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Boston University
Where shall the scholar live?

In solitude or in society?

In the green stillness of the country, where he can hear the heart of Nature beat, or in the dark gray city, where he can feel and hear the throbbing heart of man? I make answer for him, and say, In the dark gray city. — Longfellow
THE HONORABLE WILLIAM CLAFLIN.
The Honorable William Claflin

The Function of Experimental Science in a College Education

By Assistant Professor Lyman C. Newell, Ph.D.

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University Notes

The Departments: College of Liberal Arts; School of Theology; School of Law; School of Medicine.

Best Recent Books

THE HONORABLE WILLIAM CLAFLIN.

On the twenty-ninth of December, 1894, at a Boston dinner in honor of Charles Sumner, Senator George Frisbie Hoar gave public utterance to these words: "William Claflin, the story of whose life is the story of every righteous and generous course; whose friendship, with that of his accomplished and charming wife, has been the delight and solace of Sumner and Wilson and Whittier in their darkest hour."

For the three and thirty years last past the man thus nobly characterized has held the presidency of the governing board of our University. He will be seen no more in his accustomed place; for on the fifth of January, in the eighty-sixth year of his fruitful life, he was called to the world invisible.

He was the eldest son of the Honorable Lee Claflin, who was one of the three lay-founders of Boston University. Having been Governor of the Commonwealth in 1869, it was his privilege to give to the charter of the institution its validating official signature. From that time to this his name as Curatorum Cancellarius Munificent has stood on every Commencement program.

His remarkable knowledge of men, his tact and considerateness, his power to harmonize, and inspire courage, rendered his service one of inestimable value. On his response to a telegram sent to him in Europe shortly after the great fire had laid the business blocks of Boston in ashes, the ques-
tion of suspending or of continuing the operations of the University was by vote of the Trustees made to hinge. For that critical hour he proved to be the providential man. While never in position to match the munificent gifts of Isaac Rich and Jacob Sleeper, he ever placed at the service of the institution time, influence, admirable judgment, and such gifts as he could afford. Keen was his satisfaction as year by year he witnessed its growth in power, in public recognition, in good fruits manifest in thousands of human lives.

As the visitor enters the parlor of the Trustees of the University he is impressed by the strong, intellectual faces that look out from the framed portraits on the wall. He notes the keen, alert features of Isaac Rich. He lingers before the peaceful, serene face of Jacob Sleeper. He pauses before the rugged, hearty manhood of Lee Claflin. As his glance falls upon a face of manly strength, a face strikingly suggestive of a powerful intellect tempered by an habitual and philosophic calm, he invariably stops and studies the features before asking the name of the original of the portrait. When he is told that it is the portrait of Ex-Governor William Claflin he finds a singular harmony between his ideal of the man and the semblance of the artist.

In its memories of the founders and benefactors of the institution Boston University has a treasure far more precious than its mere material resources. Princely men and devoted women have contributed of their varied talents, their valuable time, their social influence. High up on the list of those who have thus unselfishly devoted themselves to the service of the University the historian of the institution will place the name of Ex-Governor William Claflin.

THE FUNCTION OF EXPERIMENTAL SCIENCE IN A COLLEGE EDUCATION.

Assistant Professor Lyman C. Newell, Ph.D.

It is the duty of a college to provide efficient education for its students. This obligation is now met, as we all know, by offering many courses of study from which the students are allowed or required to select a combination numerically equivalent to about one hundred and twenty hours. But there has never been a universal agreement upon the constituents of a curriculum, nor upon the combinations suitable for all students. Like many other teachers, I feel it would be idle to discuss the educational value of
the college curriculum as a whole, and it would likewise be imprudent to attempt to justify the current value of the different subjects. However, we can discuss with profit the intrinsic worth of single subjects in the present curriculum. The student seldom thinks of this principle. How can he? He is a learner; his eyes look ahead; the vista, not the wayside, interests him. The professor who has spent years upon his specialty is not apt to see its limitations; at least he prefers not to discuss them too freely. Nevertheless, the question of intrinsic worth is fundamental. We are apt to advise a student to elect certain courses, not because we know their actual educational value, but rather in the hope that the student by some magical process will extract from them the essence of education. Such advice may be somewhat excusable. One cannot till many fields and reap his own harvest abundantly. We may see a colleague's ways but never know his spirit. It seems appropriate, therefore, as we stand on the threshold of our extended scientific courses, to discuss the function of experimental science in a college education.

The scope of the topic is narrow. We are not concerned with liberal education, nor with the commercial rating of a college degree, and not even with culture. A liberal education is a matter of lifelong study, money-making is largely a question of wit and industry, and culture comes — if at all — from an inborn taste for the best. Our sole concern is the function of experimental science during the years spent in college.

Educators agree that college work should furnish reliable information and provide mental training. These factors must not be confused. Information does not imply training, nor is mental fibre equivalent to facts. A well-filled storehouse must be securely built. Furthermore, these factors should be simultaneously developed. Information and training are complementary, not interchangeable. Whatever else is done for the student in college, we must at least give him the opportunity to secure abundant information and valid mental training at all times.

About fifteen years ago science leaped into popular favor — not the text-book variety, but the laboratory sort. The professor was thrust away from his lecture-table and the student was given a place in the laboratory. The experimental method was heralded as the panacea for distressing cases of educational disease. Time has tempered the claims of its enthusiasts. Nevertheless, individual laboratory work is now regarded as an essential part of the college curriculum. It does not give the student all the information and all the training he needs. Only its imprudent advocates make this assertion. But it does provide the student with an agreeable environment which fosters and often compels the acquisition of a vast fund of use-
ful information while the mind is simultaneously undergoing a steady progressive training.

Laboratory work stimulates and cultivates the powers of observation. An experimenter in chemistry, physics, or biology is constantly confronted with situations demanding definite and immediate use of the senses. The simplest experiment requires watching. Nor is the task merely ocular. Apparatus must be selected and arranged, directions must be grasped, the progress of the experiment must be followed, and the final result accurately noted. At every step the mind must be alert. The student simply cannot escape the mental work. He must both observe and think. To this necessity for thought must be added the factor of interest. Most students enjoy experimental work. Science teachers seldom complain of lack of interest in the laboratory. True, the observations of the student are not always correct, but under proper supervision by the instructor the student who works faithfully day after day will acquire the habit of accurate observation. As experimental work proceeds the student learns to distinguish the essential from the non-essential. He sees that certain changes are important and learns to look for fundamental facts. In other words, he learns to make scientific observations. Students vary in observational capacity, but my experience shows that all students improve in their ability to observe correctly.

Again, laboratory work provides a favorable opportunity to form correct judgments. Experimental science is unique in this respect. Much of its data for judgments is concrete. It cannot be evaded. Certain facts found by experimental observation lead to a conclusion which in most cases can be verified by independent processes. Could there be a more ideal situation for acquiring the power to draw conclusions? There is no chance to escape the judicial situation. True, the student often fails to draw the correct conclusion, especially at the beginning of a course. But that is due to his faulty logic or insufficient information. Moreover, at any moment he can test his conclusion by repeating the experiment or by consulting the results obtained by others. The opportunity to judge is still there, and likewise the incentive to utilize this opportunity. Few other subjects pursued by the college student furnish such an admirable chance to learn how to judge. It may be urged that we are constantly required to draw conclusions in all branches of learning. This is granted, but the conclusions are seldom drawn from concrete data about which there can be little or no dispute. In literature, history, economics, and philosophy there is often an honest difference of opinion about the same set of facts, but not in the experimental science of a college course. Furthermore, the conclusions drawn...
by the student can be tested on the spot. This cannot be done with many historical and economic questions. A student who is learning the art of drawing correct conclusions should have the ideal opportunity. Once well started, he can be trusted to gather and weigh data of any sort, and he is then in some degree fitted to approach the larger questions in fields where evidence is less tangible and conclusions not readily tested.

In the science courses prescribed a few years ago the student was not required to draw conclusions. He was told what he should conclude! This defect in method has been eliminated. In the experimental work at Boston University each student is thrown upon his own resources. He stands or falls on his own work. But it should be noted that here, as in many institutions, the instructor is present to lead the illogical and careless out of difficulty. Help is given at a mental crisis.

Continuous observation necessitates the acquisition of information, and the facts accumulate while the mental training is in operation. Indeed, it is by observing the facts that the student in part trains the mind. Much of this information is useful, being closely related to modern industries, the arts, nature, and life. Great discoveries thereby become intelligible, vast enterprises assume interest, civic life is stimulated, and an impetus is given to avocations which relieve the weariness resulting from daily toil. Many a man owes his interest in a wholesome hobby to some bit of information acquired in a science laboratory. Information gained by experiments readily becomes fixed in the mind. The necessity for visualization is eliminated, for the student usually has the facts before him in concrete form. Sometimes it is a change in color or volume, occasionally an object of fantastic shape or exquisite beauty, often a new substance strikingly different from the original. But in any case the facts become lodged in the mind and are recalled with less difficulty than an abstract idea.

Besides giving the power to observe and interpret, experimental science teaches mental rectitude. The student perceives that he fails to judge questions on the evidence, and learns, often to his personal discomfort, that he must distrust preconceived notions. It takes a very short time for a student to comprehend that nature abhors fallacies, and his daily experience in the laboratory convinces him that only accurate observation and honest interpretation can rescue him from error. A recent book summarizes this point as follows: "The custom of careful scrutiny of hypotheses and their probation before the court of experiment begets a habit of mind which finally finds delight in the search for exact knowledge and correct opinions for their own sake."

Experimental science involves note-taking. In recent years it has been
customary for students to do this note-taking in the laboratory. Now the correlating of fact and expression in experimental science differs essentially from the traditional lecture note-taking. A lecturer gleans facts from various sources, arranges them to suit his conception, and expresses them according to his interpretation; the student records these expressions, if possible, interprets the statements as best he can, and finally endeavors to transform them into his own language, which may or may not agree with the facts as they lie in the lecturer's mind. The defects of this circuitous process of transfer are too familiar for further elaboration. In experimental science note-taking is a short bridge between fact and language. A student in the laboratory confronts the fact directly. There are no intermediate steps which involve the lecturer, nor is there the mental confusion incident to hurried note-taking. The student has all the facts before him, and can deliberately interpret them in language both suitable and accurate. The student's record-book thus becomes the statement of his own mental work. In well-supervised laboratories these books are scrutinized on the spot, thereby compelling the student to carry along a correct account of the facts.

The writer has already published his ideas on the psychology of laboratory work.* Nevertheless, a brief reference to this phase of the topic may not be out of place in this discussion.

Combining as it does concrete and abstract operations, experimental science has a more fundamental relation to a college course than many educators realize. It has a profound bearing upon the psychology of the student's development. Two desirable qualities of a student are curiosity and interest. But far more valuable than these is voluntary attention. Without curiosity a student never looks beneath the surface, without interest he seldom seeks knowledge, but without voluntary attention he never acquires mental power. What is the relation of experimental science to these vital factors in education?

It would be trite to say that experimental science arouses curiosity. Science is a field which has always lured one into an examination of secrets little short of magical. Students usually approach experimental work with an almost inordinate desire to "find out how things work." Now curiosity is a wholesome sign, but it is only a means to an end. It is worth stimulating, but once active it should be rationalized. An indiscriminate desire to know disconnected facts is evidence of only the beginning of the educational process. Unless curiosity changes into interest the student will always be a beginner. Obviously, he needs guidance into a more definite and systematic relation to mental development. The transition from curiosity to in-

* School Review, IX. (1901), 286.
Interest is a critical period for both student and instructor. The element of personality is potent, though often indeterminate. Indifferent instruction or distracted studying may upset the poised mind and turn to permanent dislike or reckless curiosity what might have become lifelong interest. Important as the personal element is, however, it can never succeed unless the subject is also adapted to the transformation. Doubtless many subjects contribute to the accomplishment of the delicate task, but it must be admitted that experimental science has much in its favor. Instructor and student frequently meet on familiar terms in the laboratory, where new and attractive paths of thought are easily indicated and many queries promptly answered. As the laboratory work proceeds, its concrete nature leavens the labors of the curious student. The normal tendency to shirk thinking is eliminated, essential facts become data for conclusions, and striking results serve rather to arouse the mind than the imagination. Interest, small at first, gradually grows into a determining factor. The continuous succession of phenomena is too alluring to be ignored. Disconnected facts slip into place, theoretical generalizations find abundant applications, nomenclature becomes familiar, and manipulation grows to be automatic. And thus the threads of curiosity are woven into the fabric of interest.

Once kindled, interest seldom requires energy from external sources. As in the case of curiosity, it is true that experimental science as a study stimulates a student’s interest. Science teachers as a class differ widely regarding methods, but they agree on the potency of interest. And if a student’s desire for an education flags, no better antidote can be given than a course in the laboratory. Nevertheless, valuable as interest is in mental development, it is not the essential agent. To stop when interested is to approach the station and not board the train. To “get there” psychologically one must not only be interested, but must be voluntarily attentive. The factor of willing concentration is essential to complete psychic life. The necessity for acquiring voluntary attention is painfully apparent. The world teems with people who have no power to concentrate their minds upon a task. The problems which confront us as a nation need for their solution men who have been trained to think continuously and accurately, men whose judgments are based on all available evidence and a profound love for the truth which is so forcefully exhibited by the laws of natural science. Capacity for such basal work does not come from the gratification of curiosity or from the application of interest, but from the performance of tasks which compel thought—continuous, honest, patient thought. Experimental science involves just such thought. Many experiments, even in elementary courses, fail unless the student pays strict attention to his
thought. Attention, necessary at first, soon becomes voluntary. Many agents contribute to this voluntary aspect. As a rule, students are contented in their work, and when pleasure is above normal attention is purely voluntary. The nature of the work, too, usually diverts the mind from the irksome thought of actual studying. The mind is not fixed on the task, but on the subject. The laboratory soon becomes not merely a place for labor, as its name indicates, but a place for contented mental laborers.

Two conditions contribute to the intrinsic value of experimental science. The work should be begun early in the course, preferably in the Sophomore year. At this stage of development the student's mind is more plastic than in later years, and he also has only a moderate distaste for details. He is not so inclined to be philosophical, and will approach science in a spirit which chooses fact instead of theory and accepts a result rather than investigates a cause. Second, sufficient time must be devoted to experimental work to permit the student to emerge from the clumsy, awkward stage into a somewhat automatic condition as far as simple manipulation is concerned, so that the attention can be devoted to thought rather than handicraft. To stop when one is just slipping from apprenticeship is fatal to educational results. One is left an artisan instead of becoming an artist. The critical point must be passed if a new mental life is to be secured.

The student who takes a somewhat extended course in experimental science early in his college career will acquire that enviable attainment, the power to be adequate in observation, keen in correlation, and accurate in conclusion.

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THE VALUE OF THE STUDY OF CHEMISTRY IN THE HIGH SCHOOL.

George W. Earle,
Instructor of Chemistry in the English High School, Somerville, Mass.

Two years ago over four hundred of the leading business and professional men in the city of New York were questioned regarding the attainments and character of the public-school boys in their employ; and also regarding the efficiency of the studies pursued in fitting these boys for their work.

The testimony of such men is reliable and of much value. Almost all testified that the public-school boys both spell and write better than the same class of boys used to do, and that they are more accurate in arithme-
tic. But there seemed to be a strong preponderance of opinion that the public-school course should give greater emphasis to character-building, to the training of the morals and manners; that while schoolboys are satisfactory as regards truthfulness, cleanliness, and ambition to succeed, "they are less satisfactory in punctuality, reliability, and ability to follow instructions."

This last suggests a way in which chemistry might be of great value as a high-school study,—in helping to train and develop pupils along the lines believed to be so important by these men.

A pupil experimenting in the chemical laboratory very soon finds out that carelessness or a neglect to perform the experiment exactly as he is told to do it terminates nearly always in failure; and that good results come only through carefulness and prompt and faithful following of the directions given him. Thus is cultivated at least some of those virtues which seem so eminently desirable for a successful business career.

No study could assist in "character-building" better than hard and honest work in the laboratory at some interesting but difficult quantitative experiment where the pupil must rely entirely upon his own efforts and depend for success upon prompt and truthful observation, accurate readings, and a strict following of directions.

If all that has been said by eminent educators regarding the ethical value of the study of the sciences could be collected there would be volumes of evidence along this line. A distinguished university president stated recently that it seemed to him that there were no other subjects in the entire school curriculum whose ethical values appeared to be so potent. And does not every laboratory teacher from his own experience feel sure that no subject taught has greater influence in training pupils to thoughtfulness, reliability, and especially promptness, and the importance of obeying orders, than the study of chemistry?

The ethical value of this study is alone sufficient to warrant its presence in the high-school course, but it emphatically has many other educational values.

The laboratory work certainly must train the power of observation; the study of chemical laws and formulas develops and strengthens the imagination; and the drawing of inferences aids the judgment and reasoning faculties. In the solving of problems and in the writing of notes by the pupils there is brought in a practical review of some of their mathematics and an opportunity for the cultivation of good English; and in the study of the historical part of the subject there are found accounts of heroes who sacrificed
their lives to science as thrilling and ennobling as any recorded in histories of wars and adventures.

It is the experience of teachers that pupils enjoy the study of chemistry, and at the end of the course nearly always express a desire to continue the work. In teaching this subject instructors are quite generally supplementing the school work by trips with the class to various local manufacturing establishments. These visits are both interesting and instructive. This practical side of the work appeals to pupils. It is natural to like to know how things are made and of what they are composed, and to understand something about the industries which are going on around us. To a certain extent is it not true that pupils get the most good from those studies that they like, and in which they are interested? The practical and utilitarian value of chemistry ought almost to justify its place in the high-school course. It certainly is one of the most practical of subjects, dealing as it does with the things of greatest interest to the human race. One's very existence is a succession of chemical phenomena! Every hour, every moment, our lives are dependent upon chemical activity within ourselves; and our comfort, health, and happiness in a great measure are dependent upon the constant fulfilment of the chemical laws of the universe. It is of great importance that the vital relations of chemistry to physical life be impressed upon pupils, and that they may have some knowledge of the fundamental principles of the science. Besides, even a brief course in chemistry gives considerable valuable information regarding foods and sanitation. Pupils will realize that it is the chemist who carefully examines all of the ingredients upon the market which are used in cooking, detecting impurities and adulterations; and that it is he who tells us the kinds of foods best suited to growth and most conducive to health.

No branch of science is so closely interwoven with our lives and so essential to our daily comfort and happiness as is the science of chemistry. To its discoveries the civilized world owes in a measure its present greatness; and much of future progress, health, and enjoyment will be through the increased activities in this field of science.

The number of pupils who take chemistry is usually a very small per cent of the entire number in school. This ought not to be. So useful a study should be taken by every high-school pupil. Teachers and college graduates, who know its value, should use their influence to encourage its pursuit until it has the following it deserves.
THE HONORABLE EDWARD H. DUNN.
EDWARD H. DUNN is by birth and training a member of the notable company of men who by their business acumen and their sterling integrity have given to Boston so commanding a place in the modern commercial world. Mr. Dunn was born in the city of Boston, and he received his early training in the schools of his native city. From boyhood he has been connected with the hide and leather business of Boston. As one of the foremost citizens of the commonwealth he has been repeatedly placed in positions of great honor and responsibility. He served as a member of Governor Gaston's Council. He was a Presidential Elector at the time of the election of President Grant. In local matters he has always taken a keen interest, and he has served his native city in various capacities. His ability as a financier has been shown in the numerous positions of trust to which he has been called in the business world. He has been a Director of the Shoe and Leather Bank, the Bank of Redemption, the First National Bank, the Home Savings Bank of Boston, and the Hudson National Bank. His interest in the public-school system in which he received his early training is still very keen. He has served as president of the Old Schoolboys' Association and the Eliot Schoolboys' Association. Since his boyhood he has been a member of the First Methodist Episcopal Church. As president of the Wesleyan Association and of the Methodist Social Union his name has become familiar to the community as a prominent and loyal representative of his church.

For twenty-seven years Mr. Dunn has been one of the most influential members of the Board of Trustees of Boston University. For many years he held the responsible position of vice-president of the Corporation. He had known personally Isaac Rich, Lee Claflin, and Jacob Sleeper, the honored founders of the University. He has been a generous benefactor of the University. His business training, his intimate knowledge of the spirit and traditions of the University, and his wide acquaintance with men have all been freely placed at the service of the University. Accordingly, when the death of Ex-Governor William Claflin made vacant the office of president of the Corporation, it was felt by the Board of Trustees that Mr. Dunn was conspicuously qualified to take up the important work of his distinguished predecessor.

Personally Mr. Dunn is one of the most genial and courteous of men. He has always shown a marked interest in the struggles of young men who are endeavoring to secure a college education. For a long time he has entertained once a year, at the Methodist Social Union, the Faculty and stu-
dents of the School of Theology. This gracious act has endeared him to hundreds of students. Only a few of his intimate friends know of the continued acts of private beneficence which have opened the door of opportunity to more than one ambitious and talented young man.

The strength of Boston University has always been, in large degree, the hold which it has retained on the esteem and confidence of the representative men of Boston. In Edward H. Dunn the University has a staunch friend, who is admirably qualified to represent it in the highest social and commercial circles of the commonwealth.

SOME PROBLEMS WHICH HAVE BEEN SOLVED BY BIOLOGY.

William H. Walters, A.B., M.D.

That the College of Liberal Arts has made a decided step in advance by the recent reconstruction of its Department of Biology, with the resultant increased attention devoted to that subject, is a fact that no one conversant with the circumstances will deny. And that the science of biology is one receiving ever-increasing attention by students and investigators the world over must also be admitted.

Biology, the science of life, is a subject that, in its widest definition, underlies the majority of all studies, they being merely different manifestations of that life. Hence it includes botany, zoology, and psychology, and it forms one of the main features of the curriculum of the Medical School. By it we endeavor to discover what life is, how it manifests itself, and how it may be conserved when in unfavorable environment. An important part of this pursuit, that which gives one a more intimate insight into the purpose of the Maker of all life, has been noted and its results described in the columns of BOSTONIA by others better fitted to give such conclusions than the present writer. Leaving that part of the subject, may we not profitably consider what this study of biology has done for humanity, and why it should still be followed with the greatest care?

From the earliest times men have devoted to the study of life their most serious attention. In the early centuries the theory of spontaneous generation, whereby living beings were said to have their origin from inert matter, was universally accepted. Anaximander (B.C. 610) believed that animals were formed from moisture. Empedocles (B.C. 450) explained in this man-
ner the presence of every living organism on the earth. Aristotle (B.C. 384) said, "Sometimes animals are formed in putrefying soil, sometimes in plants, and sometimes in other animals." At a later date, Virgil, in his Georgics, gives directions for the spontaneous generation of bees.

This theory, now known to be fallacious, received its first rebuff about A.D. 1690, as a result of a little biologic observation and investigation.

Francesco Redi noticed that prior to the putrefaction of meat and the appearance of maggots numerous flies alighted on the meat. This caused him to inquire whether these maggots were really spontaneously generated, or whether they were not rather the young and immature progeny of the flies. To settle this he placed some meat in an open jar, covering the top with a sheet of paper. The result was that no maggots appeared, although putrefaction took place as before. Substituting for this paper cover a piece of fine wire gauze or netting, through which the odors could pass, flies were attracted, alighted on the gauze and deposited their eggs. In due time maggots were seen on the gauze, but not on the meat below. As a sequel of this experiment, scientists began to ask if this idea of spontaneous generation was so positive a fact as they had formerly considered it.

At about this time Leeuwenhoek, by an improved microscope of his own construction, discovered those minute forms of life now called bacteria. Transition from inert matter to these almost infinitesimal living units seemed much more probable than a similar change in the higher forms, and so, unfortunately, gave temporary aid to the old theory. Space forbids description of the biologic studies and experiments that were made to finally and successfully prove that here, as with the maggots, spontaneous generation does not take place. Suffice it to say that we now know that all life must have its origin from some pre-existing life. This is one of the foundation-stones of biology. We not only assume and believe it to be true, but are able to prove it.

If we examine this science in its modern form we shall find that some of the greatest blessings of recent years have been received as a direct result of the study of biology. The majority of the benefits which we shall enumerate will be in connection with the medical side of the subject — not on account of their limitation to that field, but because of the writer's greater familiarity therein.

Prior to 1875 any major surgical operation was looked upon with great fear and anxiety, not only by the layman, but by the operator as well. The occurrence of pus in surgical wounds was considered to be the normal and invariable sequel of all operations. This was termed "laudable pus," and in many cases did not seriously interfere with the recovery of the patient.
Often, however, the result was not so favorable: the patient developed fever and died of "blood-poisoning." Contrast this with the present results of surgery, with its invasion, with remedial measures, of every body-cavity that man possesses, regions entirely out of the reach of the operator of thirty years ago. What has brought about such a wonderful change? It is almost entirely due to the study of biology, and a practical application of the results of that study.

In the early seventies, Klebs, from his investigations, conceived the idea that pus formation might be due to those then little known forms of plant life, bacteria. So clearly was this theory advanced that in 1875 Lord Lister gave it a practical test in his operations. He immersed all his instruments in a solution of carbolic acid and used a carbolic spray to play over the wound during the entire operation. In this way all bacteria gaining access to the wound were killed. The results were most convincing. "Laudable pus" began to disappear, and the wounds healed much more readily and kindly. In short, the results of biologic study have, in but little more than a quarter of a century, revolutionized the entire practice of surgery.

Not only, and not chiefly, in surgery has biology been of the greatest benefit. That large class of diseases known as infections has been forced to give to us many of its most tenaciously retained secrets, and has, in many cases, had much of its horrors removed.

To the biologist is due the discovery of the cause, progress, and termination of that disease which of recent years has probably received the most rigid study of any, tuberculosis. To him, also, belongs much of the credit for its rational treatment. Before 1882 all efforts to find a cause for tuberculosis had proven unavailing. At that date Robert Koch, after exhaustive studies on the lower animals and in the laboratory, discovered the bacillus of tuberculosis. Since that time the world has become more and more able to successfully cope with the scourge. The specialists in biology, bacteriologists, have learned that sunlight and fresh air are prejudicial to the development of the organism, that a well-fed person can more readily combat the infection than one poorly nourished, and that a vigorous body and contented mind make for health in the majority of patients. The result is evident. Tuberculous cases are kept in the sunlight as much as possible, they inhale fresh air, take plenty of food, have moderate exercise, and are provided with something to occupy the mind. Here, then, biology has caused that much-dreaded infection, well called the "white plague," to be transformed from an incurable disease to one from which the majority of its victims can escape with comparative ease.

The products of biologic studies have revolutionized the treatment of
another oftentimes fatal disease, diphtheria. As early as 1884 bacteriologists had discovered the parasitic cause of the infection, but not till later than 1890 was the most important fact promulgated. This, in brief, consisted in the discovery that animals artificially inoculated with diphtheria poison manufactured in their own bodies a substance somewhat akin to an antidote. They further found that not only was this antidote present in the bodies of the animals, but that it could be removed in the blood serum and when injected into the body of one suffering from diphtheria act as an antidote; also that when given to one who had been subjected to infection it could render him much more resistant to the disease. Thousands of lives have by this means been saved by the laboratory results.

The Oriental or bubonic plague has in recent years appeared in widespread epidemics in parts of Asia, causing an almost innumerable number of deaths. In 1894 the cause of the disease was demonstrated to be a minute vegetable organism which is transmitted from person to person by the intervention of some of the lower animals. This, together with the discovery of a remedy somewhat analogous to the diphtheria antitoxin, has done much to very materially reduce the mortality.

Possibly the most striking biologic experiment in the study of disease was that performed in connection with investigations concerning the etiology of malaria. This is a malady that had for centuries given to certain districts a bad repute, notably so certain of the environs of Rome. So notorious was the last locality that the so-called "Roman fever" became known the world over. In the latter part of the nineteenth century Laveran had recognized within the bodies of certain blood-cells of malarial patients organisms that he correctly thought belonged to the animal kingdom. The means employed in transporting them there was unknown. In order to conclusively test one of the numerous theories concerning this means, a party of Englishmen went to Italy and lived for some time in the very worst part of the malarial district. Their only precautions were to prevent any mosquitoes from biting them. They lived in mosquito-proof camps, never leaving them between sunset and sunrise, the time of mosquito activity. None of the men contracted the disease, although it was everywhere about them. They captured a few living mosquitoes, which were sent to London and allowed to bite persons who had never had malaria. Typical symptoms soon made their appearance in these people. It has now been conclusively settled that one species of mosquito only is thus able to transmit the disease from patient to patient, and that the disease is transmitted in no other way.

The result of the application of somewhat similar tests to the transmissibility of yellow fever is known to every American to-day. When the
United States took possession of Cuba this disease was the one causing more deaths than any other on the island. In fact, Havana had probably never for decades been without some cases. Measures were immediately taken to eradicate a certain variety of mosquito from the entire territory and to protect everybody from any of these dangerous insects that might remain. To-day the disease is practically extinct in the entire republic. In this particular instance our knowledge is, as yet, imperfect, for while we know that the contagion is disseminated by the mosquito, we do not know just what is the true parasitic cause. The micro-organism has yet to be discovered.

Examples of the results of biologic study might be multiplied indefinitely, but only one other will be mentioned in any detail,—typhoid fever. The typhoid bacillus, present in the intestinal walls of human beings, causes a certain characteristic set of symptoms, varying with the individual. Before the discovery of this organism the sufferer was a source of danger to all with whom he came into contact. And this was not all, for hundreds of cases of typhoid have been traced to people whom these secondary victims had never seen, and who were living, perhaps, miles away. Now that biology has revealed to us the infectious agent all this danger is removed. With proper care, a typhoid-fever patient is now treated in the general wards of the hospitals without any danger of infecting his neighbors.

Nothing will be said concerning pneumonia, hydrophobia, tetanus, leprosy, tropical dysentery, or any of the other numerous diseases caused by parasitic activity. In many of these the secrets have been entirely revealed. Many more still await the patient, careful, and trained attack of the biologist.

It is true that the dissection of a frog or a rabbit or other pursuits of an elementary biologic course, as any undergraduate course must almost necessarily be, does not immediately lead to these questions. But neither does knowledge of the alphabet immediately allow one to read abstruse philosophic or scientific volumes. In both cases the foundation must be laid, and the firmer the foundation the more secure will be the superstructure. And let not the undergraduate student of biology think that his only end must be along the lines of medicine, as here indicated; for this is but one of the roads radiating from a common centre, one travelled by many, and one where, on account of the puzzling phenomena encountered, the student should have the very best preliminary preparation—a preparation only to be acquired in a laboratory of general biology.
THE DEPARTMENT OF NATURAL SCIENCE.

We devote a considerable portion of this issue to the newly organized department of Natural Science. The contributed articles, coming from representative men in three distinct fields of educational work, will repay a careful reading. Their plea for the assignment of a generous amount of space to the natural sciences in the curriculum of the high school and the college will have the hearty approbation of all broad-minded educators. There is not a word in any of these articles which will not receive the cordial endorsement of a liberal advocate of the ancient classics. The figures which we give elsewhere in this issue, showing the number of students in the various scientific courses during the present year, is conclusive testimony to the wisdom of the University in opening this department within the college buildings. The total number of names on the rolls of the scientific courses during the first semester was 150; during the present semester there are 283. The total for the year is 433. This large number becomes the more significant when it is compared with the small number of students who elected the scientific courses which the college has hitherto provided under the direction of the professors of the Massachusetts Institute of Technology. These new facilities for scientific study under the direct control of the college Faculty will undoubtedly result in a substantial increase in the number of students, and will tend to increase the proportion of men in the College of Liberal Arts. In our next issue we shall publish an excellent article by Professor A. W. Weysse, Ph.D., under the title "Biology in a Liberal Education."
THE PROPOSED INTERNATIONAL CONFERENCE.

The proposition of the Professors of Language and Literature in the Faculty of the College of Liberal Arts to call an international conference for the purpose of adopting a phonetic alphabet has begun to attract general notice. There has been some misunderstanding regarding the nature of this proposed alphabet. It has been spoken of as an attempt to revive the Volapük system. It has been hastily assumed that the new alphabet would result in a universal adoption of the peculiar diction and spelling which made the fortune of the quaint humorists of a generation ago. It is proposed simply to establish a uniform phonetic system by which the pronunciation of the words in the dictionaries of all modern and ancient languages can be clearly indicated to the scholars of every nation. The need of such a system is manifest to any one who consults the divergent systems employed in the dictionaries of any given language. The Boston Evening Transcript has rendered great service to the movement by a recent editorial which called attention to the thoroughly sane nature of the proposition and the undoubted need of an alphabet of the kind thus indicated.

THE REGISTRATION OF PROSPECTIVE STUDENTS.

In the last number of Bostonia reference was made to the new system of registering prospective students. The editors of Bostonia requested the graduates and friends of the University to forward the names of students who are intending to enter Boston University, or who might be pleased to have their attention called to the advantages which the University offers. The response to this request has been very general. The number of such names already on hand is far in excess of that received during any previous year. A very gratifying feature is the unusually large proportion of young men. To the persons whose names are thus forwarded there will be sent from time to time copies of the official publications of the University, and such other information as may guide the high-school student in his choice of a college or in wisely shaping his preparatory course. With the approaching end of the college year this list of names will doubtless receive constant additions. The attendance during the coming year will in all probability show a marked increase as the result of this effective service of the graduates and friends of the University.
THE ANNUAL MEETING OF THE BOARD OF TRUSTEES.

The annual meeting of the Board of Trustees of the University was held on Monday, January 9, in the Trustees' Parlor of Jacob Sleeper Hall. The recent death of Ex-Governor William Claflin, who had signed the charter of the University in 1869, and who had been since that time the president of the Corporation, caused the most profound grief among his colleagues on the Board. A resolution expressive of the sorrow of the Board was passed, and was entered upon the records of the University. Ex-Governor John L. Bates was appointed chairman of the meeting. Reports from the Deans of the various departments of the University showed that the institution is expanding steadily and normally. The following professors were re-elected for the statutory term of five years: Marcus D. Buell, A.M., S.T.D., Professor of New Testament Greek and Exegesis; Henry C. Sheldon, A.M., S.T.D., Professor of Systematic Theology; Hinckley G. Mitchell, Ph.D., S.T.D., Professor of Hebrew and Old Testament Exegesis; Charles W. Rishell, Ph.D., Professor of Historical Theology. Rev. Samuel L. Beiler, S.T.B., Ph.D., was appointed Professor of Practical Theology. Assistant Professor Samuel J. MacWatters, of the School of Theology, was given a leave of absence from June 1, 1905, until February 1, 1906. The following Trustees were elected, their terms to expire in 1910: Mrs. Isabel P. Cushman; Rev. John W. Lindsay, LL.D.; Charles Leeds, M.D.; Rev. Willard T. Perrin, Ph.D.; Daniel G. Wing. The following Visiting Committees were elected, for a term of three years: For the College of Liberal Arts: Enoch C. Adams, A.M.; Lee Claflin Haskell, A.B.; Hon. George R. Jones, A.B.; William B. Snow, A.B.; George A. Dunn, A.B.; Rev. George S. Butters; Mrs. Daniel A. Goodsell. For the School of Theology: Rev. C. A. Crane, S.T.D.; Chancellor James R. Day, S.T.D.; Rev. C. H. Stackpole; Rev. Joel M. Leonard.

One of the most important of the matters that came before the Board was the election of a successor to Ex-Governor William Claflin as president of the Corporation. In view of the long service of Hon. Edward H. Dunn as vice-president of the Corporation, and his unflagging interest in the welfare of the University, his choice as president of the Corporation was, in the highest degree, appropriate. The appointment of Ex-Governor John L. Bates as vice-president of the Corporation was an especially significant action, as it secures for the University the services of one of its own graduates and a man of trained executive skill and commanding influence.

A DISTINGUISHED HONOR TO CAPTAIN L. D. BAKER.

On Wednesday evening, March 15, Captain L. D. Baker, of the Board of Trustees of Boston University, was the recipient of distinguished honors from the citizens of Kingston, Jamaica. He was presented with a silver service in recognition of the valuable services which he has rendered to the colony and the esteem in which he is held by all classes of the community. The gathering included the most notable men of the island, among them His Grace the Archbishop of the West Indies and His Excellency the Governor of Jamaica. The Army, the Navy, and the Civil Service were
represented by distinguished men. The Archbishop of the West Indies was one of the speakers. In reply to the speech of presentation Captain Baker made an admirable address, in which he sketched the growth of the foreign trade of Jamaica from its feeble condition in 1871 to its present great proportions. The Kingston Daily Telegraph of Thursday, March 16, devoted nearly a page to an account of the gathering, and publishes a portrait of Captain Baker. In an editorial the same paper pays a just tribute to Captain Baker and employs the following appreciative words: “If there is one man towards whom the people of Jamaica should feel deeply and sincerely grateful, it is that well-tried friend of the island to whom a presentation of silver plate was made yesterday. . . . It is fitting that the people of Jamaica should present to Captain Baker in his declining days a memento of the great work he has done for them and a token of the gratitude they feel toward him and the sentiments that are entertained by all the inhabitants of this colony, high and low, rich and poor.”

THE RELIGIOUS EDUCATION ASSOCIATION.

At the Third Annual Convention of the Religious Education Association, held in Boston, February 12–16, Boston University was represented both on the Executive Board and on the program of exercises. Among the members of the Board of Directors of the Association are Bishop Wm. F. McDowell, S.T.B. ’82; President Samuel Plantz, of Lawrence University, S.T.B. ’83, Ph.D. ’89, and Professor George A. Coe, S.T.B. ’87, Ph.D. ’91. The University was represented on the various committees of arrangements by Professor B. P. Bowne, Rev. George R. Grose, S.T.B. ’96, and by Mr. Silas Peirce and Rev. W. T. Perrin, S.T.B. ’74, Ph.D. ’08, of the Board of Trustees of the University. On the program of the convention the University was represented by Professor George A. Coe, Ph.D., of Northwestern University, who spoke at the opening service at the Old South Church on Sunday, February 12. On Monday evening, February 13, at the official reception of the convention held at Faneuil Hall, President W. E. Huntington extended, in the name of the universities and colleges and educational institutions of Boston and vicinity, a welcome to the delegates and visitors to the convention. On Tuesday evening, at the first general session of the convention, held in Tremont Temple, Bishop Wm. F. McDowell, S.T.B. ’82, gave an address on the theme “The Direct Influence of God upon One’s Life.” On Wednesday morning, February 15, at Park Street Church, at a joint meeting of the departments, Professor George A. Coe gave an address on “The Place of Formal Instruction in Religious and Moral Education in the Young Men’s Christian Association.” At the session of the Department of Universities and Colleges, on Thursday afternoon, February 16, Professor B. P. Bowne gave an address on the theme “What Can the Teaching of Philosophy Do for the Religious Life of Students?” The session of the Department of Secondary Public Schools, on Wednesday afternoon, February 15, was held in the Chapel of the College of Liberal Arts of the University.

THE EMPIRE CLUB.

On Wednesday, January 11, the Empire Club, an organization composed of those graduates and undergraduates of Boston University who were born under the British flag, held a meeting at the Theological School of the University. Addresses were given
by Assistant Dean Charles W. Rishell, of the School of Theology, and by Acting Dean William M. Warren and Professor E. Charlton Black, of the College of Liberal Arts. Professor Samuel J. MacWatters, of the School of Theology, contributed to the musical program. An interesting feature of the gathering was a roll-call to which those present responded stating in what part of the British dominions they were born. This organization has already been influential in drawing students to Boston University, and plans are maturing whereby the advantages of the University may become more widely known in Canada.

THE MEN'S BANQUET.

On Tuesday, March 28, there was held in Jacob Sleeper Hall a banquet of the men of the various departments of the University. The meeting was intended primarily for the undergraduates, but a number of the graduates who had seen the announcement of the meeting showed their interest in the University by attending the exercises. The attendance was large; fully one hundred and sixty men, representing all the schools of the University, sat down to the banquet in Jacob Sleeper Hall. At the conclusion of the banquet Professor F. S. Baldwin, who presided, called the meeting to order. Addresses were made by undergraduates from the various departments. Several representatives of the Faculty and of the alumni made addresses. Professor George E. Gardner, of the Law School, and Professor Frank C. Richardson, of the School of Medicine, represented these departments of the University. Mr. O. S. Marden, '77, the editor of Success, paid a tribute to his Alma Mater, laying stress upon the inspiration for future work which he received during his college life. Mr. Marden was a member of the first class which graduated from the College of Liberal Arts. Mr. J. E. Smiley, college secretary of the Boston Young Men's Christian Association, spoke as a representative of that organization.

This was the first attempt to bring together at such a gathering the undergraduates of all departments of the University. The cordial response to the announcement of the gathering, and the unmistakable enthusiasm with which the various references to the University were received, make it evident that this gathering may well become a permanent feature of the University life, and that it will exert a powerful influence in advancing the interests of the institution.

Among the graduates of the College of Liberal Arts who attended the exercises were the following: Professor Charles J. Bullock, '89; Mr. F. W. Kimball, '94; Mr. R. A. Robbins, '96; Mr. Frank M. Marsh, '98; Mr. D. S. Wheeler, '00; Mr. E. W. Crawford, '01; Mr. W. J. Bannan, '02; Mr. J. J. Butler, '02; Mr. W. A. Chandler, '02; Mr. F. P. Webber, '02.

On Friday, April 14, there will be held, in Jacob Sleeper Hall, a convention under the auspices of the Massachusetts Sunday-School Association. There will be two sessions, one in the afternoon, beginning at 2.30; the second session will begin at 7.30 P.M. Between the two sessions supper will be served in the University and an hour of social converse will follow. The program is very full and attractive. Boston University will be represented by several speakers, among whom are President Huntington and Professor E. C. Black. Music will be furnished by the College Glee Club. Dean Wm. M. Warren will preside at both sessions of the convention. The meetings are open to the graduates of the University and to the general public.
President Huntington presided at a public meeting held in the Old South Church, Boston, on the evening of Thursday, February 2. The meeting was held under the auspices of the Young Men's Christian Association, and was called for the purpose of directing public attention to the Christian work which the Association is now carrying on in the Japanese army. President Huntington delivered a brief address and then introduced the speakers of the evening: Mr. Stewart L. Woodford, of New York; Dr. P. S. Henson, Pastor of Tremont Temple; Mr. Galen M. Fisher, National Secretary of the Young Men's Christian Association in Japan; and Mr. Arashima, a Japanese student in Harvard University.

A memorial service in honor of the late Ex-Governor William Claflin was held on the afternoon of Sunday, February 5, in the Methodist Episcopal Church in Newtonville. The principal address was given by Ex-President William F. Warren.

By the recent death of Mr. John W. Pycott the University has lost an interested and highly esteemed friend. In coming years all those who make use of the telescope which he presented to the college will have abundant reason for cherishing his memory and honoring his name.

The Commencement address on Wednesday, June 7, will be delivered by Rev. Charles Cuthbert Hall, D.D., President of Union Theological Seminary, New York. Dr. Hall presided at the recent convention of the Religious Education Association in Boston, to which reference is made elsewhere in this issue.

Rev. Daniel Dorchester, Jr., Ph.D. '91, pastor of Christ Methodist Episcopal Church, Pittsburg, represented Boston University at the inauguration of Dr. McCormick as chancellor of the Western University of Pennsylvania on Wednesday, February 22.

Zion's Herald of January 25 contains portraits of Dr. Austin Barclay Fletcher and Miss Juliette Smith, both of whom are Trustees of Boston University. The portrait of Dr. Fletcher is accompanied by a biographical sketch. Under the portrait of Miss Smith appears an extract from the biographical sketch which appeared in the January issue of BOSTONIA.

President Huntington delivered, on Friday, January 20, before a conference of the Friends' Societies of New England, an address entitled "A Modern Interpretation of an Ancient Creed." The address was given in the Friends' Meeting House in Lynn.

The Boston University Beacon of Thursday, March 2, gives a sketch of the career of Dr. Austin B. Fletcher, whose portrait and biography appeared in the last issue of BOSTONIA.

The President of New Orleans University, Rev. Frederick H. Knight, S.T.B. '85, Ph.D. '99, represented Boston University at the inauguration of Dr. Edwin B. Craighead as President of the Tulane University of Louisiana on Thursday, March 16.
The departments

The equipment of the Biological Laboratory.

The biological laboratory occupies a well-lighted room in a part of the college buildings facing on Ashburton Place. Twenty students can work at one time, and it has been so arranged that each student has a separate table. Each table is provided with a compound microscope of the latest pattern, and with such conveniences as revolving, iris diaphragm and rack and pinion coarse adjustment; also a simple microscope, used chiefly in the course in elementary botany. For advanced work each table is supplied with adequate sets of glassware, reagents, dissecting-dishes, etc. The laboratory is also provided with an incubator, paraffine bath and microtome, all of most recent pattern.

For lectures there is a full set of the Leuckart-Nitsche Zoological Wall-Charts, something over one hundred in all, some Paleontological Charts, and a complete set of the excellent botanical charts of Dr. Peters. In addition the Professor of Biology has a large private collection of hand-made charts available for lecture work. For the advanced work in anatomy and the course in physiology and personal hygiene there is an excellent mounted human skeleton and a life-size physiological manikin. The laboratory possesses also a cabinet for storing the microscopic slides used by the students in their laboratory work,—a cabinet of a very convenient model, capable of holding about 1,500 slides and provided with a card catalogue. A beginning has been made towards the formation of a biological library by the purchase of a few of the most necessary reference-books.

Thus it will be seen that the laboratory offers students a rather unusual equipment of the most modern apparatus; but, as in every new department, many things are needed. The small number of students who can be accommodated at one time in the laboratory makes it necessary to divide the classes into many sections; thus four sections were necessary for the elementary course in zoology in the first semester, and eight sections in elementary botany given this second semester. This necessitates a great waste of time and energy on the part of the professor, who must go over the same ground so many times. Enlarged quarters are a pressing need. It should also be possible to provide a well-trained assistant, who could attend to some of the routine work of the laboratory and prepare specimens for students' use.

A fairly complete synoptic collection of preserved animals is desirable for lecture demonstration, together with cabinets to hold it; the professor in charge uses freely his own private collection, made at various parts of the United States, of the Burmudas, and at Naples, but this should be supplemented by other specimens to complete groups imperfectly represented. The biological library needs constant additions, and it is hoped, also, soon to add to our present collection the valuable King botanical charts. The department is fortunate in having been offered an herbarium collection of about 2,000 plants from our Southwestern States. This is a very unique and valuable collection, and although there is as yet no place for storing it, it is hoped that before long it may be possible to provide suitable cabinets for these specimens. In connection with
these there comes from the same source the offer of about two hundred plants collected last summer in New Hampshire; this will form a nucleus for a local herbarium, which will be of great value to the students and alumni who are interested in botany.

THE CHEMICAL LABORATORY.

The chemical laboratory is located on the upper floor of the college building. It accommodates about seventy students, though there is working space for a single division of only about thirty. The equipment is thoroughly modern. The desks, which were designed especially for this laboratory, provide each student with a drawer and locker and ample table surface for individual work. The liquid reagents are on a shelf running along the centre of the desk, and the solid reagents are in cases on the walls. This arrangement lessens the passing to and fro, and thus allows a large section to work comfortably in a room which might otherwise be crowded. A large hood is located at the end of the laboratory, and accommodates about fifteen at once. The plumbing is of the most approved design, and has several devices which reduce to a minimum the danger of leakage.

The department is adequately provided with apparatus and chemicals for four courses, and a fifth one is to be installed next summer. This equipment includes several accurate balances, graduated glassware, a battery, apparatus for distilling water, suction-pumps, etc.

The room is lighted from overhead as well as from the side, and electric lights make it possible to use the room late in the afternoon during the winter.

Two supply-rooms adjoining the laboratory are used for storage. One of these is provided with a sink and will eventually be used as the professor's private laboratory.

The lectures are delivered in a large recitation-room on the floor below the laboratory.

During the year the library has received a large number of recent books devoted to chemistry. This accession will greatly facilitate the work of the department.

A PROPOSED INTERNATIONAL PHONETIC CONFERENCE.

The professors in the various departments of language in the College of Liberal Arts have issued a circular inviting opinions regarding the advisability of summoning an International Phonetic Conference to adopt a universal alphabet which may serve as a uniform pronouncing key in the dictionaries of the leading languages. In August, 1904, these professors, complying with a request endorsed by many prominent men, issued a preliminary circular inviting opinions on the proposal to hold an international conference for the purpose indicated. The suggestion received almost unanimous approval. This second circular will be forwarded to some three thousand university professors in the United States and Canada. With this circular is sent a separate question-sheet, which is to be filled out and returned. The responses to these inquiries will accurately indicate the attitude of the learned world of the United States and Canada toward this project. The replies which were received in response to the preliminary circular varied greatly in expression, but there was a complete unanimity as to the necessity for a uniform key to pronunciation for dictionaries. The great majority were also decidedly in favor of the gradual extension of phonetic writing into popular use, though a few questioned its practicability, at least at an early date.
THE JACOB SLEEPER FELLOWSHIP.

Mr. Samuel Halfyard has been appointed Jacob Sleeper Fellow from the College of Liberal Arts for the academic year 1905–06. Mr. Halfyard is a native of Newfoundland. He received his high-school training in the Dominion of Canada. In 1898 he entered the School of Theology of Boston University. He soon became convinced that his highest future success demanded a complete college course, and in 1899 he matriculated as a student in the College of Liberal Arts, continuing, however, his work in the School of Theology. In June, 1904, he was awarded the degrees of A.B. and S.T.B. In October of the same year he matriculated at the University of Berlin, where he is now engaged in studying. He is devoting himself largely to Philosophy and Political Science. Mr. Halfyard made during his undergraduate course at Boston University an exceptionally fine record as a scholar, and at the close of his Senior year he was chosen to membership in the Phi Beta Kappa Society because of his high attainments.

BOSTON UNIVERSITY MEN IN PORTO RICO AND THE PHILIPPINES.

The effective work which some of the men who have graduated from the College of Liberal Arts are doing in educational work in Porto Rico and the Philippines is attracting favorable notice in the press. The Boston Globe of Friday, January 27, devotes the larger part of three columns to an article on this subject. With the article appear photographs of F. E. Libby, '02, L. P. Ayres, '02, J. F. Packard, '02, F. E. Hemenway, '01, E. W. Lord, '00, W. I. Chapman, '01, Donald MacKenzie, '01, and N. C. Smith, '01. The article contains a sketch of the educational career of Mr. D. N. Handy, '02, as well as that of the men whose photographs appear. The Boston Herald of January 22 also devotes a generous amount of space to the same subject, and publishes photographs of W. I. Chapman, '01, F. E. Hemenway, '01, and E. W. Lord, '00.

The number of students in the various courses in Natural Science, given in the college buildings during the present academic year, under the direction of Professors Newell and Weysse, is as follows:

First Semester: Physiography, 46; General Chemistry, 30; Qualitative Analysis, 9; Advanced Inorganic Chemistry, 4; Zoology, 52; Comparative Anatomy, 4; Advanced Botany, 5.

Second Semester: Geology, 27; General Chemistry, 27; Organic Chemistry, 7; Botany, 147; Comparative Anatomy, 4; Physiology and Hygiene, 71.

The Romance Language library has installed a phonograph in Room 21 for the use of members of that library. It has been generally recognized in university work that, at all events under the existing conditions, the conversational training in a modern language cannot receive the attention that all would like to give it. Other and more important points claim precedence. The phonograph, however, promises to do much in obviating this difficulty. The student has at his disposal a teacher of infinite patience, who will repeat into the student's ear the best of French, Italian, and Spanish as often and as long as he wishes it. The ear can then receive the closest training, and the student can exercise himself in reproducing the sounds ad infinitum. The practice in class will supplement and correct the latter work. This innovation should prove of great use, especially to the beginning classes.
The announcement of the sudden death of Rev. Francis H. Ellis, '80, came as a shock to the entire college community. The funeral services occurred on Tuesday, February 7, at Trinity Church, Worcester. At the time of his death Mr. Ellis was instructor in the Worcester High School. Mr. Ellis had always shown an unwavering interest in the success of the University. He had been instrumental in sending a number of students to the College of Liberal Arts, and he had succeeded in directing toward the University the attention of several patrons of higher learning. At the time of his death he was actively engaged in the preparations for the twenty-fifth anniversary of his college class. His son, Mr. John L. Ellis, is a member of the present Senior class in the College of Liberal Arts.

Professor E. Charlton Black has begun the important work of preparing, as editor-in-chief, a new edition of Hudson's Shakspere. The new edition will include a complete revision of the expurgated school edition of twenty volumes. He will also bring out a new and definitive edition of the complete works of Shakspere. This edition, which will give the text without omissions, will appear in about forty volumes. The publishers are Ginn & Co., Boston. The selection of Dr. Black for this important work is especially appropriate, not only because of his admirable literary equipment, but also from the fact that Dr. Hudson, the original editor, was at one time a lecturer on Shakspere in Boston University.

Professor James Geddes, Jr., is a member of the staff of the "Kritisches Jahresbericht der Fortschritte der romanischen Philologie," published in Erlangen, Germany. His special department is "French Canadian Literature." He furnishes an annual report of all French books published in Canada, including all new Canadian publications treating of French life, folk-lore, and French philology.

On Friday, March 24, Mrs. Mary A. Livermore gave, in Jacob Sleeper Hall, an address before the students and friends of the University. She selected as the title of her address, "A Dream of To-morrow." Mrs. Livermore was escorted to the platform by Acting Dean Wm. M. Warren. As she passed through the hall the audience rose in manifestation of their profound respect for the distinguished woman who was about to address them. At the close of the address Mrs. Livermore passed to the Trustees' Parlor, where as an honored guest she spent an hour in social converse with the members of the Junior class, who were gathered at an informal reception tendered to the class by the wives of the members of the College Faculty.

Professor M. L. Ferrin has delivered during the last few weeks a number of addresses before various educational gatherings. On Saturday, February 4, he addressed the Teachers' Association of the city of Lawrence. On Friday, February 10, he gave an address before the Newburyport High School, taking as his subject "How the Home Can Help the School." On Monday, February 20, he spoke before the students and teachers of Dummer Academy. On Saturday, February 25, he participated, by invitation, in the discussion following the reading of the papers at the meeting of the Education Committee of the Boston Branch of the Association of Collegiate Alumnae, at the College Club, Boston.

Professor Borden P. Bowne delivered an address before the Boston Congregational Ministers' Meeting, in Pilgrim Hall, Boston, on Monday, February 13. He took as his theme "The Philosophic-Religious Outlook."
A notable event of the present semester was the address which Mrs. Julia Ward Howe gave on Friday, February 10, in Jacob Sleeper Hall, before a large audience. Mrs. Howe was conducted to the platform by President Huntington, who introduced her to the audience. Mrs. Howe took as her theme "Patriotism in Literature." In her address, which held the undivided attention of the audience, she gave personal reminiscences of Whittier, Holmes, Longfellow, and Lowell. At the close of the address the audience joined in singing "The Battle Hymn of the Republic."

At the last meeting of the American Association for the Advancement of Science, held in Philadelphia during the last week of December, 1904, Assistant Professor A. W. Weysse was elected a Fellow of the Society. This is a distinction granted to scientists only in recognition of work which has contributed directly to the advancement of knowledge. This honor is the more appreciated in that it came as a complete surprise to Dr. Weysse, who was not aware that any such action on the part of the Association was contemplated.

The articles which Professor James Geddes, Jr., contributed to the issues of BOSTONIA in October, 1903, January, 1904, and April, 1904, under the title "Educational Advantages in France for American Students," have been reprinted in pamphlet form. The demand for these pamphlets continues. The editor of BOSTONIA will be pleased to forward, on request, copies to any person who may desire to read the articles.

On Saturday, March 25, Professor E. Charlton Black delivered, in Jacob Sleeper Hall, before the New England English Teachers' Association, an address on "The Vocal Interpretation of Good Literature." The audience, numbering two hundred professors and teachers of English, included the principals of some of the strongest high schools and academies in Massachusetts and neighboring States.

The Department of Romance Languages has published in separate form that portion of President Huntington's annual report which was devoted to this department. This separate publication contains much matter of interest to educators. An entire page is required to enumerate the works issued under the auspices of this department of the University. Requests for copies should be addressed to Professor James Geddes, Jr.

On Tuesday evening, March 14, Professor F. M. Josselyn addressed the College Men's Club of Brockton. He took as his subject "The Universities of Southern Europe." Boston University is represented in the membership of the club by Mr. Herbert F. Hartwell, '03.

The article of Dean William Marshall Warren which appeared in the January BOSTONIA under the title "Ex Fructu Arbor Agnoscitur" was reprinted in full in The University Beacon of Thursday, February 23.

The article on "The Present Estimate of George Sand," by Professor James Geddes, Jr., which appeared in the January issue of BOSTONIA, has been reprinted in separate form. Copies may be obtained on application to the editor of BOSTONIA.

Zion's Herald of January 25 contains a portrait of Anna Christy Fall, A.B. '83, M.A. '84, LL.B. '91. The portrait is accompanied by a biographical sketch. Mrs. Fall addressed, on Wednesday, February 16, the Cantabrigia Club of Cambridge, Mass. She took as her theme "A Lawyer's View of the Domestic Problem."
On Thursday, February 9, all exercises were suspended in the College of Liberal Arts in observance of the Day of Prayer for Colleges. The sermon was delivered by Ex-President William F. Warren. At the close of the sermon a prayer service was held, at which Professor J. B. Coit presided. As in former years, the Faculty and students of the School of Theology united with the College of Liberal Arts in the religious exercises of the day.

In the Boston Evening Transcript of March 2 appeared a poem by Mr. W. E. Leonard, '98, under the title "The Poet in the City." Mr. Leonard is expecting to publish a volume of poems within a year or two. Mr. Leonard now occupies a position on the editorial staff of Messrs. J. B. Lippincott & Co., Publishers, Philadelphia. He has just published the thesis which he submitted as one of the requirements for the Degree of Doctor of Philosophy in Columbia University. The title of the thesis is "Byron and Byronism in America."

Miss Alice Stone Blackwell, '88, acted as interpreter of the address on Russia which Mme. Breshkovsky gave before the Social Science Club of Newton on Wednesday, February 22. The address was given in French.

Mr. Mark S. W. Jefferson, '89, of the State Normal College at Ypsilanti, Mich., read before the National Educational Association in July, 1904, a paper entitled "Out-of-Door Work in Geography." The paper was published in The Journal of Geography, Vol. IV, No. 2, February, 1905, and has now been reprinted in pamphlet form.

Miss Ada Mudge, '03, has reached India, and has begun her work as instructor in Isabella Thoburn College, Lucknow, India.

Mr. Everett W. Lord, '00, Assistant Commissioner of Education in Porto Rico, contributed an article to the first number of the Porto Rico School Record, a monthly educational magazine which made its first appearance in January of this year.

Miss Ruth R. Jennison, '04, is teaching Mathematics and French in the High School at Franklin Falls, N. H. Miss Ella P. Parker, '02, is teaching Greek and Latin in the same school.

Mr. Everett W. Crawford, '01, has been admitted to the Massachusetts Bar. He took the oath on Friday, February 17, before Judge Hammond in the Supreme Court. Mr. Crawford has opened a law office at 15 Beacon Street, Boston. He is to be associated with Charles H. Sprague, Esq.

On Monday, February 27, Miss Florence M. Marshall, '99, described before the Mothers' and Fathers' Club of Boston the work and scope of the Trade School for Girls, of which she is a Director.

Mr. Rollin H. Walker, S.T.B. '92, who was instructor in English in the College of Liberal Arts during the academic year 1893-94, is now Professor of the English Bible in Ohio Wesleyan University.

On Friday, February 3, Madam Tsilka, who was with Miss Stone in captivity in Bulgaria, gave before the Young Women's Christian Association of the college an address on the story of her captivity. Madam Tsilka, who is an Armenian, was educated in Northfield Seminary, Mass.
On Friday, January 12, Mr. Hamilton S. Conant, secretary of the Massachusetts Sunday-school Association, gave an address in the college Chapel in connection with the morning chapel service. Mr. Conant presented for the consideration of the students the great opportunities which the modern Sunday school offers to college men and women who are willing to devote themselves to this work. Mr. Conant is the father of Mrs. May Conant Fruit, '00.

The Rev. Clifton D. Gray, Ph.D., who has been called to the pastorate of the Stoughton Street Baptist Church, Boston, from Port Huron, Mich., is the husband of Neva Ham Gray, '98. Dr. and Mrs. Gray will begin their new work in Boston early in April.

SCHOOL OF THEOLOGY.

On Monday evening, February 20, the Faculty and students of the School of Theology were present at the regular monthly meeting of the Methodist Social Union as guests of Hon. Edward H. Dunn, president of the Board of Trustees of Boston University. An address on “Church Architecture” was delivered by Mr. C. Howard Walker, lecturer on Architecture at the Massachusetts Institute of Technology, the Boston Museum of Fine Arts, and the Lowell Institute. Acting Dean Wm. M. Warren of the College of Liberal Arts presided. For a number of years Mr. Dunn has extended this gracious hospitality to the members of the School of Theology. The hearty singing of the students and the felicitous address of their representative made the occasion one of great interest. The only shadow on the gathering was the unavoidable absence of the generous host whose thoughtful kindness had made the assembly possible.

On Monday, January 16, President Huntington read a paper before the Alpha Chapter of the University Convocation. The paper was devoted to a doctrinal study of the ninety-first Psalm. The meeting was held at the Crawford House in Boston.


The newly elected Professor of Practical Theology, the Rev. Samuel Lynch Beiler, Ph.D., will assume his duties with the opening of the school year on September 20. Dr. Beiler has had a very successful career as pastor and educator, and is abreast of the times in his thinking and studies, although conservative in the best sense of the word. Dr. Beiler is intending to introduce a number of new courses in his department, including the Psychology of Religion, the Religious Life of the Child and Adult, and the Study of the Bible with particular reference to its practical bearing on the needs of the pastor.

Dean William F. Warren, at the invitation of the United District Meeting of the Manchester and Concord Districts of the New Hampshire Conference, delivered a sermon on “The Atonement” at their recent meeting in New Hampshire.

Several changes are to be introduced in the course of study, a larger number of electives being offered and a larger number of elective hours both in the school and in the college being credited on the degree. The courses in Senior Hebrew and Greek are henceforth to be elective, as also the course in Middle Church History.
A number of excellent books have recently been donated to the library. The Rev. W. H. Meredith, Special Lecturer on Early Methodist History in the School of Theology, has given a copy of his works entitled "The Real John Wesley," "Pilgrimages to Methodist Shrines," and "Jesse Lee and Methodist Beginnings in Massachusetts." Eaton & Mains kindly contributed a set of Bishop Hurst's "History of Methodism" in seven volumes. These are beautifully gotten up in all points,—the subject-matter, the press work, illustrations, and binding. About every place and event of importance in the history of Methodism is the subject of an illuminating illustration, and most of the men who have influenced the history of the Church in any marked degree will find their portraits on these pages. The Rev. Edward John Hamilton, D.D., author of "The Modalist; or, The Laws of Rational Conviction" and "The Perceptionalist; or, Mental Science," has generously contributed a copy of these books to our library.

Professor Henry C. Sheldon appears in the fifteenth volume of the "New Encyclopaedia Americana" with an excellent article on "Theology," which does great credit to its author.

Professor C. W. Rishell has published recently a book entitled "The Child as God's Child," which is highly spoken of in every quarter. Professors Rishell and Sheldon have been invited to contribute to the new "Encyclopaedia of Christ and the Gospels" edited by Hastings, the editor of "Hastings' Dictionary."

The Rev. Shirley D. Coffin sails in a short time for Umtali, Africa, where he is to take charge of a boys' school. The Faculty and students recently gave him a farewell reception, at which time he was made the recipient of an American flag.

A number of distinguished men have recently made special addresses to the students in the Chapel. Professor Melville B. Chapman preached, at the request of the students. This sermon was a homiletical model. It was a great pleasure to hear President Plantz of Lawrence University and President Crawford of Allegheny College in addresses to the students in the Chapel. Both of these colleges are strongly represented in the school by their graduates, who gave their respective presidents hearty greetings. The students greatly enjoyed an address by Professor George A. Coe, whose reminiscences of the days when he was a student in this institution were delightful to everyone whose heart remains young. The Rev. Dr. James Cannon, editor of The Richmond Christian Advocate, and Dr. J. L. Cunningham, secretary of the Correspondence Theological School of the Methodist Episcopal Church, South, were warmly welcomed, and listened to with great interest.

SCHOOL OF LAW.

Mr. Poultoncy Bigelow's lectures on "National Expansion" have been of great interest and profit. As part of the course leading to the master's degree they have been largely attended by third-year students. Many visitors also have been attracted to the course.

During the month of April, Mr. H. S. Haines, of Detroit, Mich., the well-known railroad promoter and builder, will deliver a series of lectures on "Transportation." This course is supplementary to the lectures given last fall by Mr. Brooks Adams on "Legal Aspects of Transportation," and is designed to give the student an insight into
the practical side of railroad affairs. The course will be divided into the following topics:

I. Introductory. II. Railroad Corporations. III. Railroad Finance. IV. Railroad Construction. V. Railroad Operation. VI. Railroad Rates. VII. Regulation of Rates by Internal Control. VIII. Regulation of Rates by External Control. IX. Regulation of Rates by State Commissions. X. Railroad Taxation. XI. State Control and State Ownership. XII. Conclusions.

A course of ten lectures on "Mining Law" will soon be given by Mr. C. Vey Holman. Mr. Holman is himself largely interested in mining property, and is well qualified to deliver such a course. He is also a lecturer on "Mining Law" in the Law Department of the University of Maine.

Several special lectures are soon to be given before the entire student body of the Law School. It is expected that among the speakers will be Attorney-General Parker, Mr. Brooks Adams, and Professor Edward A. Harriman.

SCHOOL OF MEDICINE.

The following official announcement of the award of a gold medal to the School of Medicine for its exhibit at the Universal Exposition in St. Louis last year has been received: —

UNIVERSAL EXPOSITION, ST. LOUIS — 1904.

Boston University School of Medicine, Boston, Mass.

Pursuant to the Rules and Regulations governing the System of Awards, formal public announcement is hereby made that a Gold Medal has been finally awarded you on your exhibit .............................................................. in Group.... 3. . . . A Medal and Diploma for this award will be issued by the Exposition Company as soon as ready for delivery.

DAVID R. FRANCIS,
President of Superior Jury.

Greater use than ever before has been made of the clinical advantages of the medical side of the Massachusetts Homœopathic Hospital. Professor Walter Wesselhoeft, during October, November, and December, conducted a course in clinical medicine, meeting the Senior students three times a week, illustrating his lectures by cases from the wards. His associate, Dr. Chas. H. Thomas, has just completed a similar course which he has been conducting since the first of January. In these courses a large number and great variety of acute and chronic diseases have been brought before the students, who have appreciated this very practical form of instruction. This method has been in vogue on the surgical side for many years, and the recent development of the medical clinics is simply in keeping with recent methods of instruction, in which the laboratory leads the didactic method.
Best Recent Books

The mention of a book in this department is a guaranty of its superior merit.

Silas Marner, by George Eliot, edited by Wilbur Lucius Cross; Burke on Conciliation, edited by William Macdonald; Carlyle’s Essay on Burns, edited by Edwin Mims. These are three volumes in the Gateway Series, edited by Dr. Henry Van Dyke and published by the American Book Company, New York. These books, beautifully printed and bound, and supplied with Introductions and notes by men who are recognized as authorities in this department, must exert an important influence in the new movement which is inspiring in our high-school students a love of the best forms of literature. The general reader who wishes to get into the spirit of these masterpieces of literature will find the Introductions and notes of this edition well worthy of careful study.

School Chemistry, by E. M. Avery. This is a revised form of the author’s “Elements of Chemistry.” Its text has been brought up to date, and many new illustrations have been added. Special emphasis is laid upon the older theories, and numerous exercises provide material for teaching valence, equations, etc. The three hundred or so experiments are illustrative rather than instructive, none involving exact weighing or measuring. Several are dangerous (e.g., the preparation of phosphorus on page 290). The use of different kinds of type makes the printed page attractive and adds much to the utility of the book. (American Book Company, New York.)

In the Miz, by Grace Ethel Ward. Fairy-tales and Alice adventures catch their charm mainly from playing free with fact, against a soft background of truth. In stories for children, that which is merely so counts for little or nothing; the only reality claiming regard is moral and aesthetic. Whether or not Miss Ward ever reached this canon by analysis, she has followed it with delightful result. In text and illustration it brings the same congruous absurdities, the same absurd congruities, that make the doings of Alice dear to both generations; and all through it there breathes an exquisite sense of what even in the land of dreams absolutely ought to be. The spirit of the stories, in an older reader’s mind, takes the form as it were of that almost perfect being, the right kind of boy’s favorite aunt,—a presence all sunlight and good will, yet authoritative by a certain expectancy of manliness in boys. (Little, Brown & Co., Boston.)

Education in Religion and Morals, by George Albert Coe, Ph.D. Professor Coe is a graduate of the School of Theology of Boston University. He received the degree of Bachelor of Theology in 1887. In 1891 he was awarded the degree of Doctor of Philosophy. His book “Education in Religion and Morals” received an extended notice in Zion’s Herald of January 11. The book has already passed into a second edition within a few months of its publication. (New York, F. H. Revell Company.)