

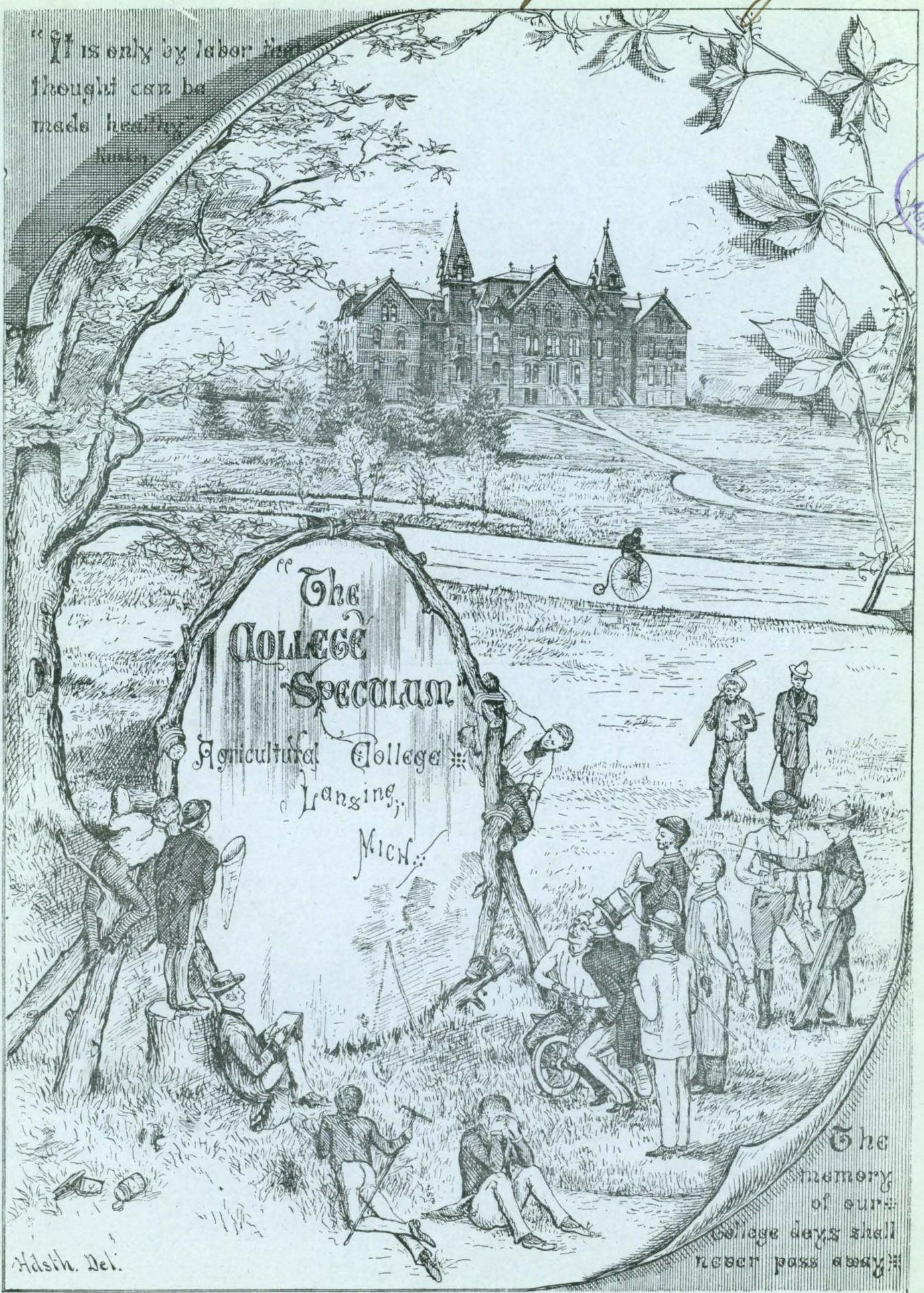
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THE COLLEGE SPECULUM.

VOL. I.

LANSING, MICH., OCTOBER 1, 1881.

No. 2.

SITTING AT THE WINDOW.

BY J. W. BEAUMONT.

Sitting at the window,
When the autumn days are nigh;
Gazing at the shadow,
That is creeping with a sigh,
O'er the faded meadow,
And is darkling in the sky.

Well do I remember,
When at this same window-pane,
In the gold September,
How I watched until he came:
Strong, yet bravely tender,
Coming down the winding lane.

Ah! we were so happy,
In that quiet, joyous love;
Now, I oft bethink me,
That the angels up above,
Looked on us in envy,
In our quiet, joyous love.

Then there came the trouble,
The wild days of sixty-one;
Days that took the noble,
And my hero, he was one:
Tore away my idol,
And my life-work then was done.

Sitting at the window,
When the autumn days are nigh;
Feeling that the shadow,
That is creeping with a sigh,
O'er the faded meadow,
On my soul shall ever lie.

Men are Rare.

BY J. E. COULTER.

Pope says: "The proper study of mankind is man." Certainly in no study do we find a greater variety than in the dispositions and characters of men. So great is this diversity of nature that it is seldom, if ever, we see two people just alike. Notwithstanding this fact, there are certain qualities which are possessed by the true man, and all of which characterize him alone. Our ideal man must be all that we consider true, noble and grand. A man's physical bearing, though perhaps of little account as determining his character and moral worth, is an essential feature in the constitution of the ideal man.

We admire a handsome form. With a thrill of pleasure we look upon the dignified bearing, the superb figure. Those broad, erect shoulders, that well-formed head, that noble brow, that pleasant, placid countenance, showing intellect and decision—such characteristics form the physical contour of an ideal man. But the mind is an important element of the man. Our ideal must be a man of large mental ability, possessing great reasoning faculties, endowed with the gift of readily acquiring knowledge from experience, observation and hard work, and capable of using his knowledge to benefit his fellow-men. From his powerful intellect should pour forth wise and generous thoughts, sentiments which shall echo and re-echo with patriotism and philanthropy. His heart should ever respond with

sympathy for right, and his hands with assistance to those who labor in a just cause. That man whose activity is founded upon principle, who spurns that which conscience tells him upholds the minutest trace of wrong, is most deserving of esteem; is the one whom you are proud of calling friend. The man of pure thoughts and high moral character possesses in himself the best of recommendations. Our ideal should be this moral man, this possessor of superior intellect, this higher type of energy, perseverance and usefulness; one who will correspond to the words of Shakespeare: "I dare do all that may become a man, who dares do more is none."

The fact that such men are rare is plainly seen when we look around us. How few of those whom we know, of those of whom we hear or read are entitled to rank as true men! Look at the hosts of business men; do they possess the necessary qualities? Do not the majority of them work largely with selfish motives? Will they not take unfair advantage if the opportunity offers? It is too true that principle and the love of right seldom influence their acts. They do not exhibit that generous spirit which leads men to do that which will benefit many and not merely give personal advantage. Society in all its branches shows the lack of the sterling qualities of true manhood. The professions furnish evidence of the truth of this statement. What motives actuate the lawyer or physician in his pursuits? Is not his chief ambition to win fame regardless of how it may affect others? He cares not whether one or many be injured, provided his desire be gratified and his purpose achieved. To be sure, there are exceptions to this, but so few that great prominence is due them for their greater rarity. Even in the ministry, that profession where most of all should be found meekness and unselfish qualities, too frequently do selfish pride and ambition usurp the position which should be occupied by higher and holier attributes.

In no sphere of activity are true men less frequently found than in political life, and there certainly is no place where the influence of such men is more needed. Politicians and prominent men in public life labor for increased popularity; they are too apt to make the general interests and welfare of the country subservient to their own interests.

True men are needed to improve every grade of society. Only such can raise the standard of moral and mental achievements. With them to lead on and show by noble example what true manhood is, and what it can accomplish, a change will be wrought which will show its beneficial influence in the generations to come.

Fellow-students, MEN are indeed rare. But cannot you do something to change this lamentable fact? It rests with the young men to show whether the evils of to-day shall exist to-morrow. It is for each young man to prove by sturdy principle, high aims and noble conduct, that he joins the ranks of true men. Let each of us then, and all young men, embrace, cultivate and develop the qualities of noble manhood, and faithfully fulfilling every duty, no longer may it be said that men are rare.

Character.

BY ROB. H. BAKER.

A healthy advancement requires one to take note of what he is, and not what he has, and what one is and does depends upon what he believes, upon his convictions. What guide has anyone to right actions but right views, and what standard of sound judgment except true discrimination between right and wrong and truth and error?

Whoever values character will cultivate right views. Every truth heartily received becomes a new power and a permanent addition to the power of right action. It is not half truths, not hazy apprehensions of truth that contribute to this power. Nothing short of intelligent convictions, without which there can be no enduring power of right action, will be sufficient. There may be sudden heats of passion, gusts of emotion that come and go like summer clouds, but no abiding undertone. I think the time is coming, if not at hand, when it will be reasonably required of such as have had opportunities of culture and education, that they have a positive power of right action, a power also of steady resistance to wrong.

Popular opinion is to be bowed to and respected where right, but opposed, resisted and defied where wrong. Where is this resistance to come from except from those who have sufficient intelligence to plant themselves upon true and just views, and who have deep wrought convictions? It is not in multifarious reading, not by slight acquaintance with many books, nor by any number or amount of impressions that you are to gain this great attainment, but by going to the root of whatever interests you, probing it to the bottom. There is no royal road, no private, privileged way to this result. You must work by earnest application of your faculties and capabilities to subdue that which challenges your attention. There is no need that we go out of our way for subjects. We cannot get away from them nor lay them aside. They press upon us and solicit our attention. We do not, cannot put them away. They are the lions in our path that we must wrestle with and master. Any matter of thought that we have mastered, that we have taken the dimensions of and seen on all sides, becomes then a thing of the mind, no longer threatening and formidable, and unless it call for action and is to be made concrete in life, may be laid away among the permanent possessions of mind. It does not clearly define character to call it the highest manhood. It is an indefinable somewhat. It is not what we have been but what we are. It is not what is extraneous to us and may fall away leaving us unharmed, but it is what is intrinsic, and what we cannot part with without losing our individuality. A fearful spectacle is one without will, without force or determination—only an instrument to be played upon by the winds of opinion and the clamor of the world. It has been said that "circumstances make the man." We think more wisely when we hold that the soul is an entity, an innate power. It is what knows nature. Man is not a product of nature, say what skeptics may. Nature, on the contrary, is the product of soul, of intelligence; and in all its stages, in all its phenomena, it is presided over by the intelligence that is creative. I see now it does not matter what our circumstances are, but if one stands behind and rules them he is a hero.

We make character daily, consciously and unconsciously. We make it in our admiration of good and noble persons. We make it in every genuine aspiration for excellence. We make it, too, of a kind in loving the vain and perishable things of the hour, and whatever does not make for strength, for purity and for power.

What Shall We Read?

BY WILL E. HALE.

When thousands of volumes are piled up within a single library, when in every city and village in the country books have become an object of commerce, when the press is dropping its periodicals and papers at the door of every cottage, and thought and feeling are flying with lightning rapidity through the length and breadth of the land, reading matter must be abundant.

The historian has made his record, the philosopher has spoken, the amateur of fiction has told his tale. While we would inquire into the nature of books and their adaptation to the respective powers of the human mind, we urge a rigid discrimination in the choice of our reading. A celebrated writer has said, "Were I to pray for a taste to stand me in ever circumstance, it would be a taste for reading." The lover of books always has companions, and the garnered wisdom of ages is his daily food. His books are his world to him, he lives in their characters, is quickened into new life by their sentiments; when the outer world is a burden to him and cares worry, he finds refuge in the calmer world of the past. It becomes, therefore, a matter of much importance how we can best cultivate this intellectual taste or love of literature.

How shall we best order our studies?

Our reading should be definite. Although it is true there have been intellects who have found in unconnected reading a mental stimulus which has not only proved a high culture for themselves and has carried them to the highest pinacles of intellectual fame, yet such instances are rare and in every case they were persons whose intellect were free from common discipline.

Reading is, indeed, the nourishment of the mind, yet this nourishment may easily be converted into a poison. The precept of Pliny was, "Read much rather than many things," or be careful and thoughtful in all that you read. Miss Martineau often read only a page an hour. Comte read but few books, but thoroughly digested what he did read. Thoroughness is the idea. It is unwise to wish to know everything. One cannot read all that comes out, and why be ashamed to confess ignorance of the majority of volumes published.

Many people show their vanity in buying every new book published and creating a great library. Thomas Carlyle's library, we are told, is characterized by its fewness of books. They are not arranged on the shelves in holiday attire, but have all seen service.

Do not spend your time on books you cannot appreciate. Confess it if you cannot get interested in Shakespeare, but let every one study his tastes and needs and purchase books accordingly, using to the uttermost what he has and not waste his time longing for more. A due regard for the powers with which we are endowed should determine the character of our reading. It is a conscious fact that the mind can store up knowledge and retain the knowledge for future usefulness and happiness.

As the mind is receptive as well as perceptive, it not only surveys the present, but through the medium of history, aided by the imagination, it traverses the broad and eventful past. The great object of history is not to move the feelings, but to enlighten the mind; including biography, it has been termed the grand panorama at which we gaze till we know more of the past than of the present, and are as familiar with the great and good among the dead as with our own personal friends.

Man is endowed with reasoning powers. He can not only retain important truths, but, by comparing them with things in some respects unknown, he may discover

the unknown. Of this kind are philosophical works in general. Their perusal tends directly and powerfully to improve the reasoning powers and greatly extend the boundary of human wisdom and happiness. They have been termed the "Oracles of nature speaking out of God's great temple," and are doing much to preserve the mind from the degenerating influence brought to bear upon it.

Man, whether Jew, Christian, Mahomedan or Pagan, bows at his shrine and worships, and all will concede we believe that as much of his present and future happiness depends upon the proper exercise and development of his moral nature as upon any other. Then it is not only proper, but important to read those works which address his moral powers and inspire his devotions. He who sits down to Wesley or Watson gets up a stronger and better man.

Since the human mind is endowed with the powers of imagination, the propriety of novel reading is often urged. It is asked, "Why do we possess this faculty if it is not right to exercise it?" That it is not only proper, but important to exercise it cannot be doubted. But we believe the imagination is acting out of its proper sphere when it pushes out from all creation and wastes its energy in ministering to the momentary gratification of the thirsting passions. In the forcible words of Watson, we would ask, "Is the world so barren of incident that we must create an ideal one to furnish it? Is man so barren a subject of speculation that we must contemplate him as a faulty or faultless monster that the world never saw?" Hence, of those works which are addressed to the passions, or are calculated to reach and affect the heart, we should learn to discriminate between the substantial and the fictitious.

May we so improve our time in reading that it will tend to directly help in our different vocations in life, and also, when we wish to spend a leisure moment in reading; we may with "history ransack the past, with geography travel round the world, with astronomy scout the heavens, and with philosophy plunge into the deepest abyss of nature."

A Review of a Review.

BY CLARENCE GILLET.

In the August number of the *Literary Microcosm* is an article written by the editor attempting to explode the current theory of sound. The theory is, that the intensity or loudness of sound decreases as the square of the distance from the sounding body increases.

The reason for believing this theory is substantially as follows:

A thin, circular stratum of air, one foot in radius, contains one-fourth the amount of air that would be contained in one of two feet radius, and one-ninth the amount in one having a radius of three feet, and so on; consequently, if sound is propagated in aerial waves, the quantity of air to be set in motion at two feet would be four times, and at three feet nine times the amount at one foot distant from a sounding body placed at the center; consequently the intensity of the sound at the respective distances would be one-fourth, and one ninth the intensity at one foot distant.

This theory applied to the increase of air, the editor says, no one doubts, but the sound theory he pronounces prodigiously erroneous, and says: "A more glaring and monstrously absurd hypothesis than this mathematical formula can not be imagined." He gives a few demonstrations, as he calls them, to prove to us that he has come to the logical conclusion. These demonstrations I will state, and then review them to test their validity.

For his first demonstration he supposes a person to start one foot distant from a sounding steam siren and then to move away, one foot at a time, to the distance of ten miles, and on squaring the distance (52,800 feet) he finds the amount of air in the larger circle to be 2,787,890,000 times that in the smaller; and, if the theory be true, the sound would be one-2,787,890,000th that at one foot distant.

He then takes one inch as the unit of measure, and goes through the same distance as before, and concludes that the two results must be the same, if the theory is true, for the sound will decrease the same in either case; but in the latter case he finds the quantity of air in the circles of one inch and ten miles radius to be in the ratio of 1 to 401,448,960,000, giving a difference of 398,661,120,000, which he calls the difference of intensity, that would have to take place between the two starting points, one inch and one foot, which evidently would be impossible. This demonstration, he says, ought to be sufficient to convince any sane man that the theory was false, but then goes on to give what he terms an absolute demonstration, by saying: "If sound decreases as the square of the distance beginning at one foot from the instrument, then it decreases at the same ratio beginning at any other distance."

He then places a person ten miles distant from the siren, lacking 100 feet, then taking one foot as a measure and causing him to walk back to the ten mile station, finds by squaring the 100 feet that the sound at the end of the last foot, according to theory and his hypothesis, must be one-10,000th of that at the first foot, and as the most cultivated ear can not tell the difference in sound, the theory can not be true.

He thinks now he has fully exploded the foolish idea in the mind of any candid scientific investigator, and asks scientists to explain away these difficulties or forever hold their peace.

I think we shall not need to lay any claim to science, but only use a little common sense in looking over the critics' arguments, and see if we shall conclude that our professors ought to "hold their peace."

The gentleman in the first demonstration has compared the intensity of sound at ten miles distant with that at one foot, and then with that at one inch, saying that the results must be the same, if the theory is true, for the decrease in sound is the same. I am surprised that he did not notice at once that his latter result was 144 times the former, and, as the last computation was made in inches, the sound would be decreased 144 times when it reached the extent of the unit of measure used in the first computation, and as the decrease went on from here together, and ended at the same place, of course the latter result would be 144 times the former, the same as at first. After this demonstration he exclaims: "Is there any man in Christendom so blind in scientific matters that he can not see the absurdity of this law?" If there is, and any man is trying to lead him to the light with such logic, we are sure they will both fall into the ditch, for it is a striking example of the blind leading the blind.

But how are we going to get around that absolute demonstration where the loudness of sound decreases 10,000 times without there being a perceptible change? If the other argument is absurd, this surely is ridiculously absurd. He says, and we all know it is so, that the theory is true when applied to quantity of air. Then, according to his figuring, the quantity of air in the circle with ten miles radius is 10,000 times the quantity in the circle with a radius of 100 feet less. To believe this does not stagger him, but he is amazed to think that any sane man can believe that such reasoning can be applied to the intensity of sound. We are glad

to inform him that we never have heard of a sane man that could believe either, and do not think we ever shall. But why does he employ feet? If he will take inches, and go through the last 100 feet in the same way, he will see that he can increase the quantity of air 1,440,000 times; but as each circle is of the same size, and holds the same amount of air, he has now proved that figures lie. What a pity that this was not found out long ago, that we might not have been deceived by them all these years!

The error in the last demonstration was in beginning at a distance from the sounding body and in changing the unit of measurement, while in all the other cases he began at the sounding body with a unit of measurement, which was retained throughout the whole distance.

There are two other arguments in the same article, which are equally frail, that I would be glad to review, but space will not permit. I will leave it with my readers to decide whether or not the article under review completely explodes the long and universally adopted theory of sound.

Scientific.

The Natural History Society.

The July meeting was held on Friday, the 22d, one week later than the regular time, and was the last meeting of the college year. There were 106 persons present. The reports of the officers showed an accession of twenty-three members during the year; donations to the museum have been quite liberal; the whole number of papers presented were 20—eight on botany, four on zoology, three on chemistry, three on geology, two on scientific methods, and there were four lectures or informal talks.

An illustrated paper was presented on "A Comparison of the flowers of apple trees with those of pear trees," by F. F. Rogers. In general the apple flowers are larger than those of the pear. The sepals of apple flowers are shorter and broader than those of the pear. In both the sepals are more or less woolly. The sepals of pears are at least half as long as the petals and are usually quite long and taper-pointed. Their stamens are not very unlike. The most marked difference is seen in the styles. In the case of the apple, the styles are united from one-fourth to one-half of their length forming a stalk or stipe; while in the pear the styles are distinct to the base. The calyx tube of the pear is somewhat globular, while that of the apple is urn-shaped.

Several varieties of apple blossoms and pear blossoms were described in detail, with accurate measurements.

F. S. Kedzie, assistant in chemistry, performed a very neat experiment, that of freezing water by pouring on liquid sulphurous acid.

An illustrated paper was read on "A comparison of the epidermis of mature cotyledons with those of true leaves," by Mrs. M. J. C. Merrill. The size and shape of the cells of the epidermis, including stomata, on both sides of mature cotyledons, the relative frequency of stomata and their arrangement, were compared with those on the first, fourth and sixth true leaves. Some order is often seen in the arrangement of stomata, as in rows with one to three rows of cells between. The stomata in these rows may be in pairs, or may alternate. In some cases a stoma is surrounded by six or eight others in regular order. The number of stomata on a leaf four inches long of common beet was 118,812 for the upper side, and 237,624 for the lower side.

The upper surface of a leaf of marigold, *Calendula*

officinalis) of four square inches contained 27,008 stomata, the lower 40,512.

The size of the cells varies with their position, being larger on the upper side than on the lower, and smaller on the sixth leaf than on those leaves which are older or nearer the roots.

In the arrangement of the cells surrounding the stomata no order was observed, they being placed in any way to fill the space. Examinations of plants were confined to dicotyledons.

Prof. R. F. Kedzie, of the Agricultural and Mechanical College of Mississippi, was present and spoke somewhat at length of that portion of the South which he had seen. Prof. Kedzie is the only person who has twice served the Natural History Society as its president. He complimented our society, said their college had organized one after the same plan and it was "all the rage." He described the first Southern political meeting which he attended. This was at Jackson, Tennessee. No one was shot. He described a scene on the streets of a Southern village as observed on Saturday, when the negroes were enjoying themselves with all sorts of trinkets, candy, ribbons, jewsharps, singing, laughing and dancing. He spoke of the red clay or mullatto land and the black prairie soil; of the deep gulleys being washed out by rains because the soil is very fine and no grasses form a close turf. He spoke of the oaks, hickories, pines, gum trees and persimmons. The cultivation is usually done with a one-horse plow, drawn by a mule, driven by a negro. The soil is often cut and covered only a few inches deep. The roads and the boundaries of fields follow the lay of the land and not the cardinal points of the compass. Cotton is the great crop. It is raised and sold to buy almost everything else needed. The crop is often mortgaged before it is raised. A greater diversity of crops, the professor thinks, would be of great benefit to the country. The negroes will often pay two or three dollars per acre as rent on land for one year, when the land could be bought for five to ten dollars an acre. The negroes are improving slowly. The college students take but very little interest in politics. They work well and study well, though their common schools have not given them many advantages.

Dr. Beal exhibited some specimens of Bermuda grass from the botanic garden. Last autumn Dr. Kedzie brought some of this to the college, where it was wintered in the green-house. In spring it was planted out. It grew slowly for a while, but as the weather became warm it branched out and spread rapidly. It sends the tips of its pointed, jointed stems into the ground. Roots start at every joint on prostrate stems which touch the soil.

L. H. Bailey, Jr., spoke in high terms of the new catalogue of the plants of Michigan. He exhibited plants of *Lemna minor* in blossom. This is a floating plant, not one-eighth of an inch in diameter. It has blossomed here every year for many years. He exhibited also plants of *Wolffia* from South Haven, where it is very abundant. It is the smallest flowering plant known, only a speck without roots floating on the water. Mr. Bailey also exhibited flowers of *Erythraea Centaurium*, a plant introduced on the college grounds. It is spoken of in Gray's Manual as occurring only at Oswego, N. Y.

A. C. Redding had been shown a head of wheat containing chess on one side. Dr. Beal had received similar specimens nearly every year. The panicles of chess in some way get pulled through the spike of wheat which holds the chess. The chess can easily be liberated by spreading the chaff of the wheat. There is no union of the chess and wheat.

An election was held, resulting as follows:

President, L. H. Bailey, Jr.; Vice-President, F. F. Rogers; Secretary, A. C. Redding; Treasurer, F. E. Delano; Curator, F. S. Kedzie; Directors, James Troop, Dr. W. J. Beal, W. C. Latta, L. A. Buell and D. C. Holliday, Jr.

The meeting of September 16th was well attended.

Dr. Kedzie read a paper on "Watered Stock." Railroad stock is not the only "watered" article. Silk and wool absorb moisture and change in weight. When in piles or bins wool absorbs much water and becomes heavier; when taken to market in a wagon, however, it will lose weight, and the man who barter about all day for an increase of a cent or two on a pound of wool, loses more than that amount in weight. Wood gives off large quantities of water in seasoning. One year is not enough to deprive it of its moisture; wood which had been kept dry for 300 years was found to be daily losing moisture. California wheat is so dry when harvested that when it is taken to the damper air of the sea coast it gains 7 per cent. in weight, or the gain is sufficient to pay for its transportation. Very many substances are thus highly hygroscopic, as chloride of lime and sulphuric acid. Glycerine is found by Dr. Kedzie to belong to this class of substances, a fact not mentioned in the text books. From this property of absorbing moisture from the atmosphere, it is used in making the best quality of lead pencils to keep the points moist. The professor found that glycerine exposed for twenty-two days to the exceedingly dry air of last August would increase in bulk one-third.

"How peas get up in the world," was a paper read by C. P. Gillett. Peas, like some other things, have a great tendency to "catch on" to objects of suitable size. This is done by the use of transformed leaflets called tendrils. He gave some reasons for believing that the tendrils are transformed leaflets; that tendrils are not fully developed until they are needed for support; that they vary in position and form; that they will only twine about small objects, and explain how they act in the presence of objects or free from them.

"Sleeping plants," were discussed by R. J. Coryell. He had examined and experimented with several different varieties of plants and found that they were all quite regular in their habits of "sleep." The manner and time of closing or "sleeping" he found to vary in different varieties. He also found that light was not necessary to keep them awake, neither would darkness make them sleep.

Fred J. Hodges read an article on "Position of honey in plants." This seems like a very easy thing to determine, but after examining many flowers of different plants he did not find it so easy in all cases. In many flowers the honey is not perceptible at all, while in others it is quite easily seen. In the red clover the flow is quite slow, while in the milkweed, figwort and verberna the flow is very rapid.

L. H. Bailey, Jr., illustrated by drawings the peculiar fertilization of the wild yellow foxglove, *Gerardia flava*. He remarked that the time would undoubtedly soon come when botanists would be able to divide flowering plants into many great natural orders from the various contrivances employed in cross-fertilization, and that these orders would very nearly coincide with the present natural orders. They would not, of course, in any way supplant the classification as we have it now. The method of fertilization of the wild foxglove in question represents to a great extent the fertilization of most of the didynamous members of the Scrophulariaceæ. The anthers open along a suture or slit, where stiff hairs point downwards, and at its lower end is a sharp spine, also

pointing downwards. As the bumble bee backs out of the flower with his back down, this spine and the hairs catch on his abdomen, and are pressed upward and the slit opens; when they let go of the bee the anther walls spring back to place and the pollen is thrown forcibly on the bee, ready to be rubbed off on the exerted pistil of the next flower visited.

Professor Cook spoke of the curious fact that many insects are double brooded this year, such as were never known to be so before. He mentioned particularly the tent caterpillar, the tomato moth and the luna silk moth, although the latter is commonly double brooded farther south.

A communication was read, relating to the benefits of small birds as insect destroyers, from John E. Taylor, of Otisco. Seven bluejays had the following articles in their gizzards, July 29, in about the proportion indicated in the table:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
Insects	00.10	00.00	00.05	00.00	00.05	00.00	00.00
Clover seed.....	00.00	100.00	5.00	00.00	20.00	00.00	00.00
Corn	50.00	00.00	75.00	00.00	00.00	100.00	00.00
Wheat.....	49.90	00.00	18.95	00.00	79.95	00.00	100.00
Cherries	00.00	00.00	1.00	00.60	00.00	00.00	00.00
Total	100.00	100.00	100.00	00.00	100.00	100.00	100.00

He finds the king-bird guilty of "beeicide" in about two cases in a hundred, but regards him as a very useful bird. He also strongly upholds the robin, and recommends the planting of sufficient cherry trees for the use of both robins and families.

Dr. Kedzie presented an amendment to the constitution, to be voted upon next meeting, to change the time of holding meetings from the third Friday to the second Friday of each month.

The Society for the Promotion of Agricultural Science.

This society held its annual meeting during August 16th and 17th, at Cincinnati, Ohio. There was a good attendance of members and of others not members.

A short introductory address was given by the President, Dr. W. J. Beal. He referred to the peculiar field and the great need of such a society, of the great interest shown not only by all of its members but by many others who wish to see agriculture advance. The president closed as follows:

"As a society, good works for an honorable name are yet to be won if they are ever won. Our aims are high, and with united, earnest effort, a grand future is before us. Even at this early day we have the united interest and cordial support of all the members. Our most valuable work may not attract public attention, but let not this lead to discouragement. Our aim is not for display or attracting large numbers by flowery speeches announced in pleasing programmes.

"We have organized in the most prosperous times in the whole history of our great nation, when science and its applications are progressing with unparalleled rapidity. We may well rejoice that we live in such auspicious times, and take pride in this noble undertaking which may accomplish some good for agriculture—an honorable business in which over one-half of our people are engaged, and in which all are deeply interested."

Prof. L. B. Arnold read a paper on "Some new points in dairying." Prof. W. H. Brewer, "Some of the works of the tenth census in regard to the cereals." Dr. W. J. Beal, "Testing seeds." Dr. G. C. Caldwell, "Analysis of milk." Dr. B. D. Halsted, "The agricul-

tural instruction of the young." Dr. R. C. Kedzie, "The ripening of wheat" and "Vesiculating test for wheat flour." Dr. E. L. Sturtevant, "The relation of seeding to the quality of fruits and vegetables." J. J. Thomas, "The aims of the society" and "Experiments on the roots of plants."

As Professor Cook was not present in time to read his papers, they were read before the Entomological section of the A. A. A. S. The papers called out much valuable discussion and were reported by the press.

The following summary of Dr. Beal's paper has been furnished by the author:

"In making tests, the fact must not be lost sight of that the finest looking seeds, and those which show the greatest proportion of living seeds, may not be the most desirable for the field or garden. Much depends on the variety. Good, fresh, genuine seeds, whose history is known, are desirable to test alongside of others whose history is unknown. Fresh, good seeds vary less in the different modes of testing than do old or damaged seeds. After many tests in several ways, new hand-saved wheat was shown to average nearly 100 per cent. of germinating seeds, while one lot of old wheat varied much, from 33 to 96 per cent. The tests of wheat in open ground were more variable and unsatisfactory than in any other way. As was expected, the changes of weather, the damage from insects, birds or moles, interfered with the outdoor experiments to a considerable extent. The same was true of all the other seeds tested.

"A series of experiments have been made to aid in determining the most favorable temperature for the seeds of squashes and the like to germinate. The most favorable and uniform results were obtained by testing in a room where the thermometer rose to 100° or 136° F. during a considerable part of the day. Seeds of melons and cucumbers were less particular in regard to temperature than were those of the larger squashes and pumpkins.

"It was found that wheat once sprouted a little and well dried would sprout a second time in most cases, and this well dried would sprout a third time. After drying the same plumule started each time, but new roots always took the place of older ones which were dried."

Probably the most valuable paper read was that of Dr. Kedzie, on "The ripening of wheat." We give an abstract made by the author:

"The composition of wheat at different periods of ripening is a subject of so much importance that it was made a matter of careful study in this laboratory. Twenty-one specimens of wheat, of the Clawson and Schumacher were selected at the same hour for 21 consecutive days, embracing the time from first formation of berry to dead ripeness. These forty-two specimens were carefully analyzed by my assistant in chemistry, now Prof. R. F. Kedzie, of A. and M. College of Mississippi.

"The following summary gives the most salient points in this investigation:

"1. The gross product rapidly increased up to complete hardening of the berry, and then fell off to a small but appreciable amount.

"2. The cellulose or woody matter rapidly decreased as the berry ripened, but after it became dead ripe it increased, showing a loss of nutritive value in over-ripening.

"3. The albuminoids were present in relatively larger amount at the earliest periods of growth, and the percentage of albuminoids fell off very rapidly in process of growth, and was less at period of dead ripeness than at earlier periods. So also the actual amount or pounds to the acre of albuminoids was less at the dead ripe stage than when the wheat was 'in the dough.'

The hardening of the berry in dead ripening is not from the increase of gluten but of woody matter.

"4. The rapid accumulation of starch and other carb-hydrates, attending and following the milky stage of the berry, is the most striking feature of ripening, and when the starch has accumulated so that the berry will crush dry between the thumb nails, the grain is in the best condition for cutting, both for the producer and the consumer. By dead ripening there is less grain, and the value of the grain for food is diminished."

The Cincinnati *Enquirer*, in its long report headed "Scientific Georgics," "Pen-pictures of the specialists," "The papers read," etc., among other things contains the following:

"The Society for the Promotion of Agricultural Science began its second annual meeting in one of the art rooms of the Exposition building yesterday morning. It has twenty-one members, comprising the most noted scientists in the United States; those who, in their various specialties, in fact, stand without a peer in the world—men who have devoted their lives to the investigation of the innumerable subjects which are the outgrowth of agriculture, and whose efforts have tended greatly to the advancement of farming as a business. The membership is small, and it is proposed to keep it so. The rules governing admission are exceedingly strict, and the applicant or nominee must be a person of unusual scientific standing and learning.

"Yesterday's gathering was highly satisfactory to those attending, and all felt considerably elated over the brilliant prospects of the Society."

Dr. Beal was re-elected President; Dr. Sturtevant re-elected Secretary. L. B. Arnold and President and Secretary constitute the Executive Committee.

Fourteen new members were elected, making thirty-five in all. Among these were W. W. Daniels, '64; W. W. Tracy, '67; S. M. Tracy, '68; R. F. Kedzie and E. M. Shelton, '71; F. A. Gulley, '80.

...

The American Association for the Advancement of Science.

This association held its thirtieth annual meeting at Cincinnati, Ohio. The session began August 16th and continued one week. The meeting was attended by about 500 members and many who were not members. Within about nine years the membership has increased from 500 to 2,000. It is every year becoming more efficient. It is now divided into the following sections, all of which may meet at the same hour in different rooms. A, Mathematics and Astronomy; B, Physics; C, Chemistry; D, Mechanical Science; E, Geology and Geography; F, Biology; G, Histology and Microscopy; H, Anthropology; I, Economic Science and Statistics.

Dr. J. W. Dawson, of Montreal, was elected President for the next meeting. The meeting will be held at the residence of the President, beginning on the 24th of August, 1882.

Free lunches were given the members every day of the session, and free excursions on railroads to the Mammoth Cave and to Chattanooga.

Every member was furnished with a badge, on which was stamped a number corresponding to a printed list issued with the daily programme of exercises.

Professors Kedzie, Cook and Beal attended the association.

Professor Cook read two papers. The following are abstracts furnished by the author:

"The two papers, 'The Syrian bees' and 'Carbolic acid as a preventive of insect ravages,' were pre-

sented before the sub-section of Entomology of the A. A. A. S.

"The first paper, after giving a brief history of the Jones-Benton expedition to Europe, and the importation of the Syrian and Cyprian bees into America, proceeded to describe in detail the former race. The great superiority of these bees lies in their continuous breeding, even in the face of a honey dearth. The chief objection to them is their lack of amiability. In their very striking uniformity, which applies no less to the drones and queens than to the workers, they form a striking contrast to the Italians, and illustrates the effects of close in-and-in breeding. The fact that all the drones, even of impurely mated queens, bear the same stamp, sustains the law of parthenogenesis."

"The second paper gave the results of some experiments with a carbolic acid mixture. The liquid was made as follows: To two quarts of soft soap was added one gallon of water. This was heated till it boiled, when one pint of crude carbolic acid was added, and all allowed to cool. This diluted with from fifty to one hundred parts of water, was used with good success against the radish fly (*Anthomyia raphani*), the cabbage fly (*Anthomyia brassicae*), and the squash root borer (*Aegeria cucurbitae*). The liquid, without dilution, is excellent as a wash for apple, pear and peach trees to repel the borers. On the trunks of the apple and pear trees of Michigan it should be applied the first and last of June; on the peach in July, about the 15th."

Professor Cook read a third paper, "How does the bee extend its tongue," which was ingenious and very valuable, but technical.

Dr. Beal presented a paper on "The Movements of Roots in Germinating Indian Corn, of which the following is an abstract: "Mr. C. Darwin in his last book says: 'In whatever direction the primary radicle (or root) first protrudes from the seed, geotropism (or the attraction of the earth) guides it perpendicularly downwards."

"Dr. Beal studied over 400 kernels of sprouting corn of seven or more varieties. These, after starting a little, were pinned fast to a stick and put in a dark place, over water. Most of the roots went obliquely downwards, many making one or more coils on the way, while some went off horizontally; some went upwards, directly or indirectly. One of those which went upwards made two coils, another made three. All the experiments did not coincide with those of Darwin."

—•••—

—Prof. Thomas, of Illinois, says that the probable reason that Michigan is not troubled with the chinch-bug is the damp atmosphere consequent upon her lacustrine borders.

—Prof. Riley gives a case of retarded development of the destructive western grasshopper, where eggs laid in 1876 hatched only this year. Prof. Thomas gives a case of four weeks' retardation of hatching of eggs which were submerged in water.

—The American Pomological Society met at Boston Sept. 14, 15 and 16. Delegates were present from thirty States and Territories. Michigan was represented by T. T. Lyon, J. G. Ramsdell, Dr. W. J. Beal, W. K. Gibson, E. H. Scott, B. Hathaway and wife, and Geo. L. Seaver. T. T. Lyon was elected Vice-President for Michigan. Dr. Beal was elected secretary of the Society. Michigan received a silver medal "for the best miscellaneous collection of fruits." The junior class of the college made an excellent display of injurious and beneficial insects—eight cases. Dr. Beal read an article on "Describing pears by the blossoms."

The College Speculum.

Published Quarterly, on the 1st of August, Oct'r, April and June,
BY THE STUDENTS

—OF—

THE MICHIGAN STATE AGRICULTURAL COLLEGE.

Terms, Fifty Cents a year; Single numbers, 15 cents.

☞ Advertising rates made known on application.

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LANSING, MICH., OCTOBER 1, 1881.

OUR friends are making constant inquiries and predictions as to the probable future success of THE SPECULUM. While its present indications for a long and useful life are very auspicious, it may still be well to give at this time some words of caution regarding the future management of the paper. We wish to impress upon our contributors, as well as upon future editors, the necessity of making THE SPECULUM a high-toned paper. It is proverbially a fault with college papers that they contain so many slang expressions, low allusions, personal flings, and supposed jokes which are understood but by the initiated, as to make them unpleasant reading. It is the determination of the present board of editors to avoid these faults above all things else; and any contributor will find his articles stripped of all such expressions if they are found, or will hear of them only through the waste basket. THE SPECULUM is not a boy's paper, into which the odds and ends of fun and nonsense may be thrown; it is published by a body of students who are earnest and desirous of making it a medium of instruction between alma mater and alumni, between the college and the tax-payers of the State.

As long as this spirit of earnestness is exhibited among students and contributors, and is rigidly borne out by the editors, the greatest success and the longest life will be the certain future of THE SPECULUM, for the paper is needed, and all things else depend upon its pure, high-toned character.

FOR a number of years the question of building a street railway from Lansing to the College has been discussed by students, professors and citizens of the city and surrounding country. The project has been brought many times to the notice of the public, and as many times laid aside for a seeming lack of business enterprise. It may be a question whether the state can better afford to build such a railway that students may board in the city, rather than erect new buildings when our present ones are insufficient to accommodate them; but it appears beyond question that at present individual enterprise could handle the matter and to good advantage. The ordinary amount of travel by students from

College to Lansing, a distance of three and a half miles, is considerable. With the wagon-road as miserable as it always is—always controlled by people who have no idea of the art of road-making—it becomes no light task to walk to the city and back, with, probably, a load of merchandise. And as for the sides of the road, they are much of the way worse if possible than its middle, being utterly impassible from gutters, weeds and rubbish, for these people care no more for the tidy appearance of their road-front than for that of any other part of their premises. It is not strange, then, that students should be anxious for some means of conveyance to economize time and strength.

It is a point quite generally conceded that such a railway would pay. But little grading would be necessary to put it in good shape, and the whole outlay for construction would be comparatively small. With such a convenience the ordinary amount of travel by the students would be much increased, although the fears of some that students would avail themselves too often of the opportunity are seemingly unfounded, for most of our students have neither the inclination nor the money necessary to ungentlemanly conduct in the city. Day students from the city would no doubt soon become numerous, and the traffic from visitors would certainly be very great. There are many residents of Lansing, and great numbers of transient people, who would be glad of an opportunity to frequently visit the College. In fact the number of visitors at present is very great, although many of them are obliged to pay some unaccommodating hackman two or three dollars to drive them out. With a street railway the usual number would be wonderfully increased. The professors would also patronize it to large extent. The mail and much merchandise could also be transported in this way.

Here, then, is an opportunity for a money making enterprise, or at least sufficient inducements to claim the attention of capitalists or stock companies.

Now that we have entered upon a new year, would it not be well to renew the question of a military department at our College? That the students desire it is established. Nothing would give us more gratification than one or two well-drilled companies of cadets. We have an armory and sixty stand of arms, with possibilities of obtaining more if desired. This armory and these guns should be utilized. All we need is an energetic, interested instructor from the U. S. army. We are confident, if the proper means were taken, that such an instructor might be obtained here at our College, supported by the government. Such a man would arouse our present cadet organization into some kind of a system, and would make it beneficial to us all. We desire some knowledge of military science. If it is nothing more, it is a fine accomplishment of which every intelligent man should know something. But it is more than this. It is the great characteristic of our nation, that she must obtain, not only her intelligent voters, but also her intelligent supporters in the time

of need from her citizens. Twenty years ago this need was painfully apparent, and it is evident to-day that had there been as much diffusion of military knowledge in the North as there was in the South, the great struggle might have been sooner ended. Congress felt this great need, and in its endowment of public lands for the support of agricultural colleges, made the teaching of military tactics one of the conditions in the colleges that might be benefited by this act. Our College is not doing its duty in this respect. Other agricultural colleges are far ahead of us here. Massachusetts Agricultural College has an instructor from the United States army, and the students are organized into two companies of fifty-eight men each. Iowa Agricultural College makes military science a part of its course. All the students are obliged to drill and wear the cadet uniform. Maine Agricultural College has a professor of military science, and the instruction extends all through the course. Infantry tactics are taught during the first three years, and artillery practice is given to the seniors. Alabama Agricultural College has a very thorough military department. The students are organized into four companies, and every student "not physically incapacitated to bear arms" is obliged to drill. Purdue has a company of cadets, the joining of which is voluntary, captained by one of the professors. As the most of us know, military science is a very prominent feature of the Mississippi Agricultural College, even making a part of the government and conduct of the school. Let us do something to put ourselves upon a footing with other agricultural colleges in this respect, as well as in all others. If we, as students, push this matter, there is almost a certainty of doing just what we desire to do and obtaining just what we ask. Why could it not be brought up before the students' organization?

It is gratifying to know that THE SPECULUM is appreciated. The alumni write their enthusiasm over its success; farmers and others who are interested in the College are pleased with it, and many of the leading newspapers and agricultural papers of the country give it favorable mention. The editor of the *Michigan Farmer* writes: "We have made copious extracts from it. It is very neat and attractive, and, what is still better, filled with interesting matter. Long may it prosper." The *New England Homestead* says: "While essentially a College journal, the first number gives promise of being of practical interest and value, and we hope the College boys may be sufficiently well patronized to continue the paper in as good shape as it has been commenced." The *Grange Visitor* and many others give similar notices. Now that the enterprise has proved so far successful, we take pleasure in recommending THE SPECULUM to all who are interested in education and to the intelligent agriculturists of the state, and from the alumni of the College we urge subscriptions. Very many of them have not yet subscribed, although a specimen copy has been sent to each one.

Send us your subscriptions; learn what your alma mater is doing; keep well informed on college topics, and distribute the paper among those who are continually opposed to the institution.

FIDELITY to work is the great requisite quality of a student in pursuing his course through college, and how this fidelity can be best encouraged is a question which has long received the attention of the erudite of this and other countries.

That examinations are essential to stimulate fidelity is acknowledged not only with us and under our system, but also in the educational institutions of Germany and England. The only question is as to their frequency, whether a student should be examined every day or whether the examination be postponed until a subject or a text book has been completed.

We think that a daily examination encourages servility and superficialness. The student is called upon to recite perhaps every second or third day, and this occurs so regularly that he makes a fair recitation when his allotted time comes. On intermediate days, however, the lesson generally receives little attention, and he will rapidly skim over a portion of it, his only object being to get a high mark if possible. There is simply a rapid "cram" on these days, while on others the student does not even do this. He does not read other authors than his own on the subject, and he has not as his aim his own improvement but the standing he gets by ingeniously reciting that which he scarcely understands. This is not always true, but we think that with a majority of students an investigation of their motives would reveal them as represented.

Again, it lowers the moral character of those subjected to this kind of discipline. It encourages deception and other kindred evils when a student understands that a sly compliment to his professor for some of his investigations, a rapid or slow recitation, a good figure on the board, apparent attention during recitation, "bulldozing," or some other peculiarity which pleases his instructor will bring him a good mark even when he himself will affirm that he "didn't know anything about the lesson."

It often happens that the professor will be calling consecutively upon a long row of students, and at the same time there will be sweeping along an advance wave of open books with sufficient prompting to help an occasional poor reciter. This, we say, often occurs, and such practices can hardly fail to be more injurious than would be a proper study and understanding of the text-book, irrespective of so much empty show.

It is contended, and with considerable weight, that the marking of individual recitations divides the attention of the instructor. He cannot devote his attention closely to the explanations and demonstrations if he is at the same time giving enough thought to the marking to insure justice to those being examined.

By dispensing with class-marking we believe that our students would obtain a better knowledge of their

studies, and would feel a consciousness of having done justice to themselves and their professors by upright dealing.

Let us have our class a place for encouragement and explanation, and not a place for hypocrisy and waste of time, as it often is.

THERE is a growing need for greater accommodations for visitors to the College. The increasing popularity of the institution brings each year more visitors, and especially so as the number of students increases. During the commencement exercises last term scarcely less than seventy-five ladies visited their friends here, and all the accommodations to make their stay pleasant was a small parlor and one bed-room! The students were required to vacate their rooms and to sleep on the floors in society halls and elsewhere. This is not only an inconvenience, but a positive wrong, which should be remedied to a certain extent, at least. While an investment of sufficient amount to provide rooms for the accommodation of seventy-five occasional visitors would not be advisable, it would, however, be a source of great convenience and benefit to provide at least a small number of rooms, say ten, which might be used by the friends of students. They would prove to be of more than an occasional use. If students ever organize themselves into boarding clubs, each club might keep and furnish a certain number of rooms for this purpose.

We should also have a public wash-room. If the College cannot afford to make visitors comfortable in any other way, it certainly can provide them with a respectable means of keeping clean. This defect in our arrangements is most felt when new students arrive. It was painfully seen but a few days since, when candidates for admission to the freshman class, after riding in smoky cars and walking through the dust from Lansing, had either to use the steward's private rooms or go unwashed. They must certainly have had a keen appreciation of the general conveniences of the institution they were about to enter!

MANY people enjoy nothing that is not showy and costly. The outside appearance of an article is of greater importance to them than its usefulness or durability. This applies particularly to the Reports of the State Board of Agriculture. These are published every year by the state; they are bound substantially in cloth, but have no pictures on the back, the pages are plain, there are a few statistics in the back part, and more than all, they are given away; hence they are commonly accounted worthless, and, if possessed at all, often find a place on the top shelf of the library or among the paper rags. The fact is, however, that there are no works on agriculture of equal importance to the agricultural reports of the various states. They are not the compilations of the experiments and opinions of one man, but are made up of contributions from professors and farmers. In Michigan the Board of Agriculture has charge of the Agricultural College, and the Reports contain accounts

of important experiments performed at the College and statements of College finances. Many farmers have a chronic growl that no one knows anything about the experiments, investigations, and especially the finances, concerned with the Agricultural College—all because they do not read the reports.

Before us is the report of 1879—not the best one—and the following is some of the matter it contains: College accounts; reports of members of the faculty; donations to the College; winter care of live stock; injurious insects; adulteration of food; boys and girls on the farm; brain on the farm; culture, cost and value of root crops; hedge fences; best breeds of cattle; farmers' organizations; farm drainage; small fruit culture; corn culture; agricultural fairs; wheat culture; farm fertilizers; improvement of stock; practical education for women; drained swamp land; manual labor at the Agricultural College; experiments in the College horticultural department; farmer's boys; our patent system; economy in farm management; the horse's foot; superphosphates for the farm; tongue of the honey-bee; sting of the worker-bee; salt in agriculture; the hog; various reports from the State Agricultural Society.

Can you afford to be without these works?

IF THE SPECULUM can do nothing more, it can, at least, find fault with some of the discrepancies of our College from a student's point of view, and, perhaps, point out wherein they may be remedied. One of these incongruities is our present chapel. Is there any body in the state, that knows anything about us, that believes our chapel is sufficient for the needs of our College? Fine buildings we lack not. Commodious recitation rooms are fast being supplied; yet our chapel, that we use so much, is far behind the other accommodations of our College. Every commencement within our memory has been spoiled by the lack of room. We like to have visitors, but visitors don't care to come over three miles and then be packed for two hours in a vertical position in a square box of a chapel; and freshmen certainly have delicate compunctions in regard to taking boxes in "Freshmen's Heaven." As it now stands, there is a growing tendency among the students to carry their exercises to the city, where they can be better accommodated. This does not seem right, and it is quite certain, if this need of a chapel was supplied, the tendency would be checked.

Special technical instruction is offered by the Louisiana State University, Baton Rouge, to young men expecting to become planters or plantation mechanics.

The new art building of Smith College, Northampton, Mass., is to cost \$25,000. It is to be made of brick, with stone trimmings, 104 feet long, 45 feet wide and two stories high.

CONTENTED ON THE FARM.—One of our professors recently wrote C. B. Charles, '79, in reference to taking a post-graduate course with a good prospect of becoming a teacher of agriculture in some college. He replied as follows: "I appreciate your interest in my welfare and am thankful for it. My labor here is both pleasant and profitable, more so, perhaps, than any other business in which I might engage. I can, perhaps, do my fellow-man as much good here as any where." Two years of experience in managing a farm since graduating has demonstrated his ability to succeed.

Correspondence.

We should be pleased to receive communications on various topics for this department, from time to time.

Anonymous articles will not be noticed by the editors.

All correspondence should be addressed to L. W. HOYT.

We are in receipt of the following from John E. Taylor, class '76:

OTISCO, Mich., August 27, 1881.

Editors of THE SPECULUM:

On receipt of THE SPECULUM I was too much delighted to manifest aright my appreciation of the good work you are all doing for us absent "boys" and for yourselves and for the institution, all of which we, I at least, have learned to truly appreciate. Nor yet can I explain the solid comfort I take in participating in its contents and anticipating its permanent future. Such is human nature that we underestimate that we have and overestimate that which is out of our reach. In connection with this thought, I might say to the students who are feign to lament their bill of fare, nerve your will to endure it; it may be your appetite is as poor as the victuals. If you wander over a considerable of the breadth of this continent, and pay from \$5 to \$14 per week for board, I know from experience that you will find there is worse than college fare that sometimes tastes a great deal better. Imagine yourselves, 12 of you, 50 miles from a habitation, grouped about a box of sardines, a pound of raw bacon and a few crackers, the first food in 12 hours, and the last till the 50 miles are passed; and, to add excitement to disorder, have the alarm of "Injuns" sounded in the midst of your scanty meal. During just such an adventure I once meditated whether it was not just retribution for some sarcasm I sometimes heaped upon "college beef."

SYRACUSE, N. Y., July 16th, 1881.

Editors of THE SPECULUM:

The idea of publishing a college quarterly, as indicated in circular received, will commend itself to the favor of all the sons of the institution, and, it seems to me, prove a gratifying success.

I well remember the momentous day of my first appearance at the college. On the day of examination I timidly approached and sat on the upper step of the west entrance to the college building, waiting in fear and trembling, dreading to enter the great building. While waiting, a gentleman climbed the long flight of steps, wheezing some as he reached the top. He tried the door. It was locked, and he turned to me to ask why I hadn't told him so before he came up the steps. Poor me! I hadn't even dared to try the door! And he remarked that I would never enter college without I tried. No doubt, as he put it, it was witty; but I was so badly frightened that I wished I was home, for this was President Williams!

I wonder if your present President will remember my aiding him in his work when he was both Secretary and Treasurer of the college. I had to make out the board accounts of the students, and, as they would pass through his hands, I wasted a quire or more of paper in getting them up neatly. There was something over an hundred of them, and they were in about this form, viz.:

Mr. A. F. Allen,

In account with Mich. State Agricultural College, Dr.
1858. To 20 weeks board, at \$3. \$60 00

By 140 hours' labor, at 7c 9 80

By cash to balance \$50 20

Received payment.

Prof. Abbot looked them over, then took off his spectacles and wiped them in his peculiar way and remarked, very kindly, "These are made out very neatly, and you evidently took great care, but when I went to school, Mr. Beebe, they spelled 'balance' with one 'l.' Have the text books changed in that respect?" From that day to this I haven't had to consult the dictionary on that word!

And any of the boys will remember how blandly he used to say, in recitations, "You may go on with the recitation, if you please, Mr. Hollister." That was particularly entertaining to us when we were in Whately's Logic! Gilbert A. Dickey and Albert N. Prentiss, or "Albert N.," as we used to call him, were the only ones who ever knew anything about where we were or how to go on, and they, confound them, always "had their lessons."

* * * * I would suggest your publishing, so far as you can obtain them, the present addresses of the earlier students. I should like to know where they are, what doing, how prospering, etc., etc.

In writing me, or sending any matter, please direct to Utica, N. Y., where my home is. Wishing the new enterprise every success, I remain, very respectfully,
L. V. BEEBE.

Colleges.

Amherst has the largest scholarship fund of any college in the United States.

The University of Michigan estimates its expenses for the ensuing year at \$271,215.

Texas Wesleyan University is the name of a new Methodist College established at Fort Worth, Texas.

The University of Rochester, N. Y., has received \$20,000 from the late Mrs. Milard Fillmore.

Kansas Agricultural College, Manhattan, Kan., is soon to purchase \$1,000 worth of books for its library.

Yale's library has lately received an addition of 17,000 German pamphlets. Some are said to be very valuable.

Mrs. S. H. Knight, formerly of Lansing, has accepted a position as teacher of vocal music at Adrian College, Adrian, Mich.

The University of Berlin, Germany, has 215 professors, and during the past year their lectures were attended by about 5,000 persons.

Pres. A. D. White, of Cornell University, Ithaca, N. Y., is suggested as a person likely to be Secretary of State should Secretary Blaine resign.

Henry Villiard, President of the Union Pacific Railroad, gave in the first part of August \$7,000 to the Oregon University to relieve it of its indebtedness.

Dr. George L. Goodale, the renowned botanist of Harvard, sailed for Germany September 3. He is seeking respite from arduous duties and improvement of health.

Amherst has admitted about 100 freshmen; Princeton, 192; Williams, 100; Smith, 100; Monmouth, 90; Kansas Agricultural College, 122; University of Michigan, 219; Western Reserve College, 27.

Dr. Asa Gray will return to this country during the first weeks of September. He is heartily welcomed home by all botanists, few of whom have not reason to thank him for repeated favors.—*Botanical Gazette*.

Regent Climie, of the University, has been appointed superintendent to look after the construction of the new library building, with a salary of \$3 per day during the winter months and \$4 per day during the summer.

We have learned that Mr. P. B. Mann, chief editor of the *Psyche*, organ of the Cambridge Entomological Club, has accepted a good position in the National Department of Agriculture, in the line of entomology. He will still act as editor of the *Psyche*.

Prof. Ira Remsen, of John Hopkins University, Baltimore, Md., has lately been making some ingenious experiments to determine whether the chemical behavior of a metal is affected in any way by magnetic action. The experiments are very interesting.

Dr. C. E. Bessey, of Iowa Agricultural College, is editor of the botanical department of the *American Naturalist*. He is making the department more interesting and valuable than it has been for years. Dr. Bessey graduated here in 1869. He is a live and accurate botanist.

Prof. J. H. Comstock has returned to Cornell as Professor of Entomology. Dr. Barnard is to go to Washington to assist Prof. Riley, who is to take Prof. Comstock's place in the Department of Agriculture. Prof. Comstock still retains a lucrative position in the department.

The Cornell crew claim that they lost the late race at Vienna on account of the treachery of one of the crew named Shinkel, who had been bought, and from all reports one would judge that the remainder of the crew were at least very injudicious in what they say concerning it.

Of the 350 to 400 colleges in the United States in 1879, Columbia had the largest productive income, and five of that number possessed over \$1,000,000, as follows: Columbia, \$4,800,000; Harvard, \$3,902,182; John Hopkins, \$3,000,000; Lehigh, \$1,900,000; Cornell, \$1,263,999.

Augustus Storrs, of Brooklyn, N. Y., has given to Connecticut a well stocked farm, with suitable buildings, situated near Willimantic, as the foundation of an agricultural school. The state has accepted the gift and made a suitable appropriation, so that the school is just open to students.

G. E. Seney, of New York, whose generous gift of \$100,000 was mentioned in the last number, has added to this other donations; \$50,000 has been given by him to Emory College, Oxford, Ga., and during the past year he has added in all \$70,000 to the fund of Wesleyan Female College, Macon, Ga.

The percentage of those who prepared for or entered the ministry has fallen in Harvard's graduates from 53.3 per cent. to 6.7 per cent.; Yale, from 75.7 per cent. to 15 per cent.; Princeton, from 50 per cent. to 21.12 per cent.; Brown, from 35 per cent. to 22.4 per cent.; Oberlin, from 66 per cent. to 31.3 per cent.; Columbia, 18 per cent. to 5.8 per cent.

Dr. Wilder and Prof. Gage, of Cornell University, Ithaca, N. Y., spent their last vacation on their book on cats. It will probably be published this fall, and considering the high standing of these gentlemen and the interest awakened by Mivart's work on the same subject, the new book will have a large sale.

Adrian College claims that it was a pioneer in offering an elective course of study five years ago to its students, and that the University of Michigan and others have followed its example. This is strange. About 15 years ago Harvard introduced an elective system, and for a number of years our University has been called one of the few universities proper in the United States.

In 1879 Harvard had the largest college library in the United States, containing 182,500 volumes. The University of Cincinnati had also 146,013 volumes, including a public library; Yale, 93,000 volumes; Dartmouth, 55,000; Brown, 52,000; University of New Jersey, 47,000, while Michigan colleges have libraries as follows: University of Michigan, 29,000 volumes; Olivet, 7,000; Hillsdale, 7,000; Hope College at Holland, 4,500; Kalamazoo, 3,300; Albion, 2,500; Battle Creek College, 1,000; Adrian, 400; Grand Traverse, 300.

College News.

Sixty-five freshmen; two are ladies.

The roof is being placed on the library and museum building (September 20).

The rotation of crops on the farm is: corn, roots, oats, wheat and two years of sod.

Positively needed by the students and dining-hall—another well of good drinking water.

The grounds south of Wells' Hall, toward the river, are being made into lawns and drives.

The students sent a large amount of clothing to the sufferers from fires in the northern part of the state.

The analysis of the sugar canes which were mentioned in the last issue is not yet completed. Results will be given in our next.

A College carpenter has come to be a fixture. Mr. Harrison B. Mohn has filled the position very creditably for nearly two years.

Governor Baldwin's wish that the Agricultural College grounds might become the most beautiful place in the state has certainly been realized.

A fish pond is nearly completed in connection with the wild garden. It is to contain carp and a large, rare species of water lily—*Nelumbium luteum*.

The foundation for the new cattle barn is completed. The barn will be 45x80 feet with 24-foot posts. It is placed in the lane east of the old barns.

The College lawns are badly damaged by the work of the white grubs, the larvæ of the common May beetle (*Leucosterna fusca*). The turf is torn up preparatory to re-seeding.

Mr. C. W. Lee, College vegetable gardener, resigned his position August 16, and returned to Detroit. The College has lost one of the most efficient men who ever controlled her vegetable gardens.

The Governor's proclamation, reserving September 8th for prayer for President Garfield, was observed at the College. Classes were dismissed and appropriate exercises held in the chapel.

The chemical laboratory is enclosed. It has a very substantial appearance; so much so, in fact, as to pass in student parlance as the "chemical fort." The drive will be placed at the west of the building, next the ravine.

Cannot some one make a move toward fixing up the abominable piece of cross-way between the College and Lansing? also toward procuring either a decent footpath for the whole distance outside the corporation, or a street railway?

We give our readers 18 pages of reading matter this issue. We hope to give them the worth of their subscriptions. In return we ask for their hearty coöperation in the enterprise. We want the name of every alumnus on our subscription list before the end of the year and as many others as we can get. You, readers, can do more than any others to bring about this result.

Mr. Eli Bidleman, proprietor of the Goodrich House, was foreman of the farm here from December 22, 1879, to May 1, 1880. His "ad." appears in another column. He supplies most of the students with meals when they are in Lansing, and does it in a highly satisfactory manner.

When the dense smoke from the northern fires came like a cloud over the College grounds two weeks ago, the bees, which were working industriously on the boneset, at once quitted their work and flew to the hives in great confusion. One would have thought they were all swarming.

The editors of THE SPECULUM received a pleasant call a few days since from Charles A. Towne, lately of Ann Arbor and formerly managing editor of *The Chronicle*. A journal could not wish for a more able and agreeable editor than Mr. Towne. THE SPECULUM desires to see him often.

Why cannot the students adopt a plan of electing a standing committee to look over the Steward's accounts, once a month or so? The students pay the Steward, and the expenses of the boarding hall, and should have some knowledge of the way it is being controlled. Mr. Mallory proposes the plan.

Our efficient business manager, H. W. Collingwood, has been obliged to leave College till spring, on account of disability brought on by over-study and an accident which occurred in a base ball game. L. W. Hoyt will act as temporary business manager till Mr. Collingwood's return.

The sugar cane is a fine crop, the stalks, notwithstanding the drought, being solid with juice. It is now ready for the press, and Dr. Kedzie has machinery for working it up already upon the ground. Interesting results concerning several experiments will be forthcoming with the next number of THE SPECULUM.

The experimental corn on the plats manured with special nitrogen fertilizers has been cut and shocked. It was considerably affected with smut, but the growth was good and uniform. When properly cured the fodder, ears and shelled corn of each plot will be weighed. The results will appear in our next issue.

Hon. T. F. Moore, of Lenawee county, Hon. Wm. Satterlee, of Oakland, and Hon. John Porter, of Kent, were a committee from the State Grange to make a report of the condition of the College for their December meeting. They examined the College September 6th and 7th. The State Grange shows interest in education and progress.

The new tool house will stand in the place of the old sheds just south of the old farm horse-barn. It will be 40x90 feet with 24-foot posts. The ground floor will be used as a store-room for farm tools, wagons, etc., and the second floor for a work-room and hay-loft. The carpenter shop will remain as at present. The building is not yet (September 20) begun.

A small silo with stone walls and cement floor, with a capacity of 30 tons of ensilage, has just been filled with sowed corn cut into half-inch lengths. The corn or ensilage has been closely covered with jointed 2-inch plank and weighted with a foot of stone. It is the intention of the farm department to conduct a feeding experiment during the winter with the view of ascertaining both the comparative feeding value and comparative cost of the ensilage.

President Abbot was one of the first teachers, if not the first, in this country to depart from the old stereotyped notion of teaching deductive logic only, and to give preference to the more useful inductive system. This was considerably over twenty years ago, when it was necessary to substitute Sir John Herschell's "Discourse on the Study of Natural Philosophy" for a text book. All the text books on inductive logic have been written since that time.

Students long for the time when our course in zoology may be sufficiently enlarged to give time for something more than the attaining of a mere general knowledge; when, in fact, a separate chair may be given to the greatest of sciences, and our present professor allowed to pursue his specialty, entomology, for which he is so well fitted, and of which the people of the state desire a more intimate knowledge.

Among other things, Dr. Kedzie has numerous specimens of water from wells where people are suffering with typhoid fever, etc., sent him for chemical examination. Such water is almost invariably contaminated by drainage from outhouses. A short time since he received a specimen of water from where three persons had typhoid fever; it was found to be much contaminated by such impurities. People cannot be too careful in placing wells and outhouses at good distances from each other.

Prof. W. J. Beal sets his students all to work, and the results of their observations form no mean contribution to botanical science. The latest we have noted are recorded in *Meehan's Gardener's Monthly* for September. Three students have been trying to answer the question: "Will red clover, not visited by

bees, produce seeds?" The results of the experiments given seem to show that, when guarded from bees, the heads sometimes set seed, but always in very much diminished quantity.—*Bot. Gaz.*

Prof. Johnson purchased at the State Fair, a few days since, two thoroughbred cows for the College—a Hereford and a Holstein. The Hereford is probably the best animal of the breed in the United States. She was imported a year ago by Mr. Burleigh, of Hallowell, Me., and has taken sweepstakes premiums at every exhibition where she has been entered, as the New England Fair, and Maine, New York and Michigan State Fairs. The Holstein is a choice animal of the celebrated Burney importation.

President George T. Fairchild, of Kansas, gave a lecture before the College Christian Union, August 14, on "The Prospects for a Christian civilization in New Mexico." President Fairchild has spent considerable time in New Mexico during the past two years. His descriptions of the country and people were vivid and entertaining. Although New Mexico is comparatively little frequented by Christian people, the prospects for Christian civilization are encouraging as soon as emigrants from the North and East turn their attention there.

The State Association of Surveyors and Civil Engineers appointed a committee consisting of Prof. R. C. Carpenter, of Lansing, Frank Hodgeman, of Climax, George E. Steele, of Grand Traverse, and Thos. Love, of Avery, to compile a "Surveyor's Manual," to contain all court decisions which relate to surveying, and such other rules and matter as will be of use to the profession. Owing to the amount of work involved in this compilation and the absence of Mr. Hodgeman from the state, the manual will not be completed till sometime next winter or spring.

The students held a general meeting, September 15, for the purpose of effecting a permanent organization which should have control of the new students' government, THE SPECULUM, and such other matters as relate to students in general. A constitution was adopted and officers elected. This organization is an important one, as it is not only the best means of transacting general business, but brings the different classes into closer union. The officers elected were: L. H. Bailey, Jr., '82, President; A. C. Redding, '83, Vice-President; F. F. Rogers, '83, Secretary and Treasurer. A committee was reported to draw up truthful reports of the difficulties with Mr. Fox, and the trial of the same, to be published in various newspapers. The committeemen are A. C. Redding, J. L. McClear and H. W. Collingwood.

Every year great numbers of people are dying terrible deaths from various parasitic worms, etc., as trichina and various tape-worms. People should carefully avoid the use of stagnant water, or even of any water that has not been thoroughly filtered, either naturally through the ground or artificially. Numerous forms of low life, as bacteria and eggs and of terrible parasites, are found in such water. People will be safe if they observe these rules: First—Eat no meat that is not thoroughly cooked; harm may come from raw beef as well as from raw pork. Second—Drink the purest water only. Third—Wash thoroughly every vegetable or fruit found on the ground before it is eaten. Fourth—Keep domestic animals away from all filth and feed them pure food, and no meat that is not well cooked. There is a valuable article on trichina from Prof. Cook in the 1876 Agricultural Report.

The Crossley's Ohio and Blount's Prolific field corns mentioned in the August SPECULUM are still quite green, being in the roasting-ear stage at this date, September 20. Both varieties appear to be slow to mature for this locality. They possess many points of resemblance. Both show a remarkable tendency to throw out "ear shoots," and produce rather small ears and large stalks. Many ears on each are abortive, and many but partially filled. The following comparison is from field notes:

	Blount's.	Crossley's
Per cent. of stalks with no ear	14	32
Per cent. of stalks with 1 ear	38	26
Per cent. of stalks with 2 ears	34	38
Per cent. of stalks with 3 ears	14	4
Average number ears per stalk	1.48	1.14
Total number ears to 50 stalks	74	57
Total number ears to 25 hills	78	75

The much-needed improvement in our heating system is nearly completed. The boilers in Williams' and Wells' halls are sold and will be removed soon. Four large new boilers will be placed in a building, now enclosed, located some distance southwest of the pigery. In this building is also a large double steam forcing pump capable of pumping 200 barrels an hour under a head of 40 pounds of steam. The building also contains a sleeping room for the engineer, who will be obliged to devote his whole time to the heating and pumping. Fifteen hundred feet of steam pipe has been laid, 860 feet of which is 4-inch main. The two dormitories, the chemical laboratory, and the library and museum building are at present in the system. Students in the west end and on

the third floor of Wells' Hall have always complained of cold. Larger mains have been laid through the building, and with other increased facilities it is hoped that they will now be comfortable. Wells' Hall should now be supplied with water for safety against fire, if nothing else. These improvements cost \$8,000.

At a meeting of the students' organization August 3, 1881, the following committee was appointed to revise the councilmen system of the students' government, viz.: President Abbot, Senior Holmes, Junior Beaumont, Sophomore Rogers, and Freshman McDiarmid. After two reports and a return of the matter to the same committee, the students finally adopted the following plan, in brief: The plan of captains and lieutenants will remain the same. Hereafter there will be no councilmen. Trials by jury will be instituted. A jury of twelve students shall be drawn at each trial, in accordance with the laws of this state. On the second Friday in September of each year twelve students shall be elected who shall constitute the College legal bar. These shall have power to try all cases brought before the court. They shall elect, each year, one of their number, who shall be called the senior member. They shall be presided over by each of the members of the bar in rotation. The senior member shall declare the presiding officer at each trial. The captain prosecuting, and the defendant shall choose their attorneys from the members of the College legal bar. The captains and lieutenants shall constitute a legislative body to amend or to enforce the students' government.

Col. Frederick Morley, Commissioner of Immigration for Michigan, visited the College, August 11, for the purpose of procuring papers from Drs. Kedzie and Beal, to be published in a circular issued this fall as a means of inducing the better class of settlers to come to our state. Dr. Kedzie prepared an article embracing a statement of the kinds of soils of the state by districts, regarding both chemical composition and productiveness as influenced by composition and natural qualities. It considers the questions: Can winter wheat be raised in all parts of the state; corn; potatoes, and other vegetables? Also, the influence of snow-fall on production; lakes and rivers as related to production; climatology; can pine lands produce crops? intermixture of hard wood and pine areas, etc. He also introduced a table giving the results of eighteen years of meteorological observations taken at the College. The average annual temperature was found to be 46.71°; per cent. of moisture in the air, 79; per cent. of cloudiness, 58; rain-fall, 31.31 inches; snowfall, 48.25 inches. Dr. Beal gave a short sketch of the flora of our state, including more particularly an account of the trees and shrubs; of the relative abundance of trees and their values, and a contrast of the variety of our trees as compared with those of Great Britain. He gave a list of the rare trees, the dimensions attained by some of the largest of our common ones, and spoke of the importance of making an agricultural survey of the state, including a survey of the flora.

COMMENCEMENT WEEK.—The students' exercises of commencement week, which began with the baccalaureate sermon August 14th, and ended with the President's reception August 16th, were distinguished rather for good arrangement, perfect harmony and almost faultless execution than for any brilliant display of intellectual power. The graduating class numbered thirty-three, thirty-one of whom were of the original one hundred and eighteen who entered in the fall of '77 and the spring of '78. It was the largest class by two which the College ever graduated—a fact which was repeatedly brought to the ears of the audiences during the various exercises. The senior class day exercises occurred on the evening of the 15th. These exercises probably show to a greater extent than any others the real worth and inclinations of any class, since they are the broadest in their scope and the freest in their execution. They give the ideas of students in reference to each other, while those of commencement proper give personal views and independent discussions. Knowing the class from these exercises only, one would judge it to be over-conscious of its own powers, and rigid in upholding its own actions; one would catch, however, a deep-pervading spirit of earnestness, honesty and laudable ambition. The literary part of the class day exercises were introduced by an address from Class President Howard M. Holmes. The address confined itself chiefly to an able, candid statement of the general objects and influences of class organizations and class days. Charles W. McCurdy delivered the oration, "Culture, the Safeguard of the Republic." It was a success in imparting good ideas in regard to general culture and education. Class history was given by Jason Woodman. Its predominant feature was an unpraiseworthy denunciation of faculty decisions and a corresponding upholding of students' actions. It probably did not express the sentiments of more than a few of the class. Otherwise the history was attractive, well written, and bore out the "Deacon's" reputation as the wit of the class. W. R. Hubbert read a poem, "The Student." Mr. H. headed the literary talent of the class, and his poem filled all expectations. The most diverting part of the programme was the class prophecy by

Sherman Upton. It consisted of magic lantern scenes, representing each member of the class in two or more caricatures. It presented an entirely novel feature in such exercises, and did very great credit to the executor. The banquet was a satisfactory affair. The toasts were all from the students, and were principally a rehearsal of the great talent and wonderful feats of the class. Commencement exercises occurred Tuesday. They consisted of eight orations. Music for these, as for class day exercises, was furnished by Speil's orchestra of Detroit.

The class of '81 was noted for the perfect harmony which existed between its members. It was always united and decided, sometimes to a fault. Taken altogether it probably possessed more than the average share of talent, and could boast of as good members as any class the College ever knew. It contained a good number of specialists, members who worked and studied with a view of following some special branch of science. The following statistics were gleaned from the class history: Nineteen were born in Michigan, 4 in New York, 2 in Canada, Wisconsin, Iowa and Ohio, and one in California and Minnesota; 25 are Republicans, 6 Democrats, and 2 Independent; 24 are free-traders and 9 protectionists; 26 believe in evolution; 18 are non-orthodox in religion, and 15 are orthodox; the average expenses of the class were \$682 for the course; least expense \$475, greatest \$1,000; average age, 22½ years; average weight, 150 pounds; average height, 5½ feet; 13 of the number will be farmers, 7 physicians, 3 civil engineers, 2 lawyers, 2 teachers, 1 dentist, 1 artist, 1 journalist, 1 housekeeper, while 2 are undecided. In these varied occupations they will no doubt be men of integrity and talent. The members give evidence of superior business ability, which will show itself in whatever vocations they follow. THE SPECULUM remembers them with pleasure, and ever wishes them success.

THE STEWARD TROUBLE.—Considerable ill-feeling had existed for two or three years between the students and Mr. E. C. Fox, the steward. Aside from the unobliging character of Mr. Fox, the students often complained of suspected dishonesty; in fact positive declarations of dishonest transactions were often boldly made by those who knew most about the business of the boarding hall. These accusations, together with continual poor board, so completely aroused the students that they held meetings to discuss the matter, and they made many complaints of poor board to the proper authorities. No measures being taken to satisfy the students, complaint soon grew into excitement, and the students appointed W. H. Burgess and J. E. Coulter a committee to investigate Mr. Fox's accounts. In due time the committee reported, making the following charges:

1st. The price paid for canned goods was much higher than Detroit prices; otherwise the purchases were not overpriced.

2d. The students' wood is used in forcing water to the greenhouse and no credit made.

3d. Extravagant charges for care of the steward's team, which belongs to the students and is kept by them.

4th. Purchase of lemons, oysters, mackerel, etc., which were charged to the students, but never put on the tables.

5th. Great deficiency in the number of meals reported as paid for by visitors.

6th. The taking of money for carrying students to town with students' team, and receiving pay for sugar and other articles from the boarding hall, for which no credit to the students was ever made.

7th. The keeping of the steward's private horse and carriage at the students' expense.

8th. Deficiency of kerosene oil with which the students are charged (to the amount of 1,500 gallons).

9th. In connection with the foregoing we can prove the following against Mr. Fox:

1st. That he has been taking short weights from Mr. H. W. Squires, the grocer.

2d. That he has been offered goods by wholesale men and refused to purchase, saying that they could not sell cheaply enough, when in one case the wholesale man was selling Mr. Squires the very goods Mr. Fox was getting at that time.

The State Board met July 28th to investigate these charges. The students employed E. Cahill, Esq., of Lansing, as attorney, and Mr. Fox employed N. F. Handy.

The first charge was not investigated, or, if it was, the report of the Board does not show it. The charge was explained away by saying that the high prices may have been due to superior goods. It is now known, however, that these goods, at an average cost of \$1.65 per dozen, are the same as those now bought for \$1.35.

The second charge was withdrawn because the amount of wood consumed in forcing water to the greenhouse was inconsiderable.

The third charge was passed over entirely; at least no record of any investigation is upon the minutes of the meetings, or in the reports. The students claim that it is impossible, at the low rates at which feed and labor were procured at the time, that it

should cost \$223.98 to keep a team one year (1880), and \$122.56 for five months at the beginning of the present year.

The fourth charge was dismissed on the ground that the articles purchased "appeared on the table, and were common for the use of all present, mixed with dried fruits." The Board states, also, that such articles had "again and again been furnished to boys confined to their rooms by sickness." This assertion is said to have been proved.

The fifth charge was sustained, to a certain extent. "the steward alleging," says the report, "that in several cases amounts were paid to him when out of his rooms in carrying people to the city, and therefore the omission to credit and account for the amounts." Fifty extra meals, \$7.50, were charged to Mr. Fox, and soon after \$8.90 more was added from additional deficiencies.

The first allegation in the sixth charge was admitted, but dropped, because, of the money received, "a part, if not the whole, was expended in properly caring for the team" after they had reached the city. The steward's buggy would hold eight; he charged 25 cents apiece!

The seventh charge was wholly sustained, and Mr. Fox charged \$22.70 for horse feed.

The eighth charge was sustained, but the number of gallons of oil missing was very different under the estimate of the State Board than under the estimate of the students. From September 1st, 1878, to June 1st, 1881, 2,423½ gallons of oil had been put into the college oil safe. "During this time," says the charge, "the total number of gallons sold to the 200 students and the professors, and the various departments, was 300, leaving 2,123½ gallons to be burned by the lamps (about 30 in number), under Mr. Fox's charge! This oil was sold to the students by Mr. Fox or his porter. The State Board find that "the proof does not show any dishonest practice on the part of Mr. Fox, who nominally had charge of the oil safe;" but "proof was submitted that on one occasion, within twenty four hours' time, creating a strong presumption that two barrels of oil were lost by leakage." Could such an amount of leakage take place, and the steward have no more than a *presumption* of its missing? But with this taken out, the Board still find 750 gallons unaccounted for, and still Mr. Fox is clear from "dishonest action"! If his assistant appropriated the money Mr. Fox is responsible for it. The 750 gallons were not charged to Mr. Fox, but to "current expense." In other words, the state pays for the deficiency, amounting to \$152.

The charge of accepting short weights was "wholly unsubstantiated." There however appears to be abundant testimony that Mr. Fox was continually getting short weights, and poor goods, such as peas in coffee, etc. The writer has in mind a recent case in which a Lansing grocer offered a certain steward 10 per cent. commission for his trade. This grocer offered Mr. Fox the same, and then quoted prices below the wholesale, but Mr. Fox preferred to trade with Mr. Squires, although the prices quoted were higher. "Then," said the grocer, "it is because you can get more there."

The declaration by the State Board that Mr. Fox furnished good and healthy food for the students is strenuously denied by them all. In the face of all this evidence Mr. Fox was not discharged; his resignation was accepted. He left the College soon after the close of the term, August 16.

The following is from the Lansing *Republican*: "The position was unanimously tendered to Con. Mallory, the genial and successful manager of the Lansing House. Mr. Mallory has long been well and favorably known as a popular hotel clerk here. For several years he was a commercial traveler, but upon the departure of Mr. Lyon from the Lansing House, last winter, he assumed the management of the house for N. G. Isbell, and has since conducted it, giving perfect satisfaction to the public, and converting it from a losing to a profitable investment. The Board exhibited excellent judgment in its selection."

Personals.

THE Editor of this Department desires the earnest co-operation of the alumni in aiding him to fill these columns with interesting items. Give occupation since graduation, what offices held, whether married or not, etc., etc. Let this receive prompt attention from every alumnus.

James E. Miller, '78, is farming near Lansing.
C. W. Gammon, '79, is farming at Richland, Cal.
Martin T. Rainier, '74, is in Marshalltown, Iowa.
Morse W. Jones, '80, is studying law in Kalamazoo, Mich.
A. F. Allen, '61, is an extensive farmer in Vinland, Kan.
Roswell Lillie, '70, is practicing law in Coopersville, Mich.
Ransom M. Brooks, '73, is a farmer near Wacousta, Mich.
C. B. F. Bangs, '76, is bee-keeping at South Haven, Mich.
Donald H. Kedzie, '76, is editor of the Grand Haven Herald.

Eugene Gregory, '78, is teaching in Milan, Monroe co., Mich.
A. E. Calkins, '72, is now practicing medicine at Edmore, Mich.

Albert A. Robinson, '78, is a lumber merchant in Wayne, Mich.

Arthur Seeley, once with '81, is studying medicine in Detroit, Mich.

Elisha D. A. True, '78, is foreman of a farm near Armada, Mich.

G. O. A. Royce, '75, is a clerk in the Auditor-General's office, Lansing.

Ralph D. Sessions, '78, is Deputy County Clerk of Ionia County.

Eugene Davenport, '78, has been teaching and farming since graduating.

D. T. Hall, once with '71, is a prosperous druggist in Tecumseh, Mich.

H. V. Clark, '78, has been teaching and is now farming near Ransom, Mich.

Charles F. Shilling, '78, is a druggist at Decatur, Ill. He is a single shilling yet.

Geo. E. Lawson, once with '82, visited the College during commencement.

James L. Morrice, '73, is farming near Little Traverse. He still keeps bachelor's hall.

Clifton B. Charles, Class '79, is one of the most prosperous farmers of Van Buren County.

W. S. Hough, once with the boys of '83, has gone to Ann Arbor to attend the University.

Charles Osband, once with '82, is a bookkeeper in the First National Bank of Lansing, Mich.

Irving Newcombe, once with '83, is now in Crescent City, Fla., engaged in orange culture.

Mr. Thorn, once a student here, has resigned his position as foreman at the Ohio State University.

John P. Finley, '73, has entire charge of the publication of the monthly journal of the Signal Service.

Geo. E. Kedzie, '73, is still in the Far West. He has recently purchased quite an estate in Colorado.

E. C. Spaulding, once with '82, is in the drug and grocery business with his father, in Lyons, Mich.

Geo. E. Breck, '78, expects to go to the Michigan State University this fall to enter the law department.

James Troop, '78, had twenty-five different species of grass on exhibition at the Jackson State Fair last week.

Malcolm Norton, for three years a member of the class of '70, is the owner of a good farm near Howell, Mich.

"Bert" Robson, once with '81, is traveling for the wholesale grocery firm of Robson Bros., of Lansing, Mich.

R. B. Norton, '79, has gone to Kansas to engage in the stock business. His address is Caldwell, Sumner county, Kan.

Arthur B. Peebles, '77, is filling a short engagement with the Presbyterian Church at Au Sable and Oscoda, Mich.

F. P. Hagenbuch, '79, married this spring, and is now engaged in husbandry and agriculture near Constantine, Mich.

Miss Ella Wood, once with the class of '82, has gone to Kansas to remain with the family of President Geo. T. Fairchild.

Cred. S. Park, remembered by the class of '81, is coating pills in the chemical works of Parke, Davis & Co., Detroit, Mich.

Channing I. Gage, three years with '79, graduated '80, in the University as Ph. C., and is now in Holt's drug store, Detroit.

Misses Ada Curliss and Annie Kennedy, former students, were guests of the family of Prof. Cook during commencement.

Arthur L. Lowell, '74, has formed a law partnership at Ovid, Mich., under the name of Dennis & Lowell, and is prospering finely.

Richard H. Guley, '78, has been a successful teacher at Dearborn. He intends soon to begin the introduction of school books in Wayne County.

H. F. Buskirk, '78, has been teaching and farming since graduation. Is superintendent of public schools. Married, January, 1881.

Fremont E. Skeels, '78, has left the employ of Wesley Emery, of Lansing, to engage in surveying in Kent county. His address is Grand Rapids.

C. S. Guile, '79, is a member of the University law class of '82. Since graduation he has been superintendent of schools and census enumerator.

Frank J. Annis, '75, formerly Professor of Chemistry and Mathematics in the Colorado Agricultural College, has gone to Ann Arbor to study law.

Israel Harris, '73, who was a grocer in Rochester, N. Y., for several years, has sold out and purchased a farm near Grand Rapids. He is doing nicely.

S. Satterlee Trowbridge, '78, was a farmer after graduating. He is now studying law with B. Morse, of Ionia, and is also Deputy-Sheriff of Ionia County.

Mason W. Gray, '77, has been until recently a doctor in the mining regions of Lake Superior, where he met with good success. He is now at Pontiac, Mich.

F. S. Sleeper, '68, is one of the most prosperous farmers of Kalamazoo. He aided in the formation of Galesburg Grange, and has been its master for one term.

W. A. Rowe, '73, of Mason, was elected one of the Board of School Inspectors for Ingham County. He is a prosperous farmer and is Master of Mason Grange.

W. S. Holdsworth, '78, for some time past an instructor in the State Reform School, and formerly an instructor in drawing at this College, has gone to Boston to study art.

H. E. Wilcox, '79, is with his father farming near Rochester, Mich. Mr. Wilcox is quite a society man, and has many friends of the gentler sex in all the surrounding towns.

Mr. Cassidy was taken sick the first part of August and is still confined to his bed. He has had congestion of the brain, but is now thought to be entirely out of danger.

Cyrus Crandall, '79, of late a clerk in the Auditor-General's office, Lansing, has returned to his home in Adrian, Mich. He thinks some of going to Ann Arbor to study dentistry.

W. H. Burgess, '81, lost all his books and college photographs in the late fires in Sanilac county. He desires each of the boys who exchanged with him to send him another picture.

M. S. Thomas, '79, has been with his brother, W. L., '80, engaged in farming at Prairie Ronde, Cass County. He was married August, 1880, and is supposed to be a happy man.

James A. Porter, '77, taught school in Ohio and Indiana until 1879, when he moved to Greeley, Col. He has been teaching there since, but expects to take charge of a wheat ranch soon.

Hon. George A. Farr, '70, is a lawyer practicing in Grand Haven. He has made good progress. He has twice been a member of the State Senate, where he has taken a prominent part.

Dr. Beal, Master of Ingham County Grange, addressed, on August 31st, a meeting of the Patrons of Husbandry and others, held on the farm of Hiram Bristol, in the town of Aurelius.

C. B. Charles, '79, of Bangor; C. Crandall, '80, of Adrian; C. E. Hollister, '61, of Laingsburg, and O. P. Gulley, '79, of Dearborn, were among the alumni who were here commencement.

Prof. S. M. Tracy, '68, has been made dean of the faculty of Missouri University, at Columbia, Mo. He has lately been elected secretary of the Mississippi Valley Horticultural Society.

William Farnsworth, more familiarly known to the boys of '82 as "Farney," is married. Geo. A. Young, his foreman, and his scaler, Mr. Rodenbaugh, were former members of the class of '82.

James Tibbets, '73, is farming near Ionia, Mich. At the recent election he was chosen a member of the board of county school examiners. He occupies the position of secretary of that board.

W. W. Remington, '80, is married. He took a large farm near Grand Rapids and during the year laid over 2½ miles of tiles. Since he has engaged to teach a school near Grand Rapids for one year.

Harry E. Emmons, '78, was foreman of a prominent drug manufactory in Detroit, Mich., until March, 1880, when he engaged in the hat enterprise at C. R. Mabley's. Was married Dec. 25, 1879.

Frank S. Kedzie, '77, assistant in chemistry at this College, with his brother, Prof. R. F. Kedzie, visited several Eastern colleges during the August vacation. He was especially well pleased with Boston.

Charles A. Jewell, '62, is now in Springfield, Mo., having gone there for the benefit of his wife's health. He is working there at the carpenter's trade, and leases all his property in Medina, Mich., his former home.

Charles A. Ward, once with '82, was married to Rosa Curry, April 17, 1881. He went to Gunnison, Colorado, last spring, to work in an assayer's office, thereby keeping his marriage a secret. It became known lately and appears to be satisfactory to all concerned. We wish him success.

Eva D. Coryell, '76, was married at the residence of her parents, in Williamston, on August 30, to Wm. McBain, of Sparta, Kent County. They move on to a larger farm. THE SPECULUM wishes them unlimited success.

Frank E. Robson, '78, after graduating taught school in DeWitt, Clinton county. Entered the law office of S. F. Seager, of Lansing, in 1879; then taught school in the First Ward, Lansing; again entered the law office, where he is at present a student.

C. P. Cronk, '79, since graduation has taught winters and expects to teach the coming winter. During last season he assisted the county surveyor of Gratiot county and this summer has been clerking in a drug store.

Miss Agnes Fairchild, in company with her father, President Fairchild, of Kansas, attended commencement here. She has gone to Oberlin College to take a course where both her parents graduated some years ago.

George D. Moore, '71, is a farmer in Medina, Lenawee County. He entered college expecting to engage in some other business. He is enterprising, takes an active part in a farmer's club, and is considered a credit to his occupation. He is married.

Ransom H. McDowell, '74, took a course in the State Normal, and then engaged in farming. In 1877 he accepted the position of assistant foreman of the farm here, a place that he held for three years to the entire satisfaction of the students at least.

Henry Palmer and C. B. Collingwood, once in the class of '83, have gone to Utah to take responsible positions in a railroad survey. Each runs an instrument and has charge of a set of men. Their address is Salt Lake City, care of the D., R. G. & W. R. R.

L. V. Beebe, '61, is one of the managers of the Penn Life Insurance Company. "Being engaged in this business," he writes, "I naturally hold to the old doctrine of death-bed repentance and for various reasons." He should be rated for such language.

Ray Sessions, '79, is engaged in farming near Maple Rapids. Has been superintendent of schools and takes an active interest in agricultural and educational topics. It is said that a Monroe county girl has caused him to resolve to enter the state of matrimony.

A. A. Crozier, '79, remained at the College during most of the summer vacation, continuing his studies in botany. His parents and most of the family have moved to Ann Arbor, Mich. Arthur has taken charge of the home farm. He did not deny that he should soon marry.

R. M. Slocum, '71, taught school and kept books until '75; engaged in farming until '77, when he established the *Grand Rapids Greenback*. In '79 returned to the farm, thinking it the best of all professions. Has held many responsible offices. Married September, '72.

John E. Simonson, '74, graduated in the law department of the Michigan University in 1877. Began practicing law in Bay City, Mich., in 1878. He was Circuit Court Commissioner in 1878 and is now City Attorney for Bay City. He is at present a member of the law firm of Simonson & Gillett.

E. O. Ladd, '78, is foreman of D. M. Ferry & Co.'s experimental garden. He expected to spend a few weeks at the College this summer studying the structure of seeds, but did not on account of other business, although while on the way to Grand Traverse, he stopped and paid the College a visit.

Richard Haigh, Jr., '69, is in South Haven engaged in fruit culture and landscape gardening; was Secretary of the Agricultural College and State Board in 1871. He spent a portion of '80, ornamenting pleasure grounds for the Grand Rapids and Indiana R. R., and the school grounds of the city of Grand Rapids.

A. H. Phinney, '70, took a post graduate course in Cornell, and received the degree of Ph. D. in 1873. He remained for some time at Cornell as assistant in the chemical laboratory; then, in 1874, went to New York to engage in the manufacture of chemicals. He remained there two years, and is now a druggist in Howell, Mich.

Con. B. Mallory is filling the office of steward to the entire satisfaction of the students. He is gentlemanly, and has the business qualities required to fill such a position. He buys goods at a less cost than did the last man who tried to fill the place. The satisfied look of the students and the peculiar quietness of the dining hall are indications of his success.

F. S. Burton, '68, graduated in the law department at the University in 1871. Practiced law and was editor of several different papers. Disposed of these and established the *Midland Sun* in February, 1881. Was Prosecuting Attorney of Gladwin County in 1874, and Judge of Probate in Midland County in 1876. Owns a large farm near Midland. Married in 1873.

Prof. R. F. Kedzie, '71, of the Mississippi Agricultural College, has been analyzing some water and superphosphates from his State in the chemical laboratory here during his vacation. He has also devoted a reasonable amount of time to the ladies—one in particular—attending numerous picnics and excursions. He made a short visit to several of the Eastern colleges, going as far as Boston, Mass.

J. A. Briggs, '79, has been engaged in teaching during the winters; last summer he was a foreman on the Detroit and Butler R.R.; and this summer is assisting in the official business of his father, and is reading preparatory to entering the law course in the University this fall. Mr. Briggs has taken an active part in educational and temperance affairs, and has held many responsible offices.

P. H. Felker, M. S., '71, was foreman in horticultural department here for two years, taught school in Lansing one year, visited Kansas and Colorado on a scientific exploration, engaged in the grocery business in Grand Rapids, wrote "What the Grocer Sells Us," became managing editor of Grand Rapids *Post*, now one of the editors of the *American Grocer* of New York. He lives in Passaic, N. J.

Seneca N. Taylor was once a member of the class of '60, being the last to leave that class. Studied law with O. M. Barnes and then attended successively the Michigan University and Adrian College. He practiced law in Niles, Mich., from '61 to '65, then went to St. Louis, Mo., and is there at present, a member of the law firm of Taylor & Pollard. He is attorney for the St. Louis, Alton and Terre Haute Railroad.

C. F. Straag, '78, entered Oberlin shortly after graduating here. During the summer of '80, he spent his vacation in Clare, Michigan, preaching; from thence he went to Andover Seminary, Mass. He spent a part of his vacation this summer in Robinston, Maine. He visited the College this fall, and then went to Dowagiac, Mich., where he was married to Miss Rosabella Rider. He then returned to Andover. They have the best wishes of THE SPECULUM.

Prof. F. A. Gulley, '80, now in the Agricultural College of Mississippi, where he has charge of the agriculture, spent a few days at this College, about the 10th of August. He was looking well, expressed great interest and showed much enthusiasm in behalf of his new position. He attended the A. A. A. S. at Cincinnati, and became a member. He was also elected a member of Society for the Promotion of Agricultural Science, which is a high honor, especially as Professor Gulley only graduated last year.

C. S. Sumner, '79, of Lambertville, Monroe County, has taught both winters at that place, and is now engaged in studying Greek and Roman history and literature, preparatory to taking a course of two years at the University in political science, after which he intends to graduate in the law course and then follow law as a profession. Mr. Sumner has acted as chairman of the Monroe County temperance organization for the past year, and as such has taken an active part in the Constitutional amendment question.

Charles Bloodgood, '77, was at first after graduation a local book agent, then a general agent; during the prosecution of the latter business he traveled over several of the Eastern and Western States. At present he has charge of the Eastern business for W. M. Patterson & Co.'s publishing house. He is located at Philadelphia, Pa. During the winters of '79, '80 and '81 he attended the Rush Medical College in Chicago, graduating in '81. He intends to take a further course in medicine at the University of Pennsylvania.

Lozienne A. Hurlbut, '67, graduated in the law department of the University in 1870, and was immediately admitted to the bar of the Supreme Court. He entered the law office of Charles Draper of Pontiac, and remained there one and a half years. Next went to Saginaw, where he acted as Deputy Clerk of the Circuit Court; then practised law under the name and firm of Hurlbut & Stark. In 1877 he moved to Florida for the benefit of his wife's health, and while there has engaged largely in orange culture. In 1874 he married Miss Frances B. Clark, a niece of the late Capt. E. B. Ward, of Detroit.

The following are the addresses of the class of '81:

Herbert Bamber, Salt Lake City, care of the D., R. G. & W.

R. R. He is a railroad surveyor.

Joseph I. Bicknell, jr., Canaseraga, N. Y.

W. H. Burgess, Deckerville, Mich.

Chas. E. Bush, merchant Pentwater, Mich.

Carroll W. Clark, Orion, Mich.

Carl R. Dart, Lansing, Mich.

Wm. S. Delano, Oxford, Mich. Goes to Washington, D. C., Jan. 1, to enter Signal Service Department.

Cadalzo A. Dockstader, Centreville, Mich.

George W. Grover, clerk in drug store, Concord, Mich.

Howard M. Holmes, *Lansing Republican* Office, Lansing, Mich.

W. R. Hubbert, 559 Second street, Detroit, Mich.

Arthur Jones, Lansing, Mich. Traveling in Michigan for W.

M. Patterson & Co's publishing house.

Josiah L. H. Knight, Lee's Park, Nebraska. Goes to Washington to enter Signal Service Department Jan. 1.

W. I. Lillie, Grand Haven, studying law with Geo. A. Farr.

Daniel S. Lincoln, Greenville, Mich., horticulturist.

Charles W. McCurdy, Dansville, N. Y.

Edward C. McKee, Laingsburg, Mich., farmer.

Charles McKenny, Dimondale, Mich., goes to Philadelphia, Pa., to work for Patterson & Co.

Mrs. Mary J. C. Merrill, Jackson, Mich., studying medicine.

Byron S. Palmer, Ann Arbor, studying dentistry.

W. W. Palmer, Orangeville, Mich., farmer.

Charles D. Phelps, Amherstburg, Ont.

Harvey A. Price, Locke, Mich., goes to Philadelphia, Pa., Oct. 1, to work for Patterson & Co.

Harvey L. Rosenberry, Columbus, O., studying medicine.

Alva Sherwood, New Troy, farmer.

W. G. Simonson, Birmingham, Mich., farmer.

Ambrose E. Smith, New Troy, Mich.

Amos W. Troupe, Dimondale, Mich., goes to Rush Medical College, Chicago, Ill.

Arthur B. Turner, Onondaga, Ingham Co., Mich., teaching.

Sherman Upton, Big Rapids, Mich.

A. H. Voigt Butte City, Montana, surveying.

Clarence R. White, Hillsdale, Mich., farmer.

Jason Woodman, Paw Paw, Mich., farming.

Literary Notes.

A GLIMPSE AT MICHIGAN HORTICULTURE. By Secretary C. W. Garfield.

This is a pamphlet of fourteen pages, prepared for distribution at the recent meeting of the American Pomological Society. No summary can do it justice. He refers to the healthy old fruit trees planted many years ago by the Jesuits; speaks of the influence of the great lakes, the fruit belt, the hills of the interior which will grow fine peaches, the facilities for good markets, the rich soils and cheap lands. He takes up the State by counties and groups of counties, naming their peculiarities. He gives some statistics and gives the location of nineteen local horticultural societies. "Michigan presents to the home-seekers a great many advantages that appeal at once to the practical good sense of those who are seeking a place in which to build up a home. Michigan is practically free from debt; her public institutions are her pride, and her educational system is commended by the best educators in the country. The agricultural advantages for mixed husbandry are of the very best; the climate is not equaled by any Northern State; the air is clear, the water pure, and the variations in temperature comparatively slight. The landscapes are beautiful, and a wide range of fruits, plants, flowers and trees, that form the accompaniments of a well-embellished home, can be grown successfully. Delightful resorts are near at hand everywhere, and a refined and intelligent people make up her present population."

ZOOLOGY FOR HIGH SCHOOLS AND COLLEGES. By A. S. Packard, Jr. Second Edition, Revised. New York: Henry Holt & Co. 1880. 12mo, 719 pp. \$3.00.

The question is often asked, especially by graduates who left College some years since and desire to keep abreast the progress of the rapidly advancing science of zoology, what is the best text book one can procure? We reply unhesitatingly, the one under consideration. Dr. Packard, as a student of the elder Agassiz, for a long time the curator of entomology in the Peabody Museum at Salem, editor of the *American Naturalist* from the first, professor of zoology at Brown University, and ever a most enthusiastic and indefatigable worker in biology, has had excellent training for the work he has performed. His earlier works on entomology and comparative embryology were, in some respects, pioneers and have served a most valuable purpose. The present promises to more than equal them. In common with nearly all recent writers in biology, Dr. Packard explains from the standpoint of "descent." He removes sponges from the protozoa, as he well may, on both morphological and embryological grounds. He makes Coelenterata and Cnidodermata separate branches, which view, if not accepted by all, is gaining rapidly in favor both in England and on the continent. That Dr. Packard takes rather advanced ground is shown in the fact that the molluscs of older writers, tunicata, brachiopoda and bryozoa are removed to swell the ranks of the worms.

Rolleston's invaluable work, "Forms of Animal Life," is suggested by Dr. Packard's minute details in giving the anatomy of some one animal of each group as a type of the whole. A valuable feature is borrowed from the German works, that of giving instruction, at the close of the discussion of each class, in

laboratory work. The illustrations are full and good, many of them being prepared for this work.

If one wishes a mere outline of the animal kingdom, with brief but clear definitions, MacAlister is excellent, and costs but \$1. The latest edition of Nicholson is midway between MacAlister and Packard, and is admirable in its style and arrangement. It costs \$1.50. But for one who is desirous to do earnest work, there is no treatise which is more to be commended than this latest—Packard's.

THE CAT—AN INTRODUCTION TO THE STUDY OF BACKBONED ANIMALS, ESPECIALLY MAMMALS. By St. George Mivart, Ph. D., F. R. S. 8vo.; pp. 557, 208 figs.

As Mivart says, the cat may well "serve as an introduction to zoology in general, and even to biology itself." As suggested by the author, this animal, from its convenient size and the ease with which it may be procured, is especially desirable as a subject for study and serves well as a type in the study of mammals. The late Prof. Wyman once expressed the same thought. Dr. Wilder even says that "no medical student should be allowed to dissect a human cadaver until he has familiarized himself with the anatomy of the cat." For the above reasons feliotomy is becoming quite generally and thoroughly practiced in our colleges. Therefore Mivart's work was expected by many with no little eagerness.

The work first details quite fully the anatomy of the cat, which part is illustrated with numerous figures which for the most part are excellent, though some of them are very poor. The mistakes in this part are numerous and patent. The pancreas is more than peritoneum, and the left side of the heart is much the thicker. This work reminds one of the Comparative Anatomy by the same author; it is often more human than feline. The author is neither happy or consistent in his nomenclature. "Backboned" and "zygencephala" are odd bed-fellows. Coelentera is too short. Such specimens of orthography as rhythm and Gregoriana are far too common. The last portion of the volume deals with the varieties of cats, their place among animals, and their origin. He takes the same view as that given in his "Genesis of Species." Evolution is taught, but that "Natural Selection" is sufficient he holds to be a "crude and inadequate conception."

The volume is a valuable addition to our zoological literature, but makes us all the more eager to greet the volume on the same subject now being prepared by two of the most capable of American scientists, Dr. Wilder and Prof. Gage. We have seen some of the manuscript pages of this work, which is to appear in a few weeks, and we are convinced that we are to have in it a classic, worthy a place beside the great work of Straus-Durckheim.

Prof. Cook has just received the "Book of Nature," by John Swammerdam, which was issued in 1674. This rare old classic is so scarce that although Prof. Cook has had orders for several years in second-hand bookstores in this country and in Europe he has been unable to secure the treasure until now. The work is large, on fine paper, while the illustrations might well put to the blush many an author of to-day. Many parts of the work, especially the chapter on bees, are perfectly wonderful for the research which they indicate and the knowledge which they contain. Many writers in our scientific magazines of to-day would be far more correct were they to turn to this work and copy verbatim. As we have admirably studied the illustrations, which are wonderfully correct and of rare finish, we have been more and more surprised. How could one, two centuries ago, when microscopes were so imperfect, have delineated even histological structures with a beauty and accuracy equal to that of the best artists of to-day? No wonder that Prof. Cook is delighted with this rare and invaluable possession.

We have just received from the author, Prof. Riley's index to his several Missouri Reports. It will prove of great service to the working entomologist, and is another illustration of the great enterprise of this greatest master of applied entomology in the world. The work is admirable in every way.

Exchanges.

We hardly know why this is a department of the College papers, but in it we can see the chance for great good to all who are in any way interested in publications of this class.

As a person is polished by contact with others and by their criticism, so a periodical will be improved by exchanging with others and receiving their criticism.

This criticism should not, however, sink to the low level of chronic rivalry so often seen in college journals. But should always be fair, commending what is good and criticizing what is bad, so that college journals may be of more than local interest and other than the organs of low, senseless jokers and constant grumblers.

We think that the greatest criticism against college papers is that they contain so many allusions which are understood by only a few, as to be tedious and unprofitable reading.

We noticed not long ago in a paper the following, which illustrates what we should discourage: "The Seniors talk of putting 'inside blinds' on the windows west of their hat rack." We offer this as an example, and not as a criticism on the paper, for we think it is an unusually high-toned journal as a whole. The fault may be found with most college papers to a greater or less extent, and should form the basis of much well-deserved criticism.

We have before us No. 1 of this year's volume of the *Oberlin Review*. It contains much interesting matter but is not neatly printed. We welcome the *Review*, and shall be happy to number it among our exchanges.

The *College Courier* was read with much pleasure. It has a neat, attractive appearance, and shows good management. Its editorials are well written and are about items of interest. The control of the paper resides in a stock company having thirty shares each with a par value of ten dollars. The poetical department is small, so that we are able to give the poem as follows:

The donkey is a pretty bird,
So gentle and so wise;
It has a silky little tail
With which to frisk the flies.

Upon its head two ears it bears,
So silky, long and soft,
That when the tail can't reach the flies
The ears can whisk them off.

We extract from an article in the *Grange Visitor*, by C. B. Charles, '79, the following concerning our College:

Of course I assume that you have already long ago settled the fact that a college education is a great advantage, and well worth all it costs.

Having settled this question we naturally look for the best institution in which to place our sons. Give the boys a chance; help them what you are able and let them go; find a school for them to teach during the winter; let them be economical, and at the end of four years they are masters of a practical education, and you will be none the poorer for your exertions.

The college is pre-eminently a farmers' college. Its primary object is to raise agriculture to its proper level, to make farmers of its students, and through them to make the labor of the farm a pleasure instead of a drudgery; to make the farmer not only contented with his lot, but a lover of his vocation.

By constantly keeping the mind upon the different branches of agriculture, the student soon can see its beauties, can feel its pleasures; he comes to like it, and the chances are he will follow farming after leaving college. "But they don't," some one says. This is true to some extent. Our college is young yet—was just old enough to vote for Garfield, and you would hardly expect many of its sons to have attained eminence at this early day. Still many of her graduates have become teachers.

There are very few agricultural colleges in the country that do not call upon our college for teachers, and many are already supplied. More than one-half of the two hundred graduates are engaged in tilling the soil, while about ten per cent. are following kindred occupations, such as horticulture, apiculture, etc. Show me a college in the world besides this where students follow their teaching more closely. Law schools graduate many not lawyers, medical colleges many not doctors. As for farmers, Harvard sent out not one in twenty-four years. Dartmouth graduated 1,200 students, not one of whom became a farmer. Ripon University, not one in eight years, while the President of Valparaiso can only find 12. So you see if you wish your sons to become farmers, keep them away from normal schools and universities. Four to six years away from manual labor makes the work of the farm appear like a mountain of hardship. Our college is a farmer's college. Of my classmates 18 out of 19 have farmer parents, and I feel proud to say that 15 of us are farmers now. It is safe to send your boys there; they will not be weaned away from the farm.

Besides this, the course of study is practical. In chemistry the student must analyze a hundred complex substances in accordance with previous teaching. In stock-breeding he must estimate the valuable points of stock until he can do so knowingly. This is not done in the shade of the college building or in the class room, but out in the field, where the stock may be observed. In horticulture, he plants, prunes, beds and grafts trees, gathers and markets fruits, and has care of fruit and ornamental trees in the lawn and nursery. In apiculture, he learns how to handle bees—both ends (and when the professor's back is turned can test the qualities of the different kinds of honey). In surveying, actual field practice is required before becoming proficient. In short, all the lessons taught indoors are illustrated by practical lessons outdoors. All is practical.

At the College the seeker after knowledge can find a course of scientific studies embracing nearly fifty branches equal, if not superior, to any in the land. True, the College is young, but "the proof of the pudding is in the eating." Of the work already done she may well be proud. She may congratulate herself upon the work of her sons. She may point to the whole body, in the spirit of the Roman matron, saying, "These are my jewels."

But there are other evidences of material prosperity in our College. Other States are following the example of Michigan, and their Agricultural Colleges are looking to ours as an example, and occasionally send their sons.

Let us Smile.

College Pun and Conundrum Club.

MR. EDITOR—Since the last report the Club held its regular meeting at midnight in the tower of William's Hall. It has become necessary for the Club to make use of this almost inaccessible resort, and to meet at this unusual hour, on account of the threatened violence of some unsympathetic students. In consequence of this slight disturbance a new president had to be elected. The last executive officer was taken from his bed by an eccentric mob and drowned in the rapids, below the dam of the Red Cedar. It is rumored that one of the members, who was tremblingly hid in the brushwood on the bank of the river, distinctly heard the dying president cry out: "See dar, oh, cedar! I come to thee! I have met, ah! more foes than I could encounter! Though now but a mere man, thou wilt soon metamorphose me into a merman!"

"Eau! into the H₂O we go!"

Mr. Flipp is the new president. He did not make a speech. He remarked "that he might have addressed us more at length if his mind had been more *ad rest*." As it was, he read the following:

A TRAGEDY.

Oh! a Freshy-fresh meeteth a second-year man,

And he cryeth out—"Sophomore!

I've failed in one study, and do what I can,

They will give me but one trial more,

Galore!

They will give me but one trial more!"

Then the second-year man with an devilish eye,

Straight turned him about and swore—

"Would'st thou *try* all the course? Thou hast plenty, thou guy!

Why cryest thou *so* for more?

Galore!

Why cryest thou *so-pho-more*?"

Then tottered the Fresh with a trembling knee,

And a pallor his face spread o'er;

And dead did he drop, as falleth a tree,

By the side of that sophomore,

Galore!

And he ne'er again *sighed* *so-pho-more*.

As the president finished reading a haze seemed to come over the members. Mr. Clink's eyes rolled in their sockets, and he looked as though he were going into hysterics. But the timely presence of mind of the janitor, who threw an unabridged at his head, quickly brought this unwary member to himself. Mr. Knapp fell a-coughing, and was obliged to hang himself over the back of a chair. Mr. Tupper-ton slipped gently off the fruit-can on which he was sitting, and stuffing his fingers into his mouth, with an ecstatic giggle and with tears running down his cheeks, cried out:

"I *thanker* chiefly for a handkerchief! Oh! *Knapp*, kin you fetch me a napkin?"

At these ghastly remarks every member ran over to where Mr. Tupper-ton was sitting, with the evident intention of hitting him on the head. But the president called the members to order with a loud voice and chided them, saying: "A house that is divided against itself cannot stand! Ye are assembled together to cultivate in yourselves the glorious and immortal art of punning, and would ye tear each other asunder as raving wolves?" And straightway every man became ashamed of himself and went and sat him down in his own place. Whereupon order was once more established. Then the president spit in Mr. Knapp's overshoe, thinking it was the coal-scuttle.

Reports of committees were next called for. Mr. Tripp, the chairman of the committee on chemical puns and conundrums reported the following:

"If I should call up my friend at midnight and 'set up' the peanuts to him, why would it resemble a chemical substance?"

"Because it would be a night treat (nitrate)."

"Or, if Hume should eat his dinner on a tin plate, what chemical compound would he make you think of?"

"Why, Hume-ate-off-tin (humate of tin)."

As Mr. Tripp sat down one member was heard to softly remark: "How exceedingly *hume-rous*." The president immediately put on his specs and gave him a 10.

Mr. Bugg, in behalf of the zoological section, reported "that no puns had as yet come before them. The nearest approach to one was when the professor exhibited the skeleton of a *cod*." The president exclaimed "that he could *whale* the man who would get off a joke like that!"

Mr. Linnaeus, chairman of the botanical section, explained that he had been unwell during the last month and had not been able to work up his report, but he had just been reading in the last *Nature* an account of the death of a pet canary bird, which, he imagined, might be of interest to some of the members. (Mr. Linnaeus is more noted for his skill in scientific investigation than for his grammatical accuracy, so it will be well to look over some of his eccentricities of expression.) Said he:

"I *seed* a notice of a pet bird who had been shot by a *pistil*. It is feared the *pet*'ll die. You can *see-pale* lines around its eyes now, *an'* *ther* both becoming shut. They've *bought-any* thing it needed. In fact, *ov'any* a thing that can be done, has been done, but it is feared death has *caught a-lead-on* it this time. Emma Bry, the young lady who owns it—I say *Em-Bry*—Oh!"—Here the president reached over and choked the botanical member off.

Mr. Hash, the chairman of the breakfast-table committee, reported that a man would frequently request some one to pass the syrup. Whereupon the some one would innocently respond: "Sir *up-on* my honor, I will!" And the man who wanted the sulphate of starch would impatiently exclaim: "Oh, *pass-er-up*!"

One man had the impudence to say to his neighbor "that he had *butter* pass the butter." This man did not make his appearance at table next morning. He has mysteriously disappeared.

Mr. Grimes said he had a gem of thought that he had heard since the last meeting. He asked:

"Why is Minnehaha eating frozen bacon like one of Landseer's pictures?"

"Because its a *red deer* at *chilling-ham*."

After the above reports had been acted upon, the president rapped on the stove-pipe with his gavel and gave all the signal to rise and join in singing the closing hymn. All rose and sung to the tune of "Auld Lang Syne:"

"Open the door,

Oh! janitor!

O-pun! o-pun the door!

The cock doth crow!

The wind doth blow!

To-morrow, scrub the floor!"

And the members put on their coats and began to climb down the ladder and slowly wend their *weights* to their respective rooms.

—SCRIBE.

"CHARITY."—Some "down east" samaritan advocates the sending of the mourning material that has been in use in our cities during the past few days to the Michigan sufferers. The charity is doubtless well meant, but if the man who originated the idea will visit that neck of land which juts into Lake Huron on the south side of Saginaw bay, next December, put on a crape overcoat and a black muslin shirt, and drive a yoke of steers ten miles in the face of a northeaster, he will be enabled to form some idea of the insufficiency of gauze for the purpose of the pioneer.

PLEASANT PROSPECTS.—"There is no man so fortunate that there shall not be by him when he is dying, some who are pleased with what is going to happen." Suppose that he was a good and wise man, will there not be at least some one to say to himself, "Let us at least breathe freely, being relieved from the schoolmaster. It is true that he was harsh to none of us, but I perceive that he totally condemns us." This is what is said of a good man. But in our own case, how many other things there are for which there are many who wish to get rid of us.

NEW ENGLAND BOG.—On the New York and New England road there is a peat bed that sucked in 600 loads of earth before a foundation could be had for the abutments of a bridge across a shallow pond. For this structure piles, one upon another, had been driven 110 feet into the peat, and the longest goes down 114 feet below the surface. A 3,000 pound weight has been used in driving them, and at the last fall of this immense hammer, a fall of twenty or thirty feet would drive the piles only half an inch, so great was the friction on the sides of the piles.

ARE CEMETERIES UNHEALTHFUL?—It is popularly supposed that the exhalation of carbonic acid gas from decomposing bodies make residence in the vicinity of a cemetery very insalubrious. A writer in the *Popular Science Monthly* shows that this is an error. Calculations to show that the combustion of illuminating gas alone in Paris, produced last year a quantity of carbonic acid thirty-five hundred times more considerable than all the dead buried in the cemeteries during five years, could give at the maximum rate of exhalation. The Grand opera house alone gives out every year thirteen times more carbonic acid from its gaslights than could be disengaged from all the cemeteries put together, even if all their carbon were converted into gas.

THE BARBED WIRE FENCE.—To keep his neighbors' cattle out of his fields an ingenious farmer stuck a few nails through a clothes line. A shrewd man saw this device, and soon afterward patented the "barbed wire" fence. The farmer from whom he got the suggestion now pays him tribute, and the income of the manufacturer is said to be about \$100,000 a month.

THE AREA OF THE DROUGHT.—It is described as an immense oval extending from central Texas in the southwest to a little beyond Montreal in the northeast, and from Kansas and Iowa to Georgia, on a northwest and southeast line. This includes a territory 1,600 miles long by over 900 miles wide, embracing nearly 1,590,000 square miles—eight times as large as France, and thirteen times as large as Great Britain and Ireland.

THE PINK-EYE.—This new equine epidemic now raging among the horses of Chicago and some other cities, is thus described: "The animal affected first shows weakness, declines to take food, the pupils of the eyes becomes discolored, the lids inflame, and the tongue shows evidence of high fever, being very hot to the touch. In some cases swelling and stiffness of the limbs ensues, this being a serious symptom, and most frequently worse in the hindmost than in the foremost limbs." The disease, however, is said to yield readily to prompt treatment.

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