The RED & WHITE

COMMENCEMENT ISSUE, 1914

BULL

Tycho Brahe said the sun moved because he saw it rise in the East and set in the West. When told the earth moved, and the sun was still, he said—"BULL." Columbus said the earth was round and it turned on its axis. The wise-acres of Spain said—"BULL."

Bell and Vaile offered their telephone patents to the Western Union for a trifling sum. The W. U. couldn't understand their value and said "BULL."

Marconi with his wireless, and the Wright brothers with their airships had to go to France for recognition. When told the story of their achievements Americans said—"BULL."

"BULL," in the vernacular of the sceptic, means "I don't believe."

When we said we have this spring the most remarkable line of woolens ever offered in the world the sceptic said tie the "BULL" outside. But five hundred wiser ones who are willing to investigate before they decide, have said: "Lead the 'BULL' in, and let us look him over."

LOOK our woolens over before you buy; it will pay you.

Murray Tailoring Co.

"Quality Higher Than Price"

RALEIGH, N. C.

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THE RED AND WHITE

VOL. XV. WEST RALEIGH, N. C., MAR., 1914. No 6.

THE BRIDGE IN SPAIN.

The cool, soft shadows of the campus were a fitting setting for the clear outline of the college auditorium, which blazed with light. The silver green of the trees and shrubbery in the soft radiance of the moon supplied a subdued undertone for the glitter, the gay color, music, and laughter of the commencement dance.

In the shelter of the vine-covered approach to a recitation hall, sat a boy and girl. They had stolen away for a few of the golden minutes which were yet theirs, to rest, and to close a chapter in their friendship. Neither spoke for a few moments, each was too full for utterance with the fleeting memories of four years.

The boy forced himself to break the bitter-sweet magic of the spell which lay upon them. He began bravely enough; but, his speech halted as he completed the sentence.

"Well, tomorrow, I must say good-bye to the old place."

"And?" she questioned.

"No, I can't tell *you* good-bye. You know that." Then he hurried on to say: "It's funny how I hate to leave the 'Hill.' Why, I felt sorry today even when I told 'Old Mason' good-bye, and you know how I hated Geology."

"Yes, I remember."

"Gee! I wonder how I'll make out with those bridge people."

"You'll do finely, Billy."

They again surrendered to the magic of imagining, and on the wings of fancy, swept past plodding Time into the future.

"Billy, will you forget me?"

"No; haven't we planned how it is all to be. How, when I have built my 'big bridge,' I am to come to you."

"I know, Billy. But you live so far away, and there are so many other girls."

"Yes, but, Mary, you know I can never forget you."

"Nor I, you, Billy."

The moon smiled, but not in unkind mirth, and her softest rays filtered through the tracery of vines which clung so tenderly to the sturdy arch under which the boy and girl were seated. In the glow of the moonbeams and to the accompaniment of the whispered music of the rustling leaves, was played the world-old drama of Youth, Spring and Love.

A laughing voice broke the spell. "Well, are you people going to sit gazing at the moon all night, or, rather, all morning?"

"No," they chorused, "we were only sitting out our dance."

"*Your dance?* Why, you have been out here for all of the last four dances, and the 'hop' has broken up."

"No!" they exclaimed incredulously.

"Yes, it has. And, 'Sis,' you'd better come on. Here's your wrap. The car's waiting." Then to his friend: "Billy, old man, won't you come with us?"

"I'm sorry; wish I could; but I must go pack up and catch my train."

"Well, old scout, so long, and good luck to you."

"Billy, must you go," broke in the girl.

"Yes. Good-bye."

Without waiting longer than necessary to help the girl into the waiting automobile, he strode away, that the brother and sister might not see the tears which gleamed in his eyes.

II.

The train roared into the little college station, and, with a screech and whistle of air brakes and exhaust steam, came to

a stop. A stream of people poured from the coaches. Among them was a middle aged man, who swung himself briskly from the parlor car. His pace slackened as he passed beyond the depot and into the quiet streets of the town.

"How everything has changed," he mused. "I wonder if she lives in the same house?"

He passed on; each familiar landmark summoning its throng of memories.

Unwittingly he strolled into a new residential district, and paused for a moment, bewildered by his strange surroundings. He looked about for someone to redirect his steps, and saw a little girl approaching.

"Ah! I'll ask that little girl to direct me."

As the child came near, he was struck by her bright, wholesome face, and instead of asking his way at once, coaxed her into a conversation.

He liked children and knew how to draw them out. Soon he and the child were chatting like old friends.

"My father's a professor," she said. "What do you do?"

"Oh, I have an overall factory."

"How funny!"

"No, not much fun; but I must make them to buy nicer things for my little girl."

"What's your little girl's name?"

"Mary."

"That's a pretty name. Mine's 'Mary,' too. And my middle name is Anderson."

"What?"

"Yes, sir," and she became a bit frightened at this change in her new friend.

"Was that your mother's name before she was married?" he questioned eagerly.

"Yes, sir. Don't you think it's a pretty name?"

"Yes." Then, absent-mindedly, "Well; well."

After a moment he again spoke, but with a voice in which

was mingled surprise and relief. He inquired his way; then dismissed her with these words: "Tell you mother that the 'Bridge Builder' is coming this evening to see her and her family."

Then, while the child gazed at him in wonder, he turned to walk slowly and thoughtfully toward the old college auditorium.

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THE AWAKENING.

Nature, there was a time when my soul's eyes
Were shut to all thy grace and beauty.
Naught of mysticism could my brain discern,
Within thy placid face all was a blank.
The trees no secrets spake; the birds no music.
Wonder, indeed, was there in many things
But my young thoughts turned seldom from
their path,
To find it. Now are all things changed. My
spirit
Stirs in its narrow house—there opens a window
And here a door—the clean air wanders in,
And I behold old forms take on new life
And turn to golden mysteries.

WILLIAM MULLER BAYNE.

THE NEW LEARNING.

Is there not something deeper than a mere childish disinclination to work which causes school boys to despise History and many other studies, as they are taught in the average high school? Laziness was not the motive which impelled hundreds of German school children to commit suicide rather than perform the dull and laborious tasks which were set them. Why should any normal child care to learn page after page of names and dates which convey nothing more to his mind than the learning by rote of a group of Chinese word characters? Greek and Latin are fittingly termed the "dead languages," when their relation to life is not indicated to the student. The scholars do not relish these husks, and it is small wonder that they turn from them in disgust, or when they feed upon them, experience mental indigestion.

The error is plain, students, particularly school children, have had their minds stuffed with fact and fancy without being shown their relation to life. They have been given mental habiliments, but no form or conception of life upon which to drape them.

True educators have always preached knowledge and action in life, not apart from life, and today we are beginning to see their words embodied in deeds. Teachers are seeking to inspire their pupils to an active desire "to learn," not to prod his passive obedience into a grudging acquiescence "to be taught." They have come to realize that "the desire to learn is the motive power on the road to learning." Mathematics, chemistry, history, all subjects of instruction are being infused with life, that students may pursue them with untiring enthusiasm because in the light of their new knowledge, they may *live*. They no longer see ahead of them tedious pages of facts to be stored away in their brains to moulder and to dissolve into the dust of forgetfulness. They perceive that they have before them an array of the truths of living which may be employed as tools in the work of life, and kept bright to become more useful by constant use.

SENATOR HENRY F. HOLLIS,
OF NEW HAMPSHIRE.

(Address to Harvard Students, Cambridge, Mass., March 23, 1914.)

I was graduated at Harvard in 1892. I believe I am the first Harvard man of radical views to occupy a seat in the Senate.

I do not fairly represent Harvard College in the Senate of the United States. I am quite sure that Harvard College is not representative of the United States, nor of New England. She is too conservative, too hide-bound. She lags behind the times. She does not lead; she follows.

In the middle West the bond between some States and their leading universities is very close. The State legislatures submit questions of public policy to the college faculties, and receive opinions which largely control their action. This is particularly the case in Wisconsin. Imagine, if you please, the legislature of Massachusetts requesting an opinion from the faculty of Harvard College. Imagine the reception it would get on Beacon Hill, if it should find its way there.

It is a great pity that the political arm of our State and National governments should not receive support from our colleges. Our leading college professors look on politics as a low pursuit, a nasty business. Our leading legislators regard college opinion as a joke. Both these attitudes are very real; they are equally mistaken.

There are many brave, patriotic men among the hosts of brainy, upright professors on our college faculties. There are many brave, patriotic men among the Senators of the United States. But the college men regard most politicians as corrupt and insincere, while the politicians regard college professors as impractical theorists. Worse than this, they believe that all college views are tainted by the great sums of money which have been bestowed on our colleges by men of great wealth.

College professors are notoriously ill-paid. They must live respectably; they must associate with people of culture and refinement; they must educate their children at expensive schools and colleges. They cannot save enough to become independent; they are dependent for their very living on the governing board of the college; and the governing board must satisfy the rich men who make princely donations to the college. The belief is prevalent among public men in Washington that every eastern college is eating from the hand that has robbed the pockets of the people. Until this belief is dissipated Congress will have little faith in our colleges or in college men.

There is a firm belief among public men that the President of the United States was forced from the presidency of a leading college because he tried to stem the tide of snobbery, and make that college democratic in the social, not the political, sense. In "Stover at Yale," we read the brave attempt of Owen Johnson to reveal the true weakness of our dearest rival.

In New England our colleges still have a wide influence. A member of the faculty who makes addresses on public questions is listened to with considerable respect, but when it is learned that a college professor has been talking in favor of certain railroad policies from a supposed interest in public affairs, while he has been secretly receiving pay from the railroad whose policies he advocates, our confidence is sadly shaken.

A college at best will act the part of an old man, a conservative old man, in politics. Worse than that, it will act the part of an old *society* man in politics; it is likely to be snobbish, supercilious, and over-nice.

We know that the young man is the progressive spirit, the radical in politics. As he gets older he becomes conservative, his political arteries harden, he slows down. Not until he becomes too old for radical action does he become important

enough to enter the faculty. The dominant note, then, in college circles is the note of the old man, the man of influence, the conservative.

And among the students, where youth is, we find the chill of convention, the rule of the social lion. A few leading spirits attain prominence on their merits, but in a large college the leaders, as a rule, are men of rich and influential families. The man in the baggy suit, with the country haircut, stays in the background during his college course; he feels that he has nothing in common with the rich young blade who cuts a dash with his automobile or riding-horse; he sticks to his books, gets what good he can from his college course, leaves no impress on the college institution, and does not return for commencement. If he does drift back, he finds the same society men in charge, the same recognition of social caste, and he doesn't come back again.

The result is that our colleges represent a very thin upper crust of our great American life. They are always respectable, always conservative, always reactionary. That is why rich men who find things rigged about right for their money-making operations are glad to contribute to the colleges. The colleges are the greatest deadweight the capitalists can fasten upon the necks of the American people. The standpatter is conservative; wealth is conservative; the college is conservative. They are all in the same boat.

My best friends will point out to me tomorrow that there is no help for this, that it has always been so, and it always will be so. I admit that is has always been so; I admit that the great colleges in this country have never led in a great reform; that the great colleges in England have never led in a great reform. But I refuse to admit that colleges are incorrigible; I refuse to admit that they are beyond salvation.

I would begin by declining gifts from men of great wealth. If new buildings are needed,I would call on the alumni for contributions, limiting the amount to be subscribed by a

single donor. I would increase the income by increasing the tuition fees. An education achieved at some sacrifice is more valuable than one acquired through charity.

College life should be made less expensive, more simple; it should be standardized. No more elaborate dormitories should be built. The popularity of the oldest dormitories in the yard shows that college men are not afraid of discomfort. New buildings should be severely plain and uniform. Men of the same college class should be quartered in similar buildings. Rooms and meals should be in fact "commons," and "commons" should be compulsory.

Every man should be compelled to live simply and to take part in military drill once a week. Automobiles and other forms of show should be prohibited. It is not good for a man to have everything in life before he is fairly grown.

Class elections should be by Australian ballot, preceded by primaries, and only men of high scholarship should be eligible to office. Every effort should be made to promote a democratic spirit and to crush out snobbishness. I should impose a limit on each man's allowance. If this did not suit the very rich man, he could easily find a college where he would be welcome.

But, most important of all, college men should be taught what is wrong with the world and the way to set it right; what poverty is and where it exists, what makes and what will prevent it; what injustice is, its causes and its remedies; the reasons for high cost of living and the way to bring it down; the problems of immigration and how to make country life worth living. They should be taught human interests, the brotherhood of man, the glory of self-sacrifice, the passion of service to mankind. They should be taught these things until they are athirst for the battle against the wrongs and evils and injustices of the world.

When a man is distinguished in public service of any kind, he should be invited to speak to the student the truth as he

sees it, so that they may catch the contagion of his spirit and the stimulus of his force and courage.

The motto of Harvard is "Veritas," a Latin word meaning "Truth." I have availed myself freely of that mute invitation to speak the truth as I see it, and I thank you for the privilege.

But Harvard's "Veritas" does not mean the truth of the past alone, the truth that lies buried in the page of geology, that has stood the test of centuries, and has received the approval of scholars long since dead. Harvard's "Veritas" should be the living truth, not the truth of the last century, the last generation, or the last decade, but truth in the making, the truth of the great, throbbing, kindly, cruel world, that pulses today just outside the college yard, the vital truth that makes a man boil at injustice and burn to make the next year better than the last.

SENIOR CLASS HISTORY.

In the fall of 1910 there were one hundred and sixty-five young men from all parts of this and other States who came to this college for their first time. Of course they would have felt better at that time if they had stayed at home. Instead of giving way to that slight feeling of homesickness, they have stayed and made themselves known, each in his own way.

In our first year here, R. R. McIver was chosen as temporary president. He was succeeded by W. T. Shaw, who was our leader until the end of that year. To him belongs the credit of organizing the class, such as the selection of the colors and putting harmony in class and between classes on a firm basis. Under him we learned the spirit of A. & M. Fellowship.

As Sophomores, we were under the leadership of H. M. Cool. He instilled into us a realization of the importance of respect, especially from our new friends of that year.

As a leader for our Junior year, W. R. Patton was chosen. He helped us to throw away our childish ways and assume the dignity and courtliness of Juniors.

D. W. Thorp is president of the Senior class. At all times he works for the betterment of the class and college.

We may well boast of the honors we have taken in class athletics. In football we have won one of the three championships; in baseball, we have won two of the three, and in basketball we have won for three consecutive years.

We have furnished more than our share of monogram men in 'Varsity athletics, of whom we are justly proud. In football we have been represented by Cool (Captain), Anthony, Plyler, Morton and Phillips. In baseball we have had Farmer (twice captain), and Patton. In basketball we have furnished Chambers (Captain), Austin and Phillips (twice captain). McIver, Kephart, Nash and Potter (Captain), have won honors on the Track team.

The growth of the college has been as fast as could be expected. There has been an average of one new building a year for the four years we have been in college, and now the erection of a new Mechanical building is in progress. In the activities of the college, such as Y. M. C. A., literary societies, clubs, and the Honor System, the members of our class have taken a very important part. We must not forget the many who have worked during spare time.

We have fought hard for the battle we have won. We are heroes in this small portion of our life's work. May we prove as successful hereafter.

HISTORIAN.

CLASS POEM.

Into thy measureless Treasury of Years
Have we paid, O, Father Time,
Four nine-month measures of our golden Youth.
But, thou, making return in full, hath given
For each day a day within these college walls.
Well spent have been those priceless hours,
And we regretless can regard
What we, in full recompense, have received.

I.

Surely, our comrades of this place
Were in themselves worthy the exchange.
For in the interchange of thoughts,
Mirthful, fanciful, or grave,
Was priceless friendship to us given.
Many were the pleasures
In those fellowships enjoyed;
Long tramps through vivid autumn's
Leaf-strewn hollows,
The cool air with woodland odors spiced;
Dull winter evenings laughed away;
Or in the silence of friends happily forgot;
Joyous days of Spring, with gladness filled,
Or balmy evenings in whose soft moonlight
College mates' voices mingled in serenade.
Then were there manly sports throughout,
In which the lithe runner to be first
Strained every nerve, and will tired feet to speed,
And courage-trying games well planned
To test, in fierce rush and swaying mass,
The pluck and strength of the clear-eyed.

II.

More than the friends of college days
And the pleasures which we shared
Did we receive for those four measures of our Youth.
Father Time, in addition, gave books, teachers, friends;
That the truth of Life which in them lived
Might attract the truth which within us lay,
And cause it to express order and kindliness in our lives.

On this last day within these walls.
The day on whose tomorrow we,
Awkward and afraid, must commence our larger life,
Some sadness mingles with memory's joys.
But not long. For there cannot fail to come
The remembrance that Time to us has given
Some priceless, though unseen, gifts
From which enough knowledge we have drawn
To read some lines in the Book of Life
And their instruction live as best we could.
And within us has grown a desire
To bargain more, and willingly exchange
Our treasure of years, weeks, then hours
For many pages in that same book.

CLASS POET.

BISCUITS BY WIRE.

He was a strange man. His clothes were of sober cut and color. And there was nothing unusual about his actions as he came toward the hotel desk; but his very presence made me uneasy. It was his eyes. He seemed to direct their gaze with the force of boundless knowledge, and not only to arrive in an instant at a complete understanding of everything in the deserted lobby, but also to perceive everything that was going on in my mind. As he picked up the pen to sign the tattered register, I became panic-stricken and determined to turn him away. Before I could frame the lie that there were no rooms vacant, he spoke.

"Friend, I see that your hotel is empty, and that you can easily give lodgings to myself." Then turning to nod toward a man carrying several large boxes, "and to my man."

My indefinable fears increased when I recognized in the stranger's servant a representative of one of the Hindu races whose pictures had appeared in a recent book of travel. I could not speak as I handed him a pen. He signed an unintelligible scrawl, then said: "What rooms can you give me?"

With a strong effort I jerked out the words: "You can have 22 and 24 on the next floor. Shall I ring for a bell boy?"

"No; give the keys to my man. He will carry the luggage to the room."

"Very well, sir."

"What is the charge for the rooms? I want to pay for them now, as I leave for New York on that early morning train."

I named the amount, and he paid me in gold coin.

"Shall I call you in the morning, sir?"

"No, my man will wake me."

I glanced toward the spot which had been occupied by the

Hindu. He had so noiselessly disappeared, that I was astounded to find the space vacant.

My guest, whose nationality I could not determine, endeavored to put me at my ease. He induced me to seat myself in one of the large chairs in the lobby. He took another; then offered me a curiously fragrant cigar. My alarm by this time had to some extent disappeared; but I still felt a vague distrust of the man. He drew me into conversation; then kept me fascinated by the extent of his information upon men and affairs.

We had discussed everything from slit skirts to the immortality of the soul, and the conversation was becoming a monologue with myself as the sole auditor. In the midst of a sentence my companion suddenly stopped and asked, "Did you know that there was a smaller division of matter than the atom?"

"No," I replied, "I thought that the atom was the unit of the individual element, and so the smallest particle of matter."

"That's true. But, cannot you conceive that an atom of gold or any other element is made of still smaller particles, and that these identical particles may be found in any of the other elements, the various ones owing their peculiar characteristics and properties to the varying number and arrangement of these particles. That the weight of an atom of any element may depend upon the number of infinitely minute particles it contains."

"Yes, you may be right; but where is the proof of your theory?"

"Oh, you want proof. Have you ever seen a current of electricity pass through a vacuum tube, and noticed the luminous glow in the walls of the glass tube?"

I nodded assent.

"Well," he continued, "Sir William Crookes explained this phosphorescence of the glass tube by suggesting that it

was caused by its bombardment by a stream of radiant particles which were shot from the little metal disc which terminated the wire leading the current into the tube. He also imagined that if the air was not removed that its molecules were struck by these minute particles or 'bullets' and produced the glow which may be seen in the partial vacuum or 'Geissler tube.'"

"But that's nothing but electricity."

"Certainly, nothing but a stream of electricity; but it is a stream composed of myriads of 'droplets,' or particles."

"Why, that's the old 'fluid' theory of electricity. What has that to do with the particles making up the atom?"

"It has everything. Those minute electric particles, christened 'electrons,' were allowed to escape from the vacuum tube through an aluminum metal 'window' which prevented the outside air from rushing in to spoil the vacuum. The bombardment of the outside air at the end of the tube by the 'electrons' produced the same glow that they produced inside. This experiment, performed by Professor Lenard, of Germany, proved that these minute electrical particles or 'electrons' were so small that they could pass through the aluminum screen which prohibited the entrance of the molecules of air and even the atoms of element gases."

"That's very interesting, but how do you know that the various elements are made up of these 'electrons' and get their peculiar qualities from the number and arrangement of these particles?"

"No one knows the absolute truth of the matter; but the results of the investigations of the greatest physicists have led them to believe that an atom is nothing more or less than an arrangement of a number of 'electrons' which are bound together in much the same way that the earth, the Moon, Venus, Mars, and various other heavenly bodies are bound together and move about each other in the Solar System. This theory is borne out by many phenomena, the most im-

portant of which is the way the elements composing certain substances yield up a stream of 'electrons' or an electric current in the action of an ordinary battery."

"It looks like that might be so."

"Well, that's the accepted theory of today; what tomorrow may find us believing may change it some what."

I did not hear his last remark, for my mind was busy grasping the significance of our conversation.

"Then because everything is composed of various quantities and arrangements of the elements or rather atoms of the elements, and because the atoms are composed of myriads of these 'electrons;' then everything in the world is made up of particles or charges of electricity?"

"Yes."

"It's almost beyond the grasp of my imagination."

"Oh, no. It's very simple." Then after a moment's pause: "If you will come to my rooms, I will try to prove to you the truth of my statements."

Had I not been fascinated by the broad view his theory had opened to my mental vision, my distrust of him would have caused me to refuse his invitation. I hesitated in my reply, and was lost to the magic of his ideas.

"Yes, I'll go."

"Good. Will you please bring me a little salt from the dining room."

"Certainly," I replied, and not stopping to wonder at this strange request, hastened to obey.

As we entered the stranger's sitting room, my eye rested at once upon what seemed to be some sort of experimental apparatus arranged upon the large center table. My scientific knowledge being limited, I was able to recognize only a small part of the curious mechanism before me. I saw a large electric generator of some sort and two small glass-like chambers connected by a wire. Before I could ask the use of the various parts of the machine, the stranger spoke:

"I cannot explain to you the details of this apparatus; but I may give you, briefly and in the light of our conversation about 'electrons,' some understanding of its action. The two transparent chambers are so constructed and so insulated that they can withstand the action of an almost incredible energy, call it electricity, heat or what you will. The energy that is to act within these chambers is generated by this machine, which resembles somewhat the ordinary laboratory generator of electricity. A substance placed in the nearest of these chambers when subjected to the energy from this generator, changes, first, to the liquid form, the molecules in a wild dance becoming separated by wider distances; then to the gaseous form, the molecules parting still further from each other; then the atoms composing the molecules become so imbued with energy, that they put greater space between each other, and the substances separate into their elements;" here his voice became solemn with the wonder of what he was saying. "Finally, the atoms themselves break up into 'electrons,' and lose their identity. Then these 'electrons' at an incredible speed flow across this wire and into this second chamber, where they become atoms, the atoms uniting to form molecules, which in turn cool through the gas and liquid states to become the solid substance once more."

"You cannot do it!" I cried.

"Yes, *this apparatus* can do it. The experiment is no more impossible than the formation of chemical substances from the elements. Here, give me the salt."

He took the paper of salt from my hand, opened the transparent chamber nearest us, and placed a pinch upon the polished floor. He closed the almost invisible button, and threw on a switch.

Illuminous glow filled the chamber, then diffused throughout the room.

Before my unbelieving eyes I saw the little pile of salt melt, then dissolve into a gas. Soon the little transparent

box became a glowing mass so bright that I could distinguish only its form.

"Watch the other," hissed my companion.

I could see in the second chest only a bright phosphorescence. But after some minutes it seemed to cool, and I saw a vapor condense upon its sides. The vapor became a white solid. So wonder-struck were my senses that I remained motionless.

I came into possession of the power of motion when the scientist removed some of the white substance from the second chamber, to request me to taste it. Scarcely knowing what I did, I put some of it into my mouth. *It was salt.*"

"Well, can you now deny the truth of the theory we discussed," were the first words to reach my benumbed brain.

"Yes, it's true," I replied in the awed tone one uses in a church. Then after a moment's thought, I asked: "Can you transfer any substance from one of those chambers to the other?"

"Yes."

"Could you send a biscuit by wire?" and I laughed foolishly.

"Yes," replied the stranger, grave and unsmiling.

The next morning my wonderful guest had departed before I awoke. I would think it all a dream if I did not have in my safe a handful of salt, and in my memory the recollection of strange tales of a mysterious glow from a hotel window which frightened a drunken negro into making unbroken vows of sobriety.

THE RED AND WHITE

THE MONTHLY MAGAZINE OF THE STUDENTS
OF THE
NORTH CAROLINA COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

[Edited by the Pullen Literary Society (P. L. S.) and the Leazar Literary Society (L. L. S.).]

SUBSCRIPTION:

One year, ... $1.00 Single copy, ... 15 cents.

Entered in the West Raleigh Postoffice as second-class mail matter.

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PRACTICE.

The trouble with the present age is that we have too much knowledge of which we have too little application. Having learned some of the laws of life, we should not waste too much time in learning other laws, but should turn our thoughts to living those we have already learned.

———o———

SPRING.

The voice of the frogs in the rain-soaked lane proclaims to the world that Spring has come. The chirp of the birds in the bosky dell reminds us that Winter is shot all to pieces.—Gower (Mo.) Enterprise.

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PRACTICAL AGRICULTURE.

Some of our graduates in electrical and mechanical engineering are to be trained in the practical side of their professions by the General Electric Co., the Westinghouse Electric Co., the Western Electric Co. Would it not be well if the experiment stations and "test farms" would offer to train the graduates in agriculture in the best practices of their profession.

———o———

LIFE'S WORK.

There are comparatively few of us who have a set purpose in life or who are to take up the work of fathers and other relatives for all time. It would be a difficult matter to foretell the profession of even a few of the graduating class. After all, does it matter greatly in exactly what way we are to earn our bread and serve our fellow-men. Is not the im-

portant consideration the way in which we shall live and build our characters? Cannot the farmer, the bookkeeper, the engineer, alike, make their lives useful, broad and beautiful?

THE RED AND WHITE'S FAULTS.

Some things which might be done to make the college magazine really good are: Limit the number of issues to six, as do most colleges, that quality rather than quantity may be secured; plan each number ahead, that it may appear in the month whose date it bears; cut down the number of editors, and select the new board, not upon a basis of popularity, but according to the quantity and quality of material each candidate has contributed to the periodical.

LAST WORDS.

All we can say as we issue our last number of the RED AND WHITE is to thank the students and faculty for the support they have given us, to welcome the men who are to take up the work of Senior year, which we are finishing, and to wish the outgoing class "good luck" and "good fortune."

SCIENCE

A. J. Doolittle, Editor.

A GREATER ENGINEERING FEAT THAN THE BUILDING OF THE PANAMA CANAL.

Louis W. Baker, '17.

The eyes of the world have been on the work being done by the engineers of the Panama Canal. The mighty feat of wedding ocean with ocean appealed to the reading public. The feat has been said to be one of the most costly undertakings of the age, and one of the most marvelous.

Tell the average New Yorker that under the surface of the streets of his city a greater work is to be done than the Panama Canal, and he will scoff at you. In spite of the scoffings of the New Yorker, you could prove your statement by facts and figures. The Panama Canal is about fifty miles long, from deep water in the Caribbean Sea to deep water in the Pacific Ocean. The distance from deep water to the shore line in Limon Bay is about four and one-half miles. The distance from deep water to the Pacific shore is about four miles; making the real distance of the canal only about forty-one and a half miles. The total expense of the canal is well under $375,000,000.

The subways, now under construction in New York City, will be more than seventy-five miles long—that is, the tunnels under the earth, and under the rivers, will be almost twice the actual length of the canal. The estimate on the subways in round figures totals around $367,000,000. Before the work is completed, this will go to over $400,000,000 or more than $25,000,000 over the amount spent on the Panama canal work.

The fact that the engineering problems are greater in

building the subway than the canal, can be adjudged by the following:

Where the canal engineers had to figure on slides of rock into the open cut only at certain points along the canal, the subway engineers must be on their guard to prevent any skyscrapers, along the line of their cut, from sliding down into it.

This great work, hidden from the view of the passer-by is revealed only by the muffled sounds when the dynamite blasts are fired, or by the sight of derricks at different street corners, where the rock and muck are hauled away, and tons of concrete mixture lowered into the earth.

The casual visitor here knows vaguely that the subways are being constructed, but he is only able to obtain the vaguest information from the average New Yorker, for the latter knows only those things in his city which he can see. The whole trouble is that he has not seen it.

This great feat is the construction of a tunnel that, when completed, will be 35 feet high by 35 feet wide. The actual rock taken out and handled will make the bore larger than this; probably making it about 40 feet by 40 feet, because the concrete walls and roof range from a foot and a half to almost three feet in thickness, depending on the nature of the rock through which the tunnel passes.

The tunnel is being constructed by a concern which is doing most of the subway work on Lexington Avenue. Tunnels as wide as this are not uncommon, but there is no other tunnel through the solid rock, of these dimensions. At this point the subway tracks will be on two levels, and the entire bore, to accommodate both the express and the local trains at this point, is being made at once. A floor for the upper level tracks, which will be the local tracks, will later be built in the tube, but there is an immense scoop in the solid rock at this place.

For hundreds of feet this big bore extends. It is being

driven north and south from Ninety-sixth Street. Careful, up-to-date methods must be used by the contractors and the engineers, who are in charge of the work, and by the men with the drill, the dynamite, and the shovel, that are actively engaged in the work of making this bore. Almost a quarter of a mile of this monstrous tube has been tunneled out, and the muck and rock take to the surface in big iron "battleships," as the iron boxes used for this purpose are called, swung on to the trucks and dumped into scows that are towed out to sea, five miles beyond Sandy Hook lightship, where the debris is sunk in the ocean.

The problems that this concern has had to meet on the work, and solve with the aid of its own engineers and the engineers of the Public Service Corporation, are typical of the work being done by other contractors on different parts of the subway. There is no private concern that could handle all the work of building the subway and have it completed in the time specified, so different contractors have secured different sections of it and have to finish it within a certain time, subject to cash forfeits.

The floor of the tunnel at Ninety Sixth Street and Lexington Avenue is more than 60 feet under ground. The visitor climbs down wooden ladders, or swings down in one of the big "battleships" from the arm of the mighty crane. The crane must be mighty when you figure out that these big boxes weigh over a ton, and when filled with rock and muck, weigh about six tons.

At this point there will be an express station on the new subway, and the local tracks will be directly over the express tracks.

In constructing this tunnel, instead of beginning at the bottom and working up, as is done in the ordinary tunnel construction through rock, the work is begun at the top and worked down. After the rock has been removed the width of the tunnel, the roof of it is propped up with timbers and

later when the rock beneath these timbers is removed, the concrete roof of the tunnel is built. That is the shape this big bore is now in. Later the sides of the tunnel will be lined with concrete and the base of it put in shape for the tracks. Between the base and the roof will be constructed a concrete platform, reinforced with heavy steel girders to hold the tracks for the local trains.

The amount of dynamite used in tunneling through the rocks of the city each day amounts to startling figures. It is estimated that it takes 400 pounds of dynamite per linear foot of the tunnel. On each section of the work, and these sections are about 3,300 feet in length, there are five hundred men employed underground every day. These men work in three shifts, but the night shifts are small ones, and are mainly engaged in preparing things on the work for the day shifts.

On Broadway, especially lower Broadway, the obstacles to be overcome are greater than in any other part of the city. Here the space beneath the streets was filled with gas mains, water mains, sewer pipes, and pipes containing electric cables. These had to be moved out of the way of the tunnel, but in such a way that the supply would not be disturbed.

Another great problem of this work was the tunneling under the streets and leaving the surface so traffic could continue along it. Then there was the problem of bracing the buildings alongside the cut, to prevent them from sliding down into the tunnel.

Subway work on lower Broadway brought out the fact that at Chambers Street and Broadway there was a cemetery in pre-revolutionary days. Several skeletons were found under the street at this point and showed that they were buried more than 150 years ago.

Another part of the work on the subways that compares with the work done on the Panama Canal, was the construc-

tion of the steel tunnels under the Harlem River. The tunnels are built of steel at the surface of the water on flat-boats. When they are completed the flat-boats are towed out to the position where the pipes are to be laid, and the pipes are lowered to the bottom of the stream. Divers did the work of placing them in the exact position necessary, and the work of making the different sections water-tight.

On the Panama Canal everything gave way before the workers. If a building stood in the path of the canal, it was destroyed. In this city nothing gives way to the subway builders. The business of the city must go on without the least hindrance. It has been a problem to do the work under the streets and at the same time keep traffic going. Only in certain places has it been possible to use the open cut method of constructing the subway.

With the completion of the dual system of subways, New York will not only have a rapid transit system to be proud of, but will also have established several engineering records that will stand for some time to come.

ATHLETICS

B. O. Austin, *Editor.*

RESULTS OF BASEBALL GAMES.

March 16—Trinity Park, 0; A. & M., 20.
March 20—Elon College at Raleigh. No game—snow.
March 26—West Virginia Wesleyan, 4; A. & M., 3.
March 27—University of Vermont, 7; A. & M., 7.
March 28—Amherst College, 4; A. & M., 2.
March 30—Amherst College, 0; A. & M., 6.
April 4—Wake Forest College, 0; A. & M., 6.
April 6—Guilford College, 1; A. & M., 5.
April 10—Davidson College, 3; A. & M., 4.
April 11—Trinity College, 0; A. & M., 1.
April 13—Wake Forest College, 8; A. & M., 11.
April 17—University of West Virginia, 6; A. & M., 14.
April 18—Open.
April 20—V. P. I., 10; A. & M., 10.
April 21—Washington and Lee University, 4; A. & M., 6.
April 22—Georgetown University, 12; A. & M., 4.
April 23—Catholic University, 2; A. & M., 4.
April 29—Guilford, 6; A. & M., 5.
April 30—University of Georgia, 1; A. & M., 5.
May 1—University of Georgia, 7; A. & M., 3.
May 4—University of South Carolina, 0; A. & M., 3.
May 6—Trinity, 4; A. & M., 14.
May 7—Wake Forest, 0; A. & M., 1.

STANDINGS OF STATE COLLEGES.

	W.	L.	Pct.
A. & M.	14	5	.737
Elon	7	4	.633
Trinity	10	11	.476
University	9	11	.450
Davidson	5	9	.357
Wake Forest	6	12	.333

SUMMARY.

Total runs, A. & M.	134
Total runs, opponents	79
Average per game, A. & M.	6.5
Average per game, opponents	4.

BATTING AVERAGES.

Player.	AB.	H.	Pct.
Russell	13	10	.588
Winston	89	38	.427
Lewis	5	2	.400
Livermon	63	17	.269
Farmer	88	26	.295
Correll	83	22	.265
Patton	80	17	.213
Gill	33	7	.212
Gammon	77	16	.208
Wheeler	81	15	.185
Jaynes	44	8	.182
Hodgin	46	7	.152
Kincaid	14	2	.143
Coleman	15	1	.067
Tenney	4	0	.000
Wooster	4	0	.000
Johnson	1	0	.000
Team average	744	188	.253

EASTER-MONDAY MEET.

In the Easter Monday track meet between A. & M. and Wake Forest, the Techs had little trouble downing the Bantists by the score of 81 to 36. A. & M. won eleven first places out of fourteen events, six second, and eight third places. McDougald was the largest individual point winner, taking 17 points. Tyner won both first places made by Wake Forest, and made a total of 16 points for his team. Sumner took three first places for the Red and White, making 15 points for him.

The events with winners:

100 Yards—Potter of A. & M., first; Tyner of Wake Forest, second; Harris of Wake Forest, third. Time, 9:4.5 seconds.

High Hurdles—Sumner of A. & M., first; Tyner of Wake Forest, second; McDougal of A. & M., third. Time 17.3 seconds.

One Mile—Milwee of A. & M., first; Hart of Wake Forest, second; McLendon of A. & M., third. Time 4:47.

440 Yards—Nichols of A. & M., first; Jeannette of A. & M., second, Langston of Wake Forest, third. Time 51 seconds.

Low Hurdles—Sumner of A. & M., first; Potter of A. & M., second; Horne of Wake Forest, third. Time 27 seconds.

High Jump—McDougal of A. & M., first; Langston of Wake Forest, second; Hurtt of A. & M., third. Height, 5 feet and 6 inches.

Two Miles—Harris of A. & M., first; Johnson of A. & M., second; Goodson of A. & M., third. Time 10:47.

220 Yards—Sumner of A. & M., first; Harriss of Wake Forest, second; Potter of A. & M., third. Time 23:3.5 seconds.

Shot Put—McDougald of A. & M., first; Horne of Wake Forest, second; Hurtt of A. & M., third. Distance, 36 feet, 5½ inches.

Pole Vault—Tyner of Wake Forest, first; Britton of Wake Forest, second ; Eldridge, A. & M., third. Height, 9 feet, 6 inches.

Broad Jump—Tyner of Wake Forest first; McDougal of A. & M., second; Patton of A. & M., third. Distance, 20 feet, 11 inches.

Half Mile—Ray of A. & M., first; Abernethy of A. & M., second; Bruner of Wake Forest, third. Time 2:12.

Hommer Throw—Hurtt of A. & M., first; McDougal of A. & M., second; Horne of Wake Forest, third. Distance, 124 feet, 6 inches.

COMICS

T. W. Porter, *Editor.*

Appreciation.

"Gee! That fellow 'Anonymous' was a good writer."

The Age of Uplift.

"Was it a good play?'

"Splendid! We expected the police to raid it every minute."—Life.

Expert Opinion,

Sunday School Teacher—"Was it right of Elijah to raise the widow's son?"

Reddy Backrow (eagerly)—"How much was in the pot, and what kind of a hand did Lige have?"

Geometry.

An imaginary line is the waist
Which seldom stays long where it's placed;
But ambles and skips
'Twixt the shoulders and hips
According to popular taste.

Harpers.

The Whole Dog.

"See here, waiter; here's a piece of wood in my sausage."

"Yes, sir," stammered the waiter, "but I'm sure—er—"

"Sure, nothing! I don't mind eating the dog; but I'm blowed if I'm going to eat the kennel too."

LOCAL COLOR.

The man who sees "green monkeys" may be said to be full of animal spirits.—Lippincott's.

ART.

"That old barn of yours is decidedly picturesque," said the artist. "May I paint it?"

"Wa'all, a leetle paint wouldn't do it no harm. What do you charge?"—Lippincott's.

CUTTING UP.

Lyle Flanagan is helping his brother, Silas, cut wood and numerous other things.—The Shield.

The average man's arm is thirty inches long. The average woman's waist is thirty inches around. How wonderful is thy work, oh, Nature.—Princeton Tiger.

THE MEDITATIONS OF A PERFECT LADY.

I.

To be a perfect lady, I
  Find very dull and slow.
I love to go to places where
  It isnt right to go.

II.

I find it very trying to
  Be modest and discreet.
I love to meet the people that
  It isn't right to meet.

III.

And after I have met them, I
Will be quite frank with you,
I love to do most all the things
It isn't right to do!

—Life.

———o———

AT THE TEXTILE BUILDING FIRE.

Fontaine (feeling radiator)—My God! You are hot for once!

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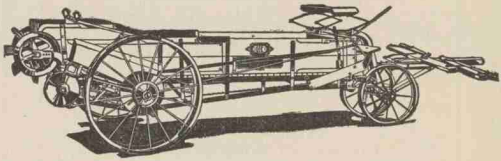

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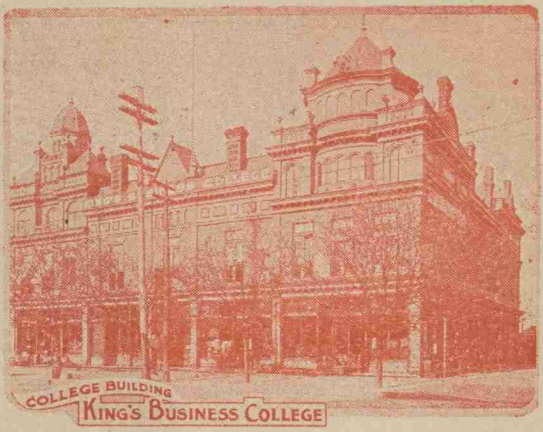

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