facts, or that they may by personal influence be able through successive years to induce suitable young persons to undertake medical study with especial reference to missionary work.

Remarks

Of Prof. Emeline H. Cleveland, M. D., on the occasion of the Laying of the Corner-Stone of the New Building of the

Woman's Medical College of Pennsylvania,

October 1st, 1874.

It would better comport with my feelings to-day to remain silent, and listen to such expressions of satisfaction or congratulation as the hour might suggest to others. I yield, however, to the request of my colleagues, both of the Faculty and the Board of Corporators, in consenting to detain you for a single moment.

This occasion is not less a proud one to us than it is unique. This building, the first as we believe, erected "*in the name of Woman and for her advancement in the science and practice of medicine*,"* is at once a mile-stone in the history of woman, and a grand achievement in our especial work.

Finding myself, however, in a retrospective mood, my own satisfaction would lack something of completeness were we not to remember in our exultation some who worked with us in the past, either in the Faculty or the Corporate Board, and who bore the heat and burden of many a day while yet this fruition was impossible.

At the risk of seeming invidiousness, the names of Harvey and Fussell, of the Professors still living, who have remained loyal to the profession and the college, deserve especial mention. They labored earnestly when labor meant both effort and sacrifice.

Among those who have been called to the higher life, my mind reverts with fondness to the face and form of one who was for many years the honored President of the Board of Corporators, Professor Charles D. Cleveland, a man whose noble bearing lent dignity to any occasion. I see him still as he walked among us with the measured tread of calm assurance. I listen anew to the modulations of his cultured voice, as in purest classic diction he conferred upon each new graduate the earnestly sought degree. If anecdote were in order I would gladly call to the remembrance of some here to-day how on a public Commencement occasion, when ridicule was a burnished weapon, and even the clergy found ready excuse from all participa-

* The words used by T. Morris Perot, President of the Board of Corporators, in laying the corner-stone.

tion in or sympathy with our work, he walked to the front of the platform at Concert Hall and offered an invocation touching in its simplicity and sublime in its appropriateness.

I recall, too, with grateful emotion, a young man, gifted and ardent, Prof. David J. Johnson, who espoused the cause of the college in its early days from fullest conviction that its objects were worthy, and who devoted himself to the teaching of chemistry with an understanding and an enthusiasm which made even its darkest pages luminous.

Of Isaac Barton, quiet, modest, unobtrusive, but ever mindful of the true interests and aims of the college, we need scarcely speak. Thanks to his efficient aid, we are enabled to realize in near prospect superior facilities for successful work.

And last, as last translated, one whose name has been mentioned in loving regard, Prof. Ann Preston. Her passage within the vail seems but as yesterday when we remember her lively interest in the very event we celebrate. Already had she begun the study of plans, and already in her mind was this very spot of ground consecrated to the purpose to which we devote it. And if the spirits of the departed do still linger about the places of their earthly abode, and still concern themselves with interests dear to them in this mortal life, our assemblage is assuredly graced with the presence of a Barton and a Preston, and if we may venture an interpretation of their message it is certainly one of lofty cheer. Beholding the foundations of this goodly edifice, they bid us rear the superstructure as guided by Him who is invisible, as seeing a long future of widening opportunity and widening influence.