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WHOLE No. 36.

An American Customs Union.

H. A. MARTIN, OLYMPIC SOCIETY.

For the purpose of securing the extension of our commerce many reciprocity treaties have been negotiated; but from the numerous depressions in business and the low prices of our farm products the need of obtaining better commercial relations is apparent.

It is strange, but nevertheless true, that countries farther away, of less energy and enterprise, brave the dangers of oceans and come to the countries south and west of us and monopolize the market. How humiliating it is to see other nations coming from 5,000 to 10,000 miles to southern countries and selling from five to ten times as much as we do, with all our boasted enterprise. We have ample means for supplying all the merchandise that goes to these countries and we would supply a good share of it, if the proposed Customs Union be adopted.

This union has for its basis the same principles as a like system in Germany called the Zollverein, and it would bring about the same freedom of trade on the American Continent as we now enjoy between the states of our own government. It is not intended to materially change the tariff upon the imports from European countries, but merely to make the rates uniform in all the countries forming the union and to establish the utmost freedom of exchange with each other. The discrepancy in weights and measures, which now causes so much inconvenience, would be equalized and reduced to a common standard. There would also be a fair chance to establish a uniform currency basis, whereby the surplus of the mines could be utilized and adjusted according to the number of people, so as to supply the

commercial needs of each country of America.

Many will say that this is a blow at the tariff, which is fitting us to compete with others in these markets; but, if they will give the subject a fair amount of study, they will see that protective duties between these countries and the United States are positive hindrances instead of benefits to our commerce. If, as claimed by so many, we must have high protective duties for our manufactures to compete with European countries within our borders, then, to do so in foreign lands it is certain that we must secure privileges there, not given to our rivals.

Our small amount of trade with the states of South America is claimed by the protectionist to be due to the cheap labor and abundant capital of Europe; hence our inability to compete with the manufacturers of those nations; while on the other hand, the so-called free-traders say it is occasioned by the high prices of raw materials and cost of living caused by the high protective duties. Were this scheme adopted it would certainly overcome the difficulties which these theorists say exist; for with common rates of duties on European goods and a free market for American goods, we could easily compete with them in the southern markets.

The revenue that we receive from these southern countries is exceedingly small as compared with the tax levied upon our products at their custom-houses, and many of our imports from these countries are free from duties; hence, the tendency to reduce the tariff surplus would not be as great even as would be desirable.

There are many things to be gained by a closer relation to our neighboring nations; for many are the blessings that nature has bestowed upon them, such as are not found

elsewhere. Better lands are not found than those lying south of the United States. They are countries of hidden mines, majestic trees and luscious fruits. Is it not well worth an effort to obtain such a grand field for American enterprise and commerce? On account of the similarity of climate and productions in places situated on the same lines of latitude that mutual advantage, so essential to successful trade, is not so easily obtained between such countries, as between countries on the same line of longitude.

The restrictions put upon the importation of our agricultural products by the countries of Europe, and the headway that England is making in obtaining supplies from India and other provinces, is enough to warn us to look elsewhere for an outlet for our surplus productions, or our agriculture will receive the blow that is falling by the under-consumption scheme of Europe. Financial ruin is inevitable to a business when there is no market for the products. Would a decrease in production produce relief? It might increase prices, but it would also increase the cost of living, besides idleness and pauperism, the first stations on the road to crime. The most feasible way of obtaining relief lies in the extension of our commercial relations with neighboring states, and intensifying the Monroe Doctrine by a united opposition to the Commercial Supremacy of any European power over the states of America.

One of the first things to be considered, when such a union is formed, will be the means of transportation. With a merchant marine carrying but from ten to twenty per cent. of our imports and exports, it is certain that we, at present, can do little in controlling the carrying trade of the hemisphere; but, what a grand opportunity would here be given for reviving the languished condition of our ocean commerce. By giving the benefits of the favored scheme to our products, only when carried by the parties to the contract and having their vessels privileged from tonnage duties and national

imposts, there would be a great incentive to the building and manning of ships of commerce, thus opening the way to the restoration of our flag, on the high seas, from its present humiliating position, to one of proud rivalry with any on the globe. Then will we be placed in a way to secure a fair share of the trade with the West Indies and the countries across the Pacific, which need, and would take, more of our products, if they were better known in their markets. Beside the gain to our shipping interests, we would realize rich results from the extension of our railway system through Mexico to a dozen republics farther south.

But the question arises as to whether the southern states will join us in such a union. Of course it is not expected that they will all rush forward to join the league at the beginning. It is thought, if two or three parties form the league, the others will, without doubt, see the advantages arising from an increased trade, and eventually seek admission. Many of these countries, through their reciprocity treaties made with us, have shown a desire to obtain better commercial relations. Several years ago the president of Mexico said that the people of that country were disposed to do everything in their power to facilitate the trade between Mexico and the United States, and that they would go as far as our government in this direction. The expending of \$200,000 by that nation for her exhibits, at the New Orleans exposition indicates a desire for a more intimate acquaintance. With all the advantages arising under such a union and a willingness on the part of others to join with us in forming it, why not take active measures to obtain the lasting friendship and trade of our sister nations?

It is not a question advocated from a partisan political standpoint, but from a standpoint of honest statesmanship. There is nothing in the system that a protectionist could object to; for it extends the borders of protection, and gives advantages to our ma-

ufacturers in other countries besides our own. On the other hand, the free-trader cannot object to it, for there would be greater freedom of trade, and it would demonstrate the advantages of a free market.

The success of the Customs League of Germany shows that great good can be accomplished for the commerce of countries so united. At first, several of her States would not join the union, for fear that some unseen power was preparing to spring forth and annihilate their commerce and revenue. In a comparatively short time their fear passed away, and they sought and gained admission to the union, which they now regard as the greatest safeguard to their commerce. So may we regard a like system, if we will but extend our hand to the nations of America, and assist them in developing their marvelous resources and the promotion of their prosperity. Such a policy would give us power among the nations of the world far greater and more enduring, than we can ever obtain by the art of war.

It is trade, and not the control of a greater extent of territory, that we need. It would be far better to see our flag supplant that of England on the seas, than to see it an emblem of political sovereignty everywhere on the American continent.

Let the dictates of right, justice and equity prevail and the States of America will rejoice over the formation of this alliance, and the great blessings that will flow from it.

Borrowing.

R. B. MC PHERSON, ECLECTIC SOCIETY.

Borrowing is essentially a human characteristic and is confined to man and man alone. In its generally accepted sense it means, "taking from another with the intention of returning an equivalent." Brute nature, not distinguishing between right and wrong and living only for self-gratification, never attempts the return of an equivalent for anything which it may have obtained from any

source whatever, though man by reason of his superiority often compels such a return. On the other hand the higher man's civilization and culture becomes the more deeply he feels the necessity of returning an equivalent for what he receives and the more he endeavors to meet this obligation.

There has always been much criticism upon the practice of borrowing and comparatively little has been said in its favor. This criticism is undoubtedly caused by a failure on the part of many persons, who make a practice of borrowing, to fulfill their part of the obligation. Then, too, the persons who make these criticisms look only upon one side of the question and fail to notice the advantages which would be lost were this practice to cease entirely. Yet there should undoubtedly be some limitations placed upon the practice for if too frequent and common both lender and borrower are injured—the lender by the injury and loss of value of what he lends and the too excessive tax upon his generosity; the borrower by the instillation of a feeling of dependence on his neighbor, and by a continually increasing load of obligations under which he either breaks down or gets rid of at a great loss to himself.

If a man allows himself to become under too extensive obligations to another he is tempted to use dishonest means to release himself from these obligations; or to avoid meeting them, he may defraud the lender. Yet with all this liability of harm coming from the excessive practice of this custom, when governed by reasonable restraint the benefits certainly much overrule the objections.

But very few of the great mass of mankind are in a position where all their reasonable ambitions and wishes can be gratified without assistance from outside sources, and to such as these this practice is most useful. It is the laudable ambition of a large class of Americans to own a farm of sufficient size and value that in its possession they may obtain a livelihood and sufficient means to

make their lives prosperous and happy. But such a farm costs money and comparatively few persons of this class have sufficient means to purchase one. But by obtaining a loan of money at a reasonable rate of interest for a long time they are enabled to purchase such a farm, and from the profits will in a few years be enabled to pay off the debt and possess the property free from incumbrance. Much has been said lately about the farming lands of the country being buried under mortgages, yet the people that take this view of the question forget to notice the fact that the majority of farmers who have their farms mortgaged for a portion of their value purchased these farms entirely with borrowed money. Certainly a man is much better off who has a farm partially paid for than one who has not a dollar or a dollar's worth of property. A large proportion of the men who have been conspicuous in the nation's history have received their first start towards fame or fortune through the loan of a book to aid them in their search for an education or a small sum of money to establish them in business. Scores of instances might be cited where a similar circumstance, trifling in itself, has been the foundation of a character whose influence in after years has been felt throughout the length and breadth of the nation.

The obligations put upon the borrower to return an equivalent for the loan he has received causes him to exert himself to discharge this obligation. Certainly there are few more noble incentives to work than the returning to a friend an equivalent for a kindness he has done you. The tendency to selfishness and a purely personal love of gain and distinction is largely prevented by the necessity of meeting such obligations. That persons, even under such an incentive to work, fail to meet obligations which they should is a fault of man's nature and not of this system.

Borrowing undoubtedly began when man was first obliged to "earn his bread by the

sweat of his brow," and it certainly has been an ever increasing custom growing and developing with the advance of civilization. Among the first records of history we hear of many lenders and systems of credit. As commerce and trade among nations and individuals increased the necessity of having some system of borrowing and loaning money for use in commercial affairs led to the establishment of a system of credit and exchange similar to that in existence at the present time. With such a system articles of commerce could be purchased to be paid for at a reasonable time in the future or when the articles were disposed of. So thoroughly has this system taken root in commercial circles and so many are its advantages that to-day nearly all commercial intercourse is carried on in this manner. When the system of money lending became common interest for loans of money was charged in order to compensate the lender for the loss of the use of his money and the risk he incurred in making this loan. As laws became more fixed and money more plenty this rate of interest has been lowered and in many cases is controlled by law, thus making impossible for a money lender to impose upon a person who might be forced to borrow of him.

When we look at the many enormous enterprises that have been undertaken by man we can readily see that the wealth of one man or of several men combined would not be sufficient to complete such undertakings. But the possibility of obtaining loans of private individuals, banks, and corporations has enabled such undertakings to be carried on with ultimately successful result. In this way the network of railroads that cover this continent was built, money lenders feeling confident that such roads when completed would be able by their earnings to pay for the expense of their construction. What is thus true of interests involving money is true in a not less important degree of all matters pertaining to the well being.

mankind. We keep and care for the welfare of our physical existence through laws borrowed from knowledge which man has stored up from generation to generation as he has progressed in civilization and learning. We train and develop our intellects by laws borrowed from philosophers and scientists who lived centuries before the continent on which we live was supposed to be in existence. Our moral and religious sentiments are guarded by many of the same thoughts and precepts which priests and prophets established ages before the Christian era. Man has lived and will continue to live largely dependent upon his neighbor for his existence, and as long as such conditions exist just so long will borrowing be a fixed and established custom.

A Memory.

'T was only the memory of a fragrance sweet,
That over my senses came stealing;
But it wafted me back to a dreamy retreat,
'Mid the violets of life's deeper feeling.

Our daily toils and joys and sorrows
Are only dark curtains before the heart,
Where dwells a richer life that borrows
The deepest joys the past will impart.

Oklahoma.

B. K. BENTLEY, DELTA TAU DELTA FRATERNITY.

Oklahoma is nearly in the center of the Indian Territory and comprises about 3,000 square miles or a little less than 2,000,000 acres. It is completely surrounded by the Indian reservations. On the north is the Cherokee outlet, a large tract of fertile land comprising about 8,000,000 acres; at the east are the small reservations of the Kickapoos, Iowas and Pottawatomies; to the south, the large reservation of the Chickasaws and on the west that of Cheyennes and Arapahoes. Oklahoma is watered in the southern part by the north and south forks of the Canadian river and by the Cimarron river in the north. The land is fertile and well

adapted to farming and stock raising. There is also quite a sprinkling of timber. The region has good railroad connection for the Atlantic and Pacific, and the Atchison, Topeka and Santa Fe railroad passes through the heart of it.

In 1866 Oklahoma was ceded to the government by the Creek and Seminole tribes of Indians on the condition that no white people should be allowed to settle and that it should be reserved exclusively for the Indians and freedmen. The small price paid at that time for the land is an argument to show that the government had no expectation of being reimbursed by selling the land to settlers. Not many years passed, however, before the whites, especially those in the states bordering on the Indian Territory, who are ever ready to snatch from the Indian any advantage, began to look towards Oklahoma with longing and jealous eyes and soon there was a demand for its being opened to settlers. This the government would not accede to, and the avaricious settlers and speculators thought to take the matter in their own hands and several incursions were made into the Territory under the leadership of Payne, Crouch and others. The first invasion made by Payne, about 1877 or 1878, and like those that followed was successful so far as entering the Territory was concerned, but they were eventually driven out by government troops. After this the "boomers" as they are called kept quiet for a time. But in the last two years the demand for the opening of Oklahoma has been greater than ever and invasions have been made repeatedly under Pawnee Bill and Hill, but as before they were driven out by the troops. These invasions were all made in direct opposition to proclamations made by Presidents Hayes, Arthur and Cleveland, and were attended with more or less bloodshed. The government finding that the trouble was increasing tried to buy the condition of the Indians but did not succeed. The Indians continued to

refuse, but at last in the winter of 1888 so many inducements were offered and so much pressure brought to bear that for a consideration of four million dollars they agreed to abolish the condition and thus make the sale absolute. The Indians however did not do this entirely of their own free will as considerable sharp practice and political maneuvering was resorted to.

At the last session of Congress, Hon. William Springer of Illinois got a bill through the house to open Oklahoma to settlers but it was defeated in the senate. The fate of this bill was closely watched by the "boomers" and when it was defeated they became more determined than ever to settle in Oklahoma. Another invasion was intended but President Harrison prevented it by taking the matter in his own hands and issuing a proclamation that Oklahoma would be opened for settlement on the 22d of April 1889, but he made the restriction that any person found in the Territory before that time would not be entitled to a homestead. Since the proclamation was made troops have been busily engaged in scouring the region for intruders and driving them over the border.

In anticipation of the event thousands of people, previous to April 22d had collected along the Indian Territory line ready to begin a race for the more desirable locations in the promised land. Never in American history has there been a time of such extensive migration. Even the great rush for the mines of California during the gold fever could not compare with it, considering the time in which it has taken place. The settlers came from nearly all the states of the union, but mostly from Illinois, Missouri, Iowa and Kansas. They are generally peaceably inclined, but are ready to defend their rights with cold lead if necessary and for this reason many people think there will be considerable bloodshed even after the first rush is over. In Oklahoma there are about ten thousand quarter sections and when

the territory was opened it was found that there were not nearly enough to go round. Many of the settlers went away disappointed but others instead of going to their homes stopped on what is known as the Cherokee outlet and staked out claims. However, they have no right to this land and will probably in time be driven out, but not without much trouble. The people have long envied the Cherokees the possession of this country and when the demand was made on the opening of Oklahoma it covered this region and also some other reservation, comprising in all about twenty-three million acres. Probably the tract that they have received appears very small in the eyes of the settlers compared with the region they hoped to get. They hope to attain the whole western half of the Indian Territory and wished to make a new state of it. Now that a start has been made they will be continually grasping for more till their object is accomplished and probably in time the Indians will have left but a small portion of their present possessions or will be driven out of the territory. That the Indians will submit to this without resisting is highly improbable, and they already look upon the settlement of Oklahoma with distrust.

Why the people should be so anxious to settle on this land in preference to any government lands in the west is probably on account of its fine situation as regards commerce. But the tendency that has characterized the American people from the landing of the pilgrims to the present, to hold the rights of the Indians as naught compared with their own, has probably had something to do with the craze for the settling of Oklahoma.

Will—"Say, Frank, what do you call such a moustache as mine?" Frank—"I should say, Will, that it was a faithful moustache." Will—"Why so, Frank?" Frank—"Because it is the 'thubstance' of things hoped for, the evidence of things not seen."

SCIENTIFIC.

Natural History Society.

The meeting of the Natural History Society for April 12th was called to order by President Dewey. The first paper presented was by C. F. Baker, his subject being "The Scales on Butterflies and Moths."

A large number of insects possess these scales in many form and colors. In shape they vary from the form of broad flat scales to a cylindrical form resembling hairs. The scaly covering is most complete with the *Lepidoptera* as the name would indicate.

Both sides of the wings of the *Lepidoptera* are covered with regular layers of these scales. Each scale has a kind of handle at the base by which it is fitted into a minute socket in the surface of the wing or body. The scales are arranged in overlapping rows like the shingles on a roof.

The outer portion of the scales may be rounded or pointed or variously toothed. The scales are usually of a different color on the upper surface of the wings from what they are beneath. They also differ in color and shape on the several parts of the wings and of the body of the same individual, being usually more expanded on the wings and narrowed and more hair-like on the body.

The scales may be considered as modified hairs, their only contents being a film of pigment. The walls of the scales are of a very delicate transparent tissue, usually covered with longitudinal lines or ridges. These minute striæ have a prismatic effect upon the light that falls upon the scales, thus giving the iridescent hues that are common to many of our butterflies.

An attempt on the part of one of our great naturalists to classify the *Lepidoptera* by means of the scales involved so much labor and confusion that the scheme was abandoned.

Mr. Baker's paper was finely illustrated and was pronounced good. Following it was an article by Mr. E. J. Rowley on the

"Continuity of Protoplasm." Mr. Rowley reported having examined cells from the young wood of *Æsculus glabra*, buckeye, in which he saw the protoplasm extending from one cell to another through minute openings in the cell wall.

Mr. A. B. Cook next read a paper on "Muskrats," in which he spoke of the distribution and habits of these animals.

The muskrat is common in all parts of Michigan and is benefited rather than injured by the nearer approach of man. This is due to the fact that man increases its food by means of corn fields and apple orchards and at the same time exterminates its greatest natural enemy, the mink.

Muskrats burrow only in light soil and may be kept out of mill dams and aqueducts by a thick layer of gravel. A muskrat house examined on the Red Cedar river showed a long passage way leading from the water's edge to the main room situated in the bank of the river. The room was circular with a diameter of four feet and had an air passage terminating in a bunch of willows. It was also located three feet above the water level, thus insuring a dry retreat in time of flood.

In flat marshy lands they build their houses of mud, weeds, grass and anything that may be at hand.

The food of the muskrat consists mainly of the roots of grasses and herbs which grow near at hand; also clams, the shells of which may be found in great numbers near their homes. They are also fond of apples, corn and carrots.

The young are born in April or May in a nest of grass or fine roots, there being from four to six at a litter. They are hairless and helpless when born and do not usually leave the nest till half grown. The muskrat is easily caught but the low price of the skins makes the occupation rather interesting than profitable.

This paper was followed by a talk by Mr. L. Churchill on "Feather-bone."

Feather-bone is an invention of Mr. E. K. Warren of Three Oaks, Mich. In the manufacture of this article only the tail and large wing feathers of our domestic fowls are used. When dry the feathers are taken from the store house to the factory where the quill is soon stripped of its plumage by a number of rotary shears. At the next machine the quills are split in halves and the pith sandpapered from the inside of each. The halves are then slitted by another machine into very slender filaments. These are then passed into what are called single winders. This machine consists of a wheel set on a hollow shaft. A spool of thread is fastened to the wheel near the circumference so that as it revolves about the filaments which are being fed into the center it binds them firmly together into a strand three-sixteenths of an inch in diameter. Two or four of these strands are fed into a larger winder which works on the same principle of the one just described. This flat band is run through a series of sewing machines which sew just between the strands, thus binding the thread more firmly about the strands. In this form it is cut into yard lengths and put upon the market. The color of the feather-bone when complete depends entirely upon the color of the thread used in the winders. The principal uses of feather-bone are for dress stays, for corset stays and for whips. It was intended to take the place of whale-bone and on account of its durability and cheapness other uses will probably soon be found for it.

The last paper presented was by Mr. A. D. Baker, his subject being The Felidæ of the United States.

Of all the carnivorous group the Felida is the fiercest, strongest and most dreaded among both men and animals. They are best fitted by their noiseless tread, non-conspicuous or mimicking colors and their great agility and strength for a terribly offensive warfare upon all but the largest animals.

The United States does not possess the

largest of this group because of its northern latitude, but such as are found here lack none of the ferocity of their tropical cousins. Among them is found the animal most dreaded among all our carnivores, the grizzly bear not excepted.

In past geological epochs the cats of America took no second place to those of tropical regions, either in size or ferocity, but, thinks Professor Flower, owing to excessive specialization, they disappeared.

The whole group is, with the exception of the *Felis domesticus* which is not of American origin, becoming steadily more rare, as are also the animals that were their prey.

The group is, as a whole, the enemy of man, and its entire disappearance will not be mourned. There are in reality but three distinct species in the United States but owing to the various names applied to each one in different sections it is generally supposed that there are more.

The first of the American species is the Puma (*Felis concolor*). This animal ranges both the Americas from the Straits of Magellan to where its further progress is blocked by the intense cold of Northern Canada. This animal is the happy possessor of some dozen names. It is variously called the American lion, the lion, cougar, painter, panther, catamount, &c., and under these various names it figures largely in American stories of travel and adventure. It is the only American representative of the group that will voluntarily attack man or the larger domestic animals. Its color is lion-like, while its habits pertain to the panther—perhaps this partially accounts for the great diversity in its naming. The skull of this animal measures about $7\frac{1}{8}$ inches in length, nearly the size of the leopard's skull, and the puma's head is smaller in proportion to its body than in most cats. Some pumas have been known to measure 4 ft. 10 in. from snout to the root of tail, while the height at the shoulder was 2 ft. $1\frac{1}{2}$ in. The color is uniform reddish brown or reddish gray, becoming lighter

below and without markings. Pigs, sheep, deer and various herbivorous animals fall prey to it. Where it has learned to fear the weapons of man it does not attack him unless in self-defense. When obliged to fight, however the puma becomes a dangerous enemy because of its great powers and more especially because of its tenacity of life—it can be mortally wounded and still be able to inflict terrible wounds. The Indians of northern California, where the puma still ranges say that between it and the grizzly bear there is a mortal antipathy, and that in combat the puma is always victorious, as the bodies of the grizzlies are found on the field of combat. The puma is fast becoming extinct and his disappearance will be mourned by none but the small boys who love the stories of adventure of which the puma is the chief actor.

The jaguar is not properly a North American animal although it occasionally strays into our southwestern borders. This animal is of a warmer latitude and of a fiercer nature than the puma.

The remaining cats of America are as fierce in nature as their larger cousins, but fortunately they are comparatively small.

The ocelot is one of the most handsome of these. Its length often reaches 33 inches, and a full grown animal weighs 25 pounds. It inhabits the southwest where it is nowise uncommon. This cat according to story has a very peculiar practice called "making love." This practice is not so agreeable as the name might signify. It is said that the animal will follow a person, who happens to be in the woods without a gun, rubbing itself against trees, purring loudly and appearing to make itself as agreeable as possible after the cat fashion. But "take care, take care, she's fooling thee," for at an unwary moment the animal will be at the throat of its victim tearing away with great ferocity. This is however only a huntsman's story and must be taken with allowances.

Next in size is the lynx. This is found

as widely distributed as the puma and much more common. Owing to its great variation in different parts of America it has received several different names. The lynx is a handsome animal with large head and pointed ears. It is more hairy than many others of the same family—the hair on cheek and foot being noticeable. Its eyes are large. The European lynx is larger than the American of which the Canadian is perhaps the largest. It is reddish gray, and measures about 30 inches from nose to root of tail. Between 1769 and 1868 the Hudson Bay Company sold 1,052,051 lynx skins—nearly all of this variety.

The red lynx, which ranges the middle of the continent and as far south as Texas, has reddish hair not so heavy as the Canadian variety.

Further south and through Mexico is found the spotted lynx—a very handsome variety. One other form ranges through California and the west. Between all these varieties of lynx there can no line be drawn as there are all forms of color, size and fur intermediate. The lynx is the common wild cat which has been such a pest to the frontiersman. The old settlers of our own State can well remember when the lynx but an element of danger to forests but now they are only to be met with in our northern woods.

The meeting closed with some general observations. Professor Cook had seen a lady-bird beetle eating the eggs of the plant lice. Several had seen the red squirrels cutting small branches from the spruce-trees, their object being to get and eat the buds.

Explosion of an Ether Residue.

In making a large number of analyses of cattle foods in this laboratory last winter a large quantity of ether (commonly called sulphuric ether) was required for estimating the fat in food. Ten kilograms of absolute ether (*i. e.*, ether free from water and alcohol)

were purchased from Richards & Co. of New York for this class of work in the Experimental Station. The tin can containing the ether bore this label, "10 kils. æther, sulfuric, absolut., 0.722, Dr. Henri König & Co., Leipzig."

In estimating the fats in food by means of this ether, the results were so discordant that the purity of the ether was suspected. The attempt was made to obtain a pure ether by redistilling, and about five kilos were distilled. At the beginning of the distillation the boiling point of the liquid was a trifle over 35° C., but near the close it rose to 36.2° C., when the boiling became so irregular and tumultuous that the distillation was discontinued and further evaporation carried on in an open glass dish. Very acrid fumes were given off towards the close of the evaporation. The liquid was then transferred to a large platinum dish, and the attempt was made to complete the evaporation in an air-bath at the temperature of 100° , the contents of the dish being examined from time to time. When a quarter of an ounce of liquid remained it had an oily consistence and yellowish color. The dish was again placed in the air-bath, and as I was watching the thermometer of the air-bath there was a violent explosion. I was somewhat rudely blown to one side, the air-bath was torn into fragments, the pieces thrown to some distance, the door striking my assistant (G. L. Teller) a severe blow, but inflicting no permanent injury. The bottom of the platinum dish was blown out and the iron shelf on which it stood broken. The air-bath was a wreck and the ether residue had disappeared.

This sudden explosion prevented the determination of the weight of the residue and an examination into its chemical composition. The nature of the material and the cause of this explosion is left to conjecture. The oily liquid in color and consistence resembled a poor quality of nitro-glycerine, and the explosion was similar. But how

did nitro-glycerine find its way into Dr. König's absolute sulphuric ether?

R. C. KEDZIE.

Agricultural College, March 30, 1889.

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AGRICULTURAL COLLEGE, MAY 10, 1889.

THAT ever pleasant topic, Field Day, is at present interesting everyone and we are glad to see the enthusiasm. A good number of students are in daily practice in the gymnasium for jumping, running, wrestling, boxing, and so forth. Our ball team has at last a strong organization, as the late victory at Olivet will testify, and they have strong hopes of winning their full share of the games. If weather favors, the Michigan Inter-Collegiate Field Day at Hillsdale bids fair to be a great success.

WE notice some excellent improvements made by the Horticultural Department on the lawns and drives. This is a step in the proper direction and we hope the students will respect the improvement and help them along by keeping off the grass as much as possible. It is but a step further to go around, and it preserves neat lawns and keeps them unmarked by paths here and there across the green. Our lawns have been a source of pride to the institution and it has always been a boast that there were no "Keep off the grass" signs to prevent perfect freedom in their use by students as well as visitors. Yet while the lawns are used they should not be abused by careless students. The subject of lawns prompts us to speak of the barren condition of the grounds around Abbot Hall, which lack not only lawns but drives and walks. We hope soon to see an improvement.

WE would like to call the attention of the students once again to our advertising list and remind them that THE SPECULUM depends to a large extent on its advertisers for its support. If the students will be particular to trade, as far as possible, with those who advertise with us it will be a great help, not only to THE SPECULUM but to all other College publications which contain advertisements, such as the annuals. It is no more than fair to help those who help us—especially when the aid which we receive is so substantial.

COLLEGE NEWS.

Freshman to the Sophomore. "Halloo, Corporal."

Mr. D. M. Meyers will spend vacation at the college.

The tennis mania is raging and increasing at an alarming rate at the college.

The Civil Engineering class went to Pine Lake to triangulate, May 9.

The Co-Eds have a job of surveying for Foster near Lansing during vacation!!!!

Oscar Eaton of Bryan, Ohio, a former graduate of the college, spent Sunday April 28, at the college.

Mr. Van Devort has lately completed a 6 horse power engine which he will send to his home for use there.

H. F. Hall will spend the vacation surveying for Mr. Watkins near Manchester.

Miss Emma Fuller, principal of the Caro schools, will take a special course in Chemistry.

Marhoff and Hollister are busily (?) engaged repairing the leaks in the water pipes in Howard Terrace.

Soon there will be put in the Botanical Museum, 50 specimens, illustrating the native timber of Florida.

Professor Cook took the Geology class to Grand Ledge, Saturday, May 4, to study the rock formations.

With the exception of a short visit to his home near Tecumseh, Mr. Dewey will spend his vacation at college.

Ex-President Willits writes: We are very pleasantly located at No. 4 Iowa circle, and are ready to see our friends.

The Engineering Department has made 3 heliotropes for use of the senior engineering class in triangulating Pine Lake.

The drives and lawns are being fixed up neatly. We will be glad when the bare sand of Abbot Hall is covered up with sod.

The Engineering Department is remodelling the dark room of the Mechanical building, preparatory to teaching photographic surveying.

The Analytical chemistry class were given the principles of photography and then required to apply them in practice by taking photographs.

Mr. Waldron will go home with Mr. Cannon and after a short visit go to East Saginaw where he will spend the remainder of the vacation.

A. L. Waters has been elected Vice President of the Students' Organization and F. G. Clark Assistant Business Manager of THE SPECULUM.

The Base Ball team won an easy victory at Olivet April 20th. They played six innings and the score was 17 to 6 in favor of the M. A. C. boys.

Rev. Mr. Peters and wife will room in Howard Terrace. He expects to take a special course in chemistry and she a special course in botany.

A new shaping machine is nearing completion for the Iron Shop. The casting for a new saw for the Wood Shop has been received and work begun upon it.

Hardly a day passes but there is one or more photographers on the grounds taking pictures of the landscapes of the buildings, cadets, and officers or of the classes.

The stewards of the various boarding clubs for next term are as follows: Club A, L. Burnett; B, F. G. Clark; C, N. C. Smith; D, H. L. Bunnell; E, C. E. Ferris, F. O. A. Turner.

The Alumni Fortnightly Club met April 29. Mr. Davenport presented a very able paper on "Popular Fallacies concerning Animal Nutrition." At the next meeting Mr. Dewey will present a paper on Plant Nutrition.

During vacation Mr. Thurtell will survey a line from Manchester to Ann Arbor. For some reason however he will spend a few days first at Mr. Cannon's home, or thereabouts.

The Senior Class have always practiced pretty rigid economy and it will be of interest to the readers of *THE SPECULUM* to know that they intend to follow out this policy to the close. It was almost the unanimous vote of the class to dispense with the usual class banquet and class exercises and all other things that tend toward unnecessary expense.

The Senior Class have elected business and literary officers as follows:

President, G. L. Flower; vice president, A. Moore; secretary, J. W. Toumey; treasurer, R. J. Cleland; orator, Thos. McGrath; statistician, L. W. Rice; historian, Wm. Lightbody; poet, Mary Smith; prophet, F. M. Seibert; toast master, D. A. Garfield.

The board of directors of the Michigan Inter-Collegiate Athletic Association met at Jackson, April 13th to make arrangements for the Field Day of 1889. Officers were elected as follows: President, S. F. Master, Albion; vice president, O. H. Westburg, Olivet; secretary and director of sports, R. A. Ward, Hillsdale; treasurer, Geo. J. Jenks, M. A. C. It was decided to hold the Field Day at Hillsdale.

In order that the contestants can do the best possible work at Field Day and do it without injury to themselves, they should begin training in a systematic way at once. It is hoped that all the boys will take hold of the Field Day work with life and interest. There are many ways in which those who do not intend to enter the contest can aid those who are training. Some apparatus will need to be bought or made.

Three societies have elected business officers for next summer term as follows:

Eclectic—President, Alexander Moore; vice president, R. B. McPherson; secretary, F. W. Ashton; treasurer, V. S. Hillyer; marshal, B. W. Peet.

Hesperian—President, G. C. Davis; vice president, C. H. Todd; secretary, J. A. Shotwell; treasurer, C. L. Himebaugh.

Olympic—President, L. Churchill; vice president, A. G. Wilson; treasurer, M. E. Greeson; secretary, L. W. Watkins; janitor, H. B. Winnegar.

The second annual Junior hop was held at the Governor's Guard Armory, Friday, April 26. Music was furnished by Speil's Orchestra of Detroit, and it was pronounced good. Refreshments were served by a Lansing caterer. Among those who came from a distance to attend were Harry Baird of Grand Rapids, E. B. Collins of Charlotte, C. M. Hemphill of Ypsilanti, Herbert Harrison and P. G. Towar. The Lansing papers comment very favorably upon the affair and also upon the success of the boys in securing their choice of Lansing's fairer ones.

There was organized at the college April 10, a new literary society, to be known thereafter as the *Hesperian Society*. Only those who have belonged to a college society can realize what the benefits to be derived

from society work are. The need of another society has been felt for some time. The best wishes of the older societies are extended to you, members of the new society. We are aware that for some time you will be laboring under many disadvantages, but success will be yours if in your actions you bear up the motto, "Where there is a will there is a way." The following are the names of the 8 charter members. Seniors—F. E. Lemon, C. H. Todd, G. C. Davis, R. H. Wilson, and F. M. Paine. Juniors—H. A. Steward, G. W. Kinsey and T. A. Sanderson.

Dr. Beal spent several days the early part of April looking after the experimental station work at the following places: Walton, Grand Traverse county; Baldwin, Lake county; Harrison, Clare county; Grayling, Crawford county; and Au Sable, Iosco county. At Grayling he put out over 3,000 and at Oscoda over 2,000 trees. The most common kinds planted were chestnut, locust, white pine, Norway pine, Norway spruce and box elder. One hundred varieties of grasses and clover were sown on small plats at one station without fertilizer. While the Dr. was at Walton he found time to write up an account of the experimental work as it is carried on there. The article was published in the *Grand Traverse Herald* and will be read with a great deal of interest by the farmers of the north part of the State.

At the meeting held April 26th, at Jackson, some important changes were made in the constitution and by-laws, which will have to be acted on at once by the various colleges of the association. The list of sports was made out (will be found in department of Athletics), and the prizes and medals assigned to each. An assessment of 33½ cents per capita was made on the members of the association, and various matters left over by the board of 1888 were settled. It is hoped that the Field Day will be a great success, which of course depends upon the members of the M. I. A. A. Indications at present, however, are very favorable. Hillsdale can, and will gladly entertain all that can come, a special train will be obtained if possible, and if a large number go the expenses will be very light individually. The date of Field Day will be May 30, 31 and June 1.

The season's work on commercial fertilizers has begun. Samples of each brand in the market are being collected by the Chemical Department from retail dealers in various parts of the State and in due time the results of the analyses will be published in connection with the amounts of the various constituents claimed by the manufacturers. The importance of this work to farmers may be realized when it is known that the *Farmer's Fertilizer Co.* of Detroit, claiming to be ignorant of the law, have been putting upon the market goods which show by analyses of a fair sample to have a percentage of some of the valuable ingredients far inferior to the amounts claimed by the manufacturers, and which could hardly be expected to agree with their claims from the fact that little effort has been made on their part to determine the composition

of their goods. Other firms knowing the requirements and risks, seldom allow their goods to fall short of the composition claimed. Important changes have recently been made in the Chemical Laboratory. The Orr and Hess furnace formerly connected with the south chimney has been removed to the east side of the north chimney and its old place is now occupied by a large hood divided into three compartments for the carrying on of acid digestions. The walls of the hood are of brick supplied with glass doors and the covering is of glass thus preventing the danger, so often realized by those who have worked in the iron hoods, of foreign matter getting into the digestion flasks and destroying several hours' work as well as the good temper of the operator.

A number of the Delta Tau Delta boys are building and equipping a steam launch in which after commencement, they intend to spend two weeks cruising among the pleasure resorts of Northern Michigan and from there around to Detroit. She is being built after their own designs; and all the work aside from the boiler will be performed by the boys. She will be twenty seven feet long by five feet beam and will carry fifteen persons comfortably. Her engines are double and of four-horse power, intended to run at four hundred revolutions per minute. The boiler, now being constructed by the Lansing Iron Works, is of the vertical tubular type, made of the best steel and intended to pass government inspection. The boys will remain here during the coming vacation and work on her. She is to be completed about the middle of next term and will be valued at five hundred dollars.

Drill is now compulsory at the college and the appearance of the battalion at the numerous parades and reviews speak well for the department. Considering the time that the students have drilled, their bearing under arms is highly complimentary. The battalion, at present, consists of four fully organized companies and material enough to form another. A band has been recently organized and with little practice will become an important auxiliary on the parade ground.

The roster of commissioned officers is as follows:

Company A.—R. S. Baker, Capt.; E. A. Holden, 1st Lieut.; H. A. Martin, 2d Lieut.; F. M. Paine, sergeant major.

Company B.—L. Churchill, Capt.; J. W. O'Bannon, 1st Lieut.; W. E. Davis, 2d Lieut.

Company C.—D. A. Garfield, Capt.; A. D. Baker, 1st Lieut. and quartermaster; H. A. Stewart, 2d Lieut.

Company D.—J. N. Estabrook, Capt.; G. J. Jenks, 1st Lieut. and Adjt.; F. M. Seibert, 1st Lieut.; L. W. Rice, 2d Lieut.

The cadets hope for an encampment some time this summer. The interest of the drill would be increased if we could have target practice every week or two. If such an arrangement could be made it would be appreciated by the military boys.

The celebration of the Centennial Anniversary of the inauguration of George Washington, at the college, April 30, was a grand affair in every way. At 20 minutes to 9 the cadets fell in at the Armory and at 9

they marched into chapel and occupied the junior and senior seats that had been reserved for them. The meeting opened with a national song, following by the reading of the proclamations of President Harrison and Gov. Luce, by Professor Mac Ewan. Dr. Kedzie then read a chapter from Psalms and Rev. Mr. Valentine offered prayer. Song by the choir followed. The address by Hon. Milo D. Campbell was very able. It was new, interesting, and well delivered. It stirred a feeling of patriotism in every heart and three times there went up from the audience a hearty applause. The address was followed by a song, "My Country 'tis of Thee," after which Mr. Lightbody built a ship and Mr. Cannon gave a short recitation. The singing of the Doxology closed the program. The Lieutenant then stepped forward on the platform and proposed three cheers for the constitution of the U. S. and the stars and stripes, which were most heartily responded to. The appearance of the boys as they formed in front of the chapel and marched back towards the Armory keeping step to the music of the band, called forth many compliments from the spectators.

The field of experimental grass plats, familiarly known as the *Della* or the *Flat-Iron*, with its 200 plats of over 150 sorts of grasses and forage plants cannot fail, when fairly established, to interest both the student of botany and the agriculturist. The plats are labeled temporarily in pencil till well started, when larger painted and lettered stakes will be substituted. All native varieties possible to secure last season have been planted, and several others from England, France and Russia, and it is hoped eventually to add the most promising native grasses and forage plants of northern South America and of western Asia. The intent in these experiments is: 1. To keep sample plats and test for hardiness all native grasses and forage plants attainable, not only from this country but from corresponding latitudes in foreign countries. 2. To test for yield and quality such as prove hardy and give any promise of agricultural value. Incidentally also comparisons will be made between mixtures and single sorts; between permanent pasture and new seeding, and between the total yield of frequent cuttings, in imitation of pasture, and that of the mature crop as cut for hay. The work hitherto has been preparatory to the real work of experiment. Time and labor are necessary to establish the plant, so to speak, and much time will yet elapse before results can be expected. The fall, winter and spring have been about as unfavorable as could well be, but it is hoped a showing will yet be made this coming summer. Despite the somewhat prevalent notion that common chess will not grow, it was the first to report itself for duty and is the best plat of the lot. About one-half an acre is sown with a mixture of one hundred sorts, the object being to watch the struggle for existence.

The completion of its Laboratory will do much to place the Horticultural Department upon a sound working basis. Although of itself something of an ex-

periment, being the first of its kind in this country and presenting many difficult problems, particularly on account of our own peculiar conditions, the use which has thus far been made of the building indicates that it will be a splendid success. The arrangement of the rooms is admirable and they are well adapted to the uses for which they were designed. While the benefits to be derived from its possession, merely in conducting the regular routine work of the department are almost incalculable, the greatest results may be expected from the increased facilities for imparting to the students a practical knowledge of horticulture. The requirement that the juniors shall work two or three hours a day on this department has made it possible for that class to obtain some practical experience in fruit and vegetable gardening, and the possession of this building will allow a wider and more extended range of instructive labor, which experience has shown to be valuable and which is earnestly sought for by the students. In the early days of the State, the merest tyro could raise fruit with success, but, owing to the change of climate, the exhaustion of the soil and the increase of the injurious insects and fungi, the need of a thorough practical and theoretical training, if one would be a successful horticulturist, is each year becoming greater. The establishment of the Experiment Station in connection with the college, affords the department increased facilities for work in this direction, and it will be of great value to the students, who will assist in growing and caring for the plants, and in taking and recording observations.

The Kedzie Testimonial.

The library has been lately adorned with a fine oil portrait of Dr. R. C. Kedzie, painted by Mr. S. L. Wise of Lansing. It occupies a conspicuous place in the Reading Room and is much admired by all who see it. It was a testimonial from the College Alumni and we are indebted to Mr. E. M. Shelton of '71, for the following notes upon the subject:

The committee appointed (see SPECULUM of Sept. 10, 1888) consisted of the following persons: E. M. Shelton, '71; W. W. Daniells, '64; Geo. A. Farr, '70; C. L. Ingersoll, '74; and Mrs. M. J. Carpenter, '81. The committee received no instructions of any kind as to the form that the testimonial should take, or the amount of money that should be raised for the purpose. It was finally agreed by the committee that the testimonial should take the form of an oil portrait of Dr. Kedzie, to be painted by some competent artist at a price to be agreed upon and that the painting should have a permanent place on the walls of the College Library, provided the consent of the State Board of Agriculture could be obtained.

Circulars have been sent to the brethren and sisters whose addresses could be found, calling attention to the work of the committee, and asking the co-operation of all interested. Of course many of the alumni were not reached by these circulars—a considerable number I judge from several letters lately received.

The responses to the call of the committee have been

generous; letters by the score almost have been received, expressing hearty sympathy with the work of this committee and proffering cash liberally. Many of the letters from the brethren wound up in some such way as this, "Call on me for more money if you need it." Happily, it has not been necessary for the committee to call on any one a second time.

Altogether \$210.00 have been received. This sum has come from ninety-five (95) different persons, an average of \$2.21 from each subscriber.

The total expenses incurred in procuring the portrait are as follows:

To postage, printing, stationery, &c.,	\$ 20.06.
To portrait and frame,	149.60.
Total,	\$169.66.

The unexpended balance (\$40.34) seems to me to be a capital "nest egg" as a fund for a portrait or other testimonial to another one of the old friends. Whom shall it be?

Fraternally yours,

E. M. SHELTON.

PERSONALS.

'62.

Frank Hodgman has sold his surveying instruments and will now give up surveying and live upon the fruits of his pen. He is the author of a Manual of Surveying.

'68.

A. G. Gulley is still at South Haven, engaged in fruit and seed growing. He says he regrets the loss of President Willits and hopes that as capable a man may be found to fill his place.

'69.

Professor Chas. E. Bessey is at present acting Chancellor of the University of Nebraska, he having declined the chancellorship, preferring his own department of botany and forestry. Professor Bessey is a member of several prominent scientific societies. Upon the invitation of the State legislature of Nebraska he delivered an address before that honorable body last winter his subject being "The object and needs of a State University." Professor Bessey is now revising the sixth edition of his botany. He is also preparing a treatise on Systematic Botany, and has under way a work on Elementary Botany, both of which will soon appear.

'70.

Roswell C. Lillie has resigned his position as postmaster at Cooperville and is now enjoying himself in the sunny South, at New Orleans.

'71.

Prof. E. M. Shelton has been appointed director of the Agricultural Experimental Station at Manhattan, Kansas.

Frank A. Sessions is cashier of a bank in Ionia. He is also using his spare moments as a "tiller of the soil."

E. B. Fairfield is special agent for the Northwestern Mutual Life Insurance Co. at Grand Rapids.

'74.

A. S. Hume is farming near Lansing, Mich.

'75.

Chas. A. Sturgis is a manufacturer at Sturgis, Mich.

Frank J. Annis is a member and Secretary of the State Board of Agriculture at Fort Collins, Col.

A. A. Crane is a lawyer and banker at Gaylord, Mich.

"Henry A. Haigh, the well known attorney, has been admitted to partnership with Col. John Atkinson, William L. Carpenter and Flavius L. Brooke, the firm name being Atkinson, Carpenter, Brooke & Haigh. Mr. Haigh is to be congratulated on forming this connection, for the firm of Atkinson, Carpenter & Brooke has taken rank among the best in Michigan and did a very heavy business last year. The head of the firm, Col. John Atkinson, is one of the ablest lawyers and most eloquent orators in the country, and he has shown excellent judgment in selecting his business associates."—*Detroit Tribune*.

WITH '75.

A. F. Anderson is county clerk of Van Buren co.

'76.

Ira B. Gage is a bank cashier at Dowagiac.

WITH '76.

S. B. Long is farming near Dearborn, Mich.

G. M. Morse is in the insurance business at Portland, Mich.

M. W. Gray is a practicing physician at Pontiac, Mich.

'77.

A. B. Simonson, M. D., is practicing his profession at Calumet, Mich.

L. A. Lilly is tilling the soil near Hillsdale.

Chas. Bloodgood, M. D., is at Kalamazoo, Mich.

'78.

James E. Miller is in his last year at the Detroit Medical College. At present he is gathering information and experience at Harper Hospital, Detroit.

Rob't T. McNaughton is in the hardware business at Jackson, Mich.

C. J. Strang is superintending the erection of a brick building in Lansing.

W. K. Prudden has been taking great interest in the organization of the Lansing B. B. C. What a fascination the game has for W. K.

R. D. Sessions still holds his position as clerk of the State House of Correction at Ionia. He made the college a flying visit last month.

'79.

E. J. Rauchfuss is following the mercantile business in New York City.

A. A. Crozier spent last winter at Washington, D. C. where he was engaged in preparing material for the Paris Exposition.

Ray Sessions is still farming at Maple Rapids.

'81.

Alva Sherwood was married November 28, 1888, to Miss Ada M. Simpson, sister of Lieut. Simpson. Alva writes that he has commenced keeping house and has

managed to get along thus far without any family jars. His address is Three Oaks, Mich.

W. H. Burgess is practicing law at Crosswell, Mich.

W. G. Simonson is practicing law at Alliance, Neb.

H. M. Holmes is editor and proprietor of the Ann Arbor Register.

D. S. Lincoln is in the fruit business at Big Rapids.

C. A. Dockstader is a druggist in Three Rivers, Mich.

WITH '81.

A. L. Anderson is farming near Berlamont, Van Buren county.

Wm. F. Pack is a merchant in Centerville, Mich. He is married.

'82.

Lincoln Avery is attorney at law in Port Huron.

Chas. W. Crossman is in the commission business at Benton Harbor.

Wm. T. Langley is a teacher in Superior, Wis.

Jno. Evert is a teacher in Mendon.

WITH '82.

Wm. O. Wilcox is a farmer at Centerville.

Lansing Major is a merchant in Vicksburg, Mich. He is married.

'83.

A. C. Bird is farming at Highland.

E. P. Clark is teaching near St. Joseph in Berrien county.

E. F. Law is teaching at Brockway Center, now Yale. He is a member of the County Board.

WITH '83.

Chas. Hagenbuch is a farmer at Corey, Mich. He is married.

'84.

W. Dothany is in the drug business at Sault Ste. Marie.

Fred Hodges, M. D. is a member of the staff of Physicians and Surgeons in Cook County Hospital, Chicago.

Homer D. Luce is running a general store at Orland, Ind.

R. J. Coryell is farming at Jonesville, Mich.

C. P. Gillette, Entomologist at the Iowa Experiment Station, likes his position better every day. He says his eleven months old daughter is getting along nicely.

J. J. Bush is traveling in the east in the interest of the Anderson Road Cart

'85.

E. S. Antisdale is studying medicine at the University, Ann Arbor.

Lewis G. Palmer taught at Horton last winter. He has a two months old heiress.

Wilber I. Power is house physician at St. Mary's Hospital, Detroit.

WITH '85.

Chas. E. Bassett, of the firm of Newark & Bassett, is editor and publisher of the Allegan Record.

'86.

T. A. Stanley is proprietor of a dairy farm at New Britain, Conn.

J. E. Hammond is teaching school at Allen, Mich.

W. K. Clute, attorney at law, attended supreme court in Lansing last month.

Henry N. Jenner is in the drug business at Allegan.

Walter E. Gammon is salesman for Bancroft & Co., San Francisco, Cal.

WITH '86.

J. J. Jakway is teaching at Kendall, Van Buren county.

Geo. E. Hancorne will return to M. A. C. next term and graduate with '89.

'87.

I. B. Bates is at Flint. He is with the Flint P. Smith Lumber Company in the interest of the Michigan Car Company of Detroit. At the election of officers for first and second Lieutenant of the Flint Blues he was chosen second Lieutenant. He tied twice with Miller for the first Lieutenancy. Never mind I. B., you will get there next time.

H. W. McArdle has resigned his position as principal of the Homer schools, to accept a similar position in the schools at Tekonsha in Calhoun county.

H. L. Chapin has recently been appointed Assistant Civil Engineer on the Cadillac and Northern Michigan Railroad.

C. E. Whitmore was married April 22 to Miss Jennie Towar of '86. The "SPEC." extends its best wishes for future happiness, etc.

E. A. Burnett is farming at Bancroft.

WITH '87.

J. L. Dawson is at Big Rapids. He expects soon to be secretary of a new manufacturing company at that place.

J. Norris is studying at Olivet College.

E. Norris is with Wicks Bros., East Saginaw.

*Glenn Smith has gone to Ennis, Montana.

'88.

C. W. Redman has accepted a position on a surveying corps at Grand Rapids.

L. C. Colburn will conduct institutes during the summer vacation. He will return to M. A. C. in August, when he will occupy the position of Assistant in Mechanic Arts.

Dale A. Smith is traveling in the west. When last heard from he was with his brother Glenn at Ennis, Montana.

Miss Mollie Carpenter is teaching school near her home at Orion.

Miss M. L. Harrison is still at Harper Hospital. She says she likes her work very much, only she gets homesick for M. A. C. She hopes to visit the College next Commencement.

WITH '88.

H. W. Carr is teaching at Seattle, Washington Territory.

Fred Wilkins is farming at Marine City.

Don P. Yerkes will toss the sphere for the Lansing Base Ball Club this season.

WITH '89.

A. B. Mitchell is at Dayton, Ohio, working in the interest of the Heiks Hand protector. They say "Buffalo" is interested financially.

W. J. Meyers has left college to accept a position as Assistant Professor at Fort Collins, Colorado. John R. will graduate with '89, however.

S. D. Peper is farming in Van Buren county.

C. M. Hemphill is clerking in a bank at Ypsilanti. He made the college a pleasant visit last month.

WITH '90.

Fred Lewis is clerking for Buhl & Co., Detroit.

Paul Woodworth is lumbering near Caseville, Mich.

F. B. Stockwell is studying law at Pontiac.

WITH '91.

A. J. Morley spent the winter traveling through Egypt, The Holy Land, Russia and Turkey. He will return to America in August.

'92.

F. G. Simpson has left college and taken up farming at home.

ATHLETICS.

A great deal of interest is being taken in the class games this season, the best game being between the Seniors and Juniors. The following is the score by innings:

	1	2	3	4	5	6	7	8	9	R
Seniors.....	0	0	5	3	0	0	0	0	3	—11
Juniors.....	0	0	0	1	0	1	0	3	2	—7

Most of the practice has been in playing class games, which has not been time thrown away, as is shown by the way in which the "first nine" played the Olivet game.

The score of the Olivet game is as follows:

	1	2	3	4	5	6	R
M. A. C.....	0	1	0	0	4	12	—17
Olivet.....	0	3	0	0	3	6	—6

Field Day is close at hand. A list of sports and prizes will be given below. Every student should look them over and if they see any sport which they think they stand any show of gaining they should have their names entered for that sport at once.

LIST OF SPORTS.

- Base Ball—1st prize, Banner; 2d, Gloves and Mask.
- One hundred yards dash—1st, Gold Medal; 2d, Silver Medal.
- Tennis, singles—1st, Gold Medal; 2d, Silver Medal.
- Tennis, doubles—Silver Medal.
- One-half mile bicycle race—Silver Medal.
- Slow race—
- Tug-of-war, five men, 800-825—Cup.
- Standing broad jump with weights—1st, Gold Medal; 2d, Silver Medal.
- Broad hand-spring jump—Silver Medal.
- Throwing hammer, 16 pounds—Silver Medal.
- Running broad jump, without weights—Silver Medal.
- Backward jump, with weights—Memento.
- Putting shot, 16 pounds—Memento.
- Standing high jump—Silver Medal.
- Passing Rugby—Silver Medal.
- Standing hop, step and jump, without weights—Silver Medal.
- Running high jump—Silver Medal.
- Drop kick for Rugby—Silver Medal.
- Running hop, step and jump—Silver Medal.
- High hand-spring jump—Memento.
- Throwing base ball—Silver Medal.
- Standing high kick—Silver Medal.
- Running high kick—Silver Medal.
- Hitch and kick—Silver Medal.
- High kick, both feet—Memento.
- High backward kick—Memento.
- Indian club swinging—Clubs.
- Horizontal bar performance—Silver Medal.

Esquimo wrestling—Memento.
 Parallel bar performance—Silver Medal.
 Relay race, one mile—Cup.
 Running bases—Memento.
 Three legged race—Mementoes.
 Wrestling, Middle-weight—Side-hold, 138-160 pounds, Silver Medal.
 Wrestling, Heavy weight—Collar and elbow, Silver Medal.
 Wrestling, Feather-weight—Catch-as-catch-can.
 Wrestling, Light weight—Collar and elbow.
 Dash, 220-yard—Silver Medal.
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 Pole rautling.
 Hurdle Race, 10 hurdle, 3½ feet high, in 120 yards, 15 yards to first hurdle—Silver Medal.

NOTES FROM THE FARM BY MR. FRENCH.—A bulletin giving the results of experiments in feeding and growing ensilage will soon be published from the Farm Department.—Nearly all of the cattle on the farm have been fed two rations daily of ensilage this winter and they never came through the winter in better condition. Ensilage has not been used as a supplementary food, it has been the *principal* means of sustenance.—A new "Quaker City" feed grinder is being tested on the farm. If it proves successful all of the corn and oat meal used will be ground on the farm.—Wheat on the farm is coming through the winter in good condition.—It is difficult to find a finer lot of heifers of the different breeds than those that are being raised for the dairy experimental work.—Several new varieties of potatoes and roots will be tested on the farm this season. Different varieties of ensilage corn will be tested, also several varieties of oats. Experiments in the application of fertilizers will be carried on.

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