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The New Novel.

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Of all the great mass of literature produced in the last half dozen centuries the novel occupies a distinctly prominent position. History, poetry, the drama, each has its place in literature, and each has its throng of illustrious writers, yet in the popular opinion the novel is as important as any other branch of literature, and in the public mind few stars in the literary firmament outshine the world's famous novelists.

Ever since the ability to read and write became generally disseminated among the people of the civilized world, fiction in some form has been grasped with eagerness by the masses of the people, and has exerted an untold influence among them.

Chivalry and feudalism had but just collapsed, the crusades were only recent history, when the novel, in its crude form, sprang into existence. The great process of evolution in society, accelerated by innumerable wars, had been going on at a rapid rate. Courage, sagacity and daring were the qualities the people admired and tried to emulate. Out of all of this upheaval of society grew many conspicuous characters in the world's history—men whose generalship, conquests or fiendishness had made their names immortal. Around these names clustered innumerable legends and stories of bold adventure or heartless torture, in which the simple minded people reveled.

This was the fertile field that gave a wonderful impetus to the growth of fiction. It was principally these great historical characters that furnished material for Shakespeare's grand dramatic productions and Scott's powerful works of fiction.

Scott's life marks a distinct epoch in the history of fiction. With Scott originated the idea of weaving great historical characters and events into fascinating romance. True, there had been various predecessors, but all were inferior to Scott in description, detail, power and influence. No one could paint every type of humanity, beggar, courtier and king, with anything like Scott's ability. Each of his works contains a well-defined plot, worked out with exactness and detail, every part conforming to the one central theme. "All is great in the Waverly novels," says Goethe, "material, effects, character, execution."

Scott's idealism and unity of action have been taken as models by many writers in later times. His greatest works were written with the express purpose of producing a story that would hold the reader spell-bound. Romance, adventure and the passions of men, all contributed to the novel of the past. In short, they were novels of a story, no more, no less.

But the novel did not lie quiescent during the wonderfully progressive age from which we have just emerged. It, too, passed through a process of evolution as extensive as any other branch of human exertion. The novel changes with the seasons. It is subject to all manner of freaks of fashion. It, too, has its bloomers and its creases. Fiction possessed so great an attraction for the public mind, that it soon became the craft with which to float theories and speculations on all the great problems of the day. The thread of romance and of love was woven alike into politics and theology. It will thus be seen that the novel claims every sphere of human interest as its own. So much for the novel of the early part of the present century. We have thus

dealt with it at length to better show of what the new novel is an outgrowth.

But a new era in the history of fiction seems to have dawned upon us, an era which marks a wide departure from the older forms with which we are familiar.

Science is the great harbinger of human advancement; it satisfies our wants and enhances our desires, in fact it does everything but insure salvation. Science is the watch-word of our institutions of learning, and the herald of a progressive age. Science is piercing and exact. It draws aside nature's veil and discloses beautiful harmonies and disgusting microbes. The good and the bad are alike exhibited. Everything from prize-fighting to religion has been reduced to a science, and to crown all we have a modern school of writers, who have endeavored to place fiction on a scientific basis under the name of the *realistic* novel.

We are told that the mind of the novel reading public is too well matured to longer digest exaggerated stories of chivalry, shipwrecks, hair-breadth escapes, and cannibals. In this hustling age people have not the time to peruse the novel for entertainment alone. Every form of literature must have some moral or instructive lesson. Romance has been worn threadbare and feudalism has been exhausted. We are told further that the old novel is nothing but a wild, idle day-dream, or an ideal conception of things utterly impossible. The times demanded a change, and consequently *realism* has presented itself as a modern form of fiction.

And what is realism? Realism attempts to portray things as they actually exist, uncolored by the imagination. It describes people and their conditions as they are, and is opposed to ideal characters in ideal spheres of life. Realism may be compared to a perfect painting in which the most minute details are worked out with accuracy and exactness. In general, realism is to show one half the world how the other half lives. "It shows alike the lowest depravity and saintly enthusiasm and affection." It flashes the light upon

the world's hollow shams and reflects them in all their senselessness. Like an immense mirage it suspends before the mind's eye an image of humanity in its actual condition.

Perhaps the one thing on which the disciples of realistic and purpose fiction pride themselves is the didactic nature of such productions. While a vein of a plot may permeate the work, its chief object is to instruct or impress some moral obligation. Of this *Adam Bede*, *David Copperfield*, *Robert Elsmere* and *The Manxman* are all grand examples. These works are immortal, and realism as represented by them will always exist.

Yet this same characteristic of the realistic and purpose novel will eventually bring them to an ignominious death. This infinite describing and eternal preaching becomes a bore to the average reader. Seemingly, nowadays, if any one has a pet theory or nonsensical hobby, which he wishes to parade before the public, he does so by means of a purpose novel. The tired business man who, perhaps deceived by the title, buys something to read as a means of recreation, finds inflicted on him a mass of scientific reasoning or theoretical nonsense as dry as the sermon or treatise of which it is an abstract.

Another distasteful product of realism is the dialect writing. True, a certain amount of dialect skillfully handled serves to give spice and vividness to conversational scenes; but to be compelled to read page after page of Georgia cracker slang or Louisiana darkey jargon is abominable. A whole volume of rank barbarisms is not necessary to reality, neither is it compatible with English grammar or good judgment.

In the attempt to depict events in life as they actually transpire, we are inclined to think the darker shades predominate. Horrible examples of dissipation, lust, avarice and crime undoubtedly add to the popularity—in other words to the *sale* of the production—but what about the moral influence? The fact that a novel sells is no evidence of its merit. Unlike

poor poetry, a poor novel may achieve success; in fact real merit is often a positive disadvantage. The most popular novel is not always the best. Calamity-howlers hold up their hands in holy horror at the sensationalism of the press, yet they will swallow equally as nauseating doses, labeled realism, without a whimper. We are *very much* inclined to doubt the value of a *real* character which impersonates all that is vicious and nothing that is worthy of emulation. Where such realism may arouse one person to a sense of duty in making the world better, it will give a dozen the idea that they are above reproach, an idea that, accepted, means that those persons have already begun to degenerate.

So much for realism with its good qualities and its poor ones. So much for the realism of George Eliot and her class that leads people to a comprehension of their plain duty as christian men and women, and so much for the realism of Zola and his school of writers that tires people with its three volumes of details.

As a natural consequence of its own spontaneity, realism has given rise to idealism; in a word, the old novel is being revived; consequently Scott's novels are old but not antiquated, and are as popular to-day as those of Mrs. Ward, Caine, or Tolstoi. F. Marion Crawford distinguishes between the two types as follows: "The realist proposes to show men what they are, the idealist tries to show men what they should be." Idealism is purely a work of imaginative art. It has a well-defined plot. The chief object is to carry the reader through the various events connected with this plot; in other words, to tell the story. In this respect it resembles the drama much more than does realism.

The characters are largely ideal, combining such qualities and in such proportions as best suit the role they are to play. The idealist makes the actor to the part even if he has to be made superhuman. They may be compared to the composite picture, so painted as to suit the artist's aesthetic conception, whether he gets his

sunsets from Greenland or Rome, or his mountains from the United States or China; not a soulless picture but one of animated life. These characters may impersonate the most noble or the most despicable qualities that man is heir to, yet these conceptions must be within the range of reason for "truth is stranger than fiction," and fiction in order to be conceivable must not be stranger than truth.

Love, piety, loyalty, and patriotism still stand very high in the popular estimation. Intelligent men and women of our time, honor the noble and spurn the vicious in mankind as much as they did a century ago, and the ideal character in modern fiction which inculcates the better attributes of humanity will certainly inspire a grand admiration for good and a hearty detestation for evil.

We are told also that romance and idealism are carried to such extremes that they too will die of exhaustion, that they are only the wild flight of the imagination, so exaggerated and so unreal as to become utterly ridiculous. Sure enough there is a great mass of shoddy, flimsy, fiction of which Rider Haggard's works are typical representatives, that amount to nothing more or less than preposterous lies. "She" and "King Solomon's Mines" have already outlived their usefulness, because they *will not sell*. Such productions are perishable commodities that soon become stale and putrefy on the market.

On the other hand we now welcome with open arms such writers as F. Marion Crawford, du Maurier, Hall Caine, Mrs. Ward, and Robert Louis Stevenson, as the founders of the *new novel* which will stand the test of time.

But, I hear you say, some of these are largely realists, and we must admit the fact. These heralds of the new era in fiction have brought the extremes of realism and idealism to a happy meeting ground in which they agree well together. While we must admit that both extremes are represented by powerful and immortal works of fiction, they are the exception rather than the rule.

And now in closing let us again quote Mr. Crawford: "Why should a good novel not combine romance and reality in just proportions? Is there any reason to suppose that the one element must necessarily shut out the other? Art, if it is to create and foster agreeable illusions, as Napoleon is believed to have said of it, should represent the real, but in such a way as to make it seem more agreeable and interesting than it really is. This is the way to create an agreeable illusion, and by no other means can a novel do good while remaining a legitimate novel, and not become a sermon, a treatise or a polemic. The perfect novel must be clean and sweet, for it must tell its tale to all mankind, to saint and sinner, pure and defiled, just and unjust. It must have the magic to fascinate and the power to hold its reader from first to last. Its realism must be real, of three dimensions, not flat and photographic, its romance must be of the human heart, and truly human, that is, of the earth as we all have found it, its idealism must be transcendent, not measured to man's mind but proportioned to man's soul."

Business Education.

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In writing about business education I may properly be expected to confine myself to the methods which are or should be adopted in the preparation of young men and women for success in business. First, let us see what is meant by the term "business." It would be defined by the ordinary teacher of book-keeping as the buying and selling of goods; or, if you take a broader view of it and say that business is the act of keeping busy, it embraces the entire field of human activity, and ceases to have any special function. I will not attempt to make a definition, but will gladly confine myself to the commonly accepted idea. Perhaps the line can best be drawn between a professional life and a business life.

The importance of a business educa-

tion, especially for those who expect to follow merchantile pursuits, must be apparent to everyone. In these days business life is no haphazard buying and selling, but a complex and intricate science that has its laws, its vocabulary, its technical terms, and its peculiar methods of communication and exchange. It is a science which demands one's best thought and most persevering study.

Young men often think they have completed their business education when they have learned to keep books. This mistaken idea partly accounts for the comparatively few really competent book-keepers. There is a great deal more in a business education than the mere technical knowledge of accounts. But while book-keeping is only a part of the education it is a most important part to the business man. I heard one of the most successful business men in Detroit say, "most men who fail in business owe it to an imperfect knowledge of their affairs, the result of faulty book-keeping. If you are in business for yourself, it will be of great value to you to keep your own books." Most business failures, in fact, most failures of any kind, are the result of incompetency. No man can expect to achieve the best success in any trade or profession without special training and study. Especially is this true with reference to business. One must thoroughly understand his business all the time and know just how he stands financially; and in order to do this he must be familiar with his accounts. The man who has had this training, who profits by his observations of the business world, who is firm and energetic, and who maintains the character as well as the title of an honest business man, seldom fails.

People are liable to entertain the mistaken idea that only those preparing to engage in commercial pursuits need this education. It would be difficult to name any profession or trade in which a business education would not be of benefit. The professional man has accounts to keep and various transactions in which this knowledge is of the greatest

assistance. The farmer who is alive to his own interests and keeps accounts of his crops and stock, thereby being able to determine which branches of his business pay best, and who can forecast results and returns before making his venture is the successful farmer. Many a college graduate has failed in life because his education did not include these essentials to a successful man of affairs; and many a man remains a day laborer all his life for the lack of few months' training which he could have easily secured in youth. There is no employment or vocation in which a man will not nearly every day find use for a business education. Consider, for instance how much, or how little we really know about the ordinary forms of commercial paper, such as checks, notes and drafts. Probably not more than one person in ten understands thoroughly the endorsements of these papers. Only the other day one of the students tried to get a board receipt cashed at the Secretary's office.

Though the business college is doubtless the proper and the easiest door of entrance to a successful business career, it is not the only one. In an address delivered before the students of Union College, Mr. Dana, the editor of the *New York Sun*, advised those who would become journalists to add to their other acquirements a "business education"; but to that end he did not recommend business colleges, nor even allude to business schools of any kind. The training he commended was the mingling with business men and the conducting of business affairs—the doing of business. Still, it would not seem best to limit education in this way. There is no question but that the common and true idea of education is the imparting and receiving of knowledge in schools or from professional teachers. Through the friendly offices and guidance of the business school the beginner finds his way made easy, and he is equipped in a few months for duties that he could have borne only after years of training in the old way. The pioneer business colleges were

met with disapproval from educators; and this not to be wondered at when we consider that the proprietors of these institutions were often very young men who could do little more than write an elegant hand with sweeps, frills and curlicues, and make the most astonishing flourishes with a pen. But those were the early days of the business college. In spite of this poor exhibit, the schools continued to exist, and in the larger cities have developed into something surprisingly higher.

Business schools have been much criticised for their narrow course of training. This has induced the principals of many such schools to strive to broaden and extend the course of instruction, assuming to some extent the functions of the higher literary colleges. The florid advertisement of such a school reads well and probably has the desired effect of increasing patronage. But right here the school has made a mistake, for it cannot redeem its pledges without defeating its own end by changing entirely the nature and intent of its institution. More than this, business colleges as well as people have all they can do well, if they attend closely to their own business. This tendency among business schools to try to teach everything is unfortunate, for when we remember that the average time spent in the best of such institutions is much less than a year, it is well to consider how this limited time may be best utilized.

The regular studies in the representative business college are book-keeping; penmanship, with much stress upon better writing; arithmetic; language, with special attention to spelling; commercial law; and frequently French and German. In many of the larger schools political economy and civil government are also made a part of the course.

Business education and the business college have been recognized as valuable and have come to stay. No class of schools to-day is making more friends, and it is a suggestive fact that these friends are those who have tested the quality of their

work in its application to the requirements of business.

The universities and institutes have also come to see the value of this kind of education, and it is noted that the best of them, as for example, the college of the city of New York, add a "commercial department", to their courses of study.

The literary college and the business college should not conflict in the least. Let the student first complete his literary course, then add to this a business education, and it is difficult to see how he could be better equipped to get the best out of life for himself and others. He then possesses two of the most valuable gifts, personal independence and a capacity to work out an honorable and prosperous career.

Agricultural Training.

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It seems not a little singular, that the principles of agriculture, the oldest of occupations, are not more generally understood. It is strange, indeed, to think that so many long centuries rolled by without having produced either a Liebig or a Linnæus.

Civilization has made rapid progress in other lines of investigation. The anatomy of different animals and the functions of their various organs are matters with which we are all familiar; but the knowledge of the structure of plants and the workings of their different parts is limited. The engineer understands his engine to perfection. He knows its every weakness and its every strong point. But a farm may continue to be unproductive year after year, and yet its owner may be wholly ignorant as to the causes of its barrenness.

Recognizing the undeveloped condition of the science of agriculture, and the importance of raising it to a higher plane, all of the enlightened, progressive nations have provided means whereby the farmer may enjoy the blessings of a liberal agricultural education.

That this plan is bringing about the desired end is being more fully demonstrated each year. Agriculture is being regenerated by the magic power of modern science. A half-century ago it was thought sheer folly for one to spend valuable time in preparation for life's work unless he intended to become a member of one of the so-called learned professions.

The farmer would say to his son, as he was about to leave the paternal roof to enlist for the battle of life: "My boy, now that the time has come to bid your home good-by, let me give you a few words of parting advice. It is of the utmost importance to you whether or not you start in the right direction. You might enter some of the great institutions of learning, and by spending years of diligent study become an able lawyer. But, my son, these are the golden moments of your life. You are now strong and hale, and you cannot afford to squander a single hour. There is an occupation which you can follow without wasting those years of precious time. You can sow, you can reap. Why not then, settle down at once and become of some use to yourself and humanity."

Such was the advice of the father fifty years ago, and to a certain extent, perhaps it was good. But conditions have altered greatly during the past few decades. In these times of close competition, and rapid progression in all branches of industry, it becomes necessary for the farmer, as well as the lawyer or doctor, to be educated. The land is being covered with a network of railroads, numerous steamers ply the seas, and the producer of one country is forced to compete with those of all others, no matter under what disadvantages he may be working. Education means much to the farmer. It means bringing him into harmony with the enterprising age, and it means the solving of the questions of profit or loss where competition is close.

It is necessary to get rid of the old idea, that education unfits one for manual labor. But the education must be in the

right direction. The world cannot live on theory alone. Humanity must look to other sources for sustenance. We have come to the time when thinkers must be laborers as well. There have been in the past; and it cannot be said of the past alone, for there are at the present time, graduates of the best colleges in the land, who, rather than take up farming as a vocation are performing common and unskilled labor. We find them as sewing-machine agents, copyists, and clerks. They shun the plow as they would an adder. Possibly they had good sense once, but it seems to have been educated out of them. There is an old saying that "Good sense without an education is a thousand times better than an education without good sense." Above all then, it is of vital importance that the education be of the right kind; that the hand be not idle while the mind is being trained. The hand is the servant, the brain is the master. If the servant will not act at the master's bidding of what use can either be?

If the farmers do not keep abreast of the times, what will be the result? It is grievous to think of, but does it not appear inevitable that the fate of the farming class in European nations will be theirs? It seems to be pretty generally admitted that the only hope for the maintenance and improvement of our rural life lies in the extension of a liberal agricultural education.

The new agriculturist knows that there is a physiology to the plant as well as to the animal. He is aware that it is as essential to keep his crop of wheat in a healthy condition as it is to keep the germs of disease from his horse stable. It requires no argument to convince him that his field is a great chemical laboratory, and that it is as important for him to have a knowledge of chemistry as it is for the mechanic to know how to handle his tools. He is a man of culture—one who thinks, who plans, who schemes, not only to equal his predecessors, but to surpass them.

But there is a more significant reason

that the farmer should be educated than the mere matter of economy. The country boy goes to the district school and receives a rudimentary education. He reads the weekly papers and is allowed an occasional trip to town. These various conditions eventually lead him to understand that great mysteries exist on every side. The sky, the sea, the forest, the field, all say, "come and converse with me. I can teach you lessons that the wisest man knoweth not of." With all nature calling to him thus, he cannot resist a yearning to become more familiar with his surroundings. It becomes evident to the farm lad that there is more knowledge than can ever be procured on a farm. He also learns that to the plucky, earnest, and persistent it is attainable. This intense longing for that which he knows he can never get at home leads him to despise his father's calling and look forward to some occupation which to him seems more congenial. Can he be blamed for this unrest? Should he choose what appears to him to be the life of a mole, while a life of joy, of light, and of knowledge is within his reach? Endeavor to compel a boy of such ambition to content himself with a humble position in the world and it will be but natural for him to improve his first opportunity in fleeing to mill, or shop, or store, or bar.

The remedy for the rash choice of city life by so many country boys does not lie in the suppression of their desires to obtain an education, but exactly in the opposite direction. The same cause which allures them to the city may be made to act with a double force in attaching them to their own homes. Give the farm boy who desires it a free access to all the knowledge which bears upon agriculture. Satisfy his craving appetite for learning. Let him once become acquainted with the wonderful mysteries which surround him and it will seem most imprudent to him to sever his free communion with nature. His father's vocation will be his own, and as he passes through the fields to his day's labor, the smallest creature will greet him a glad good morning.

Myriads of insects which once seemed so ugly to him will then be his welcome friends. In each he will be enabled to see curious features and untold beauties. Each tiny flower will smile and nod as he passes by. Every shade tree will be loaded down with wonders, and it really seems that his home will be, if such there can be, a paradise on earth.

SCIENTIFIC.

Notes Concerning Our Botanic Garden.

The following is taken from the report of Dr. Beal for the current year, soon to be published. It brings out many striking and interesting points connected with this attractive feature of our campus.

"In a very modest way a beginning was made in 1877, along a shady bank near the brook and not far from the greenhouse.

"The garden under consideration consists of three acres lying on the north bank of the Cedar river and extending to the northeast on both sides of a small brook. This area does not include the arboretum, nor the greenhouses, nor the adjoining lawn and flower beds and plats of shrubbery with their numerous varieties and races. The space of which I now speak consists largely of the higher portion of the river flats mostly above high water mark. On the banks are a variety of shrubs and small trees of nature's own planting. The artificial portion of this garden, then, consists mainly of hardy herbs with a few shrubs, 1,200 to 1,500 species.

"At first considerable pains was taken to make, by means of boulder stones, small packets a foot or two in diameter, for each species, but in dry times the small plants wilted, while the woody growth, rooting deep, absorbed the moisture and thrived. At present the sloping banks are devoted almost exclusively to families containing many woody plants, while the bulbs have "slid" down to the low flat land, which most of them seem to like very well.

"The opinion of visitors from the country, the village and the city has frequently been sought, comments without end have been overheard, and with scarcely an exception this "novel sort of a garden" awakens their interest at once.

"We aim to grow well (by no means always successfully) a plat of each species two to six feet in diameter, large enough to fill the eye, that the botanist, the artist, the florist can see how he likes it. Where the piece is rather large there is very much less danger of losing the whole than where but little is grown. The farmer can compare some of the newer untried sorts of grasses or other forage plants by the side of his old favorites, or he can see behind a label containing the name some weed pest that has lately found its way into his neighborhood. The bee-keeper looks for the plants and their names where honey is gathered in most abundance. The entomologist learns to look for certain insects on the plants of a certain family or species. At a farmer's institute last winter no topic attracted greater attention than the mention of a family of mints represented by some fifty or more species in our botanic garden. Several present expressed a determination to pay the garden a visit for the purpose of looking for something new and promising for distillation. They hoped we would extend the list by introductions from other countries.

"Many kinds of pretty wild plants are not well known by people in general, especially since the woods have been cut away, or pasture and the swamps drained and placed under cultivation or frequently burned over.

"Even along the roadside in many places the fences have been removed and grasses, grains and potatoes come nearly to the tracks of the wheels.

"In the vicinity of college or high school the herbarium fiend ransacks the wild places for choice plants which he removes root and branch in large numbers. Sometimes the roots are removed to supply the eastern market. By these methods the choicer plants are driven farther and

farther over the hills or back into the remote swamps and small patches of forest.

"A botanic garden of some extent is now becoming almost a necessity for supplying the students of school or college with suitable material for illustration and study.

"At this college where the academic year includes the summer months, a garden is especially valuable. Here each student may find suitable plants for the study of fertilization by insects, or a comparison of the tendrils, the runners, the root stocks, a study of twining plants, or almost anything needed for a thesis in botany, or for making notes to present to the Botany Club or Natural History Society.

"Every little while the amateur or the professional florist has his attention called to the peculiar value of some aquatic, vine, shrub, or what he supposed was nothing but a weed. He adds it to his garden. The benefits of a botanic garden are not yet fully appreciated, though it is a favorite place for young students from neighboring schools.

"At one time the manager is nearly outwitted by the moles that undermine his favorites of the dry sandy knoll, at another, it is the plant lice on the wild asters or water lilies. The blister beetles coming in great swarms to strip the lupines, coffee trees or baptizias, or again it is the muskrats which devour the root-stalks of the aquatics, or the striped squirrels which feast on the putty roots.

"June freshets decimate some plants not accustomed to long inundation in times of growth. Among such, are spikenard, ginseng, adder tongue, burdock, dandelion, catnip, motherwort, wild lettuce, May weed, mallow, plantain and many more.

"Some fifteen years ago plants of *Marsilia quadrifolia* were introduced into one of the ponds and soon spread all around it, and sent forth long stems into the water where it was two feet deep or more. For some feet near the shore the surface of the water was covered with

these beautiful leaves. Then water snails finding plenty of suitable food multiplied, and the *Marsilia* retreated to the shore in a few spots in the grass, awaiting better times. We still grew it well in the mud a few inches above the water. Last winter the thick ice during a long cold two months or more, killed the snails as well as the fish, and this summer, the *Marsilia* has again invaded the water. Wild rice in like manner was kept in check by the snails, but this year it grows in water two feet or more in depth.

"Perhaps it was fifteen years ago that we received *Solanum tuberosum* from Harvard botanic garden. It was said to be a fresh arrival from Mexico. After a few years instead of tubers an inch or less in diameter, we grew some three inches long. May be for ten years, we have been growing *Solanum Jamesii* from Arizona. For the past three years more especially some of the tubers have nearly doubled in size, while the outside has changed from the brown warty surface to a clear color, resembling our smoothest potatoes in general cultivation.

"In most cases by selecting the spot of suitable size especially favorable for the plants of a family we are enabled to keep them near each other, but no attempt is made to plant allied families next to each other or to arrange species in an artistic manner.

"In case of the calla or arum family, the sweet flag, golden club, wild calla, arrow arum, are grown in the mud, in shallow water and just on the adjacent bank are grown Indian turnip, green dragon and skunk cabbage. On a small inaccessible island we grow poison sumach and poison ivy, while on the neighboring banks are six other species of *Rhus* or sumach. The ferns are on the north side of a moist bank and at the base of it, more or less shaded by trees and protected from winds. A large place sunk a foot into the black soil of the creek bottom grows cardinal flowers to perfection, while a mound near by is well covered by a group of hairbells.

"Some plants, like violets and euphor-

bias, as the pistils ripen, shoot their seeds in every direction, often three to eight feet. On this account we scatter the violets around among the crucifers and must scatter the euphorbias to prevent hopeless confusion of seedling plants.

"In the fall of the year the large terminal buds of *Myriophyllum* and Bladderwort sever themselves from the parent and sink to the bottom to rise the next spring and drift away from home, starting many new colonies.

"For the mints, pulse family, and a few others the ground was rather too hard. We covered the soil with about six inches of sand which serves as a mulch and works easily.

"We have a dry sand bank sloping to the south which grows sedums, cacti, *Tanacetum*, *Huronense*, *Solidago rigida* and a few other things to perfection.

"In the older portion of the garden, the paths consist of a little gravel and loam with borders of small field stones, while in the newer portion the paths consist of well mown grass.

"By doing much of the spring work the fall previous, such as transplanting, weeding, etc., Mr. Cornell with a little help tends the whole three acres alone and this without any opportunity to use a horse cultivator.

"The portions known as the 'grass garden' and the 'weed garden' are here included as a part of the Botanic Garden."

Entomological Notes.

GRASSHOPPERS IN THE UPPER PENINSULA.

Various letters from the Upper Peninsula say that it is alive with grasshoppers. One letter says, "They swarm over the whole country. The movement of ore trains is often impeded by the hoppers on the rails. For the past three years they have been destructive to crops, and are steadily increasing in numbers. The hopper of this year is smaller than that of last, and is somewhat darker."

Specimens of the grasshoppers that were sent included several species, the

most of them being common species found in all parts of the State. The smaller one, that is reported as the most common this year, is apparently the Rocky Mountain locust of western notoriety—the same species that has appeared in such swarms and done so much damage at various times on the western plains. Minnesota is suffering from such an invasion this year and no doubt the locusts have found their way east from that region into the Upper Peninsula.

The latest report from Ishpeming says, that heavy rains have recently fallen and the locusts have been subdued so that they are traveling but little. They will probably do no more serious harm this season. There is no danger of the Rocky Mountain locust ever reaching the lower part of Michigan, because of the lakes and instances are rare of its traveling as far east as it has this year.

A New Coccid for Michigan.

At the last Natural History Society meeting several students spoke of a bark louse that they had noticed on the limbs of the elm shade trees along the road north of the arboretum. Investigation proved it to be an ally to the scale insects that differed by being embedded in a nest of a white waxy secretion, instead of having a brown scale over it. The species is known scientifically as *Gossyparia ulmi*. It is a native of Europe and has been imported on European elms by various nurseries and arboretums of the United States. Quite likely the specimens on our own trees came in a similar way. Dr. Beal says that there has been no importation of elms for the arboretum, to his knowledge, but that the affected trees and some others came from nursery stock several years ago. The insects are very thick on the trees for about twenty rods and then seem to disappear. This is the only place on the grounds where they have been found at present.

G. C. DAVIS.

Observations.

Engineering students have been enjoying an excellent and extended opportunity to study bridge building in connection with the erection of the handsome and compact structure of arch girder design which has recently been put across the Grand river on Michigan Avenue. Rather more extended perhaps than was desirable when the street was so obstructed. They will now have an opportunity to study a heating and ventilating system of modern type as plans are being examined at Lansing of a hot blast automatic system in connection with the new city hall.

The Herbarium is growing rapidly of late. Many new and curious specimens are constantly added. To give an idea of its extent the following summary of its contents are given:

Flowering plants, Spermatophyta	42,861
Ferns and their allies, Pteridophyta	1,106
Mosses and Liverworts, Bryophyta	1,638
Lichens	989
Fungi	7,404
Algæ	245

Total number of plants in the herbarium 54,243

These specimens are very nearly all well mounted and accessible in fine cases. The plants are more complete and better prepared than most of those collected by the older generation of botanists. The botanists of today have learned from others and many of the collectors are well equipped for excellent work.

Bulletin 125, by A. A. Crozier, has just been issued from the farm department of the station. It contains several topics, the first of which is on crimson clover. Forty reports are given from seventeen counties in the State by persons who tested this clover in Michigan the past season. The outlook for this new forage plant is not very encouraging.

An interesting report is given on an experiment in sowing clover seed every month in the year. The results indicate that for this locality the old way of sowing clover seed in March is the best. "The Common Names of the Clovers" is

a chapter giving all the known common names applied to the various plants called clover, with their botanical equivalents. It will be a useful reference list for seedsmen, students and others.

A report on alfalfa recommends this forage plant for more extended trial in Michigan. It is doing remarkably well this dry season upon the college farm.

"Temperatures of Different Soils," "Planting at Different Depths," and "Harvesting Wheat at Successive Stages of Ripeness" are reports of experiments by students in past years under the direction of Mr. P. G. Holden.

The concluding paper on "Detasseling Corn," shows a slight gain in yield from the operation, but not sufficient to pay for the labor required.

THE SPECULUM.

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BY THE STUDENTS
OF THE MICHIGAN STATE AGRICULTURAL COLLEGE.

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AGRICULTURAL COLLEGE, JULY 15, 1895.

ANOTHER college year is drawing to its close. It is a year that has been especially quiet and uneventful in our college history—the calm succeeding the storm. But despite the air of quiet and tranquility, which has characterized the year, it has been by no means a period of retrogression. While the material ad-

vancement has not been so marked as was that of last year, we see in the character of the work accomplished, and in the spirit of harmony which pervades our community only the most unmistakable and encouraging signs of progress.

PERHAPS the main thing to be regretted in this period is the failure of the legislature to make the appropriation necessary to build a suitable dairy building. It is disappointing to think that such a successful and promising feature of the college as the dairy school has proved to be, must be abandoned for this reason. This same unwise economy on the part of our law-makers has militated more than anything else against the best interests of our State institutions.

WITH the students as well as with the college as a whole, the year just closing has been marked by a quiet but steady progress. It is in athletics that this is mostly noticeable. While our successes have not been phenomenal in any sense of the word, they have been earnestly and honestly gained, and as such, they can be laid almost directly to the employment of a trainer. There is no doubt that, after this lesson, the same course will be pursued in future years. The trainer should be hired by the college, and be a member of the faculty. With such an arrangement, regular courses in physical culture could be offered and all students obliged to participate in the exercises.

THE time has arrived when the present editorial board must retire from the control of THE SPECULUM and give the charge into the hands of its successors. In bidding our readers farewell, we wish to acknowledge our thanks to those who have aided us in our task, especially to our printers, Messrs. Thompson & Van Buren, whose kind suggestions and careful work have obviated many a blunder and corrected many a mistake.

Our course has not in all instances

been either an easy or a pleasant one, yet it is not without a feeling of regret mingled with a sense of relief, that we lay down our work. We congratulate the students upon the wisdom they have shown in the choice of our successors. Under their guidance THE SPECULUM cannot fail to reach the shores of success.

COLLEGE NEWS.

BOARD MEETING, JUNE 25, 1895.

The salary of H. P. Gladden was raised to \$300.

Appropriations for the coming six months were made in all departments.

H. E. Harrison was appointed instructor in the Chemical department at a salary of \$500.

Fifty dollars were appropriated for seats in the mathematical class room, and \$35.00 for music at commencement.

The salary of W. L. Rossman was raised to \$700 per year, and his whole time will be devoted to Experiment Station work.

Prof. Weil was authorized to accompany students who make a trip on the steamer Rappahannock to test the engines and pumps.

It was resolved as the sense of this board, that inasmuch as the State legislature has made no appropriation for a dairy building, and we have no adequate means for conducting a winter course in dairying in a creditable manner, we advise that the short course in dairy work be dropped out for the winter of 1895-96, and our teaching force in that line of instruction be utilized for dairy work at our farmers' institutes awaiting such time for the reinstatement of the winter dairy school as the legislature in its wisdom shall adequately provide for it.

Adjourned to August 12, 1895.

ABOUT THE CAMPUS.

The total enrollment this term is 275.

A new porch has been added to Dr. Kedzie's residence.

The Ithica Farmers' Club spent a day at the college recently.

Mrs. E. M. Kedzie and daughter Pearl are visiting at Old Mission.

On the night of June 28th frost killed the corn on the low muck ground.

The Misses Greening of Toledo, Ohio, are guests of Mr. and Mrs. Westcott.

The Gratiot county Farmers' Club gave the college a thorough inspection June 28.

An excellent banquet was given by the "Faculty ladies" to the athletes who took part at Field Day.

The annual inspection of the battalion of cadets occurs July 15.

During the month of June the rainfall was 1.1 inches. The average for June has been about four inches.

The Farm department is preparing a series of illustrations showing the typical animals of the leading breeds of live stock.

Dr. Kedzie's vesiculating test for flour is quoted at length in William Jago's new book, "The Science and Art of Bread Making."

There are about one hundred and twenty students working in the Chemical laboratory this term, thirty of these are summer students.

Dr. R. G. Boone, President of the Normal College, and Hon. David Hammond, member of the State Board of Education, were here July 3.

Prof. C. F. Wheeler is spending a few weeks near Alpena studying the peculiar features of botany of that section, especially along the lake shore.

Since the library is so well patronized by summer students, we would suggest that a few more chairs be provided for the accommodation of the regular students.

A rule has been adopted by the faculty to the effect that pedestrians shall have first right of way on the cement walks, and that bicycle coasting on the walks is prohibited.

Pipes have been laid to the Botanic garden for the purpose of watering the plants and grass plots. A great many plants, grasses, and weeds have already succumbed to the drought.

Dr. Grange recently found a well marked case of glanders in a Clydesdale horse at Alpena. At Westphalia the doctor found two cases of glanders on one farm and one on another.

About fifty members of the Womans' Press Association visited the college June 13. As a result of their visit a number of very complimentary articles have been published in regard to the college.

The "glorious fourth" was spent much the same as usual this year. A few students went home, the others either remained at the college or celebrated at the various places of interest near by. In the evening there were a brilliant display of fireworks at the president's house and Howard Terrace.

Prof. and Mrs. Smith have gone to Denver to attend the ninth annual convention of the Association of American Agricultural Colleges and Experiment Stations, which meets there on July 16. President Gorton was invited to open the college section of the meeting, but coming as it does so near the end of this term, the president is unable to attend.

On Tuesday evening, June 25, members of the Capital Grange of Lansing were entertained by the M. A. C. Grange at their pleasant quarters in the Phi Delta Theta Fraternity rooms. The literary program was as follows: "Farming in the West," by W. C. Stebbins. In a very pleasant way Mr. Stebbins

described the mode of farming and manner of living in Nebraska. Next was a poem, "A Few Student Pleasures," by C. P. Close. Prof. Taft then gave a talk on "Irrigation at the College" and compared it with the irrigation of Colorado and California. Clay Tallman spoke on "Farm Wages," comparing the wages of different counties of the State, and comparing the wages of Michigan with those of other States. The Eclectic Society orchestra furnished excellent music for the occasion. Refreshments were served in Club D dining hall, where toasts were responded to by President Gorton, Dr. Beal, E. A. Holden and Jay Heck.

JOINT COMMENCEMENT CELEBRATION OF THE COLLEGE SOCIETIES AND FRATERNITIES.

For several years the commencement exercises, long, monotonous, colorless, have been a source of discussion among faculty and students. It seemed right that the students should appear before the public at that time; and yet it seemed equally important that some inspiration be given--some enthusiasm be aroused by contact with the thought of the world of action all around us. Then, again there were those who contended that matters pertaining to agriculture and the mechanic arts, and not purely literary work, should find presentation at our commencement exercises.

After a good deal of thought, it was decided to separate into two parts the exercises which had heretofore characterized the commencement occasion; to place the purely literary exercises at a separate date, and to give up the commencement day to the distinctively characteristic work of the college. To infuse larger interest, an address from some speaker of national reputation was also provided for on that day.

In arranging the character of the literary exercises, it was thought best to utilize the forces active in the society and fraternity work in the college. The work done in these organizations constitutes a legitimate and valuable part of the training afforded by the institution, and the establishment of the separate occasion for literary work seemed to offer an opportunity for fostering and encouraging interest in their distinctive work and recognizing them as an important auxiliary in the work of the college for the student.

It would seem that the variety of the exercises carried on has not been sufficiently wide to embrace debating, yet is through dialectics that nearly the whole movement of our public life is brought about, and the ability to handle one's self with skill and effect under the fire of opposing argument is one of the most practical and valuable of gifts in American social life. In the establishment of these contests the design has been especially to encourage this form of training.

It is hoped that the contests will emphasize the generous rivalry existing among the societies and fraternities, and encourage them to keener effort in their legitimate sphere; that the work of the societies will be planned so as to develop the very best talent for these contests; and that in the future no one of our

college organizations of this kind will be willing to remain unrepresented.

The contest for this year will take place on the evening of August 2d, and the careful work of the contestants promises a brilliant and interesting display of talent. Every man is determined to show the best that is in him, and to win renewed honor for his society. The ladies, too, have not been idle, but have a formidable champion in the field to bear up the colors of the Feronians. The interest and enthusiasm will steadily increase.

HORTICULTURAL DEPARTMENT.

The frost has greatly reduced the yield of strawberries, but the liberal use of water prevented any injury from the drought.

The use of two applications of water on the crop of early peas, gave an increased yield of 4,000 pounds per acre over the part not irrigated, and on the timothy a gain of 4,500 pounds was obtained.

Prof. Taft spent Saturday at the South Haven sub-station. Although it has been very dry the trees are in a healthy condition, and the prospects good for a large crop. The moisture in the soil has been conserved by cultivation.

Prof. Taft recently visited Tecumseh, Manchester, Kalamazoo and Norvell, to inspect the methods used in those places in the irrigation of celery. At the Prairie Side Celery Farm near Tecumseh, they are pumping a thousand gallons per minute by means of a five-inch centrifugal pump, and distributing it by means of ditches located from eighty to one hundred and twenty feet apart. They are also using two and one-half inch drain tile placed one and one-half feet below the surface, and at intervals of eighty feet for sub-irrigating. In other places distances of from thirty to forty feet are found preferable.

MECHANICAL DEPARTMENT.

Castings are out for a "rattle-trap."

The patterns for new benches in the iron shop are finished.

The last heat made in the foundry was the most successful one yet made.

A new Van Winkle power meter was tested, but it did fulfill expectations.

The Sturdevant five-inch fan has been removed from the blacksmith shop to the foundry.

Patterns for a Corliss engine are well under way and will be finished by the end of the term.

A set of S and alligator wrenches have been put in the shop; also a twelve-inch Sweetland independent four-jawed chuck.

Profs. Weil and Chamberlain with their wives, attended the recent meeting of the American Society of Mechanical Engineers in Detroit. They reported an interesting meeting and delightful entertainment.

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 the department, often, thus making his work much easier and the department more interesting to all.

The following letter from Louis A. Bregger shows that there is at least one alumnus who cares enough for his Alma Mater and THE SPECULUM to take the trouble of acquainting the editor of this department with a few personals. From every side we hear the remark, "Give us more personals in the Spec." But no one seems to be interested enough to send, even once in a great while, a few notes that he may have chanced to pick up. Personal visits to the local alumni have been the only sources of information this year. Brother alumnus let us "brace up" and follow the example of Mr. Bregger.

"923 Byron St., CHICAGO, ILL.,
July 1, 1895.

Dear Sir:

There are a number of M. A. C. boys in Chicago and some of us have been talking of forming a Chicago M. A. C. association. Eldridge of '86 is a teacher in the public schools. A. E. Brown, of the same class, is in the railway mail service, or was when last heard from. Rumsler of '86, is working up quite a large patent office business. R. W. McCulloch of '87, who until recently was Rumsler's law partner, is now acting agent for some concern. W. S. Palmer of '89, is helping "make the weather" in the Auditorium tower. R. S. Baker of the same class, is steadily working up in the Chicago Record Staff. "Stories of the Streets and the Town," and "Shop Talks on the Wonders of the Crafts," regular features of the Record, are mainly Baker's work. He called at Graceland cemetery today and witnessed a cremation. We had our 70th cremation today, since the opening in December, 1823. Prof. Henry Thurtell, '88, of Nevada University, is attending the University of Chicago. Dr. John Wesena, with '88, Professor of Chemistry at the College of Physicians and Surgeons, is a very busy man. In addition to his college duties he has a large private analytical practice. Those who remember him at M. A. C. as the best hand master the college ever had, will be surprised to learn that he rarely plays now. There are still more of the boys in the city,—Bohn, Coryell, Doty,—but I don't know where they are.

McCulloch, Palmer, W. J. and A. M. Meyers came out last Saturday evening to 923 Byron street, and we had an old fashioned M. A. C. time. Invitations are out for a similar party next Saturday night.

Yours very truly,

LOUIS A. BRIGGER, '88.

Born, to Prof. and Mrs. E. J. McEwan, formerly at M. A. C., a daughter, on June 20.

'92.

O. Clute, President of the Florida Agricultural College, and family arrived at the college July 5. An informal reception tendered to him by President and Mrs. Gorton Saturday evening, July 6, was largely attended. The students of M. A. C. have a warm place in their hearts for ex-president Clute and his family.

WITH '71.

The Bryan Press of Bryan, Ohio, contains the sad news that Oscar Eaton, the most prominent business man of that place, died very suddenly of cerebral hemorrhage on Saturday, June 22. His death occurred at Cleveland while attending the Republican National League convention. The funeral was held in Bryan on Monday, June 24, was one of the largest ever held at that place. A magnificent floral piece was ordered from Toledo by a committee appointed by the mayor at a public meeting held Saturday evening. Business was suspended all over town Monday afternoon and every possible effort was made to give expression to the sorrow of the community at the loss of one of its most prominent members.

The following is a brief sketch of his life: Oscar Eaton was born in 1847, near Ridgeway, Lenawee county, Mich. His boyhood days were spent working on his father's farm. In the fall of '67 he entered M. A. C. With hard work, economy and teaching between terms, he finished the junior year. He left for Colorado in 1870 where he was engaged in farming, surveying and the real estate business. In 1875 he and his family moved to Bryan, Ohio, where they have resided ever since. He was appointed postmaster in 1877, and shortly afterward was elected cashier of the First National Bank. Later on he was elected president of that institution, which position he occupied at his death. His life was full of energy, work and success. He took everything by the smooth handle and slighted nothing. He was a great lover of literature and art and possessed a remarkable memory. In politics he was an acute observer, a safe advisor, and always ready to aid his party. In recognition of his services he was elected a delegate to the republican national convention of 1892. THE SPECULUM takes occasion to express its sincere condolence to the bereaved family and relatives.

'78.

Prof. Eugene Davenport of the University of Illinois, was at the college last week.

'82.

E. A. Murphy graduated from the law department of the University of Michigan this year.

WITH '82.

R. B. Barbour is a manufacturer of high grade dyes and chemicals in Chicago.

'86.

J. E. Hammond and wife are taking a pleasure trip through the Rocky mountain region and expect to visit Mexico.

T. A. Stanley is meeting with good success at his Cedar Mill dairy farm, near New Britain, Conn. He has everything of the latest and improved machinery and commands fancy prices for his products.

'87.

C. E. St. John, who is attending the University of Heidelberg, is reported to be in poor health at present.

Geo. C. Crandall has accepted the chair of professor of the theory of medicine in the St. Louis, Mo., Medical College.

'88.

Frank J. Free and Miss Celia Hilliard, both of Lansing, were married June 20. They will reside in Lansing, where Mr. Free is one of the superintendents of Bement Bros.' Iron Works. THE SPECULUM extends congratulations.

'89.

Married, June 27, Mr. G. J. Jenks of Sand Beach to Miss Bertha Wells of Lansing. Congratulations.

Born, to Mr. and Mrs. R. H. Wilson, June 14th, a daughter.

WITH '89.

W. L. Hoffman is a successful physician at Salome, Mich.

'90.

Prof. W. H. VanDervort of the Illinois university stopped here last week on his way to a northern pleasure trip.

Chas. N. Ferris left college July 6 to spend the remainder of his vacation in and about Traverse City. He will return to his work in the University of Tennessee next fall.

J. R. McCall arrived at the college July 10. He will spend the summer in doing some special work.

W. J. Meyers of the Colorado Agricultural College, is studying Political Science and Sociology in the University of Chicago.

E. J. Cooney attended the meeting of the State Horticultural Society held at the college June 26 and 27. He acted as reporter for the Practical Farmer and Fruit Grower.

WITH '90.

Edward Bradford is taking a course at the Detroit College of Medicine.

Carl E. Pray, Olivet college, '95, has been elected superintendent of the Olivet public schools.

'91.

A. T. Sweeney and wife, *nee* Jessie Foster, visited the college July 5.

L. W. Spaulding of Florida, contemplates teaching in California next year.

A. R. Locke expects to leave Scotland August 1. He will open a law office at Ionia in company with his brother Charles.

WITH '91.

A. A. Hopkins is editor of the St. Clair Republican.

'92.

W. K. Sagendorph took the degree of Bachelor of Laws at the University of Michigan this year.

WITH '92.

Thomas Bradford is assistant superintendent of the iron works at Oswego, N. Y.

Adam Foster is bookkeeper for the Grand Rapids Engraving Co.

'93.

Miss Lillian Wheeler and Miss Katharine Cook arrived from California the last week of June.

L. J. Briggs and E. M. McElroy are at the college taking special work in physics and practical sociology.

C. E. Holmes will attend the Valparaiso Normal this summer. He has been retained as instructor of mathematics in the Lansing high school.

W. J. Willer intends to spend three years at the State University perfecting himself in literary studies.

C. W. Leipbrandt has charge of a large farm at Lynnfield, Mass.

B. A. Cook was a recent visitor at the college.

Our last issue was mistaken as to the business of J. B. Dimmick. He is assistant engineer of the Detroit & Mackinac Railway Co., and is at present engaged in laying out a road from Bay City to Cheboygan. He and his brother Chas. N. Dimmick, with '93, own a general merchandise store at East Tawas. They report a good business. The following is a quotation from John's letter: "Would like very much to get down there for commencement and will, if it is so that I can get away. If the Freshmen in Old Wells, or within 'bags throw' of it are getting too fresh, please let me know and I will make an extra effort to come."

WITH '93.

R. M. Kedzie of Grand Haven visited the grounds during the latter part of June.

'94.

E. V. Johnson is working with Sterling Bros. of Detroit.

R. S. Welsh has been kept busy improving the roads in his vicinity. He superintended the work and used \$200,000 to accomplish it.

O. S. Grover and J. W. Perrigo paid the college a visit a few weeks ago. Mr. Perrigo will probably go to Chicago as assistant to a prominent Detroit electrician.

R. S. Campbell and wife visited here July 1st. They left for St. Clair county July 3, where Mr. Campbell expects to do some work in the interest of the International Encyclopedia.

A. W. Tracy spent a week at the college during the first part of July. He will soon resume work for D. M. Ferry & Co. His time will be mostly spent in Maryland and Maine.

WITH '94.

C. H. Perrin graduated from Albion college this year and will enter the ministry.

H. H. Rhodes is working with the Scott Bros. Electrical Company of Detroit.

A. W. Chase is traveling agent for D. M. Ferry & Co. in Maryland.

WITH '95.

C. J. Combs, who recently finished the freshmen year in the U. of M. medical department, is spending the summer at his home in Elmira.

WITH '96.

N. C. Johnson has accepted a situation as head bookkeeper in the office of the Economist Plow Company of South Bend, Ind.

WITH '97.

R. A. Gongwer is working on a farm near Hart, Mich.

L. C. Smith has received a raise in salary and will remain another year in the State Bank of Gaylord.

ATHLETICS.

REPORT OF ASSISTANT BASE BALL MANAGER.

As assistant base ball manager for season of '95, I beg leave to submit the following report of moneys entrusted to me :

April 1,	Students' Organization, by Gallup,	\$14 00
April 5,	Dr. Beal,	5 00
	Score cards Albion game,	11 35
	Borrowed from Stewart,	1 25
April 25,	C. E. Hoyt,	2 50
"	G. H. True,	2 00
"	B. O. Longyear,	1 50
"	W. Babcock,	2 50
"	A. A. Crozier,	1 00
"	R. C. Bradley,	1 00
"	G. C. Davis,	1 50
"	E. C. Good,	1 00
"	Kalamazoo manager,	36 85
" 29,	T. A. Durkin,	1 00
	Score cards Olivet game,	15 70
May 1,	W. B. Barrows,	5 00
" 2,	H. M. Howe,	1 00
" 7,	C. D. Smith,	5 00
" 8,	P. B. Woodworth,	2 50
"	C. L. Weil,	5 00
" 9,	Thos. Gussion,	2 50
"	V. V. Newell,	1 00
" 9,	U. P. Hedrick,	1 00
" 10,	E. A. A. Grange,	5 00
"	Sell McKinnon's bat,	1 00
"	Tickets State League game,	1 25
"	Borrow of Stewart,	5 00
" 20,	L. G. Gorton,	5 00
"	Borrow of Stewart,	1 30
"	C. C. Fashby,	1 25
" 24,	H. P. Gladden,	1 50
"	Paul Theodore,	1 00
"	H. E. Harrison,	1 00
"	E. A. Edgerton,	1 00
" 25,	Tickets Kalamazoo game,	6 45
"	Students' Organization order,	21 00
"	Borrow of Gallup,	6 00
"	Borrow of Stewart,	1 50
" 27,	A. T. Stevens,	1 00
"	C. J. Foreman,	1 00
"	Borrow of Stewart,	20 00
"	Received from Olivet at Olivet,	13 75
"	Street car,	1 00
"	Vacation meals,	4 00
June 2,	E. A. Lewis,	5 00
" 3,	W. L. Rossman,	1 00
" 4,	H. E. Edwards,	5 00
"	C. F. Wheeler,	1 05
" 5,	F. S. Kedzie,	5 00
"	W. O. Hedrick,	5 00
June 21,	A. B. Noble,	1 50
"	Borrow Stewart,	2 00
		\$218 25
April 8,	Fix glove,	10
" 11,	One dozen balls,	12 75
" 15,	Stamps,	20
"	Score book,	1 00
" 22,	Albion game,	17 05
"	Street car,	1 00
"	Rule book,	10
"	Kalamazoo game (at Kul.)	26 85
"	Transfer (Battle Creek),	1 25
"	Telegram,	55
"	Witch-hazel,	50
"	Gum,	40
"	Stockings,	55
"	Gum,	15
"	Rule book,	10
"	Olivet game,	16 95
"	Street car, same game,	1 00
"	Printing tickets,	75
"	Paid Alvord on account,	12 00
"	Bat,	85
May 7,	Rec'd on Kalamazoo game,	2 00
"	Gum,	20
May 8,	Alvord on account,	5 00
"	Meals Albion team,	4 25
"	Meals Olivet team,	4 25
"	Bats for Crosby,	1 00
"	Receipt book,	15
"	Newman on Kalamazoo trip,	1 15

May 8, State League game,	4 00
Street car fare Albion,	1 00
Telegram,	2
Eiman, Kalamazoo trip,	10 60
Rig for Krentel,	50
Paid Stewart,	5 00
Repairs on mask and mit,	30
Bats,	1 00
Protector repairs,	50
Ball,	1 06
Gum,	04
Street car,	10
Paid Stewart,	1 30
Paid Stewart,	1 00
Street car,	1 00
Gum and repairs,	50
Team expenses,	37 70
Tickets,	65
Witch-hazel,	10
Stamps,	10
Street car, Olivet,	1 00
Gum,	20
Belt,	50
Team expenses,	13 78
Lemons,	50
Paid Stewart,	20 00
Medicine,	1 00
Toe plates,	40
Paid Gallup,	6 00
Stockings,	25
Liniment,	50
Ansorge, Kalamazoo trip,	8 60
Bromo,	50
Baggage,	75
Lemons,	75
Water boy,	1 10
Bats,	1 00
Witch-hazel,	55
Bus,	1 00
Courtplaster,	10
Paid Stewart,	1 50
	<hr/>
	\$248 26

There are out-standing debts as follows :

Stewart,	\$2 00
Krentel,	1 15
Fisher,	1 15
Alvord (account)	10 80
	<hr/>
	\$15 10

To be collected yet :

Rebate from R. R. Kalamazoo trip,	\$12 80
Balance,	2 30

I wish to thank the faculty for their very liberal subscriptions and for the privileges granted the team. I also wish to thank Messrs. Kramer, Pond, Tock, Tracy, Bierce and others who assisted in selling tickets at the various games. Mr. Vanderhoef deserves mention for the excellent work in helping our pitchers get in condition for the games.

The results of the season's games were published in a previous issue of THE SPECULUM, and so need not be mentioned again.

By the next issue of THE SPECULUM I expect to be able to announce the choice for assistant manager for next season, and I would suggest that this election take place hereafter in the summer term that the person selected may have a chance to work up a team in the fall term.

Each individual on the team deserves the highest praise for his work. All have worked hard and it is no fault of theirs that the cup is not to adorn our library for the ensuing year. Few of those on the outside understand what it means to play on the team; what work is involved in getting into the best shape and what it is to be "roasted" when a game is lost. It would be far better were these same "kickers"

to be quiet at least instead of discouraging the men. Show them that you are interested in their work and they will do far better.

Again thanking the team for its good work and gentlemanly conduct, I will close with best wishes to my successor. I am

Yours respectfully,

GUY L. STEWART,
Ass't. B. B. Manager '95

Again has M. A. C. captured her share of honors on the athletic field. July 4, a few of our athletes entered in the sports at Lansing, and brought back what they went after. Speare won the hundred yard dash in 10½ seconds. Tracy wins the mile run with time to spare. Rork gets first on the one mile bicycle, second on the three mile, and third on the ten mile. In the 440 yard dash Rider gets second and Speare third. No team appeared against us in the relay, and the judges gave us 4 min. and 42 sec. to run against. Time 4-1.

Following are the batting and fielding averages of our base ball team for the season of '95 :

Name.	No. Games Played.	Batting Average.	Fielding Average.	Batting.	Fielding.
Reed,	4	428	666	1	7
Parish,	5	416	375	2	11
McKinnon,	8	342	834	3	2
Eiman,	3	285	600	4	10
Ansorge,	8	277	644	5	8
Fisher,	5	266	818	6	3
King,	8	250	760	7	5
Krentel,	6	192	788	8	4
Bateson,	7	166	640	9	9
Crosby,	5	150	750	10	6
Gorenflo,	8	127	840	11	1
Newman,	3	090	250	12	12

Out of eight games this season we have won four. We have beaten Albion, Kalamazoo, Olivet twice, and have been beaten by Kalamazoo, Olivet, Lansing League and Albion.

July 4, Fisher pitched for the Homer team in a game against Litchfield. He ran across his old friend Jacobs of Albion, who was pitching for Litchfield, and hit him for two singles, two doubles and a home run.

McKinnon covered first in the Lansing League for four games during the sickness of Daly, the regular first baseman.

This year M. A. C. loses more than the usual number of men prominent in athletics—Bateson, Ansorge, McKinnon, Fisher and Cole.

Ansorge and McKinnon both entered with the class of '95, played on the class team, and have both won distinction as the right kind of base ball men, on the college team. Ansorge has always been a hustler in athletics, and has twice been director of the local field-day sports, as well as captain of the team of '95.

Fisher entered with the class of '93, but was compelled to drop out for two years, and finishes with '95. From an unsophisticated farmer lad, he has developed into one of the most popular and influential students in the college. For the past year he has served the

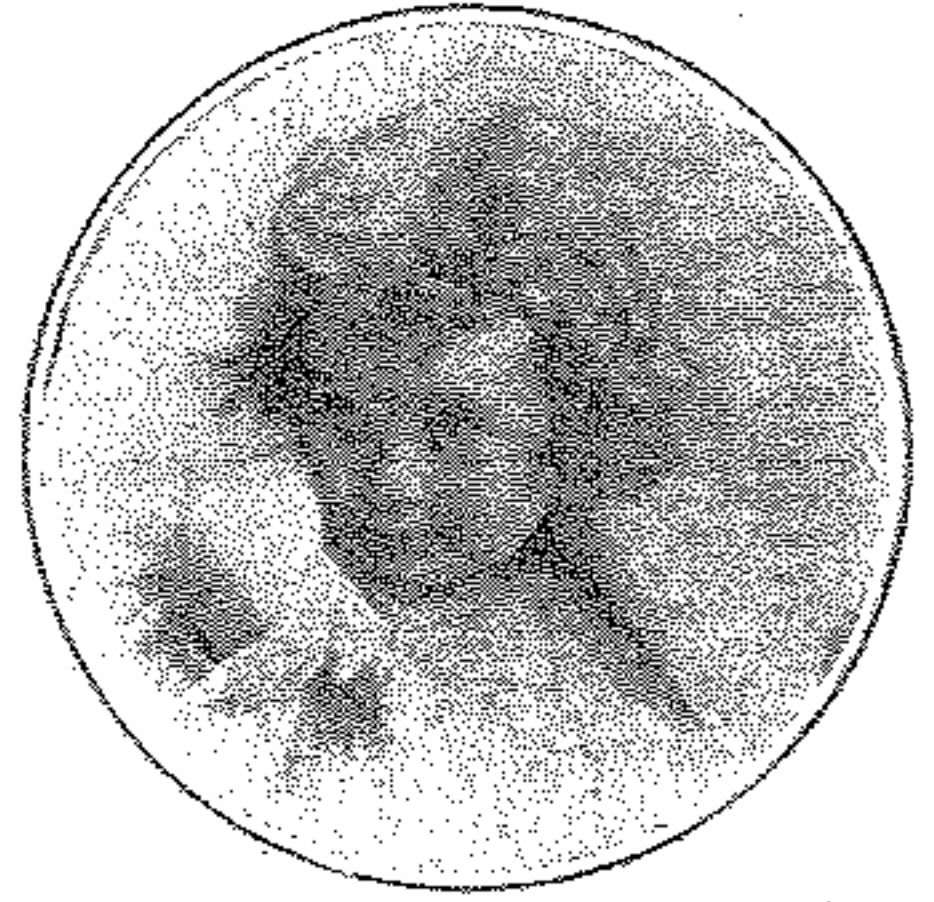
students in the capacity of president of the Students' Organization. Fisher's favorite exercises are base ball and foot ball, and this year he has so distinguished himself, in the box, that he has received several offers to play with outside teams. His mellow voice will be missed from our games next year.

Cole and Bateson, our first and second all-'rounds of the eighth annual field-day, both leave us. Bateson to enter Purdue university and Cole to enter some other Michigan college. Cole entered here with the class of '98, and was, previous to that, the Lansing high school's all-around athlete. While with us, he won the local field day all-around, twice, and at Hillsdale this year, had no difficulty in distancing all of his competitors except Bateson.

Bateson first saw this college with the class of '96. Ever since he took out his first classification card he has been one of our solid men, and we regret exceedingly to see him leave us when he might very easily have been induced to remain here. Bateson is besides an all-around athlete, a base ball and foot-ball player. At our last local field day, he had only one point less than Cole for all-around, and at Hillsdale was only three points behind him.

Two other men who play an important part in athletics, although they are not athletes themselves are Guy L. Stewart, our base-ball manager, and Chas. H. Alvord, our director on the M. I. A. A. Both of these men have spent much time and labor in the interest of athletics, and are deserving of our hearty thanks for the manner in which they have served us.

The past year has been one of prosperity for M. A. C. in the athletic line, and it is with a feeling of pride that the athletic editor writes this last chapter of his history of the year of '94-5. We hope and trust that our successor will have the pleasure of chronicling as many victories as we have. Although we lose several of our reliable men, if the students and other persons connected with the college maintain the proper attitude toward athletics, M. A. C. will undoubtedly be able next year to conduct herself with as much credit as she has heretofore in this line.



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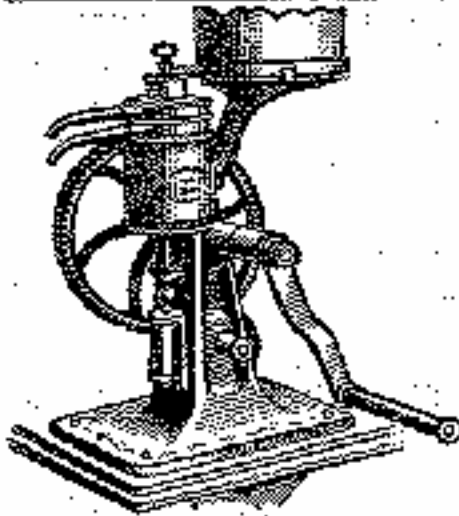
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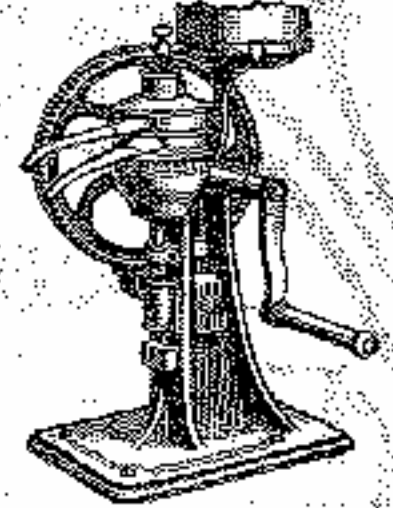


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