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Rose Technic Staff
Rose-Hulman Institute of Technology

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THE TECHNIC.

TERMS:

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Entered at the Post Office, Terre Haute, Indiana, as second-class mail matter.

MR. J. A. WADDELL, who delivered such a masterful commencement address, is by birth a Canadian. He graduated from Rensselaer, after which he was for some time an instructor there. He left Rensselaer to assume the chair of Professor of Civil Engineering at the Imperial University at Tokio, Japan. This position of honor and trust he held for several years during the eighties.

Upon returning to this country, Mr. Waddell associated himself with the Phoenix Bridge Co., and is yet their Western representative, although carrying on a vast business as a member of a firm of consulting engineers, with headquarters at Kansas City, Mo.

Mr. Waddell has carried out large engineering enterprises in all the countries of this hemisphere and many in Europe. He is the designer and constructor of the large new Halstead street lift bridge over the Chicago river, Chicago, Ill.

Mr. Waddell had but a short time to stay in Terre Haute, as he was on his way to Nova Scotia, where he has much engineering work in prospect.

The management of the Institute is certainly fortunate in being able to secure such men of practical experience to address the students. We regret that more of the undergraduate students could not have remained to the Commencement exercises.

PERHAPS one of the most pleasant features of the Commencement exercises was the music rendered by the Rose Orchestra and Glee Club. The music rendered by the Orchestra was as good as if it had been by a professional orchestra, and much more appreciated, as there was somewhat of a personal interest taken in it.

The songs of the Glee Club were certainly a novel feature, and yet quite an appropriate one, for what is more typical of college life than college songs.

The directors of both deserve a great deal of credit for the excellent training that these organizations show. THE TECHNIC wishes them a far greater success next year.

AFTER many months of hard and tedious work the Junior class has succeeded in presenting the 1903 *Modulus*. The class hopes it will meet with the general approval of the students and Alumni—they say general, for they realize that it is impossible to absolutely please all.

For the benefit of those who may desire to se-

cure a copy during the summer, Mr. Marion W. Blair, 29 S. Seventh St., Terre Haute, Ind., is prepared to express them upon the receipt of the price, $1.50.

THE TECHNIC takes pleasure in announcing the marriage of Dr. William A. Noyes to a Minneapolis lady.

The bridal couple will spend the greater part of the summer traveling in Europe.

PROFESSOR and Mrs. Howe will be in Dennis, Mass., several months this summer.

Professor Wagner and family, also Professor Peddle and family, will spend the summer in Michigan.

Mrs. Burton will pass her vacation at Worcester, Mass., and vicinity.

BELIEVING that "the more the merrier," we desire to see all the classes full next year. Fellows, bring all the good men you can, especially those of athletic ability. We have a good foot-ball schedule, therefore let us at least make a good beginning.

THE TECHNIC desires to express its appreciation of the courtesy shown by the *Gazette*, in allowing the free use of its columns in the compilation of this issue.

TO THE graduating class THE TECHNIC wishes to extend congratulations and hearty good wishes. At the same time we would remind them that we expect to continue our Alumni department.

IS IT necessary to explain why our teams are not shown the same degree of courtesy, and given equally as good accommodations, when they are visitors as they show their guests! Does not the deed itself bear the trade-mark of the perpetrators?

Commencement Address.

By J. A. L. WADDELL,
KANSAS CITY, MO.

MR. WADDELL began his address by stating that, while advice to young men is usually regarded as wasted effort, it is, if good and from professional men, of considerable value. He earnestly counseled each of the graduates to become intimately acquainted with one or more successful engineers to learn their advice and opinions from time to time and to follow the same. He advised them strongly to become acquainted with their brother engineers and older members of the profession.

"A young engineer," said he, "Can often aid an older one materially by assisting him in some of the calculations and in preparation of papers for technical societies. What would often be drudgery to the older engineers would prove to be valuable experience to the younger; so never hesitate to tackle in such a case tedious computations that will lead eventually to valuable deductions, even though your reward be apparently nil.

Concerning the benefit to be derived from an older engineer's opinion and the need thereof, I can speak from experience; for many a time have I received kindly help and encouragement from my good friend, Prof. Burr; but, he and I being of nearly the same age, in the old days, when we were associated together at Rensselaer, we often got beyond our depth, and would have given much for some sound advice from engineers of high standing—but, unfortunately, it was not at our command.

I can look back upon many a wasted hour in my early days, when, active, energetic and ambitious, I desired most earnestly to devote my attention to investigations, the results of which would prove useful to our profession and would tend to establish my reputation as an engineer and a technical writer. But, alas! there was no one to direct my energies into a proper channel, or to show me how to employ my time.

Enforced idleness for an engineer is the greatest curse in existence; and there ought to be no excuse for a member of our profession having a single necessarily idle hour; because he should always have laid out for the future more things professional to investigate and accomplish than he can possibly perform. It is a serious thing for an energetic young fellow (and all engineers of any account, both young and old, are energetic) to run short of work for any length of time.

I well remember a period of eight months of enforced idleness that I experienced a couple of years after graduating, during which time I nearly wore myself out with worry and restlessness, not having had sufficient practical experience to enable me to write more than a paper or two. It is true that I had saved up quite a little money, enough to tide me over the bad times without having to appeal to my father for assistance, and that during that time I obtained a pretty sound knowledge of the French language; nevertheless, I succeeded in worrying myself absolutely ill. I assure you that I would not go through those eight months again for untold wealth. They are the only part of my life which I look back upon as truly unhappy.

You young men are, in a way, much more fortunate than I was, in that I started my professional career during the depressed years of '75, '76 and '77, while you are entering upon yours at the most prosperous time ever known in the history of America. Never before were engineers in such demand, never before was the compensation for professional services so good, never before was the country so wealthy, and never before were the prospects for the future so bright.

Our great republic (and believe me, I can truly appreciate its greatness, although alien born) has entered the world's arena with the intention of taking quickly the first place among nations; and

in the peaceful strife that is to ensue, American engineers of all lines will be found in the van bearing the brunt of the struggle, and, even in the most remote corners of the earth, forcing foreign nations to adopt our methods and to purchase the manufactured products of our country.

Ours is truly the greatest of all professions! With it none other can compare! It, and it alone, is essentially the profession of progress! To whom is due the unparalleled world progress of the last half century? Who are the men who who have developed the resources of the North American continent? To whom are we indebted for all the great luxuries of modern life?

To these questions there can be but one answer—the civil engineers, using the term in its true and broad sense, so as to include all engineers except the military.

Compared with all the other professions ours is by far the most desirable! Lawyers of necessity lose one-half of their cases; so about one-half of their total work is a failure, while all engineering work is, or should be, successful. Half of the lawyers are retained to disguise the truth or to so distort it as to win the cases for their clients: while the engineer is essentially a searcher after truth.

The doctor too often gropes blindly in the dark, using tentative methods, and relying upon Nature to help him out of his difficulties; for medicine is anything but an exact science, while engineering comes nearer being such than does any other profession.

The military man's main object in life is to destroy, while the engineer's is to construct.

The minister deals with things based on faith; while the engineer in all his works is governed by the laws of nature, which as a rule he understands fairly well, and according to which he must comply in order to be successful.

Civil engineering is the youngest of all the learned professions; and not until quite lately many people, including even some of its prominent members, maintained that it was not a profession at all, but simply a trade. However, all that is a thing of the past, and engineers are now not only considered to be professional men, but are looked up to by the populace.

"Straws show which way the wind blows," so to learn the world's opinion of engineering and the civil engineer, we can consult the light literature of the past and present. It is not many years ago that English novelists sneered at the engineer, terming him a "greasy mechanic," and placing him outside the pale of polite society. At that time American novelists either simply ignored the engineer by leaving him out of their dramatis personae, or when he did come incidentally into the plot, considered him about on a par with a boss carpenter. Today all this is changed. Many of the prominent novels have a civil engineer for their hero; and in them the members of the engineering profession are invariably treated with the greatest consideration.

In France and in French literature the civil engineer has always been recognized with due esteem, as is witnessed by the works of Jules Verne and other French writers. There is, perhaps, good reason for this, because the civil engineer in France for the last hundred years has always been a polished, highly educated gentleman, and generally a graduate of a school of world-wide reputation.

In our country any man or boy who can use a surveying instrument or even draw a chain or handle a rod, has the privilege of dubbing himself a civil engineer, thus lowering the profession in the mind of the public, who generally fail to distinguish between a graduate engineer and one who has risen from the ranks.

Nevertheless, now-a-days in this country in order to attain anything beyond mediocre success in engineering, a young man must be a graduate of a technical school and the higher the reputation of this school the better his chances.

It is true that we have in the profession many prominent men who never had a technical school training; but they are almost invariably of advanced years.

In England there have been until lately no special schools for engineers, so the young engineer there has had to obtain his education by the

crude and faulty system of apprenticeship ; consequently there may have been some reason for the low standing of engineers in the opinions of writers and society people; nevertheless the English engineer of today ranks in his own country second to no other professional man.

Again the institution of civil engineers of Great Britain is certainly the greatest and most influential engineering society in the world; and some of America's most eminent engineers are proud to be able to write M. I. C. E. after their names. Yes, there is in my mind no doubt about it—ours is the most satisfactory profession of them all, notwithstanding its numerous physical hardships, its grave responsibilities, and its exacting demands upon one's time and energies.

Never once since graduation, over a quarter of a century ago, would I for an instant have considered any proposition to abandon the profession of my choice, and never once have I regretted that choice—this notwithstanding the fact that my early experience was anything but an easy one, involving as it did small pay, excessively hard work, long hours, continuous exposure to rain and snow, occasional extreme hunger, unappreciated effort, and sometimes imminent peril to life.

Many of these things at the time were intensely disagreeable; but now I look back upon them with great satisfaction, feeling that they were indeed blessings in disguise.

Hard knocks tend to develop a man, and to bring out the best that is in him, so in the near future if any one of you has occasion to feel that the world is treating you badly or that you are out of luck you should not worry about it but should proceed upon the even tenor of your way, having confidence that all will come right ere long and that later you will have occasion to feel thankful for all your unpleasant experiences.

The question that naturally interests you most just now is what work will you start on, and possibly what compensation you will receive; so perhaps a few suggestions from an old fellow who has been in harness for many years will be acceptable.

It is far more important that you obtain good experience than that you receive at the outset a large salary.

The services of a newly fledged engineer are as a rule of little or no account. On some work they have a positive value, on other work they are worth zero, while on still other work they have a negative value. The higher the branch of engineering that the recent graduate enters the less valuable to his employers will be his services. For instance, in any work of surveying, the young engineer from the very first day can earn as much as a teamster, axeman, rodman or general roustabout, and in a few weeks considerably more; in more complicated work, such as waterworks, sewerage or railroading, for awhile at least the value of his services will be approximately zero; while in extremely complicated work, such as bridge designing, the drafting that he does at first either has to be done all over again, or requires so much time for correction as to render it practically useless and at the same time he occupies the attention of those whose services cost considerable money and possess large earning capacity.

In our office we figure that it takes three months to bring the value of the recent graduate's work up to zero, and three months more to recoup the office for its loss on his instruction ; so it is not until after six months that his work really begins to become remunerative.

Each of you must judge for yourself what class of work is best suited to your needs and conditions.

Fortunately for you, it is practicable to-day to enter any branch of engineering that you may choose, as engineers of all kinds are in great demand, everybody having more work than they can really do in the short time that is almost invariably allowed on the engineering portion of enterprises.

* * *

Mr. Waddell followed the above general suggestions with a large number of specific ones in the course of which he said : "About the poorest and most unsatisfactory position that one can

take is in the employ of a city; not only because the pay is generally small, but mainly because the tenure of office is so uncertain.

* * *

"Avoid all political positions."

* * *

"Aim always to obtain valuable experience rather than large pay."

"It is a great mistake for a young engineer to choose a speciality before he has had several years of general experience."

* * *

"It is better to strive constantly for a high ideal and fail to attain it completely, rather than jog along contented with small things and mild ambitions.

* * *

"Earnestness of purpose is a sine que non for success.

* * *

"In all your work cultivate to the utmost the attributes of reliability and accuracy, and never let any computation be used unchecked."

* * *

"There is no part of construction work that is of too menial a nature for you to learn."

* * *

"Every young engineer should make a practice of reading the leading technical papers."

* * *

"Engineers have to be students all their lives."

* * *

"In my opinion a knowledge of French is only a gentlemanly accomplishment and one that a man is very liable to lose for want of use; and a knowledge of German is of no advantage whatsoever to an American engineer. There is one language though, that I believe it would be good policy to teach to technical students and that is the Spanish." (Applause.)

* * *

"Mathematics should be treated as a servant, and not worshiped as a God."

"Every young engineer should join the leading technical society in his branch of the profession, starting in as a Junior immediately after graduation and changing grade as soon as he qualifies until he reaches the highest."

* * *

"It is a good thing for a young engineer after he has been three to five years in practice to spend a year or two in teaching engineering in a technical school."

* * *

"Because you think a man is a fool, that is no reason for telling him so."

* * *

"Avoid fancy investments of your savings and dabbling in projects that promise enormous profits."

* * *

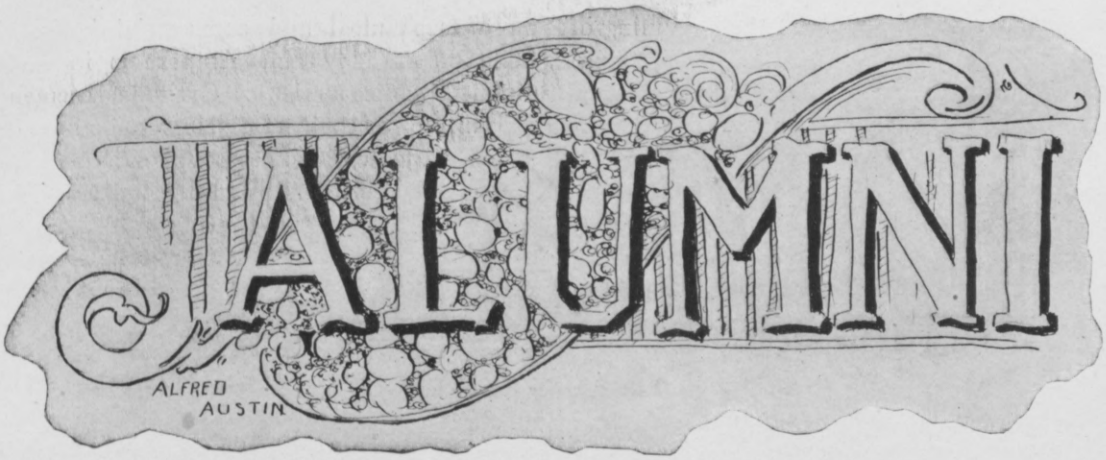
"In spite of all talk that one hears about soulless corporations good, efficient, faithful and willing service is nearly always recognized and retained; so I would by no means discourage any young engineer from working for a large manufacturing company which employs civil engineers."

* * *

"I may get into some trouble by stating it but I am firmly convinced that early marriage is not conductive to a successful career in engineering for the reason that it confines a young man too much to one locality and causes him to strive for the almighty dollar rather than for professional advancement."

* * *

"In conclusion I beg to say, gentlemen, that it has given me sincere pleasure to meet and address you, that if in the future I can serve you either collectively or individually I am at your command, that I hope some of my remarks may some day prove of benefit to you and that I wish for each of you and all of you the greatest happiness in life and a truly successful, professional career."



Alumni Address.

By S. S. WALES, '91.

MR. WADDELL has referred to one of the failings of the engineer which is a lack of ability as an extemporaneous speaker. The whole training of the engineer tends to teach him to put his ideas in as concise a shape as possible. This will not make a good speech. It is always pleasant to give advice and it has been my experience that advice is never taken. This being the case it can do no harm to relive the mind of the giver.

It is with varied emotions that I stand before you today to offer this address, on behalf of the alumni of the Rose Polytechnic Institute, to the patrons and well wishers of the school.

I can share the feelings of the young man just finishing his first year as he watches the graduates receive their diplomas and looks down the long vistas of time which must elapse before he will stand in the same place. I can appreciate the sensations of the class of 1902 as they stand at the culmination of their four years' work and receive from the faculty the token of the time well spent and difficulties overcome. I can realize fully what the President means when in wishing the graduates "God speed" he cautions them that the reputation of the Institute is in the hands of its alumni. Having stood in the position of freshmen, student and graduate I feel that I can make this, in a sense, an address of welcome and caution to the new members who are about to join with us, in carrying the name of our Alma-Mater in all the varied lines of engineering.

The engineer holds a very important and responsible position in the present scheme of civilization, almost as much so as the clergy in the middle ages. As the priest of old, so the engineer of today is supposed, by the uninitiated, to hold the key to many hidden and valuable sources of knowledge which are beyond the reach of the average worker. To a great extent this is true and a young man with a thorough technical education has an inestimable advantage over his brother who is working in the ranks. Yet it is possible to place too high a rating on technical education without energy and too low a rating on energy without a technical education. The opportunity to acquire practical experience is open to both and let us hope, for the good of the country, that the time will never come when the door of advancement will be shut to the man starting at the bottom without technical preparation but with a clear head, energy and a determination to advance.

The strides made by the engineering professions during the past ten or twenty years have

been enormous and standing at the beginning of practical life the view is likely to be appalling. It must be remembered, however, that each one must fill his own place and work along his own path of progress and that while he should keep in touch with the ever broadening view which will greet him as he moves upward, still his energies should be concentrated on overcoming the difficulties met with in his immediate work. Almost without exception all of the great industries, complicated machinery, delicate instruments of today, are the result of the harmonious efforts of many individuals working with a common purpose and not the complete creation of one master mind. The master may select, cull out or adopt certain of the suggestions of others and thus put the stamp of his own individuality on the final result, but still not have been able to conceive the work in its entirety at the beginning. One man may discover the means of applying the ideas of another and still another, of improving on his application until an industry is built up which, viewed in its full strength and intricacy, is beyond the grasp of any one man, yet each department, section and piece of detail work is under the control of men, each of whom thoroughly understands his part of the work. The present growth of electrical engineering as the latest offshoot from science is an example of this. By experiment with an electric arc between two carbon pencils the foundation was laid for the street lighting by arc lamps which now turns night into day in nearly every city in the United States. By enclosing a carbon fibre in an exhausted chamber, Edison laid the foundation for the electric lighting business in all its magnitude and detail. By their experiments with toy motors Gramme and Lieman laid the foundation for the greatest revolution in power transmission the world has ever seen. Yet even these fundamental advances would have been impossible but for the discoveries of Faraday and Ampere, and others would themselves have lain dormant but for the efforts of our Westinghouse, Thompson, Brush and others like them with their hosts of lieutenants, constantly working to put their ideas on a mechanical and commercial basis. The fame of Faraday and Ampere is in no way dimmed by discoveries of Gramme, Liemen and Edison, nor or their names less to be held in esteem by the world on account of the advancement along lines indicated by them which has been made by others. Neither would it be safe to say that any of these men put in the place of any of other would, or could, have achieved the same results, or that any one of those mentioned, even with an infinite lease of life, would have been able to produce or even imagine the results which we see as a whole today.

As the graduates leave the college and scatter to take up their various lines of work at the foot of the ladder, their ideas and opinions will be naturally narrow and diversified, but as they become better acquainted with real life and their observation broadens they will become constantly more liberal and those who reach the higher levels of success will find that the view from the top of the mountain is the same by whatever road they may reach it.

In the Modern Technical Institute the student is instructed in theoretical engineering and is brought into contact with the practical side of the work to a certain extent.

He is thus supplied with an instrument to assist him in the work of life, but one that becomes useless unless energetically operated by himself.

In the keen competition of today the purely theoretical man will find himself in the position of an encyclopedia, consulted by the busy man of affairs, when wanted, and probably shelved when the desired information has been obtained.

The man who is purely a combination of theory and shop practice will find himself in some more or less subordinate position.

It is the man, who by combining theoretical training and practical experience with a knowledge of human nature, and by his ability to direct others, virtually multiplies himself a hundred fold, who becomes a leader in our present industrial system.

The American workman can be led to victory but not driven, and the man who undertakes to

control his subordinates and associates by a severe or overbearing manner will find it impossible to obtain lasting good results for his employer and success for himself.

Oftentimes a word of encouragement, in case of an unavoidable accident, will be worth many times as much as a severe reprimand, for a man can be just as firm in his dealings with others pleasantly as by losing his temper. By being careful in giving credits and demerits, and by uniformly treating his subordinates with the same courtesy that he expects them to show to him, a man will be able to bind them to himself and his interests so that when an emergency arises and he calls on them for extra effort he will be surprised at the power he has back of him.

If success in the industrial world is to be rated on the American basis of dollars and cents, then the key note of success is the ability to control men.

This knowledge, though born in some, cannot be taught in any school and has to be acquired by the majority by careful association and practical experience.

The engineering branches of today embrace every phase of human industry, opening the way for the graduate in chemical, mechanical, electrical and civil engineering to take their place in the country, and work for the advancement of their chosen profession, and I feel assured that when the progress of the next twenty years is reviewed by history that the alumni of the Rose Polytechnic Institute will be found to the front in guiding the industrial enterprises in the United States.

ALUMNI BANQUET.

At the Terre Haute House Thursday night, June 12th, occurred the sixteenth annual banquet of the Rose Polytechnic Association. Like all of its predecessors it was a notable event in the annals of the association. Officers of the association for the past year have been:

President—Herbert Foltz, '86.

Vice President—Robert L. McCormick, '94.

Secretary-Treasurer—John B. Aikman, '87.

Executive Committee—John B. Peddle, '88; Victor K. Hendricks, '89; E. S. Johonnot, '87.

All of these officers were present except Mr. Hendricks, who was unable to leave his business at this time.

Early in the evening the office of the hotel began to fill up with the members of the association, some of whom had only just arrived in the city. At nine o'clock, headed by the officers of the association, all filed into the dining room. Two tables had been placed across the room parallel to each other and in the bay window a cross table united them. In the center of the upper table sat President Foltz, who acted as toastmaster of the evening. For the most part the members of the several classes sat together.

The tables had been tastefully decorated, sweet peas strewn over the white cloth, lending a dash of color that was attractive. An orchestra was in attendance and during the evening furnished music. The banquet served in courses was a delicious one and was admirably served. It was as follows:

"The garland of glad faces 'round the board."

Little Necks.

Salted Almonds. Claret.

Consomme en Tasse.

Cheese Sticks.

Boston Smelts Remoulade.

Cucumbers. Potato Rosette.

Olives. Sherry.

Poly Punch. Cigarettes.

Breast of Spring Chicken.

Saratoga Chips. Muscatel.

Potato Salad.

Strawberries. Ice Cream.

Assorted Cakes.

Cheese. Crackers. Coffee. Cigars.

"What a man has, so much is he sure of."

Cigars lighted, Herbert W. Foltz, president of the association and toastmaster of the evening rapped for order. The program of toasts, in its sentiments, arrangement and printing showed evidence on every page of the fine Italian hand and droll wit of Mr. Foltz. As Prof. Gray, later in the evening in his response to the toast, "Hobbies" well said: "One of Mr. Foltz's 'hobbies' is the Rose Polytechnic Institute, loyalty to and love for it, interest in the alumni association and attendance on its meetings. His riding of this hobby affords pleasure to and is a benefit to us all." "What," he asked, could we do without Mr. Foltz and his hobby?" And the answer to the query was hearty applause.

In his own inimitable droll way, with a humor that was infectious and full of surprises Mr. Foltz called out each successive person on the program and certain others, the regular list having been concluded. This was as follows:

"And what's to come is still unsure."

Toastmaster, ... Herbert W. Foltz, '86

New Chips Off the Old Block, ... E. L. Flory, '02

"All are needed by each and each is necessary to all."

Misfits, ... A. M. Hood, '93

"This world is full of globular men who have cubical jobs."

The Strenuous Life, ... Dr. Mees

"We are not in this world as spectators of the drama of the world's life. We are factors, and the theme is the outworking of our own destinies."

"Rum Creeturs is Womeu," said Tony Weller, ... C. E. Mendenhall, '94

"First in war, first in peace, first in the hearts of their countrymen."

Reforms and Reformers, ... W. C. Ball

"There's nothing kills a man so soon as having nobody to find fault with but himself. It's a deal the best way o' being master, to let somebody else do the ordering and keep the blaming in your own hand."

Hobbies, ... Dr. Gray

"Men who ride hobbies would not be nearly so objectionable if they did not want all the road to themselves."

The Grand-stand Performer, ... W. E. Burk, '96

"Notwithstandin' I hain't writ much for the papers of late, nobody needn't flatter theirselves that the undersined is ded."

What's the Use, ... W. A. Layman, '92

"When you've done your utmost and learned something of which you hope to be the one master, you are bumped against by a dozen or so fellows who know it ten times better than you do."

Well, good-bye, Jim;

Take keer of yourse'f."

W. E. Burk, '96, who is living in Kentucky, expected to be present. He was unavoidably detained. But he had written a letter to Prof. John B. Peddle, '88, and this was read by Mr. Peddle. Following the regular list there were impromptu toasts by W. S. Roney and G. M. Crane of the board of managers, by Professors Hathaway and Wagner of the faculty and by Harry Richardson, Robert Warren and J. J. Kessler. The responses were in a pleasant vein, expressive of regard for the Rose, gratification at meeting old friends and fellow students of former years, remniscent in part and altogether greatly enjoyed. It was after midnight when Secretary-Treasurer John B. Aikman closed the oratory with a fervid and eloquent appeal to the brothers to come up to him and shake him by the hand before leaving the banquet hall. Doing this and shaking hands with each and saying good bye until they met again, which all hoped might not be longer off than next year, the alumni dispersed. And this ended the sixteenth annual banquet of the Association—one of the pleasantest in the series.

Following is list of those seated at the banquet tables as signed to a round robin circulated during the evening:

A. W. Patterson, faculty.
L. S. Rose, '92,
W. A. Layman, '92.
G. M. Davis, '88.
G. M. Crane,
board or managers.
Brent Wiley, '98.
A. C. Eastwood, '98.
Robert York, '00.
A. M. Lathert, '89.
R. C. Warren, '02.
E. J. Hirschler, faculty.
E. S. Johonnot, faculty.
E. L. Flory, '02.
J. J. McLellan, '99.
C. E. Mendenhall, '94.
A. S. Hathaway, faculty.
J. J. Kessler, '97,
H. A. Schwartz, '01.
H. E. Pekins, '01.
M. M. Troll, '01.
J. R. Riggs, '01.
F. F. Phillips, '00.
W. H. Insley, '00.
B. F. Allen, 93.
J. B. Peddle, '88.
R. L. McCormick, '91.
H. C. Westfall, '97.

C. E. Cox, '02.
C. H. Hills, '02.
A. J. Paige, '02.
Victor Hommel, '02.
F. C. Wagner, faculty.
W. S. Roney,
board of managers.
C. E. Scott, '86.
A. P. Stone, '99.
A. M. Hood, '93.
Thos. Gray, faculty.
W. C. Ball,
board of managers.
Carl Leo Mees,
president of faculty.
Herbert Foltz, '86.
J. B. Aikman, '87,
board of managers.

REPORT OF SIXTEENTH ANNUAL BUSINESS MEETING R. P. I. ALUMNI ASSOCIATION.

Terre Haute House, 3 P. M., June 12, 1902.

Meeting was called to order by President H. W, Foltz, '86. Roll call showed the following present:

Class of '86, H. W. Foltz, Indianapolis, Ind.
Chas. E. Scott, Terre Haute, Ind.
Class of '87, John B. Aikman, Terre Haute, Ind.
Class of '88, Geo. M. Davis, Terre Haute, Ind.
Jno. B. Peddle, Terre Haute, Ind.
Class of '91, R. L. McCormick, Terre Haute, Ind.
Class of '92, W. A. Layman. Terre Haute, Ind.
Class of '93, Burgess Allen, Indianapolis, Ind.
A. M. Hood, Indianapolis, Ind.
E. S. Johonnott, Terre Haute, Ind.
A. H. Klotz, Sandusky, O.
C. C. Rose, Little Rock, Ark.
Class of '94, O. R. Hedden, Robinson, Ill.
Class of '96, O. E. McMeans, Indianapolis, Ind.
Class of '97, J J. Kessler, Jr., St. Louis, Mo.
Class of '98, Brent Wiley, Munhall, Pa.
Class of '99, Jas. J. McLellan, Webb City, Mo.
Arthur P. Stone, Cleveland, O.
Class of '00, Jesse I. Brewer, Altoona, Pa.
Wm. H. Insley, Indianapolis, Ind.
Edward F. Phillips, Indianapolis, Ind.
H. S. Richardson, Washington, D. C.
Robert York, Pine Bluff, Ark.
Class of '01, H. E. Perkins, Chicago, Ill.
J. R. Riggs, Terre Haute, Ind.
H. A. Schwartz, Terre Haute, Ind.
M. N. Troll, Indianapolis, Ind.
Class of '02, C. E. Cox, Libertyville, Ind.
A. J. Paige, Terre Haute, Ind.
C. H. Hills, Bernardtown, Mass.
C. C. Park, Evansville, Ind.
C. H. Jumper, Terre Haute, Ind.

Report of Secretary and Treasurer was read and approved;

REPORT OF TREASURER.

ALUMNI FUND.

Receipts in 1901.

Balance on hand as per last report	$ 95.39
Alumni dues received last meeting after report was submitted	22.00
	$117.39

Disbursements in 1901.

550 printed return postal cards for election committee	$ 13.75
300 invitations for executive committee	8.25
300 printed postal cards for exective committee	4.25
Directing envelopes for executive committee	1.25
Postage for executive committee	2.75
275 printed circular letters for secretary	2.75
Postage for secretary	2.77
Envelopes for secretary	.70
Clerical work for secretary	5.00
C. E. Hollenbeck, printing for executive committee	7.50
Transferred to banquet fund to balance same	8.80
Balance at close of 1901	59.62
	$117.39

Receipts in 1902.

Balance from 1901.	$ 59.62
Annual dues for 1902, received to date	34.00
Balance on hand this date	$ 93.62

BANQUET FUND.

Receipts.

Balance on hand as per last report	$ 1.40
Received from persons present	84.00
Drawn from Alumni fund	8.80
	$ 94 20

Disbursements.

Music for banquet for June 20, 1901	$ 13.00
Rental of piano	3 00
Flowers	4.00
Terre Haute House for banquet	73.20
Head waiter	1.00
	$ 94.20

Respectfully submitted,
J. B. AIKMAN,
Sec. and Treas.

June 12, 1902.

Election committee reported the following candidates as a result of the balloting that had been conducted by mail:

For Alumni representation on Board of Managers: F. F. Hildreth, '94, W. E. Burke, '96.

For President: H. W. Foltz, '86, R. L. McCormick, '91.

For Vice-President: W. E. Burke, '96, E. S. Johonnott, '93.

After calling for votes from those present who had not previously voted by mail, the result of election was announced as follows:

Alumni representative on Board of Managers, F. F. Hildreth, '94,

President, R, L. McCormick, '91.

Vice-President, E. S. Johonnott, '93.

On motion of J. B. Aikman a unanimous ballot was cast for the following executive committee:

H. W. Foltz, '86, chairman.

J. B. Peddle, '88.

E. S. Johonnott, '93.

After considerable discussion the following resolution, submitted by W. Arnold Layman, was unanimously adopted, viz:

That the Executive Committee prepare a letter to the entire membership of the association and mail it through the Election committee, containing the suggestion that hereafter the graduating class be entertained each year at the banquet by the association and that the Treasurer be authorized to draw on the Alumni fund to defray this expense; that each alumnus be requested to express his wish on the subject and that each member be advised that those present at this meeting unanimously favor the adoption of this proposition.

By resolution unanimously adopted the President was instructed to appoint a permanent committee that shall have constantly under consideration ways and means calculated to help the Rose Polytechnic Institute financially, the same being free to act according to their judgment and make report to the association whenever they have anything of interest to submit.

This committee as appointed by President Foltz was as follows:

Edson F. Folsom, '92. chairman, A. M. Hood, '93, J. B. Aikman, '87.

The following resolution was unanimously adopted:

RESOLVED: That the Association has with much satisfaction and pleasure observed at the commencement exercises today the commendable progress made by the glee club and orchestra composed of students; That we are pleased to recognize in this development the accomplished direction and leadership of Mrs. Allyn G. Adams and do hereby tender to her the unanimous vote of thanks of this association; That in testimony of our appreciation of her valuable services in this direction, the Secretary is hereby instructed to send Mrs. Adams some roses and a copy of these resolutions, with our compliments.

A unanimous vote of thanks was extended to Mr. Samuel S. Wales for his excellent Alumni address delivered at commencement today.

The class of 1902 was then voted into membership in the Association.

There being no further business adjournment followed.

The following correspondence will be of interest to alumni and students of Rose, as it took place in obedience to instructions given by the Alumni Association to its Secretary at the annual business meeting, held on Thursday, June 12th:

TERRE HAUTE, IND., June 13, 1902.

MRS. ALLYN G. ADAMS, City:

My Dear Mrs. Adams:—I am pleased to advise you of the adoption of the following resolutions at the annual meeting of the Rose Polytechnic Alumni Association, yesterday afternoon.

It affords me great pleasure to herewith carry out the provisions of these resolutions, whereby I am instructed to give you a copy of the same and hand you the box of flowers which I send by messenger.

"*Resolved*, That the Association has with much satisfaction and pleasure observed at the Commencement exercises to-day the commendable progress made by the Glee Club and Orchestra, composed of students; that we are pleased to recognize in this development the accomplished direction and leadership of Mrs. Allyn G. Adams, and do hereby tender to her the unanimous vote of thanks of this association. That in testimony of our appreciation of her valuable services in this direction the Secretary is hereby instructed to send to Mrs. Adams some roses and a copy of these resolutions, with our compliments."

Assuring you that the expressions contained in these resolutions were both hearty and unanimous, I am,

Very truly yours,

J. B. AIKMAN,
Secretary and Treasurer.

TERRE HAUTE, IND., June 15, 1902.

Dear Mr. Alumni Association Secretary-Treasurer:

I have never in the whole course of my checkered

career received a compliment that gave me more genuine joy—pleasure is too mild a term—than the resolution and flowers from the R. P. I. Alumni Association. I felt sure of the appreciation of the Board and Faculty, but didn't count on making an impression on the alumni to the extent of a splendid resolution and an immense bouquet! It is the most graceful act of courtesy and appreciation that I know anything about, and I wish I could tell every alumnus how proud I feel. I hope my head wont be turned—but if it is, the Alumni Association will be to blame.

Sincerely yours,

CARRIE B. ADAMS.

ALUMNI NOTES.

Harry S. Richardson, 00, who is in the Ordnance Office, Washington, D. C., has been home for a few days.

O. E. McMeans, '96, was promoted to the position of chief draughtsman with the Nordyke & Marmon Co., Indianapolis, May 1st.

A. S. Bixby, '92, is Superintendent of the National Malleable Castings Co., Indianapolis branch

Tinsley, 92, has embarked in the bottling business in Indianapolis.

Harry A. Schwartz goes to Indianapolis July 1st, with the National Malleable Castings Co. He has been Instructor in drawing at the R. P. I. for the past year.

W. H. Insley, '00, of Indianapolis, has been with us for a few days.

Jesse I. Brewer, who has had charge of the shops at Swarthmore, Pa., for some time, is now in the Mechanical Engineer's office of the Pennsylvania R. R., at Altoona, Pa.

W. Offut Munday, '95, is Master Mechanic of the St. Louis Transit Co., St. Louis, Mo.

Maurice Rypinski, 97, has left the General Electric Co., and is Superintendent of the Empire Electrical Instrument Co., N. Y. City.

Cecil Howell, '99, who has been erecting a wireless telegraphy station for Eddie Green, President of the Taxas Midland Railway, has accepted a position as Transformer Engineer for the Bullock Electric Mfg. Co.

J. J. Kessler, Jr., '97, is Vice-President and General Manager of the Western Diclectric Co., of St. Louis, Mo., which will be devoted to the manufacturing of insulating material. He is also connected with the Bullock Electric Mfg. Co., as engineer of insulation.

Brachmann, '98, who has been in Cincinnati, Ohio, for some time, suffering from an injured knee, received while at work in Schenectady, is slowly recovering.

Robert York, '00, who is manager of the Kearney Lumber Mills, Kearney, Ark., has been with us for a few days.

H. E. Perkins, '01, Assistant Eng. of Maintenance of Way of the T. H. & L. and the L. & T., with headquarters at Logansport, has been here for Commencement.

Mr. Wm. R. McKeen, Jr., has been appointed Superintendent of Motive Power, on the Union Pacific railway, with headquarters at Omaha, Neb.

Charles F. Trumbo, '99, is now with the General Electrical Company, Schenectady, N. Y.

W. F. Freudenreicht, class of '98, has entered upon the practice of patent law with T. Hart Anderson, 946 Tremont Building, Boston, Mass. Since graduation, Mr. Freudenreich has been employed in the Patent Office at Washington. Also he studied law at the National University and obtained the degree of LL. B.

W. J. Klinger, '96, is connected with T. B. Jeffery & Co., manufacturers of the Rambler Automobile, at Kenocha, Wisconsin.

John H. Lufkin, '97, who was in Mexico for some time several years ago is going there again.

THE CLASS OF 1902.

Nicholson and Fishback go to Cheyenne, Wyoming, as special apprentices in the U. P. shops under W. R. McKeen, Jr.

Uhl goes to Omaha in the employ of the U. P. as special apprentice.

Marshall goes to Mattoon in the engineering department of the Big Four.

Parks goes to Schenectady in the testing department of the General Electric Co.

Dickerson goes to Chicago as assistant engineer in the employ of Ralph Modjeska, consulting engineer.

Warren goes to Kansas City with the Armour Packing Co., as assistant to Mory.

Flory has the position of assistant chemist with A. G. Hammond Co., Hammond, Ind.

Cox has accepted a position with the Standard Wheel Co., as traveling salesman, with headquarters in Terre Haute.

Jumper goes to Cumberland, Md , as assistant to Helmer, '01.

Housum goes to Youngstown, Ohio, with the Ohio Steel Co.

Jones goes to Chicago with the Roebling Construction Co.

Paige will remain at home this summer, not desiring to accept a position as yet.

Hommel will spend some time at home in Sandusky, Ohio, before accepting a position.

Osborne has not decided yet where he will locate.

Hills will probably go with the Allis-Chalmers Co. Owing to a mistake about the time at which he could go, the position which he had accepted was lost.

Powell goes to New York City, as draughtsman for Puray & Henderson, civil engineers.

The chain letter for '02 has been left in the hands of Claude Cox, 519 N. Seventh street, Terre Haute, Ind. The letter will be started as soon as the boys are located and have sent in their addresses.

Commencement.

THE programme carried out at the Eighteenth Annual Commencement exercises, which took place in the gymnasium Thursday, June 12th, was as follows:

MUSIC.

PRAYER.

MUSIC.

ADDRESS.

J. A. L. WADDELL, Kansas City, Mo.

MUSIC.

ALUMNI ADDRESS.

SAMUEL S. WALES, '91, Munhall, Pa.

MUSIC.

Presentation of Diplomas.

Awarding of Prizes.

Benediction.

MUSIC.

On all sides the room was decorated with palms. In front of the platform where the speakers sat was a large picture of Chauncey Rose, the founder of the school. The frame of the picture was hidden with a fringe of roses of old rose and white, the school colors. At the right of the platform were the seats of the glee club and orchestra which furnished excellent music during the exercises. In front of the platform on the left side were the graduates and a large body of the alumni filled the seats behind the graduates. At the left of the platform chairs were reserved for the faculty of the school. Each member of the faculty wore a rose, some white and some old rose while the seniors wore carnations of white and old rose.

On the platform were Rev. W. A. McCaughey of the Central Presbyterian church, S. S. Wales, of Munhall, Pa., J. A. L. Waddell, of Kansas City, W. C. Ball, president of the board of trustees and President Carl Leo Mees of the faculty. In the faculty chairs at the left of the platform were Professors Gray, Noyes, Hathaway, Wicksham, McCormick, Johonnott, Peddle, Howe, Clement, Hirschler, Patterson and Earhart, and Messrs. John B. Aikman, George M. Crane, Preston Hussey, W. A. Layman, and W. S. Roney, of the board of trustees.

Music was furnished by the school orchestra and Rev. McCaughey offered prayer. The Glee club then sang a selection and Dr. Mees introduced Mr. J. A. L. Waddell of the firm of Waddell and Heidrich Co. of Kansas City, Mo.

After the completion of Mr. Waddell's address the orchestra rendered another admirable selec-

tion. President Mees now introduced Mr. Samuel S. Wales, of Munhall, Pa., who delivered the alumni address, which may be found on another page of this issue.

The alumni address was followed by a lively song by the Glee club, after which Mr. W. C. Ball was introduced and addressed the members of the class, on behalf of the board of managers, conferring the degrees. Mr. Ball's address was as follows:

Gentlemen of the Class of 1902:

You have listened with pleasure and profit to an address by a man eminent in several special lines of that general profession which you have chosen for your own, and an elder brother of yours, a son of the same cherished mother, who is winning his way in the world in pursuits for which the training received at the Rose fitted him, has come back to address you on this special occasion when you are formally "breaking home ties."

To what they have said I can hope to add little of worth, yet in connection with the handing to each of you a diploma, I cannot neglect the opportunity of saying a final word—a pleasant privilege accorded me by the courtesy of my associates of the Board of Managers.

Quite the most obvious thing in connection with commencement ceremonials is the demonstrated fact that a four years' course, purposely made hard, has been completed creditably. Not what I shall say, for that will be little noted, nor long, if at all remembered, but what you have done during your four years of undergraduate student life at the Rose Polytechnic Institute is the significant feature of this occasion.

For four years you have been associated together as a class. During that time your work has been assigned you. Each day you were given your daily work. You were not even required to ask for it. Sometimes, perhaps, it came more freely and fully than you desired.

Right here you will find a radical change in your relations to your surroundings. Assigned tasks, in the way you have had them here, end, for you, today. Lessons have been work, and lessons have been assigned. Work will be the lesson of the future, and you must find this work as well as do it.

Your diplomas, standing for what they do, will be of assistance to you in obtaining work. Knowledge that you were about to obtain diplomas has already been of service in this respect, to all or nearly all of you. How gratifying this fact is to all friends of Rose I need not tell you. Certainly none can be more pleased because of it than you.

For this gratifying condition of affairs you are placed under a three-fold obligation. First of all, you, and all of us, owe a lasting debt of gratitude to that sturdy citizen and friend of humanity, who conceived and established an l endowed this Institute which bears his honored name. Past all human praise, you can only partially repay that debt to him by your utilization in the highest degree, for yourselves and for the world, of the education which his large liberality placed within your reach.

Next, you owe something to the teaching faculty whose members have labored over you with a patience and persistence each of you will understand and appreciate better, in the years to come, than you do now, and certainly better than you did at the time when that patience and persistance were most exercised. The thoroughness of the instruction they have imparted to you and your predecessors is the sure foundation on which rests the reputation of the Rose Polytechnic institute and because of which it is made easy instead of hard for you to obtain satisfactory starts in life at congenial occupations.

Great, too, is the obligation you are under and will be under to your elder brothers of all the classes that have gone out into the world from this Institute. They have demonstrated to the captains of industry and all men of affairs in charge of industrial establishments and enterprises that brains, Rose colored, wear well. So they turn to you for junior assistants.

Just now, for that matter it was always so, but it is especially so now—the world is full of men with more to do than they have hands or heads

to do it with or time to do it in. They are in search of assistants of trained intelligence and sterling integrity—dependable men, possessed of knowledge how to do things and with the pluck and perseverance to do them. On the sturdy shoulders of such young men they are anxious to shift an increasing measure of their burdens. Very few are searching for young men to take immediate possession of their places on those much-exploited top rounds of ladders, where it has been said, with more effusiveness than accuracy, there is an abundance of room. Really, the rounds of the ladder, to continue that figure of speech, are more and more crowded the higher one gets, the more strenuous the struggle, the slipperier the standing and the dizzier. Moreover, it wouldn't be good or safe for you to start up there if you could. And of course you understand that you are not likely to, anyway. Up at the top the air is said to be fine and the prospect pleasing, but I feel quite sure that, after reflection, you will decide to start lower down.

What the Rose Polytechnic has done for you, or rather, and more accurately furnished you an opportunity for doing for yourselves, has been to fit you to start quite a little distance from the bottom round, or if you must, as haply may be the case, start at the very bottom, so trained that you can pass up rapidly. How fast and how far you go will depend in part on what you have done here, but more largely on what you do hereafter. The ladder is long enough and the pace will be fast enough to try your metal. And it reaches somewhere—some useful where.

Unlike some apprenticeships, whereof all know, the effort here during your student apprenticeship has been to advance your training of head and hand just as fast and as far as possible. Progress with each of you in your chosen professions will be an individual matter. Each of you has probably a tolerably accurate idea of what he can do and endure and of what, generally speaking, he desires to accomplish. Suit yourselves in such matters. Let others suit themselves. Under no circumstances seek to impose on any other in his personal matters the rules by which you regulate your affairs. And of course resist and resent any attempt to limit your pace to that of any other. Maybe that other isn't going any place in particular anyway, and is entirely indifferent when he reaches his uncertain destination. You are going somewhere and possible may be in some haste about it. Let us hope you are. We, who are your friends and well-wishers, will feel more assured of your reaching a desired destination, professioally and personally, if as an individual, for it is an individual matter, you select as your pacemaker some one of capacity and character who is doing the very best that is in him, and doing it worthily and well.

To me these statements are so axiomatic that I would not deem them worth the time it takes to say them but for the fact that in circles with which you will come in contact in your professional life they are challenged, and misguided and lawless efforts made to clog the wheels of progress by eliminating the personal factor, grouping men and holding all to the pace of the slowest and lowest and lamest, or those near to that point.

A pleasant feature of your college course, as noted by others, and probably not altogether unappreciated and unencouraged by yourselves, has been the interest taken in your scientific pursuits by many not heretofore supposed to be especially concerned about such subjects. Perhaps it may be ascribed to the attractiveness of personal magnetism.

I am quite sure you will join with me in an expression of gratification that your commencement exercises have been signalized by the music of your fellow students. Greatly gratifying, in a larger way, to those of us charged with a measure of responsibility in connection with the Institute and to all of its friends generally, is the loyalty of its alumni to the Rose as manifested frequently in the help extended by them to their younger brethren. Where one of the older graduates has located and secured power, it will be often found that he has used that power, or shall I call it "pull?" to help some of his younger

brothers of the household of this faith to place and position. Doubtless this is in large part due to enlightened self-interest—the knowledge of of what his younger brother has been trained to do and the comfortable feeling that comes from assurance that familiar methods will be followed by his juniors. Let us hope, however, that some measure of this partiality is pure loyalty and love for the Rose—that thing which we mean when we say that blood is thicker than water. For it is, you know; always was and always will be, because it always should be.

Without attempting to take advantage of the occasion to preach to or at you, I may venture to remind you of the fact that much has been given you and that of you much will be required. Not extraordinary things, necessarily, or even probably. Many incalculable elements enter into the extraordinary. Nor immediately, either. But achievements above the ordinary in the course of ten years or so. And something worthy from the start to finish.

It is one of the fortunate things that the worthy achievements of all men, and especially of educated men, benefit many besides themselves. It pleases me to believe that this is particularly true of men whose pursuits will be such as your training has fitted you for and you are likely to follow. The more you accomplish the larger will be the circle of those benefitted.

You may be quite sure your careers will be followed with interest by all connected with the Rose Polytechnic Institute, teachers, students and friends. Pride and pleasure will be taken in your successes. Pride and pleasure, unmixed with envy, and next only to that felt by your own immediate relatives.

Hopeful for you to the point of confidence, your Alma Mater expects you, wherever you go and whatever you do, to acquit yourselves as men.

It is now my pleasant duty to present to you your diplomas.

Claude E. Cox, Libertyville.
Chenoweth Housum, Decatur, Ill.
John A. Nicholson, Terre Haute.
Arthur J. Paige, Terre Haute.
Frederick R. Fishback, Terre Haute.
C. Herbert Hills, Bernardstown, Mass.
Don F. Osborne, Cassopolis, Mich.
Clyde C. Parks, Evansville.
Henry W. Uhl, Portsmouth, O.
John T. Dickerson, Atlantic, Iowa.
Victor A. Hommel, Sandusky, Ohio.
E. Lindley Jones, Decatur, Ill.
Ira Marshall, Alma, Ill.
Edgar B. Powell, Terre Haute.
Edgar L. Flory, Dayton, Ohio.
Charles H. Jumper, Terre Haute.
Robert C. Warren, Terre Haute.

At the close of the exercises, before the benediction, President Mees of the faculty announced the degrees which had been conferred on members of the alumni and the annual prizes which were awarded. Arthur J. Paige, of Terre Haute, won the Hemingway gold medal for excellence in work throughout the four years' course. Herbert Watson, also of Terre Haute, was awarded the bronze copy of the gold medal for excellence of work in the freshman year. Those who were awarded honorable mention by vote of the faculty were:

In the Senior Class—Claude E. Cox, of Libertyville, Ind.

In the Junior Class—Robert B. Arnold, of Terre Haute, Brent C. Jacob, of Louisville, Ky., and Edward C. Kirby, of Muncie, Ind.

In the Sophomore Class—William H. Hazard and Robert F. Garrettson, of Terre Haute.

In the Freshman Class—Charles B. Trowbridge, of Decatur, Mich., and Louis A. Snider, of this city.

The following members of the alumni submitted the theses given below and received degrees:

FOR THE DEGREE OF ELECTRICAL ENGINEERING.

The Design, Manufacture and Operation of Controllers and Controlling Devices for Electric Motors,
ARTHUR C. EASTWOOD, M. S. 1900, Cleveland, O.

FOR THE DEGREE OF MASTER OF SCIENCE.

Lang Radial Valve Gear,
JESSIE I. BREWER, B. S. 1900, Altoona, Pa.

Design of a Fire Proof Warehouse for a Transfer and Storage Company,

WILLIAM H. INSLEY, B. S. 1900, Indianapolis.

A Study of the Development of Recoil Mechanism for Heavy Ordnance,
HARRY S. RICHARDSON, B. S. 1900, Washington, D. C.

Electricity in the Navy,
HARRY B. STILZ, B. S. 1898, Bath, Maine.

Design of a Ten Ton Auxiliary Electric Hoist,
SAMUEL S. WALES, B. S. 1891, Munhall, Pa.

On the Operation of a Pumping Plant Before and After the Installation of Steam Superheaters,
FRANK A. WHITTEN, B. S. 1898, Brooklyn, N. Y.

The Design of a Fifteen Ton Overhead Electric Traveling Crane,
BRENT WILEY, B. S. 1898, Munhall, Pa.

The Various Cost Items Which go to Make up the Total Cost of Electric Power Plants,
ROBERT YORK, B. S. 1900, Pine Bluff, Ark.

After the awarding of the prizes, President Mees delivered a short, appropriate address to the members of the graduating class. This was followed by the benediction which was delivered by Rev. McCaughey.

The exercises of the Commencement were completed by a song of college cheer, the Glee club being accompanied by the Poly orchestra. The last verse of the song was merged into the old, familiar R. P. I. yell.

THESES SUBJECTS.

FOR DEGREE OF BACHELOR OF SCIENCE.

Construction and Test of a Six Horse Power Gasoline Automobile,
ARTHUR J. PAIGE.

The Design, Construction and Test of a Gasoline Automobile with Three Designs for an Improved Carriage of the Same Type,
CLAUDE E. COX.

Test of a Carbonic Acid Refrigerating Machine in the Rose Polytechnic Institute,
JOHN A. NICHOLSON

An Experimental Steam Turbine,
CHAS. HERBERT HILLS.

Design of a Twenty-five Horse Power, High Speed Twin Steam Engine,
CHENOWETH HOUSUM.

Experimental Investigation of the Laws of Attraction of Electro-magnets,
FREDERICK R. FISHBACK, C. CLYDE PARKS.

The Efficiency of Transmission of an Electrically Driven Automobile.
DON F. OSBORNE.

The Investigation of the Relations Existing Between a Direct Current Dynamo and a Polyphase Motor,
HENRY W. UHL.

Design of a Viaduct for the Wabash Railroad over West Main Street, Decatur, Ill.
E. LINDLEY JONES.

Design of a one hundred and fifty foot Through Pratt Truss Railway Bridge.
JOHN T. DICKERSON.

A Sanitary Sewer System for the Town of Kinmundy, Illinois.
IRA MARSHALL.

Fire Proofing and Fire Proof Construction,
EDGAR BYER POWELL.

Plans and Specifications for a Four Story Fire Proof Warehouse,
VICTOR ECMMEL.

Camphanic and Camphononic Acids,
ROBERT C. WARREN.

The Hydrolysis of Maltose,
EDGAR L. FLORY.

The Hydrolysis of Dextrin,
CHARLES H. JUMPER.

SENIOR RECEPTION.

The Senior reception was given in the gymnasium at the Rose Polytechnic Institute Wednesday evening. For a time, however, it looked as if it would have to be held in the main building. In the gymnasium the lighting is by electricity exclusively. In the main building provision is made for both gas and electricity. Early in the evening an accident at the electric light plant put all the arc lights out of service all over the city. By half-past nine o'clock the machinery had been put in operation again and the arc lighting service was resumed. But up to that time no arc light anywhere was burning. Moreover, there was no telling, as there seldom is in such cases, when the lights would burn again. So the guests, as they arrived at a little after 8, were received in the main building and enjoyed themselves in its spacious hall and corridors.

Meanwhile the members of the Faculty busied themselves in arranging for the getting up of steam in the Institute shop, and in connecting up the gymnasium with the Institute's own electric light plant. By 9:30 o'clock this was accomplished and the current turned on. Coincident with it, however, was the resumption of the electric company's service. Then there was double light—light to burn.

Attendance at the reception was large. Rather more than usual of the alumni were present, meeting and greeting each other and renewing

old acquaintances. Relatives and friends of the members of the graduating class and of other students were present.

President Mees and members of the faculty with their wives received the guests of the evening. Among them were J. A. L. Waddell, of Kansas City, Mo., who delivered the commencement address, and his wife, and Mr. Samuel S. Wales, an alumnus, who delivered the alumni address, with his wife.

The young ladies of Terre Haute, friends of the students, were numerously present. After the formal portion of the reception was ended there was dancing, the Breinig orchestra furnishing music. During the evening the Poly Glee Club, under the direction of Mrs. Carrie B. Adams, sang a number of college songs, to the delight of all present.

Light refreshments were served in the gallery of the gymnasium. Arrangements had been made with the street car company for an extra late car service. It was something after midnight when the reception came to an end.

CAMERA CLUB.

At a meeting of the club, held May 24th, the work of the past year was reviewed and approved.

It was decided to further improve the convenience of the dark-room by installing a new ruby window and an up-to-date fixing box. The club further decided to have placed in the library twenty-five copies of "Photo Minature." Each copy of this set is devoted to some separate photographic subject.

The following officers were elected for the year 1902–1903:

President—A. E. Michel.
Vice President—Marion W. Blair.
Secretary-Treasurer—Alfred N. Austin.

SCIENTIFIC SOCIETY.

A meeting for the election of officers of the society for the year 1902-1903 was held in Prof. Hathaway's room, Wednesday, June 4th, at five o'clock.

The result of the election was as follows:
President—Marion W. Blair.
Secretary-Treasurer—Howard Mullett.
Senior Councillor—Henry S. Kellogg.
Junior Councillor—William von Borries.

WABASH 8; ROSE 1.

THE Rose victories that can be reported in this TECHNIC are very few—in fact, so few that we have not been able to discover any. We will take the defeats in order :

On Friday morning, May 16th, the team left for Crawfordsville to give Wabash another beating, such as we had given them on our home grounds. This was not to be the case, however, for the Rose team, weakened by the loss of Capt. Randall, who had resigned, was no match for the Wabash boys. Wabash played a much better game than they did on the previous Saturday, and Lackesteen proved to be a much better pitcher than Gooding, who pitched the first game.

On account of the absence of Randall a change had to be made in the position of players. Nicholson caught the entire game, Reed played third and first base, and Daily played first and pitched the latter part of the game. Kellogg pitched four innings.

Hills made the only run for Rose in the second inning, while Wabash scored in five different innings :

WABASH.

	A.B.	R.	H.	P.O.	A.	E.
Gooding, 3rd b.,	5	1	1	1	2	1
Wilson, c.,	4	0	1	10	1	0
Posten, 1st b.,	4	3	2	12	1	0
Lackesteen, p.,	5	1	2	0	3	0
Roby, c. f.,	5	1	2	0	0	6
O'Rear, l. f.,	5	1	0	0	0	0
Thornell, 2nd b.,	4	1	0	3	4	1
Eckley, r. f.,	5	0	0	1	0	0
Cane, s. s.,	4	0	0	0	1	1
TOTALS,	41	8	8	27	12	3

ROSE.

	A.B.	R.	H.	P.O.	A.	E.
Bland, c. f.,	4	0	1	1	0	1
Hampton, 2nd b.,	4	0	0	0	2	1
Nicholson, c.,	4	0	0	9	1	0
Daily, 1st b. and p.,	4	0	1	6	1	1
Hills, r. f.,	4	1	1	0	0	1
Reed, 3rd b. and p.,	3	0	0	5	0	2
Cox, s. s.,	3	0	0	1	1	2
Stoddard, l. f.,	3	0	0	1	1	1
Braman, 3rd b.,	1	0	0	1	0	2
Kellogg, p.,	2	0	0	0	0	0
TOTALS,	32	1	3	24	6	11

SCORE BY INNINGS.

Wabash,	3	1	2	1	0	0	0	1	*	
Rose,	0	1	0	0	0	0	0	0	0	

Stolen bases—Rose 1, Wabash 4.
Two-base hits—Poston, 2.
Double plays—Stoddard to Reed.
Bases on balls—By Kellogg, 1; Daily, 1; Lackesteen, 1.
Hit by pitched ball—By Kellogg, 1; Lackesteen, 1.
Struck out—By Kellogg, 5; Daily, 3; Lackesteen, 3.
Umpire—Walters.

NORMAL 6; ROSE 4.

Probably the saddest defeat which Rose has received was the second defeat of the ball team by the Normal team, on May 27th. The game was to have been played on Saturday, the 24th, but the weather was bad, so the game was postponed.

There were probably five hundred rooters at Athletic Park when the two teams took their positions at 4 o'clock on Tuesday afternoon. The Rose rooters, about 125 in number, were on the east side of the grand stand, while the Normals occupied the west side.

Rose batted first, and by the assistance of two

hits and an error, were able to make three scores in the first inning. The Normals made two scores in their half, and again two in the third and fifth each. In the fourth inning our boys lost a chance to win the game. Bowsher, Stoddard and Reed each made hits, and had filled the bases, and no outs. Cox hit to pitcher and Bowsher was forced out at the plate. Daily made a hit and Stoddard scored. Bland and Hampton both made outs, and the side was out with only one run, after four hits had been made.

The game was close and a most interesting one to the spectator. Both teams received hearty support from their rooters. The only thing that we can say is that the Normals had the better team and won the game.

During the game three of the R. P. I. boys put a card up on a pole on our side of the grandstand. On the card were the letters R. P. I. This angered the Normals, and at the end of the game they made a rush for the pole. The Poly men were nearer and beat them to the pole. Things looked decidedly interesting for a while, but in a short time all bad feeling had disappeared, and both sides were fighting good-naturedly.

This is one fight, at least, for which the Polys can not be blamed for starting. We were visitors of the Normals in the first place, and in the second place we stayed on our own side of the grounds during the entire afternoon. However, no one was seriously hurt, and, after all, it only gave us a chance to follow the advice of Shakespeare where he makes Polonius say to his son, something like this: Be careful how you get into a scrap, but after you are in one be sure that you don't get licked.

NORMAL.

	A.B.	R.	H.	P.O.	A.	E.
Sherb, c. f.,	4	0	0	1	0	0
J. Mitchell, 1st b.,	4	2	2	16	0	0
Cummins, s. s.,	3	2	0	1	3	0
Pierce, 2nd b.,	4	1	3	4	2	1
B. Mitchell, r. f.,	4	1	3	1	0	0
Hanna, 3rd b.,	2	0	0	0	7	0
McFerrin, l. f.,	4	0	0	1	0	0
E. Mitchell, c.,	3	0	0	2	5	0
Cavanaugh, p.,	4	0	0	1	1	0
TOTALS,	32	6	8	27	18	1

ROSE.

	A.B.	R.	H.	P.O.	A.	E.
Bland, c. f.,	5	0	1	2	0	0
Hampton, r. f.,	4	1	1	0	1	0
Nicholson, 2nd b.,	4	1	2	1	2	1
Randall, 1st b.,	3	0	0	12	0	0
Bowsher, l. f.,	4	1	1	1	1	0
Stoddard, 3rd b.,	4	1	2	3	2	1
Reed, c.,	4	0	1	4	2	0
Cox, s. s.,	4	0	0	1	3	1
Daily, p.,	4	0	1	0	3	1
Hills,	1	0	0	0	0	0
TOTALS,	37	4	9	24	14	4

Hills batted for Cox in ninth.

SCORE BY INNINGS.

Normal,	2	0	2	0	2	0	0	0	*	
Rose,	3	0	0	1	0	0	0	0	0	

Stolen bases—Rose, 6; Normal, 7.
Bases on balls—By Daily, 2; Cavanaugh, 1.
Struck out—By Daily, 3; Cavanaugh, 2.
Umpire—McCoy.

FRANKLIN 9, ROSE 6.

On Decoration day the team went to Franklin and played the return game with Franklin college at that place, and experienced about the worst treatment which a Rose team has received for some years.

The town of Franklin is not large and does not afford a Waldorf-Astoria, so the team was taken to a fifteen-cent lunch room. After lunch the boys walked about a half mile to the college, carrying their grips all the way. Here they were shown to a dirty little room where they changed clothes, and then they went on the campus and were shown to an umpire of very much the same quality as the lunch they had previously seen.

The game was not called until late in the afternoon and quite a crowd had collected before it began. The game was poorly played on both sides and Franklin took the lead and kept it throughout the game.

After two outs had been made in the last inning Nicholson and Bowsher made singles and Stoddard hit for two bases. The fielder fumbled the ball and Stoddard started to third. A spectator jumped down from the grandstand (which was in center field) and handed the fielder the ball. He threw the ball to third and the umpire said "you're out," and the game was over. This is not the only mistake the umpire made, but it

is a sample. As the Rose team marched slowly off the field the spectators on the fence were yelling to the umpire: "Play ball."

Score and line-up:

FRANKLIN COLLEGE.

	A.B	R.	H.	P.O.	A.	E.
Walden, l. f.,	5	2	1	0	0	0
Webb, 1st base,	4	3	2	8	1	2
Branigin, 2nd b.,	3	2	1	0	1	0
Roach, c.,	5	2	0	13	1	0
Wiley, Luyster, c. f.	5	0	2	0	1	1
Severin, r. f.,	5	0	0	0	1	1
Weyl, s. s.,	4	0	0	1	1	1
Rivers, p.,	4	0	0	2	0	1
Schuler, 3rd b.,	4	0	1	3	0	0
TOTALS,	39	9	7	27	6	6

ROSE.

	A.B.	R	H.	P.O.	A.	E.
Bland, c. f.,	3	2	0	0	0	0
Hampton, r. f.,	5	1	2	2	0	0
Nicholson, 2nd. b. and s. s.	4	1	2	1	3	0
Bowsher, l. f.,	5	1	2	1	0	1
Stoddard, 3rd b.,	5	0	1	0	0	1
Reed, c.,	3	0	0	5	0	2
Hills, p.,	1	1	0	0	1	0
Daily, p and 2nd b.,	3	0	0	1	4	0
Cox, s. s and 2nd b,	3	0	0	1	3	3
Fitzpatrick, 1st b.,	4	0	0	13	0	1
TOTALS,	36	6	7	4	11	8

SCORE BY INNINGS.

Franklin,	1	0	3	2	0	1	0	2	*	
Rose,	1	0	0	0	0	0	2	1	2	

Stolen bases—Rose 4, Franklin 6.
Two-base hits—Stoddard, Branigin.
Three-base hits—Hampton.
Bases on balls—Off Hills 2, off Daily 1, off Rivers 5.
Hit by pitched ball—By Daily 1, by Rivers 1.
Struck out—By Daily 3, by Hills 1, by Rivers 12.
Umpire—Schuler.

WABASH-ROSE FIELD MEET.

On May 31st Rose and Wabash College met in a dual field meet. Wabash won the event with 64 points to Rose's 32 points.

The results of the different events are as follows:

50 Yds. dash—First, H. Adams, W; second, von Borries, R; time 5⅘ sec.

100 Yds. dash—First, H. Adams, W; second, von Borries, R; time 10⅗ sec.

220 Yds dash—First, H. Adams, W; second, Heintz, W; time 23⅕ sec.

440 Yds. dash—First, Heintz, W; second, C. Adams, W; time 54⅘ sec.

Half mile run—First, Reed, W; second, Funkhouser, W; time, 2 min. 14½ sec.

One mile run—First, Reed, W; second, Hawkes, W; time, 4 min. 58⅖ sec.

Hammer throw—First, Bowie, R; second, Marshall, W; distance, 85 ft. 5 in.

Shot put—First, Marshall, W; second, Beatty, W; Dist. 31 ft. 2¼ in.

Broad jump—First, H. Adams, W; second, C. Adams, W; Dist. 21 ft. 3½ in

High jump—First, Jumper, R; and second von Borries, R.

Jumper and von Borries each quit jumping after clearing 5 ft.

Pole vault—First, Larkins, R; and Second, Nicholson, R.

Larkins and Nicholson each quit vaulting after clearing 9 ft. 1 in.

The prettiest event of the afternoon was the half mile relay race in which Rose took first place. Spalding, McDonald, Post and vonBorries composed the Rose team and each one of them deserves credit for the run he made.

AVERAGES.

The following are the averages of the different men who played in any of the college games of the season. They are fairly good in most cases and, on the whole, it is hard to tell why the team did not win most of its games. Surely all the trouble cannot be laid to "hard luck." Probably lack of team work would account for many of the defeats:

BATTING AVERAGE.

NAME.	A. B.	R.	H.	Per Cent.	Stolen Bases
Bland	29	12	2	.414	9
Bowsher	9	2	3	.333	1
Hampton	26	6	8	.308	4
Nicholson	28	6	7	.250	8
Daily	20	1	5	.250	4
Fishback	12	2	3	.250	2
Kellogg	5	2	1	.200	1
Stoddard	21	1	4	.190	1
Hills	16	3	3	.188	3
Braman	16	5	3	.188	3
Reed	22	1	3	.136	4
Cox	18	3	2	.111	2
Randall	22	6	2	.091	6
Knight	4	1	0	.000	2
Fitzpatrick	4	0	0	.000	0

FIELDING AVERAGE.

NAME.	P. O.	A.	E.	P. Ct.
Nicholson	29	10	2	.951
Randall	55	0	3	.948
Fitzpatrick	3	0	1	.929
Reed	33	5	4	.905
Hampton	13	9	3	.880
Kellogg	0	7	1	.875
Daily	9	13	6	.786
Cox	6	17	7	.767
Hills	0	6	2	.750
Bowsher	2	1	1	.750
Stoddard	6	6	5	.705
Bland	4	0	3	.571
Braman	4	3	7	.500
Fishback	3	0	3	.500
Knight	1	1	3	.400

STATE FIELD MEET.

The thirteenth field meet of the Indiana colleges was held on June 7th at the fair grounds, under the auspices of the Normal Athletic Association. Almost 1,000 spectators were present and there were 50 or 60 different men entered in the events of the afternoon. The meet was a success in every way except that it was more of a three cornered meet than a state meet. One State Intercollegiate record was broken and another one tied. Rice, of Purdue ran the 220 yards dash in 22 seconds, breaking the old record of 22⅕ seconds. He also ran the 100 yards in 10 seconds, tying the old record.

Purdue won the meet with 58 points. I. U. and Notre Dame tied for second place with 35 points each, Wabash 4, Normal 3, Rose 0.

FOOT BALL SCHEDULE.

Manager Brent Jacob, of the Rose foot-ball team has almost completed his schedule for next fall. There are several games and it is to be hoped that Rose will show her opponents some clean, hard foot-ball next season.

The following games have been arranged:

Open, September 27.
Indiana University at Bloomington, October 4.
Franklin at Terre Haute, October 11.
Washington University at St. Lois } October 18.
or
I. M. T. H. S. at Indianapolis, }
Wabash at Crawfordsville, October 25.
Earlham at Terre Haute, November 1.
Open, November 8.
Wabash at Terre Haute, November 15
University of Indianapolis at Indianapolis, Nov. 22
Earlham at Richmond, November 27 (Thanksgiving.)

WHEREAS, The Faculty has been grievously laboring under the delusion and snare that they were able to play base ball with all comers; and,

Whereas, Having been associated for four years with said company of distinguished men, in whose footsteps we have, with fear and trembling, endeavored to follow, to fit ourselves for positions of ten (10) cents per hour responsibility and trust, applications for which are constantly being received: and,

Whereas, The best athlete makes the best student, we feel confident that each member of the said Faculty-team will be able to integrate the following expression to show their eligibility as members of said team of brain and brawn:

$$\int \text{Brass} = \int_{\text{you and me}}^{\text{Gate-post}} (\text{CU} + \text{ZN} + \text{anything})\, d\text{EZ}$$

and,

Whereas, It may be possible that darkness come upon the field before the end of the struggle,

WE, THE UNDERSIGNED, agree to turn over to aforesaid Faculty-team all rights and privileges of the tub baths in the gymnasium; therefore, be it

Resolved, That we, the class of 1902 do hereby challenge the aforesaid Faculty, allowing for shrinkage, to measure themselves by us in a game of before said base-ball.

In Witness Whereof, We have this, the twenty-second (22nd) day of May, 1902, affixed hereunto our official seal and signature.

SEAL

THE CLASS OF 1902.

WHEREAS, The members of the Senior Class are about to be cast out into the cold, hard world and need appropriate instruction in good manners and becoming behavior under defeat,

Therefore, We the Faculty, in the spirit of good nature and kindly forbearance that we have continually exercised towards them during their four years of minority, hereby appoint Monday, June 9th, at 3 P. M. as the day and hour for the discipline of said seniors in respect to their recent challenge.

A. S. H.

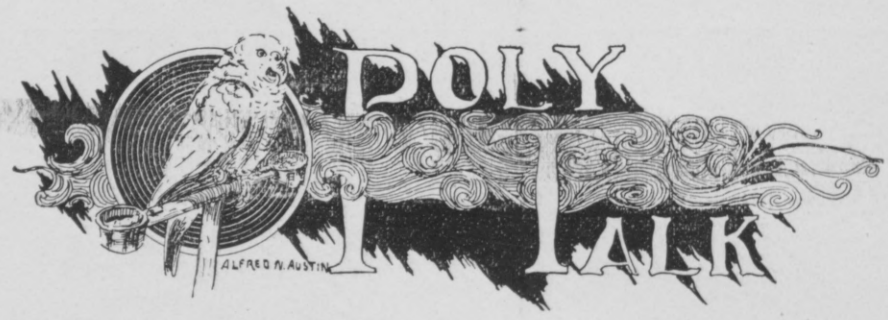
FACULTY 12; SENIORS 20.

The Faculty appeared on the campus early in the afternoon of June 10th. They were arrayed in the school ball suits and looked as if they would put up a rare exhibition of the national game. At about 3 o'clock the Seniors, clad in white duck suits, entered the east gate. After a little drill around the campus the Seniors took their places and in a short time the game was called.

The Seniors took the lead at the start and then gave themselves over to enjoying the fun. They played one inning sitting on stools and shading themselves with umbrellas. Another was played with tennis nets stretched between first and second, and second and third bases. The nets served to stop the balls, while the players engaged in a little game of "ping pong" on the side. At another time they brought out cardboard sheets on which were witten epitaphs to the Faculty.

The members of the Faculty team were:

NAME.	POSITION.	ALIAS
Clement	C. and P.	"Billie."
Crawford	P. and C.	"Craw."
Patterson	1st B	"Lizzie."
Earhart	2nd B	"Sweetheart."
Johonnott	S. S.	"Jo Jo."
Hathaway	3rd B.	"Hath."
Hirschler	L. F.	"Kaiser."
Wagner	C. F	"Steam."
Noyes	R. F.	"Camphore."



The following complaint of an exhausted Sophomore was found in his recent examination paper. It was a Hazard (ous) experiment to tackle "Hath" and his "math," therefore, the author may thank his good fortune that he came safely out of the struggle:

"Hath" is the best there is, as often has been said,
But this morning got his dander up and slapped the Soph'mores on the head.

We tried to work them all, we did the best we could,
But figure and swear, it wouldn't do, we couldn't split the wood.

Gilbert—"How can you evaluate when the curve is not a hyperbolic parabola?"

You should have seen "Doc" rubbing down the fellows at the Wabash-Rose field meet.

Stoddard (speaking of "Doc" Larkins)—"Well, 'Doc' will get second out of this."

Dr. Mees—"What do you mean? I am not not entered."

Powell (as the draw string in "Nick's" running pants breaks)—"Everything has its drawbacks."

Touzaline (after Normal scrap)—"I guess that Normalite thought he was back on the farm, for taking hold of my legs he proceeded to plow up the ground with my face."

Sympathetic Soph. (noticing that the Normalite he has been scraping with is cross-eyed)—"Good God! man, did I do that? Well say, I am sorry."

It seems our students were not the only ones that had their fun out of the Normal matter. Our faculty derived a great deal of amusement at the manner in which the Normal professors made asses of themselves.

Palmer was seen looking over the "Delineator" the other day. This gives rise to the question: "Do coming events cast their shadows before them?"

Johnny Wise—"Why did T———, at the last Modulus dance, remind one of Scott's 'Lady of the Lake'?"

—— "Can't imagine."

—— "Because 'the stag at eve had drunk his fill'."

While discussing the question of ventilating the gym during commencement, Leedy suggested—"We might run a 'pipe' down from the shop with 'Wires' in it."

Streeter has a position for the summer vacation at "drafting"—opening and shutting windows.

TOO BASE HITS.

Sol (returning from keg)—"Oh, they are turkeys. It's nothing but water."

"Coover" your number on second.

Hazard—"Nobody is put out in this game. They are all precipitated."

Fishback stole a base. What do you think of that?

Jumper can't even catch them in his basket.

Just pat him on the back there at first.

As Seniors stretch a tennis net across diamond —"You are beating them at base ball, now beat them at ping pong."

Flory at bat. Give him a "high ball."

Warren, look out for the ethylesters.

Crawford, why don't you get a job on the section? You swing well.

To Hirschler, at bat—"Hock der Keiser," "Schlugen sie tot."

THE COUNTRY CHURCH-YARD.

DR. CARL LEO MEES
DYED
in a gentlemanly manner.

—

Here Lies
JO JO
There will be no Sophomores there.

EARHART,
Tobacco heart.

—

HI JACKET,
THE LITTLE DOC.
May his bones rest in camp-phire,
But not in ——phire.

—

MICK CORM MICK.
Nuf sed,
He's ded.

—

Here Sits
WICKY,
Tired to death.

—

Here Lies
WAGGIE,
Same as Wicky.

—

HATH,
Choked to death on quartered onions.