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Rose Technic Staff

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THE ROSE TECHNIC.

VOL. I.

Terre Haute, Ind., November 11th, 1891.

NO. 3.

THE ROSE TECHNIC.

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THE tragic death of H. C. Lewis, who was for a short time a member of '94, was one of those sad events which come at intervals to all communities. Young in years, endowed with marked ability, surrounded by a social atmosphere of purity, it was inconsistent with nature that he should come to such an end. Characters of such possibilities are not built to be thus hopelessly destroyed. He surely was the victim of peculiar circumstances which so preyed upon his mental powers as to lead him to his ruin. The final pistol shot was but the last of a series of evil deeds, the magnitude of which he did not, possibly could not realize. His coming to this city and his actions here were an object and a course of attainment wholly inconsistent. Ambition, talent, all those characteristics which gave promise of a brilliant future, struggled in vain against dissipation of such violence that no nature could bear up beneath it. His introduction to the school had hardly been effected, the faculty had scarcely come to know his classification, when the fatal deed was done. He had not permitted the good influences of an acquaintance among the students to seek him out, nor had he granted

opportunity for his personal endowments to reflect that credit upon the Institute which they might. In truth he was not really in nor of the Polytechnic and no responsibility for his death rests upon the school, or upon any one connected with it. He was merely upon the threshold. How different it might have been had he known the life within. The sympathy which all now extend the bereaved parents would have operated to his reformation. Destiny would have offered a brighter ending to a life founded upon refinement, culture and ambition. There is no death more sad than that in which a soul of value goes to eternal judgment with its mission uncompleted. Yet such a death it is that teaches the lessons we are to learn.

* * *

WISCONSIN state university follows an excellent plan in the publication of its faculty directory. In connection with descriptions of the various departments, there appears a brief biographical sketch of each professor, clearly setting forth his qualifications for conducting the work he has in charge. Such an idea might be introduced in Indiana college catalogues with benefit to all. Should it be adopted, this fact would soon become quite evident: Rose Polytechnic would have no occasion to occupy a secondary position. In the very front rank would we stand and right proud of it are we.

* * *

HOLLOW E'EN possesses a strange and all persuading influence over the Poly boy. It penetrates to his inmost soul and extracts therefrom whatever of evil intent it may contain. It moves him to push a loaded lumber car through a closed gateway, to paint his class number upon the newest pavements, to torment the life out of half a dozen special watchmen, to remain out all night and at day-light scale the roof of a four story building and deco-

THE ROSE TECHNIC.

rate the slate shingles with four foot imprints of "92," etc., etc. In fact it changes him from a model of innocence to an impersonation of deceptive "villainy." It transforms an angel to the darkest demon. How strange that this should be. Is it witchery or is it somnambulism? Is it imagination or is it fact? The witness only is to judge.

* * *

ROSE POLYTECHNIC has reason to congratulate herself in possessing one great advantage over other prominent institutions of learning. She does not permit "special" students to undermine the regular class work and eat up the vitality of the school. Among the requirements for entrance are that the student shall elect one of the prescribed courses, and that in his subsequent work he shall adhere to it. Were he permitted to select at random, soon the class work would be so inconsistently divided up that the regular men would be at the mercy of the "specials." Undoubtedly the enrollment of the institute could be easily doubled were "specials," admitted. But, thanks to the powers that be, such increase is not desired, and that young man who wishes to be consistent in his course of work has an opportunity to be so without interference at all times and upon all occasions from that will-o'-the-wisp, the "special."

* * *

SUGGESTION has been made that the constitution of the Athletic Association be revised. The proposition is an excellent one. By all means let it be followed out. The present constitution is an old one, and in point of fact the Association has out-grown it. There are numerous features in which it does not meet the requirements of such a progressive and successful organization as ours has come to be. In many colleges it would long ago have proved inadequate and even here would have failed to meet the demands had its administration not been in most able and conscientious hands. To be frank, an association could not be more ably conducted than ours has been. To this excellent management all credit for our

athletic victories, local and inter-collegiate, are to be traced, all of which speaks volumes in praise, first of those who have given their time and enthusiasm to its care, and second to the students as a body for their unanimous interest in the common welfare rather than in the promotion of factional issues. If such has been the case with an imperfect constitution at the basis, what would be the state of affairs with an improved one to work upon. A good plan for carrying out this revision would be for the directors of the Association to select a representative committee from the several classes, which committee could agree upon a new constitution and finally report it for consideration by all the students. This might profitably be done in the near future.

* * *

FOOT BALL is carrying everything before it in other colleges of the state. DePauw is lost in enthusiasm over it. Purdue, Butler, Bloomington and Wabash likewise. Even Earlham, which has always been thoroughly exclusive in athletics, has gone so far as to put a team in the field and arrange a series of games with Oxford. Very evident is it that we are far behind. This is much regretted by many of the boys who would ask nothing better than to be permitted to play upon an inter-collegiate foot ball team.

* * *

IT is very strange, but nevertheless true, that the tendency is prevalent over the city to attribute indiscriminate recklessness to the Polytechnic students. There is but one reasonable explanation for this, and it is that prejudice exists. If such were not the case why should so prolonged an outcry be heard when at rare intervals and by accident, an Institute wheelman collides with a pedestrian upon the street. Ten times as many such accidents occur in which city wheelmen are the guilty ones. And why should there be a storm of indignant comment when the students undertake to punish a crowd of little urchins who make life miserable for them going to and from their work?

Not a man whose indignation gets the better of him on this score would tolerate one-tenth of the persecution to which the students are subjected. Think of walking along the streets absorbed in study, only to be rudely awakened by a stone hitting you in the back of the head. Wouldn't you chastise the little vagabond who threw the missile? Yet rarely do the students resort to force. Occasionally a crowd of classmen get together and indulge in a noisy celebration of some class victory. In consequence they are set down as "drunk," a "public nuisance" and so on down the list. The truth of the matter is the people of Terre Haute do not know what college life is. The students of the Polytechnic are not at all typical college men. They have too much work to be rowdies. Residents in this fortunate city have no conception of college enthusiasm. In the Polytechnic, those factors which lead to constant wrangling and exhibitions of violence are entirely wanting. Really there is no occasion for residents holding the Poly men in the light they do. Students can be, and the great majority of them

are gentlemen. Meet them in society, in business circles or at the Institute and you will find this to be true. Cultivate their acquaintance and you will then appreciate the mistake you have made in believing that the recklessness of the community is centered in the Rose Polytechnic Institute.

* * *

SUPERINTENDENT BROWN'S selection of a successor to Mr. Whitehead undoubtedly is a good one. At this early period Mr. Smith has made warm friends with the classmen under him, and has convinced them beyond question of doubt of his ability to instruct them in every branch of the shop work over which he is placed.

* * *

THE CHRISTMAS TECHNIC will contain a full page picture and accompanying historical sketch of the orchestra. A special edition will be issued with a view to supplying extra copies to all who desire to send them to their friends.

THE STUDENT'S AMBITION.

BY PROFESSOR CARL LEO MEES.

We take it that the student in our higher institutions of learning has in common with all mankind the desire to gain happiness. This, the main-spring of most human effort, actuates him in the pursuit of knowledge, for as Samuel Baily in his discourses says, "Ignorance does not simply deprive us of advantages; it leads us to work our own misery; it is not merely a vacuum, void of knowledge, but a plenum of positive errors continually productive of unhappiness." The difficulty, however, which the student encounters on entering his career, is that the attainment of this end, happiness through knowledge, seems remote, and that he has a wearisome path to travel. As he stumbles along over roots, to him always real and not imaginary, quadratics and cubics obstructing the way,

with cones to slice, cylinders and planes to intersect, the series never seem to converge towards his aim; of what use is to me the study of the infinite, for never will I reach it with my infinitesimal steps. The integral of all my studies will not be definite. The practical (?) only, makes me happy. Then comes the inertia whose moment, sad to say, he finds too great. The stresses and strains are too much to bear; the modulus of his ambition is too small; midst fields of force and ether waves he thinks his energy lost; his guides encourage him, but oh, 'tis in a foreign language. Relief seems to come when worried brain finds rest in watching the chips taken off by that kind planer, in sympathy with poor mortal, taking care of itself—when buzz saw takes upon itself the work first

wearily performed on two-inch plank, with muscle and rip-saw he rejoices, but even there the dream is rudely interrupted, for the saw is no respecter of fingers. What puzzling piles of models, rings, cubes and pyramids are heaped in disorder. He dreams of gears and racks and screws until his teeth chatter and in the morning finds that the most sensitive reagents seem to fail in revealing the practical use of anything. Again comes relief, for with rod and chain in bright sunshine amid the green fields, the world seems again fair, the levels check and the polygon closes fairly satisfactorily—when—oh, horrors—even here; least squares are stumbled upon and errors must be adjusted. If I could only calculate the probability of my passing in examination I would see some use in this, he thinks—I must have some relief to keep from despair. I [will study acoustics *practically*—a good tin horn will help me—I will study lettering *practically*—I know where there is a nice sign. I will wield the paint brush, for I must have practice, and until I am proficient, will practice at night. Satisfaction seems to have come—but the awakening is rude, for he is met by an examination in the morning.

Is all this tribulation going to lead to happiness? The answer of experience is, yes. If the aim of mankind is to gain happiness then the means by which it can be attained, once known, will be used more and more liberally. Technical schools have multiplied and have grown in popularity, not spasmodically as a patent medicine has a run for a short time owing to the credulity of ignorance, but steadily. By state aid and private endowment they have been established in all countries. The attendance has increased in them much more rapidly than in any other class of educational institutions. Is not this one evidence that those who have attended in the past have found them powerful instruments in attaining their end, and by their example and advice encourage others to make use of them. The courses of study in most of these schools are more rigid and less elective than in collegiate institutions, and I believe that this is a dis-

tinct advantage, though the student often believes that he is made to study that which is not *practical*, and not being to his taste, slights his work. Think a moment. If you knew all that is required in your profession would you have to learn it? Who is most competent to tell you what is required? Evidently, one who has encountered problems and learned what tools and means were needed to solve them. No knowledge is impractical—practice makes *expert* but theory leads to *advances*. The investigator, not merely executer, stands upon the frontier of human knowledge and aims at the conquest of new soil, knowing that upon it will be reared the *new* structure more extensive and perfect. It will not do either to attempt to impress the correctness of your design, invention or improvement by that most American phrase, "I bet you it is right." You must be able to prove by indisputable reasoning that you are right or Butler's well known lines might be quoted to you—

"Quoth she,
I've heard old winning stagers
Say fools for arguments use wagers."

What must be your equipment of tools in order that you may be engineers, capable of coping with the many problems you will encounter, for each problem like

"The eternal Pan
Who layeth the world's important plan
Halteth never in one shape.
But forever doth escape
Into new forms."

First of all we have mathematics, that most powerful of all tools in the attack upon the various problems in practical work. Not only in engineering does it find its application but in all studies, physical, social and political. Can you use a tool or select it without knowing of its existence? Will you be able to wield and apply it without knowing its construction and manner of application? Of what value is a machinist's tool and supply depot to you, if you see in it only the rows of packages and boxes with labels of contents, unintelligible to you, full of material you need, but of the existence of which you are not now aware. You must, in order to make progress rapidly, have at your command

the best tools, must have them bright, clean and sharp, ready to use at a moment's notice, or you will be outstripped in the race by better equipped competitors. The experience of those before you must be to you a guide, and it is in the arrangement of the courses of study that their experience finds expression. Should you find that the work seems hard and the gain small you must bear in mind that we enjoy most the thing for which we have to work hard and to attain which we have had to put forth our best energies. To be happy in the end, one of the most important factors in education and success is to learn to resist our desires and inclinations until they are proven right and profitable. This is true in every department of life.

Closely related to mathematical knowledge is physics, including dynamics. Here our mathematical formulæ find material translation and significance. As by experiment we accumulate data we find that mathematical language, like a line of short hand enables us to express relations and truths, almost inexpressible in ordinary language, or at any rate requiring long and tedious definitions. The study must not be carried on so as to give you merely information in the form of many isolated facts, the memory of brilliant experiments may be pleasant and not without use, but measurement and generalization from quantitative results have led to the advances in science and to their practical application. With what care are not the electrical units, for example, defined and determined for commercial purposes. It has been truly said that American engineering practice shows signs of great originality, but shows a great disregard for economy in material and is most wasteful. As the supposed unlimited material resources of our country show signs of exhaustion and economy must be practiced we must learn to weigh and measure, giving to each member of a structure or machine only such amount of material as is necessary to insure its safety and proper performance. We must know and study properties and behavior of all the materials of con-

struction to enable us to determine upon its best form and combinations, or else we must expect to fail in economic design. Again it is from physical investigation and measurement that the material was gathered to erect that great central pillar upon which rests nearly all of our modern structure of science and engineering, the conservation of energy. Perpetual motionists have had their day. Chemistry finds its place, in the practical application. We learn laws of transformation which enable us to predetermine what store of energy may be made available; how physical properties may be recognized readily from chemical composition and how special properties, required in certain structures may be imparted through chemical means. These means must however be studied, discovered, invented as occasion requires, and this is only possible by intelligent knowledge of chemical laws and theories.

When the student reaches the work in the engineering laboratory, usually less encouragement is required, for he seems to see the use which knowledge here acquired has in practical pursuits. He finds encouragement in that theoretical knowledge, previously acquired, becomes his hand-maid, but one complaint he has to make: why such demand for accuracy, why repetition? I have done this once, why do it over? Skill can only be acquired by practice and the test for accuracy and truths lies in consistency of results by use of the same and different methods of attack. Unless when the physical properties of materials be investigated the results are accurate and reliable, unless errors in experiment and conclusions from them are avoided, economy in the use of the material can not be practiced for the factor of safety must then be made to cover these.

One method of attack may often contain in itself a source of constant error revealed by another experimental procedure. This lesson must be learned and fertility of recourse cultivated. Here the manual training proves of so much value the ability to construct apparatus for investigation is of inestimable value. Again

in practical work at bench and lathe the student learns what forms are cheapest and most readily constructed, a factor of no little importance. What chagrin to an engineer when he finds that his design is such that it is almost impossible of construction or so expensive as to be practically prohibitory.

What about language? Is it necessary to an engineer? You have worked perhaps for weeks upon, to you, an original problem and have solved it and on publishing your work, in a few days are informed that the work has been done before you by some one else. True you have been benefitted by the work, for each problem so solved will be of use in future work, but the keen pleasure is gone, for you seem to have been thrashing empty straw. If the literature upon the subject you were attacking had been accessible to you, and you had cultivated the habit of reading, you would probably have encountered the solution before. The best practice is that which makes use of all the accumulated experience of different engineers. This will differ in many respects in different countries, owing to varied environments, you should be able to make use of this. The knowledge of several languages is essential to do this. In reading a French novel you may skip a page or fail to understand a sentence here or there, if all ends well on the last page, you may feel satisfied and no great loss has come to you, but in a scientific discussion the misconstruction of a single sentence may reverse to entire reasoning and lead to erroneous conclusions. Here accuracy is required. You can only hope to reach above those gone before by making use of their accumulated experience, recorded in books, must stand upon their shoulders; how can you do this if you cannot find the shoulders? Nor is this all, in management of men, public discussion of problems and principles, language is required. Here also the study of political economy is of advantage.

What an apprenticeship is this? How long must I study before entering upon the practice of my profession is complainingly said. As a rule, our students are in too great a hurry to do

this—that is, enter into practice. To do this before being well equipped with that theory which will enable them to work advancement, is poor policy. The rate of interest upon the investment in school work, where every moment is productive, will generally make up, in a very short time, for the loss sustained by putting off the professional money-earning period for a few years.

I do not wish to say that the better preparation which the student may have who continues his studies in an institution of learning longer, should lead him to aspire at once to the highest positions in the profession, but, that he will be able to rise to such position more rapidly, beginning below, than one who has not had such opportunities. The time gained in rapid advancement will more than compensate him for the additional time spent at school. To feel that one is rapidly advancing is a source of gratification and an incentive to fresh efforts, while to stand still, only maintaining ones position and see that others are encroaching upon it, coming from below, leads to unhappiness and discouragement. It is in this condition the student too often finds himself who is not satisfied with beginning at the bottom, thinking that his long study entitle him to a higher position, and is disappointed if such are not opened to him at once, I repeat that, success comes from *practice*; this can readily be acquired after the school period. *Advancement* comes from theory. This can best be acquired in the school where theory is so presented as to show its advancement of the practical.

We find also that often the student's ambition is to specialize too early. There can be no question that the tendency of this period is toward specialization, but not always are the results most gratifying. It is not an uncommon thing to find that a structure or machine has been designed which is very perfect in one feature, the designer's specialty, but utterly erroneous and useless in many other respects. I am reminded here of a story told by Prof. Magnus, of a medical student who when assigned the dissection of chest and lungs of a

subject said. "but Professor, why should I be made dissect these parts? I am going to be a specialist in throat diseases, let me dissect the throat, devote my time to it alone?" The fallacy here is too evident to require comment. We find it however quite as glaring often in the engineering branches. Though practice is specializing more and more; science is generalizing. Rarely will a student find a position waiting for him when he leaves the school, which is to him the fulfillment of his ideal; to some extent circumstances will influence his career at this point, and that preparation is best which has given him the ability to adapt himself to them and later to mould them to his taste. This however he can only do if the work *at hand* is cheerfully and well done first. Don't be in too great a hurry to ride your hobby but find a firm seat in the saddle of the steed you find at your door, before you attempt to teach it new tricks or force it into your favorite gait.

If in your school life you seem to find little satisfaction and happiness, it is generally due to the failure to cheerfully perform the work nearest at hand. Chaffing and fretting in the traces will not lighten your work. Your ambition should be to perform your daily task well, trusting that your preceptors, in virtue of their experience, are leading you in the right path to near your ideal in the end. Let not dread of examinations be the irritating stimulus to study but rather look forward to them as a tonic, a kind of *meter bar* by which your progress is to

be measured and the measure recorded, so that you yourself may be the better able to estimate it. Don't try to deceive yourself here by using any means to stretch the record; it is for yourself that the work is done. When thus honestly you have measured progress and find it substantial do you not rejoice and feel happy? You have made a mark—not to be hidden in closets, as paint brush and mask sometimes are, in order that you may disclaim interest in marks sometimes left in moments of thoughtlessness—but to be proud of, satisfied with and happy to claim your own.

It would seem that in technical schools especially, you would find constant encouragement in your work to attain a coveted end, for never are you left for long periods without direct demonstration of the utility of your studies. You are constantly shown that all theory is practical and all practice based on theory; also that all substantial progress must be based on systematic work and study, must be slow and requires patience, honesty and good cheer to accomplish. This lesson learned, you will not care to trust to visionary flying machines or airy balloons to reach your goal, but will be satisfied and happy in substantial progress along roads paved, to certain points at least, undoubtedly leading to the end sought. If you have to extend that road yourself you will have become familiar with its construction by this time and may feel pride in having added a bit of pavement making future progress more rapid.

A TRIP TO VESUVIUS AND POMPEII.

BY COX AND HUPE, OF '90.

On July 17, 1890, our party was in Naples, Italy, and having missed the 2 p. m. train for Pompeii we waited at the Union Station for the next which was to leave two hours later. The time wore along drearily, but finally our train was ready and we steamed away. Once more our spirits came to us and we talked and prospected on the coming sights and events. The

little time spent on this train brought a number of peculiar sights to our eyes. We saw women working in the fields loading flat cars with stone which others were carrying from a quarry near by. The road was lined on one side by an embankment on whose clay and rocky surface grew huge cacti; on the other by the turbulent Mediterranean. After having made numerous

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stops, we arrived at a small station—Pompeii. It seemed on first sight that no one resided in this historic village other than a handful of peasants and quite a number of beggars and guides.

Our first task was to find the "*Hotel Du Soleil*," a place recommended to us. We walked at least two miles through a very arid and tropical country, the hot sun beating down upon our heads. We reached the hotel in question and were very glad to sit under the shade of fig trees and refresh ourselves with fruit and water. After this repast we visited the amphitheatre of the disinterred city, which was not very far distant. This ancient structure, built long before the coming of Christ, is still in a state of preservation that is remarkable. Some of the white marble seats are still as good as in the time of its glory when the gaily clad Pompeians congregated there, to witness the bloody contests between their noble sons and those of Rome. Once more the peculiar scenes were enacted. No audience was present save a few frightened lizards. The contests consisted of a hundred yard dash and a game of base ball. Think of it.

We returned to the hotel and were there informed that the horses and guide would be ready at one o'clock the next morning to make the ascent of Vesuvius. We retired early. One o'clock found us dressed and eating breakfast. Our steeds awaited us in the road. We mounted and started on our journey looking like a company of U. S. cavalry traveling at night. About five o'clock we made a halt where the steep climb commences. Here the horse is useless and one must resort to his feet for the rest of the ascent. Over beds of cinder and huge piles of lava we made our way slowly to the top. The noise and hissing of the active crater became more audible at every step. Near the top the path lay over great beds of hot sulphur broken by deep crevices from which issued flames of sulphur. At the very crater we had to watch the shower of hot cinders and dust which was continually pouring forth from the huge opening, so that we would not be struck. The heat was very intense, almost unbearable. At fairly

regular intervals there was a terrific explosion and hissing of the gases, throwing up immense quantities of hot cinders which fell far and near. Here each member of the party secured a souvenir of this remarkable place by putting a copper in one of the hot, almost melting cinders and by means of a stick completely enclosing it. After this had become cool enough to handle, the coin could not be removed without breaking the cinder.

The surrounding country to a great distance presented a wonderful scene. Naples appeared as a small spot far to the north. To the south the island of Capri could be plainly seen and the red glare of the morning sun was lighting the mountain tops with his glow.

The descent was made by a different path. This carried us over a steep bed of cinders which were very loose and ready to slide on the least provocation. We descended in a series of long strides. The operation consisted in picking one's foot up and throwing it forward and letting gravity do the rest. The acceleration was so great that one of the party became unable to control his descent and was thrown headlong into the loose cinders below him, causing several wounds which served to perpetuate the memory of this wonderful mountain. After reaching the previous halting place for the horses, we again mounted and made the rest of the descent. This proved to be full of sights. We were now seeing what we had traveled over in the dark. The road was entirely new to us and our party became separated. The writers of this article, not knowing the way, wandered off on a side road and became lost. The only words we could speak to be understood were "*Hotel Du Soleil*" and "*Pompeii*." We traveled on over hot, sandy roads in the vain hope of seeing a familiar object by which we could direct our course. To make all this predicament worse our horses gave out and refused to carry us any further, so we were compelled to lead them through the hot sand. Finally we came upon two huntsmen who wore blue uniforms and the Italian coat of arms on their caps. With never dying hope we put the usual three words, "Pom-

peii—*Hotel Du Soleil*." A smile lit up their astonished countenances. They comprehended. We were now within a stone throw of the buried city. They led the way and we followed, pulling the weary horses. We came upon the main road, and, dropping a few francs into the hands of the guides, took up our way to the hotel. When we reached the entrance to the city we found our former guide awaiting us. He told us in a few words that some of the party were inspecting the ruins and that we were to join them. We did so and once more felt that life was worth living.

Pompeii is made up of narrow streets and small rectangular houses. We were first conducted by a guide to the museum, a modern structure which contains some of the most interesting relics of the city. A series of glass cases down the center of the building contained the forms of some of the ancient inhabitants as they were caught on that fatal day. These forms were made by pouring liquid plaster of paris in the moulds found by the excavators. These moulds were once occupied by human forms of the ancient Pompeians. The cinders and dust falling enveloped them and hardened there, leaving a cavity in which nothing was left but the bones of the unfortunates. Some of these forms plainly showed the act or state which the person was in at the time of burial, some running, others found on the sick bed, some crouching as in the act of being hit by the falling cinders. Various domestic animals were found in different positions. A dog curled up enjoying a bit of slumber was overtaken by the shower. Other relics such as vases, coins, frescoes, fruit and a bottle of olive oil were among the things found, which adorned the cases along the walls. We next passed up the narrow streets, paved with huge flags of lava from

the mountains. On either side of these streets are narrow side-walks about two feet in width. Most of the streets are too narrow to permit vehicles to pass. In many places can be seen the ruts and tracks, made by chariot wheels some 2,000 years ago.

The average Pompeian house is a small rectangular one story structure, enclosing an open court in the middle, around which is a piazza with doors opening into various apartments of the household. In many of the rooms the walls still retain paintings and complete frescoes as bright as if they were painted yesterday. The various places that are shown to the visitor are the forum, the small theatre, the house of the poet, the temple of Venus, the baths, etc. The small theatre is very much like our modern ones. The seats are arranged in semi-circular tiers in front of an open stage. The seating capacity is about 2,000. The forum, though quite small, was one of the principal sights. One of the most interesting features of this place was the prison, a small room about 12 by 15 feet in size. The baths were well appointed. The Pompeian would come here with his slave and bathe for hours at a time, going through all of the different operations the place permitted. Hot and cold, as well as vapor baths, could be had.

Our guide next took us from this part of the city over to the amphitheatre which we had seen before. We then left for our hotel where we sat down to a typical Italian dinner of macaroni and roast pullet. The afternoon was principally taken up by the ride to Naples by rail. Another American party was in the same train, having ascended Vesuvius on the side opposite to that which we took, and by the new rack railroad.

ALUMNI DEPARTMENT.

A METHOD OF TESTING SHORT-WOUND RACING RECORDS BY CHRONOGRAPH. ELECTRIC MOTORS.

BY J. R. PEDDLE, '88.

Let e = Efficiency.

" E = E. M. F. on the motor.

" C = Armature Current.

" c = Field Current.

" R = Armature Resistance.

" r = Field Resistance.

" S = Stray Power.

By stray power is meant the power used to run the motor on no load, minus $c^2r + C^2R$, or it is the power used in overcoming the friction on the bearings and the air and the hysteresis in the armature core, and may be assumed, I think, to be nearly constant for all loads within reasonable limits if there is no considerable variation in the speed.

We have for efficiency

$$e = \frac{E(C+c) - C^2R - c^2r - S}{E(C+c)} \text{ or}$$

$$e = \frac{E C - C^2 R - S}{E (C + c)}$$

By the use of this formula we are able to make an efficiency test in which all the measurements are electrical and therefore, in general, more convenient and accurate than when they must be partly made on a dynamometer.

All that is necessary is to run the motor unloaded and measure the armature and field currents, the E. M. F. and the hot resistances of armature and fields, and you have all the necessary data to calculate the efficiency of the machine under any load.

By the use of the differential calculus we find the armature current for a maximum efficiency to be

$$C = -c + \sqrt{c^2 + \frac{c^2r + S}{R}}$$

which of course will give you at once the nominal H. P. of the motor.

BY GEO. R. PUTNAM, '90.

At the recent meeting of the Amateur Athletic Union in St. Louis an electrical method of recording the time of the races was used, and some interesting comparisons made with the old standard system of having three timers with stop watches. The perfection of the electrical arrangements was due to Mr. Alfred Ramel, of the Washington University Observatory. The well known Fauth chronograph was used, with a Bond break-circuit chronometer recording seconds on it. In the same circuit with the chronometer were wires going to the starter's pistol and along the track. The hammer of the pistol was arranged to break the circuit for an instant in its fall. The tape stretched across the track at the finish line contained a section of wire making a very gentle contact in the same circuit, so that the slightest touch of the runner would break the circuit, which by an automatic arrangement was immediately closed again. For such a race as a hundred yard dash therefore, there was accurately recorded on the chronograph the instant of the firing of the pistol, and the instant of the winner's breasting the tape, and with a scale the interval of time could be read on the chronograph sheet to the hundredth part of a second. At this meeting the method was applied, with various necessary modifications to bicycles, hurdle and running races, and the time was also taken by the three official timers of the Association with stop watches, though in one case the difference was 36 hundredths of a second longer. In a few instances it made the time shorter, the greatest difference in this direction being 8 hundredths of a second. The stop watches differed among themselves in some cases nearly half a second. In all contests where accurate time records are desired the advantages of the

chronograph are obvious (though its proclivity to lengthed records may be considered unfortunate!)

McKEEN—STRONG.

Another alumnus has joined the matrimonial throng. On Tuesday evening, October 20, Mr. Benjamin McKeen, '85, was united in marriage to Miss Anna Masse Strong, eldest daughter of Mr. Joseph Strong, of this city. The ceremony was solemnized in St. Stephen's church at 8 o'clock p.m., in the presence of their large circle of friends. Subsequently a beautiful reception was tendered them at the home of the bride's parents, and at midnight they left on their bridal tour to California. In all respects was this marriage a notable one. Mr. McKeen, son of President W. R. McKeen, of the Vandalia, is one of Terre Haute's most excellent young men, able, ambitious and thoroughly trustworthy. He has full charge of maintenance of way on the T. H. & L. division of the Vandalia Line, and is an engineer the R. P. I. may well be proud of. His bride is from one of the first families of the city, and is full worthy of the high esteem in which she has always been held. On their return Mr. and Mrs. McKeen will make their home in the residence presented them by President McKeen at Sixth and Walnut streets.

CLASS FRATERNITY.

A circular published by the president and secretary of the class of '91, DePauw University, has been handed to us. It is addressed to the members of that class who are now out in the world trying to make a living or boarding with their wives. (We don't suspect the children are keeping them yet). The circular says that a roster is to be published in the near future, which will be one of the means of keeping the old spirit and enthusiasm still burning. Each member of the class is expected to write a short account of himself for this roster; a short informal letter, not to strangers but friends who are extremely anxious to know what their classmates are doing. The letter is to give a short

history of the career of the writer since graduation; present business, place of residence and *domestic condition*.

We think this scheme is a good one; it will relieve the individuals of the class of any anxiety they may have concerning their former school fellows. When one graduates from college he is soon caught up by his business or profession and taken along whether he will or no; his time is too full to write to each of his classmates; but nevertheless he wants to know what they are doing. If doing well he will rejoice; if poorly it may be that he can lend a helping hand. If such a roster as the above will promote such a continuation of friendship it ought by all means to be encouraged; not only by the alumni of DePauw University but by alumni of Rose Polytechnic as well.

We make mention of this plan in hopes that the classes of R. P. I. will take it up and begin to do something in this line of chain making which cannot help but be beneficial to the alumni and the institution.

NOTES.

Mr. W. R. McKeen, Jr., '89, has returned from a year of study in Germany.

The address of H. G. Brownell, '86, is 872 N. western avenue, Chicago, Ill.

Mr. Abe Balsley, '91, sends his "73" to all the boys from No. 7 Vine street, Lynn, Mass.

Mr. T. L. Condon, '90, has changed his address to 375 Dearborn street, Chicago, Ill.

Mr. S. S. Raymond, '90, will study mining engineering at the Columbia School of Mines, New York city, this year.

Mr. F. W. Hurlbert, '91, passed through town last week on his way to Detroit. He goes to work for the Detroit Electrical Co.

Mr. F. P. Cox, '87, has left the Welding Co., and is now in charge of the meter testing department of the Thomson-Houston Co.

It is desired to lay particular stress, principal or conjugate as you please, on this part of THE TECHNIC. We know, as well as an undergrad-

uate can know, that the alumni are desirous of being informed of the whereabouts and prosperity of former chums. Therefore we hope any changes that may come up will be reported and not be put off till a letter is received asking for such information.

From the *Terre Haute Gazette* information has been gained that Mr. J. D. Harper, '91, is to be the electrician for a new street railway at Evansville, Ind.

Mr. A. J. Hammond '89, having spent a year in the east studying sanitary engineering has hung out a shingle as civil and sanitary engineer, at Frankfort, Ind.

Mr. C. C. Brokaw, '86, is located in Buffalo, N. Y., at present, where he is superintending some work for the Brown Conveying and Hoisting Machine Co., of Cleveland, O.

Mr. H. S. Putnam, '86, has left the Brush Carbon Co. and taken up again with his first love, the Thomson-Houston Electric Co. He is at present spending a few weeks at his home in Davenport, Iowa.

Mr. E. F. McCabe, '91, has severed his connection with the Gaynor Electrical Co., of Louisville, to superintend the iron work which the Sneed Architectural Iron Co. are erecting on the new Library at Washington, D. C.

ECHOES.

It is said the watchmen were fired for proving an alibi.

Those Senior signal whistles are the loudest echoes to be heard.

The "error of closure" in that midnight sprinting match proved to be zero.

Who ever before heard of Juniors, Freshmen and Sophomores uniting on Hallowe'en?

"The Rustler" for one of our leading dailies who imagined "An Orderly Hallowe'en," evidently retired early that evening.

The druggist who prepared the two gallons of "wild west" pigment used in promulgating the trademark "9495" states positively that he never had such materials in his stock.

* *

Problem in Mechanics—"Compute by methods based on experimental data, the momentum which will be acquired by a freight car moving as fast as a student can walk." Necessary data will be furnished by "9495."

* *

A Freshman introducing himself unceremoniously to a Senior preliminary meeting on Hallowe'en, met a response which was saturated with enthusiasm, and applied with a few feet of

well regulated rubber hose in the hands of an expert.

* *

WANTED—Some one to tell who painted the roof, who smashed the gates, who didn't have a full night's sleep, who said "Have you," who, who ———, who ———, who ———, etc.

* *

Investigating committee—"Do you know who did this mischief?"

Freshman—"No sir."

I. C.—You were in the crowd Saturday night?"

Freshman—"Yes sir."

I. C.—"This is very strange. You have no idea who did it?"

Freshman—"No sir."

* *

Senior (in his dreams): "When Webster first worked out Young's modulus of elasticity we didn't know whether Harry Wetherbee would make a good center rush or whether we'd have to use black paint on the roof. I told Rowley he'd better keep "Shorty's" bull dog locked up, but Place says the radius of curvature had changed so we had to put in a double break in the circuit and compute gravity

all over again. You're a liar. Say let me blow the whistle."

*
* *

PÓPULAR LITERATURE.

Looking Backward.—The investigating committee.

Les Miserables.—"Jake" and "Shorty."

A Mortal Antipathy.—Reuhl's liking for hose.

The Ancient Mariner.—The deluged engineer

The Rape of the Lock.—Getting out of the bath room.

The Cotter's Saturday Night.—Hallowe'en.

The Prisoner of Chillon.—Stone.

Our Mutual Friend.—The Watchman.

The Gates Ajar.—Story of a freight car.

The Scarlet Letter.—9495.

Opening a Chestnut Burr.—Discovering who did it.

Black Beauty.—The Corked Freshman.

ATHLETIC DEPARTMENT.

THE FALL FIELD DAY.

Razzle Dazzle, Razzle Dazzle !
Zip ! Rah ! Boom
Hoop lah ! Hoop lah !
Give us room,
We're right in it all alive,
Rose Polytechnic '93.

In discussing the advisability of having a fall field day the directors of the athletic association considered that the only real advantage in having a field day in the fall would be in drawing out the new men, thus giving a chance to develop to the best advantage the new talent of the school. Feeling assured that this could be done the board decided to have the field day; and the preparations were made with that idea foremost.

The result was very gratifying indeed and the purpose aimed at was more than accomplished. The new men were drawn out to such an extent that it became impossible to check their advance and consequently they score a complete victory over their rivals.

No doubt the natural antagonistic feeling existing between the Freshmen and Sophomores had much to do with this, and certainly that over abundance of class enthusiasm at first displayed in "pipe and tin horn rushes," but latterly turned to better account as field day competition, had a marked effect on the day's sport. The Freshmen, and there were several of them, who had the perseverance to come out every day before recitations for practice deserve especial mention. They have set an example,

which many of the older athletes of the school would do well to follow.

The weather was all that could be wished for and other conditions were favorable. Behind these the hard work of the managing committee in getting things ready must not be forgotten; Messrs. Young, Mott and Reuhl had performed their work well and deserve full credit for it.

The sport began at 2:30 with the one hundred yards dash, Hoff '95 and Earl Layman '94 being the only entries; Hoff won, time 10½ seconds.

Second on the program was throwing the sixteen pound hammer in which Beach '94 won, overthrowing 61 feet. Daniels, '95, second, 54 feet 1.2 inches.

Running broad jump: Hildreth, '94, 16 feet, 10.8 inches; Hoff, '95, 16 feet, 6 inches.

Throwing base ball: Darst, '95, 318 feet, 8.4 inches; Lake, '94, 301 feet, 4 inches; Hedden, '94, 280 feet, 7 inches; Rock, '92, 271 feet.

Running high jump: Childs, '94, 4 feet, 9½ inches; McTaggart, '95, 4 feet, 6 inches.

Standing broad jump: Layman, '94, 8 feet, 11 inches; Sanford, '95, 8 feet, 10¼ inches; Hoff, '95, 8 feet, 5 inches.

Two hundred and twenty yards dash: Hoff, '95, 27½ seconds.

Pole vault: Lake, '95, 7 feet, 7½ inches; Layman, '92, 7 feet, 6 inches.

Putting shot: Darst, '95, 26 feet, 6 inches; McCaffery, '94, 26 feet, 2½ inches.

High kick: Childs, '95, 8 feet, 5 inches; Hildreth, '94, 8 feet, 4½ inches.

In the tug of War '95 won by a quarter of an inch, in a three minute pull.

In tennis the Freshman, Sophomore and Senior classes were represented and only doubles were played. The Seniors first played the Freshmen and defeated them two straight sets; then the Sophomores and Seniors played, the latter being again winners in two sets out of three. The players for the Seniors were Wood and Tippy; for the Sophomores, Mendenhall and Layman, and for the Freshmen, Bender and Eddy.

The records are not high. On the contrary they are low, and if they were to be taken as an exponent of the ability of Polytechnic athletes the school might well be alarmed for the safety of her position as leader in field sports in the State. But they are not to be taken as the best that can be done. This field day can only serve as an object lesson, which, by studying, future efforts may be put forth to the best advantage. Since to tell a man of his good points is to prevent his doing as well the next time, no compliments or flattery will be indulged in here; if the criticisms seem severe it must be remembered that they are given with the right intention. In the 100 yards dash, Hoff would have lowered his record one-fifth by starting quicker and two-fifths more by keeping his eyes on the track ahead of him instead of watching his opponents. In throwing the base ball, Darst should learn at what angle he gets the best throw and then always get that angle. Childs in the high jump seems to have good spring but a poor style of jumping. Sanford no doubt intended well but failed in two contests by not being ready on time. Unfortunately for him the world could not be stopped while he changed shoes.

Hoff, in the 220 yards dash made quite a spurt through the first 100 feet but dwindled down to a dog-trot in the last three hundred. The reverse would undoubtedly give a better result. Other weak points might be mentioned, but want of space forbids. Careful practice and

close attention to best methods will accomplish all that can be desired.

For those who had entered in contests and failed to appear, the censure cannot be too severe; it perhaps seems a trifling matter to them but to the managing committee and the success of the field day itself it is anything but that. Not only do they break their faith with the committee but they also cause delays and breaks in the program, which at times have nearly swamped the whole affair. Thus, in this field day, several contests had to be dropped from the list, and others were badly crippled because so many who had promised, failed to appear. Although no one would think of questioning the integrity of a Poly, yet it would seem that in field day matters at least, that integrity would need to be backed by a money forfeit in order to be depended upon.

FOOT-BALL.

Partly on account of the field day and partly on account of the dampening effect of not being allowed to enter the Inter-collegiate race, the start in foot ball this year, has been later, even than is usual here. However a splendid beginning was made on Saturday, Oct. 24, when the Freshmen, assisted by three Seniors, played an eleven picked from the rest of the school; of course this arrangement threw nearly all the old players together against the Freshmen and made a one-sided game. And considering the unbalanced state of the two teams the score of 16 to 0 does not speak so badly for the Freshmen after all; they played a stiff game and showed plainly that some among them at least have handled the egg-shaped ball before.

The best feature of the game however was the good spirit which existed all through and the absence of that wrangling which is looked upon as a necessary part of a game of foot-ball. With a few more such games even our faculty may be persuaded to give up their prejudices against foot-ball and next year may see the R. P. I. ranked with the others in the foot-ball world.

The immediate effect of the game was to stir

up a strong interest in foot-ball in each of the classes; so that now each class has an organized team and a schedule of games between the classes has been arranged as follows:

Saturday, Nov. 7,	{ Freshmen vs. Sophomores.
	{ Juniors vs. Seniors.
Saturday, Nov. 14,	{ Freshmen vs. Juniors.
	{ Sophomores vs. Seniors.
Saturday, Nov. 21,	{ Freshmen vs. Seniors.
	{ Sophomores vs. Juniors.

In order not to run the series too late in the season it was necessary to arrange for two games on each afternoon; to do this the time of playing was cut down to one-half hour for each half of a game. As none of the men are trained or hardened, this arrangement is possibly a wise one from other standpoints as well as that of time. By agreement of all a few rules, looking to the proper control of games, were adopted.

1st. Two o'clock shall be the time of calling the first game, and three thirty the time of calling the second game on each afternoon.

2d. Any class failing to have a team on the field and ready to play within fifteen minutes of the time of calling the game, shall forfeit to its opponent.

3d. Decisions of referee and umpire shall be final in all cases; captains alone shall have the right to question the decision of the umpire or referee; and the breaking of this rule, or wrangling between players shall be sufficient ground for disqualification.

4th. Either the umpire or referee shall, if possible, be a member of the faculty.

5th. Captains shall have the right to substitute men at any time during the game but no man taken off shall be allowed to play again in the same game.

The class teams are as at present organized are as follows:

Freshmen—Hartman, capt.; Mundy, Reuhl, Sanford, Hoff, Light, Troxler, Gray, Crockwell Clinger, Comfort, T. C. Smith and Manning.

Sophomores—O'Brien, capt.; Hildreth, Lash, Layman, Lake, Andrews, Skinner, Anderson, Winters, C. McCulloch, D. McCulloch. Substitutes Schultz, McNaught and Teller.

Juniors—McGregor, capt.; Wenzel, John-

nott, Valentine, Ross, Klotz, Huthsteiner, Sample, Hesser, Waite, Johannesen, Rice and W. A. Alberts.

Seniors—Fogarty, capt.; Wetherbee, Sperry, Frank, Oglesby, Matthews, Rose, Rock, Dietrich, Davis, Hussey, Boyles and Young.

IN THE I. I. A. A. SERIES.

The other colleges of the Intercollegiate Association have been busy since the last issue of THE TECHNIC in working out the schedule of games given in that number. The games played so far have resulted as follows:

DePauw defeated Butler at DePauw, Oct. 17. Score, 32—20.

Wabash defeated Indiana University at Bloomington, Oct. 17. Score, 20—0.

Purdue defeated Wabash at Crawfordsville, Oct. 24. Score, 44—0.

Butler defeated Indiana University at Butler, Oct. 24. Score, 52—6.

DePauw defeated Indiana University at Bloomington, Oct. 31. Score, 56—0.

Of the games yet remaining, Butler will undoubtedly win from Wabash on the 14th, and Purdue from Indiana University on the same date. So that the championship now hinges on the two games of DePauw vs. Purdue, Nov. 9, and Purdue vs. Butler, on Thanksgiving day. The result of the Butler-DePauw game was a surprise to every one, and it give DePauw a very good chance for the championship, which will be hers if she can win the game from Purdue on the 7th. Should Purdue win this and lose to Butler on the 26th a tie will be the result; should Purdue win both she becomes the champion for the year.

TENNIS CLUB.

The recent excitement among the students on the tennis question has subsided, and the prospect is now for a more amicable settling of the whole difficulty. The proposition which Dr. Eddy advanced to the club, looking to the final dissolution of the club seemed to them rather harsh. At a subsequent meeting the club, after duly considering a rather discouraging future,

THE ROSE TECHNIC.

reconsidered their former resolution of not hearing any propositions from the Athletic Association, and determined to sell out. They accordingly fixed as their price thirty dollars cash, and an exemption of Athletic Association dues for two terms for each member of the club, making a total of nearly seventy-five dollars the deal would cost the Association. The directors of the Association have not as yet taken any action on this proposition, but the general opinion among them seems to be that seventy-five dollars would be several times too much to pay for the property now belonging to the club.

As a matter of fact their whole property now consists of three back-nets, all nearly ready to fall. These nets are 106 feet long and nine feet high, making a total of 2862 square feet of wire netting, which at one cent per square foot, the market price, would cost \$28.62; each net is supported by seven oak posts 2x4 and 16 feet long, making a total of 232 feet of oak, which at \$2.50 per 100 feet cost \$5.80. A base rail of pine 2x4 and a base board 1x12 also of pine, the full length of the nets, give 530 feet of pine which at \$1.75 per 100 feet, cost \$9.28; allow \$1.30 for nails and other items not mentioned and the total cost for the three nets is \$45.00. No allowance is made for labor as that did not cost the club anything nor would it cost the association anything. Upon such a basis as this it is not surprising that the directors seem inclined to refuse the offer, thinking that the Association cannot afford to pay full cost price for worn out property.

EARLHAM COLLEGE.

Although not by any means the youngest college in the State it is only recently that Earlham College has come to the notice of the other colleges in an athletic way. Their application for admission to the I. A. A. naturally leads to an investigation of the status of athletics in their own school.

They have had for many years back a good

athletic association, and all forms of athletic sports have always been encouraged by their faculty and vigorously pursued by the students themselves. They have had strong base ball and foot ball teams, but in these two sports are restricted by the trustees of the school from playing with other colleges. They have had field days, and their past records would indicate that they would make lively competitors for the other colleges in this direction. They have one of the best gymnasiums in the State, and systematic exercise is taken by all.

Although they will not be able to take part in foot ball and base ball at present it is earnestly hoped that Earlham will be taken into the Intercollegiate Association. It ought to be the policy of that association to assist the other colleges wherever possible.

PURDUE LETTER.

Purdue meets DePauw the 9th in what will be the game of the season, as Purdue must beat DePauw to win the pennant. The DePauw Bema congratulates the eleven on having secured the services of Clint Hare, our coach of last year, but if Ames can't give Clint Hare lessons we want to know why. Our eleven has improved greatly under Ames, especially in team work, and if DePauw wins from us she will have to play far better ball than she did last year, when we shut their team out 36-0 in one half.

The game between Purdue and Wabash, Oct. 24th, developed only two interesting features. One was the '88's dance (vide *Lalle Allemand*) and the Crawfordsville newspapers to down Purdue. The Wabash men kicked at everything and one of their kicks was on the cleats worn by the Purdue men, which were the regulation put up by Spaulding. The next week nearly every paper had some sort of a roast on the "rolling mill hands" of Purdue and the "plane irons" they wore. A chapter of the Sigma Nu fraternity has been organized here.

E. F. N.

CURRENT MELANGE.

A MIDNIGHT ROMANCE.*

I.

The night was cool, the air was still,
The moon-beams danced on the window sill,
And a Poly boy with a date to fill,
Went by the Artesian bath house.

He stopped at a doorway farther east,
And rang the bell three times at least,
Then paused as the beats of his heart increased
And waited as still as a mouse.

The door flew back and revealed a maid,
In a dainty evening gown arrayed,
And her smile her pearly teeth displayed,
In a manner really charming.

To the youth the evening almost flew,
And as time went on as time will do—
The antique clock struck one, struck two,
In a fashion quite alarming.

The light was dim, the fire was low,
His fair blue eyes seemed all aglow,
He loved but dared not tell her so,
He could only stoop to kiss her.

But his desires of bliss were nipped in the bud,
She struck him but once, that once drew blood,
He fell in the street with a sickening thud,
And they carried him home on a shutter.

—“Tuesday.”

II.

When I the query for your hand
Did tenderly impart,
You said you'd gladly give the same,
With all your precious heart.

But when a rapturous kiss I gave,
I learned, by sudden pain,
You gave instead, that little hand
With all your might and main.

—“95.”

* Two of the many versions submitted.

THE EVOLUTION OF THE BANJO CLUB.

In the early part of January, 1890, six members of '95 met and organized what was then known as “The '93 Banjo Club.” Wheelock was elected leader and at once began to get the club in good running order. The interest never lagged and rapid progress was made under his able leadership. It was not the intention of the club to make a public appearance until prepared to give a creditable performance, and the only accepted invitation to play that year was at the Terre Haute High school concert; each member of the club will long remember that night. How hard it rained, how he thought aloud and how often the leader changed his mind about going. Then the laborious work of tuning, familiar to all who know how the unfavorable weather affects the strings; to keep the pitch was almost impossi-

ble, but after patient effort, harmony was obtained and a good start made with our initial piece. Then came misfortune, Wheelock broke a string and retired; slightly changed, the piece was finished and though well received the club experienced little encouragement from its work that night.

Last year the club reorganized and with the addition of several new members became a school affair. Wheelock was re-elected leader and the showing made at the Orchestra concert showed that time and practice had developed much talent. The club this year has a promising outlook, all the old members, excepting Wheelock and Hendricks, having returned.

The organization looks to the school for support and the fact that every modern college has its banjo club as well as its A. A., should be the means of enlisting all support from the students.

The club meets every Tuesday evening for practice from 7:30 to 10 o'clock.

Several new waltzes and marches are being prepared, and an opportunity will be afforded within a short time for showing what further improvement has been made.

The following is the present membership:

Banjos	{ Davis. McGregor. Strong.	Guitars	{ Klotz, Hhrt. Lash.	Mando lins	{ Simple. Wallace. Farrington.
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OBJECTS OF THE Y. M. C. A.

There is no class of persons more quick and willing to respond to any hearty and genuine effort in their behalf than young men. This may be especially applied to the young men of the Rose Polytechnic, for they have responded willingly and heartily to every effort that has been made in their behalf or in the behalf of the Institute. That this will make our recently organized Y. M. C. A. a success, there can be no doubt, but in order to do this we must have the hearty and earnest co-operation of all.

The fact that this movement came from the students was sufficient assurance that such an association could be maintained with credit to the Institute. On October 3d a permanent organization was effected with nineteen members; the enrollment now numbers about thirty-five members. What is the object of the Association in the Institute? Its purposes and its plan are many. Some of the important ones I will mention. Individual work. It is a universal law that man, like everything else, becomes assimilated to his environment. This is especially true of the new students. A great majority, if not all of them, come from Christian influences. A stranger, he is desirous of fellowship, and is susceptible to any influence which may be exerted upon him. One great object of this association is to grasp the new student by the hand and welcome him to our midst; to make him feel that he has friends in the Christian boys; and to make him feel at home in the Association. Devotional meetings and bible study. These meetings are held once every week—Thursday evening—and are led by one of the members, who gives a short talk upon the topic

which has been assigned to him, giving as much time to the historical part as he deems best, it being the object of the Association to study the bible from a historical as well as a devotional standpoint. The meeting is then thrown open for all who desire to take part. Singing is, of course, one of the prominent features. After the devotional exercises are over those that desire, remain for a few minutes and have a social time.

Inter-collegiate co-operation is also a great factor in a college association. Each college can help the other and all working together can develop a powerful organization.

Lest these features of the association should be emphasized too greatly I had better say that the pre-eminent object of the Y. M. C. A. is the winning and keeping for Christ the souls of young men. It is a well known fact that, whether in secular or Christian affairs, the young men have been the most potent factor in the development of history.

Cannot we be just as powerful in building up the kingdom of Christ? Some have the idea that only Christians can become members of the association. Such is not the case. It is our intention to take a man as he is and where he is. Let each one strive to make this organization a power for good in the Institute. Let us reach that position among Indiana colleges, in regard to Christian work, that we now hold in regard to our athletics.

R. S.

A PHILOSOPHIC SURVEY.

As the first term of the school year advances consciousness of having an interest here becomes manifest in a variety of ways. The faculty appeals to us in its usual manner, each member being particular to furnish sufficient material for thought, which, if it received proper attention, would divert our minds from everything else. The Senior is frequently discovered in a sort of dazed condition and, rarely, is observed engaged in deep thought. It is supposed that just where to draw the line on dignity is what puzzles him most. The Juniors desire some consideration and a generous amount

of sympathy. It is not without the feeling akin to regret that they part with that wealth of information (?) which haply they have discovered is of little benefit to themselves and less to anyone else. For it they have substituted the wise art of attending to what really concerns them and have submitted the responsibility of running things to more capable hands. The Sophomore, like a necessary evil, tries to make life odious to the initiated and has not entirely freed himself from those traits which made him so conspicuous a year ago; he seems to have made the alarming discovery that there is room for improvement in every highway and byway of his existence. The Freshman, although not entitled to representation until after Christmas, has advertised "The Body Politic." Everyone else contributes in an effort to rescue him from barbarism and from his aggregation, we hope, will be found a creditable portion of the future history of Rose Polytechnic.

MR. WHITEHEAD'S SUCCESSOR.

Mr. J. Whitehead, after being with us little more than a month, has resigned his position as instructor in wood-work to accept a general foremanship offered him by the Wheeler & Ewing Co., of Carteret, N. J. Mr. W. P. Smith, who has been appointed to fill the vacancy, is a pattern-maker of wide experience, having followed the trade in its connection with marine work, stationary engine work and sanitary engineering. He came to this country from London, England, about eighteen month ago and

since that time until coming to the Polytechnic, was foreman for the Pratt & Cady Co., Hartford, Conn.

NEW APPARATUS.

The progressive spirit of those concerned with the management of affairs at the Institute is particularly well shown by the selection of apparatus in all departments and also by the systematic arrangement of the same. The most recent additions to the Electrical Department are the Weston Am-meter and Volt-meter, both of which are direct reading instruments. They are spoken of as first-class instruments and experimental work with them here has given best results. Prof. Howe has secured for the Civil Department two new tripods, also a new plane table; one of the old tripods is to be fitted to a camera for typographical work. Furthermore an instrument is being specially arranged for the purpose of illustrating the adjustments of the transit.

Prof. Gray has been devoting considerable time, during the past month, to the construction of a machine for making tests of different wires. The machine is for use in the Mechanical laboratory in connection with experiments in elasticity and strength of materials. It is designed for testing wire up to $\frac{1}{4}$ in. in diameter, and has attachments for testing the Young's and the rigidity moduluses, the tensile and torsional strength, together with the resistance of the material against longitudinal and torsional distortion. Attachments are also provided for making the ordinary bending and twisting tests applied to telegraph and other wires.

LOCALISMS.

"Let me feel you pulse Mr. Oglesby."

Allen is the "essential" member of '93.

No visitors allowed on Saturday afternoon.

Have you blown through those speaking tubes.

Prof. Brown rides the only pneumatic tire at the Poly.

Something to surpass the Nye-Riley Combination—J. B. S.

A member of The Four Hundred—each copy of the previous issue.

J. F. Goodell is one of the additional workman to the shop force and has charge of the engine room.

THE ROSE TECHNIC.

A Senior is authority for the statement that Banquo's ghost was an allusion.

A California paper says "Rev." Maynard, once of '92, has entered Stanford.

Ridgely, '95, broke the ankle bone of his right foot while practicing the pole vault.

Chorus of Junior class after the first frost: Where! oh where! are the whiskers?

The plumbers have left the building and Prof. Mees' thumb screws are still with us.

Sig. Frank says the girls at St. Mary's "wear secret dresses in their pockets." He knows.

Arthur Rice from U. S. Naval Academy, class of '92, is now a student at R. P. I., class of '93.

Prof. Hathaway has been nominated for membership in the Terre Haute Literary Society.

One of the best sustained characters on Hallowe'en was "Williamson" from St. Louis Military Academy.

Bixby, '92, was called home last week by a dispatch announcing his father's fatal illness. He has returned.

Tally a few more for our Freshmen; their work field day emphasized the benefit of a little judicious training.

Sherley Moore was unsuccessful in an effort to arrange for a special course and returned to Louisville, his home.

Frank Stratford, one of the most popular fellows '92 ever had, is now with the Atlas engine works in Indianapolis.

C. E. Albert, '93, one of the patrons of foot ball, is suffering from the inconvenience of a severely sprained ankle.

There has been a slight re-arrangement of machinery at the shop, which gives more space in the vicinity of "The Westinghouse."

French Prof.: From what does the form "furent" come. No. 10 [aside]: I "furent" I do not know. (For French students only.)

If you wish to learn how passionately fond humanity is of being photographed, follow a levelling party of civils some pleasant afternoon.

The reconstruction of the boiler plant has been completed and everything in connection with the same is working in a satisfactory manner.

M. H. Bentley, '94, has returned to his home in Chicago, ill health at present preventing him from continuing his course at the Polytechnic.

Kilbourne, '94, took a severe fall from his wheel, bruising himself so severely that his attendance at the Poly was interfered with for several days.

The McCulloch brothers, '94, were suddenly called home Oct. 30th, on account of the severe illness of their father, Rev. Dr. O. C. McCulloch, of Indianapolis.

Attendance at the exercises field day showed that Coates College still has an interest in Polytechnic affairs, which, by the way, speaks well for both institutions.

Although we have no remarkable reputation as foot ball players, still a few more severe accidents will furnish us with sufficient material for a hospital department.

Hervey Richardson, an old Poly boy, who is now in the U. S. mail service as night messenger over the Van., has just recovered from a very severe spell of sickness.

A somewhat complicated case is the the Poly boy who takes a nap in the bath tub with the water turned on. Whether the experiment has a scientific bearing on not, we are curious to know.

Promising young workmen should remember that the area of ground contained within the walls of the blacksmith shop is not a part of the expression used for ascertaining the size of the blower.

Slowly but surely the hulk of that "Brown" engine is being removed from the shop. The boys stand by with weeping eyes thinking of the many many hours spent in rubbing their old friend with a brick.

Valentine '93, Tippy '92, Tinsley '92, Wetherbee '92, White '95 and Hood '95, comprised

the delegation from R. P. I. Y. M. C. A. to the Indiana State Y. M. C. A. Convention held at Indianapolis, Nov. 5th-8th.

Professor Johnson, who has charge of the department of Physics and Electricity at Franklin, visited the Institute last week. He is engaged in making a tour of inspection among the various colleges of the state.

News was received a few days ago of the recent death at Riverside, Chicago, of Mr. — Soper, who was the father of Ed. Soper, deceased, of '92. Many students will remember the genial countenance of this kind old gentleman.

A Senior, in his Freshman year, was caught with a suspicious hair upon his coat. Notwithstanding that he had placed it there, a companion convinced him that it was "hers" and therefore sacred. He still carries it coiled in his waistcoat.

The majority of Sophomores rejoice that their work in spherical trigonometry has been so satisfactory as to exempt them from further examination on that subject. Striking sim-

ilarity of erroneous work on several papers prompted Prof. Hathaway to explain in a few logical remarks the disadvantages of "cribbing."

The Right Honorable Hannible Hennen is now in a fair way to complete recovery, being under the protecting care of only seven Louisville physicians. He is getting fat under their treatment and in all probability will return to Rose next fall.

Subscriptions to many of the popular magazines must soon be renewed. Avoid the usual trouble and unnecessary waste of time by patronizing Miss Smith's subscription bureau at Polytechnic library, where subscriptions can be entered for all papers and magazines.

The following is a copy of a cipher message received by one of the R. P. T. A. officers:

"N n-one r-e-h-a-r-d haw lr-hay keyoye s-e-i have you t-r-i-e-d c-a-l-c-u-l-u-s, got your dutch to rbusie — at is the matter wit- I am stuck in calculus I— e ht th tr pt he first o n e i n w h e l e s s o n.
add Melange

THE COLLEGE WORLD.

Her hands were full, her veil not tied,—
Her cheeks were rosy as the dawn;
"May I not hold your gloves?" he cried,
She answered, "When I've put them on."
—*The Blue and White.*

The teacher whacked the boy one day
Who disobeyed the rule,
The scholars did not laugh nor play,
To see that lamm in school.
—*Harvard Lampoon.*

Harvard and Yale each spend annually about \$50,000 in athletics,

It is reported that Wabash will adopt co-education in a year.

The Moslem University at Cairo has 10,000 students and 310 professors.

Harvard has seven men of last year's football team and Yale eight, back this year.

The new library building at Cornell, costing \$300,000, is now completed. It is said to be un-

equalled by any similar structure in the country.

Lake Forest University now claims the honor of having the finest college gymnasium in the West.

The Freshman class at Harvard is so large that even the largest class room will not contain the rhetoric class which accordingly meets in a theatre.

If DePauw wins the foot-ball pennant this year, she claims that she does not propose to have any Indiana rivals in athletics hereafter. How about this?

Cornell is increasing in favor as a co-educational institution. More ladies entered this year than were anticipated or provided for. Perhaps our delegates are drawing cards.

Hanover college may be heard from in the spring at the inter-collegiate meeting. The faculty has granted new and desirable grounds to the athletic association and is showing a very favorable disposition towards sports in general.

An English paper has started a foot-ball insurance system. Foot-ball players are insured against fatal accidents for the sum of £100. A penny secures this benefit in addition to buying the paper.—Hamilton Review.

We would suggest that Prof. Waldo be asked to serve as one of the referees for the foot-ball games. Mr. Waldo is an enthusiast in athletics and always led the Rose Polytechnic boys to victory in whatever they undertook.—Bema.

This is what the Senior class in pharmacy at Perdue yell:

Chondodendron, Tomentosum,—
Eriodictyon, Glutinosum,—
Wahoo,—Catechu,—
Pharmacy—Pharmacy—'92.

A skeleton was recently unearthed in the west holding a one-cent piece clenched in one hand. The story now goes round that it was probably the remains of some college editor who was endeavoring to take his assets along "where moth and rust doth not corrupt."

The trustees of Columbia College are discussing the removal of the College from its present site in New York city. They may move out of the city, as no more ground can be procured to spread out on, and more room is needed. Columbia has an endowment of over \$9,000,000, and until Senator Stanford's magnificent gift, was the best equipped school in the country.

Knox college, Galesburg, Ill., has recently dedicated a magnificent new alumni and society hall, costing \$60,000, and the gift of the alumni. She also won second place in the state oratorical contest and claims the cup for

capturing a majority of the points at the state athletic meeting. For all of these blessings the *Coup D'Etat* is thankful and gets out a souvenir number in celebration.

During the Purdue-Wabash game a man received a wound behind the ear. A special in a Chicago paper next day had a harrowing account of one man having had an ear cut off and of eight men disabled and knocked senseless. No wonder foot ball is considered a desperate game, when correspondents write up such stories. It would have been more interesting had he killed a man or two for a little excitement.

INDIANA COLLEGE ASSOCIATION.

The Mathematical Section of the Indiana College Association holds its fall meeting at Purdue university, Lafayette, Ind., the date selected being Nov. 12th and 13th. Rose Polytechnic is represented by Pres. Eddy and Prof. Hathaway.

The following program has been arranged for the occasion:

THURSDAY EVENING—7:00 O'CLOCK.

1. Mathematics necessary for a course in Electric Engineering..... A. P. Carman, Purdue University
2. Text Books of Elementary Algebra S. E. Davidson, Indiana University

FRIDAY MORNING.

3. Those in attendance will visit the mathematical and other classes of Purdue University.

FRIDAY AFTERNOON—2:00 O'CLOCK.

4. The Teaching of Mathematics in the Preparatory Schools A. S. Hathaway, Rose Polytechnic
5. Theory and Practice of Stadia Surveying R. L. Sackett, Earlham College
6. Report of Committees, etc.

FRIDAY EVENING—7:00 O'CLOCK.

7. Spherical Harmonics H. T. Eddy, Rose Polytechnic
8. Discussions by members on miscellaneous mathematical topics

SATURDAY MORNING.

9. Inspection of laboratory and shops of Purdue University.



THE ORCHESTRAL CLUB.

H. S. Hart, '93,	A. M. Hood, '93,	C. E. Mendenhall, '94,	J. S. Royce, '94,
M. D. Sample, '93,	T. S. Perkins, *	A. V. Manchester, '94,	W. G. Hesser, '93,
	H. H. Meadows, *	W. J. Elmsam, '92,	
		S. E. Johannesen, '93,	
		Miss Harriet E. Paige,	
		E. C. Lavin, '92,	