

Democratic Watchman

Terms 2.00 A Year, in Advance

Bellefonte, Pa., Feb. 24, 1893.

P. GRAY MEEK, - - - EDITOR

Democratic County Committee for 1893.

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—Scientists are getting up the scare that paper money is dangerous because it has been found to carry microbes of infectious diseases. If any of our readers have any that they think might be tainted we are willing to get vaccinated every morning if they feel disposed to shove it off on us.

—A very sad story is being told about BILL MCKINLEY now. They say he never made any money out of politics. Such an assertion is indeed startling; for only four months ago he was junketing about the country telling people of the glorious possibilities of Republicanism.

—Linguists say that an ordinary business life could be lived and carried on with a vocabulary of one thousand words. Of course they did not suppose that women would ever figure prominently in any of the professions.

A MATTER OF IMPORTANCE TO OUR BOROUGH TAX PAYERS.—The following statement in reference to the action of the Borough Council in placing the new loan that Bellefonte is necessitated to make to refund the old 7 per cent bonds, has been handed us for publication. We know nothing as to the facts stated, but they are worthy the fullest investigation by the citizens who are so deeply interested in this matter. If Messrs Orvis, Bower and Orvis, can furnish parties who will take the loan at 3 per cent then the Council has acted most unwisely, to speak in the mildest terms, in negotiating these bonds at 4 per cent. It is a question for prompt action, as our correspondent suggests, on the part of the people, and we hope that immediate steps will be taken to ascertain the facts, and if correct as stated, that some action will be had preventing this palpable wrong upon the tax-payers of the borough by those who have been elected to care for its interests.

“It is reported, that the Council has accepted a proposition from W. Fred Reynolds, to loan the borough of Bellefonte one hundred thousand dollars at four per cent per annum.

This at first sight, appears to be a low rate of interest, but the borough pays the State tax in addition.

The Council has been inconsiderate as well as premature in accepting this proposition, for the reason, that Orvis, Bower and Orvis were ready to take this loan at three per cent, per annum for Boston capitalists. They were not aware that the present Council were considering the matter—they expected the loan to be accepted by the ensuing Council.

This mistake will cost this borough a thousand dollars a year, probably for twenty years.

The citizens of our town should call a meeting to consider the matter, and if possible, ask the Court to grant an injunction to stay the proceedings and compel the Council to secure the money at the lowest possible rate of interest.

Prompt action may possibly save the tax-payers of Bellefonte twenty thousand dollars.

A TAX PAYER.

A Great Day in the History of The Pennsylvania State College.

Crowds of People Brave the Chilling Blasts and Binding Snow to Hear the Addresses of Notable Men at the Dedication Services.—The New Engineering Building the Finest of its Kind in the Country—The Impressive Ceremonies—A Brief History of the College and Its Leading Departments of Study.

making a total of 50,824 square feet or about one and one-seventh acres. Inside, it one may tread over two and one-third acres of floor space, surrounded by four million brick. Or, having made a complete tour of the building, he will have been in 57 different rooms.

The new building adds another variety of material and style to the nineteen buildings already on the campus. The old main building, erected in 1857 of the magnesian limestone taken from the ground on which it stands, forms the prominent and central figure. At its left and rear, is the Chemical and Physical laboratory, built of light brick and trimmed with light Ohio sandstone. Beyond, the main Experiment Station building is of wood and stained shingles. In the other direction, the Botanical laboratory, of cut magnesian limestone and red brick, with its glass and iron conservatory, forms an agreeable contrast with the Ladies Cottage of brick. On the right of the main building, the steep self-supporting roof and square tower mark the position of the armory. The Professor's residences of brick, stone and wood complete the variety of buildings.

The new Engineering building is the only combination of red brick and brown sandstone.

The arrangement of the interior abundantly sustains the promise of the exterior. Passing up the broad stone steps and under the great stone arch, one enters the main hall way from which stairways lead to the basement and upper floors. Going to the basement by the left hand stairway, one is in the hydraulic laboratory.

In one corner is a stand pipe which, by the use of compressed air on top of the water, can be made to assume a power equal to a pipe of the same diameter 100 feet high. In the different stories attachments may be made to this pipe for testing the sanitary value of the various systems of closets and drainage.

A wrought iron tank, six feet in diameter and fifteen feet high, will afford opportunity for experiments in wire work, gauging flow of streams, etc. Being connected with the reservoir of the college, a sufficient head can be secured for

wing on the first floor, the right hand corner shows a lavatory and dressing room fitted with a hundred lockers. Here the embryo mechanics and smiths cleanse themselves after their practical labor.

Beyond the lavatory, on the right of the wing hallway, is the machine shop where chipping and filing and machine tool work are taught. Electric motors will furnish power for all machines. From this room a tool supply room leads off to the left, beyond which is the foundry. Here, on the earthen floor is built an 18 inch culvert for iron founding and a brass furnace, all the work is which is done directly by the students.

Passing beyond the forge room, one comes through the iron supply room to the carpenter shop, 36x35 feet, fitted with 24 neat benches and tool cabinets. Each cabinet contains saw, plane, chisel, and in fact a complete kit of tools used in the ancient art of carpentry. The student passes in his course from use and care of tools to intricate joinery. Beneath this room is the pattern-making department, with its many turning lathes and benches.

Returning to the front of the wing, the first room on the left is the forge room, 32x42 feet, with cement floor. Twenty forges and anvils give opportunity for practical work. The forges are supplied with blast from a large fan in an adjoining room through pipes, passing beneath the floor. The smoke is drawn off by another fan and forced into the smoke stack of the boilers. Every care is taken for the comfort of the workers.

The forges, with their tools carefully in place and convenient for work, present a pleasant appearance. The work consists of the elements of blacksmithing, tempering and preparation for machine work.

The last room on the left hand side is occupied by the wood working machines with pattern making benches arranged around the walls. Overhead in the attic will be placed the machinery necessary to prepare the stock for use. In a basement, room beneath, bench moulding will be taught, where the pupil will determine how patterns must be con-

sidered by Congress to endow the college, which they had previously founded for the same purpose which Congress had in view.

In 1865 President Pugh resigned and William H. Allen was appointed, who served for two years. Mr. John Frazer was then chosen, but only remained in the chair one year. Rev. James Calder was made president and served until 1880. In 1871 the college was declared open to both sexes, thus beginning the Ladies' Department.

Ever since the foundation of the college the agricultural department of the institution had contained but few students, while the Classical, Scientific and Technical departments, which were all lower under the act of Congress received patronage of the State. For this reason the name was changed to the Pennsylvania State College.

In 1880 President Calder resigned and Mr. Joseph Shortridge was appointed. He at once met with a great deal of opposition on account of his evident lack of ability to control the students. He served for one year and resigned under pressure. Prof. McKee acted as president until 1882 when Dr. Geo. W. Atherton was selected and has ably filled the chair since that date.

When Dr. Atherton was appointed the college had run down to a very low ebb and had secured an unenviable reputation. Under his management it has rapidly and steadily improved both in character and number of students and in the standing of its courses. In 1885 the new mechanical building was completed, thus greatly enlarging its ability to fulfill the law of Congress in this direction. In 1887 a course in Electrical Engineering was established. The Legislature in this year appropriated \$112,000 to the college for buildings. This money has been expended in erecting a chemistry and physics building, botanical laboratory, armory, dwelling houses, and in beautifying the main building and the campus. In 1890 the State appropriated \$127,000 for a new building completed and equipped the new laboratories. In giving this amount the State promised to give more money whenever it was needed and the call for more will doubtless be taken up soon, if this is truly needed.

THE LEADING DEPARTMENTS OF STUDY.

To any one who has observed the growth of the institution within the last three years, there will appear a development almost phenomenal. The facilities for instruction have been broadened and the corps of instructors increased and strengthened in correspondence. Especially marked has been the improvement and advance in the Technical Departments. In this age of electrical and scientific discovery, mechanical invention and gigantic engineering enterprises, the value of a thorough training for the successful grappling with these great problems of this age cannot be overestimated. The departments of instruction are all based on the principles recognizing the importance of practical application, as well as the necessity of theoretical investigation; and to put into practice this idea, each student, whether Mechanical, Civil, or Electrical Engineer, or Chemist, puts in a certain number of hours of practical each day, either in the shop or laboratory.

In the equipment of these departments the need of real practice with modern appliances and instruments has been a dominant idea throughout. And by the judicious expenditure of money appropriated for the departments this idea has been well carried out.

Mechanical Engineering.

This department, headed by Prof. Louis E. Reber, has been steadily building up to day it offers a course of training for Mechanical Engineering second to none in any similar department of any other institution in the State. This is a fact not nearly so widely known as the circumstances justify. The advantages presented in this department and the constant improvements that are being made in it make this course one of the most desirable in the College.

It has been the aim of the head of this department to build up a course that is modern, practical and thorough. For the theoretical part constant care is taken that only the best and latest textbooks be used. For convenient reference a well stocked library is accessible at all times to the student. Works treating exhaustively of every branch that can be included under Mechanical Engineering may be found in this library. The class room is supplied with numerous models, and new ones are being added constantly. This gives the very best facilities for the successful study of the text-book. Drawing from books and direct from machines is required. Also much attention is given to work and drawing in original design.

Every opportunity is given for the practical application of the text book. The different kinds of machinery with which the Mechanic Art Building will be supplied affords the student ample opportunity not only to observe the running of the machine, but to run it himself and to study its movements.

Besides the practicum in wood-working, forging, chipping, filing and manipulation of the lathes, drill presses, milling machines, and so forth, during the senior year, time is given in the Mechanical Laboratory to testing the various engineering materials and lubricants. The laboratory is fitted up for steam engineering work with condensers, calorimeters, indicators and all the necessary appliances for making complete efficiency and other engine tests. An automatic cut-off engine of the Ide type, constructed entirely by the students of the Mechanical Engineering Department, is a part of the equipment of the Laboratory, and is used for experimental work.

During each year, at such a time as is most convenient for the purpose, a visit is made to some of the large manufacturing establishments throughout the State, under the direction of the head of the department.

CIVIL ENGINEERING.

The work of the Department of Civil Engineering is carried on, on the one

hand by recitations and lectures, and on the other, by practical work in the shop, draughting room, the field, and the laboratory.

In the former, those general principles that form the theoretical basis of Civil Engineering, as an applied science, are developed, and familiarized by dwelling upon their relations to practical work. In the latter, the art of engineering has the important place.

Aside from the general training in Drawing, Mathematics and Mechanics, the class-room work falls broadly under the following topics, corresponding to the several specialties in engineering practice: Surveying, through all its forms, from that of land with compass, to geodetic, with delicate and precise instruments, Designing of Engineering Structures, Sanitary Engineering, including the designing of water works and systems, the Economics of Railroads, the Methods of Least Squares and enough of The Elements of Mechanism of the Steam Engine and Electric Light and Power to enable the graduate of the course to use the corresponding machinery understandingly, though not to design it.

In the shop the use of tools, in working wood and iron, is obtained, and afterwards exercised in making a model of some engineering structure, from working drawings.

In the draughting room, mechanical drawing, topographical and railroad maps, graphics, designing and lettering, occupy the student's time, to which is added the making of tracings and blue prints.

The equipment for field work is full,

and the instruments are the best manufactured.

The scheme for field work includes railroad and topographical surveying, leveling, followed by determinations of time, latitude, longitude, azimuth, the measurement of horizontal angles, the gauging of streams and surveys for pipe lines.

The demands of practical work are kept constantly in view, and it is the endeavor to so train the student that he will not only be able to start well in professional work, but to step to its higher grades as opportunity offers.

PHYSICS AND ELECTROTECHNICS.

Since the establishment of the Department of Physics and Electrotechnics no effort has been spared by Professor Osmond to found a course of study which will have no superior in this State.

The course furnishes an extended and thorough training in all branches of Physics, and provides an advanced technical course for those desiring to become electrical engineers. The best text-books are used. The student also has access to the library of the department at all times. Practical work is combined with theoretical knowledge, certain hours being devoted to recitation, while certain other hours are taken up in putting into practice those ideas which have been comprehended theoretically. The department is now encased in their new building, which has a front of eighty-five feet and a depth of sixty-five feet—a model of commodity, with ample room for all desirable purposes. In a neatly fitted up basement are established the dynamo room, work shop, photometer room, spectrometer room and three laboratories for research work. The second floor comprises a lecture room, professor's office, library, electro-statics room, two apparatus and three research rooms. The third floor contains the elementary laboratory, an apparatus room and the assistant's office. Conveniences of all kinds abound. Prior to the erection of this new building, owing to the want of space, the supply of apparatus was meager; since it has been occupied an almost entirely new equipment has been collected, consisting of apparatus of the most costly and delicate construction, and fitted for the most accurate research. The dynamo room contains one Hall engine, twenty five horse-power; one Shipman engine, two horse-power; two Brush dynamos, arc and incandescent; one incandescent dynamo, Linneus sound wave armature, constructed by students some four years ago; one Brush motor, two horse-power. Recently the building was excellently wired by the Senior class for both arc and incandescent systems. The plant has a capacity of one hundred and fifty incandescent and four arc lights. The students from year to year have been assigned certain pieces of important apparatus to construct. In this manner the department has become possessed of eight galvanometers, eight voltmeters, one resistance box, two shunt boxes, one earth inductor, and the dynamo which has been previously mentioned.

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