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COLUMBIAN
SOFT WATER LAUNDRY
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ALWAYS MENTION THE TECHNIC WHEN TRADING WITH OUR ADVERTISERS. IT MAY HELP US.
WE publish this month a short article by Henry L. Coles, Instructor in Chemistry at the Institute, descriptive of the experimental electric furnace which he built and with which he is now engaged in research work leading to the Master of Science degree. Considerable interest has been manifested by students in Mr. Coles’ furnace, which can be seen in the shop. The article together with the excellent illustrations will give a very good idea of its general operation.

The article contributed by N. A. Bowers, '10, Associate Editor of The Engineering Record, is descriptive of a notable piece of railway engineering which has successfully eliminated the most difficult piece of standard gauge road to operate in North America. Mr. Bowers is a former TECHNIC editor, who is making his mark in technical journalism, and still retains his interest in the Institute and the TECHNIC, as is shown by his voluntary contribution to this issue. More such voluntary contributions will be received with heartfelt gratitude.

RECENTLY a magnificent Student Club was formally opened at Case. The trustees of Trinity College have donated the former library building to the Student Union, together with $1,000 for its equipment, to which the students have added $200 by popular subscription. Carnegie Institute is equipping a Student Union and Michigan is raising $1,000,000 for the purpose of erecting a new building for the same purpose. The Student Union at Harvard is one of the most important institutions in the University. The beautiful Reynolds Club at the University of Chicago is one of the chief show places of the University and a perpetual source of enjoyment and comfort to its students. At M. I. T., the Technology Union is open to all students free of charge and in the Walker Memorial building at the new site in Cambridge the Institute will make adequate provision for the physical and social needs of its students one of the most important features of the new school. Every
place, in the little schools as well as the big
the trend is the same.

At Rose? We spend six or eight hours a
day toiling away at real work. We scatter to
our homes, boarding houses or fraternity
houses after the day's work is done. Each one
goes his way and is through with the Institute
till the next day. Until some way is provided
for getting students together outside of work-
ing hours there can never be a feeling of fel-
lowship running throughout the undergraduate
body. The 17th of March celebration by the
whole school is one step in the right direction,
but it is only the beginning.

JOHN C. BARRETT, '16, has been forced to
resign from the TECHNIC staff on account
of lack of time caused by the pressure of out-
side duties. C. N. Stevens, '15, President of
the Athletic Association, has been elected to
fill the position of Athletic Editor for the rest
of the year, beginning with the present issue.
While Mr. Barrett's resignation is very much
to be regretted, Mr. Stevens has already proved
himself a worthy successor by getting in copy
a day ahead of time, in emulation of the praise-
worthy record for promptness set by his pre-
decessor.

A VERY grave situation with regard to
the much discussed question of the atti-
dude of the undergraduate body toward stu-
dent affairs has been disclosed by the state-
ment of a student that he believed that a ma-
jority of the students of the Institute would
rather keep the fifteen dollars now paid to the
Student Fund than to pay anything toward
the support of athletics and the various organ-
izations. He frankly stated that he did not
get his money's worth and from the standpoint
of dollars and cents he was entirely right. The
Student Fund is an entirely voluntary contri-
bution for the support of student enterprises
and if the general opinion is really that it con-
stitutes a form of blackmail levied upon each
student, it is time to stop keeping student en-
terprises alive by that sort of artificial respiration.
Rose Alumni are undoubtedly as loyal
to the old school as the graduates of any in-
stitution in the world and this can be vouched
for by any one who has ever attended a Tech
Club meeting any place in the country, from
New York to San Francisco, but undergraduate
sentiment just now seems to be almost entirely
lacking in some quarters.

While we are on this subject of school spirit
it may be well to call the attention of under-
graduates to an example of the true loyal and
self-sacrificing spirit shown by an alumnus.
To Carl Wischmeyer, '06, coach of the 1915
basket-ball team, the Institute owes a debt that
it can never repay. His hard work and de-
votion to this difficult task, for which he neither
asked, nor received the slightest compensa-
tion, should be an example and an inspiration
to students of Rose for years to come. If every
student in the Institute had one-half of his
spirit we could whip Germany and the Allies
combined.

COLLEGE NOTES.

About a third of the number of students at
the University of Maine are dependent en-
tirely upon their own efforts for the money
necessary for their college course.
A bowling league has been formed at the
University of Wisconsin among the sororities.
Each sorority bowls twice a week until each
sorority has met every other one in the league.
A large trophy cup will be awarded to the
winning team.
Instead of giving a monument or any of the
other conventional class memorials, the 1914
class of the University of Chicago has de-
cided to institute a loan fund for helping
undergraduates through college.
An Experimental Electric Furnace

By Henry L. Coles, B. S.

It is not the intention of the writer to give an exhaustive treatise on the subject of Electric Furnaces, but merely an explanation of an experimental electric furnace that was built and set up in the Rose Polytechnic Shops.

Before taking up the description of the furnace it will be necessary to give a brief classification of electric furnaces.

Stansfield’s classification is as follows:

1. Arc furnaces;
   (A) Those with independent arc. (Moissan furnace).
   (B) Those with direct heating arc, where the arc is from one electrode to the charge. (Siemens vertical arc furnace).

2. Resistance furnaces.
   (A) Those with special resistor.
   (1) Furnaces in which the charge constitutes the resistance such as in the Carbtorundum furnace.
   (2) Furnaces having the resistor in the wall, such as in the tube furnace.
   (B) Those without special resistor.
   (1) Furnaces in which electrolysis is not employed, the charge constituting the resistance.
      (a) Those in which the charge is not melted but remains in the solid condition.
      (b) Those in which the charge is added in the solid condition but subsequently becomes liquid.
   (2) Furnaces in which the charge constitutes the resistance.

The first thing considered in the building of the furnace was the material, size, thickness of walls, size of electrodes and general scheme of arrangement.

The furnace was built up of blocks of a mixture composed of Portland cement, sand, fire clay and magnesium oxide.

Eight blocks were used. The foundation was composed of a block of cement 22" x 30" x 3" of the following composition: 10 Kg. of sand, 5 Kg. of cement and 1.6 Kg. of magnesium oxide.

Each of the sides consisted of a single block composed of 8 Kg. of sand, 3.5 Kg. of cement and 1.4 Kg. magnesium oxide. Two of these sides were provided with holes for the entrance of the electrodes. A cover block 16" x 16" x 3" with a 5" hole was made of the same composition. A top block to fit over the 5"
hole and extend down to the inside of the cover block was made of the following composition, 1 Kg. of magnesium oxide, 400 Gms. of sand, 600 Gms. of cement, and 400 Gms. of fire clay. The high amount of magnesium oxide and fire clay was necessary on account of the high heat to which the top is subjected. The four walls were bound together by two iron bands and a lining of Acheson graphite was provided to protect the walls, the bottom and the top of the furnace. This made an insulation of three inches of cement and one inch of graphite. Care was taken to cut away the graphite around the holes where the electrodes entered to prevent a short circuit.

The electrode and the plug of the lead wire were connected by a copper band fixed to an adjusting screw for raising and lowering the electrodes, as may be seen in the drawing. As the wheel is revolved the electrode is raised or lowered, a slot and key preventing it from turning.

If the furnace is to be run as an independent arc furnace, the graphite electrodes are inserted from the side and the hole in the top is closed with a plug of fire clay. Through a hole in the base a large block of graphite is inserted on which the crucible is set. The electrodes are brought together and quickly separated when an arc is struck between them. By regulating the distance of the crucible from the arc the proper temperature can be obtained. A direct current of one hundred and fifty amperes at forty to fifty volts at the furnace was used, and it was found by measuring inside the furnace by means of Seger cones, that there was obtained a temperature of 1800°C. two inches from the arc, dropping to 1000°C. at the walls of the furnace, while after a run of one hour the temperature on the outside of the furnace was only 80°C. No means was available for measuring a temperature of more than 1800°C. and it is probable that if the arc could be struck nearer the crucible than two
inches that the temperature would be over 2000°C. in the crucible.

Experiments were tried with a view of obtaining some of the metals from their ores by smelting with carbon and by heating. Tin, lead and nickel were tried with poor results, as the impurities and the lime put in as a flux seemed to keep the heat away from the metal and it separated in a pasty and impure condition. Iron ore, however, gave very good results and a fine sample of almost pure iron was obtained.

The type of direct heating was tried next. The one electrode enters from the top and the block of graphite serves as the other electrode. A carbon crucible is set on the block and serves to hold the substance to be heated. This proved a very good method and seemed to be the most efficient.

In this case the arc is struck between the electrode entering from the top and the crucible. The substance to be heated is put in the crucible and the full heat of the arc is thrown down upon it. As this is the method especially adapted to the formation of carbides, various carbides were made with very good results. On trying to get metals from their ores it was found that the temperature became too high and the metal in many cases was burned. This difficulty was overcome by machining a recess in the carbon block and setting the crucible in this. The recess was made to grip only about one-half of an inch leaving a space below the crucible. The crucible was then made the crater of the arc and in a short time a small hole was formed in the bottom. Meanwhile the ore was being charged into the crucible, together with the flux and the carbon. About the time the hole was formed in the crucible the molten metal began to form and ran down into the recess below. This continued until the required amount of metal was obtained.

In this way copper of an impure sort or matte, nickel, tin, ferro-chrome and lead were formed.

In charging the crucible a tube was inserted through the holes in the sides through which the ore was fed. Care was taken in charging since the arc is easily put out when cooled.

It should be noted that changing from the previous type to this means only a changing of the electrodes.

Of the resistance furnace in which the charge serves as the resistor the arrangement of the electrodes was as in the previous case. Carborundum was made by packing the crucible full of sand, mixed with charcoal and salt, a thin rod of graphite through the center serv-
ing to start the process. After a run of two hours the furnace was opened and small crystals of carborundum were found near the center where the highest heat occurred.

The type of resistance furnace without special resistor and in which the charge remains in the solid condition was tried. Pieces of coal were packed in around a small bar of graphite and after a two hour run the furnace opened. Graphite should have been formed from the coal, but only a very small amount was formed. This was probably due to the fact that the amperage of the current used was not high enough.

The type in which the charge is added in the solid condition, but becomes liquid, was next tried, using the same arrangement as in the case of carborundum. Pieces of steel were melted by the passage of the current through them.

Considerable time was spent on the problem of obtaining pure chromium from chromium oxide with a view of studying the properties of chromium and its alloys.

Moissan's method was tried, which consists of forming the carbide by heating the metal with carbon, and putting the resulting carbide in a carbon crucible lined with chromium oxide and heating. This product is then heated with lime and the resulting double oxide of calcium and chromium used to line a lime crucible. The chromium carbide is then smelted in this crucible and the pure metal is supposed to be formed. About eighty runs were tried by this method, but no very good results were obtained, the metal appearing to have some carbon left in combination. The failure to obtain pure chromium by this method may have been due to the fact that the amperage of the current used was not high enough.

A method was next tried of heating carborundum, chromium oxide and lime. The reaction takes place according to the equation,

$$\text{CSi} + \text{Cr}_2\text{O}_3 = 2\text{Cr} + \text{CO} + \text{SiO}_2$$

The lime is for the purpose of fluxing the sand formed. A good grade of chromium was obtained by this method using the independent arc type, the time of heating being fifteen minutes. This method seems to be one that may be used for the production of chromium on a large scale.

The furnace described above is an experimental furnace for the laboratory and answers the purpose for which it was intended, namely to combine for purposes of study several types of furnaces. One use to which it has not been put is that of heating substances in an atmosphere of some gas other than air. The furnace can easily be made air tight and adapted for this purpose.

In closing, the writer wishes to express his appreciation for the valuable assistance and suggestions given by Dr. Mees, Dr. White and Professor Knipmeyer.

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MANY NEW TUNGSTEN MINES DISCOVERED IN WEST.

As a result of information gathered during a recent geological survey, it is reported that the tungsten resources of this country are probably much greater than previously realized. Many new deposits have been found in several of the western states, and while they have not been sufficiently developed to indicate their extent, it is believed that several of them are large. In case values should advance materially these deposits would be tapped.—Popular Mechanics.

INTERNAL AND EXTERNAL HEATING

Prof. H. L. Dodge, State University of Iowa, experimenting on the comparative effects of electric heating and external heating upon the elasticity of mild-steel, copper and aluminum wire, has found that the effects of internal and external heating are the same. With increases in temperature Young's modulus decreases for all metals, it is declared, with increasing rapidity. Professor Dodge described his experiments before the recent Chicago meeting of the American Physical Society.
THE ROSE TECHNIC.

How the Most Difficult Railway Grade in North America was Eliminated.

A remarkable engineering work consumated by the Canadian Pacific Railway to do away with the heaviest grade on the main line.

BY N. A. BOWERS, '10

The title of "the most difficult piece of standard gauge road to operate in North America" which the stretch of the Canadian Pacific railroad, between Hector and Field, in the Canadian Rockies, bore unchallenged for a great many years, is gone. Three tunnels, two of them spirals, the first of its kind on the Continent, solved the problem. From a grade of 4.5% they reduced it to 2.2% and where before 4 engines could only haul 710 tons at eight miles an hour now 2 engines haul 980 tons at twenty miles an hour.

The problem of operating trains over the "Big Hill," as it came to be called, was one of the bugaboos of the Canadian Pacific operating department. It was the steepest grade ever operated as part of a standard gauge main line and it required four engines, weighing 154 tons each, to haul a train of 710 tons, from 14 to 28 freight cars or 11 coaches, over the summit, and, then, under favorable conditions, it took an hour's time to make the trip.

Every passenger train was required to stop on reaching the top of the "Big Hill," while the air brakes and sanding apparatus were tested. Eight miles per hour was fixed as the limit of safety for passenger trains coming down. Freight trains were restricted to six miles. Two huge consolidated engines were limited to a maximum of 17 loaded cars in daylight and 12 at night and one engine to 12 cars by day or 9 by night down the hill.

Three safety switches, about nine-tenths of a mile apart, with spurs leading from the main line up the mountain side on a steep incline, protected the traffic in case a train got beyond control. At each safety switch a man was constantly stationed and as soon as a train started on its down hill journey, each one was notified by telephone. Each had an automatic speed recorder and whenever that showed that the train was exceeding the speed limit, he allowed it to run up on the spur. In fact the switches were never turned to the main line except just long enough to permit each train to pass and only if it was running at the prescribed speed. Trains over the "Big Hill" were operated on the staff system, under which the only rights recognized were those carried by the possession of a little steel wand which, obviously, could not be held by more than one conductor at a time. So important and so difficult was the operation of trains over this short stretch of mountain line that it was in charge of a separate train-master, whose only duties were to supervise its operation. How successful was this operation on this difficult piece of the main line is evidenced by the fact that in all the years of its operation, the Canadian Pacific never lost the life of a passenger in its mountain division.

But with the greatly increased travel and the opening up of Canada's farthest west province, British Columbia, the operation of this one short stretch retarded the operation of the entire mountain division. So after twenty months of rapid work, the two spiral tunnels, 2921 and 3255 feet long respectively, the first on this Continent, were opened and the "Big Hill" became a thing of the past. The work involved the lengthening of the track by 4 1/4 miles, the building of two bridges over the Kicking Horse River, the removal of 550,000 cubic yards of
rock and the boring of one short straight tunnel and two spiral tunnels.

The 4.5% grade was reduced to 2.2%, all danger was eliminated and instead of being able to make only four or five miles an hour as four engines used to do on the old track, two engines can now haul a train at twenty miles an hour.

The “lay” of the track is very peculiar. Coming from the east the line first enters the more westerly of the two “spirals” or “corkscrews” (3255 feet long) under Cathedral Mountain. Emerging from it, the track runs back east across the Kicking Horse River and then enters the eastern spiral tunnel (2921 feet long) under Mount Ogden. Here it describes an elliptic curve and once more seeks daylight to again cross the Kicking Horse River westward. The whole thing is a perfect maze, the railway doubling back upon itself twice, tunneling under two mountains and crossing the river twice in order to cut down the grade.

Although the engineers who built the two spiral tunnels were the pioneers in building tunnels of this character in North America, the bores, which were being drilled from both ends, met exactly and the entire undertaking, which cost over $1,000,000, went through from start to finish without a hitch.

This is one of the big things that a modern transcontinental railroad must do occasionally to improve its service. But big as this undertaking was, it will soon be eclipsed by the five-mile double track tunnel under the Selkirks at Rogers Pass which the Canadian Pacific is now rushing through. The first authentic account of the Roger’s Pass tunnel was secured by the Engineering Record which sent a representative into British Columbia specially for this purpose and published the report in the issue of Dec. 5.

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NEW PROCESS FOR MAKING HYDROGEN GAS.

HYDROGEN gas, containing less than .01 of one per cent of impurities and coming from the apparatus under high pressure so that it can be stored immediately in cast-iron bottles, is being produced by a new process developed by a German chemist. Hydrogen is obtained by the decomposition of water. With this process the water is decomposed under high pressure by means of iron at a temperature of about 572 degrees F. The chemical reaction takes place rapidly and can be made still more rapid either by adding an electrolyte to the water or by raising the temperature. The hot hydrogen gas as it comes from the apparatus is first cooled by liquidated air and is then purified by being passed over charcoal. The cost of production on a large scale is estimated at about 40 cents per thousand cubic feet.—Popular Mechanics.

CHEMICAL ECONOMY IN BOILER-WATER TREATMENT AT LEAVENWORTH, KAN.

By treating the water when hot instead of at ordinary temperatures the Leavenworth (Kan.) Light, Heat & Power Company effects considerable saving in the amount of chemicals used for water softening. Formerly water was admitted to the mixing tank without regard to its temperature. But with the present plan water to be treated is taken from the condenser after it has served its purpose as circulating water. Ordinarily this water ranges in temperature from 105 deg. to 120 deg. Fahr. and the lime and soda ash act much more readily in this water than in colder water. When the present scheme was first tried the feed water was made so soft that the boilers gave trouble on account of priming, but after the quantity of chemicals used had been sufficiently reduced excellent results followed.—Electrical World.
MR. JOHN T. MONTGOMERY, '98, of Chicago, addressed the Senior Class, February 6, on the subject of writing letters of application. Mr. Montgomery had requested that each member of the class write him a letter of application and these were sent to him for criticism before he came to Terre Haute. Each letter was carefully read and handed back to the writer with a type-written criticism which should prove a great aid to the near-graduates in nailing jobs.

Mr. Montgomery's rise in engineering following graduation was exceptionally rapid. He is a forceful and interesting speaker and a clear thinker and held his audience fully half an hour overtime without the latter showing the slightest signs of restlessness or inclination to leave, in spite of the speaker's request that anyone who wished should go at 11 o'clock. The Senior class has never given such profound attention to a speaker since it has been in school.

Mr. Montgomery's talk was not in the nature of an address, but rather a conference with the class on the subject of salesmanship, the quality that makes a successful letter of application. He first took up in a general way the letters addressed to him by members of the class and read several individual criticisms of general value. Several of the letters, he said, lacked personality, and this is the greatest essential of such a letter. A convincing personality conveyed by means of a letter is the first step toward making an impression on the employer. Care should be taken in this connection that the address and appearance of the letter are smart. The applicant should never be extravagant but should show more than ordinary claim for attention.

Regarding the question of stating the salary desired, the speaker advised that it is always best to avoid committing oneself on the subject if possible, but rather to show willingness to undertake a position at a fair living wage with chance for advancement. Experience should be strongly emphasized and given in detail. In the case of an undergraduate especially, the particular work done in college should be mentioned in detail, since theory is a very important part of engineering, in fact the foundation of all practice.

Mr. Montgomery, before preparing his talk, had the opportunity of looking over about two hundred letters written in response to advertisements to fill engineering positions and inserted in technical journals. These replies, which were for mechanical and civil engineers, came from graduates of sixty or seventy different colleges, universities and technical schools, ranging all the way from Yale to Cooper Union and embracing every variety of higher institution of learning in the country. The thing that impressed the speaker particularly about the whole lot was the extremely poor quality of the average letter. This con-
dition is not confined to the graduates of any particular institutions or class of institutions but seems to be general throughout the educational system of the whole country. Mr. Montgomery’s observations seem to back up decidedly the statements made so often concerning the inability of college graduates to write clear, forcible letters.

One important feature of several of these letters which the speaker called to the attention of the class was the placing of the applicant’s experience on a separate sheet in some systematic form. This gives a concise, convenient means of enabling the employer to ascertain exactly the things he wishes to know about the applicant. This plan not only serves to put this information in the most readily available form, but also enables the writer to cut down the bulk of the letter proper without preventing the full exposition of all essential facts.

In closing his address Mr. Montgomery told of some of his own early experiences and spoke a few words of advice of a general nature. He advised the young engineer by all means to affiliate at the earliest opportunity with Engineering Societies and Clubs and to associate himself as closely as possible with their work and their members in order to keep in touch with other engineers and with progress in other lines outside of that in which he himself happens to be working. Also he should keep up with the current technical literature and cultivate the knowledge and the power to take part in open discussions following the reading of papers.

He also spoke of the importance of taking a live interest in social life; of getting a big, broad view of what the world is doing by meeting all sorts of people and taking an active interest in the social problems of the community. He advised a more diligent study of literature, of the novels that have proven their worth and have stood the test of time and cited particularly the novels of Dickens, any one of which contains enough characters for a dozen modern novels.

Finally Mr. Montgomery appealed to the class to see to the proper upkeep of the human body, as success in life is often primarily dependent upon its efficiency and good condition. Plenty of exercise, temperate habits, a clean moral life, will all unite in enabling a man to meet the demands of the most exacting employer.

ALUMNI NOTES

At the meeting of the Cleveland Rose Tech Club held at the University Club the faculty was represented by Professors Wagner and Faurot. Claiborne Pirtle, ’98, presided. One of the chief subjects of discussion was the substitution of several added subjects for thesis work. The general opinion was that thesis work ought to be continued as it gives opportunity for original work on the part of the student. The athletic situation was discussed at length, considerable interest being displayed by all present. The lack of interest on the part of the faculty was deplored and it was generally agreed that a little interest on their part would go far toward improving conditions. Those present were:

A. H. Klotz, ’93, Sandusky, Ohio; W. H. Waite, ’93, Cleveland; Jay H. Hall, ’97, Cleveland; Claiborne Pirtle, ’98, Cleveland; Rumsey W. Scott, ex-’99, Boston; J. G. Dornbrirer, ex-’99, Cleveland; J. F. Schwed, ’99, Cleveland; H. S. Richardson, ’00, Cleveland; F. R. Fishback, ’02, Cleveland; J. S. Brosis, ’03, Cleveland; R. D. Landrum, ’04, Cleveland; H. W. Eastwood, ’06, Cleveland; A. W. Worthington, ’06, Cleveland; Geo. McCormick, ’08, Cleveland; P. F. Stokes, ’10, Shelby, Ohio; W. L. Woody, ’14, Cleveland; E. H. Willmarth, former superintendent of shops, Cleveland; Professor Wagner and Professor Faurot.

On Feb. 13th, at the regular meeting of the Southern California Rose Tech Club, held at Los Angeles, E. T. Buckley was elected president and J. H. Johnston, ’08, was elected secretary-treasurer for the ensuing year. The
enrollment now numbers twenty-three. Owing to the expositions this year at both San Francisco and San Diego many Rose men are expected to visit the city. The club trusts that they will notify the secretary, Mr. Buckley, so that arrangements may be made to extend the club’s best efforts in their behalf.

The Indianapolis Rose Tech Club held the regular monthly dinner at 6:30 p.m. Jan. 30, 1915, at the Marion Club. Members present were: Curry, ’06; Foltz, ’86; Hood, ’03; Hubbard, ’12; Brennan, ’13; Insley, ’00; J. C. Johnson, ’09; Rasmussen, ’12; E. V. Price, ex-’15; Fuller “Prep.” Guests were: Gray, ’13; C. Wischmeyer, ’06; Compton, ’15.

After the dinner, the club attended the Rose-Butler game. They were joined at the game by several other Rose men. Foltz and Hood were very enthusiastic rooters. The defeat of the team was attributed to the fact that there were 13 at the table for supper.

S. J. Kidder, ’00, is manager of the Ernestine Co., Mongolin, N. Mex.

E. E. Black, ’11, is located in Honolulu where he holds the position of Junior Engineer on the Incline Railroad.

The German Naval 15-Inch Gun—According to an artillery expert writing in a German artillery magazine, the latest naval gun, if the ballistic data which he gives are correct, is a truly astonishing weapon. The gun, presumably of 15-inch caliber, is reputed to fire a shell of over 2,000 pounds weight with a velocity of over 3,000 feet a second. If the Krupps have produced such a piece, they must have developed a gun-steel and a powder altogether superior to that of any other nation, our own included. Velocities of 3,000 feet per second for large guns were tried and abandoned several years ago, because of the severe erosion due to the high powder pressure and accompanying heat. To avoid erosion and prolong the life of the gun, the tendency is to increase the weight of the shell and decrease the velocity, our own 14-inch naval guns having only 2,600 foot-seconds velocity, and our 14-inch army guns only 2,250 foot-seconds. We know that one of the leading naval powers of the world recently offered the Krupp agents a very large and remunerative order for guns of the 15-inch, high-velocity type, if the company would guarantee a certain accuracy life; but the guarantee was refused.—Scientific American.

An Engineering Foundation—Usually any funds given for the advancement of an art or science are put in charge of some institution of learning, but a notable departure from such precedents was made at a combined meeting in New York on the evening of January 29th of the United Engineering Society, representing the American Institute of Mining Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, in combination with the American Society of Civil Engineers, when it was announced that Ambrose Swasey of Cleveland had donated the sum of $200,000 as an initial gift toward a foundation for the advancement of Engineering Arts and Sciences. This foundation is for the promotion of the greatest good of the engineering profession generally and the benefit of mankind. The administration of the fund will be entrusted to a board of eleven trustees.

Mr. Swasey, who has inaugurated this important movement, is of the firm of Warner & Swasey, who built the Lick, Yerkes and many other telescopes, and is himself a well-known engineer and a member of many prominent engineering and scientific societies.—Scientific American.
DEATH, A WEDDING, OR WHAT?

In view of the fact that the Modulus has always been a financial failure and a burden to the class publishing it, everybody wants a change. Two plans have been proposed: that we give over the idea altogether, and that we combine the Modulus and Technic in one grand Christmas number. Having served to some extent on both the Technic and the 1915 Modulus, I feel expected, entitled, and duty bound, to have an opinion on the subject. I oppose both plans.

We need a Modulus. It advertises the school and gives the students something to remind them in after years of the days when they chewed tobacco and held down Seventh and Main. We may think now that we can afford to forget; but time will tell. In twenty years, we will be glad to have something to prove to posterity that we were “regular” students when we went to college.

The “hybrid publication,” as the indignant editor of the Technic has dubbed the combined Modulus and Technic, might solve the problem if its advocates could actually carry out their plan. However, there are as many problems connected with this scheme as there are in Descriptive Geometry. To state some of them very briefly—

The Retail Merchants’ Association would not sanction the Modulus under any other name. They probably don’t know what “modulus” means.

The regular subscribers and exchange list of the Technic could not be supplied with a Christmas number at $1 a throw; but they would demand a December number.

The subscription price of the Technic could not be raised. It’s hard enough to get a dollar a year now.

Etchings and engravings for the proposed publication would cost just as much for a Modulus. The only place where there would be any saving would be in the binding (if the present Technic style is kept).

The Technic staff is not necessarily a suitable staff for the Modulus, the Editor-in-chief being the only man who does any work to speak of.

The Technic’s allowance from the Student Fund should not be placed in jeopardy. The Technic ends each year with about $60 deficit. There would not be any additional subscribers as a result of the combination, because the persons who buy the Modulus are generally Technic subscribers already. The reverse is not true.

The 1915 Modulus had $300 worth of advertising without the sanction of the Retail Merchants. The December number of the Technic had about $60 worth. Would the Modulus advertising rates be lowered, or the Technic’s rates raised? A big problem either way. At any rate, we can count on Ed Sparks.

Realizing that a dissenter must have an idea of his own or be classed as a knocker, I will state my idea of an ideal Modulus for Rose:
THE ROSE TECHNIC. 175

An inexpensively bound book.
All expensive engravings dispensed with.
No pictures of societies we haven’t got. No “life-size” portraits. Group pictures substituted for individual portraits wherever possible.

More literary effort expended.
A scientific, a historical, and a miscellaneous department.
Plenty of information concerning the faculty, which was sadly lacking in the last Modulus.

A department written by the faculty.
Plenty of drawings for zinc etchings. They are cheap.

A staff selected from at least two classes. Let every man in the Institute consider it his duty to contribute anything he can. A few men can’t get out a book that will please everybody.

A publication representing a school of 200 students, not 4,000.

—J. M. SANFORD.

INTER-FRATERNITY BOARD.

T

HE first meeting of the Inter-fraternity Board was held Friday evening, Feb. 19, at the home of the chairman, Dr. John White, Beta Theta Pi. There were present for Sigma Nu, Baxter, ’15; Drake, ’15; for Alpha Tau Omega, Compton, ’15; Weinhardt, ’16; for Alpha Chi Sigma, Sanford, ’15; Pigg, ’16; for Theta Xi, Stevens, ’15; Kingery, ’16; for P. I. E. S., Finley, ’16; O’Laughlin, ’16; for M. E. P., Reid, ’15; Stoner, ’15; for V. Q. V., W. Carter, ’15; E. J. Hegarty, ’15.

Meeting formally opened by Mr. O’Laughlin, P. I. E. S. settling back in his chair which, being unable to withstand the stress thus set up in its back, collapsed. Another specimen having a more suitable rupture work factor was substituted for the wreck and peace was restored.

Dr. White briefly outlined the purpose and work of the Board since its foundation and stated that he had been requested to call the meeting chiefly for the purpose of revising the rushing rules, which had proven unsatisfactory to all parties concerned. Discussion was then opened.

Mr. Reid, M. E. P., advocated Sophomore pledging and was joined by Alpha Chi Sigma and Alpha Tau Omega in his stand. A lengthy discussion ensued. Sigma Nu favored the shortest possible rushing season at the beginning of the Freshman year. Mr. Baxter spoke at length in favor of immediate pledging and also advocated moving freshmen into the house as soon as pledged. Theta Xi also favored a very short rushing season, and V. Q. V. seemed to lean the same way. P. I. E. S. favored an intermediate length, somewhat longer than the present season. The discussion was carried on at length, being considered from every view point, real or hypothetical, the result being that every one convinced himself more firmly with each argument but did not convince any one else. A tentative vote showed Sigma Nu, Theta Xi and V. Q. V. for a short season; P. I. E. S. for one of intermediate length; A. T. O., Alpha Chi Sigma and M. E. P. for Sophomore pledging.

After a short suspension of hostilities for much needed nourishment and refreshment, which were kindly provided by Mrs. White, the decks were once more cleared for action. One general principle looked upon with favor generally was the closed season before the rushing season. Mr. Baxter of Sigma Nu advocated a two weeks close season followed by four weeks rushing, and also advocated moving freshmen into the house as soon as pledged. Mr. Carter of V. Q. V. suggested a closed season to Thanksgiving followed by an open season extending to Christmas. Mr. Carter’s suggestion was introduced by him chiefly to get something definite in the way of a compromise before the Board. Further discussion occurred. Finally Dr. White appointed two committees, one with Mr. Baxter, the other with Mr. Carter as chairman to draw up definite forms of agreement to be submitted to a second meeting before adjournment Mr. Baxter spoke in favor
of a revision of rules to make possible the mov-
ing of freshmen into the house as soon as
pledged.

Since the meeting a third committee has been
appointed by the chairman with Mr. Sanford
of Alpha Chi Sigma as chairman to draw up a
form of agreement for Sophomore pledging.

The second meeting of the Board was held
at the Heminway House, Friday evening,
March 12. Dr. Mees was present to advise the
Board from his experience with the fraternity
situation during the past twenty years. The
general attitude of the fraternities at the be-
beginning was practically the same as at the pre-
vious meeting, except that V. Q. V. took a de-
cided stand for the Sophomore pledge rule.
Mr. Baxter’s committee had no recommenda-
tion to make, nor had Mr. Carter’s, as neither
committee had been called together by the
respective chairmen. Mr. Sanford’s committee
recommended that only second year men be
eligible for pledging, the date of pledging to
be the first Friday after the beginning of school
in September. The chairman called for the
opinion of each representative present, and it
was practically unanimously agreed that
Sophomore pledging was the ideal system, the
only doubts expressed being as to how it would
work out practically. Dr. Mees himself gave
the most convincing argument for the system,
most of the rest of the talk both for and
against being of a rather lengthy nature with-
out really saying very much of anything.
After some three or four hours during which
various phases of the situation were taken up
and discussed, the motion was made by Mr.
Stevens of Theta Xi that the proposition be
voted on. On the vote that followed both
Theta Xi and P. I. E. S. climbed onto the
band wagon with Alpha Chi Sigma, A. T. O.,
V. Q. V. and M. E. P., leaving Sigma Nu
alone in opposition to the Sophomore system.
The chairman appointed a committee consist-
ing of representatives from Theta Xi, A. T. O.
and P. I. E. S. to draw up a form of agree-
ment to be presented to the various fraternities
and then brought before the Board at a third
meeting on Friday, March 26.

In recommending the adoption of this rule
the Board has taken the highest possible stand
in respect to the welfare of the school as a
whole. Practically no strong argument ex-
ists against trying the new system except that
it works a hardship upon the fraternities
themselves, and this argument was never even
mentioned by any opponent to the proposition.
The spirit of loyalty and self-sacrifice shown
should materially aid in bringing forth the
dormant spirit of the whole undergraduate
body. The fraternities are to be congratulated
upon their attitude, which puts affairs on a
higher plane than ever before, and will tend to
subordinate the fraternity to the interests of the
school as a whole. If every individual showed
this same unselfish attitude in student affairs,
it would take a very short time to make con-
ditions in all lines approach the ideal, and the
first step has been taken in that direction.

—J. N. C.

STUDENT COUNCIL MEETING OF
MARCH 4, 1915.

Meeting called to order by President Brauns.
Roll call. Stevens absent.
Report of Financial Secretary:

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<td>Technic</td>
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<tr>
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<td>16.30</td>
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<tr>
<td>Scientific Society</td>
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<td>General Fund</td>
<td>441.82</td>
</tr>
<tr>
<td>Athletic Assoc.</td>
<td>91.22</td>
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</table>

Total on hand: $897.82

The business manager of the Technic rendered his report stating that the probable deficit at the end of the year would amount to about $161.00.

Moved by Grafe and seconded by Hild that a committee be appointed to frame a suitable
ceremony for a St. Patrick’s Day Celebration in view of the fact that this day is to be the day upon which all freshmen must again don their green caps, and that this day is generally observed by students at engineering schools. (Carried.)

Committee: Compton, Hild and Sanford.

Moved by Weinhardt and seconded by Sanford that a committee be appointed to see the faculty in regard to having classes beginning at one o’clock, not taking up until fifteen minutes after the hour and extend fifteen minutes past the present hour of dismissal in order to give students more time during the noon hour. (Carried.)

Weinhardt appointed.

Moved by Grafe and seconded by Anderson that meeting be adjourned. (Carried.)

Meeting adjourned.

F. W. HILD, Rec. Sec.

PROTECTING METALS WITH ALUMINUM ALLOY.

A new step in the process of protecting iron and other metals from the effects of high temperatures by means of a metallic coating having a high degree of resistance to such effects has been taken in the development of the process known as calorizing. At a temperature much above red heat, iron, when exposed to the air, rapidly oxidizes and scales away, and the same thing happens with copper when it is heated above 572 degrees F. The new process overcomes this by coating the metal with a mixture containing aluminum, and subjecting it to heat treatment so that a skin consisting of an aluminum alloy is formed over the metal under treatment. The apparatus consists simply of a revolving drum in which the metal to be treated is tumbled and which is filled with a mixture containing, among other things, aluminum in a finely divided state. The drum is high heated so that the two metals unite as an alloy. In the case of copper this alloy is of the nature of an aluminum bronze, but is richer in aluminum and more resistant to heat than the ordinary alloy of that name. After iron is calorized the effect of heating is slight, and there is none of the burning and scaling that occurs when untreated iron is subject to high temperatures. The process has already been used successfully for iron and copper vessels of various kinds, as well as for copper soldering irons and iron resistance wires used in heating devices. Pieces too large to be tumbled may be calorized by painting them with a suitable mixture, and then heating them to the required temperature.

—Popular Mechanics.

COLLEGE NOTES.

Students of McGill University who have enlisted in the present war, will on their return be promoted to the class immediately above the one in which they were enrolled previous to their enlisting.

The Student Council of Gettysburg has set aside a day known as “Take It Back Day,” for the students to return articles which they have borrowed from one another.

“Mike” Dorizas, the noted Greek athlete of the University of Pennsylvania, addressed the students of Ursinus last week under the auspices of the Y. M. C. A. The Y. M. C. A. of Franklin and Marshall have also arranged to have Dorizas speak at that institution in the near future.

Cornell has received a gift of $150,000 for the purpose of building their first resident dormitory, and the Schoellkof family donated $700,000 to complete the University’s track and football field which is to be named after the family.

Motion pictures have been adopted as a means of advertising at the University of Arizona. Over 1,000 feet of film have already been taken.
The last section of the schedule for Rose Poly's basketball five started off with a rough and tumble victory over Franklin College at the K. of C. hall. The Engineers were able to win by their lead of six points gained in the first half, the final score being 20 to 14. Franklin presented a heavy and unwieldy team and should have been beaten much worse by the men of Rose. This game marked the debut of Bob Larr, whose work later on in the season pulled strongly for the Engineers.

This victory was followed by a heart-breaking defeat at the hands of Notre Dame University. Rose piled a lead of ten markers with a great show of ease during the first period but the Catholic five came back strong in the next and pushed the hopes of the Poly team into the class of losers. The game would have been an exceptionally fine one to win since our old rivals, Wabash, had just defeated the bunch from South Bend the night before. The count at the end totaled 38 and 47.

Another defeat that was even more discouraging, if possible, was the Butler contest. The referee according to popular opinion helped considerably toward Butler's victory, but the team was off color and played far below form. Larr stepped into the limelight and probably did the best for Rose. Kingery received rough treatment by the football player on the Butler squad, Lockhart. The score stood 21 to 24 at the finish.

In the last game with our friends, the Normalites, the Engineers were completely forgiven for past defeats when they took the struggle in a whirl-wind fashion in the last few minutes, finishing with a total of 29 to their opponents' 19, an even 10 points to spare. The contest was much more decisive than the previous unlucky and questionable defeat at the hands of the Teachers on January 22nd. Every man on the team was a hero during this hotly contested struggle and every one of them as well as all of Sam Fink's band realizes now that old Rose is by far the superior of the Normalite basketballers, as in the good old days. The student body took victory in a well preserved manner as was to be expected. Now let us remember the coming baseball games.

The season closed with a defeat typical of the whole program. Earlham downed us on their floor by a 27 to 10 count. It was a typical one because two of the regular team were unable to play, Joe Carter and Abe Hegarty. The unusually large floor also had much to do with the loss, as the Engineers were entirely at sea during the first period.

Financially, this year's season has been very successful, more so than any
for several years. The Athletic Association will have some left over for baseball and with any kind of receipts the finances should be in a fair way again by the next football season.

In comparative scores, however, the team was a loser. Not through anyone’s fault in particular but because of the same jinx that followed the football squad, Rose generally came out of the fray leaving victory with the opponents. For the whole schedule the five averaged 29.4 points per game to its opponents’ 32.2, scoring 385 points in eleven affrays while their contestants were able to make 419. The percentage of games won was .385 or five out of thirteen. Last year the team won seven out of 12, a percentage of .583.

BASE-BALL.

With “Bob” Larr as Captain, Stevens as Manager and Weinhardt as his assistant, the baseball season will soon begin and the athletes of Rose Poly will leave at least a few foot-prints on the athletic pages of 1914 and 15. Bobbie was chosen as pilot for the team at an election held on Saturday, March 6th. Votes were received from Planque and LeForge of last year’s squad and were accompanied by their best wishes for the “bunch.” Although we will miss these men who have made their exit, the baseball products are not all gone by any means. A wealth of material is present in the Freshman class only waiting for Captain Bob’s call to the diamond. Besides these, only three players are absent from the roll of last year, the only place where we need more men is in the pitcher’s box. Brownie is a steady and hard worker at this position but one man can not do the whole job. However, it is certain a relief man can be uncovered somewhere and with the good quality of support that is assured, our average of “won,” and “lost,” should not be so sham- ing.

Also an unexpected piece of good luck has arrived in the way of a coach. “Lefty” Gilbert of basketball coaching fame at Rose and Manager of the Terre Haute Central League team has offered his services to Alumni Mgr. Fred Frisz, who most promptly accepted the same. At times when the popular coach can not get out here he has arranged to have two or more of his best players come and do what they can for the advancement of the Engineers. Under this able tutoring a fast and heady team is sure to be developed out of the material at hand.

Already the fence is down and stored away, and the schedule is almost completed. In the matter of a schedule, discretion was used as to the number of home games in order to keep the Association’s sinking head above the water. With this in view only four home games were arranged for which involved any expenses and the games with Normal will be counted on to help considerably. The schedule is given below, most of the dates being contracted for except those with Normal and Kentucky State. The Normal contests will be played on those dates, only the order is not settled. It was thought best to have the two day trip come at the last as a sort of spur to keep up the hearts of the subs who usually decide they have no chance, after being left behind once or so. The following is the order:

April 13—Indiana at Bloomington.
April 15—Purdue at Lafayette.
April 17—Eastern Illinois Normal at Terre Haute.
April 24—Indiana State Normal at Parsons Field (probably.)
April 24—DePauw at Terre Haute.
May 4—Eastern Illinois at Charleston.
May 6—Central Normal at Danville.
May 8—Butler at Terre Haute.
May 12—DePauw at Greencastle.
May 15—Central Normal at Terre Haute.
May 22—Indiana State Normal at Rose Campus.
May 28—Butler at Indianapolis.
May 29—Kentucky State at Lexington.

First signs of base-ball appeared early this year. The Chemical Engineers have had custom of playing an annual game among themselves every year, generally on Decoration Day. While the temperature was still around zero the Junior and Senior Civils announced that they were also going to break into the game and challenged the S. & J. molecule jugglers. The challenge was accepted immediately and soon after a challenge was posted by the Junior Electricals, who want to play the winners. An inter-course base-ball league would not be a bad thing to start.

Although the Athletic Association voted not to have any regular track schedule this year a team will probably be sent to the I. C. A. L. and Fred Frisz has also arranged for three men to make the trip to Lafayette to represent Rose in the new league formed among the Colleges of Indiana. The Inter Course meet will also be staged as in former years. Hardly anyone but the board themselves and the managers realize what a hole the athletics are in financially. For this reason alone it was thought advisable to let track have the worst of it this time in order to give our next year’s football team a fair chance. It is certain that more men are interested in baseball and therefore it should have the preference. Until the students of Rose Polytechnic realize that they can not take more out of the association than they put in and still have it flourish, we will still be in the same rut. Without exception every man who debates whether he will pay his student fund or not asks this question, “How many games will this get me in?” when in reality he not only gets free admission into the aforesaid games but joins countless societies of Rose such as the Camera Club, etc. Until the spirit is one of building and not of taking away the Association will sail rough waters with its deck barely able to shake off each new roller. No man ever built a business success by drawing out the entire capital each year nor was our country placed in its position by disinterested workers. Here is food for thought for those who wonder what they can buy with their seven-fifty.

ATHLETIC ASSOCIATION.
Seventh Regular Meeting.
Roll call.
Reading of minutes of previous meeting and approved as read.
Moved by Wente, seconded by Stuart, that track athletics be abandoned for this season. Carried.
Moved by Stuart, seconded by Risser, that the bill of $16.40 from Fred Frisz be allowed. Carried.
Report of basketball manager to date shows a probable loss of $219. Adjournment.

Eighth Regular Meeting.
Roll call.
Reading of minutes of previous meeting and approved as read.
Discussion of track athletics.
Moved by Professor Hathaway, seconded by Wente, that as many track men as possible be sent to the track meet at Purdue. Carried.
Moved by Professor Hathaway, seconded by Stuart, that a tennis team be sent to I. C. A. L. meet at Hanover. Carried.
Adjournment.

BASKETBALL SUMMARIES.
Rose (20) Franklin (14)
Larr. F. Vandiver
Brown, Hegarty F. Mulliken, Hamilton
Davis C. Lowery, Gowen
Carter G. Nelp, Mize
Kingery G. Ulyrich
The University of Kentucky is for prohibition. A census is being taken to ascertain the position of every student in regard to prohibition. The question is, “Are you wet or dry?”

A new ruling has been adopted at the University of Missouri by which a student loses one credit for each total of seventeen absences during one semester.
Mr. Montgomery, who gave a valuable hour's talk to the senior class not long ago, mentioned the fact that an advertisement of his in an engineering magazine drew an answer from a student in an Italian Polytechnic. We can imagine the following conversation to take place in an Italian class in Thermodynamics:

Prof. Wagnerino—"Adiabatica spaghetti?"
Bundillio—"Wanta isotherma macaroni caruso."
Pearlio—"Nota bean swatti da fli?"
Prof. Wagnerino—"Beani swatti da flee."
Wallnerilli—"Pafessa! Pafessa!"
Arnoldo—"Stoppa da exhaustillio."
Prof. Wagnerino—"Lew docstada vailabiliti."
Bundillio—"Tuhardo, tuhardo."
Prof. Wagnerino—"Wurkitorflunkita."

Emslie Wallace of the Senior class is exhibiting proudly a beautiful hand embroidered apron sent him by friends in New York City.

Civil—"I can't just express myself."
Prof. McCormick—"Send it by freight, then."

WHY BE A CRAB?

If some young freshman speaks to you,
And starts some foolish line of gab,
Just answer him in his own way.
Omit your hauteur for a day.
Don't be a crab!

If some old "prof" surprises you,
And gives you "D" in shop or lab.
For reasons that you cannot see,
Be glad you didn't get an "E."
Don't be a crab!

If father gets a little wary,
On expenses keeps close tab,
Do not languish in dismay;
You may treat some other day.
Don't be a crab!

If some fair maiden here or there
Gives to your heart a ruthless stab,
Accept your lot, and don't be sore,
For such is life the wide world o'er.
Don't be a crab!
KIPLING WAS AN Engineer.

My son, if a maiden deny thee,
And scufflingly bid thee give o'er,
Yet lip meets with lip at the lastward—
Get out! She has been there before.

The Man (during the second act)—“This play was taken from the French.”

His Wife—“Apparently the allies have abolished their censorship.”

She—“Isn’t it strange that the length of a man’s arm is equal to the circumference of a girl’s waist?”

Wallner—“Let’s get a string and see.”

A LEFT HAND STAR.

Physics Instructor—“Name the unit of power, Mr. Jones.”

Jones (waking up)—“The what?”

Instructor—“Correct. Any questions? All right. We have a few minutes before the end of the hour in which we will do this problem: A man on a bicycle approaches a 4% grade; how far has he come, and will he have to get off and walk?”—Cornell Widow.

Wisely (in a department store)—“What! Two dollars for that! Don’t you think you are a little dear?”

Sullivan—“I’ll say she is.”

Karl—“I see where the Kaiser has hired 5,000 dressmakers for the German army.”

Rufus—“No doubt to protect the outskirts of Berlin.”

Karl—“No; to work on the border.”—Purple Cow.

“You’ve certainly got to admire that fellow. He’s practically borrowed his way through school.”

“Yes, you have to give him credit.”

(Received by the C. M. and St. P.)

Gentlemen—I have been thinking for some time past of Becoming a Rail Road Engineer of Grounds I have never been an engineer but I realy believe that I would be of Interest to the St Paul in the Entry System as I have Very good Ideas about my self which is all that is Required in the Engineering Service I know that their is allways Vacancies in the Engineering Board for a Man with good Ideas I would like if you will tell me the Salary terms Yours truly, etc.—Chicago Tribune.

After years of untiring effort we have at last detected Doctor White in a blunder in the use of the English language. In a lecture to the Chem. Tech class he was heard to say: “At first sight this sounds unreasonable.”

ANXIOUS MOMENTS.

Fond Mother (proudly)—“An’ do ye not think that ’e looks like ’is father?”

Sympathetic Neighbor (cheerfully)—“An’ niver ye mind that, Mrs. McCarthy, so long as ’e’s ’ealthy.”—Harvard Lampoon.

Ewing: “Where does the honeymoon end?”

Taylor: “Well, frequently, like the other moon, it ends after the last quarter is reached.”—Ex.

Whelan (telephoning garage)—“You’ll have to come and get me. I’ve turned turtle.”

Voice—“Go jump in the river then.”
Young William F. De Quincy Brown
A well-behaved from Boston town
Declared with all his main and might
That come what would, he'd be polite.

At Boston Tech the Registrar said:
“Tell me what your courses are.”
And Bill politely said “I'm here
To be a Civil Engineer.”—Michigan Technic.

Even Engineers Have Souls.
This of course has the appearance
Of being a regular poem, but it is
Actually the kind of stuff a C. E.
Likes after studying “Materials of
Construction” and “Prime Movers.”

Dean—“H’m—you've been up before me be-
fore.”
A. E.—“That so? What time do you get
up?”

Binhack—“We had an old hen once that
roosted on the mail-box.”
Williams—“Must have been hatched from a
Parcel Post egg.”

Jo Jo proved that he had a sense of humor
recently, when he left the class speechless after
the following statement: “I know this is hard;
that's why I go so slow.”
But perhaps he didn't realize that it was
funny.

It Happened at Wabash.
Chem. Prof.—“Mr. Jones, can you explain
how to determine the molecular weight of a
substance?”
Mr. Jones—“Yes, sir. Weigh a molecule.”

Professor—“I love to hear you speak French;
you speak it so differently from others.”
Student—“Thank you, professor,”
Professor—“Yes, I think it is so especially
different from the way the French people
speak it.”

Thrilling Facts For the Chemical
Engineer.
Minaniata, Japan, produces 40,000 tons of
calcium cyanamide annually.
In the desert regions, modern chemists have
found water immensely valuable for irrigation
purposes.
Wood as a fuel is not of great industrial im-
portance though its domestic use is very ex-
tensive.
Umpfschnitt, of Dublin, has discovered that
hydraulic gypsum, completely dehydrated, with
grains of anhydride fully developed, and whose
basic calcium sulphate increases with rising
temperature, is very nice.—Ex.

HARSH WORDS.

“Sis writes me that she’s going to be married.”
“That right? Who’s the lucky guy?”
“Dad is.”

Brooks—“I wish you’d drop the “Mister”
and call me plain George.”
She—“Oh, but it would be unkind to twit
you on your personal appearance that way.”
He—“I’ll take you to the theatre if you don’t
mind sitting in the balcony.”
She—“Sir, I’ll have you know I’m used to
something higher than that.”—Reserve Weekly.
News Item—A. S. Mathaway is now Professor of Mathematics at Rose.—Technic, Nov. ’08.

HEARD IN VALVE MOTIONS.
O’Brien—“How much pull back did you use on this exhaust valve?”
Brennan—“About two inches.”
Frisz—“One hundred and eighty pounds.”
Heim—“A mile a minute.”
Brannon—“Three gallons.”
—Technic, Dec. ’08.

Soph—Shall I read the French before translating?”
Wicky—“Yes; it’ll help to kill time.”

A certain Sophomore says he’s going to call his dog “Entomologist,” because of the canine’s superb collection of insects.
—Technic, Dec. ’09.

Wallace, to clerk at Roots—“Have you any nice warm underwear?”
Young lady—“O yes, sir, thank you, ever so much.”

By looking at the weekly wash,
You can see if you chooseter,
That they’re not wearing now, b’gosh,
Half of what they usedter.”
—The Fulcrum.

A young man with a bronze complexion fell in love with a girl with a silvery laugh and had the brass to ask for a kiss. She immediately called a copper, who with a steely glance, led him away, “Alas,” cried he, “my happiness is o’er.”
—Mt. Union Dynamo.

PROPER CAUTION.
“May I come nearer to you?”
“No, I’m afraid if you do you’ll—”
“No, honestly, I won’t.”
“What’s the use, then?”—Case Tech.

DELICATE QUESTION.
First Senior: “There’s just on thing I don’t understand about this job getting business.”
Second Senior: “Shoot.”
First Senior: “Do I apply to the president of a company to get his job or do I go to the Board of Directors?”—Daily Illini.

ON HIS JOB.
Country Hotel Clerk (knocking at the door)
—I’ve forgotten whether you wanted to be waked up at 7 or 8.”
Guest—“What time is it now?”
Clerk—“Nine.”

We understand the Germans shelled the English because they thought they were nutty.
—The Fulcrum.

Heading in last Technic: “Michigan Students Dry.” A chance for the Terre Haute Brewing Co.

AIN’T IT SO?
Some days there’s not a “Jane” to get.
There’s not a date that’s open,
It’s Friday night, you’re feeling right,
All ev’ you lounge a mopin’.

Then other days with lots of girls,
There’s nothing for complaining;
A lovely night, you’ve a date all right,
And then it starts to raining.—Illini.

The boy sat in the chapel,
He did not hear the bell,
And when he reached the Latin class
His teacher gave him—some extra work.
—Ex.

“She’s head over heels in love with him.”
“That so?”
“Yes, she’s got to the point where she can’t see how she can possibly live without the automobile he owns.”—Detroit Free Press.
SUNRIE STYLES

Rose men will find here a most complete and attractive line of wearables for spring. Hart Schaffner & Marx Fine Suits, Shirts, Shoes, Hats, Neckwear etc.

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