

BILLINGS (U.S.)

THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE.

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ADDRESS BY JOHN S. BILLINGS, M. D.
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GIVEN AT THE OPENING OF THE LABORATORY, DECEMBER 4, 1895.

Mr. Provost, Gentlemen of the Board of Managers:

LADIES AND GENTLEMEN:—I have been honored by Dr. Pepper with the request that I shall, in his name, formally present to-day to the University Hospital, and through it to the University of Pennsylvania, the William Pepper Laboratory of Clinical Medicine, which is now completed and ready to begin its important work.

In complying with this request I fully appreciate the truth of the remark of Dr. Weir Mitchell, upon a somewhat similar occasion, with regard to the sensation of joy which one has in being not only able, but willing, to give on such a royal scale, when presenting another man's gift.

Now what is this gift? That part of it which is material and visible to-day is a building sixty-two feet long, forty-two feet wide, and four stories high, with a basement cellar; built of brick and terra cotta on a stone base to the first floor, with a green slate roof; and fitted up inside with tables, work benches, and apparatus of various kinds. You have all, no doubt, seen its exterior, and will, I think, agree with me that while it is simple and unpretentious, it harmonizes well with the adjacent building, and forms a very satisfactory terminal on the west to the range of hospital buildings. Great credit is due to the architects, Messrs. Cope & Stewardson, for the



manner in which they have solved this problem, which was a difficult one when the character and appearance of the other buildings on the east is taken into consideration.

I remember very well when Mr. Cope, Dr. Pepper, and myself were standing on the north side of Spruce Street, opposite the proposed site for the laboratory, and Dr. Pepper, waving his hand towards the heterogeneous conglomeration of facades of the then existing buildings, said: "Now what we want is a design which will pull all this together." And then there came into Mr. Cope's face that peculiar expression in which the eyes lose their sparkle and are directed to distant space, and the corners of the mouth drop a little, the expression which you all know means "I don't see it."

Nevertheless he has produced, to a considerable extent, the desired effect, although perhaps he would say that it has been done not so much by "pulling together" as by "pressing together" between the designs of the laboratory on the west and of the new Agnew Memorial Building on the east. It is worth your while to look at the result as seen from the north-west corner of Thirty-sixth and Spruce Streets.

The essential idea of the plan of this laboratory is a central bundle of perpendicular tubes or flues forming a large chimney stack, around which the work rooms are so arranged that each one has its own flue on its inner face and an abundance of light on its outer face. The purposes of the several rooms are indicated on the diagram before you. On the first floor above the basement are rooms for microscopical, for chemical, and for bacteriological investigations of the secretions, excretions, outgrowths, discharges, and other products from the bodies of the sick; with a balance room. On the second floor are rooms for anthropometrical work and research, the laboratory of the director and his assistant, and a store room. On the third floor is a large laboratory for post-graduate students, and a dark room for photographers' work. On the fourth floor are a research room for special workers, an assembly room, a library, and a janitor's room. Corridors connect each floor with the adjacent hospital pavilions, which will be devoted to medical cases. One of these corridors will make

an excellent photograph gallery, a dark room being provided in the laboratory. The building is heated by steam and at present lighted by gas. The simple fittings of the rooms, benches, tables, hoods, &c., you will see for yourselves when you visit the building, as I hope you will do, after the addresses in this amphitheatre are concluded.

All this, however, by itself is merely dead mechanism, and a still more important part of the gift is still to be mentioned, namely, that which provides for brains to make use of it, and for the making of public utility the results obtained by the conjunction and co-ordination of brains, building, apparatus, and opportunity. Each of these things is required to produce satisfactory results from a laboratory, but this does not seem to be as generally well understood as it should be. I have heard of a case, for example, in which a certain university offered to a distinguished professor in another university a much larger salary than that which he was receiving to come and establish his department of teaching in the new locality, and the professor accepted the offer. But he was a laboratory man and believed in practical laboratory teaching and work, which had given him his reputation; so when he went to his new field of work and found that there was no laboratory and no apparatus, nothing in fact for teaching purposes but a few diagrams, he immediately set to work to make plans for a laboratory and lists of apparatus required for the students, and took them to the president that they might be provided. When these were brought before the ruling authorities of that university they were greatly astonished, and said, "How is this? Do we not pay a high salary to secure this distinguished professor, and now are further demands to be made?" "No! No! the students will come, attracted by his reputation, and he can lecture to them in the big lecture room, and that is all we want." And that professor departed, a sadder and a wiser man.

Dr. Pepper, however, has provided an endowment as well as a building, and this endowment consists partly of money and partly of some of his own brainwork by way of commencement. That you may understand this more clearly I

will refer to one of the points of his terms of gift, which terms were accepted by the authorities of the hospital and of the University. The gift consisted of \$50,000, one half of which was to be used in building the laboratory and the other half invested as a special endowment fund. The director and assistant director of the laboratory are to be appointed annually by the board of managers of the University Hospital, upon the nomination of the professor of the theory and practice of medicine and of the professor of clinical medicine, in the medical faculty of the University. The present director, duly appointed in accordance with this condition, is Dr. William Pepper, and therefore, as I said, some of his own brainwork is to be available as part of the endowment, for many years to come let us hope. Further stipulations I will give presently, in his own words. Dr. Pepper's letter of gift, dated February 24th, 1894, closes as follows: "It is my intention, should my life and strength be preserved, to supplement this foundation by a further endowment for the purchase of apparatus and the publication of scientific memoirs."

Having thus told you briefly what this gift consists of, I will now proceed to answer two questions which no doubt many of you have asked, namely—1. Why did Dr. Pepper make this gift? 2. What are the main purposes of the gift, the objects to be kept in view in its future management?

These two questions are not always quite the same, but in this case the answers cover nearly the same ground. The history of the first conception and gradual development of an idea, until it takes definite shape and form and develops action, is sometimes very interesting, and as I have known something of the way in which during the last ten years this particular idea has taken shape, I have asked Dr. Pepper to give me a sketch of the process, which he has done in the following letter. Those passages in it which refer to myself I asked Dr. Pepper's permission to omit, but this permission was sternly refused, and I can only ask you to remember that it is he who now speaks, and that I am merely his mouth-piece:—

1811 Spruce Street,
PHILADELPHIA, December 3d, 1895.

MY DEAR DR. BILLINGS :—In response to your request that I would write a letter to you, as director of the University Hospital, stating my purpose and wishes in establishing this laboratory of clinical medicine, I have prepared, with considerable hesitation, the following statement.

My father, the late William Pepper, held the chair of the theory and practice of medicine and of clinical medicine in the University of Pennsylvania from 1860 until the Spring of 1864, when he was forced to resign by the progress of the disease which caused his death on October 10th, 1864, in the fifty-fifth year of his age.

Already at that time a few young men had formed the definite hope of reforming the system of medical education in America, and of placing it on the sound basis of clinical teaching. I can say for some of them, including my brother George, who died in 1872, at the age of thirty-two years, after a brilliant and all too short career, that the eloquent advocacy of clinical teaching and its effective application by my father supplied at once the inspiration and the exemplar. Both father and son wore themselves out in the service of humanity and science, and fell victims to the terrible scourge of pulmonary consumption.

It is not necessary to review the long and weary struggle for reform in medical education which has only now ended. The role played by the University of Pennsylvania has been a proud one, as befitted her traditions and her obligations. The names of Edward Rhoads, of Horace Binney Hare, of John S. Parry, of William F. Jenks, should not fail of mention, although they fell early in the struggle; for these were brave spirits, who dared to aspire greatly. And other names, Leidy and Agnew of the immortals; and Stillé and Weir Mitchell, still happily preserved to us in their rare intellectual vigor; and Wood and Norris and Tyson, my life-long colleagues, must be named with grateful tribute for their labors

in the cause of higher medical education, and of clinical teaching and scientific research.

It was our fond dream, in those early days, that a happy time would come when well-equipped laboratories with adequate endowment would offer the chance of original investigation which was then denied. Horace Hare fitted himself by long and costly training for the special work of chemical research in the field of clinical medicine. His gifts and attainments were worthy of his descent from America's first great chemist, Robert Hare. As chairman of the building committee of this hospital in 1872, I planned some small rooms around the base of this amphitheatre where you now stand; and I can recall vividly the pleasure with which I gave the necessary equipment to have the best of these rooms ready for Hare when he returned in 1875 from the laboratory of Ludwig in Leipsic.

He was gratified, and entered at once with enthusiasm upon important chemical researches in connection with cases of disease in the hospital wards. In less than one year pulmonary consumption attacked him, and he died in 1878. Parry and then Jenks succumbed to the same affection, while Rhoads, one of the most beloved of our little group, died of organic heart disease. You cannot wonder that I registered a vow to do what I could to secure the erection and endowment of a special department of the University Hospital for chronic diseases of the lungs and heart and a laboratory of clinical medicine to promote original research into the causes and nature of disease. At a meeting of the board of managers held August 12th, 1879, a memorial setting forth the necessity of provision for those suffering from chronic diseases of the chest was formally approved, and it was resolved that a special ward should be opened so soon as the sum of \$100,000 was available. It was with special reference to this undertaking that the annual charity ball was established, and over \$12,000 was secured the first year for the new department of this hospital. In addition to this, the funds necessary to endow seventeen beds in perpetuity, amounting to \$85,000, were contributed by generous men and women; and then a noble-

hearted man, Henry C. Gibson, came forward with the proposal to erect a separate wing to be devoted to the care of patients with consumption and other chronic diseases of the chest. It was you, Mr. Director, who prepared the plans of the Gibson wing, a structure which will commemorate so long as the University of Pennsylvania shall endure the name and good deeds of one of the best friends the University has ever possessed. It is true it has been impossible to devote this wing exclusively to these cases until now, when the completion of the new surgical wing of the hospital will permit proper classification and arrangement of patients. I cannot refrain from the briefest mention of the legacy of \$60,000 of my cousin, Henry Seybert, to endow a ward in the Gibson wing for chronic diseases, and of the much larger bequests made by two noble women, which have not yet become operative.

The most important step was taken when I learned one morning in 1889 that it might be possible to secure to Philadelphia and to the University the services of Dr. John S. Billings. Before evening Mr. Henry C. Lea had responded to an earnest appeal that he would increase a previously contemplated gift to equip a small laboratory of hygiene to an amount sufficient to erect a complete laboratory. His conditions were that if an additional sum of \$200,000 were secured for endowment; if Dr. Billings were secured as director of the laboratory; if the study of hygiene were made obligatory on students of medicine, of dentistry, and of certain other branches, he would erect at his expense a laboratory of hygiene, at a cost of not less than \$50,000. I was at your house in Washington before breakfast the next morning, and we drew up and signed an agreement, the operation of which has been the establishment of the most complete laboratory of hygiene in America, under your direction, and the rapid advancement of this hospital, under your administration, to a very high level of efficiency. Henry C. Gibson contributed \$25,000 toward the laboratory fund—many generous friends co-operated—but the fund had reached only the figures of

\$140,000, when *\$60,000 was received from George S. Pepper coupled with the condition that I should designate the particular chair which should be endowed therewith. Not one moment's hesitation did I feel in naming the chair of hygiene.

Even this, however, did not complete our compliance with the wise though stringent conditions imposed by Mr. Lea. He had stipulated further that when the requisite amount of \$200,000 was secured for the endowment of the laboratory of hygiene an effort should be made to obtain subscriptions of money sufficient to justify the board of trustees and the medical faculty of the University in raising the standard of medical study and in prolonging the course to four years. In order to secure compliance with this final condition it was deemed necessary that a subscription of \$50,000 should be made to the medical department, and that an additional guarantee of \$20,000 per annum for five years should be secured. This was done, and it was only reasonable that it should be done. Any one who appreciates the commanding influence exerted by the medical department of the University of Pennsylvania will realize that it was essential for the establishment of higher medical education throughout this continent that it should be demonstrated here that such advance could be made and could be maintained with good practical results. As a matter of fact the result of the important change was unexpectedly gratifying. The increased attractiveness of the longer and more practical course of instruction inaugurated outweighed the much greater cost and difficulty of securing the degree. The receipts of the medical school did not fall off; no part of the guarantee fund was called; and the medical faculty cordially assented, by resolution adopted February 20th, 1894, to the proposal that my subscription of \$50,000 should be applied to the erection and partial endowment of a laboratory of clinical medicine. The board of trustees of the University and the managers of the University Hospital and the medical faculty concurred cordially in approving the conditions connected with the proposed foundation; and I quote the follow-

* The proportionate share of the residuary estate of Mr. Pepper subsequently accruing has increased the amount of this legacy to \$90,000.

ing paragraphs from a communication bearing date of February 24th, 1894:—

“That the said laboratory shall be erected in accordance with plans prepared by Dr. Billings, the director of the hospital, and on the site designated by the managers of the University Hospital, and shall be supplied with heat and light from the hospital plant without cost to said laboratory. ✓

“*Fifth.*—That the said laboratory shall be always styled and designated as the William Pepper Laboratory of Clinical Medicine, it being my intention to hereby create a memorial for my father.

“*Sixth.*—That the director and assistant director of said laboratory shall at all times be appointed annually by the board of managers of the University Hospital upon the nomination of the professor of the theory and practice of medicine and of the professor of clinical medicine.

“*Seventh.*—That the purpose of said laboratory shall be to promote the interests of the patients in the said University Hospital by the prosecution of minute clinical studies and original researches, and to advance the interests of science by the publication of the results of such work.

“It is accordingly stipulated that at no time shall any teaching be given therein to undergraduate students, or to any students except our own graduates or the graduates of other approved medical schools, whose curriculum is at least of equal length and grade with that of the medical department of the University of Pennsylvania.

“Provisions will also be made for advanced workers engaged in original research.”

There seems to be every reason to hope that the building thus constructed upon plans provided by you will prove well adapted for the purpose in view. I desire to take this occasion to express publicly my sincere thanks to you for the unwearied care and cordial sympathy you have extended to the work at every stage and in every phase of its progress. That the restriction of the use of the laboratory to original research and to post-graduate instruction has secured general approval, and has already met a recognized need, may be

judged from the fact that nine associates have already received appointments, and have been assigned to distinct fields of original investigation. It is superfluous to observe that the small amount of endowment which I have thus far been able to contribute (\$25,000) is wholly inadequate for the maintenance of the work. It has been estimated that to pay the necessary salaries; to provide annual stipends to a certain number of the associates; to supply the costly apparatus required; to issue the numerous publications resulting from the researches therein conducted; to purchase the necessary journals and works of reference; to meet the current expenses; will require the income of an endowment fund of at least \$200,000. While I shall reckon it a privilege to supply as much of this sum as my continued professional labors may render possible, I hope it is not unseemly to indicate two directions in which contributions might be made with great effect to promote the work to be here conducted. A fellowship in clinical medicine may be established by a gift of \$10,000, subject to the statutes of the University, the income of which would defray the living expenses of the incumbent and would also provide a fair sum to maintain his place in the laboratory. A gift of \$5000 would yield income sufficient to meet either one of the other of these objects, as might be indicated by the donor. To any one interested in the study of any special disease or group of diseases, such as tuberculosis or heart disease or infectious fevers—all of which destroy so many thousands of precious lives annually—the advantages of establishing a special research fund must seem obvious. I earnestly trust that such endowments will gradually accumulate around this laboratory. The special trust created would be administered scrupulously by the trustees of the University. The good results would be far reaching and enduring. It is indeed hard to conceive in what way we, whose dearest and most cherished interests will be affected vitally by the results of such researches as will be conducted here, can better display our sorrow for the dead and our love for the living than by strengthening the resources of such institutions as this which is to be opened formally to day. May it long endure to pro-

mote the interests of suffering humanity and to enlarge the boundaries of medical science.

I beg to remain,

Your obedient servant,

WILLIAM PEPPER.

I beg leave, Mr. Provost and gentlemen of the board of managers, in the name of Dr. William Pepper, to present to you and ask your acceptance of this laboratory and its endowment for the purposes named in his letter just read.

Thus far I have been speaking as the representative of Dr. Pepper, but now I have a few words to say in another capacity, speaking as the director of this hospital.

Many gifts of and to hospitals have been made by generous philanthropists in the United States during the last twenty-five years, and in the list of such givers the names of some citizens of Philadelphia have a prominent place. But this gift is unique in this, that it is made for the specific purpose of promoting and stimulating original research and improvements in methods of diagnosing and treating the diseases of human beings and of giving advanced and special practical instruction in the new methods to post graduates, that is, to men who have already obtained the degree of doctor of medicine.

While a few hospitals have rooms set apart for chemical, microscopical, and bacteriological investigations, no hospital, so far as I know, has ever before received a specific gift for the construction and maintenance of a separate building to be devoted entirely to such purposes and to post-graduate teaching of clinical laboratory methods, and I count it as a singularly fortunate thing for this hospital that it should have now been selected as the recipient of such a gift.

One of the great purposes of this hospital, second in importance only to its work in relieving suffering and prolonging life, is the education of skilled physicians and surgeons, and of trained nurses, for the benefit of the people of this city, this State, and this country—present and to come. This gift emphasizes, and promises powerful aid to, a third purpose,

which should always be kept in view in such a hospital as this, namely, the increase of knowledge for the benefit of the sick and suffering all over the world, whether they be high or low, rich or poor, dwellers in a palace or in a "Hotel Dieu." Moreover, this third purpose not only does not interfere with the first and second purposes to which I have just referred, but it powerfully promotes them, because the best teaching is that which is given in connection with research work, which thus stimulates investigation, accurate observation, and independent thinking on the part of the pupils; and because the most careful and painstaking application of the best known methods of practice is a necessity in a teaching hospital where keen eyes are watching the methods and results.

The importance and value of such an addition as this to the resources of this hospital is highly appreciated by its board of managers and medical staff, and in their behalf I offer to Dr. Pepper sincere thanks for his splendid gift.

I have also a word to say as a member of the medical faculty of the University of Pennsylvania, the oldest faculty of its kind in the United States. For more than a century this medical school has maintained the high reputation which it acquired at first from the work of Morgan, Rush, Shippen, and others, and has always been, as it is to-day, one of the most advanced and at the same time one of the most popular institutions of its kind in this country. This amphitheatre in which we are assembled is but a recent affair in its history, being only about sixteen years old; yet there are to-day scattered over this country thousands of physicians who received their instruction in clinical medicine on these benches, and hundreds of thousands of people who rely upon these physicians in time of sickness.

The medical faculty is responsible to the public and to the medical profession for the quality and quantity of the instruction which it gives, and for the qualifications for practice possessed by the young men whom it indorses by its recommendation for the degree of doctor of medicine. Its standard has always been high, but I feel safe in predicting that in the near future this standard both for admission and for degree

will be raised still higher, and that in its future work on a higher plane this laboratory will play an important part. Our friend, Dr. Welch, will presently tell you of some of the scientific and educational aspects and outlooks of such a laboratory as this, and no man in this country can speak upon this subject with more authority than he; hence on this point I will say no more. I have only alluded to it that you may understand why this gift is so highly appreciated by the medical faculty, in whose behalf I assure Dr. Pepper of the gratitude of his comrades and fellow workers.

I have yet a few words to say as an individual, and not as an official. The letter of Dr. Pepper which I have read to you needs no comment, and very few words of praise from me are either needful or proper to be spoken to this audience of his friends. Broad and far has been his outlook in thus providing for the future a heritage of power, which mildew, flame, and frost cannot harm. It is not a statue or carving or memorial arch that he has given, things that will blacken and moulder and crumble as the centuries roll by, until the mills of the gods shall have ground them to dust. It is a perpetual wellspring of force, a storage battery which will fill itself and give out warmth and light and motion so long as this institution of learning shall exist on the earth. He says, and says it with authority, find me the means of making the lives of men longer and more efficient—of putting aside the plague that has destroyed our fathers and brothers and threatens to consume our children; his demand is not for the fruit which is known and harvested, but for that of regions yet unknown and unexplored, for which he provides the seed, for charts of dangerous bays and coast lines still unsounded and not yet triangulated.

The taking such a step as this requires not only the opportunity of means, but also wisdom, courage, faith; wisdom, as regards selection of the unknown regions to be explored, and in providing motive power and guidance for the work to be done; courage, in investing funds in an enterprise the precise results of which cannot be predicted; and faith, in the future progress of science and in the future managers of this important trust.

But wisdom shall be justified by her children, and this far-seeing, bold-planning man of the silver tongue and the open hand will be remembered as the founder of the first distinctive laboratory for research in clinical medicine in this country, so long as there are sickness and death among the children of men.

REMARKS OF PROVOST HARRISON.

DR. PEPPER, LADIES AND GENTLEMEN:—Upon such an occasion as this the simplest words are the best; and, indeed, it seems to me that it would be hard to find one more deserving of dignified, simple, and quiet ceremony. My own memory goes fully back to the work of the man taken away in early middle life by the disease dreaded above all others by the Anglo-Saxon race—the man in whose memory this building has been erected and is to-day dedicated. His eldest son was my classmate in this University; together we were members of the same society; and after he had been graduated I watched him in his too brief career. He fell a victim to the same disease; father and son both cut off in early life. I do not wish to intrude into the sacred circle of home anxiety, but may we not assume that the facts which I now record gave constant rise to anxious thought, and is there any doubt that there has been for many, many years an underlying principle of benevolent activity growing out of the death of father and brother, which is at the last reverently realized here to-day? It must be so; and the deepest satisfaction which all of us can feel must arise from the reflection that through the son who has survived, and who has done this deed of mercy, neither father nor brother would have lived in vain even if they themselves had contributed nothing to benefit the world. May he not now feel that in death he and they are not divided? And as these thoughts arise in our minds will not the most fervent wish of each one of us be that in the providence of God the research work to be conducted here and in this University may find a counter agent for consumption? Surely that will some day come.

Not long ago, before a great scientific body, its most dis-

tinguished officer said that the extent of our knowledge is like a small oasis, surrounded on all sides by a vast region of impenetrable mystery yet unexplored. "Successive generations win a small strip from the desert and push forward the boundaries of knowledge." To advance these outposts many forces of science are at work in this University, which is so dear to us all, and which we all trust may be controlled by that spirit of wisdom which is modest in that she knows no more. The chemist is diligently interrogating nature in her manifold riches. The physicist is studying forces and devising apparatus whereby they may be measured or applied with unerring accuracy. The bacteriologist is penetrating the mysteries of that lowest life which so influences for good or ill all higher forms of life; but here at the last are gathered into one supreme application all that these other sciences have produced—to relieve or to remove human suffering, to save human life. This is the highest mission to which the discoveries of science can be applied.

The University's duty is not only to maintain and press forward the intellectual and moral standards of the nation, to direct and control its social energies, but to touch life at every point and to help it. The mitigation of suffering, the prolongation of life, the prevention of disease, are of its highest functions. In this hospital and in this place may science always come into union with benevolence. May one of the old meanings of the word which describes this laboratory be ever realized here. May the baptism of life flow out from this place like a spring of living water. May the William Pepper Laboratory of Clinical Medicine be one more instrument in our hands to fulfill the reason for the University's existence, which, in the words of our charter, show that we were "established to be the means through the blessings of Almighty God of raising up men of dispositions and qualifications beneficial to the public, and as an institution of the most essential consequence to the good government of States, to the peace and welfare of society, and to be a public blessing to mankind."

In this spirit the trustees of the University accept the gift.

