

# THE SPECULUM.

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WHOLE No. 62.

## Experience in Brazil.

EDITOR SPECULUM—In response to your request I gladly offer the following condensed account of my experience in endeavoring to found an agricultural college in Brazil.

Last September, Senhor Luiz Queiroz of the State of San Paulo came to this country claiming to represent an association of Brazilian gentlemen, who proposed to establish in that State an agricultural school on the same plan as is most approved here in the States, viz.: to teach the sciences related to agriculture, and the practice with special reference to the introduction and use of machinery. To this end they had pledged of substantial aid from the general government, in addition to fixed and liberal endowment from the State—neither of which materialized when on the ground.

The plan of our own college pleased the gentleman above that of any other, and he tried persistently to secure one of our graduates to go and assist in the founding. Many were unwilling to undertake a task that involved so much uncertainty and offered so many odds against success, even though if success should follow it would be of immense advantage to both that country and this as well as to the college whose man might do the work.

I was led to consider the proposition only upon the understanding that the general theory and plan should be modeled closely after that of our own M. A. C. As might be suspected, I entertained strong doubts of there being in that country a demand for a class of college that requires all the force of our superior civilization and development for its support.

Of course to predict the success or failure of an untried enterprise is largely a matter of hazard and opinion; but if the few searching questions that I put had been intelligently and truthfully answered, I could have foretold in New York what I saw immediately on arriving, and confirmed every day of my stay, viz.: that such an institution is impossible to found under present conditions; and, moreover, would have no support even if it could be set down from here and appear among them, like Minerva, fully equipped for business.

To acquire a full and comprehensive understanding of all that this means would require a residence in the country, when the conviction follows as logically and as certainly as effect ever follows cause, and no American or English friend of mine expressed the least surprise at the outcome. On the contrary all agreed that the enterprise was premature and ill-conceived—the coinage of a brain more benevolent than practical, showing little conception of the logic of circumstances. And this last, by the way, is not an individual but a national trait.

However, an enumeration of some of these conditions will, I think, make tolerably clear the impossibility of materializing such an enterprise in that country.

The national trait of fickleness and unreliability was evinced from within, and from the first. The government help which had been represented as certain and fixed, had never been more than a pledge or encouragement resting upon no legislative enactment. The association did little or nothing, and all the burden of labor and expense seemed thrown upon one man. And it gradually appeared that he was about the only man in

class of '92, becoming a member of the team this spring, and has since developed into one of its best players.

Center-fielder Bernart of Detroit belongs to the class of '94, playing with the team for the first time this spring. As a fielder Bernart has shown himself sure and active, but his best work has been done on the bases, bringing in scores where a less fleet or active player would have been left.

Left-fielder Chase of Detroit entered college with the class of '94, and though not at present a member of the college, still holds his position.

Patrick of Detroit belongs to the class of '94, and has acted as tenth man for the team for some time, playing in many of the games, and doing credit to himself and profit to the team.

Record made by the team in the last three games played:

	A. B.	R.	B. H.	P. O.	A.	E.
Wilson .....	14	2	1	24	3	2
Burnett .....	13	3	4	4	12	0
McElroy .....	12	2	3	7	1	4
Harrison .....	13	4	3	2	6	3
Rittinger, C. ....	12	5	2	9	6	2
Rittinger, J. ....	13	2	4	27	2	0
Chase .....	13	2	2	1	0	1
Bateman .....	11	1	0	1	1	2
Bernart .....	10	3	1	3	0	0
Patrick .....	6	1	1	2	0	2
Totals .....	117	28	21	81	31	15

## COLLEGES AND EXCHANGES.

Among other things Yale's new gymnasium will have a swimming tank 55 x 25 feet deep; rowing tanks, 30 x 30 feet each for the university and freshman crews. The running track will be thirteen laps to the mile, circling the walls of the great hall or gymnasium proper.—*The Rose Technic.*

Oxford University will send an eight-oared crew to the World's Fair if it can be assured that American college crews will be there to compete.—*The Bethany Collegian.*

Owing doubtless to a fear that the better education of the Russian youth will result in their higher appreciation of freedom and more advanced ideas upon the subject of government, the Czar has seen fit to order the closing of the University of Kiev. Sympathy is largely with the students, and trouble may result from the Czar's action.—*Ex.*

The teacher asked, "And what is space?"

The trembling student said:

"I cannot think at present

But I have it in my head."

—*Collegium Forensic.*

President Adams of Cornell has resigned. He has been in office seven years.

She, '95—"Will I pass without taking an examination?" Professor—"You may by a tight squeeze.

She—"Oh, how provoking you are; but I'd ever submit to that to avoid examination."—*Ex.*

A Japanese student describes Harvard in a home letter thus: "A very large building where the boys play foot-ball, and on wet days read books."—*Ex.*

Seven professors of the university of Pennsylvania have been asked to resign, being charged with teaching partisan politics.—*Ex.*

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Brazil that cared to have an agricultural school.

Again the political situation, always uncertain, suffered complete disruption two days before I landed, and revolution followed revolution over all the country with a rapidity you cannot conceive of, and of which the meagre reports that reach our papers are but echoes in which the individual disturbances are lost and merged into a confused jumble that you call chronic revolution. In nearly every State the governor has been deposed or the legislature dissolved, generally both, and often several times, and the city or town that has not endeavored to oust its officers by violence in the exception. Bloodless? Unfortunately in most cases, yes.

Added to this was the fact that money which had stood in the days of Dom Pedro II at 40 cents to the milreis had sunk under the republic to 31 cents, notwithstanding the banks had been allowed to draw on the national treasury for any loss they might sustain in holding exchange at a respectable figure; and when the president dissolved congress and declared himself dictator, it took a sudden drop to 26 cents, only to gradually settle through the gamut of decline to 22 cents, and this in the face of marketing the coffee crop, the only product that brings large amounts of gold to the country. Where it will go before the next harvest no man knows. Remembering that the par value of the milreis is 54 cents, what can any man or any enterprise accomplish when it drops to 22, and banks refuse for days to sell foreign exchange at any price?

It requires but a brief residence to convince one that Brazilians are an exceedingly polite and generally obliging people, but unreliable and thoroughly lazy, with an aversion to labor that is inborn and inbred and withal strongly favored by climatic conditions and a long period of slavery, until no man or woman labors with the hands except

from dire necessity. Hence labor is the ensignia of poverty, and he who labors forfeits recognition as a gentleman.

The fortunes of Brazil were made on coffee and sugar plantations by slave labor. Both, especially the former, were enormously profitable, because not only from the nature of the crop, but because it was raised upon land that originally cost but little and was never taxed, and cultivated by slaves who propagated rapidly and in that climate need little in the way of clothing or shelter, and were expected to raise enough beans and corn to feed themselves. This system made the gross income about as near net profit as it is possible to bring the two together.

In Columbia when the slaves were freed they took to the woods and would not labor for love or money. They had no use for either. In that climate they needed nothing but food and that, such as it was, was everywhere to be had for the picking. In Brazil the slaves when freed flocked to the cities, and by no rhetorical figure can they be described as either industrious, frugal or moral. Labor, yet insufficiently paid, is scarce and of wretched quality. Brazil with its miserable methods and most inconceivable unskilled labor cannot pay even low wages and compete with the rest of the world in any crop but coffee. It does not signify when they say that the coffee crop was doubled the year after slavery was abolished, because the coffee does not bear till five years old, and practically every bearing coffee tree was planted and raised by slaves.

It was with the greatest difficulty that laborers could be had to harvest common crops this year. Coffee planters only could offer large wages, and all that would labor were needed for gathering that crop during the season of several months. Practically all the labor of the farm is hand labor, for the heavy hoe is the universal weapon of cultivation. The plow is a small affair, too

diminutive to turn a furrow, and the plowman has no idea of cutting all the ground, but after going over two or three times in various directions he considers his duty done and the hoes do the rest. In all my stay I never saw a farm laborer who could drive a team with lines, and but few that could use mules or bullocks at all.

This unskilled labor has all the stubbornness that goes with ignorance, and it is practically unteachable. If the white man as the overseer has any superior knowledge, the pride of his class has always prevented him from acquiring any manual dexterity; and he is neither fitted nor inclined to teach the ignorant laborer any better ways. So the methods of the country are the blundering creations of the ignorant slaves crystallized by time, and may fairly be said to have become hereditary.

I will illustrate volumes of observation and experience by one incident. The only vehicle of transportation over the general roads is the bullock cart, with two solid wheels keyed to the axle which turns with the wheels. The whole structure weighs about a ton, and is drawn by anywhere from four to twenty bullocks. The chief feature of this institution is that unearthly creaking of the axle, which is easily heard a mile away. The drivers oil the axles to make them "squeal," and the noise is considered indispensable.

Now to my story. We had a cart made with an iron axle that did not turn, but carried ordinary wheels, and gave it to the best driver. He tried it, but soon said it was "no good." He must have one of the old ones that would "squeal," and came near quitting because his request was not granted. I could multiply examples indefinitely both of laborers and of the employers showing a degree of stupidity in matters mechanical that is truly astounding. In all my stay I never saw a gentleman put his hand to anything, to do it or to find a better way. Will, then, the sons of such gentle-

men labor besides such laborers and use such methods?—Nay verily.

The only genteel occupations are medicine and the law, whose followers are fully as respected as the *fazendeiro* or planter. It is only recently that sons of gentlemen engaged in mercantile pursuits, and it can hardly be called customary yet. Teachers are considered a very respectable class of laborers, but laborers they are, and their salary is not sufficient to enable them to go into society.

A government position is the most sought after as the most genteel and remunerative employment, and if one can believe the current report it is doubtful if total receipts are included under the head of salary. Under the empire, government appointments were from civil life and from the medical and legal professions, especially the latter. The republic is an army and navy enterprise, and most appointments are from those ranks. It is not surprising then that every ambitious youth seeks the army, or that the military schools are crowded to an inordinate degree as compared with other schools. The dress and parade are themselves attractive to a people especially sensitive to outside appearance. The least suggestion of uniform is worn with huge gratification, and if a gun or bayonet sword be added it is a joy of the heart.

There is a peculiarity in the mental constitution as fatal to our enterprise as is the antipathy to labor, and the lack of manual skill in all things. As a race they take naturally to languages and are born orators, at least in the sense of being ready talkers and speakers. *But they are notoriously bad thinkers*, deficient in reasoning powers, not inclined to inquire into the cause of things or their connections. They pay little attention to things going on about them, and the most remarkable phenomena pass unnoticed. A thing to be noticed must be presented to the eye, or in the most extravagant and forcible terms to the ear.

Agassiz says of them in his admirable book, *Journey in Brazil*: "The education is one rather of books than of facts. Indeed as long as the prejudice against manual labor of all kinds exists in Brazil, practical instruction will be deficient; as long as students of nature think it unbecoming a gentleman to handle his own specimens, to carry his own geological hammer, to make his own scientific preparations, he will remain a mere dilettante in investigation." p. 449.

These are the words of perhaps the greatest man—at least the keenest observer—that ever traveled in Brazil. I will add that to-day this prejudice is so strong that little boys in the kindergarten department of the mission schools object to whittling, fearing they will be taken for carpenters.

I have far exceeded the limits of space that I should occupy. I will add one more difficulty that of itself would effectually bar any American from successful work. I refer to the intense prejudice against Protestants. Although the laws recognize religious rights and promise religious liberty, the country is practically under the power of that most bigoted and intolerant sect of Roman Catholics, the Jesuits.

The admirable little mission school in Piracicaba is of nearly ten years standing, yet has its windows stoned frequently, the last time was the week I came away. I myself gave great offense by taking a Protestant friend to see where the college was to be, and by introducing him. I firmly believe that the common observation is true, viz.: that the only American institution that has any business in Brazil at present is our religion, supported by Northern people and Northern capital and upheld by the grace of God, and until that can make substantial headway against ignorance, superstition and intolerance, the attempt to introduce other features of our civilization that are built upon and around that religion will be but as building upon the sand.

It is not a heathen country, but a better

religion must precede everything else, where the credulity and the ignorance of the people are so played upon and systematically perpetuated as in Jesuitical Brazil. They must learn to read before they can learn to think and act. Everywhere there goes first the missionary with his school and his Bible; then commerce; then Anglo-Saxon blood with its civilization, and its institutions which graft but poorly upon the Latin races. Quoting Agassiz again: "\* \* \* if also I miss among them something of the stronger and more persistent qualities of the Northern races. I do but recall a distinction which is as ancient as the tropical and the temperate zones themselves."

However much Brazilians envy us our prosperity, and admire our civilization in the abstract, they have little appreciation and no love for its details, the concrete is positively distasteful to them. There are such things as racial likes and dislikes so strong that mere associations will not remove, and nothing but time and mixture of blood will eradicate. Of this nature, it seems to me, are many of our institutions that we prize highest, and particularly is it true of scientific and industrial education.

I could multiply reasons and examples indefinitely. I could mention many that are stronger, but that were better not written. I have certainly kept far within the bounds of moderation, and my conviction is abiding that it will be many years before success in establishing and supporting such an institution can be reasonably expected. Indeed a persistent and wealthy American recently established an agricultural school upon a practice farm, by his own efforts and capital, but it had no students.

The trip was valuable, even beyond my expectations, and I realize better than before the need of somewhat wide observation on the part of him who undertakes to instruct. Therefore while I regret the outcome I never for one moment regretted making the attempt.

I am, sir, with deepest love and respect to  
yourselves and the readers of the SPECULUM,

Sincerely yours,

EUGENE DAVENPORT.

### The Alumni in Politics.

O. C. HOWE, '83.

*To the Editor of The Speculum:*

The article in a recent number of the SPECULUM which treated of the rights and duties of young men in politics was excellent, and is worthy of much further consideration. Permit me to draw a few practical conclusions from it, which, I think, have much to do with the welfare and prosperity of the college as an educational institution, and the alumni and students as individuals.

A few years ago the alumni association appointed a committee on political action, whose specific work was to secure the appointment of graduates of the college upon the State Board of Agriculture. This course of action was not taken because it was felt that the members of the Board did not have the best interests of the college at heart and were not doing good work for it. To the contrary the alumni have always held that these men have been loyal to the college, and have at all times labored with energy and enthusiasm in its behalf. That they have succeeded is shown by the fact that the Michigan Agricultural College is recognized as being one of the best of the many schools of its kind. Those who have been students at this institution appreciate the many valuable lessons learned during their course of study. Those who graduated learned many lessons that were not found in the curriculum. They learned to look upon the place as a home surrounded by many hallowed associations. Their life as students enabled them to form many ties of friendship which will ever be a comfort and a blessing. The effect of all this has been to beget such a love for Alma Mater

that most of the alumni, so far as their circumstances will permit, pay frequent visits to the college, to renew their many acquaintances and to sit under the oaks and live over again the happy days of yore. It is this same love which leads them to take a deep interest in the welfare of the college, and to desire to take some part in its management.

No one will deny but what there are, within the borders of the State, graduates well qualified to act as members of the State Board of Agriculture. That such is the case has been demonstrated by actual test, and it was what prompted the appointment of the committee whose province was to secure the re-appointment of men who had been tried and found acceptable. Indeed, there have been critical times in the history of the college, where one who had been connected with the institution as a student could render more valuable service than another person could who had never received the benefits of such a connection.

But the question of vital importance at this time is not whether or no there shall be graduates upon the State Board of Agriculture. It is generally conceded by those who have given the subject some attention that at least one-third of the Board ought to be graduates who are residents of the State. The question of consequence now is what is the best manner of getting these members of the alumni appointed upon the Board. The committee has not as yet been able to produce any noticeable results. It may have done work that will be visible at some time in the future. Even if it should win the work must necessarily be done over and over again, year after year. So long as the members are appointed by the Governor, so long will it be difficult for the college to get the representation it desires.

All appointive offices are to the prospective candidate for governor the same as so much stock to be used in trade for votes to secure the desired nomination. All can-

didates may not bargain away their offices before election, but some do. The alumni committee, in order to do effective work must be everywhere. As a rule, it must have influence to sell in order to get the place it seeks. It must confer with all the candidates of all the parties to be sure. If it did less work it might tie to the wrong man, because it is not certain nowadays who will be nominated or who will be elected. So much work, with no surety of being successful makes the task an undesirable one.

It seems to me as if the only proper thing to do now, is for the alumni to turn their attention to the law governing the appointment of members of the State Board of Agriculture. This law should be amended so that it gave the alumni association the right to elect one-half or one-third of the members of the board. This would put an end to all lobby work and do at once for all time, a work that the association attempted to do in a more roundabout manner. We find a precedent for this at Cornell University. The law provides that outside of the honorary and ex-officio members of the board one-third of the members of the board of trustees shall be elected by the alumni. At the regular meetings of the alumni, one of their number is elected to act as a trustee for five years. A printed, blank ballot is sent to each graduate, together with a list of the nominations made for the place. This vote filled out in proper form and sent to the secretary is recorded. This gives all who desire an opportunity to express their choice.

This system should be adopted in Michigan. It can be done if every graduate, student and friend of the college will work to get the law amended. No one ever connected with the college is so insignificant that he has no influence. If this strength is massed and turned in one direction, much good will come from it. Not only will we get men of our own choice on the State Board, but it will give a certain vim to the

meetings of the alumni, and undoubtedly cause more of the members to be present. This will result in good because one cannot visit the college without being pleased and resolving to do more earnest work in its behalf in the future.

There is another good that will come if the alumni take a hand in practical politics. It is getting difficult nowadays—not only for the Agricultural College, but for other State institutions to get the money necessary to equip them properly and carry on their work effectively. A sort of parsimonious spirit seems to hover over the State Legislature. There ought to be a few graduates elected to every session of this body. The graduates ought to take part in the caucus and convention, and to let their influence be felt. They should confer with all candidates before election, and ascertain their attitude toward the college. Perhaps some work might be done for them that they will repay by being friendly toward the college. I do not advocate any underhanded methods. In politics we should be actuated by the same spirit of honesty and manliness that pervades the best business circles. If every graduate and student will lend a hand in this year's campaign, doing all the good work they can, the Michigan Agricultural College will take several steps to the front and be far more secure in her place at the head of the schools of this kind.

### Three Lights of the Century.

JOHN W. RITTINGER, PHI DELTA THETA FRATERNITY.

We live in a progressive age. Not a sun sinks beneath the horizon, but what inaugurates some form of mechanical invention, some wonderful discovery of science, or perhaps brings some dark and unexplored land to light. Within the last century there have been many men who have become eminent because of their good work. Among these we shall mention three who are

especially prominent, viz., Darwin, Stanley and Paderewski.

Charles Darwin, the great English scientist, was born at Shrewsbury, February 12, 1809. His early life was spent mostly in traveling, and as a result he wrote: "The Voyage of the Naturalist," and several other works equally as good. We find his whole life devoted to scientific subjects and from him we have received some of our most modern views in science. Though not the originator of the "Evolutionary Theory," he was one of its earliest and most enthusiastic advocates. His work on the "Origin of Species," is considered the widest known and to have caused the most excitement of any of his works. This theory caused severe controversies, but it has been embraced by nearly if not all of the ablest naturalists and has induced great changes in the methods of biology. His theories on several of the leading scientific questions are combined together, and form what is called Darwinism, or the Darwinian Theory. This theory had great opposition at that time, but happily Charles Darwin lived to see the prosperous beginning of this great, silent, philosophical revolution.

"Harvey's Grand Discovery," it has been said, was scoffed at for nearly half a generation. "Newton's Marvellous law of Gravitation" was coldly received even by the gigantic intellect of Leibnitz. Francis Bacon in disguise and humiliation, could only commend his name and memory to foreign nations and the next age. It is too often so with thinkers of the first rank, happily, it was not so with the great and gentle soul of Charles Darwin. Alone among the prophets and teachers of triumphant creeds, he saw with his own eyes the adoption of the faith he had been first to promulgate in all its fullness. He died April 19, 1882, being the Nestor of Evolutionism. He had lived among two successive generations of thinkers, and over the third he ruled as king. With that crowning joy

of a great, a noble, and a happy life, let us leave him here alone in his glory.

Henry M. Stanley, the great explorer and discoverer of the nineteenth century, was born at Denbigh, of Wales, in 1840. He came to America at an early age and served in the late Civil War, as a special correspondent for the *New York Herald*. In 1867 he was invited by Mr. J. Gordon Bennett to undertake an expedition in search of Dr. Livingstone, in the regions of Lake Tanganyika. In 1874 he published an account of his travels entitled, "How I found Livingstone." Again in 1876 he was sent to Africa, this time under the auspices of *New York Herald* and *Daily Telegraph*. In his travels this time he discovered the Congo, which he describes beautifully in his well known work, "Through the Dark Continent." This book was published after he returned to England. From 1878 to 1883 he was engaged in locating stations along the Congo, where trade could be carried on with the natives. After returning this time he gave lectures upon many interesting subjects relating to his travels, especially to the commercial resources of the Congo. During the winter he was chosen governor of the Congo Free State. He again visited Africa about 1890 and made many more interesting discoveries, returning home this time amid the honor and admiration of the whole world. Too much honor can not be attributed to Stanley; the man who has sacrificed the happiest portion of his life for the good of mankind, and borne every affliction without a murmur, deserves our praise and admiration.

Ignace Jan Paderewski, the famous Polish musician, was born in Padonia, a province of Russian Poland, 1860. Although his father was able to educate him, he was by some misfortune thrown upon his own resources when very young. He had however inherited aristocratic instincts, high breeding, indomitable will, with love and power for work. Paderewski passed the



earlier days of his childhood in the country. He was left motherless when but a mere boy, and it is said, "Him by the kind hand nature took." She showed him her gracious silence, her souls of forest, field and brook, her stir of living growth, her various skies and motions. From earliest youth, Paderewski was very quick to hear; at the age of three he would steal to the piano to touch the keys and to listen. He first began to study music when six years old, his instructor being a country fiddler, whose knowledge of music was very limited; later he studied harmony and counterpoint with Roguski and took piano lessons of Janotha. At sixteen, young Paderewski made a tour through Russia. This journey was of great value to him for in this tour he learned to watch his audience and to play to them just as he does to-day. At the age of twenty-three, Paderewski was professor of music in the Conservatory of Strasburg, being still poor, but poverty could not crush his noble spirit nor narrow his conception of life. It was simply a stimulus to incessant work. With Paderewski, practice and study never cease. Before every concert he is accustomed to shut himself up and to practice all night, going carefully over his whole program. When all is securely thought over and worked out, the artist is ready for his hearers. The next day he goes to the piano master of his material, and free from concern about notes or mechanical means, but plays with perfect ease his inner feelings.

"How Paderewski plays; and was it he,  
Or some disembodied spirit that had rushed  
From silence into singing, that had crushed  
Into one startled hour a life's felicity,  
And highest bliss of knowledge that all life, grief,  
wrong  
Turns at last to beauty and to song."

Dr. Beal has recently received seeds of over two hundred species of plants from the Kew Gardens, near London, and the *Jardin des Plantes* at Paris. They have been sown in the wild garden, and as they are all foreign species their growth will be watched with considerable interest.

## SCIENTIFIC.

### An Interesting Fungus.

BY G. H. HICKS.

Fungi are as varied in their tastes as some people. While many of them are especially fond of plants or fruits which are cultivated by the farmer, others are found only upon weeds. These of course are beneficial for they sometimes accomplish what a considerable tillage does not.

However not all fungi are vegetarians. We recently collected a species near the college which prefers a meat diet. It has a slender stalk from 1.5-3 cm. long, which appear to grow out of a rotten log. Upon digging away the soft wood to the depth of an inch or so it is seen that the fungus has started from a dead larva. It usually springs from or near the head but may originate from any of the segments. As the stem of the fungus passes through the wood it takes a zigzag course but as soon as it reaches the light shoots straight upwards. At the base it is covered with a tawny colored fuzz while the upper part is smooth.

Near the top the stem thickens into the fruit-bearing portion, called the stroma, which is cylindrical and 1.5 mm. in diameter while the stem is not more than one-half as thick. Above the fruiting portion the plant narrows down to a point of a few millimeters in length. The spores are transparent, needle-shaped and seen only with strong magnification. They are borne in minute sacs called asci, which are contained in black, shiny, pear-shaped cups no larger than pin points. These are partly immersed in the stroma. The whole plant is of a light tan color and resembles a miniature cat-tail flag without leaves.

The fungus was described by the English botanists Berkley and Broome from specimens collected in South Carolina thirty-five years ago and, so far as I know, has not

been met with since the time of Ravenel, its discoverer, until found by the writer. It is named *Cordyceps Stylophora*, the specific name referring to the stylus or point above the stroma.

There are several other species belonging to the same genus. The hoste upon which all of my specimens grew was the larva of the Coleopterous borer, *Dendroides Canadensis*, which, as it happens, is found only in rotten wood, hence is of no damage to living trees. I captured several of these larvæ, all of which were lively and apparently sound. They, together with moist pieces of rotten wood, were placed under a bell jar. After a few weeks each larva was dead and had from one to four of the fungi growing from it. I hope to repeat the experiment with other larvæ which are really destructive. Thanks are due to Mr. J. B. Ellis for identifying the fungus and to Mr. G. C. Davis for procuring the name of the hoste.

### Natural History Society.

A very interesting meeting of the Natural History Society was held on Friday evening, June 10. Prominent among the features of the program was an interesting talk on "What I found in a tumbler of swamp water" by Professor McNair. The attractiveness of this article was greatly increased by the pleasing manner in which it was illustrated. By means of the ingenious combination of compound microscope and stereopticon, the life forms were depicted upon the canvas with startling clearness and in all their activity.

Professor McNair said: "I will not attempt to tell you this evening, all that we may find in a tumbler of ditch water. I will speak only of a few forms of animal life, and will not touch at all upon the plant life, which in itself forms a most interesting subject for study.

"All the forms of life which I shall dis-

cuss this evening belong to the class Crustacea. We will first turn our attention to the family Cyclops. They move with a peculiar darting motion which is characteristic of this family. Their long antennæ are used for swimming, and they have a distinct tail which is made up of several joints, and terminated by a number of spines. This family receives its name from the peculiarity of having but one eye, thus resembling the famous Cyclops of Grecian mythology. They breathe by means of branchiæ or gills, which are attached to what correspond to their feet and which are kept constantly in motion. The female Cyclops has two large ovisacs which are attached to a posterior segment. In these the eggs are carried until they hatch, when the young Cyclops come forth. They do not resemble in the least the parent form, but have rough, spiny legs, and partake somewhat of the general appearance of the horse-shoe crab.

The next specimens belong to the family Cladocera, and are known as *Daphnia Vetula*. These animals are made up of several segments and are enclosed in a bivalve shell which is formed by the development of the covering of these segments. The antennæ are long and jointed and there is but one eye, which is large and compound. The eggs are placed between the shell and the body and are cast off with the shell. This is during the summer. In the winter, however, a division of the shell takes place, and two eggs are placed in this receptacle. These eggs so protected will stand the severity of the winter, while the parent and the unprotected eggs will perish."

Professor McNair concluded his talk with a brief description of one or two other low forms of life. He also urged the members of the society to investigate more thoroughly what he proved clearly to be a most interesting subject.

Mr. V. H. Lowe then presented an excellent paper on the order Hymenoptera. His article was illustrated with twelve fine plates

which were made especially for the occasion. Mr. Lowe's article is briefly as follows: "The order Hymenoptera includes a large number of membranous winged insects, of which the common bees and wasps are good illustrations. A typical Hymenoptera may be described as follows: Wings four, membranous, the posterior pair usually smaller than the anterior pair; head large with parts mandibulate, tongue sheathed; abdomen of female furnished with a saw, borer, ovipositor, or sting. The transformation is complete, that is the larva, pupa and imago, differ greatly in structure and habits.

"The order is divided into eight groups or series of which the saw-fly series is the lowest, as these insects illustrate a degenerate form of Hymenoptera, and the bee series the highest. Probably, the most important, however, from an economic standpoint, is the third series, which includes the ichneumonidae and other families of hymenopterous parasites. Were it not for these parasites the country would be overrun with predaceous insects of various kinds.

"As an order, the Hymenoptera are very interesting, especially so as the highest development in the insect world is here found. In the case of the ants and also of the bees, no better illustrations of what is commonly called instinct can be found. The well known social habits of both and the strict laws governing a colony, together with various expediencies to which they are wont, at times, to resort, are good illustrations of this power. The beginner would find this a very attractive field in which to begin his study."

Mr. Lowe's article was followed by some interesting observations, after which the meeting adjourned.

L. J. BRIGGS,  
Secretary.

Prof. Cook has received a fine collection of bird's eggs for the museum. The collection, as far as the birds of the Northern States are concerned, is now practically complete.

# THE SPECULUM.

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AGRICULTURAL COLLEGE, JULY 11, 1892.

IN this issue of the SPECULUM O. C. Howe, '83, furnishes an article of especial interest to the welfare of the college. Alumni and students, do you not think Mr. Howe has an idea well worth pushing? Who knows the needs of a college better than its alumni, and if but one-third of the Board are alumni the other two-thirds would check any unreasonable request while the one-third would know more the needs of the college than any other class of men the Governor could appoint. True this is not a new idea, but if Mr. Howe's suggestions of procedure are carried out the time will come when the State Board of Agriculture will be constituted as suggested.

WITH this issue of the SPECULUM "ye editors" lay down their editorial pens to be succeeded by a new Board. Whether or not we have fulfilled the trust reposed in us we have certainly tried to do what we thought was our duty. We feel that this is a fitting

time to express our thanks to the members of the faculty and alumni who have so kindly encouraged and assisted us in our work. We sincerely hope that we have at least kept the SPECULUM up to its usual standard of excellence, and that it is more firmly established than ever before. We have tried to carry in our work the same principles of kindly criticism as our predecessors, and voice the sentiments of the students towards the welfare of the college.

Now we bid the SPECULUM and its readers good-bye. You have been a big help to us in many ways, and although you will soon forget us, we shall never forget you.

We are pleased to learn that the faculty at their last meeting voted in favor of placing German or French in the college curriculum, the study to be elective in the senior year.

Nearly every earnest student rejoices at the action, and we feel certain that if introduced in the course it means a step in the advancement of the college by adding to its enrollment. It only needs authority from the Board to be placed in the course, and will no doubt be favorably received by them, for the Board of 1866 authorized it in the course, but was stricken out by the faculty in 1881. From the latter date on till President Willits came and a new course was added, there was a falling off of students, which was no doubt largely due to this change.

For the past few years the college, as regards number of students in attendance, has been at a stand-still, and something is needed to induce a larger enrollment, and it appears to us that the above named scheme will largely conduce to this desired need.

Being made elective it necessarily meets the approval of every student, and why should those students that desire it be disappointed? Students that follow any of the sciences for their life's work necessarily need one of these languages. A student

started in German will go on in any investigation needing that language, thus greatly aiding him in his work, but after busy life comes on the untaught scientist has not the time to learn the language, and is therefore unable to make a thorough investigation.

Many students make a specialty of the sciences taught at the college, and then finish at some other college where languages are taught, or if they graduate they are obliged to devote nearly a year's work specially to one of the languages. Being in the college course this extra year's work is saved, for German or French could be substituted for some of the studies in the senior year that are not a direct benefit to such students, and would otherwise be necessary to take.

If the scheme is carried through it will be well taken by the students, and will add a new inducement to bring more students.

THE unsympathizing manner in which the State Board look upon athletics at this college has caused considerable criticism on the part of the students and those interested in the progress of the college, nor could it be expected otherwise when they see and hear how other colleges are encouraged in athletic sports.

In the request by the athletic committee of the faculty in behalf of the students for a permanent grand-stand, to be paid for by the students, and an appropriation of \$80 for a mat and parallel bars to place in the gymnasium, the following action was taken:

"The State Board of Agriculture is not in sympathy with the development of athletics at the college to such an extent as will lead to public competition trials between the students of this institution and other colleges, because the board believes there are pernicious results liable to come from giving so large a measure of attention as will be required by students who prepare for these competition trials. The Board further holds the view that the necessity of giving atten-

tion to athletics to contribute to the good health and physical development of students in literary colleges does not apply to our institution, hence the requests of the committee of the faculty on athletics at the college is not granted."

Now we do not wish to criticize the Board in its action too severely, but we think we are safe in saying that the action of the Board is not in hearty sympathy with the majority of the faculty, the alumni or the students. Pernicious results may be liable to come from athletic training, but we doubt any more than would result from these leisure hours being devoted to in-door games or fruitless conversation.

Nearly every reader knows the position literary colleges take in regard to athletics, so we will conclude by quoting from a Cornell catalogue, showing the sympathy the board and faculty of Cornell hold toward athletic sports.

"The Cornell Athletic Association, composed of representatives from the trustees, faculty, and students' athletic organizations, was incorporated in June, 1889. A standing committee on athletics, including the faculty members of association, has also been appointed from the faculty. It is hoped that the corporation of these various interests, and the existence of a permanent organization may tend to produce a continuity in the transmission of athletic methods and traditions.

"Through the generosity of the friends of the university, the association has received a field of about nine acres, situated on the north side of Fall Creek gorge, which has been enclosed and graded. A *grand-stand* and cinder track have also been provided. The field, which is admirably adapted to the purpose, contains base-ball and foot-ball and other out-door sports."

President Clute and Professor Harwood visited the experiment station at Grayling a short time ago. It will be remembered that this is the only one of the northern stations now being worked, the others having been abandoned at the end of last season.

## COLLEGE NEWS.

Keep away from the fruit.

Will Clute is visiting friends at Houghton.

The foundation of Bachelor's Hall is nearly completed.

Professor Davis of Alma College visited here June 23.

The Olympics entertained their lady friends on the evening of July 1.

G. H. Hicks of the Botanical Department will graduate with the senior class.

The old open ditch in front of Abbot Hall is soon to be replaced by a closed sewer.

Mrs. Kedzie and Mrs. Landon attended the commencement exercises at Olivet College.

The corner stone of the new Botanical Laboratory was laid June 22, with appropriate exercises.

Professor Harwood purchased a valuable Hereford calf at the recent Culbertson sale in Chicago.

President Clute gave the *baccalaureate* address at the Albion High School on May 29, and a similar address at Ionia June 19.

At a recent business meeting of the Young Men's Christian Association, O. B. Hall was elected president for the coming year.

All college duties were excused on July 5, in order that all those desiring to do so might celebrate the "glorious Fourth" at home.

A very neat and convenient index of the bulletins of all American experiment stations has been prepared for the horticultural department.

Lieutenant Edson A. Lewis, who has been detailed as Professor of Military Science at this college, arrived here from Fort Clark, Texas, June 29.

Dr. W. J. Beal will attend the meeting of the American Association for the Advancement of Science to be held in Rochester, N. Y., next August.

The armory and also the chapel will soon be lighted by electricity. A new engine has been procured by the Physical Department for this purpose.

C. B. Cook, after having mounted about forty specimens of birds and animals from California and the western States, has returned to his home in Owosso.

Mr. Sanderson, the artist, recently spent several days visiting friends here. He gave an exhibition of some of his paintings in the free-hand drawing room.

The library will soon be heated by hot water. The heater is to be procured from the same firm that have the contract for heating the horticultural buildings at the World's Fair.

Professor Taft recently visited the experiment station at South Haven. He reports the fruit crop as being considerably damaged by the continued rains during the early part of the season.

The grass plats in the "delta" are in excellent condition and are well worth the careful study of all students. A splendid opportunity is here offered to those desiring to make a special study in that line.

Prof. Anderson of 104 Short Street, formerly of the M. A. C., is removing to Oxford, Ohio. The professor has accepted a position as teacher in the Oxford University.—*Lansing Republican*, June 29.

The old system of taking notes is being rapidly done away with. In many of the studies the students are now provided with type written copies of the lectures. We think the plan is a good one and one that should be kept up.

Several new books have been added to the library of the Botanical Department. Among others are several valuable works on Sedges and the complete Transactions of the Linnæan Society, consisting of over forty volumes.

Now that the high schools have closed, the "summer students" are arriving quite rapidly. About fifteen are already here and more are coming daily. The advantages offered for special work seem to be thoroughly appreciated by the teachers of the State.

While here a few weeks ago, Mrs. Davenport presented the Entomological Department with over eight hundred species of butterflies which she collected in Brazil. They are all in fine condition and of such brilliant colors as Brazil alone can furnish.

The old greenhouse has been torn down and work commenced on the new one, which will be somewhat larger and of a more modern plan. Professor Taft expects that the building will be completed by the end of the present term. When completed it will have cost about \$4,000.

Dr. Beal is constantly receiving additions to the college herbarium. He has lately received about 300 specimens of Mexican plants, collected by the great botanist, Pringle. Eight hundred specimens have also been received from Porto Rico. Mrs. Davenport brought back about thirty species from Brazil.

The board of editors of the SPECULUM for next year is as follows: H. F. Palmer, editor-in-chief; A. T. Stevens, college news; V. J. Willey, personals; L. H. Baker, science; W. L. Harvey, athletics; R. M. Kedzie, colleges and exchanges; E. B. Hale, business manager; A. L. Wilson, assistant business manager; Sec. H. G. Reynolds, treasurer.

A one term preparatory department has been added to the course of instruction for the benefit of those who are not qualified to take up the regular work of the freshman year. It is thought that by this move the general standard of admission may be somewhat raised and that much of the trouble due to the lack of careful preparation may be avoided.

At a recent meeting of the faculty it was decided that the color of the uniforms to be worn by the cadets should hereafter be gray instead of blue as at present. Each student will also be obliged to provide himself with the uniform before the opening of the second

term of his course. By special arrangement the gray uniform can be procured at a less price than is generally paid for ordinary clothing.

The students of five years ago would scarcely recognize the college farm as it is to-day, so many are the changes and improvements which have been made. Numbers three and five, the two fields this side of the river on the east side of the lane, have been given over entirely to the experimental work; all of the fields have been cleared of stumps and the unsightly rail fences along the lane have been replaced by neat wire ones. In addition to this the fertility of the soil has been considerably increased by careful management.

Under the management of J. N. Estabrook the military department has aroused from its demoralized condition and is rapidly regaining its old-time efficiency. The boys are getting accustomed to the new tactics, and are drilling with an earnestness that makes success certain. On the whole, more interest is manifested in drill this term than at any time during the past two years. Mr. Estabrook is deserving of much credit for the thorough manner in which he has conducted the work of the department since the resignation of Lieutenant Crittenden.

Professor Eugene Davenport, after a stay of seven months at San Paulo, Brazil, has returned to his old home at Woodland. He recently spent several days in visiting the college and in renewing old acquaintances here. On the morning of Sunday, June 26, he gave a very interesting talk to the students on "A Sunday in Brazil." The Professor stated that nearly all of the travel there is done on horseback, and that when the horses are left standing, even though not hitched, they are invariably found where they were left. This, however, is the only thing in which man or beast in Brazil can be depended upon. The Professor speaks highly of the Brazilian climate and natural scenery, but unhesitatingly says that he has returned to the "fairest land and the best institution in the world."

For the next few weeks the regular Sunday morning chapel exercises will be conducted by the different members of the faculty who have traveled abroad. The manner in which the Sabbath is spent in the different foreign countries will be the subject of a short talk each week. The subjects as arranged are as follows: June 26, Professor Davenport, A Sunday in Brazil; July 10, Professor Edwards, A Sunday in Paris; July 17, Prof. F. S. Kedzie, A Sunday in Berlin; July 31, Professor Woodworth, A Sunday in London; August 7, Professor Vandervort, A Sunday in Rome. The members of the faculty, students and all college employes are invited to attend.

We give below a complete roster of the officers of the corps of cadets:

*Battalion and Staff*.—Second Lieut. Edson A. Lewis, 18th Infantry, U. S. A., commandant of cadets; R. M. Kedzie, adjutant; E. N. Thayer, quartermaster;

'88.

Prof. Harry Thurtell will pass his summer vacation at Fort Collins, Colorado.

J. N. Estabrook will fill the place of H. G. Reynolds as Secretary of the College and Board of Agriculture, during the latter's stay in Europe.

A. B. Cordley, with J. W. Toumey ('89,) is exploring the Grand Canon of the Colorado.

Mary L. Harrison, Thomas Flower, Jr., (with '89), married Wednesday, June 22, '92, Lansing, Mich. At home, 268 Farnsworth Street, Detroit, Mich.

'89.

W. S. Palmer will teach science in the Muskegon High School during the coming year.

Thos. McGrath is with a Chicago wholesale firm.

Married, at the bride's home in Laramie, Wyoming, June 29, 1892, Prof. F. J. Niswander of Wyoming University and Miss Dora Hunt. Thus is Nis's prowess as a Nimrod sustained.

'90.

H. J. Hall will study during the summer at Leland Stanford Jr. University.

'91.

A. H. Kneen is in the city engineer's office at New Rochelle, N. Y.

Peck Safford visited M. A. C. July 4th and 5th. He reports H. D. Waldron and C. B. Moore (with '93) as members of his engineering party on the L. S. & M. S. road.

A. C. Sly, Miss Maggie Martin, married, June 16, at Vassar, Mich. Sly now has control of a second paper, one at Mio, Oscoda Co., and his editorials are said to show a decided tendency toward "tariff reform."

WITH '91.

Joe Bettinger lately graduated from the Detroit Medical College.

WITH '92.

Joe Begole and Jno. Church are students in Chicago University.

Earl Bullock is studying medicine at the Detroit College.

WITH '94.

"Gov." Ashton is in the employ of a wholesale and retail hardware house in Toledo.

L. E. Frost lately graduated from Cayuga Lake, (N. Y.) Military Academy, carrying off, at its last Field Day, the medals for 100 yards dash and standing broad jump.

Foot-ball in every form has been prohibited by the University of Heidelberg, Germany. They draw the line at duelling, and will permit nothing more dangerous to students. — *The Owl.*

## ATHLETICS.

On the first page is shown a picture of our base-ball team as it now exists, along with it being Base-ball Manager Stowell, and Director of Sports W. Clute.

This is the best team which the college has supported since the time of Canfield, Chase, Smith and Cordley, and one of which we are justly proud. Though they have played but four matched games, as a team their three victories and the winning of the first cup ever contested for in the Intercollegiate Athletic Association have won to them a State, if not a National, reputation.

Not only are the players victors on the diamond, but for the most part they are students, winning laurels in the intellectual as well as the athletic world, and proving what college authorities need most to have proved to them—that the athletic giant need by no means be the intellectual pigmy, or *vice versa*.

As to the history of the players since they became connected with the college, we find that Catcher Wilson of Grand Rapids entered in the fall term of '86 to take a course with the class of '93, quitting college however during the last year. He has held his position in the team since entering, and will continue to hold until the year after his leaving has expired, when M. A. C. will lose one of her best players and the best college catcher in Michigan.

The plays creating the most interest this season, have been from Wilson to Rittenger on second.

Pitcher Burnett hails from Harbor Springs, and is known to about all the M. A. C. students since the fall term of '87, having entered then with the class of '91, dropping out during last year and will graduate in August. Became a member of the team on coming here, playing on the bases till the fall of '89, when he succeeded Canfield as pitcher. As a player he is good at the bat and noted for his base-running and fine playing at critical times.

First Baseman J. W. Rittinger of Dayton, Mich., belongs to the class of '94, having come to the college in the fall of '90, and has held the position which he now occupies since then. His record has been with few errors, though filling the position where they are hardest to avoid.

Second Baseman C. P. Rittinger graduated with the class of '90, and is now taking a post-graduate course. Though a member of the ball team, while a student here, he played his first game of this season at Olivet during the May vacation. Is at present captain, and it has been from his energetic training that the team has developed its present skill.

Third Baseman McElroy of Kalamazoo belongs to the class of '93, and played his first matched game last fall. Though scoring a number of errors, has otherwise made a good record.

Short-stop Harmon of Plymouth, Mich., entered college this spring with the class of '93, and has made the record of a good all-round player.

Right-fielder Bateman of Dimondal belongs to the

# THE SPECULUM.

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WHOLE No. 62.

## Experience in Brazil.

EDITOR SPECULUM—In response to your request I gladly offer the following condensed account of my experience in endeavoring to found an agricultural college in Brazil.

Last September, Senhor Luiz Queiroz of the State of San Paulo came to this country claiming to represent an association of Brazilian gentlemen, who proposed to establish in that State an agricultural school on the same plan as is most approved here in the States, viz.: to teach the sciences related to agriculture, and the practice with special reference to the introduction and use of machinery. To this end they had pledged of substantial aid from the general government, in addition to fixed and liberal endowment from the State—neither of which materialized when on the ground.

The plan of our own college pleased the gentleman above that of any other, and he tried persistently to secure one of our graduates to go and assist in the founding. Many were unwilling to undertake a task that involved so much uncertainty and offered so many odds against success, even though if success should follow it would be of immense advantage to both that country and this as well as to the college whose man might do the work.

I was led to consider the proposition only upon the understanding that the general theory and plan should be modeled closely after that of our own M. A. C. As might be suspected, I entertained strong doubts of there being in that country a demand for a class of college that requires all the force of our superior civilization and development for its support.

Of course to predict the success or failure of an untried enterprise is largely a matter of hazard and opinion; but if the few searching questions that I put had been intelligently and truthfully answered, I could have foretold in New York what I saw immediately on arriving, and confirmed every day of my stay, viz.: that such an institution is impossible to found under present conditions; and, moreover, would have no support even if it could be set down from here and appear among them, like Minerva, fully equipped for business.

To acquire a full and comprehensive understanding of all that this means would require a residence in the country, when the conviction follows as logically and as certainly as effect ever follows cause, and no American or English friend of mine expressed the least surprise at the outcome. On the contrary all agreed that the enterprise was premature and ill-conceived—the coinage of a brain more benevolent than practical, showing little conception of the logic of circumstances. And this last, by the way, is not an individual but a national trait.

However, an enumeration of some of these conditions will, I think, make tolerably clear the impossibility of materializing such an enterprise in that country.

The national trait of fickleness and unreliability was evinced from within, and from the first. The government help which had been represented as certain and fixed, had never been more than a pledge or encouragement resting upon no legislative enactment. The association did little or nothing, and all the burden of labor and expense seemed thrown upon one man. And it gradually appeared that he was about the only man in