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The Cadet Staff

THE CADET.

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The Cadet.

ISSUED ON THE FIRST FRIDAY OF EACH MONTH DURING THE COLLEGIATE YEAR, BY THE

MAINE STATE COLLEGE PUBLISHING ASSOCIATION.

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Contributions from the alumni and friends of the College will be gratefully received, when accompanied by the writer's name. No anonymous articles will be accepted.

Advertising rates may be obtained on applicatio to R. H. Fernald the Managing Editor, Orono, Me., to whom all business correspondence and remittances should be sent. All other communications should be sent to the Editor-in-Chief.

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EDITORIALS.

How decidedly finite we are in our powers of expression and perception! This is our exclamation when we bring together the two facts; viz., the editors of THE CADET have for several years been anxious to receive communications from the alumni of the college, and have extended hearty thanks for all articles received; and several of our alumni have just discovered that expressions of their large and wise thoughts are wanted in the columns of THE CADET by readers and managers, while many others labor under the wrong impression that their assistance is not wanted.

The board extends thanks for suggestions, criticisms, commendations and *articles* lately received and asks that the interest of the

alumni in the college and THE CADET continue to express itself in this way.

Inexperience needs advice,
  Blunder needs a kind reproving,
They who strive hard should receive
  For their efforts an approving

Words and smiles are often good,
  But when men want food and clothing,
They must have material things;
  Words and smiles are good for nothing.

It is our wish to say something that shall make students feel more keenly the importance of using the college library. There has been a steady and rapid increase in the reading matter of the library since it was moved to its present quarters and good judgment has been used in selecting books and periodicals. The number of volumes in the library at present is almost seven thousand, about six hundred of which have been added during the last year. The periodicals are numerous and various. Should not the students apprize and use the library more? The real work of educating is no more to crowd the pupil's head full of facts, than it is to make the pupil capable to learn and digest facts for himself. Our text books contain very little of the knowledge that is in the world, and in order that a man be well educated he must become acquainted with many literary works, and must keep informed on new discoveries and conceptions that appear in periodicals from time to time.

The reading necessary to acquaint a person with these important things may be done if that person exercises due caution in the use of minutes. Many minutes pass in which we do nothing; we do not work, we do not sport, we do not rest; we are simply hesitating about what to do.

Probably the lack of interest in prying into unknown subjects is due mainly to the force of habit, but would there not be ample reward for breaking the force of the habit? The reward would be, increased powers of observation, perception and memory and a large and ever increasing amount of knowledge.

Are studies that are partly foreign to the course which a student has chosen worth the cost of learning? Our desires to educate ourselves in some special line should not be allowed to lead us to regard "side studies" of no value. An engineer would be limited indeed in his field of observation who knew nothing of Rhetoric, Botany, Chemistry, Astronomy or Political Economy, and his usefulness as a citizen, if not as an engineer, would be much decreased. It does not always happen that a young man chooses the right course of studies to suite his tastes and bring him prosperity, and in such cases occupations have been chosen for which the college course has not fitted the man at all unless attention has been given to studies which at the time of their learning seemed useless. Who can tell what he will be doing in five years, or what part of his education will be most useful to him? Men who have graduated from the Maine State College as engineers are teaching Chemistry and Physics. Men who have graduated as chemists are working at engineering, and these are ready to give the advice, "Give diligent heed to each study for you know not which shall profit; this or that."

The board of editors wish to acknowledge the receipt of complimentary tickets to the field sports of the Manhattan Athletic Association held on their new grounds in New York, Sept. 19, and to thank them for their kindness and thoughtfulness. The board regret that they cannot attend.

Invitations and complimentary tickets have been received from the International Press Association, also, for the editors of THE CADET to attend the International Exposition in St. John, N. B., Sept. 21—Oct. 3. The editors would affirm their appreciation of the kindness shown them and express regrets at not being able to attend.

Within a few months the number of members of the Faculty here has been increased by six. Some of these men have been prepared for filling these positions in the very rooms in which they are now giving instruction. Of these, alumni may be expected to know something; other have come to us entire strangers. These in particular need introductions to the readers of THE CADET. We purpose to publish sketches of the lives of each of these men.

Mr. Nathan Clifford Grover, was born in Bethel, Maine, Jan. 31, 1868. His father, Daniel D. Grover, was a prosperous farmer in that town for many years, and it was there that he reared his family, consisting of five sons and one daughter, Nathan being the third son. In 1889, Mr. Grover removed to Redlands, Cal., and is now heavily engaged in fruit growing.

From his early hoyhood, Nathan was a bright and active scholar, fond of sports and ambitious to excel. As a boy his favorite sport was base ball. As for studies, he manifested an unusual interest in the branches of mathematics and resolved that, Providence permitting, he would sometime go to college and satisfy his desire for mathematical study. With this in view he completed his common school studies and entered Gould's Academy, which was situated near his own home. Here for two years he was under the instruction of Mr. H. W. Johnson, a graduate of Harvard, and a third year under Mr. W. R. Howard of the Maine State College, class of '82. Mr. Howard saw in him not only natural ability, and aptness, but a determination of purpose, and willingness to work, which has proven the key note to many a man's success. By the advice and council of Mr. Howard, he determined his course definitely: viz. to attend college, and, pursue such a course as would make his mathematical training of the most practical value.

In 1887 he entered the Sophomore class of the Maine State College and graduated in 1890, with the title of B. C. E. As a student he stood well in his class, always excelling in the mathematical branches. In calculus, for example, he maintained throughout the term the phenominal rank of 100 per cent. As for recreation while in college, he retired from base ball entirely. Tennis he played some, but his especial amusements were checkers and whist. At these he was proficient, but never allowed them to interfere with work. "Business before pleasure" seemed to guide his labors.

In the summer of 1888 he was employed with Prof. Hamlin on Peak's Island, Portland harbor, surveying and laying out house lots. In the summer of '89 he assisted E. D. Graves on an extension of the Somerset R. R. Immediately after graduating he joined a surveying party on the Coos Division of the Maine Central in New Hampshire, where he stayed until late in November of that year. It was now that he was called to a new field of labor. The Maine State College, his Alma Mata, was about to assume new proportions. New buildings were to be added and new studies introduced, this necessitated a larger working force, a new man was sought in the Civil Engineering Department. Mr. Grover's work as a student was sufficient recommendation for those who knew him, and the trustees, by the advice and consent of the Faculty, engage him to assist Prof. Hamlin, his former instructor. After his appointment as a member of the Faculty, he availed himself of three months' study in the Post Graduate Department of the Massachusetts Institute of Technology, before assuming his duties. He is now in charge of drawing, field work, and other branches of the Civil Engineering course of this college.

LITERARY.

MY RETREAT.

In the dense and shadowy forest,
Where the veery and the thrush
With their clear and jubilant anthems,
Break upon the woodland hush;

Where the towhee's notes metallic,
And the warbler's trilling song,
Ring out gladly from the tree tops—
Glorious music all day long;

Where the goldthread imtermingles
With the twinflower's trailing vine,
And arbutus, sweet and fragrant,
Twines among the soft ground-pine;

Where hepaticas blossom gaily,
Trillium and bellwort spring,
Wood-anemone and violets
Forth their wealth of whiteness bring.

Where some babbling, bubbling brooklet
Winds its murmuring way along,
Creeping through the shady forest,
Rippling forth its liquid song;

There is where my footsteps wander
When I would forget all care.
There I drink in strength and vigor
From the pure, cool, balmy air.

There I love to sit, and know that
  Bird and flower, tree and vine,
Earth and rock, bank, brook and forest,
  All these to enjoy are mine.

Would you too escape the fretful
  Sound of voices, tread of feet,
Then accept this invitation,
  Come and share in my retreat.

'89.

A FEW STAGES IN THE EVOLUTION OF PHYSICAL MEASUREMENTS.

Commensurate with progress in physics which is worthy of the name, has been the growth of the idea of physical measurements. Maxwell says: "We owe all the great advances in knowledge to those who endeavor to find out *how much* there is of anything," and Sir William Thompson says that one has made a beginning in science "when he can measure what he is speaking about, and express it in numbers." Indeed so conspicuous a factor is this in modern scientific work that physics has recently been defined as "the science of measurement."

The development of this idea has come late in the history of physical science. While the Greeks had a science of geometry to which very little has since been added, their notions of physical laws and phenomena were so crude as to be almost ridiculous.

The reason for the almost total failure of the ancient philosophers to formulate a basis for physics, in any degree satisfactory, has been the subject of much discussion. It is commonly held that they did not observe natural phenomena, and that they did not give due weight to the teachings of experience. More careful investigation, however, seems to show that such was not the case. Nor were they lacking in the contemplation of those phenomena, which is always a requisite for success. No philosophers were ever more meditative upon perplexing problems then were Pythagoras and Aristotle. But they wrought out no sure foundation for subsequent investigation chiefly for the reason that they were content to observe that certain effects followed certain causes, without endeavoring to compute *the quantitative ratio between them.*

The meaning of this may be made obvious by a single illustration. Aristotle in his "Mechanical Problems" asks and answers the following questions:

1. "Why do small forces move great weights by means of a lever, when they have thus to move the lever added to the weight? It is because a greater radius moves faster."

2. "Why does a small wedge split great weights? Because the wedge is composed of two opposite levers."

3. "Why, when a man rises from a chair, does he bend his leg and his body to acute angles with his thigh: It is because a right angle is connected with equality and rest."

4. "Why can a man throw a stone farther with a sling than with his hand? It is that when he throws it with his hand he moves the stone from rest, but when he uses the sling he throws it already in motion."

5. "Why is it difficult to distinguish a musical note from the octave above? It is that proportion stands in the place of equality."

It will at once be seen that not a single suggested solution involved the slightest idea of quantitation, nor indicated that it had occurred to the author that they could be worked out along that line. And yet it is now well known that their only method of solution lies precisely here. (Compare the correct explanations given by Archimedes, Newton and Lagrange.)

Physical science in the middle ages had much with which to contend. The two principal causes of its lack of progress were, first, the attitude of churchmen; and secondly, the blind adherence of the philosophers to the doctrines of Aristotle. With the former we have nothing at present to do. Of the latter it may be said that it was only the old conflict between fruitless speculation and reasoning from exact measurements. When Galileo attempted to formulate laws for falling bodies, he was confronted with that old *dictum* of Aristotle that some bodies possessed levity and others gravity, and that they fell with varying degrees of rapidity, according as one or the other property prevailed.

In this brief sketch it is impossible to assign to Stevinus, Piccolomini, Francis Bacon or Newton and many others, the part played by

each in the establishment of a true scientific method. Pope says of Sir Isaac Newton that "God displayed him as we display an ape." While the complimentary character of this reference may be somewhat questionable, it is nevertheless true that among his contemporaries not only, but among men of whatever age, the discoverer of the law of universal gravitation will ever stand apart as a genius greatly to be admired and highly to be exalted. He would have been preëminently great as a mathematician, had he not been a greater natural philosopher.

A study of the methods of investigation employed by Newton is a most profitable source of inspiration to beginners in science. He was his own most severe critic. What he was after was *the truth*. One cannot imagine him indulging in a verbal quibble to cover a weak spot in his argument. Even his great law was laid aside for sixteen years as not proven, until a more correct measurement of the earth's surface convinced him of its accuracy. From his labors, it is not too much to say, the modern idea of physical science took its origin.

Passing on to consider the science of more recent times, we find that the progress of electrical knowledge well illustrates its own dependence upon a method of exact measurement. While great credit must always be given to the contributions made in this department by Otto Guericke, Galvani, Franklin and others, it was nevertheless the determination of the three principal electrical units, the Volt, the Ohm and the Ampére, together with their derived units, the Watt and the Coulomb, that prepared the way for its remarkable advancement in the last half century. Before the establishment of this system of units, physicists were dealing with a mighty but unknown force. Those most familiar with the subject used it as a toy with which to amuse themselves and admiring friends. The idea of the Cosmical telephone or that triumph of modern skill, the electrocution machine, was as far from their minds as the inventions of coming centuries are from ours.

In conclusion reference may be made to an important enterprise undertaken by scientists in various countries, which, if brought to a successful issue, will do much towards the removal of obstacles at present confronting the worker in physical measurements. I refer to the attempted unification of the various systems of weights and measures. Whether it shall ever become practicable or even desirable to introduce the centimeter-gram-second system into the various departments of mechanical industry, it is nevertheless true that such a system is indispensable for carrying on scientific investigations, and it should be thoroughly mastered by every student of physical science.

JAMES S. STEVENS, PH. D.

SUGGESTIONS.

TO THE "CADET":

Some few days since, in a letter to Orono, I made some suggestions regarding the methods by means of which the Maine State College might be made more useful and its field of usefulness enlarged, I found afterwards that some of these suggestions had been accepted in advance and that more were under consideration. This, together with an invitation to contribute an article to the October number of THE CADET, emboldens me to outline more fully such changes and improvements as seem to me possible to be made at Orono.

Whatever I write, I write concious of my fallibility and "with all my imperfections on my head." I have been long absent from Orono, I am not thoroughly in touch with the later work, aims, and thought of the institution and I intend least of all, to carp at or criticise the work of men, abler and older than I, but as Lord Bacon says, "Since the man who stands a little removed from a spot of ground may often survey it better than those who are upon it, it is not impossible but that as a spectator I may have observed some things which the actors themselves have not," so it may be possible that a suggestion from a spectator may be of some value to the actors at Orono. The Maine State College no longer stands a beggar at the gates, living on the crumbs that fall from the rich man's table. From the central government, from the State, from the munificent liberality of Ex-Gov. Coburn, she has received that finan-

cial aid of which she so long stood in need. With good facilities, excellent situation, good equipments and officers, and a good faculty, the only technical school in Maine and the one school of liberal learning, for which a student can prepare in a country High School, the State College occupies a broad and important field.

There is one serious fault and it has been commented upon by press and people to such an extent that it must be remedied or in spite of our new found prosperity the college will fail of its purposed career. It is the small number of students. Where we would expect two hundred, we find eighty.

There are reasons for this. I would give these. Others may suggest themselves to each of those interested in the college.

First; the name. Is it necessary that anything more than "Maine State College" be used to designate the institution? Make the courses in Agriculture and Mechanic Arts as broad as possible, as prominent as you like, but don't handicap the men who are working to induce young men to go to Orono with all that that long title suggests and implies. It has kept hundreds from ever investigating the institution.

Second. The fact that the college is practically unknown. It has been my pleasure and privilege to talk State College to several intelligent, fairly-posted men in this town who never heard of it. Scatter circulars and catalogues over the State. Have a dozen High schools in each county made fitting schools for the college. Send circulars to teachers, urging the claims of the college on their attention and that of their pupils. Have the college talked up at Teachers' Conventions. Exchange THE CADET with obscure country weeklies, each of which carries the news of the world to many a family reached in no other way. In short, advertise, push, and boom the college in every conceivable way.

Third; the curriculum. I am treading on delicate grounds now, and I am conscious of it, but cannot wise changes be made in the course of study at Orono? Why is it that so many enter in the spring instead of fall unless because the first term's study can be taken at home as well? Physiology is taught in all our common schools. Rhetoric and French can be entered upon at most High schools, but of course are necessary studies, still they with Geometry and Botany make up a small year's work. Cannot more work be done in the first year and a half and in the Junior first half profitably? If so, certain other studies can be taken up through the course. I would suggest a term or more in Pedagogy in the Science and Literature course; a much longer and fuller course in History, modern and ancient; the addition of Spanish to the modern languages, and if possible, something in the nature of a brief and elective course in the dead languages, as much at least as a good High School gives. It is easier to suggest than to carry out, but I make these suggestions in all good faith and with full knowledge that some of them may be impracticable. I make them, too, in the hope that they may call out letters from others whose ideas may be of more value.

Of one thing I feel assured, that under the direction of President Fernald, of whose great efforts in behalf of the college, I am well aware, our Alma Mater cannot go far wrong, and that her journey will be upward and her face turned toward the morning. The tide in our favor will soon begin to flow. The darkest days are passed, and it only remains for us to work and wait a little longer and success will crown the efforts of all who are interested in the Maine State College, or if we do not gain success in the near future, make and keep the college what it should be and has been and I believe is, and as the old Greek philosopher said, "We'll do better than achieve success, Sempromus we'll deserve it."

W. R. PATTANGALL,
Principal High School, Machiasport, Me.

ALUMNI, ATTENTION!

TO THE ALUMNI OF THE MAINE STATE COLLEGE:

Do you realize what the present condition and prospects of your *Alma Mater* are? If you do not a few facts and figures may interest you. The first class graduated in 1872 and up to the present time the total number of alumni is 349. At the present time the Faculty num-

bers nineteen, of whom eleven are of "our own make," and three of the eight members of the Board of Trustees are also graduates of the college. The total appropriations received from the State have been $301,718, the endowment fund is $231,000 and in addition to the income derived from this $17,000 will be received from the national government for the year ending June 30, 1892 under the provisions of the Morrill bill. No tuition is now charged. The various courses of study have been revised and improved, short courses in agriculture established, and new courses are contemplated. With the new buildings, enlarged Faculty, and the increased means of the college, with the consequently greatly improved facilities for instruction and with free tuition a large increase in the number of students may be expected in the near future. The Experiment Station has a staff of eight and property amounting to about $15,000. It has an independent income of $15,000 annually.

While there is no desire on the part of any body to restrict the proper development of the agricultural courses, let us not forget that there are strong influences at work looking toward the restriction of the other equally important features for which the College was established.

It is especially important at this time to secure the cooperation of every alumnus in making the Alumni Association a live, vigorous organization, and the good which it is possible for it to accomplish can hardly be overestimated. It is desired to arouse the interest and revive the enthusiasm of every alumnus, to secure his cooperation and assistance in making the Maine State College what it ought to become, not only the greatest institution of learning in Maine, but one of the best, even if not one of the largest or richest in the nation. This should be its destiny. You can aid in bringing it about; will you not?

The Commencement of 1892 will be the twentieth anniversary of the graduation of the first class. At the meeting of the Alumni Association last June it was decided to hold a general reunion of the alumni in Orono next Commencement. Arrangements will be made during the year and a grand event may confidently be expected. Make your plans now to be present at that time, and let nothing interfere with your carrying them out. Plan to see the new and handsome buildings, beautified and well kept grounds, see improvement and the promise of a vigorous and healthy growth on every hand; renew old friendships and make new ones at that time. Take your wife along to see that you have just reason to be proud of your *Alma Mater*.

Do you take THE CADET? If not, you should subscribe at once and you will be amply repaid for the trifling expense. For the current year it is under able management and will contain full accounts of the changes and improvements at the college as well as many personal items regarding those you were associated with in student days. Try it a year, and if you are not satisfied—well, you ought to be.

Write any suggestions that occur to you as to what the Alumni Association should seek to accomplish and the best way in which it may be done and any features that would add attractiveness to the reunion next June to the President of the Association, Prof. H. M. Estabrooke, Orono, Maine, or to the Corresponding Secretary at Findlay, Ohio. Any such favors will be appreciated.

Yours very truly,

RALPH K. JONES,
Corresponding Secretary.

OFFICERS OF THE ALUMNI ASSOCIATION.

At the last annual meeting of the Alumni Association, the following officers were elected:

President, H. M. Estabrooke; Rec. Secretary, F. P. Briggs; Cor. Secretary, R. K. Jones; Treasurer, J. N. Hart; Necrologist, L. H. Merrill.

CLASS SECRETARIES.

'72, E. J. Haskell; '73, J. M. Oak; '74, Walter Balentine; '75, E. F. Hitchings; '76, E. M. Blanding; '77. S. W. Gould; '78, E. C. Walker; '79, F. E. Kidder; '80, A. H. Brown; '81, C. L. Moore; '82, W. R. Howard; '83, L. W. Taylor; '84, G. H. Allen; '85, J.

N. Hart; '86, R. K. Jones; '87, D. W. Colby; '88, T. G. Lord; '89, C. G. Cushman; '90, G. H. Babb; '91, Prescott Keyes.

A WEEK OUT.

The opinion has always been prevalent among the boys that in order to have a good time during a week of camping as a military organization, the camp must be made at some fair or other place where there are many people and much excitement, and that the journey must not be made on foot, they now believe that neither of those is necessary.

Plans having been made for our marching to Fort Knox, the march to commence Monday, Sept. 14, at 9 A. M., it was with a mixture of feelings of anticipation of pleasure and dread of tired bones that we took our places in ranks at the sounding of assembly. It had been the intention of Lieut. Hersey to ferry the corps across the river at Webster and march it to Bucksport by the way of Brewer, but as the tents had not arrived, such a course had to be pursued as would insure to us shelter that night. Accordingly passage to Bangor was taken by rail and a drenching shower was escaped. After partaking of our steward's sandwiches and turnovers, we pursued our journey which led us through Brewer. The day was hot, the streets were muddy, but scenes were varied and rests came often. Mr. Sargent's kindness in treating with sodas is remembered as one of the events of South Brewer.

After passing the night on the park in Orrington, we marched toward Bucksport along as pleasant a road as is often found. The beautiful scenery of the Penobscot surrounded us as we traveled, now ascending, now descending the gentle hills, greeted on all sides by smiles and flying streamers. Our advance guard gave warning of our approach, our rear guard was not to early to do the foraging act which was nothing more than the accepting of treats. Songs and jokes shortened the distance and Bucksport was reached about noon. The crossing of the river was soon effected as was the pitching of the tents, and soldier life began. The trip had been so pleasant that the unpleasant ideas of "roughing it" were no longer entertained. The work of camping was hardly done when friends from Bucksport came over and expressed their purpose to have a dance in their town Wednesday evening for the pleasure of the cadets.

There was no lack of confidence in the honor of the boys, apparent in Lieut. Hersey as he granted permission to a majority of his battalion to attend the dance, and naturally enough there was no abuse of the confidence, liable though students are to acts of mischief for their amusement. By means of the dance an evening was passed very pleasantly, thanks to the people of Bucksport. Sergeant Hegyi, the officer in charge of the fort, kindly admitted us on two afternoons and explained the use of cannon, cannon ball, grape and canister shot and biscuit oven, also the unique arrangement of walls, mounds and loopholes. With what wonder we looked upon the massive structure! with what feelings of awe we passed along the dark passages, peering into magazines, and hearing in caves and passages, provision rooms and dining rooms the painfully loud echoing and re-echo- of our own voices!

The art of constructing hasty fortifications was taught by Lieut. Hersey, and the knowledge gained put into practice on a field near the camp ground. The fortification was placed where it commanded the road leading to the camp in the direction opposite from Fort Knox, thus making the corps quite safe against invaders. The cadets were divided into four reliefs, each relief working ten minutes and resting thirty. In this way a trench was made in two and one-half hours which would protect the corps in a kneeling position.

Hon. Parker Spofford having arranged a reception for Gov. Burleigh, the Coburn Cadets had the honor of an invitation, and many had the pleasure of responding to it. Additional honor was ours to enjoy when the Governor of the State and Adjutant General Sprague called on the camp Friday morning and gave us the privilege of meeting His Excellency and his Adjutant General individually. The two companies were formed on their parade ground, and their captains having met the guests, presented their companies man by man. The guard was presented in a similar manner by the Officer of the Guard.

After this inspection by the Governor of the State, and Adjutant General Sprague, camp was broken about 10 A. M., Friday, the eighteenth inst. and at 11 A. M. the field was deserted.

The march was next directed toward Winterport, which town we were cordially invited to visit by Hon. Fred Atwood, one of the warmest friends of the college. The first three miles of the march were over a very hilly road, and when within about a quarter of a mile of the village of Prospect, it was found that by crossing a field back of the village, about half a mile could be saved. This direction was accordingly taken and in a few minutes a rest was given in order for Mr. Spencer to arrive with dinner. While eating this meal prepared by our most accommodating steward, Uncle Ben drove up and informed us that the good people of Prospect had prepared a fine dinner for all and that they were much disappointed that "the boys" had failed to pass through the town. We were all much disappointed, but the distance to the village and the fact that we had already eaten an abundant dinner prevented our returning to the town. The people of Prospect have the most cordial thanks of the entire corps for their kindness in arranging such a reception.

The afternoon march was through a delightful country, and this, together with jokes and songs, caused us to be in the best of spirits when we arrived at Frankfort about 2.45 P. M. Here too were flags flying and a bounteous treat prepared. A rest of three-quarters of an hour was much enjoyed and the boys endeavored to show in a slight degree their appreciation of their cordial reception by cheers and songs.

Upon arriving at the outskirts of the beautiful town of Winterport where we were to camp for the night, we were met by a number of Winterport's most charming young ladies, an attention which filled our hearts with cheer. The band soon arrived and we were escorted into town in a most hospitable manner.

Upon looking down the principal street, one would have thought that the President of the United States was coming rather than a battalion of college boys, were he to judge from the beautiful decorations displayed. The street was literally overhung with the national colors; from every door and window, and even on the fences flags were flying, so faithfully had our friend Hon. Fred Atwood worked, that we might be well received.

The Town Hall was beautifully festooned and in the center appeared the well known "C. C." From Commercial Hotel was suspended a brilliant display of flags of all nations.

After parading for about half an hour, we were escorted to the residence of Mr. Atwood, which was most beautifully decorated, also showing the initials "C. C," and received at the hands of the ladies most delicious cake and coffee, followed by bouquets.

By this time a heavy shower was gathering and we were obliged to take a hasty departure for our barracks. Because of the rain it was so arranged that we camped in the basement of Union Hall, which saved our getting drenched by having to pitch our tents in the rain.

About 8 P. M., the cadets formed in front of the stage in the hall, and the people of Winterport were cordially received by the four commanding officers of the corps. After the the reception a short exhibition drill, under command of Lieut. Hersey, was given by request. The boys then gathered upon the stage and indulged in a good jolly "song," assisted by some of the young ladies. Dancing began at 9.30. A pleasanter gathering of young people could not be found, and all fatigue from the day's march was forgotten until the "wee sma' hours." Although we had much enjoyed marching and had felt but little inconvenience from it, yet as we had kept rather late hours for the last few nights, and as it was desired to reach Bangor by noon, it was deemed best to take the train from Bucksport Centre at 10.10 A. M., Saturday. Accordingly after farewell cheers and songs, we left this most cordial of towns, slowly and sadly, for the ferryboat which was to transport us to Bucksport Centre. The cadets feel that they can hardly express their gratitude to the people of Winterport for their hospitality, and especially to Hon. Fred Atwood who so kindly extended the invitation; to the band for its inspiring reception; to the

managers of Union Hall for their great kindness; to the proprietor of Commercial Hotel; Mr. P. C. Rich, H. C. Atwood, J. Bolan, R. S. Runlett, Dr. Baker and all others who took great interest in the welfare and pleasure of all.

Especial mention should also be made of the many attentions shown by the ladies, which added so much to the enjoyment of our brief visit. Much credit for the many pleasures afforded is due Mrs. Sproul, Mrs. J. C. Atwood, Miss Doe, Miss Hall, and to others who were extremely thoughtful; and also to the young ladies who so kindly escorted us across the river to the train. We arrived at Orono about noon and were soon enjoying hearty dinners at home. Although somewhat fatigued, we feel that the outing has done us much good and that we shall pursue the work of the term with more vigor than before. The advantages in a military line can hardly be appreciated by one not versed in the science.

The cadets desire to express their thanks to Lieut. Hersey, who during our trip took so much interest in the welfare of all, and who was in every way so extremely kind and generous. It gives us great pleasure to think that he will be with us for three years.

IN MEMORIAM.

CHARLES F. BRADFORD.

Sept. 7, 1891.

Comrade, the days are few since first we said good-morrow,
Only one winter's snows, one summer's sun and showers,
Only one clasp of hands and then, alas! the sorrow
To make thy narrow bed where spring the grass and flowers.

Comrade, farewell! sweet be thy dreamless slumber,
Sweet the awakening on some celestial shore;
Love gently weeps to lose thee from our number;
Faith smiles and whispers, "Not lost, but gone before."

RESOLUTIONS OF RESPECT ON THE DEATH OF CHAS. F. BRADFORD.

Whereas, death has again visited our class and stricken down one of our members, Charles F. Bradford, therefore

Resolved, that by his death the Class of '94, Maine State College loses a highly esteemed member whose absence will be deeply felt by all who knew him.

Resolved, that we extend our sympathy to the bereaved family and friends, that a copy of these resolutions be sent to the parents of the deceased, also placed in the class records and printed in THE CADET.

E. B. WOOD,
E. H. COWAN, } Committee.
F. G. GOULD,

CAMPUS.

"Turn out the guard!" "the officer of the day."

Breakers ahead.

Have you heard of the recently appointed fish-warden?

Blossom, Codfish, Stocking Feet, Shakespeare, Four Trunks; a few pet names.

The most of the boys took advantage of the two days given for the purpose of attending the State fair at Bangor.

Williams, '93, has been visiting his home for two weeks lately.

The boiler under Oak Hall has been moved to the northwestern corner. It is hoped that it will do better work in the future.

The drills during the month of September have been as follows: Tuesdays, Guard Mounting and the School of the Soldier; Thursdays, School of the Company; Fridays, School of the Battalion.

"Ben" Butler of Hampden, was on the Campus one day toward the last of August.

The Y. M. C. A. gave a reception to the Freshmen on the evening of the 9th of September. Mrs. Fernald kindly loaned her parlors and a good time was enjoyed by all.

Small, 94, has been quite sick with typhoid fever. According to last reports he is convalescing rapidly. We would all be pleased to see him among us again.

At a recent meeting of the Junior class the following officers were elected: Pres., Young; Vice Pres., Kittredge; Sec. and Treas., Webster; Executive Committee, Crosby, Freeman, Gannett; base ball manager, Alford. It was voted not to have ivy day this year. Also voted that the class publish an annual. Crosby was elected business manager, Freeman elected assistant business manager. Voted that an editor be chosen from each society, and one from non society men.

The Agriculturalists under Mr. Gowell scored some of the cattle at the fair grounds in Bangor. They now call themselves capable judges.

Bristol, '92, has returned to us. Where is Doolittle?

Hon. Fred Atwood of Winterpert, one of the Trustees of our Institution, was on the Campus recently.

Timberlake, '92, made a visit to his home during the State Fair at Lewiston.

Prof. Robbins has finished his labors here and has returned to Boston. The Civils made good progress under his instruction, considering the time allotted to each man.

"Peter, have you found the point?"

The officers of the Freshman Class are: President, E. J. Atwood; Secretary and Treasurer, Boardman; Councilman, Folsom.

Jack, '93, was visited by his sister for two or three days early in September.

The Sophomores have elected the following officers: President, W. H. Jose; Vice President, J. H. Ricker; Secretary, Bowler; Treasurer, Gould; Councilman, Norwood; Base Ball Manager, Gilbert; Captain of team, Hayes; Committee on base ball diamond, Rumball. It was voted not to play the Freshmen this term.

Who said Cowan, 2d, was lost while hunting for botany specimens?

The railroad brought our mortality from Winterport, but we feel that we left a great deal behind.

Blue coats and brass buttons may be sufficient protection for a nation but they are no protection for a man's heart.

"We do this only on special occasions."

Query—How many miles is it to Winterport? Answer—It's about six but since there are so many of you it can't be more than four.

Or—Oh, it's about four miles; with a good horse I should call it two miles.

Prentiss attended the Y. M. C. A. reception held here. He says he shall not be back in '92 but will undoubtedly finish with some other class.

After this issue a complete file of CADETS will be found in the library. The exchanges will also be placed there, and they will probably be bound with THE CADET by the college authorities.

The following of the Freshman class have joined societies: Atwood and Ellis, the Q. T. V. Society; Moulton, Hincks and Thomas, the Kappa Sigma Society; Folsom, French, Achorn and Urann, the Alpha Tau Omega Society. Alford of the Junior class has also joined the Alpha Tau's.

The dairy building is now finished and has been occupied by Prof. Chesseman for several weeks. The building is situated about two hundred feet south-east of the barn belonging to the Experiment Station. In the north-west corner on the ground floor is a boiler room with a horizontal boiler of about twenty-five horse power, which supplies the steam for a five horse power engine and also the steam for heating the building. Next on the lower floor is the large cheese room supplied with all the modern appliances for making cheese. The rest of the lower floor except a room about 10x10, which is used as an office by the Professor, is the butter room where are found two or three kinds of separators, besides churns and other appliances. On the second floor just above the boiler and cheese room is the curing room with its many shelves conveniently arranged. The rest of the second story is occupied by a large lecture room, and a small packing room, which is directly over the office. The roof is very steep, making a large well ventilated attic, which is not to be used. The second story is reached by a broad flight of stairs in a large convenient hallway. The work was done by Foster & Son of Waterville, who are working at present on Wingate Hall.

Another building that has greatly improved the looks of the Campus is the one recently built in connection with the hot house. Its dimensions are 30x30, 18 foot posted. There are four rooms on the first floor, work room, office, tool room and boiler room. On the second floor are the store room, assistant's room, and dark room. The heat is conveyed by hot water, through this building as through the hot house. The building is devoted entirely to the horticultural department and is conveniently arranged. Whitney, '93, drew the plans and had charge of the work on the building.

The work on the foundry was completed during the third week of September, but it will not be before next term that the apparatus will be ready for use. The building is similar in shape to the ell of the shop and is joined to the ell. Its dimensions are 24x36 feet, one story in height. There is some talk of engaging an instructor in foundry work for a short time and during that time, letting the students devote their entire attention to that department. A new iron bench saw has been received at the shop and put into use.

The students who take meals at the boarding house, have chosen Tyler, '92, to represent them on the boarding house committee.

It is whispered that Bragg is "Bill the Biter of Bitter Creek;" that '93, will not celebrate Ivy Day; that Tape is a *white* man; that Pious deserves a pension; that "Aaron's baked beans" were in demand at the camp; that '94, is full of hay; that the boys will be well "sot up;" that the co-ed is very genial especially to a certain little Senior; that Stubby returned from Portland happier than ever and is again on the turf; that the *Mayor of Bradley* has been promoted and is now Capt. of the "Horse-Marines;" that Tooth-pick, Skish, Noah, Shakespeare and Long Necker compose the musical bayout; that some of the "Farmers" are full of cheese and gall; that "Hinckley" is very popular; that Stanley painted Lewiston with several bright colors; that "Honey" is pounding Dutch into the Juniors at a great rate; that "Hutch" preferred Bucksport to being on guard; that all the Freshmen have not been named and it should be attended to at once.

Boston has a musical critic who is so intensely musical that he takes soup with a tuning fork.

PERSONALS.

'81,—A. H. Brown, of Old Town, lost an infant son recently.

'82,—A. J. Keith has been appointed City Engineer of Old Town and in this position has charge of the construction of the new sewerage system now being put in place.

'83,—C. W. Mullen of Old Town, has sent 25 men to work in the woods, in Northern Me.

'87,—Charles F. Sturtevant purposes taking a post graduate course at Johns Hopkins University in Mathematics, Physics and Astronomy, for the degree of Ph. D.

'89,—J. W. Edgerly is at work on the shore line near South Perry.

90.—C. W. Dillingham, of Old Town is on a pleasure trip to Boston and New York.—Frank Sawyer, of Old Town has returned to his studies at the University of the City of New York.—E. F. Heath is principal of the Monmouth Academy.—Geo. Pillsbury, who has been employed by the Cushnoc Fibre Co., of Augusta, for the past year or more, has gone to Cumberland City, Md. where he has a position as superintendent of a large pulp mill.—Fred T. Dow has obtained a fine position through President Fernald and Gen. Armstrong of Hampton, Va. Mr. Dow goes to the Island of Montserrat, West Indies, as instructor in forge work and mechanical drawing. On account of the great heat there his services will be needed but six months in each year and he will make visits to his friends during his long vacations.

'91.—Prescott Keyes, Jr., has gone to Bar Harbor as principal of the Bar Harbor High School.

The Personal Editor will consider it a favor if the alumni will forward personal items. It is almost impossible to obtain them, so please forward any thing of interest about the M. S. C. men.

"Did you ever break the record?" asked a gentleman of a bicyclist.

"No," replied the wheelman, but I broke my right arm last fall, broke my watch a week ago, broke my machine twice, and last night I came blame near breaking my neck. I may break the record next."

EXCHANGES.

The advice given by Robert Combe, a professor of phrenology, after an examination of one of the many heads, we think will apply to many and be of great value to all those who would heed it. "Think less of yourself and more of the feelings of others. Cultivate the gentle amenities that make life so delightful. If you must be a bear, dance instead of growling, and because your own feelings are invulnerable, do not imagine that others are equally armored."

In an article written for the *Education Review* says the increase of male college students in the last forty years is one hundred and forty-one per cent. in population has been only seventy-two. Including those students of scientific schools who would probably have taken a classical college course if no scientific advantages had been available enlarges the per cent. to two hundred and nine while the per cent. in population is the same. This does not seem much like a decreasing of college students as many advocate.

One of the recent presidents of Amherst declares at the present rate of progress the women of this country will, at the end of this century be better educated than the men.

The question of shortening the college course is being discussed quite extensively by our ablest college professors. In looking at the question there are several sides to be looked at. Those advocating a shortening claim that the students enter college at a more mature age than in former years, therefore the greater part of the first year is time wasted, time which he could use to a better advantage in preparing for his life work. If a correct census of all the colleges in this country were taken, it would probably be found that Ann Arbor University would fairly represent them in this particular. President Angell claims that the age of entrance of this institution is not increasing, but diminishing. President Patton of Princton, says that the four years' college course is short enough, for the work of the first year can be better done in college than in school, and it is necessary that the work of the last three be done in order to fit them for their respective professions. He also claims that a large part and in some respects the best part of our college education grows out of the condition of college residence and the influence that the students exerts upon each other is of great importance to them in forming character.

TEACHING BY CORRESPONDENCE.

Teaching by correspondence has developed wonderfully during the last ten years, largely being the result of the earnest work of Prof. W. R. Harper, late of Yale College, and now at the head of the new University of Chicago.

At Detroit, Mich., the Sprague Correspondence School of Law is conducting a Law School by the Correspondence method with splendid success. Its students are located in every State and Territory and are among all classes. It is adapted to the wants of students who are unable to attend a law school—to those who are studying in offices, where, by reason of the regular work of the office, little opportunity is had for guidance, instruction, examination, etc., such as is necessary to a thorough grounding in the law; and to those who have a few hours every day which might be profitably used at home in the pursuit. The method or instruction is more thorough, personal and direct than the law school method, or that of "reading in an office." The student is not left to himself, but is continually guided and proven in his work.

See their advertisement in another column.

GLEANINGS.

It happened one time that a Mr.
Fell in love with a maiden and kr.,
And he said: "Be my wife
And bring joy to my life!"
She said: "No, but I will be your sr."

Success requires not something new
To win applause and recognition;
But doing things that others do
Beyond their range of competition.

"Ah! I'm saddest when I sing,"
She sang in plaintive key;
And all the neighbors sighed and said,
"So are we! So are we!"

POULTRY FOR PROFIT.

Are you keeping poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep and eggs and poultry used in your own family? If not, can you explain why not? For poultry properly kept pays the best of any domestic animals. Do you care to learn how a man of experience does make his hens pay better than $2.50 per year for each hen, from eggs alone; and who has to buy all of his grain and meat food? Do you desire to know how to make hens lay the most eggs in a year; how to dress and sell your poultry and eggs to obtain the highest prices? Do you care to learn about, and how to obtain the best breeds and crosses from which to get the largest number of eggs and most pounds of poultry to sell? And when and where to sell them? Do you desire to know how to prevent and treat diseases of poultry; how to get your hens through the moulting season well and strong; how to bring your pullets to early laying, etc.? Do you care to learn how to build the best poultry houses and yards economically, warm and dry? In short, do you desire to know how to make money with a few hens? If so, for the small sum of fifty cents you can learn all of the above and much more. Subscribe for one year to the *Farm-Poultry*, if for no longer. Sample copy will be sent free. It is acknowledged on all sides to be the "Best Poultry Paper Published in the world. *Farm-Poultry* is published by I. S. Johnson & Co., Boston, Mass., and edited by Mr. A. F. Hunter, a well known, practical writer and experienced breeder of Poultry for Profit. Send for index to last volume free; and judge yourself, if as much complete, instructive, practical matter regarding poultry raising can be found in any volume costing four times the price of *Farm-Poultry* one year. Subscriptions can begin any time.

Bank teller (turning to president)—"I do not see the cashier this morning."

President (dry and solemn)—"And I don't see any cash here, either."

Which was a natural consequence.

THE BELL OF THE ANGELS.

It is said somewhere, at twilight;
A great bell softly swings,
And man may listen and hearken
To the wondrous music that rings.

If he put from his heart's inner chamber
All the passion, pain and strife;
Heartache and weary longing
That throb in the pulses of life;

If he thrusts from his soul all hatred,
All thoughts of wicked things,
He can hear in the holy twilight
How the bell of the angels rings.

Let us look in our hearts and question
Can purer thoughts enter in
To a soul if it be already
The dwelling of thoughts of sin?

So, then, let us ponder a little—
Let us look in our hearts and see
If the twilight bell of the angels
Could ring for us—you and me.

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