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Rose Technic Staff

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THE ROSE TECHNIC.

VOL. I.

Terre Haute, Ind., October 15th, 1891.

NO. 2.

THE ROSE TECHNIC.

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TERMS:

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Issued monthly at the Rose Polytechnic Institute.

IN the *Forum* for September Professor H. W. Tyler discusses the subject of technological education. With keen insight he declares: "Differences of opinion exist, not as to the need of education for industry but as to the proportion which the school can safely undertake and that which it must leave to be acquired in practice. Often too much has been expected. The graduate has believed himself already a mechanical engineer. The manufacturer has made insufficient allowance for shortcomings which no school could prevent." The situation could not be more aptly expressed. Occasionally the graduate imagines he has exhausted the fountain of knowledge. Frequently he finds others have been deluded in the same belief and have built their expectations accordingly. A few months suffice to make clear the mistaken judgement, and then the school of technology comes in for criticism. The parent who has thought his son a prodigy of wisdom bemoans his folly in sending the boy to such an institution. The manufacturer who has held the graduate to be a skilled engineer declares the polytechnic to be a farce. This is all wrong. The universe was not the creation of a day, nor is the mechanical, electrical or

civil engineer the product of an hour. The late President Thompson, in his inaugural address delivered at the opening of the Rose Polytechnic Institute, clearly defined how much should be expected when he said: "No graduate of any school is at that time an engineer. * * * No diploma can be regarded as meaning anything more than that the possessor has passed successfully the examinations that are set at any particular school. Graduates should begin at the bottom and their school training will tell best and most effectively in the rate of their advancement." Slowly the world is beginning to discover this, and Professor Tyler is right when he further declares: "As the school and shop are coming to appreciate each other, the problem of bridging the chasm which has separated them, to the detriment of both, is approaching its solution."

* * *

THE present year surely marks a new era in the history of Indiana educational institutions. Never before were indications of prosperity so indisputable. Courses of study have been enlarged, facilities for efficient work improved, faculty lists strengthened, and to crown all, enrollments of students greatly increased. This cannot mean other than a year of unparalleled success. In the establishment of schools two aims are held in view, each occupying a field to itself. First, there is the desire to extend the benefits of education to the greatest number possible. To this end the public school system was conceived. Second, there is the desire to extend to many the best education possible. To this end the college was created. Each is working out a wonderful destiny over all the world. In the record of advancement, Indiana is moving to the front. For years her public schools have been far famed. Soon her colleges too will lead in the van, and it is anticipation of such an end that present prospects seem to justify.

THE TECHNIC is here to stay, thanks to a most liberal response from all directions. In June fears of success were entertained, but day by day the prospects brightened and now, should all indications be fulfilled, those fears will prove groundless. That commendable spirit which has characterized the students of Rose in all her undertakings has come to the aid of her journalistic enterprise, and failure is almost impossible. The local business men too have been generous in contributing their advertisements, and THE TECHNIC asks that the students remember them in the distribution of patronage. In return we shall aim to publish a journal worthy of the institute, the alumni and the students. No effort will be spared to constantly improve THE TECHNIC, and in such measure as the finances warrant will special features of interest be added. The projectors have but one aim and that to build a foundation upon which in coming years will be erected a permanent institution known as the history of the rise and development of the Rose Polytechnic Institute and her students.

* * *

ONE hundred and fifty-six students comprise the enrollment of the institute at the present time. To those familiar with the facilities of the various departments this statement means that all the courses are coming in for full share of popular favor. It also means that every man on the faculty has a big burden to carry and that, as never before, will the equipment be taxed to a degree near its limit. One great claim to superiority made by the Rose Polytechnic has been that the individual student received a large share of attention. With a much larger attendance the claim would be null and void. Nevertheless this will be one of the best years the Institute has ever known.

* * *

PURDUE is incensed against DePauw on account of the foot ball schedule details. There will be high sport when their representative teams come together. A full corps of surgeons will be engaged in advance.

IN this issue is presented the first of a series of cuts of school organizations it is intended to run should fortune favor us. The ball pennant winners of last spring will at once be recognized, and as the pleasant memories of five unbroken victories come flooding back, let no one suppress the joyous cry of exultation:

R. P. ! — R. P. ! Rah ! Rah ! Rah ! Rah !
 R. P. ! — R. P. ! Rah ! Rah ! Rah ! Rah !
 Hoorah ! Hoorah !
 Rose Polytechnic. Rah ! Rah ! Rah !

* * *

D R. EDDY is quoted as saying that the Institute Trustees are the most liberal men with whom he has ever had dealings, and that this fact was one of the things which induced him to give up a beautiful home in Cincinnati and come to Terre Haute. Our experience coincides with his. We wish to return thanks to the trustees for the hearty interest and good will they have shown us.

* * *

THE antagonism between the Freshmen and Sophomores will accomplish at least one good result. It will make the fall field day a success in the development of what new talent there is in the school. The '95s are determined to revenge their recent ball defeat, and if the '94s refuse to meet them in fair out-and-out contest, it will unquestionably be a black mark on their record.

* * *

NOWHERE else in the state could a state field day financial disaster have been more easily disposed of than was that of last June here. Why? Because nowhere else in the state are there business men who more generously respond to a call for assistance from the students than do those here. It was the business men who, in large measure, guaranteed the field day expenses.

* * *

AN impression prevails that the cold shoulder was shown us in the recent football manipulation. Facts are gradually coming to light however, which tend to suggest another

explanation of the discourteous treatment received. It appears that no intentional slight was involved. Some one volunteered the information that our faculty opposed the organization of a team here, and upon this assumption it was thought unnecessary to inform us of the meeting. The guess was not a very wild

one. The faculty does not favor a team. Nevertheless it would have been an eminently proper thing to have obtained the information from headquarters rather than to have taken the random opinion of a man who knows as much about it as did our athletic men about the meeting which was held.

EARTHQUAKES AND THEIR MEASUREMENT.

BY PROF. THOMAS GRAY.

An earthquake consists of a rapid backward and forward motion at any point of the earth's mass. To an observer on the surface the earth seems to tremble or quake, and hence the name earthquake. The motion may be a continuous vibration backwards and forwards along the same line, but is more commonly of a more or less spasmodic character and variable in direction. When the point of observation is a considerable distance from the centre of disturbance the motion begins gradually, continuing usually for several seconds as a slight but increasing tremor which precedes a series of more or less violent bumps, separated by tremulous motion. The duration and the general character of an earthquake often varies greatly at different places, even when these places are only a few miles apart. In a situation on solid rock very little of the preliminary tremor is noticeable and the total duration of the disturbance is generally small. On the other hand, if the situation be well out in a plain covered to a considerable depth with comparatively soft geological formations the disturbance may last much longer, and it will possess the peculiarity that distinct shocks are less marked while the motion will have a larger amplitude and probably a longer period of oscillation than on the hard rock. The motion is in fact of a secondary character somewhat difficult to explain and, for a certain class of structures, much more dangerous than the original. This brings up a question of primary interest to those who have to design structures for such a locality,

but leaving that for the present, let us look a little more particularly at how the vibratory motion, which constitutes the earthquake, is propagated from its source. Let us imagine, for example, that, by some means, a disturbance of great energy is produced at some point considerably below the surface. Let us also suppose that the material surrounding the centre of disturbance is nearly uniform in its physical characteristics. Then the points which are simultaneously affected in precisely the same manner all through the mass, so long as the disturbance has not reached the surface of the earth, will be on the surfaces of spheres of which the origin of disturbance is the centre. Now the amplitude of the motion at these spherical surfaces can be readily shown to be inversely as the radius of the sphere. Hence it is evident that the distance any particle is moved from its normal position varies very rapidly near the surface and very slowly at great distances from it. If, for instance, the amplitude be a foot at the twelfth of a mile from the centre it will only be an inch at one mile and it will be a hundredth of an inch at one hundred miles, and so on. A very considerable motion is thus required near the centre to produce a motion of say an inch, or even a tenth of an inch, at a point ten miles distant. As a matter of fact, except in cases of very destructive earthquakes, it is seldom that the motion a few miles from the source exceeds one or two tenths of an inch. When a disturbance such as has been indicated is produced in a perfectly uniform medium it is generally prop-

agated outwards as two distinct kinds of waves. In one of these the motion is in the direction of the radius from the centre and the waves consist of condensations and rarefactions of the medium; in the other the direction of motion is transverse to the radius from the centre and consists of distortions of the material without change of density. The rates at which these two kinds of waves are transmitted through the material are different, the waves of condensation and rarefaction moving considerably faster than the other. Thus at points near the source the motion will begin in the direction towards and from the centre and will gradually change more and more towards the transverse as the second kind of wave produces its effect. The actual path traced out by such a particle is thus very complicated, consisting, as it does, of a network of approximately closed curves, producing that peculiar gyrating kind of motion which has been called by some writer vorticoose motion. For points distant from the source the two kinds of waves become separated and give rise to two distinct shocks, one of them transverse in direction of motion to the other. Both these kinds of waves do not always exist and the existence of both or the amount of either depends on the conditions under which the disturbance originated. It is, in consequence, impossible to tell with any certainty from the direction of vibration from which direction the disturbance is being propagated.

Consider next what takes place after the disturbance reaches the surface of the ground, and let us, for convenience, call the origin of disturbance the centrum and the point on the surface vertically above it the epicentrum. The motion at the epicentrum will, at first, be in a vertically up and down direction in accordance with the direct wave and afterwards, if the depth be sufficient, in a transverse direction with little or no vertical component indicating the arrival of the transverse wave and giving the impression of two distinct shocks. Again, since points near the epicentrum are very nearly at the same distance from the centrum, the difference between the times of arrival at these

points will be small. This gives rise to the idea of great velocity of propagation, but when the observations are properly interpreted they indicate the proximity of the epicentrum. For points at equal distance from the epicentrum the times of arrival, and the total amounts of the motion, ought to be the same, but for the direct wave the motion becomes more and more nearly horizontal, while for the transverse wave it may remain either absolutely horizontal or it may approach to the vertical, according to the direction of the transverse movement. The points at which the horizontal component of the direct wave is greatest lie on a circle the radius of which is equal to the depth of the centrum and hence it is evident this is a valuable circle to locate. Similarly the positions of similar and equal motion lie in circles of which the epicentrum is the centre.

So far the effects of a disturbance emanating from a center and propagated through a perfectly uniform medium have been considered. Unfortunately for the observer the strata near the surface of the earth are far from uniform and they are often broken up and fissured to such an extent as to greatly interfere with the propagation of waves either of compression or distortion through them. The surface is also in most cases irregular in contour, which renders it difficult to determine the curves of equal movement or intensity. A series of curves drawn on a chart through points of simultaneous arrival of the shock will in general form the most satisfactory means of determining where the earthquake originated. The character of the motion is in general greatly modified by mountain chains and by valleys. An earthquake of moderate intensity, originating near the surface of the ground, and hence giving rise to considerable vibrations, is seldom felt on the opposite side of a chain of mountains. On the other hand, an earthquake originating in a mountain is apt to produce destructive effects on the mountain sides where the surface strata are unsupported. Similar effects are often observed on the sides of ravines nearest to the origin of an earthquake, while the opposite

sides are hardly at all affected. The distant side is placed, as it were, in shadow by the ravine. It is curious also to observe, in this connection, that there are sometimes regions of comparatively small extent in an earthquake area which are seldom, if at all, affected. These regions are known as earthquake bridges, they seem to be protected by internal fissures or by total reflections of the subterranean waves from strata of different densities. Cases have been known in which a violent earthquake has broken down the barrier and a region, or bridge, previously unaffected, has been subsequently as subject to shocks as the surrounding country.

As to the causes of earthquakes there have been many theories. A prevalent belief in the middle ages, and still apparently held by many people, was that earthquakes were marks of divine anger. At the time of the Charleston earthquake, for example, the negro preachers told their congregations that the disturbance was in consequence of their wickedness. About the middle of the eighteenth century several severe earthquakes occurred in Europe. This gave rise to numerous sermons, all based on the idea that if mankind would lead better lives there would be no earthquakes. A poem written at this time, entitled "The Earthquake," illustrates the belief:

"What powerful hand with force unknown,
Can these repeated tremblings make?
Or do the imprisoned vapours groan?
Or do the shore with fabled Tridents shake?
Ah, no! the tread of impious feet,
The conscious earth impatient bears;
And shudd'ring with the guilty weight,
One common grave for her bad race prepares."

Then there are a great many myths connected with occurrences of earthquakes. The Japanese had their Jishin Mushi, or earthquake animal, which was said to be covered with scales and to have eight legs. Later this animal gets changed to a fish and that fish is supposed to be kept quiet at present by a large rock known as the Kanami rock, situated at Kashima, which is believed to be resting on the fish's head. In Mongolia the animal is said to be a frog. In India there is a world-bearing elephant. In Celebes there is a world-supporting hog, and

the Musselman has his world-supporting bull, while in North America there is a big tortoise that shakes the earth. The people of Kamchatka had a good Tuil who, like themselves, lived among the snow and ice. Tuil had several dogs with whom he occasionally went out to exercise, and these dogs by shaking and scratching themselves produced the earthquakes. In Scandinavia there is an evil genius called Loki, who, having killed his brother, was chained to a rock face upward so that the poison of a serpent could drop on his face. Loki's wife intercepts the poison in a vessel which, however, has occasionally to be emptied, and when this is being done a few drops falling on the deity's face causes him to writhe and shake the earth.

In the attempts to account in a scientific way for earthquakes almost every known source of physical energy, and more has been brought forward as a possible or probable cause. They have been due to the attraction of the heavenly bodies; to ocean tides; to variation of atmospheric pressure; to fluctuations of temperature; to wind; to rain; to aurora borealis; to magnetism; to electricity; to explosions of steam; to subterranean tides of molten liquid flowing round on a sea of liquid rock beneath an imaginary solid crust, the waves and floating rockbergs impinging on protruding rocks causing the shocks; to volcanic evisceration; to chemical degradation, and so on. There has been a surprising disregard of cause and effect in the reasoning of even some of the best writers on the subject. There seems no doubt but that the cause of earthquakes is endogenous to the earth and that such exogenous forces as the attraction of the sun and moon, the pressure of the atmosphere, the fluctuations of the earth's surface temperature due to the sun's radiation, and so on, play a very secondary part. They may, as it were, form the last straw, but they are by no means capable of producing such effects on an otherwise sound structure of such an average strength as we have reason to believe the earth to have. There is evidence of a greater frequency of such phenomena at certain seasons of the year, when the sun and moon, for ex-

ample, are on the same side of the earth or when they are on opposite sides, and when the earth is nearest the sun. For almost all countries in the northern hemisphere the greatest frequency is from October to March, the least from April to September. Thus the winter months are the worst for earthquakes in the northern hemisphere. In the southern hemisphere their winter—that is from April to September—is the worst. This seems to show no dependence on the relative position of sun, earth and moon, but a possible dependence on temperature, or possibly the effect of an extra load of ice at the poles.

The primary cause of the whole phenomena is no doubt the gradual cooling down of the earth as a whole, causing unequal contractions throughout its mass, together with the enormous stress which must come to bear on the cold outside layers when the inside ones shrink away from or expand up towards them. These great forces produce distortions of the strata and bring pressures to bear on molten material underneath which, when the pressure becomes sufficient, bursts through the overlying strata and forms a volcano. The shock of the bursting of the bonds causes a violent tremor to spread in all directions. Possibly a minor but nevertheless very important cause lies in the fracture of rock masses producing fissures and "faults." Another cause may be the breaking in of the roofs of subterranean cavities. It is not at all an uncommon thing for earthquakes to accompany changes of volcanic activity, but it is a mistake to suppose the earthquake to have been the cause of the volcanic eruption. They are parts, and necessary parts, of the same phenomena. To imagine that the earth's strata may be bent and stretched and not spring back when the force is suddenly removed is the same thing as to imagine that the bent bow will not straighten when the cord is let go. Considerable local changes of the earth's surface sometimes takes place at the time of an earthquake, much of which may be of a secondary character, caused by the shaking. It is also probable that many of the small shocks which follow a vio-

lent earthquake are in part, if not wholly, due to the violent shaking having weakened and rendered critical parts of the surface strata which previously were quite secure. However this may be, it is certain that most violent earthquakes are followed by a succession of slight shocks, often originating at places some distance from the source of the original disturbance. Another change has already been referred to, namely, the breaking down of "earthquake bridges." Observations such as these give an idea of the enormous changes that are still going on beneath the surface which we call *terra firma*. Nature's fires have not yet gone out and the earth is still being melted and moulded.

One of the most interesting parts of this subject is the effect which earthquakes have on living beings on buildings, and on the history of a country. References are frequently made to the evident alarm which the lower animals exhibit at the time of an earthquake; birds scream, dogs howl, &c. Possibly the alarm of the observer has a little to do with the interpretation of a very ordinary sound given out by the animal. There can be little doubt, however, but that excitement produced by the frequent occurrence of earthquakes gives rise to a nervousness which may have great influence on the bodily health and the mental soundness of the inhabitants of such a country. It is not at all improbable that reliable statistics, if they were available, would show a larger percentage of people of weak intellect in countries where earthquakes are frequent than in those where they seldom occur.

As to the effect of earthquakes on buildings, it is difficult to lay down any very practical rule. Experience has been very variable on this point. Some earthquakes have devastated towns standing on soft, gravelly plains, while the houses on the hard rock and high ground have escaped. Other earthquakes have given exactly the reverse result. It is, in fact, impossible to predict from any one earthquake what the next one may be like, and hence it is equally impossible to say which buildings will

suffer. Something can, however, be said as to the form of buildings suited to different kinds of foundations. For example, a flexible structure will be likely to stand on a solid rock, while a very rigid light topped structure is generally more suitable for a soft, marshy foundation. Again, too great attention cannot be paid to the proper proportions of the different parts of a structure so as to avoid intense stresses due to the induced oscillation of the structure itself. The design should be such that all the points will oscillate, when free of each other, in very nearly the same period. If this be not so then the junctions between different portions of the structure must be strong enough to force it all into isochronism. Good examples of the neglect of these principles are sometimes obtained

from the practice of tying tall, flexible chimneys to adjacent houses for support. The chimney would of itself vibrate very slowly, but if the tie-rods be strong enough the points of attachment must go with the house and the consequence very commonly is that the top part is cut off and falls. Heavy blocks of masonry or brickwork joined together by light arches generally suffer considerably in an earthquake of short period by the arch crowns being too weak to move the heavy intervening walls. It is with structures as it is with the rock strata—each part must be able to transmit the wave past itself by moving or compressing the material in front of it. If it be not strong enough to do this it breaks.

GOLD AND SILVER

MINES IN THE UNITED STATES OF COLOMBIA, S. A.

BY J. A. PARRA, RECENTLY OF CLASS OF '94.

One of the principal products of the United States of Colombia is the gold and silver obtained from the few mines in actual exploitation. The noble metals occur in most of the cases allied, but there are some mines that may be regarded as of gold and others of silver exclusively. The largest number and the richest are found in the mountains while *placeres* and nuggets of gold are of frequent occurrence in valleys and at the foot of the *Cordilleras*. Some of the mines that are giving products have been mounted by foreign companies and comparatively few by the natives. Among the most important mining enterprises worthy of mention are the Marmato, Titinbi, Zancudo, Frias, Cristo and La Plata and La Esperanze. The first belongs to an English company. The gold is found free in quartz and the system employed is that of free milling, an operation which is conducted by means of stamps. The mine has been worked for about 25 years and has yielded very high dividends. Titinbi and Zancudo may be considered as a single enter-

prise although each one forms a separate source of ore. The machinery of these mines is of the latest patents of this country, and is perhaps the most complete that has been put up in Colombia. The process used there is that of smelting. The ore is first reduced by means of crushers and a Chili mill to a convenient degree of fineness, and then concentrated. The concentrates, being rich enough in lead, are smelted, and the bars of the precious metals sent to foreign markets. This is the only plant which possesses a smelting furnace in the country. Although the mines do not rank among the richest in regard to the gold and silver per ton, they are, however, the most abundant in ore, and this fact renders them very profitable. The mines were first started by a Colombian company but now there are some North American capitalists interested in them.

Frias is essentially a silver mine and was worked by the Spaniards during the Colony years. An English company found the old cuts about 26 years ago, and undertook at once to

work them, not without some trouble in the drainage of shafts, all being flooded. The machinery is adapted to the sort of ore which characterizes the mine as a silver one. The system for the treatment of ore does not differ from the above mentioned, only that instead of the improved concentrators now in use everywhere, they have common jiggling machines and *arrasties* somewhat different from those used in Mexico. The machinery for this mine comes from England, of course. However, the Pelton wheel put up lately was bought of The Pelton Water Wheel Co., San Francisco, Cal. The efficiency of this motor, when there is plenty of water and sufficient height, is inestimable. It has been observed that there is a large amount of native silver in this mine. It occurs in a spring-like shape in the cavities of the ore, and also in the form of thin plates between the veins and sterile rock. The main shaft is about 620 feet deep with a large number of drifts in different directions.

Cristo mine is the property of an American company whose manager is Mr. Harpendines, of New York, and is considered by Mr. Ezekiel Williamson, F. R. S., who was the first engineer that gave a report about it, as the richest silver mine in the state of Tolima. It has been in exploitation but a few months. The ore consists to a great extent of sulphurets and copper sulphide, and the amount of native silver found exceeds that of Frias mine. The ore is first roughly crushed, and when too rich, women and boys are employed in picking it out and packing it in that form, saving in this manner expense and time. The first is pulverized to a finer degree and concentrated. The machinery is run by steam power, the water being scarce in that region. As Frias, Custo mine was opened by the Spaniards and worked for a number of years. Its main shaft is 350 feet, very well timbered and provided with drifts in several directions.

La Plata & La Esperanza mines lie also in the state of Tolima, and differ from the above in this respect, that were virgin when they were found. The object of the discoverer was to

form a Colombian company with sufficient capital to undertake the exploitation of the mines. Accordingly, ore from the various veins discovered was brought to New York and analyzed. The results being satisfactory it was resolved to get the required machinery in this country. The veins are imbedded in mica schist and lie almost perpendicularly: the *gany* is the well known gold bearing mineral quartz which contains, besides, sulphurets in abundance. In the surface the lodes have been disintegrated by the action of the atmosphere on the iron pyrites, which exposed, give out sulphur and take in its place oxygen forming thus oxide of iron, and setting the gold free. It has been noticed that the deeper the workings get the richer ore is obtained; this arises from the fact that the sulphurets contain more *altaite* (lead telluride) which is very rich in gold. The yield of gold in these mines exceeds that of silver by one-fifth, so that they are considered rather gold than silver mines. There are two shafts of importance, one 60 feet, the other 70, and the richest ore obtained gives 78 ounces of gold to the ton, while the amount of silver is comparatively small.

The plant is entirely a new one and the machines employed are of the best patents of this country. As in Cristo mine, the machinery of these mines has been in use but a few months, and has given satisfactory results. It consists of a big Blake crusher with a capacity of 100 tons a day; two multiple crushers; a Chili mill; a set of silver copper plates; and three Golden Gate concentrators. After the ore has been reduced in the crushers to the size of one-fourth of one inch it is finely pulverized in the Chili mill and the free gold collected with quicksilver. The ore is then screened and conveyed to the copper plates by means of an Archimedian screw. In these plates the small particles of gold that escape the action of mercury in the mill are collected. Now the concentrators play their part by separating the quartz from the sulphurets, and the iron pyrites from the galena and zinc blende. A reverberatory furnace is used for the purpose of roasting

the iron pyrites and getting rid in this manner of the large amount of sulphur it contains. The galena and zinc blende are simply dried. In this state the concentrates are packed and shipped to New York.

In addition to this short report, I must say that the expenses in mining in Colombia, as well as in most of the other countries in South America, depend upon the difficulty that is

met with in the transportation of machinery from the coast to the mines, and that of the mineral after having been beneficiated, to the ports on the rivers or the ocean. There are very few wagon roads and still fewer railways, so that the cargo is taken on mule back. As for wages I am justified in saying that they are very low. An ordinary miner gets from \$0.70 to \$1.20 a day.

ALUMNI DEPARTMENT.

IN this department of the ROSE TECHNIC, effort will be made to chronicle all doings of our Alumni in the business as well as the social world. To this end we invite the hearty co-operation of every alumnus, asking, first, to be informed of changes in employment or address, and second, to be liberally advised as to the best means for promoting the common interests of all graduates. Regular correspondence is solicited, and upon each man we desire to impress the fact that at all times will contributions on practical subjects be most cordially welcomed.

THE MARION ELECTRIC STREET RAILWAY.

MASON GALLOWAY, '90.

Editor Alumni Department:

DEAR SIR:—In the introduction to the Alumni Department of the June number of the *Technic* is a request to be informed of change of employment, etc. In compliance with this request allow me to say that at that time I was helping install an electric railway and not a lighting plant. The company owning the road is the Marion Street Railway Co., and my position is that of electrician. The road is ten and one-half miles long and is equipped with six motor and five trailer cars. The motor cars were built by the Brill Company, and on each are mounted two 15 horse power single-reduction motors, manufac-

tured by the Thomson-Houston Company. Power is furnished by a 62,000 Watt generator (Thomson-Houston), driven by a 125 horse power Buckeye engine. For the generation of steam one of two 150 horse power return tubular boilers are used, and these are supplied by a duplex pump with water from a Stillwell and Bierce heater, which heats the water to almost the boiling point and at the same time clears it of all sediment, lime and magnesia, of which substances there is a large amount in the water used. The boilers are also equipped with skimmers and after a run of sixty days were as clean as the day they were started, showing the good work done by the heater and skimmer. Besides this the engine is supplied with steam free from sediment which would cause rapid wear of valves and cylinder. That we have had no stops, with the exception of one of a few hours for a little repairs on the engine, is a proof of the excellency of the Thomson-Houston apparatus. I say this because it usually happens that stops are due to electrical troubles and not to the engine, although in street railway work an engine has about the hardest service to perform that any piece of machinery is put to.

The *Technic* is all that could be asked for in the way of a college paper and great credit is due those who started it. I think it the duty of every alumnus to give the paper every encouragement they can.

The "Alumni Notes" is, I think, an especially

good feature, for it keeps us informed of what our former associates are doing and where they are, better than by almost any other means, since this news comes once a month.

MARION, IND., Oct 2.

THE THOMSON-HOUSTON ELECTRIC COMPANY.

Just ten years ago this month, the greatest electrical company in the world to-day took upon itself the above name. It had existed for two years previous under the name of the American Electric Company with a capital stock of \$125,000.00. The factory was moved from New Britain, Conn. to Lynn, Mass. in 1882 and employed about 75 men. The works to-day consist of a dozen large buildings with a floor space of over eight acres. Over three thousand names are on the pay roll which amounts to about \$35,000.00 per week, and fifteen minutes only are required to pay off this large number of people.

An electric tram-way distributes the raw material to the different buildings and collects the finished product and takes it to the shipping department. The power in many of the buildings is supplied by electric motors and the arrangement to be seen here is a good illustration of the subdivision of power. Any department can run as much or as little as it pleases without interfering with any other department. Motor power to the amount of 350 horse power is in use in this way. Some departments run day and night. A second gang of men begin work at 6:30 P. M. as soon as the day men are out of the way. In one of the buildings is a 20 ton electric crane. It is astonishing to see this crane raise a massive casting 10 to 15 feet high, move it 50 or 75 feet toward the other end of the shop and place it on one of the large planers with smoothness and dispatch. One of the large engines used by the company is a 500 horse power Greene engine with a 20-foot fly wheel, which makes 100 revolutions per minute. The fire protection consists of automatic sprinklers placed about every ten feet apart through all the buildings. When

the temperature reaches a certain point they begin to sprinkle. In each department is a telephone and the company has its own telephone exchange, so that connection can be had with any department. Many of the employees ride bicycles and the sight seen at noon time in front of the Polytechnic is seen here on a much larger scale—wheels by the hundred of all sizes and colors heading for all directions. There is one difference however; instead of Rankine's Mechanics suspended under the saddle or Whitney's French strapped to the handle bars may be seen a pair of overalls or a lunch basket.

BOSTON, MASS., Oct. 1, 1891.

ALUMNI NOTES.

Mr. Samuel Collett, '90, is with Thomson-Houston Company, Lynn, Mass.

Mr. D. P. Sanderson, '86, is practicing his profession, that of civil engineer, at South Bend, Wash.

Mr. C. B. Kidder, '88, is superintending the erection of an electric railway plant at Vincennes, Ind.

Geo. Davis, Esq. and Francis Hord, Esq., '88, are attending law lectures this fall at the University of Michigan.

Invitations are out for the wedding of Mr. Ben McKeen, '85, and Miss Anna Strong, of this city, on October 23.

Mr. R. F. Thompson, '90, has gone into electrical supply business for himself at Helena, Mont. The Technic wishes R. F. success in his new undertaking.

The address of Mr. E. G. Waters, '88, is Pittsburgh, Penn. Mr. Waters is still with the Thomson-Houston Co.

Messrs. J. D. Galloway and V. R. Hendricks, '89, are with the Fairhaven & Southern Division of the Great Northern R. R. in the engineering department.

Mr. Geo. H. Chapman, '88, sends congratulations to the ball team for their good work of last year. Letters of this kind are welcome,

for they show that the Alumni have an interest in the good work of the undergraduates and are pleased to see them add laurels to the school's excellent collection.

Mr. Geo. R. Putnam, '90, who holds the position of aid on the U. S. Coast and Geodetic Survey, is temporarily located at the Washington University, St. Louis.

Mr. W. D. Elder, '90, is located with the construction department of the Northern Pacific at St. Paul, Minn. Mr. Elder has been making extended trips on the road measuring bridges and is now engaged in making the drawings for "the same."

Mr. B. R. Shover, '90, made a change from Richmond to Indianapolis early in the summer, and is now employed by the Citizens St. R. R. Co. in the electrical department. The company is equipping its lines with electrical apparatus and will soon do away with animal power altogether.

The officers of the Alumni Association elected last June are: F. T. Hord, '88, President; O. C. Mewhinney, '91, Vice President; Geo. M. Davis, '88, Secretary and Treasurer. The executive committee is composed of J. B. Aikman, chairman, Donn M. Roberts and W. R. Paige.

The banquet took place at The Terre Haute the evening of June 18th, 1891. The toasts were as follows:

Introductory.....	J. B. Aikman, '87.
Size of our heads 10 years hence.....	Hood, '85.
Old Hoss.....	Sames, '86.
The Eye Talian question.....	Hord, '88.
Work $\frac{1}{2}MV^2$	Hedges, '88.
Cheap as dirt.....	Early, '85.
Jones, he pays the freight.....	Goetz, '87.
Is the tariff a tax?	Collett, '90.
The gift of gab.....	McCabe, '91.
Fizz.....	Raymond, '90.

Dr. Eddy gave a very interesting talk on the school and its work. Those present were H. T. Eddy, J. B. Aikman, '87, pres.; H. Goetz, '87, sec'y; Prof. O. P. Hood, '88, Sames, '86, Foltz, '86, Elder, '86, Hedges, '88, Raymond, '90, Early, '85, Roberts, '89, Davis, '88, Collett, '90, and all members of class '91, except one.

As near as could be ascertained the class of '91 are located as follows: Mr. Balsley with the Thomson-Houston Co., Lynn, Mass.; Mr. Boehm consulting engineer for a Bridge Co., Memphis, Tenn.; Mr. Buckley in the employment of the Westinghouse Electric Co., Pittsburgh, Pa.; Mr. Cox with the Car Works, Terre Haute; Mr. Gillett in the employ of the the Detroit Electrical Co., Detroit, Mich.; Mr. Harper with the Indianapolis Citizens St. R. R., Indianapolis, Ind.; Mr. Harris with Morrison & Co., bridge engineers, Chicago; Mr. Hupe post graduate in marine engineering, Cornell University; Mr. Hurlbert at Evansville, Ind., with Mr. Fitch, '90, establishing a sewerage system for the asylum located at that place; Mr. Jones with the landscape gardener, world's fair at Chicago; Mr. McCabe in the employ of the Gaynor Electrical Co., Louisville, Ky.; Mr. McCormick instructor in mathematics at the Poly; Mr. Menden with the De Forest Mining Co., Evansville, Ind.; Mr. Mewhinney at Dansville, N. Y., trying to regain his health which has been poor for the last two years; Mr. Paige with the city engineer Terre Haute, Ind.; Mr. Wales post graduate in electricity at the Polytechnic; Mr. Carothers probably in the Sandwich Islands where he had an excellent offer of the superintendency of a department in a manual training school.

ATHLETIC DEPARTMENT.

OUR FIRST FIELD DAY.

WILEY, '89.

Every alumnus of Rose must feel proud of the remarkable record the school made in the last state field day, but I think that the Class of '89 is rather inclined to claim a good part of the credit for this present excellence and to pat itself on the back each time Rose's prowess on the athletic field is mentioned. This class from its first entrance to the school insisted, in class meetings, on the establishment of field contests and always instructed its athletic directors to advocate such a course in the meetings of the association. However, little progress was made until the spring of '88, when the class then Juniors, challenged the rest of the school to meet them in athletic contests on the following Saturday afternoon. The preparations were very simple, and when the eventful Saturday in April came around, about half of the students were present to see the contest, which consisted of a hundred yard dash, standing and running broad jumps, running high jumps, wrestling, etc. '89 was represented in the dash by Hendricks and Wiley, by Hammond and Sparks in the broad jumps, by Galloway and Hammond in the high jump and by Jones and Gilbert in the wrestling. In the hundred yards Hendricks won, Rauchfuss, '88 second, in the then remarkable time of a little less than 12 seconds, caught on an ordinary watch. Rosenfeld, '90, took the standing broad jump and Galloway, '89, the high jump. Their records have skipped my memory along with the results of the other contests except that '89 was defeated. Although not particularly successful—only winning the two events—and while no remarkable records had been made, still the class had accomplished its purpose, viz: to arouse the interest of the students in field contests. Previous to this time the athletic association had furnished its members with athletic

supplies and also supported a ball club, but this crude and unpretentious little field day marks the beginning of the present era of supremacy. The following June, the first regular field day was held and the boys showed the good effects of some training and much better records were the result.

Steady improvement in form has been the rule and will continue to be, and we are sure that it will not be long until Indiana college men will equal and we hope surpass the eastern records—and we all know Rose will not be the least active in reaching this point.

OUR ATHLETIC ASSOCIATION.

We have no literary or debating societies; we have no Greek-letter fraternities; but we have an athletic association. More than this, we have the strongest athletic association in the state, as is shown every time the R. P. I. meets the others in friendly contest. No visiting base ball team has ever had difficulty in collecting their expenses here; the experience of our team at other places has been different.

The Rose Polytechnic is younger than any of the other colleges; there are fewer students here than at any of the others; but with less experience and fewer men to select from, it produces the winning base ball team and has twice carried away the honors from the Inter-collegiate Field Day. Why? The answer can only come from the fact that here one undivided effort is made by the students themselves for the promotion of athletics. Over ninety per cent. of all the students were members of the Athletic Association last year; the interest is divided between base ball, foot ball, tennis and field-day contests; but all are directed by one board and are supported by the common treasury.

The members of the faculty not only encourage but also take part with the students in many of the sports; and the fact that the

President of the Institute presides over all meetings of the Directors assures a perfect harmony between students and faculty.

Just now it is earnestly desired that all new students should join and that all old members should retain their membership in the Association; no better plan of encouraging them to do so suggests itself than by showing what was done last year with the seventy-five cents per term dues collected from each member. Accordingly the following condensed statement of money received and expended has been drawn from the treasurer's accounts. Anyone interested in a more detailed account can inform himself by calling on the treasurer.

Received by balance from year '90.....	\$ 3 10
" dues " class '91.....	33 75
" " " " " '91.....	67 50
" " " " " '92.....	61 25
" " " " " '93.....	76 75
" from all other sources.....	4 40
Total.....	\$246 75
Expended to Base ball.....	\$ 67 60
" " Foot ball.....	13 57
" " Lawn Tennis.....	28 85
" " Field apparatus.....	15 52
" " Gymnasium.....	9 70
" " R. P. I. Field day.....	17 13
" " Incidentals.....	40 39
Total.....	\$192 76
Balance in Treasury Sept. 18.....	53 99

On September 22 the directors of the A. A. holding over from last year, met to arrange for the election of the new board. Time was given until Thursday evening (Sept. 24) for the several classes to elect their directors and nominate candidates for the offices of president, treasurer and secretary.

In accordance with this the Seniors elected Chas. Young director, and nominated L. S. Rose and Will. J. Fogarty candidates for the presidency; the Juniors elected Robert Moth director and nominated Jas. Dale and W. H. Waite for the office of treasurer; in the Sophomore class, O. R. Hedden was elected director and G. W. Teller and H. J. Holt were nominated candidates to the secretaryship. The Freshmen class elected C. L. Anderson and G. P. Reuhl as directors from that class. The election, held Monday, Sept. 28, resulted in the election of Fogarty, Dale and Teller, as president, treasurer and secretary of the association for the ensuing year. The first business meeting of the new board was held Tuesday evening, Sept. 29, at the residence of Dr. Eddy. Here "ways and

means" first occupied the directors, and was disposed of by deciding to adopt a new form of membership receipt and to push the collection of dues as much as possible.

Saturday, Oct. 10, was set as a limiting date, after which only those whose dues are paid will be considered members of the association, and be allowed the privileges of such. This rule will be adhered to more closely than formerly.

The question of having a foot ball team in the inter-collegiate race was discussed, and left in the hands of Dr. Eddy to present to the faculty.

A committee consisting of Fogarty, Moth and Anderson, was appointed to confer with the Tennis Club, with a view to consolidating the latter with the association. Another committee consisting of Young, Moth, and Reuhl was appointed to have charge of the fall field day, which will be held October 31.

The purchasing committee, Fogarty and Dale, will make all purchases for the association; they are limited to an expenditure of not more than five dollars between meetings of the board.

THE FIRST GAMES.

"Can the Freshmen play ball? If so, will they play the Sophs. on Saturday afternoon?"

Soph. B. B. M'gr

In explanation of the above, it is only necessary to say that it appeared upon the school bulletin board Thursday morning, Sept. 24th. Early in the afternoon of the same day the following appeared just under it:

"The Soph's challenge for Saturday afternoon is hereby accepted.

Freshman Managing Committee."

Of course the Freshmen were new to us, and everyone was anxious to see how they would turn out; the readiness with which they accepted the challenge showed good grit at any rate, so a good game was expected. But good ball playing failed to materialize; the diminutive size of the modern base ball was too much for the Freshmen, and the Alliance, even after one whole year's experience with it, are only slightly acquainted; a big balloon would have suited both sides much better. The score of 25-2, in favor of the Soph's, tells all that anyone needs to know of the points of the game.

This beautiful farce called base-ball was entirely insufficient to hold the attention of the audience, and before the end of the first inning it became evident that something more active was brewing in the minds of the two lower classes. The first demonstration took place when the Freshmen, tiring of the little-grandstand, seated themselves on the grass directly in front of the Soph's. They soon had business elsewhere.

In the next move the Soph's took the lead by making a rush for and securing most of a box of pipes which the Freshmen had brought out to smoke on the road home; before this skirmish was over, the tables were turned by the Freshmen siezing the tin horns from the Soph's and breaking them up. So that in the end the Freshmen were minus their pipes and the Soph's mourned the loss of several of their horns. This continued excitement was fatal to the game of ball, which broke up during the fifth inning, having been the occasion of the liveliest "rush" ever witnessed on the Poly Campus.

Having heard an account of the affair from several of those interested, we feel assured that the number of particular *heroes* brought to light that afternoon is only equalled by the number of men in the two classes, plus the imaginative ability of each.

'94 VERSUS '92.

As a natural consequence of the game recorded above, the Soph's felt equal to anything, and skipping over the Junior's unnoticed, they next challenged the class of '92.

The noble Seniors, casting aside all superfluous dignity, demonstrated to the audience that their ball players have survived the prescribed number of frosts necessary to this stage of life and are with them yet.

The Sophomores exhibited too much confidence, and also betrayed the fact that they have not altogether recovered from a slight attack of Big Head; and while they occasionally made a brilliant play, every man in the nine contributed generously to the aggregate of errors.

The clubs succeeded in keeping the crowd interested until the close of the eighth inning,

when rain stopped the game. The score was as follows:

Seniors,	3	3	0	0	6	1	1-14
Sophomores, . .	0	2	2	0	0	2	1-7

MEETING OF THE I. I. A. A.

The meeting and action of the Inter-collegiate Association on Wednesday, Sept. 30, called forth so many vague rumors as to our position in the Association, that a plain statement of the facts of the case seem necessary by way of explanation. No regular call for a meeting was made. C. M. Bivins, the Purdue delegate, by telegram on Tuesday requested Butler and the State University to meet him at Indianapolis on Wednesday, and he, en route for Indianapolis Tuesday evening stopped at Wabash and DePauw to notify them of his projected meeting.

At this meeting the five colleges above named were present. Franklin College was dropped from the Association. An amendment to the constitution was adopted, changing the date of the annual election from spring to the twelfth of September; and under this amendment the meeting elected officers as follows: President, J. L. Davis of De Pauw; vice president, F. M. Erickson of Wabash; secretary, T. H. Stegmaier of I. U.; treasurer, C. M. Bivins of Purdue; executive committee R. F. Davidson of Butler and ——— of R. P. I.

Upon the statement of Mr. Bivins that the R. P. I. was prohibited from playing foot-ball by their faculty, we were not included in the schedule. A new schedule would very easily be arranged should the R. P. I. desire to enter. It is readily seen from the above that the R. P. I. has not been forgotten by the Inter-collegiate Association. How much the irregularities in calling the meeting may affect the action taken by it remains to be seen. The entirely unauthorized statement of Mr. Bivins regarding foot-ball in the R. P. I. cannot be too severely censured. How this fact, even if authorized by our faculty, would excuse him from notifying us of the meeting may be best explained before some future meeting of the Association. However we are still "in it" and if we do not play foot-ball this fall we may be all the better able to hold our former lead in all the spring contests.

POTPOURRI.

FACULTY CHANGES.

Not often is a college so favored in the selection of men to fill vacancies as was Rose Polytechnic in the election of successors to Professor Waldo, Mr. Strunk and Mr. Sherman. Usually the places of popular instructors are found hard to fill and it was anticipated such would in this instance be the case. But it seems the board of trustees made most excellent selections, and that in no particular will the affairs of the institute suffer in the new hands. Professor A. S. Hathaway, who becomes the head of the department of mathematics, is eminent in his line of work. He is a graduate of Cornell University in the class of '79. During his undergraduate course in that institution he contributed a number of articles on mathematics to the Analyst, and was sent by Cornell as its representative to the Inter-Collegiate contests at New York city where he won the first prize in this favorite study. After graduation he became a teacher in mathematics in the Friend's High school, Baltimore, for a time. He then turned his attention to business pursuits, but at the request of Professor Sylvester, who was then at the head of Johns Hopkins, gave up a profitable employment to take a fellowship there. This continued two years, 1882-'84. In '84 he reported and edited Sir Wm. Thompson's lectures for Johns Hopkins and the Electrical Conference for the U. S. Government. In 1885 he was elected instructor of mathematics at Cornell and later an assistant professor, which position he held at the time of his appointment here. He has been a frequent writer on mathematical subjects in recent years, and several articles on the Theory of Numbers have appeared in the American Journal of Mathematics and the Johns Hopkins circulars. He certainly is eminently qualified for his work here, and enter-

taining as he does, a strong desire that the kindest relations and a spirit of mutual helpfulness and respect may exist between himself and the students of the Institute, his success is assured.

Mr. Robert L. McCormick, who becomes Mr. Strunk's successor as instructor of mathematics, hardly needs introduction or commendation. As a student of Rose in last year's graduating class he won for himself laurels in every department of the Institute work. His excellence in mathematics was especially noteworthy, although the Heminway gold medal testifies to his superior scholarship in all his classes. He is well known and highly respected by every man in the three upper classes, and one and all join in expressing the belief that the institute was extremely fortunate in securing him for his present position.

Mr. J. Whitehead, who takes charge of the wood department of the shops, is an Englishman by birth but has been in this country about twenty years. He located first in Allegheny, afterward removing to Cleveland, where he became foreman of the pattern making department for the Cummer Engine Co. Later he became pattern maker and confidential advisor for Geo. H. Corliss, assisting him materially in the development of his ideas. He served Mr. Corliss in this capacity for several years and was about to become general foreman of the Corliss Engine works when Mr. Corliss died. In a change of management his connection with the firm was severed, and he has since devoted himself to pattern making and designing. At the time of his appointment to his present position he was employed at Providence, R. I., where his family still resides. He is a practical pattern maker as well as a student of the theory of pattern making, and has written much on that and kindred subjects. He is a thorough instructor and will prove to

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be a very valuable man for the mechanical department.

Perhaps in this connection it would also be well to note two indirect additions to the faculty. During the summer months Professor Brown and Professor Place each contributed a surprise to the information awaiting the old students on their fall re-entrance, by taking unto themselves partners in their pleasures and duties of life. To both The Technic extends heartiest congratulations and best wishes. Professor and Mrs. Brown are at home at 610 Mulberry street; Professor and Mrs. Place at 409 north Sixth street.

THE NEW Y. M. C. A.

A meeting for preliminary discussion of a Y. M. C. A. was held in the chapel Saturday, Sept. 26, at 12 M. The attendance and the spirit manifested were such as to offer much encouragement to those in charge of the movement, and in consequence a second meeting was held Saturday evening, the 3d, at the Congregational church. Here permanent organization was effected with the following officers: President, R. D. Valentine, '93; vice president, Bruce O. Tippy, '92; treasurer, C. McCulloch, '94; corresponding secretary, S. B. Tinsley, '92; recording secretary, P. H. White, '95. The society starts with a promise of success, but every student should awake to the fact that in order to make it a power for good the hearty and earnest co-operation of all is imperative.

SCHOOL ORGANIZATIONS.

The various classes and other associations of the Institute have perfected organizations for the coming year with the following officers:

Seniors—W. A. Layman, president; S. B. Tinsley, secretary; W. Hussey, treasurer; M. Oglesby, historian.

Juniors—A. H. Klotz, president; H. McDermott, secretary and treasurer.

Sophomores—W. M. Blinks, president; F. Hildreth, vice president; C. McCulloch, secretary and treasurer.

Freshmen—E. R. Lamb, president; J. W. Breyfogle, vice president; H. T. Eddy, Jr., treasurer; H. Barton, secretary.

Tennis club—C. Mendenhall, '94, president; E. H. Gibson, '93, vice president; G. R. Wood, '92, treasurer; R. Johnson, '93, secretary.

Athletic association—W. J. Fogarty, '92, president; J. Dale, '93, treasurer; G. R. Teller, '94, secretary.

Telegraph association—R. J. Moth, '93, president; C. E. Albert, '93, secretary; E. H. Gibson, '93 treasurer; F. S. Boatman, '94, supt.

Orchestra—S. E. Johannesen, '93, president and leader; E. C. Laux, '92, treasurer.

Wheelmen—S. Wales, p. g., president; H. F. Dyson, '94, secretary and treasurer; Bentley, '94, lieutenant.

Banjo club—M. D. Sample, '93, leader; Klotz, '93, manager; J. McGregor, '93, sec'y and treasurer.

THE TELEGRAPH ASSOCIATION.

A few years since some progressive students (they're in the asylum now), recognizing the value (\$) of rapid communication, got together and organized what is now known as the *Rose Polytechnic Telegraph Association*. This association is a great advantage to the student; it interests its members in the working of telegraph lines; makes them feel that they know something about electricity, (which they have ample opportunity to prove in the third term of the junior year); gives its members a chance to become its president, for every free born member has a chance to be the presiding officer; some lucky ones are superintendent (a very desirable office), secretary and treasurer. The secretary keeps an accurate register of the meetings, and the treasurer gives a bond to keep peace with the superintendent. The members are practiced in the art of climbing slivory poles, scaling houses, walking the edge of roofs, and getting on the good side of the landlady so that she will permit the costly conductor of energy to beautify her dwelling and disappear in the front window. The members

are joint owners of some very fine wire, a pair of plyers, climbers, alcohol lamp, (it's empty now) and several dozen *binding posts*. Each member has the pleasure of owning his instrument, battery and keeping same in good order. At the meetings members are practiced in the art of debate; and nineteen men, each with a different idea, develop this practice far into the night, often till there is a gentle knock on the door of the good member's room and a voice speaks forth: "Mr. —, it is time those gentlemen were going home." But the chief advantage is the telegraphing. Members coming on should enlarge their vocabulary to some extent for the words used when one is out of patience are about worn out and some new ones must be forthcoming for this another year. The association recently held a meeting with ten members present. Six new members were elected. The members are to get their line working as soon as possible.

PLAIN VS. FIGURATIVE.

June Language Examination for Freshmen.
Question: Distinguish between plain and figurative language and give an example of each.

PLAIN.

The time for examinations has arrived, and we will shortly write what we know as best we can; even scratching our heads in order that we may arouse our brains, if we have any, to their highest power. We will very likely fail in language and chemistry, but we will do our best, and even if we do fail we will stand it bravely, and try again next year.

FIGURATIVE.

Examinations now are here,
Our misery is complete,
Soon we will write for all we're worth,
And ——— poor standing meet.
We'll chew the rag on language,
And scratch our heads in vain;
We'll flunk dead out on chemistry,
And wish we had some brain.
But soon the tug of war will end,
No more our way we'll beat,
We'll face the music like a chump,
And come out on both feet.

— M. R. T.

LOCALISMS.

CAN THE FRESH PLAY BALL?

"Whoop-te-razzle terre-ga-hoo"
I thought we'd beat 'em, didn't you,
Last year the Sophs had not a show.
This time our Freshmen went below.

"Best on record, horse on you."
Score, twenty-five to two, you know.
Wonder if those babes felt blue
When they saw their pipes all go.

It pleased us a pipe to smoke
That valour won; when fierce we broke
And snatched away from their sweet lips
Those brier woods with meerschchaum tips.

"Ausgezeichnet, hear us roar"
On Hallowe'en when Freshmen die
And Profs look on with tearful eye,
Then hear that yell—more dread—more sore
"Rose Polytechnic Ninety-Four."

J. B. S.

Make way for the bearded lady—Matthews, '92.

The board of trustees met last night, the 13th.

A. P. Peck has made one century run since entering Purdue.

Norton, who did belong to '92, is comfortably settled at Purdue.

What was it? A cane rush, a pipe rush, or an all round bluff?

One good word for the '95s. They are a strong lot of fellows.

They were originally pipes of peace, but became pieces of pipe.

Prof. Ames has introduced a new plan of work in Descriptive.

There are 26 Seniors, 27 Juniors, 44 Sophomores and 58 Freshmen.

The blue print room of the civil department is now in excellent shape.

E. T. Troxler, '95, was called home to Louisville by a telegram last Thursday.

It is rumored that Conner, '93, is acting city engineer at his home, Wabash, Ind.

Scene. Room 21. Time: 2:55 P. M., Oct. 1. Professor (in midst of long demonstration). "Mr. Davis! Are you going to sleep?" Davis. "Sir?" Professor. "You can't sleep here."

THE ROSE TECHNIC.

It is hinted that the Freshmen will show the Sophs a thing or two on October 31st.

Valentine claims a patent on the translated expression: "Source of his ancestors."

Sam Bowser, an old '92 man who is in business at Chillicothe, Ohio, is here on a visit.

The Freshman who has not gouged himself with a chisel, is an object of commiseration.

When it comes to tackling the Seniors in athletics the "Farmer's Alliance" is not in it.

A cut of the orchestra will appear in either the next or the Christmas issue of The Technic.

Prof. Waldo's "innocents abroad" last summer learned one thing if nothing more—how to raise burnsidles.

Mr. Wales is president, vice president, secretary and treasurer of the post graduate organization.

Seniors are required to do three months' pattern work this year. "O death, where is thy sting?"

Gehr, that invincible center fielder, is not back this year. He is at his home, Waynesboro, Pa.

Two Seniors and nine Freshmen room in one house on north Eighth. Poor Seniors! Poor Freshmen!

The two civil seniors are wrestling with bridge graphics while their thoughts are, "what shall the thesis be?"

Hampson, Kenower, Coleman and Thaxter, all '93 men, have entered the Leland Stanford, Jr. University.

Folsom is the official committee on petitions to the faculty in the Senior class. The office has been made a permanent one.

Stanton, '93, is as yet undecided as to where he will finish his course. He is at present having a good deal of trouble with his eyes.

The St. Louis club was an evanescent dream. The active members "liquidated" their "bills" so copiously from the initiation fees that the association collapsed.

The Freshmen colors are pink and lavender. Their class call is:

Razzle Dazzle, Razzle Dazzle,
Zip! Rah! Boom!
Hoop lah! Hoop lah!
Give us room.
We're right in it, all alive,
Rose Polytechnic, '95.

There are several aspirants for Rip Van Winkle honors among the '94's. "Here's to your health. May you live long and brospier."

Mrs. S. P. Burton's trip in Europe during the vacation was a very profitable one. She not only thoroughly enjoyed it, but came back in excellent health.

Huthsteiner received a card from an engraver of "Wedding Cards," the other day. Some of the boys are wondering whether they are to receive invitations.

The many friends of Perkins, '93, will regret to hear that on account of ill health he will be unable to return to Terre Haute. He will finish his course in Worcester, Mass.

It was only a stray scrap of essay paper found in the hall, but it contained valuable information concerning the "dubbling" of "consinants" and the use of "vouls." Was it a Soph's or a Junior's handiwork?

J. A. Parra, last year of '94, has gone to Golden, Col., where he will develop his natural tastes in the line of mining engineering. He will take a special course of mining study.

Prof. Kirchner has taken Prof. Waldo's place as librarian. Under his supervision a complete re-arrangement of books is being made. Other important changes are contemplated.

An intelligent observer has noticed another characteristic difference between the Sophomore and Freshman. When in a jovial frame of mind, the former sings; the latter whistles.

The Junior civil division are now working up their notes and drawings for the railroad survey just completed. Their line extends from the oil tank north of the C. E. & I. and Big Four crossing to the east end of Vandalia yard.

Two parties of Soph civil engineers did some fine leveling last week. They ran a line of levels from the Poly B. M. to the water works and back and checked in the tenths place for three of the four sets. Taking into account that this was the first time these men had been out on a leveling trip it is excellent work.

Should you ask me whence these burnsides,
Whence these whiskers all prevailing,
I should answer, I should tell you,
From a clime beyond the ocean
Where the air, so very bracing,
Where the winds so very alpine,
Make you feel so very chilly,
If you do not let 'em grow.

The boilers and heating apparatus of the shops have been thoroughly overhauled during the last few weeks. This is the beginning of a system of improvements Supt. Brown has in

view. Next the old forges in the blacksmith shop will be replaced by a set of patent Buffalo forges with new exhaust fans, and the old furnaces in the foundry will be torn out to build new ones of an improved pattern. The new Wheeler condenser is also to be put up within the next month, connections being made with both engines. This addition is made for the benefit of the steam engineering classes especially.

The following is self-explanatory :

Sept. 25, 1891.

Prof. Wickersham :

DEAR SIR:—By unanimous vote of the class at a meeting held this 2 P. M., it was decided, taking into consideration the fact that Prof. Gray had excused us at 2 o'clock on account of the heat, and also the fact that to come out at five o'clock would necessitate the fourth round trip to the Institute to-day, that we express to you our regrets on not being able to attend the English recitation this afternoon. By order of the class.

Secretary of class of '92.

THE COLLEGE WORLD.

Purdue has a locomotive now for the use of its mechanical department.

Life-sized panels of athletes are being placed in the front of the new Yale gymnasium.

The Massachusetts Institute of Technology has about forty free scholarships of various incomes.

The senior class at Rochester last year voted mathematics the most beneficial and also most enjoyable study of their course.

Earlham has no Greek fraternities, but has literary societies whose merits are probably unexcelled by any similar ones in the State.

A Japanese student describes Harvard in a home letter thus: "A very large building where the boys play foot ball and on wet days read books."

The faculty of the newly organized Northwestern Christian College at Excelsior, Minn., includes no less than five alumni of Butler University.

A good beginning has been made in the football race. Butler has broken one man's shoulder blade, and DePauw one man's leg and another's collar bone.

Has Fate this in store for us? "Eighty per cent. of all men who have been editors of college papers have followed journalism as a profession."—*College Man*.

Northwestern University is clamoring for possession of the base ball pennant won by them last spring. Perhaps this is something like ours one in name only.

This fall, prospective '95s probably started for Princeton with lighter hearts as the '94s last spring announced that this year "all indiscriminate and extreme hazing" would be abolished.

The Wabash literary societies at their last meetings formally released their claims to the Wabash, the college paper, and the faculty was requested to select from the senior class a board of editors for the paper.

There will likely be high times in some of the Indiana colleges on Hallowe'en.

The cane rush has held its own this year as a feature in the fall openings of Eastern colleges.

Athletics of all kinds are discouraged at Franklin and the result is that the campus is fast becoming a jungle.

Wabash is one of the luckiest colleges in Indiana in the number of bequests received. While none are large, nevertheless the aggregate amounts up.

The little college, founded by General Washington, in Rockbridge County, Va., has educated thirty-seven governors, eight United States Senators and thirty-one college presidents.

He writeth best who stealeth best.
Ideas great and small;
For the great soul who wrote them first
From nature stole them all.—*Ex.*

It is not unlikely that a change may be made in the name of the Rennselaer Polytechnic Institute making it read Rennselaer Civil Engineering Institute or something like that. *The Polytechnic* had considerable alumni correspondence last year favoring a change.

A writer in the *DePauw Bema* says, " * * * Let us learn to admire the athlete. Let us stimulate him with the applause of men and the smiles of women. Let us make him our hero, not less than the man who takes the inter-state prize in oratory. Let us have flowers and receptions * * * for his successes." Evidently this advice is apropos, and we might add, "Let it make no difference whether the successful one is a D. U. man or not."

The new Baptist University to be located at Chicago proposes something new in the way of a college course. There will be no vacation. The year is to be divided into four terms of twelve weeks each with an open week at the

end of each term. During half of each term the student will confine his attention to two studies only, a major and a minor subject, which will be completed at the end of that time. He may take a vacation at the end of any full term for one or more terms. In this way other studies will be taken up in order and it is expected that at the expiration of a period equivalent to that occupied in our colleges, the student will have completed a four years' course in three years.

The Indiana University foot-ball team members have signed the following agreement: "We, the undersigned members of the Indiana University Athletic Association, do hereby pledge ourselves to abstain from the use of intoxicating liquors, tobacco and the keeping of late hours; also from all things that will interfere with the training of ourselves during such time as we may be members of such team, and by the breaking of any part of this pledge will consider a sufficient cause for expulsion from said team."

PURDUE LETTER.

Foot-ball is all the rage here now; nothing else is talked of. Nearly all of the old team are back and there is more than enough good material to fill the vacancies. Wagoner and Teeters, the famous guards, are back; likewise Olds, Thompson, Finney, Studebaker, Herkliss and Moore. Among the new men we notice especially Hardy, Sibley, Oiler and Downs. C. M. Bivins has been elected manager of the team. The first game of the season was played between the classes of '93-'94, and was won by the Juniors through their superior rushers. Score, 12-6. The features of the game were the runs of Studebaker, '94, and Finney, '93. Over five hundred people witnessed the game.

E. F. A.