

# THE SPECULUM.

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WHOLE No. 34.

## The U. S. Government should Grant a Pension to Every Honorably Discharged Union Soldier.

D. F. ANDERSON, '89, OLYMPIC SOCIETY. (FIRST PRIZE ORATION.)

When the armies of Grant and Sherman passed in grand review through the city of Washington, there was stretched from side to side of that broad avenue a banner bearing these words: "The only debt the nation can never pay is the debt it owes to its soldiers." That was the feeling of the people of those times. But there are some now who argue that the paltry thirteen dollars a month paid those men for their hardships. There are many in our northern states who think that our pension legislation has gone far enough, and that it is time to call a halt. The amount paid for pensions is certainly very large. But the war was an enormous one. It is probable that we have the most liberal system of pensions of any country in the world. But the real question is, "Is it liberal enough for justice to the soldiers?"

The numerous private pension bills passed by Congress, and signed by the President, are direct and practical evidence that these men, at least, believe that many deserving cases cannot be met by our present general laws. Beside this, figures show that but thirty per cent. of the soldiers now living are on the pension rolls, and 30,000 of these at two dollars per month. As we look about us and notice how comparatively few of the veterans are able to perform the labor necessary to their own support, can we believe that thirty of every hundred are all that deserve pensions? The healthy soldier is the exception. Men can not march in the burn-

ing heat of summer, and lie exposed to the frosts and snow of winter without serious consequences to their health. And many, nay, most, who may have gone on for some time with no apparent inconvenience, now find that nature is exacting the penalty for laws they were forced to violate. But that is not the worst. In 1886 Pension Commissioner Black declared that 9,000 veterans were under public charity, and that of these 9,000 thirteen per cent. were pensioners and nineteen per cent. blind or insane. Do not the cheeks of every true American burn with shame as he thinks of these men, who, when the strength of young manhood was in their sinews, offered themselves so freely to their country, but now in blindness and insanity are dragging out a miserable existence as common paupers? Is anything more needed to convince any man who desires to see justice and generosity shown to the soldiers, that our pension laws are not liberal enough? Is anything further required to prove that the debt of the nation to its soldiers is not yet paid?

What, then, is to be done? Shall we increase the liberality of our laws granting invalid pensions? This would doubtless be beneficial. But any system of invalid pensions must necessarily cause much unjust discrimination and that of the most hateful kind. Under the present system any soldier who was ready to play sick if any fighting was to be done, can easily establish his claim, as his hospital record will never fail to show him to have been a great sufferer. While the man who was always at the front, who despised going to the hospital if he could possibly avoid it, though he may now deserve a pension, has no hospital record; his comrades who knew of his case are scattered

or dead; his claim cannot be established and he must live in want. There is much said of fraudulent pension claims. While the number of illegal claims granted is very much smaller than is commonly supposed, still those that do exist, very likely come from the unjust system that increases a man's chance for a pension if he was a shirk, and decreases his chance if he was always at the front. The nation had better be cheated than cheat. A fraudulent pension is a disgrace to the man who receives it; but the failure to grant a pension to the deserving veteran is a stain upon the honor of the whole nation. And the only way our country can avoid many cases of flagrant wrong and unjust discrimination is by requiring proof only of faithful service. We have precedents for this. The soldiers of the Revolutionary war were granted service pensions in 1832; those of the war of 1812 in 1871, and those of the Mexican war in 1887.

But the proposition to grant a service pension to Union veterans, and its support by these precedents, is met by the objection that these service pensions were not granted until many years after the close of the respective conflicts, and until but few of the soldiers were left, being then given, as President Cleveland says, "As a parting benefaction from a grateful people." Let us apply the principle of this objection to another case. A man owes debts to one hundred men. He sits down and coolly figures on being able to put off payment of these men until seventy-five of them shall die, and the rest be on the very edge of the grave, when he will pay what remain as a parting benefaction from his grateful heart. Let us have no parting benefactions. If we owe nothing let us pay nothing. But if we have not paid the debt, let us give living benefactions, such as will keep the soldiers in comfort while they live, and let us not mock the last few by flinging our bounty into their faces as they drop into the grave.

Again it is said that many of the veterans in

poverty, or even of those in the poorhouse, can not and do not attempt to trace their misfortune to injuries or diseases contracted during the war; and that some of them are brought to poverty by their own immoral habits. It is a poor rule that will not work both ways. And the United States government did not come to grief through its efforts to benefit the men it asked to defend it. More than this, it was its own sin in allowing slavery such a foothold that brought our nation to its deep distress. But that made no difference to the men who wore the blue. They simply saw that the country was in danger, and they rushed with one accord to its rescue. If a man saves your life and you afterwards find that man in distress, would it not be the basest ingratitude to refuse him aid because his trouble is in no way caused by the effort to save your life? The objection is wrong in principle and evil in effect.

The most common objection, however, is "It would cost too much." What an excuse! One of the great questions of the day is "What shall we do with the surplus?" Our treasury is overflowing and every one admits the evil of piling up money away from the use of the people. We have maintained our tariff and internal revenue taxes to raise money to pay the national debt. Not one dollar has been repudiated. The bond holders who lent their money have received it back, principal and interest, as fast as their claims became due. And shall the men who presented their bodies a living sacrifice, be turned away by the miserly plea "We can't afford it?"

When the war closed the armies of the Republic might have made any demand and no power on earth could have said them nay. But they demanded nothing. They returned to their homes with the love they first held for their country deepened and intensified by their baptism of fire and of blood. And their love is no less to-day. All that they did they would willingly do again. And for whom was all this sacrifice made?

Listen to the words of one of Michigan's Congressmen for the answer: "It was in our fight they fell. It was their valor and their sacrifice that preserved our country, that assured our future, that conquered our peace. It was while bearing their country's flag in the path of patriotic duty that they met disease, disaster and death. Theirs was the sacrifice, ours is the fruition. It is easy in these times of blood-purchased peace to speak lightly of their service, their suffering and their sacrifice. But in that awful hour of dire necessity when the slippery slopes of Gettysburg blazed with deadly fire, and the fate of the great Republic hung in the trembling scales of destiny, the great metropolitan journals had not yet learned to sneer at "the grand army of paupers and mendicants." Then they were patriots. Then they were heroes. Then they were worthy of all praise and reward. Then nothing could be done or promised beyond their deserts. And while the millionaires and the speculators and the journalists made merchandise of their heroism, these men bared their breasts to the storm and rolled back the crimson tide of war."

### Agricultural Schools.

T. F. MCGRATH, UNION LITERARY SOCIETY.

After reading an article on "Agricultural Schools: Their Objects, Methods and Equipments," written by Pres. Geo. T. Fairchild, of the Kansas Agricultural College, it was thought that a brief review of the points presented would be of interest to the readers of THE SPECULUM. The subject is one of special importance at the present time, as the question whether farming must be left to less and less intelligent people as civilization advances, is raised in all the older States where the original type of farming is changing for the worse rather than for the better.

Our people ask, and rightly, "Are the schools doing all that ought to be done for a

rural population, the conservatory of national character?" Many of our institutions and literary works arouse the curiosity and interest as to the gay life of the city and create a distaste and disrespect for life on the farm; and most of the education given in our common schools and high schools is purely literary. It is a knowledge about things, not of them. Technical schools, such as those of engineering, both civil and mechanical, have had the same drift towards the teeming city and the wealth in trade.

The presumption is that agricultural schools and colleges have their mission in checking this one-sided tendency. They have for their aim, then, the promotion of intelligence among farmers, and creating fuller appreciation of the ends, means, and methods of agriculture as a basis of sound progress.

This higher type of farming should not be sought through training a few experts in scientific agriculture, who may dose the multitudes the needed prescriptions for debilitated farms. But the multitudes should be inspired through the youth to better work by a widely extended elementary training.

To reach the farmers with any application of science, we must train the coming generations in the elements of science. The youth from the farm must find in our schools of agriculture the stimulant to scientific thoughtfulness that prepares them for better farming. Farming can never be much benefited by ready made information till a generation is trained to appreciate it, as it requires a mind trained to present wants, to utilize the results of research and experiment.

It appears evident that the moral and material support for thoroughly scientific inquiry can come from no other source than masses of men whose training suggests the need of advanced inquiry. The majority of the untrained farmers seek only for the roughest experiments, and denounce the underlying truths as high spun theories. Only as the leaven of youth awakened to the



nature of science pervades the masses, can the means of higher investigation be secured and experimental stations used to good advantage.

Another fact is beyond dispute: that the trained experts now willing and ready for these genuine investigations are largely the offspring of such elementary training. This we can see illustrated in the recently organized experimental stations. While the majority of the thirty-nine endowed colleges of agriculture have drifted with the tide into university departments or schools of technology, yet the nation looks to the minority for its real leaders towards a more perfect agricultural knowledge.

Accepting these facts as a foundation of certainty, Pres. Fairchild is convinced that the true object to which all the forces of such an institution should tend is such discipline of body, mind and sympathies as shall give strength for the task of elevating agriculture, while the every day surroundings add to the natural curiosity about seeds, soil, moisture, heat, germination and fertilization, variation in plant and animal, and adaptation of parts and forces. In all of this there is abundant room for the truest discipline of perceptive powers, of judgment in all phases of thought, and the most natural cultivation of memory, imagination and true philanthropy. Therefore, the real object is to give genuine education in the humanities through those elements of knowledge which touch humanity most.

To secure this object, Pres. Fairchild says: First, that students should be able to reach the advantages of such an institution directly from their rural homes. Any required examination at admission must be suited to the methods of the rural schools, and in no way is even a seeming advantage to be given to a city grading system as a method of access, as it would weaken the continuity between the agricultural home and the Agricultural College. Second, the course of study must present essential discipline in lines of

most interest. In an ordinary four years' course better results will be realized from a thorough study of the English language than from a mere smattering of other tongues. Again, there must be the discipline of perceptive and reasoning faculties through the science of nature, with illustrations from the things which the students themselves have handled. This will make a series so full of constant adaptation to previous curiosity as to give new zeal to the problems of farm life. Of equal importance is culture in pure and applied mathematics, with their bearing upon human welfare, and enough of history to show the tendencies of civilization, if not the complex forces promoting it, and the essential principles of national economy and government. The grand essentials in all this are two: The principles shall be truly scientific, as broad as all the facts; the illustrations and applications shall fit into the life of the farmers' sons and daughters who study them.

It is essential to such a plan of education that the youth should have his interest in the details of farming kept alive by some responsibility in actual service. Such work brings the student into direct contact with improved methods and means, as well as with questions under investigation; arouses curiosity and develops ingenuity, without which all the information of the cyclopedias is useless on the farm or to the farmers.

Throughout the course, special opportunities for the development of agriculture will occur through the means of special lectures, clubs and institutes. With such surroundings, any student of fair abilities is fitted by both interest and training to share in the discussions of farmers and horticulturists with influence. To accomplish the best results of this method, there must be unity of purpose and unity in execution. The location must be a farm with the buildings and apartments so adjusted as to show their character. Every science must vie with every other for the best of apparatus, especially in the lines of investigation and research. The live

stock of the farm must serve the purpose of a farm as well as a school. It must illustrate the breeds and principles of breeding and show that it has a purpose.

While the idea of profit and loss can never be separated from good farming, it must here be confined to the handling of a given group of stock or the manipulation of certain crops; and such a farm is as truly to be managed for instruction's sake as a chemical laboratory. Economical provision for instruction is the only profit to be thought of.

Such a school needs a more stable and carefully selected faculty than an ordinary college, as where one general purpose is to be served, the symmetry of growth is essential. Last and of utmost importance, there should be a vital connection with the farmers of the State, through the medium of institutes where the faculty may impart direct knowledge to the farmers themselves. A glance backwards over the requisites named will show a plan of general rather than of technical education; but one best adapted for the object in view, and one in which the sons of farmers and mechanics can work side by side to the advantage of both.

### Printing.

J. H. FREEMAN, PHI DELTA THETA FRATERNITY.

The art of printing from movable types was invented in 1440, but it has made more progress since the time of Franklin than during the three preceding centuries. The first type and presses were made of wood by the printers themselves, and the characters were made to represent the manuscript of that time as nearly as possible. This was the style in which the first Bible was printed, the book and chapter headings being written by hand in red ink. Perhaps the most complete printing house of the olden times was that of Platin's, described in the Century Magazine a few months ago. This printing house was as much a home for art and education as a place for work and trade. Since

that time, especially in the last hundred years, the art has been growing more and more factory like. The work of the printer has been growing more and more confined to one branch of the business, until the idea that it is as good as a school education to learn the trade is almost a thing of the past.

The common conception of a printer nowadays is one who sets type. But in reality a compositor is no more a printer than is an engraver; each simply prepare the work that is to be printed. In China what is called block printing has been known longer than has the present method in Europe. They have no type and therefore no compositors. Each page that is to be printed is carefully written upon thin sheets of transparent paper which are then glued, face downward, upon thin tablets of hard wood, and then the engraver cuts away the wood where there is nothing traced, thus leaving the enscribed characters in relief and ready to be printed. This process necessitates a separate block for every page, thus making it very tedious and expensive.

The types of any font are assorted in two cases, the upper and the lower. The latter contains the small letters, figures, spaces to put between the words and points in most common use, and has its position on the rack next to the compositor. The upper case contains the capital letters, small capitals, accented letters and all other characters not commonly used. The compositor forms the words and lines letter by letter, placing them upside down in what is called a stick, which is capable of being adjusted to different width pages or columns. The stick holds from two to three inches of the matter that is being set, and when it is full the compositor carefully lifts and dumps it on a galley, which will hold about two feet of the composed matter and is usually wide enough to take in two of the ordinary newspaper columns. When enough matter is composed to make up a form, which contains from eight to thirty-two pages of the ordinary book, the matter, after being proved and corrected, is



separated into pages of equal length, the proper heading being placed over each one, and the whole is locked in an iron frame of suitable size, called a chase, so that it can be handled; then it is ready for the press. If it is a small job that is to be set, such as a hand-bill, business card or the like, the compositor sets it up from fonts of assorted styles to suit his taste or by the directions, if any, then locks it up in a chase made especially for the small or job press on which it is to be printed.

The work of the pressman has changed a good deal since the invention of the cylinder press, the first of which was built in 1814. Before that time printing was all done with flat-pressure machines and the inking done by hand. In the first machines the pressure was applied by means of a screw and the inking was done by a ball. Afterwards a system of levers replaced the screw, by means of which the required pressure was obtained with less labor and in less time. Some of these presses are still in use in the more remote districts, the only modification being that a composition roller is used instead of a stuffed ball. The ordinary job press now commonly used is a flat-pressure machine arranged to be run by power, the inking being done automatically. The object in inventing the cylinder press was to obtain a machine that could be run by steam. The first one consisted of a bed carrying the form, having a to and fro motion, and run by a rack underneath. The cylinder carried the sheet and was geared into the bed, the inking being done automatically by means of rollers. Improvements have been made on the cylinder press by means of which perfect register and complete distribution of ink have been obtained, thus making them indispensable for the production of fine book and catalogue printing. In "making ready" a form, the pressman, after getting the rollers in proper condition, locks the form on the bed in the proper place to secure the right margin; then, after setting the ink fountain as near as possible, he takes three or four "pulls" or impressions of the form from

which, by means of "overlays" and "underlays," he proceeds to make all parts of the form "show up" alike, by cutting out spots on the tympan, or blanket on which the sheets lay while being printed, where the impression is too great, and pasting on pieces of paper where the impression is too light. If there are cuts in the form, the dark places and shadows have to be brought out and the edges graded so as not to be too sharp. After the impression is even, the guides and delivery are set for that particular sized sheet, and the press is ready to start. A boy feeds the sheets into the press, and after satisfying himself that the job is running all right, the pressman is at liberty to get another job ready on another press, look after the engine, or other necessary work around the press room.

The liberation of newspapers from the obligatory penny stamp in 1855 caused a great increase of circulation, so that none of the ordinary cylinder presses could print them fast enough. Resource had to be had to an entirely new method of printing, the invention of which is due to R. M. Hoe of New York. His process consisted in forming the type on a large cylinder, the sheets being pressed against it by numerous smaller cylinders, each one of which was fed by a boy. The most capacious press of this description had sixteen small cylinders, each running 2,000 per hour, thus making a total of 32,000 impressions, or 16,000 newspapers per hour. Since Hoe's invention presses have been invented in which the forms are stereotyped and formed on two cylinders, each running in contact with another, one set printing one side of the paper and the other set the other side of the paper. After the paper leaves the second set of cylinders it is cut and dropped into a folding machine which pastes and folds them as fast as they come out. The best of these machines take the paper from the roll, print it on both sides, cut, paste and fold the newspapers ready for delivery, at the rate of 30,000 copies per hour.

## The Elective System in our Western Colleges.

N. C. SMITH, DELTA TAU DELTA FRATERNITY.

A graduate of a German university says of the American collegian: "He is simply a schoolboy of a larger growth." Why is this statement made? It is simply because from the day of his matriculation to the day of his graduation the American student pursues a prescribed routine of study, and because he is watched and cared for as incapable of judging and acting for himself. There are exceptions to this. Every Senior class in any New England college elects a portion of its studies. Every important New England college allows election in the Junior year. Amherst, Bowdoin and Yale allow it in the Sophomore year, while Harvard begins the system with the Freshman year. Election in a slight degree is admitted in every college, but the western institutions of learning have not as yet offered their students a large range of elective studies. But few institutions in the west, except the University at Ann Arbor and that at Evanston, Illinois, begin the system earlier than the Senior year. The number of studies to be elected during the one year is not sufficient, and the time allotted to the students to pursue these studies is not long enough. By contracting the course of prescribed studies to the first two years the electives could be increased and ample time provided to pursue them. Although our own College has a special mission, yet it will serve as an example to show the effect of the Senior elective system. There is no apparent connection in the line of studies laid out for this work, and the student naturally selects that which he considers will do him the most good. Many times studies are pursued, during the same term, which have nothing in common and which do not tend towards the same end. For example, Veterinary, English Literature and Astronomy are offered to

the student during the summer term of his Senior year. The election of studies during this year is allowed that the student may acquire knowledge in a definite line, and thus we see the object sought for is not obtained. Undoubtedly it is the same elsewhere, with like controlling circumstances. What we need is independent groups of studies from which a student may select. But these cannot be well arranged without extending the time to at least two years, for no group could be completed without a sufficient number of studies connected with it to require two years of hard labor.

With the standard of scholarship now required in our western institutions, nothing of this nature could be attempted. Our colleges must raise the standard for admission. The reason for this is self evident. Boys, whose ages do not exceed fifteen, are granted permission to enter our educational institutions. To secure success in even partially adopting the new educational system requires a solid foundation, and surely but few of this age have acquired it. The student should have had discipline in studying and have been drilled in thorough schools, where he could obtain a knowledge of the fundamental branches of education. Many of the younger students have been sent to college because somebody has thought it the correct thing to do, and they have been hurried over preparatory studies to fit them for entrance. The chances are that after entering upon his duty, the young student, if left to his own discretion in choosing studies, will graduate with but little knowledge of many things he should know.

But why draw the line between the Sophomore and Junior years, rather than at some other part of the course? It would require indefinite details to reply satisfactorily. The whole question is one of drawing lines and making distinctions. It has been stated that the time allotted for elective studies at present is too limited. There is equally as much danger in extending the system. We know

that, as the human race is a variable factor, an average must be taken. The individuality of a single student can not be regarded. As a student grows older he can be more and more left to direct himself, and by the time he has reached his Junior year, he is acquainted with the surroundings, has adjusted himself to them, has learned from experience in them how matters pertaining to study go, and is somewhat prepared for the task of deciding. If the two remaining years are not sufficient for his needs, he will be compelled to supplement, either with post-graduate or private study, and at that stage of his educational structure, he should be thinking rather of turret than of foundation stone.

But few objections are made to the elective course of study in connection with the regular course, although at the same time our colleges have a tendency to pursue a uniform curriculum. This does not prove that they are antagonistic to the elective system. It may be due to the reluctance of people to discard old customs; but there is another important reason—the question of finance confronts us. Many of our western colleges are denominational and their finances are limited. To make the elective system a prominent feature of an institution means an increase in the number of professors and the amount of apparatus, thereby vastly increasing the current expenses of the college.

This system encourages specialization—the one great feature of modern educational tendencies. As we have seen, our eastern institutions are progressing with the times in adopting it. But the course of the majority of our western colleges disregards entirely the student's individuality. Each student is ground through the same intellectual mill-stones year by year. By this the progress in all the vast fields of knowledge is made impossible, at least until graduation. We must remember that every occupation is calling for specialists, and we should shape our educational institutions accordingly.

## SCIENTIFIC.

### Natural History Society.

The second meeting of the Natural History Society for this term was held at its usual time, the second Friday evening in October. The meeting was called to order by the president, and after the reading of the minutes of the previous meeting, the regular program was opened by an article upon "Cultivated Asters," by Mr. Bregger. Of the wild asters we have fifty-five distinct species in this country, yet our cultivated asters come from none of these. With all these beauties blooming around us, free as Nature's bounties always are, we go to China for plants to beautify our gardens. Our cultivated asters do not belong to the genus *aster*. They come from *Callistephus Chinensis*, as named by Cassini, or *Callistemma Chinensis*, according to some authors. From this species have arisen many variations. Three general distinctions are made by florists, the Chinese, French and German, according to the place from which the plants came. All came originally from China, and they were introduced into Europe in 1731. There are two kinds of asters raised in our gardens, the Tall and the Royal.

To cultivate asters, sow the seeds in boxes so as to transplant in May, as soon as all danger of frost is over, or for later ones seeds may be sown in the ground where they are to grow. The soil should be very rich to produce good and abundant blossoms, though in the case of the tall aster a rich soil will produce such a rank growth that the plants will have to be staked. They should be watered well, and like other plants in the flower garden, they may be kept from the injuries of our early frosts by a plentiful supply of water. To save seeds, pick off the side shoots that all the nourishment may go to the terminal flowers. It is probable that some of our native American asters might be greatly improved by cultivation,



but florists consider it cheaper to obtain the China aster, which is already developed.

Following the talk upon asters was an article on the common house fly, by Mr. Abbott of '87. Considering the importance of the house fly, comparatively few descriptions have been given of it. The eggs of the *Musca domestica* are laid in the summer time in the ordure of horse stables and the larvæ, hatching in about twenty-four hours, feed first upon this. There are three stages in the life of the larva. In the first stage the larva is partly transparent and has a row of spine-like projections on the ventral side. In the second stage the form is longer and more slender. In the third stage the mouth parts develop. The first stage lasts about twenty-four hours, the second somewhat longer and the third four or five days. After the third stage it pupates in a cylindrical pupa case, which very much resembles that of the meat fly, *Musca vomica*, its near relative. The pupa state lasts six or seven days. Contrary to a quite general opinion, the common house-fly cannot bite; it has no teeth or other apparatus arranged for that purpose. It moistens with a kind of saliva and sucks up its food in solution. Flies are enabled to walk on the ceiling, not by means of suckers, but by means of fine hairs, called pulvillæ. Winter is passed by imago flies in a dormant state. The fly has many natural enemies, and man has invented many more quite as destructive. Among its natural enemies are spiders, wasps and a kind of fungus that attacks it in the fall. The common house-fly is not known to be beneficial, and might well be exterminated. Pyrethrum stupefies but does not kill them. Flies will avoid darkness, therefore it is well to keep stables dark and also rooms as much as possible.

Mr. Marhoff presented an article upon cements. Three kinds of cements, French, Italian and American, are used in making walks. Cements are cheaper and more durable than natural sandstone, the place of which it usually takes. The Pantheon, one

of the best preserved buildings of ancient Rome, was built 27 B. C., and is of cement. The foundation of the Washington monument is of cement. It can be used to make a solid foundation in quicksand.

The manufacture of wood-pulp was next described by Mr. Teller. During the last half century most of our paper has been made of this material. The wood most commonly used in Southern Michigan is poplar and basswood. This is obtained in four-foot sticks, and at the Jackson pulp factory it is whittled by machines, cutting diagonally across the grain, to shavings  $\frac{3}{4}$  inch thick. The shavings are put into water and treated first with caustic soda ( $\text{Na H O}$ ) to partly decompose the fibres and dissolve resinous matters, and then chloride of lime ( $\text{Ca Cl}$ ) is added to bleach the mass and get rid of the soda. The substance is then taken from the vats in a thick, pulpy layer, as it adheres to cloths wound on frames which revolve partly in the water. By means of steam, heat and pressure this thick, pulpy layer is reduced to paper. A common method in some places to reduce the wood to the requisite fineness is to dash it against a solid obstruction. At Alpena balsam fir and tamarack are used as well as poplar. In Maine hemlock is largely used to make the pulp.

An article upon "Cleistogamous Flowers," was next presented by Mr. Waldron. These are hidden flowers. They are small, frequently with a very incomplete perianth, but always bearing perfect seeds. The pollen-bearing parts and the pistil are arranged so as to insure fertilization. There is thus no need of insect aid and they have no nectar glands or other attractions. In many cases these flowers appear crowded in the axils, as in Touch-me-not, Ladies' Sorrel, and many other species of the Geranium family. In other cases they are found under ground, as in the violets and the hog peanut. Comparatively little has, as yet, been written about them.

# THE SPECULUM.

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AGRICULTURAL COLLEGE, NOV. 10, 1888.

WE need another society. A large portion of our students are non-society men, and hence miss the valuable training which can be derived only from that kind of work. Many eastern institutions have no college rhetoricals whatever, but every student belongs to some society or fraternity which furnishes him with literary work. College rhetoricals must necessarily be limited, both on account of time and the large number of students to be attended to. All of our societies and fraternities are now about as full as they can be, and yet not more than half of our students are members. The fraternities hold about thirty-five men and the literary societies about one hundred and ten men. The question of a new society has been discussed somewhat, but it does not seem to

materialize. Non-society men, now is your time. There is plenty of ability outside of the societies, but they are now so overflowing that they can take none of it. Of course there are many obstacles to surmount in the formation of a new society, yet were the advantages of the work realized by outsiders there would soon be a new organization. It seems to be the general opinion that were such a society founded it would receive the cordial welcome of the older societies.

THE intimation a short time ago of the possibility of musical instruction in College met with the highest approval of the students. It is something that the College has never had and that we very much need. Although there is musical talent in the glee club and choir, yet the students, as a body, know little or nothing of vocal music, and many of them would be very glad to take lessons. There are few institutions that do not possess a musical instructor in some of their branches. While the Agricultural College is not fashioned after the usual run of colleges, its great point being practical work, yet an instructor in music would be a great acquisition, and the students would hail such an event with delight. It would make a marked difference in the interest of our literary societies and fraternities. In fact, this is one of the chief things with which our societies have to struggle. Any number of their members will produce good literary articles, but very few have the desired amount of vocal culture. THE SPECULUM will heartily support any measure which tends to bring about this end.

ANYONE having Nos. 3, 4, 15, 18, 19 or 23 of THE SPECULUM can dispose of them to the Assistant Business Manager. Twenty-five cents each will be paid for the first three and fifteen cents each for the last three.

At a meeting of the Alumni of the Class of '85 the following resolutions were unanimously adopted:

WHEREAS, It has pleased an allwise Providence to remove from our presence and from

the bright prospects of an active and useful future our beloved and respected classmate, Truman L. Parker,

*Resolved*, That the class of 1885, as a body, and we, ourselves, as individuals, feel the loss to the class in removing one whom we had well-founded hopes would prove a useful member of society and an honor to our class and our Alma Mater. We knew him as a friend, grateful and beloved; as classmate, loyal and true; as a student, thoughtful, earnest and laborious; as an Alumnus, ambitious and industrious, and one who had already entered successfully on the course he had marked out;

*Resolved*, That we deeply regret he should be so early taken from us, and that we sincerely mourn with his relatives and friends, of whom we consider ourselves members, his early death;

*Resolved*, That we extend to his family our deepest sympathies in their heavy affliction;

*Resolved*, That a copy of these resolutions be sent to his bereaved family and that they be spread upon the class records, and that a copy of them be sent to THE SPECULUM for publication.

H. E. THOMAS,  
J. Y. CLARK,  
GEO. MORRICE,  
*Committee.*

## COLLEGE NEWS.

All Halloween was not forgotten by the boys.

Mrs. McEwan is visiting friends in Kalamazoo.

Juniors and Seniors all beware,

Choose your subjects with exceeding great care.

Quite a number of the boys will leave two weeks earlier to begin teaching.

Corn on College Farm is yielding about 100 bushels of ears per acre.

Prof. Cook presented a paper on *Bee Culture* to the A. B. A. which met at Columbus, Ohio, a few days ago.

Mrs. Kedzie, the teacher of art in Olivet College, spent several days visiting at the College a few days ago.

Twelve delegates were sent from here to the Y. M. C. A. State Intercollegiate Convention.

Mr. Waldron read a paper on the life and works of Charles Darwin before the Alumni Fortnightly Club, Oct. 30.

The east side of sheep barn has been changed into stalls for cattle, also two mouse-proof feed rooms have been built.

Dr. Beal has secured about ninety photographs of northern Michigan pinery scenes which will be framed and put in the Museum.

The Union Literary Society gave a hop following the oratorical contest, Friday evening, October 26. Everyone enjoyed a pleasant time.

Dr. Kedzie delivered a very interesting lecture Wednesday, Oct. 24 on the battle of Pittsburg Landing. The Chapel was crowded to overflowing.

Grass plats on farm experimental grounds are in fine condition this fall. The Alfalfa does not cover the ground as well as some of the other varieties.

About twenty of the seniors will teach this winter. The rest will be divided up among sundry professions such as buying chickens, milking cows at home, etc.

The farm department has just received two Ayrshire heifers from Vermont, to be used in the dairy experimental work. They are good specimens of the breed.

On Friday, October 19 the Phi Delta Theta Fraternity gave an informal reception, at which literary exercises, banquets and dancing were the order of the evening.

Experimental steers will go to Chicago to be exhibited at "Fat Stock Show," which begins November 10. The steers are in fine show condition, and will no doubt be viewed with a great deal of interest.

Seventy-five specimens of plants from Mexico, two hundred and fifty from the Upper Peninsula and three hundred from the northern part of the Southern Peninsula are being put in the Botanical Herbarium.

Mr. Beal attended the Western Society of Naturalists, held at Champaign, Illinois, October 24 and 25, and presented a paper on A Botanical Museum. The main object of the meetings of the society was to discuss methods of teaching.

Dr. Beal received a letter from Mr. Lake, Professor of Botany and Horticulture in the Agricultural College of Oregon, a few days since. He says the College is small, but its future prospects are good. Buildings limited (one), students seventy-five, thirty of whom are girls, land thirty-five acres.

The Entomological Department of the Experiment Station is making an experiment which will be watched with interest by the bee-keepers of our State. Five acres are being sowed to the Rocky Mountain bee plant. The object is to secure a good honey plant that will stand the drought.

The root crop on the farm was very good this season, both in quality and in yield. Of the new varieties



tested the "New Red Fleshed Tankard" mangel and Danver's carrot are the best. But these are not as good as some of the old reliable sorts, such as Golden Tankard mangel and Long Orange carrot.

The second annual contest of the Michigan Agricultural College Oratorical Association took place Friday evening, Oct. 26, before a crowded house. The Eclectic society was represented by Mr. A. L. Waters; the Olympic society by Messrs D. F. Anderson and L. A. Clinton; and the Union Literary society by Messrs W. J. Meyers and G. L. Foote. Music was furnished by a city orchestra. The judges for manuscript were Rev. C. H. Beale, Mr. George Barnes and Miss M. E. Tilton, and the judges on orators were Rev. James McGrath, Mr. W. F. Clark and Mrs. George Barnes. The first prize was awarded to Mr. D. F. Anderson, the subject of his oration being "Every Honorably Discharged Union Soldier should receive a Pension." The second prizes were awarded to Mr. W. M. Meyers, the subject being, "The Indeterminate Sentence," and to Mr. A. L. Waters, his subject being "Liberty—not License."

How the members of the faculty will spend this winter: President Willits will remain at the College until January, after which he will recreate. Professor Carpenter will deliver a paper before the N. A. Tile Association at Memphis about the close of this term. He will then make a tour of the Southern states. Professor Cook has not decided yet whether he will accept an invitation to help conduct a series of institutes in New York or will prepare a treatise on injurious insects. Professor Durand will take an ocean voyage, probably to the Bermudas. Secretary Reynolds will spend the vacation in California. Drs. Kedzie and Beal, Professors McEwan, Taft and Johnson will spend most of the vacation at the College.

What the assistants will do: Messrs Frank Kedzie, Davenport, Waldron, Dewey, Cordley, Teller and Lodeman will remain at the College to study. Messrs Holdsworth and Woodworth will go to Cornell. Mr. Thurtell will go to Ann Arbor. Messrs Hall, Hillman and Cook will teach school and Mr. Cannon will study at home.

**Exhibit at State Fair by Mechanical Department,  
Sept 10 to 15, 1888.**

PROF. R. C. CARPENTER.

The exhibit occupied a space in the center of Machinery hall, about 12 by 75 feet in dimensions. At the north end was arranged the engines owned by Mr. Bartmess and Mr. Freeman, and a few feet to the south and on the sides were arranged respectively the engines of O. J. Root and the double engine of Mr. Vandevort, each of which was about 3-horse power.

About midway between the last two engines was the automatic 8x12 engine, which had just been completed. These engines were all furnished with steam and were run during the whole of the exhibition.

Near the engines were arranged the iron working tools. These consisted of the 15 inch engine lathe, the

12 inch engine lathe and the 15 inch turret lathe, all built by the present Senior class.

The 15 inch engine lathe was shown in operation.

In addition there was shown the twelve inch surface plates, constructed two years ago, also a large number of gear wheels cut on the new milling machine, and quite a complete collection of lathe tools and other products of the blacksmith shop.

The students' drawings occupied considerable space, and were exhibited by tacking to board frames, arranged on the sides of the space.

The south end of the space, opposite the main entrance, was devoted to the exhibit of the wood lathes, and the products of the wood shop.

Two wood lathes were exhibited, one being the pattern maker's lathe, built two years ago, the other a 12 inch lathe just completed.

A large number of vases and other products of the turner's art were shown and proved the most attractive part, especially to ladies, of the whole exhibit.

This exhibit, taken as a whole, was probably the most attractive of any single exhibit shown at the State Fair. There was no exhibit in any place that attracted a larger crowd, and there was decidedly no exhibit that was so closely scrutinized as this. Mechanics and machinists paid the closest attention to it, and cases were not rare of men spending fully a half day in the examination of the work done by students. This work was highly commended. One machinist, of Jackson, was so well pleased with the work that he offered to pay two of the students in attendance full journeymen's wages to commence work in his shop. Mr. H. A. Steward devoted most of his time to turning, on the wood lathe, and attracted a great crowd.

There was a great desire to purchase the turned articles. The inquiries as to the price of the little wood vases, and especially the vases with loose rings on the stem, were so constant as to become very tiresome.

Our exhibit was well marked; in fact the name "Agricultural College" was pasted in nearly every available position, and yet a large portion of our visitors had to enquire the name of the firm making such an exhibit. This was not so bad however as to be confounded with the exhibit from the State prison as was very frequently done. One lady asked in a very earnest tone and at the same time pointing to Mr. H. A. Steward, who wore a striped blouse, "Is that actually a convict turning at that lathe?"

The students who attended the fair were Mr. Wm. Vandevort, Mr. Joseph Freeman, Mr. O. J. Root and Mr. H. A. Steward. They found that attending the fair was much more work than vacation. The work was exacting during the day time and in the evening of course they had to study, in order to keep up with the classes. Whether they did or not or whether they made the acquaintance of some congenial young church ladies is not for me to say. Professor Durand was present two days, Mr. Wiseman one day, while your humble servant saw the beginning and the end.

### An Ocean Voyage.

Professor Bailey who left a short time ago for Europe has written us a letter in diary form, describing his ocean passage. The letter is written in Professor Bailey's sprightly style and is full of graphic descriptions of ocean life and scenes. His ship fired its farewell salute to this country at Quebec on August 30. He describes the trip down St. Lawrence, and you feel as though you were with him, seeing what he sees. The scenery was varied. The verdant fertile country gave place to barren uninhabited tracts. Mountains soon show their rugged outlines, towering up till lost in the clouds. Night settles over all. Now the phosphorescence of the ocean attracts the attention. Pale flashes of light ripple along with the wavelets or spread in filmy sheets over the surface. They were met by a steamboat from Pimreusk and the last mails exchanged. The Professor sent home his good bye letter to those at home and virtually bade good bye to America.

Morning dawned bright and fair. A few miles away was the wild and mountainous coast of Gaspé—cheerless and lonely it seemed. The Professor here had his first sight of a live whale. As the wild mountains of Gaspé sink in the west, the dim blue outlines of Anticost rise in the east. About the middle of the afternoon the sea swells begin to be felt and the ship rolled a little—only a hint of what was coming. Professor Bailey had not forgotten his photograph instruments and had taken a few pictures already, about two dozen. The steward told him he must take an iceberg—all right my friend, trot out your iceberg.

Saturday morning opened in a thunder storm. No land was now in sight, nothing but the heaving billows with their white crests. The day had grown gloomy and the sea wild. They heard the fog whistle from the Labrador coast and at length Newfoundland appeared. At nine o'clock in the evening was heard the salute from "the guardian of the straits" bidding good bye to the Western Hemisphere, and the ship moved out into the broad Atlantic. The Professor went to sleep lulled by the long swells of the Atlantic.

Sunday morning was foggy and the sea was getting rough. The number at the table was getting fewer each meal, as one by one succumb to the pitching, rolling sea. Services were held in the saloon, at which the Church of England services were read. At dinner the side-boards were put on to keep things from sliding off. The Professor spent much of his time in walking the deck enjoying the wildness of the scene. Toward night the weather became wilder and the ship's rolling heavier. The Professor had yet felt no intimation of sea sickness, which made the seamen wonder. On Monday the sea was much rougher, but Professor Bailey stuck to the deck, delighted with the wild scene about him. The foam blew from crest to crest, and ran in wind lashed streaks through the wide and awful troughs of the sea. The sea was grand and inspiring beyond all description. Through all the Professor

held his stomach in equilibrium like an old tar, while all around were sick.

Tuesday morning the storm was at its height. It was grand beyond all powers of description. The wind was astern and the ship flew over the rough sea. The climax was capped when for a short time before sun set the sun came out on the wild scene. The dignity of the Professor received a dampening when he was wet through by a wave washing over the deck. He succeeded in taking a few photographs of monstrous waves as they rolled upon the ship. The rest of the journey was stormy and before its end he looked forward to its finish with longing. On Friday morning a hazy blue line appeared on the horizon and soon the mountain peaks of the Emerald Isle came to the glad view of the tired passengers.

## PERSONALS.

### Alumni, Take Notice.

AS THE SPECULUM circulates widely among the alumni of this College, it is aimed to make this department of much interest to them. For this reason, all persons having items of interest concerning any of the alumni, or their occupations, will oblige by forwarding same to Personals Editor, SPECULUM.

WITH '61.

E. P. Allen, who has served one term as U. S. Representative from the Second District, Michigan, is re-nominated upon the Republican ticket.

'67.

Daniel Strange, general manager for the sale of Johnson's Cyclopædias, is now selling in the natural gas region of Ohio.

'68.

Hon. G. F. Beasley of Detroit has recently issued a protection brochure, entitled, "What Policy?"

'69.

Dr. C. E. Bessey has returned from Europe and is now the acting Chancellor of Nebraska University.

'70.

Hon. Charles W. Garfield has regained his health. He is still a director of the Grand Rapids Savings Bank, and his work in this, with the care of his farm and a chief interest in two gravel roads, keeps him busy.

'73.

Ransom M. Brooks is reported to be slowly failing in health.

'74.

G. W. Mitchell of Newberg, Oregon, "can't do without the SPECULUM." The SPECULUM can't do without Mr. Mitchell either; we wish more alumni would send news for the SPEC.

Henry A. Haigh, Secretary of the State Republican League, has been hustling things in Michigan for

Benjy and Levi. In the New York Tribune of September 25, he gave a long sketch of the work of the League. He recently addressed the H. and M. club of Detroit upon the Democratic policy towards the Southern Negro.

'75.

Through misinformation, the October number of the SPECULUM reported O. E. Angstman as a physician at Harper Hospital. Instead Mr. Angstman is a member of the law firm, Angstman, Pitts and Rasch, of Detroit. Mr. Angstman's three year old daughter speaks German fluently, and can readily understand English, to which she replies in German.

A. A. Crane is in the banking business at Gaylord. His little girl is so much interested in the study of botany that Mr. Crane recently procured for her a compound microscope similar to those used here in the botanical department.

'76.

C. B. F. Bangs was a delegate to the Republican county convention at Holt.

'77.

Professor W. C. Latta of Purdue University is the Agriculturist of the Indiana State Experiment Station, and will remain at least through the station's first year.

'80.

W. W. Remington, who has been for some years principal of the Ft. Collins schools, is now principal of the schools at Greeley, Colorado.

'81.

Dr. H. L. Rosenberry, Miltonsburg, Ohio, has a fine medical practice and is meeting with success.

W. S. Delano is grower of choice field and garden seeds at Lee Park, Nebraska.

'82.

Prof. L. H. Bailey is now in Scandinavia, and is much pleased with the scenery. He writes from Christianssand under date of October 13, "Tomorrow I take a Norsk coaster for Christiania, and there I shall be on the same parallel as southern Greenland; from there I intend to go to Upsala and Stockholm, and then south to Copenhagen."

WITH '82.

C. W. Crossman is in the commission business at Ann Arbor.

A. G. Jack is in the wholesale and retail grocery business at 132 Market st., Philadelphia, Pa.

'83.

E. P. Clark is teaching in St. Joseph.

Clarence M. Weed is doing exceptionally fine work as State Entomologist at the Ohio State Experiment Station.

'84.

Orel L. Hershiser recently attended the National Bee-keepers' Convention at Columbus, Ohio. He

went as delegate from New York State and was selected vice-president for that State.

Homer D. Luce is partner in a dry goods firm at Orland, Indiana.

W. A. Dothany is in a drug store at Sault Ste. Marie.

WITH '84.

Will Kirby is teller of the bank at Schoolcraft, Mich.

'85.

E. A. Bartmess is still in Lowell, Massachusetts. He is getting a pretty correct idea of the soil, climate, productions and inhabitants of New England, but is chuck full of Western prejudices.

D. J. Stryker was in California for a time, but Burt lured him across the continent, and now they have formed a mutual admiration society. Sh! Keep still, Doc's in love with a Yankee girl, a down easter.

E. S. Antisdale has entered the course in medicine at Ann Arbor.

J. D. Towar and Miss Jennie Towar of '86, both presented papers at the Farmers' Institute recently held at Fitchburg. Mr. Towar is Master of the county Grange.

J. S. Dixon has been working for the Smithson Lumber Company of Charlevoix for three years, and has been doing fairly well. Mr. Dixon says that there are no bee-keepers at Charlevoix, so next spring he intends to begin bee-keeping there.

Prof. E. R. Lake writes that he likes his situation at the Oregon Agricultural College much better than he expected.

C. H. Hoyt of Irving, Michigan, reports that he had a fine crop of wheat this year. He is thinking somewhat of investing in Shropshire sheep.

T. D. Hinebauch is getting out a work on Veterinary Dentistry. He says that, so far as he knows, there is no existing work upon the same subject.

WITH '85.

Charles E. B. Bassett is a member of the firm of Newark and Bassett, editors and publishers of the Allegan Record.

TO THE CLASS OF '85.

At the Alumni Reunion there were but eight members of '85 present. Hoyt seemed all taken up with his farm and his girl. Clark came back to have a good time with the boys and he seemed to have it. We learned that he is a leading farmer in Oakland Co. Geo. Morrice, whom we supposed had crawled into some hole to remain forever obscure, was here, looking hearty and sunburnt, and just as fond of the foot ball as ever. Thomas is still in the law office of Cahill & Ostrander, and studying very hard. Hinebauch was at the reunion; he was from Purdue. And of



course French and the Towars were here. The secretary had letters from a few of the boys. Bartmess keeps books for E. S. Pike, wholesale and retail dealer in dressed beef at Lowell, Mass. He likes the east. Ed Antisdale has concluded that "it is not good for man to be alone." Wells says the July 10 Spec., had him as he still is. Lawrence has been his assistant during the last summer, but will teach the Dansville school the coming year.

Gardner writes from Arcadia that he was too busy to attend reunion. He trades hardware for horses colts and cattle with a view to stocking his farm. He attended the State Prohibition Convention as a delegate at Omaha. Hemphill and Matthews were both away camping at reunion time. We boys that are farmers congratulate ourselves that with the exception of Antisdale all the farmers of the class were present at Alumni meeting. We hope to meet all the boys three years hence, when arrangements will be made for a grand class reunion and banquet.

Fraternally,

J. D. TOWAR, Sec.

WITH '85.

T. O. Williams is county surveyor of Allegan Co.; is renominated by the Republicans.

'86.

Frank L. Wrigglesworth has charge of a wheat market at East Cohoctah, and is the station agent. He is doing finely.

J. J. Jakway is principal of the Kendall school, with Mrs. Jakway as assistant. Since leaving college Mr. Jakway has spent six months in California, besides teaching several terms and farming a year. His post-office address is Benton Harbor.

C. H. Judson is civil engineer and draftsman. His headquarters are at 308 Superior St., Toledo, Ohio. He has been deputy county surveyor of Lucas Co., Ohio, has compiled a map of the county, also one of the city, wherewith he hopes considerably to benefit his material fortunes. Mr. Judson is also connected with the engineering corps of the Michigan Southern division of the Lake Shore road, and he visits Lansing occasionally. He is president of a Choral Union of sixty voices, and is said to have made the acquaintance of a very estimable young lady and to be enjoying himself immensely. THE SPECULUM admires Judson's pluck.

W. K. Clute has entered into partnership with his father in the practice of law at Ionia; is candidate for prosecuting attorney, and is a regular attendant at church and Sunday school.

W. Rummel is now at Spokane Falls, Washington Territory studying law.

J. E. Hammond is now teaching school and studying law at Allen, Mich. He has recently sent to his classmates a circular letter from which many of these items of '86 boys are taken.

'87.

N. C. Hall is working in the shipping department

of E. Bement's Agricultural Implement Works at Lansing. Ye Personals Editor thinks Mr. Hall about a model alumnus, for he occasionally sends in items for this department.

J. C. Duffey sends the program of a three weeks' Farmers' Institute to be held at the Dakota Agricultural College, beginning on Nov. 26. Mr. Duffey seems to be the same old Duffey as of yore. His talent for original spelling has not been a whit impaired by his work in Dakota.

C. L. Himebaugh is well pleased with THE SPECULUM in its new form.

W. W. Diehl is now taking a course in the Northwestern University at Evanston, Ill.

E. A. Burnett reports a successful year on the farm at Bancroft.

O. C. Wheeler is township school inspector.

C. S. Whitmore was delegate to the Ingham county Republican Convention.

WITH '87.

J. T. Crabbs is at West Point in the class of '91.

C. L. Crabbs is studying for the degree of C. E. in the class of '90, University of Illinois.

'88.

Miss M. L. Harrison is well pleased with her position in Harper Hospital.

Will A. Taylor writes that the crop of peaches this fall was large and fine, but that owing to the low price the West Shore people do not light their cigars with Vs.

WITH '88.

A. E. Hart, special in chemistry, has been in the mercantile business at Highland Lake, Colorado; he expects to teach this fall.

H. A. Knevels is in a book store at Elkhart. He is thinking of coming back to M. A. C. in the spring.

WITH '89.

A. L. Free is taking the literary course at Ann Arbor.

Homer Wood is in the U. of M., studying in the course in literature.

WITH '90.

Harry M. Williams has been stumping Noble Co., Indiana, in the interest of the Democracy.

George D. Mena is at the U. of M.

N. R. Hawkins and Rob Lederle are working at the Creswell Iron Works, corner 23rd and Cherry streets, Philadelphia, Pa.

R. C. Clute is in Wisconsin, selling memberships in the U. S. Literary and Scientific Association.

WITH '91.

E. J. Brown is learning the jeweler's trade at Bowling Green, Ohio.



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