

THE SPECULUM.

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What a Decade Hath Wrought at M. A. C.

EDITOR SPECULUM—It is over ten years since my student life at the Agricultural College closed. Since that time I have continuously resided within the State, have visited the College a number of times, have read the SPECULUM and other publications of the institution, more or less regularly, and in a general way have kept up my knowledge of the history and growth of the College during these years.

Notwithstanding these facts, as I came back here for study during the present summer and was thus afforded an opportunity for closer view of the real situation, I met two surprises.

First—the very marked improvement in the equipment of the institution in its various departments and in the opportunities which are now offered students as compared with those of ten years ago.

Taking it for granted that many of the "old boys" may be as ignorant as myself in regard to these changes I will take this occasion to refer to some of them.

Since 1881 the library has been removed to a substantial building which is well adapted to the purpose for which it was constructed. It has a capacious reading room attached which is open all day for the use of students. The library has been increased by the addition of about ten thousand volumes, the accessions being largely of scientific and technical works, thus giving students access to the highest and most recent authorities on science and its application to agriculture and the arts.

The second floor of the library building contains the general museum, which is greatly enlarged and arranged with refer-

ence to increasing its usefulness as a means of illustration. The second floor also contains the entomological laboratory.

The department of agriculture now occupies a neat and commodious brick structure located on a rise of ground midway between the farm house and the cattle barn. The head of this department is given a sufficient amount of help so that his time is not all taken up by the drudgery and routine work incident to his office, but something may be done in the line of special and original investigation pertaining to the advancement of science as applied to practical agriculture.

Within a few weeks the botanical department, now occupying temporary quarters in the agricultural building, will be transferred to a new laboratory with greatly improved facilities for teaching this important science.

Dr. Beal, instead of being called upon to teach botany, horticulture, ancient history and freshman rhetoricals, and to superintend one or more departments outside the classroom, is now enabled to devote his entire time to his favorite. Besides, he is provided with two competent assistants.

The herbarium contains over thirty thousand species and for neatness and accuracy of arrangement is said to be without a rival in this country.

The Mechanical Course, unknown here until 1885, now occupies a prominent place in the curriculum and is a factor which ought to materially widen the field of usefulness of the College. The department is supplied with a well equipped laboratory and every advantage is afforded young men of a mechanical tendency to pursue advanced work in this department.

The Veterinary Course is now recog-

nized as an important recent addition to the College. The laboratory is furnished with a lecture room, operating and dissecting rooms, and a museum. The museum contains a large number of pathological specimens and French models to illustrate the various parts of domestic animals in health and disease. An apartment in the second story contains the apparatus belonging to the Bacteriological Department, which has been recently established by the State Board. At present the chair of bacteriology is vacant.

The Military Drill in which all students except seniors take part, is now an important factor in college life. It is carried on in a systematic and thorough manner under the direction of a United States Army officer, graduated from the West Point Military Academy.

Another radical improvement in the College which demands our attention has been made in the administration of the labor system. Students are no longer sent out in squads to work without plan or method, and with no special purpose, except to put in their time; but, so far as possible, each individual is given charge of a certain portion of the work, e. g., an experimental plot, connected with the Experimental Station, and is thrown upon his own responsibility. He is expected to direct his labor intelligently and to be able to report definite results. The student thus knows in advance what his work will be. He has an opportunity to see his industry rewarded and under this stimulus his personal pride is aroused to such a degree that his labor no longer needs supervision. Students now frequently work over hours from choice and are always willing to do so if the required labor is not sufficient to accomplish their assigned duties.

A reference has been made to the Experiment Station located here. This is not a part of the College proper, but is intimately associated with the College. The establish-

ment of the Experiment Station has been a means of much good to the students and especially to those interested in the practical results of the work of the station. Students not only have the benefit of the experiments performed by this department, but that which is of greater value, in many cases. They become familiar with the methods by which scientific experiments are conducted.

To refer in detail to the progress made in all the departments of the College would exceed the limits of this article. Such a course is not necessary. Those departments not mentioned are just as aggressive, and it is fair to presume that the growth has been uniform throughout the whole institution.

My second surprise was, in the light of all these improvements, that more students are not at the College to partake of these bounties.

The catalogue of 1878, at the time I entered the freshman class, contained an enrollment of two hundred thirty-nine students, while the current catalogue shows an enrollment of three hundred sixty students; a much smaller number are in actual attendance at this time. Now if we compare these figures we shall find an increase in the enrollment of fifty per cent in fourteen years, or an average annual increase of less than four per cent. It is true that this growth is in the right direction and upon the principle that we have an eternity before us perhaps the friends of the College should take courage at this progress.

On the other hand taking into consideration the natural growth of our State, the increase in population and especially the comparative prominence which has been given to agricultural education throughout the land during these years, we are at a loss to account for the fact that so few young men have sought an education at M. A. C.

Many other educational institutions in this and the neighboring States, whose merits are not to be compared with those of this

College, have made four times the growth in one-fourth the time.

When the increase in the number of students here so utterly fails to keep pace with the increase in the educational facilities which ought to attract students, questions of the cause of these things naturally present themselves. It is probably true that during the time the equipment of the College has been multiplied by one hundred per cent the number of students has not increased more than fifty per cent. These figures are not without significance. They show that for some reason the College is not receiving the patronage and consideration which its importance demands. Many theories might be advanced to explain this condition, but it is not the purpose of this paper to attempt an explanation. We have no desire to offer any criticism upon the past or present management of the College, or to reflect upon anyone. Our object is simply to call the attention of the alumni to the situation and to urge upon them a more thoughtful interest in the welfare of their Alma Mater. At the same time to suggest that they may find a fertile field in which to manifest this interest by directing the attention of their young friends to the educational advantages which are here offered. Teachers in public schools and members of school boards have best opportunities for such work, but it need not be confined to them.

I know of no greater blessing that a teacher can confer upon his pupils or young friends than to instill into their minds a desire for a college education, and at the same time a determination to obtain it. Such work, if done in a proper spirit, is very effectual, and if this method were generally employed by the alumni of this College, even within the limits of our own State, it would do much towards bringing up the attendance here.

While the alumni are doing the political work suggested to them by Mr. Howe let

them, at the same time, see to it that the desirable young men in their schools, among their friends, or residing in their communities, be made acquainted with the peculiar privileges for scientific education which are to be secured at M. A. C.

This is already being done to a certain extent, but it is the opinion of the writer that many of our alumni are not living up to their opportunities in this respect.

There is another side to this question of more students—mass should never be considered the measure of merit. The fact that quality is more important than quantity should never be lost sight of. There can be no doubt that to lower the standard of requirements in order to secure more students would be a mistake. This is not necessary. The supply of well fitted young men is abundant. The attendance at the College could be doubled during the next three years if the legitimate claims of the institution were made known to the young men of the State. All that is necessary is to turn the tide of public attention to the real merits of the case and the future supply of students will be assured.

There are many agencies which might be instrumental in promoting such a result. Among them, not the least, is the thoughtful and active co-operation of the individual alumnus.

Very truly,
ALVA SHERWOOD, '81

The Student in Politics.

R. B. PICKETT, UNION LITERARY SOCIETY.

In a recent number of the SPECULUM appeared an article entitled "Should a Young Man Enter into Politics." The writer deemed it necessary to discourse at some length in order to prove that it was appropriate, that is not degrading, for a respectable person to enter into politics. That a man of Mr. Rich's standing should give such an argument so prominent a position in

his article shows how wide spread this idea is. The underlying principles of politics were not established by man, but by the Creator. Nature and society are so constituted that each individual must rely on his own resources. His success in life, his position in society depend on his own endeavors. "The world will not anxiously inquire who you are. It will ask 'what can you do?'" "If a young man, as well as one advanced in years, vitally interested in his right to life, liberty and the right to earn and preserve a sufficiency of this world's goods to maintain himself and family," he must enter politics and secure and defend those rights himself. It is preposterous to suppose that those who are placed in charge of our government and public institutions will search into whims, or make strenuous efforts to satisfy every caprice of people who seldom attend the elections or make themselves heard outside of their own narrow circles. Naturally public officials heed only those who make their wants known, and if the young man's political rights are to be respected his voice must mingle with the rest. As Mr. Rich has shown, just as long as politics are participated in only by those who have mercenary or impure motives, so long will corruption flourish. Every citizen should study and take part in politics both national and local. He should be incited not only by duty and patriotism, but by self interest.

Mr. Howe, in the last number, took occasion to comment on the above mentioned article and to describe the attitude of the alumni toward the political interests of their Alma Mater. The spirit expressed in this article is excellent and should be fostered. Not only are the alumni interested in the welfare of the College for the sake of the past, but the students are vitally interested for the sake of the future. Why, if I may ask, should not all concerned join forces to secure the common end? Surely the students of this College have shown in one instance what the student in politics can do.

A concentrated effort of both students and alumni could hardly fail of success.

Mr. Rich's article shows that the conditions of political affairs are not entirely faultless. And it is impossible that an institution which is so dependent on politics as ours should entirely escape its evils. Indeed it sometimes seems that he who said "A little learning is a dangerous thing," must have had a close acquaintance with the class of men from which some of the members of the State Board of Agriculture have been selected. It is not intended to intimate but that the College in its past history has accomplished good work. But if the friends of the College take it upon themselves to see that the right kind of men are selected, any repetition of what was known as the Johnsonian affair will be impossible.

It must be remembered that the members of the Board receive no compensation, and that what time and effort they give to the College affairs must be given gratis. Hence we must not criticise too severely if they seem loath to neglect their own business affairs for those of strangers. But if the alumni and friends of the College are unable to secure better conditions in this respect, they can at least use their influence to secure the appointment of only those who are in sympathy with our institution and its work and who are willing to devote sufficient time and energy to continue the advancement already made in the past.

If any criticisms were to be offered on the present condition of the College, the most severe would probably be the lack of confidence and sympathy between the students and those who have the College in charge. It would seem that the members of the Board must have some clairvoyant faculty of obtaining knowledge of the work that the College is doing. During the three years that I have been in the College I have never seen a member of the Board visit a class, nor have I known of their being at chapel more than half a dozen times.

Doubtless the members of the Board correspond with the various departments, but this is a very superficial method of supervision. When students are allowed to sleep during the hour of recitation, it isn't probable that the department in which this is permitted will contribute much to the reputation of the College of which we are so fond of boasting. From this instance and others that could be mentioned it seems that the Board are as little acquainted and interested in our work as we are in them.

No one who is intimately acquainted with the College at the present time, will for a moment dispute that certain members of the alumni could be named, who, if on the Board, would at least make some visible efforts to secure the interest and "heartly co-operation" of the student in the welfare of the College.

A movement as suggested by Mr. Howe, it seems to me, would be beyond the power of a committee to secure. If successful it must receive the support of all the alumni, students, and what other influence that can be secured. It need matter little whether the next state administration be democratic or republican, as available candidates could be easily selected from either party. All who are interested would undoubtedly be willing to support the measure in either case.

Alumni, students, and friends of the College, will you at least give it a careful consideration?

Criticism of the Coverley Papers.

When Addison and Steele began writing in the character of "Spectator," it became necessary to form a background against which to outline the follies of the time. Such a background is made of the club mentioned in the first paper. Of the members of this club, one of the most prominent was Sir Roger de Coverley. The Coverley Papers, as a part of the plan of the Specta-

tor, were no doubt prompted by the general moral awakening of the time. The taste, even of the court, was becoming more refined; the authors were mature men, and Addison, at least, was of a deeply moral and religious character.

Addison's aims in the Coverley Papers, and indeed in all his Spectator papers, are plainly to be seen. They are of the highest moral excellence even when compared with the work of more recent writers. If he had any ambition to become rich or famous, it must have been subordinated to his desire to elevate and purify society and social intercourse. He pictures in Sir Roger his ideal; a man whom disappointment in love may sadden but cannot sour; who lives at peace with his servants, his tenants, his rector; who loves his country and its religion; who will send a tenant's son a Bible for repeating his catechism well but sends along with it a fitch of bacon for the boy's mother. In his comments on Will Wimble, he remonstrates with his readers against the folly of high-born families for allowing their sons to fritter away their lives rather than to engage in some useful mercantile or mechanical pursuit. These were Addison's higher aims. Whether he had lower and more mercenary ones, we are loth to believe. However, the Spectator became very popular, having a daily circulation of nearly twenty thousand copies, so that it must have been a source of some profit to its editors.

Whether it was an aim of Addison, or whether it was his natural mode of expression, his style is one of the most attractive and restful, if we may so characterize it, of any in English Literature. He may almost be said to have originated it. If we compare it to that of his predecessors, it is the thought of Bacon expressed with almost the simplicity of Bunyan.

That he succeeded in his aims is proven by the popularity of his works even at the present time. If Bacon and Bunyan were

his models, the genius which could blend the good qualities of both styles, at the same time avoiding most of their imperfections, was no mean one and deserves to rank as high, at least, as either model. Moreover, he has left a style which will always please and profit not a limited number, but all who can understand the English language.

Aside from its charm of naturalness, Addison's style is neither peculiarly fine nor peculiarly faulty. His vocabulary is that of every day conversation, void of technicalities and pedantry, but by no means meager or cramped in its range. He avoided the somewhat prevalent custom of his time of introducing long Latin and Greek quotations without translation or explanation, a custom always "more honored in the breach than the observance." If there is any deficiency in his vocabulary, it lies in a dearth of Johnsonian "long-tailed words."

But, carefully chosen as were his words, his arrangement of them was rather loose and careless. His use of personal pronouns though never very ambiguous, is sometimes more promiscuous than would be allowable today, even in a high school essay. For example, in the butler's letter, telling of Sir Roger's death, we find this: "He has bequeathed the fine white gelding that he used to ride hunting upon, to his chaplain because he thought he would be kind to him." In fact, in many cases, we find rather long and loosely connected sentences which bear all the marks of having gone to press without a second reading.

As a whole, Addison's paragraphs possess unity of thought and are well arranged and divided. He makes very sparing use of figures, only an occasional metonymy or interrogation being found.

He was a master of simplicity and clearness. His most beautiful thoughts and flights of fancy are clothed in language that a child can understand. For instance, in a paper on immortality, he says: "A brute

arrives at a point of perfection that he can never pass; in a few years he has all the endowments he is capable of and were he to live ten thousand more, would be the same thing he is at present. Were a human soul thus at a stand in her accomplishments, were her faculties to be full blown and incapable of further enlargement, I could imagine it might fall away insensibly and drop at once into a state of annihilation. But can we believe a thinking being that is in a perpetual progress of improvement, and traveling on from perfection to perfection after having just looked abroad into the works of its Creator, and made a few discoveries of His infinite goodness, wisdom and power, must perish at her first setting out and in the very beginning of her inquiries?" He possessed equal mastery of the emotional qualities of style. Witness his mirthful handling of the dissection of a coquet's heart, the strength of his description of the glories of heaven and the quiet but deep pathos of the description of Sir Roger's death.

However, to the elegance of exterior form, Addison paid little attention in his prose writing. Sentences were written to be read, not to be spoken, and many harsh combinations of consonants and inharmonious expressions may be found in his writings.

That his is a style worthy of study, is proved by the opinion of such men as Macaulay, Franklin and Irving. Macaulay, in comparing his humor to that of Swift and Voltaire, says: "The mirth of Swift is the mirth of Mephistopheles; the mirth of Voltaire is the mirth of Puck. If as is oddly imagined, a portion of the happiness of just men made perfect be derived from an exquisite perception of the ludicrous, their mirth must surely be none other than the mirth of Addison—a mirth consistent with tender compassion for all that is frail, and with profound reverence for all that is sublime." Even Pope, who could not for-

bear thrusting at Addison's popularity, in his satires, is brought to say:

"No whiter page than Addison's remains,
He from the taste obscure reclaims our youth
And sets the passions on the side of truth;
Forms the soft bosom with the gentlest art
And pours each human virtue thro' the heart."

SCIENTIFIC.

Collecting and Preserving Plants for an Herbarium.

BY W. J. BEAL.

Notwithstanding the great value and interest in plant histology and physiology and the importance of an acquaintance with the lower forms, it is still a great mistake to abandon the preparation and study of an herbarium. Botanists have learned much from each other, and more recently the number of such persons has very largely increased. We have the advantage of pioneers in the work of collecting.

I am more familiar with the collection of grasses in this country than with those of any other family of plants. I make this assertion, that with a very moderate number of exceptions, all truly good preparations of grasses in this country for the herbarium have been made within the past fifteen years. In many other instances, the same statement is true and most collectors are still making poor specimens. These suggestions are offered with the hope of inciting a reform at least in many of the students of M. A. C. Unless you are doing nice work, you are on the wrong track. It will be better to look into the subject and reform. No one is a good collector by instinct. No beginner is likely to think of any good new points, but on the contrary he is sure to make a great many mistakes. I note some of the most common:

1. The specimen is a mere small "snip" of a thing, one little top, destitute of lower leaves, of roots and of rootstocks, instead of enough to completely fill a whole sheet.
2. In many instances the plant is pulled

into small pieces, throwing away runners, sterile shoots, old leaves, etc.

3. Specimens lack fruit, which is often of more importance than the flowers.

4. If tender and young they are pressed too hard, or later in the season not pressed sufficiently to make the leaves dry flat.

5. Too many use newspapers for the light sheets on the dryers. The printed letters were made with oil and such spots can take up little moisture.

6. Plants are put in dryers which are not thoroughly dried by the heat of the stove or the direct rays of the sun.

7. The old fashioned press made of tight boards is a clumsy device, but still in use.

8. Plants are not changed two or three times a day on the start and all this time kept in a very dry and warm place. Hence the color is not good.

9. They are too long for mounting and must be broken or cut off or cut in two to fit the sheet of standard size.

As a remedy, consult numerous articles which have appeared in recent times in the *Botanical Gazette* or the *Bulletin of the Torrey Botanical Club*, or see a chapter on the subject in *Gray's Text Book*—the larger book; or better still, hang about and worry some good collector and see how he does it. Talk about it and compare notes, and make a few models, or join the Botanical Club. As to mounting, get good stiff paper cut uniformly of the standard size, 11 3/4 x 16 inches. The genus covers should be firm and smooth and when folded be 12 x 16 inches. Learn to poison the plants and then read the following as to mounting:

1. Place the plant right end up, or if bent or doubled, put the root, or root end near the label but not covering any part of it.

2. Spread the plant just enough so that all parts can be readily examined.

3. Let no part of the plant come nearer than one-fourth to one-half an inch of the margin of the paper, but about one-half inch away.

4. Economize the space if the plant is small, by putting to one edge of the paper, if possible, leaving room for one or more specimens.
5. If there are several small pieces, arrange in two or more sets in a vertical line above the label.
6. Place only one species on a sheet.
7. Place no variety on a sheet with any other variety or species.
8. In case of crowding or confusion, run a pencil line between contiguous specimens to the label.
9. Stick the label very close to the bottom of the sheet (usually) and very near one corner, sticking for only about one-eighth of an inch at each end, that it may be removed if desired.
10. Use strips of gummed paper of three widths, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ inch according as the strength is needed.
11. Cut strips into pieces instead of tearing.
12. Let the strips extend about half an inch each side of the plant or part of a plant.
13. Do not lick off all the "stickum."
14. Avoid long strips which cover much of the specimen or run uselessly over the species sheet.
15. Avoid putting strips too near the tips of leaves, as the leaves pull out.
16. In case of large leaves cut with a knife each side the midrib and put in a short strip the ends running under and sticking to the sheet. In some cases, with broad leaves, stick with fish glue as bought already prepared.
17. Extra seeds, flowers, etc., may be of value for future study and should be put into small envelopes stuck to the sheet near the plant.
18. Cut gummed strips into pieces, keeping each length by itself in a small dish. These when not in use are to be kept together in a certain place, put away. Keep a few long strips for certain places.

19. Put away specimens when mounted where ordered under a wooden block containing your name—a paper might blow off.
20. See that all papers and litter are cleaned up, and everything put away.

Relation of Scientific to Economic Entomology.

G. C. DAVIS.

Insect remedies vary with the habits and life history of an insect as does a doctor's prescription for the patient under his immediate charge. Even with many mandibulate insects our stand-by remedy, the arsenites, is ineffectual and entirely impracticable because of certain peculiarities in feeding habits or other deviations. These may be peculiar only to the one species or they may be characteristic of a whole family. The more knowledge one obtains regarding each class or group of cases, and still better of each individual case, the better he is prepared to cope successfully with that individual pest when necessity demands. For this reason Scientific Entomology must be the source to which Economic Entomology must resort for steady progress and growth.

Means of destruction and prevention, by the use of insecticides or otherwise, may be tried indiscriminately without even a general knowledge of the habits of an insect. Such practice may occasionally produce pleasing results, but the odds are greatly in favor of commencing with a thorough knowledge that will enable one to know when, where and how the most vulnerable period in that insect's life may be reached. Perhaps no better illustration of this point under consideration can be given than to cite the important discovery which has been recently brought to light in the life history of our common ox bot-fly that is the cause of warbles on the backs of our cattle in spring. This *Hypoderma bovis* was supposed to deposit its eggs on the backs of

stock and then the young larva would bore through the skin and feed and grow here till the following spring. Many insecticides and preventatives were recommended for applying over the backs of stock through the fly season with the supposition that it would prevent further attack. Under recent investigation it has not only been found that our species is *Hypoderma lineata* instead of the European *Hypoderma bovis*, but that the life history is much different than heretofore supposed. Most of the credit for this is due Dr. Cooper Curtis of the Bureau of Animal Industry at Washington, D. C.

Through his investigations we learn that the eggs of this bot are fastened to the hairs on the legs about the heels and on other parts of the body that can be reached by the tongue. The young larva is already well developed when the egg is laid and when the cattle lick themselves the shell is easily broken and the young larva is taken into the mouth. In this early stage it is armed with numerous minute spines that enable it to cling to the walls of the esophagus and soon to penetrate them. Once through, it moults this spiny covering for a smooth skin and in this stage slowly advances through the tissues of its host for eight or nine months. During this period of latency and slow movement, the irritation and inflammation must be reduced to a minimum. However, late in the winter it has reached a point beneath the skin along the back and again assumes its spinous character, when, by its growth and irritation, it soon inflames the region and produces the warble so well known to us all.

Such is the remarkable life history of one of our insects so well known as injurious to cattle interests, yet in reality so little known otherwise that it has baffled all attempt at prevention for ages. With the enlightenment now before us, the remedy is plain, viz., prevention of the eggs from hatching or from entering the mouth.

When there is so little known regarding the habits of many of our common insects, it must be plain that there is a vast field in scientific investigation yet unexplored. Specialists can and are doing much, but there will inevitably be great help from the careful and intelligent observation of the multitudes who are annually sent out over the country from our Agricultural Colleges where they have been taught to see and observe for themselves.

Such an impetus is the herald of youth from infancy for entomology and the growth that attends that period. But Economic Entomology will advance under their guidance even more than the scientific research, for the collegian will at once put in practice what he has already learned as well as many remedies which a little knowledge and good judgment will suggest. Other persons in the neighborhood who know less of the subject will soon learn the value of these remedies and the why, when and how such remedies are to be used in certain cases rather than others and so the practical part will advance in company with the scientific though dependent upon it for its real progress.

At the next meeting of the American Association for the Advancement of Science, which is held in Rochester, N. Y., in August, Dr. Beal will deliver an article on the subject, "The Value of Relative Length of Sheaths of Grasses to Internodes, as a Specific Character." A few days previous to this at same place he will read papers before the American Association for the Promotion of Agricultural Science. Among these are two, one "How to Know Our Common Grasses of Pastures and Lawns Previous to Flowering," and another "Some Selected Races of Grasses." Then at the meeting of the Botanical Club of America held in same place, he has a paper on "Some Monstrosities in our Cultivated Wheats."

'Tis said a wizard in days of old
Converted all base metals into gold,
The modern alchemist, beyond dispute,
Can all your gold into this air transmute.

—S. R. Elliott

A broad education is the one of highest worth.—J. Dwight

THE SPECULUM.

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AGRICULTURAL COLLEGE, AUG. 10, 1892.

AND now comes '93's turn. As the cycle of years go by, each class has taken hold of the SPECULUM work with a feeling of meekness, thinking perhaps the task would be too great for their youthful minds. It is with this feeling that the present editor takes up the pen of his predecessor. We, as the SPECULUM Board, do not come forward to inaugurate any great change in the management of the paper; we will only try to keep up the present standard and make such changes from time to time as circumstances seem to demand. We make no boast as to what we will do; but, be assured we will do all in our power to make the paper a success.

And now, brother students and alumni, you must realize that the editor-in-chief or the SPECULUM Board alone cannot insure success to the paper. We need, and must have, your help. It costs money to carry on such a paper and unless you are prompt in the payment of your subscriptions we will lack the necessary financial basis. A

pleasant word or a congratulatory remark are always in order, but of all things that pleases the SPECULUM Board, it is to get a letter containing a year's subscription.

There is another way, fellow students, by which you can be of great aid to us. At all times we endeavor to have in our columns of advertisements, the names of those parties who contribute to our aid by giving us good, liberal prices. If you give your trade to them, you will help us along by encouraging our advertisers and thus we could readily secure the necessary advertisements.

In each issue we will endeavor to have one or more articles from the alumni. This practice was started by our predecessors and seems to meet with general favor. Our alumni like to read articles from their classmates and these articles are appreciated by the students. We as students are encouraged to know of the practical value of the education received here and by these articles we are reminded of it. The alumni need not be surprised to be called upon to furnish an article, and so, one and all, be prepared. When you get the article all written and are waiting for us to make the call, do not be bashful but send it right along. Our waste basket is small, our temper is good, so in due time the article will be published.

THE efforts of the M. A. C. Republican Club in securing the nomination of Mr. H. R. Pattengill as Superintendent of Public instruction, were crowned with success. Any one who has ever been a student under Mr. Pattengill, or who has come in contact with him in the business affairs of life, will recognize his fitness for the position. He is intimately acquainted with our school system, knowing its needs as well as its advantages. This would enable him to carry on the work of the office in a manner that would be satisfactory to all. If our students and alumni wish such a man placed in office,

Let them see that they are up and stirring and that their influence is toward such a man.

THROUGH the efforts of our former editor-in-chief, an index of volumes VIII to XI inclusive has been prepared. Any one wishing to secure a bound volume of those issues can do so by sending their SPECULUMS to this office. We will have them bound with index included for one dollar and fifty cents. Those who lack some of the numbers and wish a complete file for those years, can secure the lacking numbers at regular price. There are also a few copies of the index to volumes I to VII inclusive which can be had at cost.

We are sorry to see that our catalogue is so delayed in its publication. It seems fitting that it should be out in ample time for all prospective students to give it a careful study before entering. By this earlier publication, the plan of work for the succeeding year would be known, and all could formulate their work to agree with the plan. As at present, we were nearly to the end of the summer term before we knew the program for next year's study, and so those who were privileged to elect studies had not the chance for as much thought upon the selection as they ought to have.

There is one plan, the revision of the elective studies of the seniors, which pleases us very much. We can now elect our studies and they are so arranged that we can follow that line of work through the year.

We feel greatly disappointed to think the State Board reported unfavorably as to placing German as one of the elective studies of the senior year. We were in hopes it would be favorably considered and our hopes were heightened upon hearing that a large majority of the faculty were in favor of it. We are confident that the time will yet come when German will be made an elective study of our agricultural course.

WHY do our students carry on the indiscriminate use of applause, so long ago established here. An applause means a praise and should be regarded as a compliment to the speaker. Is this the way we find things here? Far from it. Only within our society halls, is there a proper use of applause; and why can't our students carry this into their college life? A chapel oration is delivered, the applause is given, be the production good or bad. This is no encouragement to the speaker but it seems rather to be a disgrace to have a poor production applauded with equal vigor of a well written, well delivered oration. Students, think of this, and see if you cannot help our chapel orators by making a proper use of applause.

THE long expected inspection of rooms has at last come. For some time it has been seen that some system must be introduced by which a few persons deficient in the care of their rooms could be brought to see that in a measure the health of every person rooming in the hall was dependent upon the general tidiness of each room. Moral suasion had its effect upon the greater number of the students but in order that all students would be brought under its beneficent results, the system of military inspection of rooms has been instituted. By this system it is seen each day (Sunday excepted) whether or not the student is properly caring for his room. If he is not, such measures are taken as will insure a proper care for the room in the future. The system is new, and consequently there are minor changes which will probably be made.

As a criticism to the system, we would say; if such a system is to be carried on, let it be more thorough. Inspect every room of the halls, have none exempt.

Have some definite established system of demerits for all reports that are not properly removed.

If this is for sanitary help, let it extend farther. Let there be an inspection of other rooms and other buildings with which our students come in contact.

COLLEGE NEWS.

In our attempt at furnishing the students, alumni, and other readers of the SPECULUM with the news of the College, we hope to be able to have all the various departments represented. We also wish that those who are at College may always bear in mind, that the item of news that may seem most commonplace to them may be most gratefully received by those who have gone from these lovely scenes of M. A. C.

The students and College employes have been highly entertained at Sunday morning chapels by Professor Edwards, July 10th, A Sunday in Paris, illustrated; July 17, by Prof F. S. Kedzie, A Sunday in Berlin; July 24, by Professor Edwards, Through Provincial Britain; and July 31, by Professor Woodworth, A Sunday in London; illustrated.

Recent rain improves the appearance of the campus.

Literary Societies held a union meeting in the chapel at which the following program was presented: Oration, R. M. Kedzie of Delta Tau Delta; Poem, C. R. Winegar, Olympic; Reverie, D. D. McArthur, Union Literary; Declamation, Lucy Clute, Feronian; Violin Solo, R. C. Bristol, Phi Delta Theta; Biography, C. B. Smith, Hesperian; Society Paper, F. P. Clark, Eclectic.

New catalogues are out. They have five new and additional cuts. This now makes a catalogue which does credit to the institution. The courses have again been changed, but perhaps most in the Military Department. The seniors, who elect drill will have in autumn term, art of war, one day each week, and in spring term they have campaign of civil war, first half term and drill in manual second half, two days each week, and no military exercises during the summer term.

Painters are giving the exterior wood work of College, Williams and Wells Halls and also the library building a thorough painting.

The Faculty Social Club gave the students of the College a very pleasant party in the Armory, Friday night, July 22.

The Feronians held a leap-year party at Grand Ledge, July 16th. Those young men who were lucky enough to have the young ladies drive around after them report a very pleasant time.

July 12th, the M. A. C. Bicycle Club made a run to Leadley's Park and return.

The Republican Club held a mock State convention on the evening of July 16. Some very good nominating speeches were made. At a previous meeting they appointed the following persons to attend the Republican State Convention. Mr. P. G. Holden, K. L. Butterfield, D. J. Crosby and E. B. Hale. Professor Cook went as delegate from this district.

The president and several professors attended the

burial ceremonies of Robert Baird, son of Ex-Secretary Baird, July 26, at Mt Hope cemetery.

Captain Estabrook accompanied by Roscoe Kedzie and Duncan Reynolds has gone to Bay View for a few days recreation.

Professor Wheeler was called to Walkerville a few days since to testify in a case on the age of some peach trees which had been sold by a nurseryman.

Our post office is fast coming to the front. It has just been equipped with 187 new boxes, mostly lock; has been made a money order office, and is soon to be an international order office.

The farm lane from the barns to Grand Trunk R. R. is now fenced with Page wire fence.

A new Furman hot water heater is being placed in the library building.

Dr. Beal, as pathmaster of the road district from the College toward Lansing, proposes to construct a path for wheelmen and footmen, as far as in his power. Any contributions to aid in the work will be thankfully received.

Mrs. Kedzie is conducting a class in painting. They meet in the room formerly occupied by Club F., as a dining room.

The Homestead strike has delayed work in the machine shop, also on the new greenhouse.

A new lumber shed will soon be erected between the bath house and the Mechanical building.

A new fifteen horse power engine and boiler, which was constructed at the Lansing Iron Works, under the supervision of O. J. Root, class of '90, are now in running order in the Physical Laboratory. This will also be used to furnish electric lighting power for the Armory which is now completely wired, and College chapel which will soon be wired. Incandescent lamps are to be used in both buildings.

How the boys climb out of bed, get breakfast and arrange their rooms before seven o'clock! All on account of military inspection which takes place from 7 to 7:40 each morning of school days and from 12 to 1 on Saturday. By the way it has been suggested that it would perhaps be well for mothers of incoming freshmen to give them some instruction in handling the broom and keeping a room tidy.

A hydrant has been placed just a few feet southwest of the library. Now the thirsty student and visitor may quench his thirst without traveling one half mile to do it. This is good, but we hope to see something better in the near future.

The World's Fair commission at their last meeting made an appropriation of \$3,000 to the College; the College will add to this \$1,500, making a total of \$4,500 for the World's Fair. This does not include the \$1,000 appropriated for making wax models of fruit.

The Physical Laboratory has just purchased a new photographic outfit. It is the latest and best. To

pay for this the special class in photography is doing excellent work.

Dr. Kedzie has constructed a set of apparatus to determine the rate of evaporation of water from different kinds of soils. Instead of an expensive balance and the old process by weight and differences it is very simple and inexpensive. He is also conducting a series of investigations regarding the dew point and soil temperature in open field and forest at depth of one foot.

The Botanical garden is in splendid condition, considering the weather this spring. A large addition has been made and still more will be added. The Botanical Department have also procured a "Century of American Weeds," put up by Byron D. Halsted, of N. J., a former graduate of M. A. C.

A new tool room in the machine-shop has been under course of building for some time and is now ready for occupancy. It is a model of neatness in design and certainly convenient in construction.

Dr. Kedzie is now conducting one set of investigations which cannot be other than valuable to the farmers of Michigan. At 48 different gatherings he has had wheat and its straw collected. This will show the best period for gathering wheat for grain also for the straw.

The library has lately added a French dictionary for Botanical Department, a number of books on education and mathematics, besides a large number for the Agricultural Experiment Station.

Since the hot, dry weather there has been from 1,600 to 1,800 barrels of water pumped each day at the pumping house.

About six years ago the societies on the grounds each planted a tree on Arbor Day. The co-eds also planted one, a pepperidge, and this is now the most healthful, vigorous tree of the lot.

The College will exhibit stock and other articles at the State Fair this year and at Hillsdale will make some miscellaneous exhibits.

The Farm Department has arranged a new seed room where the old room was. Around the sides are arranged 580 pigeon holes for the reception of small packages of seeds. Below these on the floor tier, is a number of large chests for larger quantities of grain. For drying grains in the straw they have a number of legless rack tables. As a further equipment they have a mouse-proof apartment for storing grain in straw, with a capacity of a thousand bundles. Then there are two large tables for putting up seeds.

On Friday night of the Faculty Social Club party, horses used by students for conveying them to College were disturbed and some of them driven by some one. It is probable that fellows who do such things as this do not realize the responsibility that rests upon their fellow students for the safe return of the liveries to their owners. However it may be, each student should strive to protect his fellow

students against this kind of unpardonable meanness. A horse hitched to a carriage is not guarded by a policeman in our cities, and much less should it be at a College like our College.

We have at hand a copy of "Michigan Flora," prepared by Dr. W. J. Beal and Prof. C. F. Wheeler. This has required a great amount of hard work. For two years they have been working extensively on it. Without question, it is the most complete thing of the kind in Michigan.

Does it not look as if our College is at the front? Recently two Japanese students named Yasuhara Kato and Kiyohide Kuroda came to this country in search of a place to complete their education. After visiting Amherst, Cornell, and North Dakota Agricultural College, they came to M. A. C., and decided that this was the College of all they had visited.

Among the many summer students at our College this term is Prof. Freeman, professor of science in Minnesota State Normal School; Prof. Kellogg, superintendent of Tecumseh schools; Prof. J. W. Matthews, of Grand Rapids; Miss Emily Fuller, superintendent of schools at Caro last year, but she has accepted a position as teacher of Physical Geography in Brooklyn, N. Y.; Prof. J. H. Smith, superintendent of schools at Rogers Park near Chicago; Prof. Munson, professor of Horticulture in Maine Agricultural College; J. H. McCall, of the University of Tennessee, at Knoxville; Miss Nena W. Stevens, Superintendent of Schools at Oscoda; Miss Creed, a graduate of the State Normal; Miss M. M. Haskins, a graduate of the University of Michigan; and Miss Vandewalker, a teacher of the State Normal. Among these, Mr. McCall, Mr. Matthews, Mr. Smith, Mr. A. Sherwood, of Three Oaks, Miss Marion Weed and Mr. Williams, of Albion College, are taking post graduate work.

The program of commencement week is as follows: Friday evening, August 12, banquets of literary societies; Sunday, August 14, Baccalaureate sermon; Monday evening August 15, Class Exercises and Tuesday, August 16, Commencement Exercises.

Among the many improvements on the Farm Department will be a new corn harvester, manufactured by the Leonard Manufacturing Co., also a new improved ensilage cutter and the silos will be relined according to the latest methods.

In a few days the Michigan Agricultural College will send into the world of busy life its thirty-second graduating class. It is composed of twenty-six young men and one lady. Would our space admit we would be glad to give a brief sketch of each, but being thus limited, our readers, we hope, will be content in knowing what part these young people will take in this great battle the following year. A. H. Gillett will spend the fall at M. A. C., teach a winter term of school and then go to the Normal. B. W. Peet will remain at College and take a special course in chemistry. George W. Davis will follow farming.

George A. Hawley will go onto a fruit farm as also will William P. Hawley. W. D. Groesbeck will remain in the secretary's office. Frank Bauerle is undecided. John E. Hinkson will go to the University and take a course in medicine. Charles F. Winegar will follow teaching for a time. George E. Ewing will follow farming, while David Trine will go to Maine as an assistant in Horticulture under Mr. Munson. E. J. Freeman will return to Minnesota and teach science in the State Normal of that State. Leander Burnett contemplates a course in engineering at the University. H. Arnold White will take a course of law at the University. Howard B. Baker will remain at College and take post graduate work in entomology. Dor N. Stowell will go home and follow farming. Harvey N. Peck is undecided and William E. Palmer will remain at College and take post graduate work in chemistry. Thomas S. Major will follow farming and Albert N. Bateman will go west and teach. C. W. Conner will go to the Missouri Agricultural College and take up experiment station work. Will K. Sagendorph will remain at home in his father's office. Louis C. Brooks will turn his attention to farming. Horace B. Fuller will take up teaching. G. H. Hicks will remain at College in the Botanical Department. Clarence A. Hathaway will take a short vacation and take a business trip through the south, and Mabel E. Linkletter is undecided.

PERSONALS.

We desire the earnest co-operation of every person who has ever been connected with the College in trying to make this department an interesting one. Let every alumnus and every person who has been with classes here send in news to the editor of this department, often, thus making his work much easier and the department more interesting to all.

'62.

A. J. Cook was a delegate to the recent Republican State Convention at Saginaw.

President Clute and P. B. Woodworth, '86, recently visited C. A. Jewell, at Hudson, and gave an exhibit of college views.

'64.

Lewis J. Gibson, formerly principal of Lyons schools, has recently gone into business at North Lansing.

'69.

James Satterlee is now living on his farm at Greenville.

The name of Paul J. Wilkins appears on the faculty roll, Minnesota School of Mines, as instructor in the preparatory department.

'71.

E. M. Shelton expects to return home from Australia in the near future.

'73.

On May 3, in St. Mark's Hospital, Grand Rapids,

Anna, wife of Frank L. Carpenter, died of typhoid fever.

'74.

C. L. Bemis has just finished his first year's work as superintendent of Ionia schools, and has been re-engaged for the ensuing year.

'75.

D. H. Kedzie is now in Elmira, N. Y., being treated for lameness in the knee, with which he has been a sufferer for many years.

'78.

James S. Pardee, M. D., of Three Oaks, Mich., is recreating at Bay View this summer.

Chas. F. Shilling is doing a good business at Decatur, Ill., as proprietor of a drug store.

R. T. McNaughton, who has spent the past two years in Tacoma, has returned to his home in Jackson, satisfied that there is no place like the Peninsular State.

James Troop, professor of Horticulture and Entomology, Purdue University, will have charge of Indiana's exhibit of grasses and cereals at the World's Fair. Prof. Troop, together with wife and daughter, are spending the summer in Western New York, where he expects to spend a short time at Cornell with Prof. Bailey of '82.

Prof. Eugene Davenport is spending the summer on his farm near Woodland, where he will soon erect a new house. From the *Woodland News* we clip the following: "An enormous crowd congregated at the M. E. Church on Saturday evening, July 16, to listen to a lecture from Prof. Davenport on 'Brazil, its People, Their Customs and Mode of Living.' Prof. Davenport is a young man of pleasing and impressive manners, who has no difficulty in securing and holding the attention of all within the sound of his voice. We are sorry to say that only about one-fourth of those who came to hear him were able to gain entrance to the church. It is estimated that 1,500 people came for that purpose."

'81.

C. W. McCurdy will superintend the high school at Winona, Minnesota, the ensuing year.

Prof. Chas. McKenay, Olivet College, English department, will be ordained to the ministry the coming autumn.

Wm. S. Delano is senior member of the firm of Delano Bros., seedsmen, Lee Park, Nebraska, and with his two brothers, Fred, of '82, and Milton, of '84, is doing a flourishing business. They sold seeds this year in thirty-five different states.

J. L. H. Knight is still doing well as a farmer and fine-stock breeder, located but two miles southwest of Delano Bros.' seed farm.

With '81.

L. E. Kinner, station agent at Mt. Vernon, Iowa, for the Northwestern Railroad, enjoys his work very much. Mt. Kinner was formerly connected with the Allegan schools.

First Lieut. W. L. Simpson has lately been transferred from Sackett's Harbor to Fort Ontario, Oswego, New York, where he is said to be enjoying life to a huge extent.

'83.

It is reported that W. A. Bahkic, attorney-at-law, Alma, was recently married.

H. W. Baird has gone to Denver, Colorado, for his health. His younger brother, Robert, for many years an invalid, died in Grand Rapids, July 23.

H. M. Weed, formerly a lumberman at Mostestown, Mich., has formed an association with J. H. Moores, a former M. A. C. student, in the hardware business at Lansing.

'84.

Dr. F. J. Hodges, of the Merchant's Hospital, Anderson, Indiana, visited friends at the College July 22, a guest of Dr. Kedzie. Fred shows the same fraternal feeling that characterized him as a student.

'85.

G. C. Lawrence will remain in Grand Ledge as superintendent of schools for the coming year.

C. F. Schneider is now chief officer in charge of the U. S. Signal Service station at Detroit.

T. D. Himebaugh, professor of Veterinary at Fargo, North Dakota, Agricultural College, recently paid the College a visit.

R. M. Bates, a farmer at Hastings, is talking of giving up farming and becoming a traveling man.

H. E. Thomas, a former editor-in-chief of the SPECULUM, was married to Miss Grace Boosinger, at Lansing, July 12.

E. T. Gardner, of Arcadia, Nebraska, says he is at last located on a farm, where he has longed to be, hopes to stay, and live happy and contented.

WITH '85.

W. S. Ruckman attended the U. of M. after leaving M. A. C., took the degree of B. S. in '87, taught the subsequent three years in a private college at Pittsburg, Pennsylvania, and is now clerking in the pension department at Washington, D. C.

'86.

Geo. S. French is now a hustling real estate agent in Lansing. He has in preparation a class letter to the members of '86.

H. N. Jenner, druggist, Goshea, Indiana, for some time past troubled with poor eyesight, has completely lost the use of one of his eyes.

We are in receipt of a manual of Hillsdale county schools, edited by the commissioner, J. E. Hammond. If the manual is any exponent of Prof. Hammond's work, truly we may say he is successful.

WITH '86.

A. C. Himebaugh is a member of the Sheffield Manufacturing Company at Burr Oak, Mich.

'87.

C. L. Himebaugh is a clerk in the pension depart-

ment at Washington, D. C., where he has been for some time, and enjoys his work very much.

'88.

C. B. Cook is farming at Owosso, making a specialty of small fruits.

J. N. Estabrook, Deputy Secretary of the State Board, is rustivating for three weeks at Charlevoix.

Frank H. Hall is assisting his father on the farm near Tecumseh, this summer.

Dale A. Smith, and his brother Glenn, a former student, are proprietors of clothing stores in both Portland and Sebawa. We hear they are doing exceptionally well.

Chas. Lawton, of the Negaunee mines, recently paid the College a visit.

W. F. Stayley has been promoted and now gets \$1,000 per year, holding a clerkship in the Civil Service at Washington.

WITH '88.

Joe Thompson, of Corunna, visited friends at the College a few days ago, and signified his intention of coming back in the fall and finishing his course with '93.

'89.

D. A. Anderson has recently been admitted to the bar, and will practice law, commencing this fall. He has been on the farm this summer.

Will Curtis is a hustling newspaper agent at Kewanee, Illinois. It is vaguely rumored that he will soon join the Benedicts.

E. A. Holden represented Benzie county at the State Republican Convention, recently held at Saginaw.

William Lightbody, who took the degree of B. Ed. at the State Normal this year, is spending the summer at Detroit. He expects to be here at commencement.

J. W. Earle is conducting a Normal School at Wawaka, Indiana. It is a success, financially to him and intellectually to the students.

'90.

Chas. Ferris is doing well as assistant city engineer at Grand Rapids.

When in Portland recently, ye editor saw a delivery wagon bearing the sign "The J. W. Toan Co." Subsequent inquiries brought out the fact that John was one of Portland's most hustling grocerymen.

WITH '90.

H. M. Williams is manager of a union job press at Fort Wayne, Indiana.

'91.

Jessie J. Foster graduated at the State Normal this year, and is spending the summer at her home near Lansing.

H. W. Mumford is county surveyor of Hillsdale county, appointed to fill vacancy. If the republicans are successful this fall, H. W. will continue as such for two years to come.

A. T. Sweeney, a stirring Sturgis farmer, visited friends near Lansing a few weeks ago.

WITH '91.

F. B. Smith, principal of Rockford Schools, for the year past, will be principal of schools at Bay Mills, near the Soo, this coming year. This is the best position in the county outside of the Soo.

WITH '92.

James Lamb is in the employ of the Birmingham R. R. Co. at Utica, New York.

L. W. Watkins is in Colorado, recuperating. He expects to return in the spring, and graduate with '93.

L. C. Gibbs is traveling for an Educational Publishing House, with headquarters at Lansing, Michigan Avenue East.

J. A. White has been teaching for the past year at Jacobsville, Mich., where he expects to remain. He has been working this summer for the Portage Red Stone Co.

Leo B. Plummer, who holds a \$600 position at the Orono, Maine, Experiment Station, refuses a raise of \$200 for the coming year, and will return to the College next term to graduate with '93.

ATHLETICS.

At this time of year when most other colleges are having their long vacation, when the portion of the "world" that can do so is at the various summer resorts trying to live and keep cool and those of us who cannot are sweltering in whatever place duty demands, mere existence requires all our efforts and College athletics must of necessity be neglected.

And if little is done in the athletic line, certainly the athletic column must be a short one.

Our ball team usually goes the way of all things athletic after Field Day, for the remainder of the summer term. This year's team has been no exception to the rule. In the latter part of July a team, not *the* team, but composed mostly of players who had never played in a matched game before, went to Battle Creek. They played against a strong team and one in excellent training. As might be expected, our team was defeated.

Since that time they have practiced considerably and have greatly improved. July 29th they played a picked nine from Lansing, some of whom belong to the great U of M team. M. A. C. won from them, the score being 7 to 2. The game was valuable in that it showed what a wealth of undeveloped material we have in the base ball line.

Next issue the editor will try to have less space filled with apology and more with athletic news.

COLLEGES AND EXCHANGES.

A new dormitory and science building are being built at the Vermont Agricultural College.

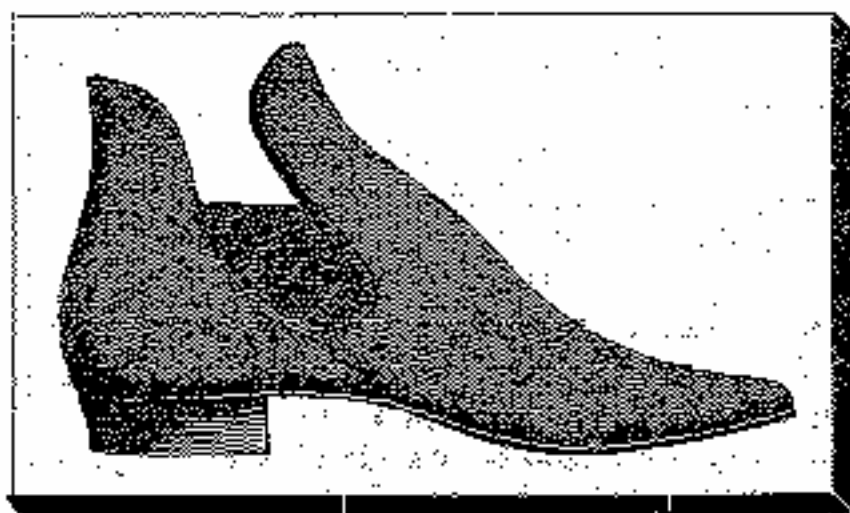
All of the few exchanges we have received have been replete with accounts of commencement exercises and class reunions.

The *Madison Weekly Times* (Democratic) came to us recently through the courtesy of E. J. MacEwan, formerly Professor of Literature here. Professor MacEwan is the editorial writer and contributes a page of able editorials, which no doubt, the readers of the *Times* will greatly appreciate.

The last issue we received of *Industrialist* of the Kansas Agricultural College, was a double number. It contained a Columbian supplement, which was sent to 10,000 teachers in that State for the purpose of interesting them in the Kansas educational exhibit for the Columbian Exposition. The *Industrialist* also contained the full report of the address given on "Success" by Ex-Governor Luce of this State.

We have before us the *Dodgerville (N. Y.) Herald* which contains an article on "Education" by Annie Chambers Ketchum. She shows how old notions are giving away to new; how there is an advance all along the line; that the best training is that which teaches man his place in nature, his best means of elevating himself, his brother, his home, his city, his nation, his whole earth.

We have received volume I, number I of the *College Record*, representing the interests of the State Agricultural College and School of Science at Pullman, Washington. Though it contains little of literary importance, its board of editors do not intend it to be strictly a College paper, but will endeavor to make it interesting and beneficial to the farmers of that State by giving opinions from the well trained minds found in the different departments of the College. It promises to be a paying investment, and the "hustle" of the business manager is shown by the fact that out of fifteen columns of reading matter eight are advertisements. Among the faculty we notice the name of Edward R. Lake, professor of horticulture, forestry and botany. He graduated here in '85.



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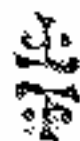
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