

The Spectrum.

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Liquefied Air.

With the wonderful progress that has been made during the past decade, due to the phenomenal discoveries and the application of scientific thought and research along all lines of the industrial arts, one naturally looks into the future with the thought—what next?—or, is there anything that shall hold the secrets of its power impervious to man's research? And yet by the phenomena which I shall attempt to describe, we are only shown the extreme narrowness of man's judgment of things, and after all the very limited range of human observations.

We are familiar with the terms solid, liquid and gaseous, but if we try to define them we see that they are only relative terms depending upon conditions which have been greatly different from the present in times past and are likely to differ, perhaps, as greatly in the future. We know iron only as a solid in the natural state, but could we inhabit the sun we would likely know it only as a gas like our atmosphere. Likewise, could we change the conditions of temperature in an opposite direction, the most of our liquids would be known to us only as solids and we could carry our atmosphere about in barrels and pails like water.

It is the reduction of the atmosphere which we breathe, to a liquid in an open dish, together with its attending phenomena, which is the latest to attract the attention of students of science. Liquefied air has been known for some time, but the conditions of its manufacture have made it rare and expensive even for experimental purposes. Within the past few weeks Mr. A. C. Tripler of New York has succeeded for the first time in this country in furnishing us with liquid air by the pailful, and at a comparatively moderate cost. As

early as 1823 Faraday liquefied many of the gases, such as carbon dioxide, hydrochloric acid, ammonia, etc., by applying great pressures to them at low temperatures. But there remained such gases as oxygen, nitrogen and hydrogen that seemed to resist any pressure even, as we now know, 2,000 atmospheres. It remained for Andrews in 1869 to show that for every gas there is a temperature above which no amount of pressure will liquefy it. This is called the critical temperature and for oxygen is—118 degrees C. and nitrogen—123 degrees C. At these temperatures then, with a sufficient amount of pressure, these gases may be liquefied. These temperatures have been produced by the rapid evaporation of other liquefied gases, obtained at higher temperatures, such as carbon dioxide, and air has by this means been liquefied in very small quantities, but at a cost of about \$500 a pint. Mr. Tripler finds that by lowering the temperature of the mixed gases of the atmosphere (oxygen and nitrogen) to a temperature of—191 degrees C (—312 degrees F) that under ordinary atmospheric pressure these gases will liquefy. The difficulty has been to produce these extremely low temperatures. This is now accomplished by placing the air under a pressure of 2,000 atmospheres, then by passing it through copper tubes one-fourth inch in internal diameter, arranged for cooling the air back to ordinary temperature from the increase due to compression, and allowing it to escape from this high pressure (30,000 pounds to the square inch) through small openings no larger than needle points. The rapid expansion so reduces the temperature that 30 per cent of the escaping air is reduced to a liquid and can be caught in a pail like water. Unlike water, however, it is a smoking, seething, hissing

fluid with a temperature of 312 degrees F. below zero. If properly handled its own evaporation reduces its temperature to slightly below its boiling point, except on the surface exposed, and it actually boils away quite slowly. Even if placed over a fire, it boils less vigorously than when water is added to it. It may be of interest to know that these extremely low temperatures are measured by the resistance offered to a current of electricity passing through a platinum wire placed in the liquid. The resistance offered to a current of electricity passing through a platinum wire placed in the liquid—the resistance supposed to be nothing at absolute zero temperature (—273 degrees C.)

Mr. Tripler presented this university with two or three gallons of this remarkable fluid, and it has been my pleasure to witness the experiments described which were conducted by the physicist, Prof. G. F. Barker, of the University of Pennsylvania. The liquid is of a decided blue tint and a little lighter than water. It represents 800 volumes of air compressed into one which is a mixture of two liquids the same as the air which was composed of two gases. The minor impurities of the air, such as moisture, carbon dioxide, etc., actually solidify so that they can be filtered from the liquid air like dirt from water. In boiling away, the nitrogen disappears first on account of its slightly lower boiling point, the remaining liquid constantly growing richer in oxygen until we have a liquid of almost pure oxygen. In the fumes of this boiling liquid, steel is burned like wood, in fact, all of the experiments usually made with oxygen gas may be conducted with these fumes with much greater ease. A non-combustible piece of rope waste, when soaked in the liquid, burns like gun cotton. Strips of tin placed in the fluid are rendered brittle, and hence are easily broken, but copper is not thus affected, and is therefore used as a receptacle for the liquid air. A tin cup suspended in liquid air for a few moments, then dropped on the floor, broke as if it were made of glass. A rubber ball thus treated and

thrown against the wall, flew in a thousand pieces. Mercury was frozen so hard that it was used as a hammer to drive nails through a board. A little liquid air added to alcohol immediately freezes the alcohol as solid as ice. However, ordinary ice is so hot as compared with this liquid that when placed in a vessel containing the fluid it causes a most violent boiling, the ice being frozen so hard that it crumbles like meal when removed.

Paraffin, rosin, beefsteak, onions, etc., are frozen so hard that they are easily crumbled in the hand when removed. This has to be done with speed and the hand protected, as they are slightly cold. A half cup full thrown into a man's lap causes great consternation, but no harm results, the clothes are not wet, it was only air and a little cooling down can hurt no one. Many substances are rendered phosphorescent by soaking them in the liquid air and exposing them to a bright light. This liquid air is handled quite readily in double glass bulbs, so made that an inner bulb is nearly surrounded by a vacuum chamber which reduces the heat radiation to a minimum. It is needless to say that to hold one's finger in this liquid would be as disastrous as if it were so much molten lead. But the finger may be touched to the liquid if quickly removed with no bad results, the same as with molten metals, and with a sensation which can be more easily remembered than described.

Besides these, many experiments of a more technical nature were performed, which I will not mention. The question now arises—to what use will this liquid air be put? Mr. Tripler's idea was to use it as a motive force, but a thousand other uses immediately suggest themselves, which are food for careful thought as well as speculation.

C. M. Hall.

Johns Hopkins University, March, 1898.

'Tis not the course we take, nor the professors we have, nor the school we attend, but the work we do that makes us men

John Q. Calhoun.

Life is not only "stranger than fiction," but frequently also more tragical than any tragedy ever conceived by the most vivid imagination. Often in these tragedies of life there is not one drop of blood to make us shudder, nor a single event to call for tears.

A man far above the average in intellect, spurred on by a lofty ambition, unsullied by ignoble passion, with a character of exceptional firmness and more than common purity, yet under a fatal illusion devoting all his mental and moral energy to the service of a doomed and unholy cause and at last, passing off the stage of life at the very moment that the structure of his life work is riven asunder. This is in a few words the life story of John Caldwell Calhoun, born March 18, 1802, in the Abbeville District, S. C. Brought up amid the quiet scenes of rural simplicity, surrounded by the comforts of a family in modest circumstances, lacking all the educational advantages enjoyed by the youth of later days, hampered by that narrowness of mind peculiar to a restricted education; he nevertheless lived to attain to the summit of his political ambition. Living contemporaneously with Webster and Clay, his name is handed down to posterity in connection with theirs, its luster undimmed by comparison with those mighty landmarks of our national progress. At the age of eighteen, the future champion of state rights began a course of systematic study, to fit himself for the higher walks of life. After two years of hard work he prepared himself for college and entered the junior class at Yale.

In 1804 he was graduated with high honors, and then devoted three years to the study of law. In 1811 he was elected member of Congress. In the same year he married his cousin Floride Calhoun, who possessed a sufficient fortune to free them from the practical anxieties of domestic life and to enable him to devote his entire time to that profession for which he was so eminently fitted. The times were most favorable for a

clever and ambitious young statesman to make a brilliant debut. The policy of commercial restrictions, by which Jefferson and Madison had tried to force England and France to respect the rights of neutrals had signally failed. The party in power had not the courage to acknowledge its errors, but it was apparent it could not much longer pursue its old course—the United States would evidently be forced to abandon all half-hearted measures and adopt a clear and decisive policy.

From the very first the member from South Carolina was a marked man. We are told by Mr. Cralte, the editor of Calhoun's works, that at the first meeting of the members, Calhoun was, on motion of Mr. Porter of Pennsylvania, to whom the speaker had assigned the chairmanship of the committee on foreign relations—unanimously chosen to preside over their deliberations. So he held from the first the place which, next to the speaker, was the most important in the House of Representatives. The essence of the report is contained in the following sentences:

"To wrongs so daring in their character, so disgraceful in their execution, it is impossible that the people of the United States should remain indifferent. We must now tamely submit, or we must resort by those means which God has placed in our power."

"Your committee will not cast a shadow on the American name by the expression of a doubt which branch of this alternative will be embraced * * * the period has arrived when, in the opinion of your committee, it is the sacred duty of Congress to call forth the patriotism and the resources of the country."

The report concludes with six resolutions giving effect to this opinion. So the first act of Calhoun on the National stage was to sound the war trumpet.

In his early political history we find none of that constitutional contention in his arguments which characterizes those of his later life. He considers

the first question a statesman has to ask himself is not if the act be constitutional, but if it be wise and politic; and unless it is actually in opposition to the constitution, he takes for granted that the constitutional power exists until the contrary is proved. Only when instead of national interests, slave-holding interests became the glasses through which he viewed everything, did he discover things of which he had never dreamed, nay, the general spirit of that great instrument underwent a radical change in his eyes. Although Calhoun deprecated the ambition which prompted the best talent of the House to aspire to executive positions, yet he accepted a place in Mr. Monroe's cabinet as Secretary of War. The department was in a state of confusion when he assumed charge of it. He re-organized it on so simple and at the same time so efficient a basis, that it has in the main been followed by his successors. It witnessed the test of our Civil War and today is a speaking monument to the man's executive ability. During the eight years, from 1825 to 1833, he served as vice-president under Adams and Jackson. His high position exposed him to many harsh and often unjust criticisms. The radical change some of his opinions underwent in later life, his enemies promptly attributed to the attempt on his part to subvert the good of his country to personal ambition. That this was calumny, his friends have always and with good reason maintained. Posterity gives him credit for sincerity and believes this change of opinion was due, more to a maturer judgment and greater knowledge of the principles which he advocated than to the desire for personal destruction. Some of the great dissimilarities which he so aptly portrayed, between the political and social interests of the North and South, may be found existing today between the East and the West. The great agricultural interests of our western states require a different policy for their development than do the vast manufacturing interests of the East; and while the question of state sovereignty has been

settled forever, yet, many of the great Nullifier's arguments could be used with telling effect in support of western claims. And especially is this true of his direful prophecy, that the emancipation of the black laborer would result in the enslavement of the white one. The labor troubles of today seem to point to its realization and Calhoun's argument that slavery was a good antidote for labor dissensions has never been successfully contradicted. It was not a crime, but it was his misfortune, that he saw everything relating to slavery with such appalling clearness, discerning with unerring eye the last consequences at the first glance. But he lost sight of the great fact that the middle classes are the backbone of civilization, and slavery prevents more than any legislation could do, the formation of a well-to-do, intellectual and progressive middle class. No better illustration than this could be found than in the social conditions then existing in the North and the South. He did not stop to consider the incongruity of a union between northern thrift and southern prodigality. The highest statesmanship is not equal to the task of welding these two economic extremes into a harmonizing unity of interests; and though Calhoun did more than any other man to avoid the logical result of this attempt, no one did more toward precipitating the natural outcome.

When Jackson's administration inaugurated the "Spoils System," Calhoun was not that type of statesman to ignore the future effects of such a course upon the American people; he was not the pampered favorite of political "Bossism" but one of those fearless natures that possessed the courage to voice his convictions and the intellect to give his arguments adequate weight. Some of his speeches during that time read like extracts on civil service reform from independent newspapers of the present day, pointing out in clear, incisive language the danger to political purity, if men should be appointed to office, not on account of merit, not from any incompetency of the incumbent, but simply

because they were crafty politicians who held the position by virtue of their ability to gather supporters for the party by a judicious display of the tempting bait of "office." His assertion that such a system would fill the government positions with ignorant, inefficient and corrupt politicians may well be considered by political students of later days, little short of prophecy.

He did not know and understand things by intuition as this privileged class do, but was obliged to study and reflect on the things he was called to legislate upon, hence the positive tone, in which he voiced his opinions.

We leave the study of Calhoun with regret that so great an intellect should champion such an unholy cause. He pursued with an earnestness that sapped his very life blood, the logical workings of his reasoning. Although defeated again and again, he always returned to the charge more determined than before, and when his convictions must have compelled thoughts of civil strife, he hesitated to put them into words, clinging to the last to the false hope of saving the Union intact and with it perpetuating that "peculiar institution," which, a few years later, a new political star was to brand a disgrace to man and an abomination in the sight of God. Had Calhoun lived to read Lincoln's Emancipation Proclamation, it might have affected him like the Declaration of Independence did his fathers. Once brought to see the inhumanity of his course, his brilliant endowments would have been used on behalf of Freedom with the same fervor as they had been used against it.

BINOCULARISMS.

In the investigations of science are the successive steps of hypothesis, theory, and law. At what time in the development of any science we pass from one of these stages to the succeeding one is a question upon which there seems to be no authoritative statement. This situation is to be expected when we remember how the dispositions of

investigators differ. The enthusiast will declare that to be a law which the conservative scientist will scarcely admit to be a theory.

We hear of the law of gravity, in terms of which is reckoned the influence one body has upon another; but time was when this law was only an hypothesis or, at best, only a theory. In like manner we hear evolution spoken of as an hypothesis, a theory, or a law, according to the degree of partisanship with which the speaker approaches the subject. If he have any preconceived ideas against revealed religion, evolution is to him a law as well defined as that of gravitation; if he be a religionist, evolution is generally merely an hypothesis unworthy of serious consideration.

Minds are liable to be occupied by some belief or dogma against which truth cannot make way. Scientific research demands a type of mind rarely found,—an absolute indifference as to whether this or that theory wins, if only truth may prevail.

There are usually two sides to any question. Men have two eyes with which to study the facts of a subject. Often, however, investigators assume that there is but one side, and view that one side with the poorer eye. They too often follow the French method—a hasty, headlong, headstrong habit of generalization, scorning particulars, or merely pressing into service only such as are useful to it and driving the others out. They aspire to be artists rather than craftsmen,—seek to elaborate a beautiful theory rather than to discover more beautiful truth.

The books in the library have been re-arranged and classified, and now would be an appropriate time to make a few additions. The library stands sadly in need of histories, some standard works on philosophy, biographies of living authors, etc. The literary societies would certainly do better work if a better opportunity were given them to consult standard works. We hope the faculty will heed this request.

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It is with pleasure we present to our readers the article by Mr. Hall on Liquefied Air. Experiments of this nature have a greater interest to us when actually seen and described by a person known to us.

Students, awaken to the fact that this month is the time to cast off that odious debt of the Athletic Association. Everyone of you, to show your loyalty to athletics, should attend the Burdette

lecture, and if your own sister is not convenient—take some one else's. Success is assured but let us make it a grand success.

This term opens up with comparatively few students (100) but to those that remain ample opportunities are given for work, rather better, possibly, than in any other term. Classes are not overcrowded and more pleasant afternoon work is given in surveying, in chasing the nimble butterfly, etc. The botany classes are as large as can be conveniently accomodated, and good work should be done in that most delightful of the sciences. With as large a number of students of botany as at present, there ought to be enough enthusiasts to form the nucleus of a good botanical club or natural history society. Such an organization might have such an effect upon some of its members as to influence greatly their life work.

College spirit, student loyalty and student geniality are three things which go far towards making an ideal college. When these elements are present, "after lessons are learned," many things will unconsciously be done which would tend more to build up the college than would a mere aggregation of numbers. If all students exercised these virtues, many desirable things would be accomplished, which otherwise seem to go by default. Among other things we venture to predict that the Oratorical League would thrive, that the literary societies would always have a maximum number of members, that visitors would remark on the willingness of the students to act as guides, that class day programs would be looked forward to with pleasure and finally, that the editor would be overwhelmed with suggestions and material aids concerning the college paper. The trait which stifles and kills these virtues is, primarily, selfishness. If a student is not willing to sacrifice some part of his time in return for the training and culture which he receives, for the broadening and vivifying of the College, then the College

will not advance as it should. It is this pushing of work from our shoulders, where it rightly belongs, upon those of others that must fill the average on-looker with ennui. Soldiering is a virtue—in time of war.

In a recent number of *The North American Review*, President Thwing of the Western Reserve University presents an article upon Personal Morals and College Government. In this article the writer discusses the utility of paternal government on the one hand, and self government by the students on the other. He concludes that the right of self government depends upon the size of the college, the age of the college and the general character of the students that attend. Old and well established institutions, such as Harvard and University of Michigan, have better government where the students have charge of their own conduct than do the smaller colleges, which are closely guarded by rules. Those things which help most in building character and controlling the conduct of students are the personal relationship and influence of the instructor and the necessity of hard work.

The personal influence of the instructor may have greater influence than is generally supposed. James A. Garfield said once that his notion of an ideal school was a log with Mark Hopkins on one end and a student on the other. Now while a Mark Hopkins is not found on every log or in every college, yet it is possible for a teacher to so mold and fix his character as to influence greatly those under him. He should climb above all petty prejudices and minor passions and take his stand in an intellectual atmosphere which the college student will delight to breathe. It is not enough that merely the lessons be heard. Anyone can take that part. He should so impress his individuality—and it should be a superior one—upon the student, that the student shall look back upon that teacher as a model for all his after life. Who can doubt the immense influence that Dr. Arnold ex-

ercised upon all England by his work as head master of Rugby? Nobility is brought about chiefly by birth, we believe, but much can be done in the way of self training. Froebel said, "I see before me, in every child, the embryo of a perfect man," and not until death has one a right to say "I may now cease to train myself."

HOLMES UP TO DATE.

I saw the curl of her waving lash,
 And the glance of her knowing eye;
 And I knew she thought she was "cut-
 ting a dash,"
 As the ball came down from on high.
 And she may pose as the forward "fig,"
 And "rattle" her lively guard,
 And dream that she looks exceedingly
 big,
 As she calls a "foul" on her pard.
 But she shall think, when the game is
 o'er,
 On the enemy's gathered numbers,
 And the ghost of many a hoped-for
 score
 Shall hover around her slumbers.
 That ghastly ball shall worry her sleep,
 As rheumatics cause her sorrow,
 And she shall creep to the cupboard
 deep,
 For drugs, e'er the game tomorrow.
 Ay! Sew up your rips and rosin your
 shoes,
 And bid the game go faster—
 She did not know when she donned her
 "blues,"
 The depths of her dire disaster.
 Then carefully brush from your b'oom-
 ers neat,
 The dust from the field so gorey,
 And go and pose as a maiden sweet,
 To wait for future glory.

—E. H.

Upon the new gateway at the entrance of the Cornell campus will be placed this inscription: "To enter, that daily thou mayest become more learned and thoughtful; to depart, that daily thou mayest become more useful to thy country and mankind,"—The Carletonia,

CAROLINE BRONSON.

Once more our College circle is broken by the hand of death. On the evening of April 10, Miss Caroline Bronson passed from this world, after a brief illness of about ten days. We had but missed her from the College halls so short was her sickness.

Miss Bronson suffered from an attack of measles, followed by pleuro-pneumonia, which latter disease caused her demise.

Her illness began while visiting with Miss Spencer at the home of the latter in Mapleton. This is the second time during an interval of eighteen months that death has removed from the class of '98 one of its members. The class visited Mapleton in a body on the 11th inst. to pay a last tribute of respect to their departed classmate.

The class of '98 has a vacant chair, the Philomathian Literary Society has lost an efficient and enthusiastic charter member and the College an earnest and conscientious student. Had not death intervened, she would have graduated on the twenty-second of June. Her thesis work was well along and is said to be very creditable. Like the balanced books of the accountant her work seems to have been complete until the date of her enforced absence.

RESOLUTIONS.

Whereas, Almighty God in His infinite wisdom has seen fit to call home our beloved co-worker, Caroline Blanche Bronson; and

Whereas, Because of the friendly relations existing among the members of this Society, it becomes appropriate that we tender our sympathy to the bereaved parents and sister, and all to whom she was related; therefore

Resolved, That the death of our co-worker, Caroline Blanche Bronson, leaves a vacancy and casts a gloom which will be most deeply realized by the family of the deceased, and will be an irreparable loss, not only to them, but to the Philomathian Literary So-

ciety, where she was loved by all; to the community and to everyone with whom she was acquainted.

Resolved, That her Christian character, sweet and loving disposition and kindness to every living creature is an ideal example and highly laudable by all, and in the memory of the loving ones that are left, the beauty of her noble life will ever remain and be fondly cherished, and will do much in helping them to bear their overwhelming sorrow.

Resolved, That a copy of these resolutions be handed to the grief stricken parents, to the sister, and to the members of this society.

Chas. R. Foley,
James McGuigan,
C. L. Worst,
Committee.

Whereas, As death has entered our student body and removed one of our members, we hereby resolve that in the death of Caroline Bronson we recognize and deeply feel the loss of a loyal and patriotic student, whose sympathy and services were at all times exerted in behalf of this College and its students.

We feel the added sorrow that accompanies untimely death, and contemplate with deep regret the tragic ending of a college course within such a short time of honorable completion.

To the parents and friends whose hopes and plans have grown with hers, only to be cruelly destroyed at the last, we extend our deepest sympathy.

We further resolve that a copy of these minutes be printed in THE SPECTRUM, a copy to be spread upon the minutes of the Students' Organization, and that a copy be sent to the parents and sister of our departed friend and comrade.

Lawrence Waldron,
Edith H. Hill,
Edwin M. Andrews.

Whereas, Almighty God has, in His infinite Wisdom, seen fit to call home our beloved class-mate Carrie Bronson; therefore, be it

Resolved, That we, the members of '98, extend our heartfelt sympathy to the bereaved family in this, their hour of sorrow; be it also

Resolved, That a copy of these resolutions be sent to the members of the grief stricken family.

Ferdinand Benn,
Purl Bottenfield,
Clarence Follett,
Angela Gibson,
Hugh McGuigan,
Bernard Meinecke,
Annie Small.

THE DECLAMATION CONTEST.

The third annual declamation contest between the Philomathian and Athenian Literary Societies for the Hinebauch-Worst gold and silver medals was held Friday evening, March 19. The chapel was crowded and the occasion equalled in interest and merit anything of its kind ever given in the city. The contestants rendered their selections in an excellent manner, showing both enthusiasm and careful training. The following was the program:

- Piano Solo Selected
Miss Thams.
- Declamation Tom's Little Star
Dorothy Berry.
Athenian.
- Declamation
..... The Death Bridge of the Tay
Angie Gibson.
Athenian.
- Declamation Helen's Babies
Helen Jewett.
Philomathian.
- Music Trio
Cornet, Violin, Piano.
- Declamation
..... The Exiles of the Acadians
Jessie E. Taylor.
Athenian.
- Declamation The Modern Cain
L. P. Bottenfield.
Athenian.
- Music Selected
Mixed Quartet.
- Declamation The
Supposed Speech of John Adams
on the Declaration of Independence
F. G. Benn.
Philomathian.
- Declamation The Last Speaker
P. O. Nordby.
Athenian.
- Piano Trio Selected

Misses Mabel Spencer, Anna Chisholm,
Edith Hill.
Music Selected
Mixed Quartet.

The judges, Mrs. M. M. Davis, county superintendent of schools, Attorney F. B. Morrill and Professor Knowlton of Fargo College, found difficulty in marking, as some of the members were very close, but their final decision awarded the gold medal to Mr. Benn, '98, and the silver medal to Mr. Purl Bottenfield, '98. On the announcement of the decision, both societies "broke loose" and for about ten minutes the College building literally vibrated with yells of each society. Such an outburst of enthusiasm has never been displayed by the societies, and while the sound may have seemed hideous to persons of sensitive tympanums, it must be borne as a constant accompaniment of honorable rivalry. The Athenian yell:

Rickero, Bickero; I just guess.
Nothing's the matter with A. L. S.
Rah, Rah, Rah.
Rah, Rah, Rah.
N. D. A. C., A. L. S.

The yell of the Philomathians was prominent, yet euphonious, and some of the voices that shouted Hyah, Hyah, Hyah, Bang Zu Bah, We are the Philos, Rah, Rah, Rah, shouted no more for about a week.

The musical part of the program was varied and pleasing, several of the numbers being heartily encored. If the interest increases in the future as it has during the past, we may hope for a contest next year, which will be even more creditable to our institution, and which will evidence greater effort and a more zealous spirit among the students.

C. M. T. S. Register, Cambridge, Mass., seems to lack an exchange column. We should endeavor to make this one of our most interesting departments. It is beneficial to be criticised, affirmatively or negatively, and the exchange of ideas proves a great help.

The University of Chicago and the Rush Medical College have been united recently.

Local Happenings.

War.

"Bugs."

Easter bonnets.

Promenade all—in the evening.

Have frogs hair on their eyebrows?

Keep all dogs away from the dormitory.

Miss Lizzie Olson has moved into the country.

Some of the seniors have their theses almost finished.

Miss Hodges of Mapleton visited the College last week.

Mrs. Nichol has left for a two weeks' visit in the Twin Cities.

B. F. Meinecke has just recovered from a severe attack of measles.

At the next Chemical Club a discussion of *Quo Vadis* will be given.

The second year German class have to "Tell" what they know of Schiller.

Messrs. Follett and Benn have returned to the dormitory; at home after 10:30 p. m.

The Common School for April contains an article on plant physiology by Professor Bolley.

Professors Brannon and Babcock, of botany and chemistry, of the University, were with us on April 12.

Professor Kaufman was in Oakes April 9, making arrangements for the State Dairymen's Association.

The class in theoretical chemistry is making rapid progress, but no new theories have been propounded.

Experiments in the agricultural department, with pedigreed seed wheat, are receiving particular attention.

The horticultural department has purchased two microscopes, to be used especially by the students in entomology.

This month Professor Bottenfield has given a series of talks to the students on the subject of International Law.

Commencement programs are in better shape at the present time than they

have been in any preceding year at the same date.

"Pie, cheese and crust got damp down cellar" makes the finest substitute for high grade swearing—when properly emphasized.

We are pleased to learn that Warren Pickard is slowly recovering from a severe combined attack of typhoid fever and measles.

The President's Bulletin, No. 31, just published, is a brief popular summary of the work already done at the Experiment Station.

Miss Lena Ten Eyck, a graduate of the University of Wisconsin, visited her brother, Professor Ten Eyck, during the first part of the month.

The English department expects to add Charles Dudley Warner's *Encyclopaedia of Universal Literature* to their already extensive library.

A special class in logic has been organized and is making good progress. Besides the regular text-book work, they will study some of Webster's orations.

Professor Ten Eyck is making arrangements for carrying out a thorough investigation of soil temperatures, moisture, etc., and their relation to the growing crops, as directed by the department at Washington.

Tower City Topics: While driving into town last Wednesday afternoon, T. D. Hinebauch saw a large American eagle perched upon a low corner of a haystack near his home; and making a detour on foot he managed to get to the bird unobserved and caught the huge creature in his hands and brought it into town under his arm. A temporary cage was made, and his eagleship was provided with the proper environments for captivity. It appears to be a very large specimen of its kind, and the doctor is being congratulated upon the success of his exploit, which few people would have believed to be possible.

In order to prevent an attack of meas-

les you should drink something or its equivalent.

A "hen party" visited Mapleton on March 25.

Miss Bratton, a former student, visited the College on April 1.

Bayley says that Spain hasn't enough money to buy the 'Higgins.

W. C. Albrant, a former member of '98, was on the campus April 6.

President McKinley sent one message to congress and several to M. C. Henry.

The new shelving in the library adds greatly to the convenience of the building.

Young ladies should be more definite in making arrangements and avoid, if possible, all duplex systems.

The freshman class are learning the secrets of woodwork this term, alternating with botanical laboratory work.

The Athenian Literary Society will give a farce entitled "Wooing Under Difficulties" near the latter part of this month.

One of our gay youths asserted a few days ago that he always goes on his merits—wonder if he didn't mean demerits?

We were sorry to see the librarian leave her post on account of sickness, but welcome her back after an absence of two weeks.

Lieutenant French has been sick for the past two weeks with measles, but will be able to command the cadets when they enter Havana.

English history has been made a regular junior study for the spring term of the science course; this change does not affect the class of '99.

Wm. Lang, a former student, paid us a visit on March 24, while on his way home from St. Paul, where he had been attending school during the winter.

Professor and Mrs. Ladd gave a dinner on March 29 at 7 p. m., in honor of the senior class, at which all members were present with the exception of Miss Bronson and Mr. Meinecke, who were

numbered among the victims of measles. Those present speak in the highest terms of their host and hostess as entertainers.

The baseball enthusiasts are practicing every fine day, and indications are that we shall have a team that will compete favorably with the amateurs of the State.

Canines are unwelcome visitors at the dormitory, and when we saw one fall from the second story window, it reminded us of the oft-quoted words, "Great was the fall thereof."

A complete set of "Shoemaker's One Hundred Selections" is to be added to the library for the use of students who desire good recitations for library, society sessions or class day programs.

Pat—"The top of the mornin' to ye! I suppose ye are goin' to the war!" Mike—"Nope, if they would only foight wid shillalahs I would be there wid the best o' 'em, but no white man would foight wid an electric gun."

Mr. C. G. Warner, a former student of the College, was recently graduated from the Chicago Veterinary College and has been appointed assistant to Dr. Hughes of the college, who is also one of the largest practitioners in Chicago.

The sophomores are doing excellent work in surveying, and we notice that the flags do not remain so long in one place as they did last year. The most plausible explanation for this is that there are no young ladies in the class.

A young lady student, on reading of a "stag party," wondered what name would be appropriate for a party of a similar nature composed of young ladies, and after some deliberation, concluded that "hen party" would be the most suitable name that could be applied. Still there are some who "kick" on the originality of our students.

The chemical department is arranging with fifty farmers in the southern part of the state to make experiments in growing sugar beets. The same parties will probably experiment with chicory. Why may not the growing of sugar beet seed become a profitable in-

dustry in this state? Enormous quantities of seed will be required to supply the American market.

We advise students to turn out en masse to hear Bob Burdette. By doing so he will make them happy, and they will transmit the feeling to the Athletic Association.

Special to THE SPECTRUM: The latest move on the part of the young ladies in the physical culture class is "hopping" around on one limb, but the significance of this movement is unexplainable; it is thought, however, to be a special endeavor to place them on a war footing. We are also pleased to learn that they were compelled to write an examination in the above mentioned position—and with bloomers on.

President Worst, Secretary Farnham and Professors Keene, Kaufman and McArdle, assisted by Mrs. Nichol and Miss Senn, gave a party for the literary societies on March 19. The music was furnished by Schirrmann's Orchestra, Miss Clyde Foster and Miss Bamford. There was amusement for all in the numerous games and dancing, and the guests dispersed voting their hosts royal entertainers, and cheering for the Faculty.

We learn that some of the assistant editors require considerable "punching up" before they hand in their contributions, and that this has to be renewed each issue. There should be no necessity for this, but if it is so obstinately persisted in the local department advocates the creating of a new department to be named the "punching-up" department, and that the editor of the same be furnished with a stick with a nail in the end of it.

The March number of The North American Review contains an article on Personal Morals and College Government, written by President Charles F. Thwing, D. D., LL. D., Western Reserve University and Adelbert College. The subject is treated in a masterly way and should be read by everyone interested in college work.

EXCHANGES.

The McMicken Review, University of Cincinnati, discusses in the exchange column, "The Limits Which We Would Assign to a College Essay." It is too often true that we find in many of our college papers articles on literary and philosophical subjects which are beyond the scope of the ordinary student's knowledge, therefore the subject is treated very incompletely. This endeavor on the part of the student "to lay unsurprising hands upon the crowns of Emerson," also leads to the lack of originality in the essay. Our readers will find our literary attempts more interesting if we confine ourselves to subjects we understand—until we possess the knowledge and experience necessary to writers of "learned essays."

Among our exchanges a contrast is noticed between the average northern college paper and the average southern paper. The southern paper is much larger and is devoted almost entirely to literary articles, which generally are of creditable merit. A just spirit of criticism exists among them as shown by their good exchange departments. The northern paper is smaller, more spicy, with many locals, and generally pays more attention to science. The papers are a reflex of the schools and are in a measure a reflex of the two parts of the country. On the one hand we have a paper as a type of culture, and on the other as a type of utility. In both cases the majority show earnest workers at the head of them.

The Mercerian, Mercer University, Macon, Ga., Andrew College Journal, Cuthbert, Ga., and High School World, St. Paul, Minn., The Ariel, University of Minnesota, and Messenger of Richmond College, Richmond, Va., are found on our table this month for the first time, and all prove to be neat, progressive papers.

The Erskinian, Due West, S. C., comes to us with a number of brief but worthy articles in the Literary Department, and the exchanges show enthusiasm on the part of the exchange editor.

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