

The M. A. C. Record.

VOLUME I.

LANSING, MICHIGAN, TUESDAY, OCTOBER 27, 1896.

NUMBER 38

Ex-President Willits Dead.

On Saturday the sad news reached us of the sudden death of our former president, Edwin Willits. For a considerable length of time his health had been failing, and on Friday he passed away at his home, 1411 Hopkins street, Washington, D. C. Dr. Kedzie left yesterday morning for Monroe, where the funeral will be held today.

Edwin Willits was born in Otto, Cattaraugus Co., N. Y., April 24, 1830. He removed to Michigan with his parents when 6 years old. He was educated in the public schools and at the University of Michigan, from which he was graduated in 1855. For ten years after graduation he was editor of the Monroe Commercial. In the spring of 1856 and for a year and a half after he studied law in the office of Isaac P. Christianity, Monroe, he was duly admitted to the bar and soon attracted a large clientele.

In 1860 he was elected prosecuting attorney of Monroe county. At the close of his term of office in 1862 he was elected a member of the state board of education, an office he held for twelve years. President Lincoln appointed him postmaster at Monroe in January, 1863, but he was removed by Andrew Johnson, in October, 1866. He was a member of the constitutional commission of 1873, and in 1876 he was elected to the forty-fifth congress, and two years later was re-elected to the forty-sixth congress.

When his term as congressman expired in 1880 Mr. Willits returned to Michigan, and shortly afterward he was chosen principal of the State Normal school at Ypsilanti. In 1885 he was made president of this college, but resigned four years later to become first assistant secretary of agriculture under Hon. Jerry Rusk. He remained in this position until January 1, 1894, when he was removed by Secretary Morton, and at once opened a law office in the Loan and Trust building in Washington.

Although Dr. Willits was but four years president of our College, he did a wonderful amount of work for the institution in that time and endeared himself to all who knew him; and those of us who have come since and did not know him always held him in the highest esteem for what he had done.

Death of Miss Minnie A. Bush.

The friends of Miss Minnie A. Bush, who was a special student here in drawing during a portion of the summers of '95 and '96, will be pained to hear of her sudden and untimely death in Louisville, Ky., last Wednesday morning. Late in September Miss Bush entered the Chicago School of Art but was not well enough to continue her studies and soon after went to Louisville with her brother Charles Bush, and was placed in a sanitarium under the care of skilled physicians. She was supposed to be suffering from nervous prostration but her condition was not thought to be serious until last Tuesday.

Miss Bush was a sister of John J. Bush, '84, and graduated from the Lansing high school last June.

Her funeral was held at the residence of her brother in Lansing, 320 Ottawa

street west, at 2:30 Friday afternoon. The service of the Episcopal church was read by the Rev. W. H. Osborne. Many beautiful floral tributes were presented by friends of the deceased.

King's Daughter's Entertainment.

The entertainment given by the Kings' Daughters last Friday evening, in the Y. M. C. A. parlors was in every way a success: financially, nearly \$12 being taken in; in the number entertained, the rooms were full; in the quality of entertainment, a splendid program being rendered.

The M. A. C. circle was assisted by the Lansing circle, who furnished excellent music, and by Mrs. Esselstyne, who gave a very interesting talk on missionary work in Persia.

The first number on the program was vocal music, "Nearer My God to Thee," by a quartet composed of Misses Grace and Gertrude Brundage, Miss Garlick and Miss Callahan. This was followed by a solo, "When the Children Say Good Night," by Miss Stone. Then Mrs. Esselstyn gave her talk, which was briefly as follows:

Persia is a country one-third the size of the United States and contains 10,000,000 of people, of which 9,000,000 are Mohammedans. The remainder are mostly Armenians or Nestorians, fire-worshippers, Jews and Christians. The Armenian religion was once christian but is not now considered orthodox, so missionaries work among them.

They worship idols and pictures and take especial care of the lizards that crawl out of the walls because they consider these little animals to be good spirits.

Mrs. Esselstyne wore a Persian house costume, described the difference between the costume of the married woman and that of the maid, and exhibited the street costume. The missionaries do not wear the Armenian costume because they would not then be admitted to the Mohammedan homes, nor the Mohammedan costume because it is immodest. They wear the American costume.

The religion of the fire-worshippers in its home in India is the same as that of the fire-worshippers in the time of Darius, but the adherents of this faith in Persia know but little of their religion because they are so far from India. They worship fire and the sun as symbols of power, and have many superstitions. We have an example of this in their burial of the dead. They have no burying ground, but, instead, outside of the city a white tower in which the only opening is at the top. The walls are scaled by means of ladders carried out from the city. About half way down the inside of the tower is a platform containing boxes in which the dead are placed and left until their bones are picked by the birds. After a body has been left in one of these boxes it is carefully watched to see which eye the birds pick out first. If the right eye, the spirit of the departed is supposed to have gone to heaven; if the left, to hell.

The Jews live principally in the cities and are persecuted by both Armenians and Mohammedans. They are a very filthy people and put on an appearance of poverty to escape persecution.

But the principal religion is the Mohammedan, and this the speaker con-

sidered the worst enemy to Christianity. They are a wicked people, even when judged by the principles of their own religion. The men may have any number of wives, one to whom they are regularly married, the rest contract wives. The latter are married for a period of weeks or months or years. Rice growers marry a number of women for the rice-harvest, about five months. Many women go about from place to place, marrying first one man and then another and carrying their babes with them.

Girls lead miserable lives. They marry at from six to twelve years of age, but very few reaching the latter age without being married.

There are six mission stations in Persia, four of which are supported by the Presbyterian church and two by the church missionary society of England. These mission stations maintain hospitals, churches and schools in the larger cities, and the missionaries also extend their work into the country. In Teheran the Christian Armenians have a chapel of their own, but are much persecuted. Teheran is the only place where Mohammedan girls are admitted to the schools. In this city there is also a society of Christian Endeavorers and a circle of King's Daughters. An important part of the work of these societies is relief work for the city poor. The condition of the poor is deplorable. The coal bill for a family one year is about \$1.50. Men work for 10c. a day and women for 5c.

Under the influence of the missionaries superstition and prejudice are gradually breaking down; and, once Christians, the people become earnest workers for their suffering brethren.

"The work of the missionaries in Persia is so hard that we would give up were we not sustained by the prayers of our friends at home."

The program was closed by two musical selections, a duet by the Misses Brundage, and a trio by Misses Crosby Garlick and Robinson. Refreshments and a social hour followed, in which all participated.

Flowers in Country Schoolyards.

Last spring the College sent out packets of flower seeds to 500 of the public schools of the state for the purpose of encouraging school yard decoration and developing in the young a love for the beautiful. The condition upon which these seeds were sent was that in the fall each school report the success of the experiment. A few days ago Pres. Snyder received the first of these reports, which took the form of a number of letters from pupils in district No. 1 Barton township, Newaygo county. We publish one of the letters, just as written, from a little fifth grade girl:

Hawkins, Mich., Oct. 9, '96.

Mr. J. L. Snyder, Pres. of Agricultural College, Agricultural College, Mich.:

Dear Sir—We agree to send you a report in the autumn of the condition of the flowers; the seeds which you so kindly sent us early in the spring. We received twenty-five different kinds, which we planted on the school ground about May 15. The fore part of the summer was very dry, so that the flowers did not come up till about June 10. Our school closed June 28th, just as the candy tufts and a few balsams

were in blossom. They were nicely cared for during vacation by Miss May and Ethel Smith, two pupils who lived near the school house. Our flowers were the nicest during that time. There were quite a number in blossom when school begun on Sept. 14th, and we had quite a number of bouquets until the frost killed them about Sept. 20. We have finished gathering our flower seeds and have commenced to get our flower beds ready for spring. We will send you a plot of our school ground showing the arrangement of our flower beds. We intend to use the same beds next year, and to make some additional beds on the south side of the school house. Yours respectfully,
VIVIAN RANDALL,
Paris, Mich.

The plot, which we are sorry not to be able to reproduce, shows that four artistically arranged flower beds have resulted from the first season's work in this school. The most hopeful feature of the whole thing, however, is the fact that this year is the but the beginning, that the work already done has developed a taste for more, and that the pupils are already planning and working for next year.

Petley-Sipley.

One of Lansing's social events of last week was the wedding at the home of Mrs. Louise Sipley on Thursday evening, when her daughter Winifred was married to James R. Petley, with '96, of Milwaukee. The ceremony was performed by the Rev. Swift, the ring service being used, and was witnessed by about 75 relatives and friends. Among the M. A. C. people present were Prof. and Mrs. Vedder; Prof. and Mrs. Weil; Arthur J. Beese, with '93, of Saginaw; William Anson, with '95, of Grand Rapids, and E. M. Kanter, with '96, of Detroit.

After an elaborate luncheon served in the dining-room Mr. and Mrs. Petley left for Milwaukee, where they will be at home after December 1, at 661 Milwaukee street.

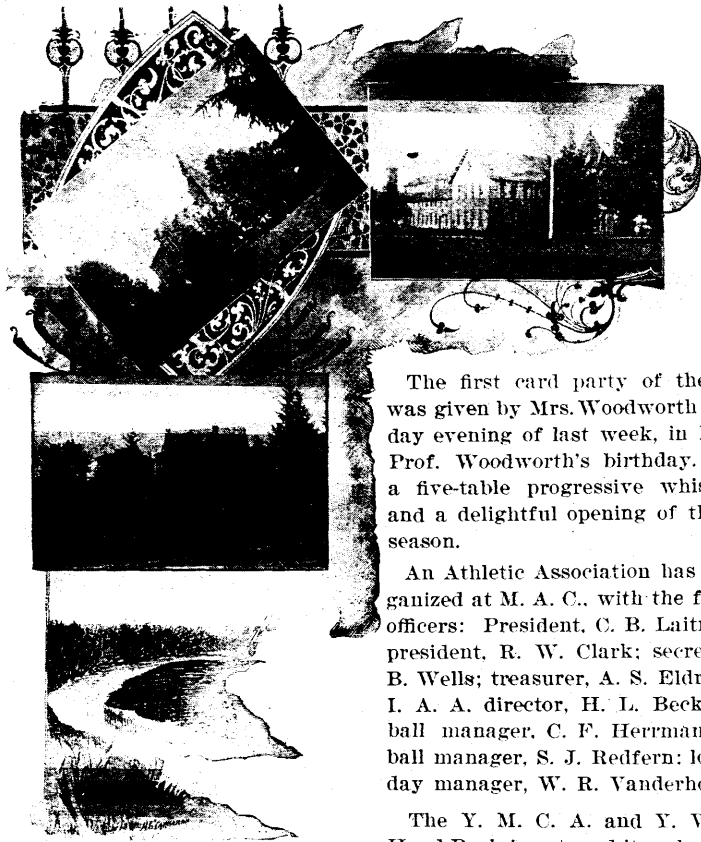
Football—M. A. C. vs. Alma.

M. A. C. and Alma played an interesting game of foot-ball at Eltom Park last Saturday. The teams were very evenly matched, so nearly that the game ended without either side scoring. The first half ended with the ball on M. A. C.'s 30-yard line, and the second with it on M. A. C.'s 15-yard line.

M. A. C. has improved considerably in her interference since last Saturday, but still runs back occasionally. One of our best ground gainers has this fault. You're doing well, boys. Play faster and harder and go down to Kalamazoo for victory.

"That College is a great benefit to the State, but more especially to the students, if they could appreciate it. They ought to remember their Uncle is doing a great thing for his nephews."
—W. H. Rayner, with '61.

"I have always been interested in the College and believe its curriculum is a splendid preparatory training for any young man before entering upon his life work, no matter what his chosen occupation."
—D. J. Gillam, with '84.



At the College.

E. W. Ranney, '00, spent Sunday at his home in Belding.

A. E. Wallace, '99m., entertained his brother, the 17th and 18th.

The Union Lits entertained their lady friends Saturday evening.

Harry Wright, of Alma College, visited friends here over Sunday.

ONE FARE FOR ROUND TRIP TO STUDENTS GOING HOME TO VOTE.

Henry G. Reynolds, '70, spent Saturday and Sunday visiting old friends at the College.

W. G. Amos, '97m., has been confined to his room by sickness for several days past.

M. W. Davenport and J. Steidle, of Milan, were out looking over the grounds last week Monday.

F. W. Robison, '98, entertained a couple of friends from the Mt. Pleasant Normal, Saturday, the 17th.

The college was favored with many visitors from the grand lodge of Odd Fellows and from the Daughters of Rebekah last week.

Mrs. I. H. Butterfield, who has been for several months in the Alma sanitarium, returned to College Saturday much improved in health.

R. J. Robb, '98sp, spent two days of last week in Ann Arbor arranging his course at M. A. C. to prepare him for a course in civil engineering at the U. of M.

Come to the Y. W. C. A. reception in Abbot next Friday evening, prepared to represent some book. All other things will be revealed unto you later.

B. O. Longyear recently took a civil service examination for the position of botanical artist. He was one of three out of about twenty applicants to pass the examination.

Charles Fisher, '00, entertained his brother and sister, Mr. Reno Fisher and Mrs. M. O. Fisher, and Mrs. Joseph Cleveland, last Friday. They were delegates to the grand lodges of Odd Fellows and Rebekahs.

For students who desire to go home to vote the railroads have granted a special rate of one fare for the round trip. Tickets will be good for November 2 and 3, and, if for more than 20 miles, on November 4.

The first card party of the season was given by Mrs. Woodworth on Monday evening of last week, in honor of Prof. Woodworth's birthday. It was a five-table progressive whist party and a delightful opening of the social season.

An Athletic Association has been organized at M. A. C., with the following officers: President, C. B. Laitner; vice president, R. W. Clark; secretary, G. B. Wells; treasurer, A. S. Eldridge; M. I. A. A. director, H. L. Becker; base ball manager, C. F. Herrmann; foot ball manager, S. J. Redfern; local field day manager, W. R. Vanderhoef.

The Y. M. C. A. and Y. W. C. A. Hand Book is out, and it makes a valuable little vest pocket memorandum book. In addition to the Christian Association constitutions and announcements, it contains a directory of the College population—over 400 names—their occupations, rooms or residences, and home addresses, gives the course in which each student is enrolled and the number of terms he has been in College.

From Former Students—Non-Graduates.

Dr. Beal, while corresponding with non-graduates for the purpose of perfecting his catalogue, received many letters containing good words for M. A. C. He has kindly allowed us to quote from some of them.

"The old M. A. C. is as near to me as ever."—A. M. Woodmansee, with '87.

"Have always regretted that I did not complete the course."—W. A. Norton, with '75.

"I like your school very much and mean to visit it sometime."—Daniel P. Burnett, with '69.

"I retain a warm love and interest for the institution and for those connected with it."—Frank Barnett, with '77.

"It has been the greatest regret of my life that I was unable to continue at the College until I graduated."—Geo. W. Phelps, with '70.

"I look back upon the three years spent at M. A. C. as the most pleasant and profitable of my student life."—Seneca N. Taylor, '60.

"The system of study, recitation, labor and recreation at the College has been of very great advantage to me."—Volney P. Bayley, with '64.

"I have always been proud of the achievements of my friends who have graduated from your estimable College."—H. L. Benschoten, with '84.

"I think that three of the happiest months of my life were those during which I was a student at the Agricultural College."—E. T. Pennoyer, with '93.

"The years spent at the College certainly made a better man of me and I wish more of our young men had a similar training."—F. C. Miller, with '70.

"With the best of wishes for the M. A. C. and with the promise that she will always receive a good word from me, I remain, etc."—F. O. Williams, with '84.

"My education has helped make my life a success."—W. F. P.

"I have always had a warm interest in the College and have secured at least two students and intend at no distant time to finish my course there."—H. P. French, with '92.

"I have always had the fondest recollections of my year at the College. My only regret is that I could not have taken a full course there."—D. W. Andrews, with '79.

"The Agricultural College is the farmers' college and ought to be patronized and sustained by them. It deserves their earnest support."—J. M. Knapp, with '60.

"I have always felt an interest in the College and always remember with pleasure the instruction received there. The College has my best wishes."—James A. Reid, with '81.

"Whatever success I have made in life I owe to such men as Abbott, Kedzie, Beal, Carpenter and others who taught me the true methods of how to study."—C. A. Smith, with '81.

"Will endeavor to present the invaluable advantage of the College to that class of rising young men who seek a good, thorough, practical foundation upon which to build."—L. C. Gibbs, with '92.

"I take great interest in all that pertains to, and am proud of our M. A. C. I have never ceased to regret my inability to continue at that institution and receive the instruction I so much feel the need of."—F. W. Redfern, with '65.

"It is now over thirty-six years since I was a student there, but the memories of those days are yet fresh in my mind. The old stump machine with the stag team that worked it so well, the old breaking-up plow (schooner as we called it) with its six yoke of oxen, led by the old black horses, 'Prof.' and 'Blucher,' are ne'er to be forgotten."—E. L. Brewer, with '61.

"I beg leave to express my sincere appreciation of the kindly interest you have taken in behalf of the boys who failed to procure their 'sheepskins,' and who consequently have had to hustle to keep even with the other fellow who had the honor and pleasure to walk away with his under his arm. Wishing the College continued prosperity, I am, very respectfully,"—D. C. Gillett, with '89.

Albert N. Prentiss.

PRESIDENT OSCAR CLUTE, FLORIDA AGRICULTURAL COLLEGE.

Of the men who wrought with ability, zeal and self-sacrifice in the organization or in the early development of the Michigan Agricultural College many have now gone over to the majority. Joseph R. Williams went many years ago. He did not live to see the realization of his noble dreams. John C. Holmes, than whom the College never had a more faithful friend, lived longer to work for the school and to rejoice in its dawning success, but he, too, went away years ago. George Thurber, whose genial spirit wrought for friendship as well as for science, left a sad place in many hearts when he was called away. Dr. Abbot stamped the impress of his pure character and his scholarly attainments on many succeeding classes, then some of us in sorrow saw and all of us in sorrow knew his gradual withdrawal to the nobler company. Recently the word has gone through the journals of science and of education of the death of Albert N. Prentiss, who passed on

from his home on the Cornell University campus at Ithaca, N. Y., on August 15, 1896.

AMONG THE FIRST STUDENTS AT M. A. C.

The first students at the Michigan Agricultural College were enrolled on June 13, 1857. Albert N. Prentiss entered some months later, and took his place among the more advanced students in the College. With some periods of interruption, caused by ill health or teaching, he continued as a student until the fall of 1861, when, with his class, he enlisted in a corps of topographical engineers. He was thus a student at the College in the first part of its formative period. He endured the difficulties and enjoyed the great advantages of that early day. Among his fellow students he was, from the first, well-liked, but his reserve of manner, which was thrown off only with the few, prevented him from being popular in the broad sense of that word. But the boys trusted him entirely, and respected him fully for his ability, his industry, and his thorough genuineness.

With the professors he was always among the first, for his clear and strong faculties, his observance of every duty, and his thorough self-respect commanded their attention. The quiet force of his character soon gained their confidence, and he was chosen by Prof. John C. Holmes, and later by Prof. Geo. Thurber, as foreman of the gardens, where he began that work in Horticulture that, as years went by, expanded into wide fields of usefulness.

His was the first class, that of 1861; my class was that of '62; hence we were not class-mates in the usual sense of the word, yet we sometimes recited in the same classes, for in that early day the professors were few in number, and classes of different years were sometimes put together in reciting, for the convenience of over-worked teachers. In the old "Saints' Rest" Prentiss roomed at different times in No. 1, No. 2, and No. 12; and his chums were A. F. Allen, Chas. E. Hollister, G. A. Dickey, H. D. Benham, George Haigh, and perhaps others whose names do not recur to me. My room was either No. 3, or No. 14, throughout my course, and my chums were my brother Lemuel, Thomas Haigh, S. M. Millard, and James H. Wellings. His chums and my chums were friends and companions. Rooming on the same halls, dining at the same tables, reciting often in the same classes, mingling freely with the same companions, I came to know Prentiss well as a student, and I had every facility for estimating his ability and his character.

OFF FOR THE WAR.

In 1860 came the famous Lincoln campaign. The whole country was excited. Of course the College boys were deeply interested, and the most of them rejoiced in the election of Lincoln. The events that rapidly followed his election and his inauguration on the 4th of March, 1861, roused every man. The enthusiasm among the College boys was intense. Some left College to enlist. The boys of the class of '61 were to graduate in November. In September Capt. E. P. Howland appeared at the College, seeking men for his corps of engineers. After some consultation among faculty and students it was agreed that members of the senior class could enlist, be absent from the College the remainder of the year, and be granted their diplomas in November. Thomas Haigh, of the freshman class, and O. Clute, of the junior class, were also allowed to

enlist. Many others desired to go, and some little diplomacy was necessary to prevent such an exodus as would have seriously injured the College. There was a feeling of disappointment among some of those who were not taken, whose bitterness was not entirely assuaged for many years.

Prentiss, with his hidden intensity, was one of the most earnest in this service. After some weeks of weary waiting by our company in St. Louis, and in camp on the beautiful prairie at Tipton, Fremont, who was leading his army into southwestern Missouri, was removed. We saw him pass through Tipton on his way to St. Louis, and soon after our company was ordered to the same place. Fremont's successor said he had no need of a company of topographical engineers, and we were allowed to choose between joining some other branch of the service or being mustered out. We chose to be mustered out, though within a short time many of the boys again enlisted, usually in companies formed at their homes and of their friends and companions.

During the hurried and exciting days of enlisting, of our stay at Battle Creek, of our journey to St. Louis, of the vexatious delay in that city, of our journey by train to Tipton, of our encampment there on the wide prairie in November and December, of the weary disappointment of Fremont's campaign and removal, of our own unhappy return to St. Louis and our mustering out, Prentiss was one of the most industrious, and most cheerful. His health was good; he was helpful to everybody; he made no complaints. But the full story of this service must be told at another time.

AGAIN AT M. A. C.

Most of the College boys were soon again at their Michigan homes. Some re-enlisted, some took up other duty. I returned to my class at the College, and graduated in '62. Prentiss spent the year in teaching in the high school at Kalamazoo, then in charge of Prof. Daniel Putnam. In the spring of 1863 he was chosen Instructor in Botany and Horticulture at M. A. C., and returned a few weeks later to the scenes of his student days. He had full charge of the department, and it began at once to show evidence of his clear and systematic methods. The students in his classes were deeply interested in their studies, their garden work was done with pleasure, for though the conditions for such work were then comparatively crude, the boys recognized in Prof. Prentiss one who knew what he was about, who desired to give them the best instruction in science and the best training in practical matters, and who respected their rights and feelings. Perhaps Will W. Tracy, or Richard Haigh, or some other one, will tell in the RECORD of his able work as a teacher and horticulturist, as well as of the friendly sympathy and companionship that were in his heart.

CALLED TO THE CHAIR OF BOTANY AND HORTICULTURE AT CORNELL.

In 1869 he was called to the chair of Botany and Horticulture in Cornell University. Of his life and work there, will not some one who knew of them intimately speak? After he left our M. A. C., I met him but very few times; for brief periods, and at long intervals. Not only space, but warm interest in different lines of work, separated us. I never saw him at Cornell. That he was for nearly 30 years the honored head of one of the important departments of this great university is

sufficient evidence of his industry and training, his ability and worth.

At the time when Prentiss was appointed instructor in Botany, in 1863, I was chosen instructor in Mathematics. Subsequently we were advanced to full professorship at the same time. We roomed in adjoining rooms on the second floor of College Hall, we were the only unmarried teachers then at the College, those with whom we could associate were not numerous, hence he and I were necessarily thrown much together. The woods and swamps in the vicinity of the College afforded an inviting field to the botanist, and we tramped or drove over the whole of them. In our student and teacher days were begun the trips to Pine Lake, Park Lake, and Grand Ledge which have remained a feature of College life unto this time. Two summers when we were young professors we camped for days during the summer recess on the beautiful banks of Park Lake, to fish, to hunt, to boat, to bathe, to botanize, "to loaf and invite our souls."

On all such trips Prentiss was a most agreeable companion. He was thoughtful for the pleasure and comfort of others, ready for whatever of work and enjoyment the occasion offered, amused and cheerful under any discomforts that came upon us, full of resources in overcoming any difficulties that arose. How full of calm pleasures were the days and nights of our life in camp! The lake gave a chance for sport, for science, for the cool refreshment of the morning or the evening swim; the woods and swamps were full of treasures with which to fill his botany-box whenever we chose to tramp; the waters, touched by the summer wind, broke in soothing sounds upon the shore but a few feet from our tents; the great pines spoke in soft murmurs above our heads, and showed balsamic odors upon our sleep.

HIS INFLUENCE WHOLESOME.

It is seldom that I have met a person whose whole mental and spiritual atmosphere was so pure and wholesome as was that of Albert N. Prentiss. In all the varied scenes and associations of student, soldier, and professorial life he showed always the clean mind and heart. He was keenly sensitive to any treatment from others that seemed unkind or ungenerous. This sensitiveness led him to appreciate the rights and feelings of others, and to refrain carefully from any word or deed that could injure their rights and feelings. No one ever thought that Prentiss had intentionally treated him unjustly, or had spoken of him an ungenerous word. His sensitiveness led to an almost undue fastidiousness of speech and conduct. No one at heart was fuller of good comradeship than he, but to many people he seemed reserved and formal. Only after friendship and confidence had conquered this reserve did the warm-hearted man, with genuinely human qualities appear. Then he was frank, genial, sympathetic. Yet it is to be said that only with a few was he ever able entirely to throw off his reserve. He could not "carry his heart upon his sleeve for daws to peck at." To many people he seemed, in greater or less degree, to dwell apart. It was the isolation of sensitiveness and thoughtfulness, not of selfishness and unkindness.

Perhaps no man was ever more incapable than Prentiss of manipulating men for the purpose of gaining moves on the checker-board of college life. To cater to the weaknesses and prejudices of students in order to gain their

support; to log-roll with professors in order to carry a point in faculty meeting; to flatter the president in order to win favors for his department; to button-hole members of the board in order to secure or to hold a position; to undermine a fellow professor or the president in order to wreak vengeance for some fancied ill or to secure some personal advancement—all this pitiful unmanliness which is sometimes seen in college politics—was as far from his nature as is darkness from light. His white soul would not soil itself by wading in such slime.

AN ARTIST—A LOVER OF NATURE.

Prentiss liked his work as horticulturist and as teacher. The true horticulturist is a lover of nature; he rejoices in her varied forms, in her enchanting tints. Added to this love of nature he must have the artistic genius to work with nature in so disposing flowers and shrubs and trees and grass and brooks and ponds and distant gleam of stream or lake or sea—all in a marvelous setting of cloud and sky—as to make the whole landscape a picture that throbs with the spirit of beauty. The painter, with some strokes of his brush, puts on canvas the colors in which he tries to copy nature; the horticulturist is nature's friend; she takes him into partnership, and together they make, on the broad earth-canvas, pictures of surpassing beauty. It was in this love of nature and with this artistic touch that Prentiss worked as horticulturist and landscape gardener. He began a work in the gardens, lawns, and groves of the Michigan Agricultural College campus which succeeding hands have developed and which, as time goes by, will develop into such beauty as to draw artists from far distant lands to look upon their loveliness.

AN ABLE TEACHER.

In teaching, as in everything else, Prentiss went quietly and intently about his work, *and did the work*. He knew the subjects he taught; he had a clear mind without any fogs of conceit or superstition; his command of the English language was excellent; he could understand and appreciate the difficulties of the student. He went directly to the point, roused the interest of his students by his own quiet earnestness, led them to work with eagerness. His manner as a teacher seemed to me most excellent. He recognized that his students were untrained and that mistakes might be expected; that they were sensitive human beings with rights and feelings that any man but a bully would respect; that they had desires for knowledge which he could stimulate and train; that they had abilities which deserved the best work that he was able to give them. With these qualifications his success was sure. Year by year well-trained students went out from his classes, many of whom today occupy positions of influence in the world of botany and horticulture. To arouse and instruct his students he depended wholly upon his knowledge of his subjects and his ability to present them. His lecture platform was never a place for browbeating the timid or the incompetent, or for taking an unfair advantage of some slight lapse of duty by holding the delinquent up to ridicule. Nor were his lectures strewn with stale stories and ancient jokes whereat the afflicted students were expected to laugh or else suffer diminution in their daily marks. In his classes there were no traditions handed down from year to year as to passages in certain lectures where the fishy odor would de-

mand the tribute of their clapping hands.

KNOWN BY HIS DEEDS RATHER THAN BY HIS WORDS.

Prentiss was mainly a worker rather than a speaker or writer. He taught well, but he wrote very little about teaching. He was an accomplished botanist, but the journals have few contributions from his pen. His greenhouses glowed with beauty that brought to him the keenest delight, but he seldom wrote of the wonders of the plant world that grew in luxuriance under his skillful hand. He sought expression in his work rather than in his words. If from year to year the effects of his plantings on the grounds grew more beautiful, if his greenhouses increased in the wonderful perfection of their contents, if the herbarium gained the specimens to fill in the gaps, if his students were inspired and instructed he was content. He seemed to have no ambition for the publicity of associations and conventions. To spread his thought and his knowledge by aid of printers' ink had for him small fascination. Perhaps in this too great reticence he was not wholly wise, for words are, in a measure, works. Inspiration and instruction may be given by the convention address or the published lectures not less than by the lessons in the class-room. But with Prentiss the work and not the word was paramount.

Perhaps this reticence was in a measure due to ill health. He was never robust. Scarcely was his daily strength sufficient for the daily work of the class-room and campus. He used what power he had in doing what he was in honor bound to do. The convention address, the magazine article, the monograph, the volume could await the coming of the day of strength; but, alas for us, that day for him came not on earth!

Lake City, Fla., Oct. 1, 1896.

The wages of sin is eight cents an hour.—P. V. R., '95.

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LANSING, MICH.

SUBSCRIPTION, 50 CENTS PER YEAR.

Business Office with ROBERT SMITH PRINTING
CO., Printers and Binders, 108-120 Michi-
gan Ave. West, Lansing, Mich.

Entered as second-class matter at Lansing, Mich.

For various reasons THE M. A. C. RECORD is occasionally sent to those who have not subscribed for the paper. Such persons need have no hesitation about taking the paper from the postoffice, for no charge will be made for it. The only way, however, to secure the RECORD regularly is to subscribe.

Official Directory.

Sunday Chapel Service—Preaching at 2:30 p. m.

Y. M. C. A.—Holds regular meetings every Thursday evening at 6:30 and Sunday evenings at 7:30. S. H. Fulton, President. C. W. Loomis, Cor. Secretary.

Y. W. C. A. regular weekly meetings for all ladies on the campus Tuesday evenings at 8 o'clock, in the ladies' parlors. Meetings on Sunday evenings with the Y. M. C. A.; Miss Edith F. McDermott, President; Miss Alice Georgia, Cor. Secretary.

Natural History Society—Regular meeting second Friday evening of each month in the chapel at 7:30. H. C. Skeels, President. W. R. Kedzie, Secretary.

Botanical Club—Meets first and third Friday of each month in Botanical Laboratory at 7:30. T. Gunson, President. W. R. Kedzie, Secretary.

Dante Club—Meets every Wednesday evening at 7:30 in Prof. W. O. Hedrick's office, College Hall. Prof. A. B. Noble, President.

M. A. C. Athletic Association—C. B. Laitner, President. G. B. Wells, Secretary.

Columbian Literary Society—Regular meeting every Saturday evening in their rooms in the middle ward of Wells Hall, at 7:00. E. H. Sedgwick, President. C. F. Austin, Secretary.

Delta Tau Delta Fraternity—Meets Friday evenings in the chapter rooms on fourth floor of Williams Hall, at 7:00. W. Judson, President. C. P. Wykes, Secretary.

Eclectic Society—Meets on fourth floor of Williams Hall every Saturday at 7:30 p. m. C. D. Butterfield, President. Manning Agnew, Secretary.

Feronian Society—Meets every Friday afternoon at 1:00 in Hesperian rooms. Miss Sadie Champion, President. Miss Marie Belliss, Secretary.

Hesperian Society—Meetings held every Saturday evening in the society rooms in the west ward of Wells Hall at 7:00. J. D. McLouth, President. R. H. Osborne, Secretary.

Olympic Society—Meets on fourth floor of Williams Hall every Saturday evening at 7:00. H. W. Hart, President. C. J. Perry, Secretary.

Phi Delta Theta Fraternity—Meets on Friday evening in chapter rooms in Wells Hall, at 7:00. W. G. Amos, President. F. H. Smith, Secretary.

Union Literary Society—Meetings held in their hall every Saturday evening at 7:00. E. A. Robinson, President. S. F. Edwards, Secretary.

Tau Beta Pi Fraternity—Meets every two weeks on Thursday evening in the

tower room of Mechanical Laboratory. G. A. Parker, President. E. H. Sedgwick, Secretary.

Club Boarding Association—I. L. Simmons, President. H. A. Dibble, Secretary.

Try and Trust Circle of King's Daughters—Meets every alternate Wednesday. Mrs. C. L. Weil, President. Mrs. J. L. Snyder, Secretary.

The Experiment Station.

By an act of congress, passed March 2, 1887, and familiarly known as the Hatch act, there was established in the Agricultural College of each state in the Union a department "to be known and designated as an 'Agricultural Experiment Station.'" The duties of these stations were somewhat obscurely defined by the original act, except that they were form experiments on topics bearing directly on the agricultural industry of the United States, and that their work was to be governed largely by the wants of the state in which they were located.

The stations are supported by annual appropriation by congress, and, unlike the other departments of the College, have no share in the benefits either of the land grant fund or state appropriations. They were connected with the colleges for reasons of economy of administration and because men competent to perform experiments of a scientific nature could be more readily found in the faculty of these institutions than elsewhere.

It had been the habit of the Michigan Agricultural College to issue bulletins prior to 1887. In fact it was required by law to do so. Since 1887, however, the bulletins issued, as well as the annual report of the College and Station, have been sent through the mails free to all the newspapers in the state and to such private citizens as have applied for them, and the number of farmers receiving them has enormously increased.

The administration of the affairs of this station is vested by the board in a director and council, consisting of the president, secretary, and heads of the agricultural, horticultural and chemical departments.

It is impossible in this short article to even enumerate the principal lines of investigation that have been conducted at the station, but I may illustrate something of the character of the work done by naming certain series of experiments that occur to me without looking over the report or giving much thought to the subject.

In the past the agricultural division of the Station has directed its attention to two broad lines of inquiry, one relating to economic questions concerning crops and forage plants, the other related to live stock and questions of breeding and feeding.

Without recalling the former valuable experiments in the culture of corn and other cereals I may refer to the recent work on millet and substitutes for clover to illustrate the work along the first line mentioned.

In a state as famous for its sheep as is Michigan, it is to be expected that a good share of the energies of the farm department would have been devoted to the solution of questions arising in the rearing and fattening of lambs. A long series of experiments with many of the common feeding stuffs in various combinations and under varying conditions, has been performed. The results have been scattered broadcast in the bulletins and have saved the farmers many times over the cost of the experiments.

Bulletins have been issued on the filling of silos and the use of silage. Dr. Miles, a former professor of agriculture of the College, was a pioneer in the introduction of this system of handling the corn crop in this country. The profit from the dairy industry has heretofore been so large that the farmer has not felt the need of practicing the economies of his business and building a silo until recently. There seems this year to be a general awakening, and farther bulletins on the construction of silos and the use of silage are in preparation.

Much attention is now given to the dairy and much valuable work along that line has already been done.

The horticultural interests of the state are both large and varied, naturally, therefore, the equipment of the station for work in fruit culture and gardening must be extensive and the experiments performed must be well planned and long continued.

Besides the important tests of new varieties carried on at the home Station and at the branch Station at South Haven, experiments in the culture of small fruits and garden vegetables, on greenhouse work and vegetable forcing; on the diseases of fruits and vegetables; on the prevention of insect ravages and various other important lines of horticultural work are carried forward every year. The value of the results of the horticultural work of the Station to the fruit growers and gardeners of the state is beyond calculation.

The work of the chemical department has long been recognized as one of the most valuable contributions of the College and Station to the farming interests of the state. The work has been performed along so many lines that it is impossible to mention one without doing injustice by inference to the other. I cannot avoid, however, referring to the fertilizer work which saves annually thousands of dollars to the purchasers of commercial fertilizers; the work with varieties of wheat both as to their economic values and the strength and other qualities of the flour; the investigation in the chemistry of plant nutrition, and finally the investigations of the best methods of reclaiming swamps and rendering valuable the sandy lands in the upper part of the lower peninsula.

It is doubtful whether any other station in the Union has published as many or as important bulletins on economic entomology as has this Station. The fruit growers have been kept informed of the proper methods of fighting new insects as soon as they have made their appearance in the state. The farming community has also been benefited by the vigilance of the entomologist in foreseeing and warding off preventable invasions of noxious insects.

Among the most important publications of the botanical department of the Station, the works on forage plants and on the flora of Michigan rank high. The time of the botanist, however, is largely taken up by the identification of plants and seeds and answering letters of inquiry in regard to plants both new and old, which attract the attention of citizens in all parts of the state.

The bulletins from the veterinary department have been helpful to the live stock interest of Michigan and are destined to be of more widespread value when the results of the investigation of the bacteriologist are added.

Each department lays out the work of the year in the early spring and submits its proposition to the council, where the different phases of the experiments are correlated, so that as the

investigations proceed there may be no friction or omission and the work of the entire Station may present a harmonious whole.

The details of each experiment are thought out before the work begins. At the conclusion of the experiment its history and result are written up in bulletin form and submitted to the director and council, who carefully review it, hoping to detect and correct possible mistakes. After the bulletin is approved it is printed, put in envelopes and sent out.

The number of people who receive the bulletins is rapidly increasing, and now exceeds 20,000. The College, therefore, aids in educating not only the students who attend its regular courses, but a host of farmers in this and other states as well.

Agricultural Bacteriology.

CHARLES E. MARSHALL.

This branch of bacteriology is of comparatively recent origin, and its resources are undeveloped. For the past dozen years medical bacteriology has absorbed so much attention, because of its vital relation to mankind, that all other branches of this science have been neglected. To state what is meant by agricultural bacteriology today does not indicate what it will be twenty years hence. However, at the present time it is so formidable as to be appalling. While scores of workers are digging up the wealth found in the mine of medical bacteriology, single individuals only number the workers in the mine of agricultural bacteriology. This latter branch embraces not only as much as the medical branch, but its usefulness is felt in several departments. It is these departments of usefulness which we wish to review. They may be presented in the following order: Bacteriology in its relation to

1. Farm hygiene,
2. The diseases of domestic animals and plants,
3. Fermentations,
4. The dairy, and
5. The soil.

The hygienic condition of the home and the farm is no mean factor in the development of agriculture. Modern hygiene is founded largely upon bacteriological principles. Dust and filth about the house, decomposition in cellar and yard, and uncleanly habits of the person, furnish a nidus for bacteria. The wastes of the family and the cesspool, unless confined in water tight apartments, saturate the ground with danger. The water supply is near by and underground currents are numerous; these easily convey deadly bacteria. Water may prove dangerous not only to people but also to cattle, horses and other animals. It is not a rare occurrence to trace out the death of several valuable horses on a single farm to an infected well. The food also furnishes enemies in various forms. Meat may be burdened with poison, either when killed or after standing for some time. A cook has a grave responsibility when she determines what shall and what shall not be eaten, for it is not infrequent to hear of a whole family poisoned by the use of infected meat or milk, which may result from infected animals or decomposition. A careful watch is necessary. The farm household ought not to be ignorant of prophylactic measures which are the means of protection against contagious diseases; and ought to be able to intelligently disinfect the lot when infection is present. These

are practical measures and are of as much importance as arithmetic and geography.

The possibilities of infection from animals sick or dead with infectious diseases are indeed great, unless a knowledge of the habits of bacteria is acquired. It is established beyond a doubt that tuberculosis often finds its way from the herd to the family. To obviate such communication well directed care is all that is essential. Many a farmer has succumbed to blood poisoning after handling horses with glanders, but did not realize that he himself had glanders. Case after case is reported where anthrax has announced itself in a human being, contracted from sick cattle. With each contagious disease to which domestic animals are subject, instances of this kind could be multiplied. These are sufficient to illustrate how significant are these diseases.

In plants, so far as known, bacterial diseases are not communicable to man and animals; yet the contagion that exists sweeps across a country, affecting its special plant, with amazing rapidity. Many obstacles are to be surmounted in the study of this phase of bacteriology, yet much effective work has been done. The methods connected with animal diseases are better defined and the conditions for experimentation more favorable. Usually in bacterial plant diseases the time of operation is limited to a few weeks of each season; consequently season after season may pass before any results can be obtained. Notwithstanding, the time is near at hand when more workers will be added to the present small corps, and practical conclusions will be reached.

When we speak of fermentation we are inclined to imagine the production of wine or the manufacture of beer. It is true that these have been and are receiving important consideration, still many fermentations of different kinds surround the farmer. The wife is surprised that her canned fruit should taste of alcohol or acid after the precautions she had taken. She forgets, however, that cells were about when she was canning. These found their way into her cans and soon began converting the sugar present into alcohol and acids. Had she known what bacteriological care in the preservation of media meant, she perhaps might have been able to intercept the cells. The farmer often wishes to place a barrel of cider away for the winter, but is disappointed because it changes to vinegar so quickly. The best conditions for keeping it longest without the addition of harmful chemicals are unknown to him. He buys a concoction which is recommended for checking the fermentation, but little knows what poison is within. Sickness of animals has been frequently attributed to silos. What is the explanation? The usual fermentation may take place and this will then be followed by the action of bacteria producing intense poisons, which may not be in any way perceptible to the naked eye in the ensilage, yet may exist in a considerable quantity. Fermentation is always in process about our homes and we are accustomed to look upon it as a natural phenomenon inexplicable to man.

The dairy is a branch which has been known to bacteriologists for many years. Treatises upon dairy bacteriology have been written setting forth the necessity of observing certain bacteriological principles and methods. To eradicate a certain species of bacteria which has produced evil in the dairy,

unless it is known what sterilization signifies, is work in the dark, and nine chances out of ten the bacteria in question will leave voluntarily before they are exterminated. A discussion of what bacteria do to milk would be too much of an undertaking in this article, but suffice it to say that the diseases of milk produced by bacteria are numbered by the dozens. The industrial side of dairying is much interested in the Pasteurization of milk—a means of eliminating most of the bacteria from the milk—and in the ripening of cream by pure cultures of bacteria. The entire work of several bacteriologists has been devoted to the solutions of problems associated with milk.

Much attractiveness has been offered to bacteriologists by the investigations of soil. Although in its infancy, this is perhaps the most promising field now opened, because the indications point to a deep richness not possessed by the better known branches. It seems a peculiar thing that there are plants which require the association of certain species of bacteria to grow. These bacteria are necessary to provide suitable food for the plants. Many of the constituents of the soil cannot be assimilated, unless there are the specific bacteria present to render them soluble. Micro-organisms are needed in the fertilization of a soil. Land which has been under water and containing an abundance of the elements required for productiveness is worthless for a period of time; it is sour indifferent land until it has been properly inoculated and subjected to the action of certain micro-organisms. Like many other things, this has been attended to by the farmer unconscious of what he was doing; he, of course, had his way of accounting for his movements.

We have now reviewed very briefly and only in small part those phases of bacteriology which are regarded as belonging to agriculture. The extent of the field is wide and its possibilities are exceedingly great.

Department of Veterinary Science.

M. A. C.

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C. D. WOODBURY

News from Graduates and Students.

E. M. McElroy, '93, is taking post graduate work at the university.

S. B. Young, '96, is teaching school two miles from Imlay City.

Paul Woodworth with '90, U. of M., '93, is stumping Huron county for McKinley.

Andrew B. Goodwin, '88, is practicing law at Carson City, Mich. He is city attorney and clerk.

We see in the *U. of M. Daily* that L. A. Wilson, '94, has been elected toast-master of the '99 laws.

L. P. Fimple, '96, is taking the law course at the U. of M. Address 23 North University avenue.

W. L. Cummings and R. B. Pickett, '93, took the civil service examination in Grand Rapids last week.

Guy L. Stewart, '95, is principal and teacher of history and English literature in the Gaylord schools.

W. J. McGee, '96, is working on the board of trade in Chicago. His address is 75 Commerce Building.

Arthur J. Beese, with '93, attended the Petley-Sipley wedding last week and also made the College a short visit.

E. E. Faville, a special student here in the summers of '95 and '96, is director of a school of horticulture in Nova Scotia.

E. D. Partridge, '96, writes that he is comfortably settled at Provo City, Utah. He is busy teaching and enjoys the work very much.

P. V. Ross, '95, is secretary of the Mullane, Idaho, silver club. He says that Butte City, Mont., supports ten silver orators in the East.

Prof. U. P. Hedrick, '93, of the Corvallis, Oregon, Agricultural College, has just completed an extensive trip through eastern Oregon in the interest of horticulture.

The botanical artist recently appointed to a position in Washington, D. C., is an assistant to G. H. Hicks, '92. Mr. Hicks is soon to have another assistant, making four in all.

Miss C. L. Holt, who was a special student in drawing during the spring and summer terms, has entered the Massachusetts Normal Art School, Boston, for a three years' course.

Our Washington correspondent says: "Briggs is getting along first-rate. He went to Philadelphia yesterday to test some delicate physical apparatus. He is an original worker and will make his mark."

Our alumni should be more prompt in reporting such events as the following: Married, at the residence of the bride, Pittsfield, Ill., August 6, 1896. Henry B. Winegar, '91, to Miss Mollie E. Rian. At home "on a farm," Utica, Michigan.

C. H. Briggs, '96, is taking post graduate work in French, chemistry, calculus and electrical measurements at the U. of M. J. L. Sutherland has entered the law course at the same place, and the two room together at 23 North University avenue.

E. D. A. True, '78, Armada, Mich, is putting into practice the principles set forth in his thesis, an abstract of which we published in the *RECORD* October 6. "I am running my gang-plow and six every day now. I generally plow four acres in a day, but often do more."

Of all sciences, there is none where first appearances are more deceitful than in politics.—*Hume*.

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Since our academic year now continues through the winter, when all nature presents little to attract, there is more need than ever of turning our attention to museums as a means of instruction and amusement.

A prominent professor in speaking of an agricultural museum as a valuable adjunct to an agricultural college, said: "What do you need of such a museum—what is it worth after you get it?" No doubt he was thinking of collections such as are sometimes seen about state capitols, in connection with the headquarters of an agricultural society. The museum in such cases too often consists of a heterogeneous mass of dusty corn stalks, gourds, jars of wheat, odds and ends, all poorly labeled, unclassified and not well put up in cases. There is little to be learned from such a collection.

It seems almost incredible, but it is true that very few of the present college population, including professors as well as students, ever saw the botanical museum which was burned in 1890. Although new and incomplete and costing but little money, it was much frequented and received many compliments. It was unique and in many respects unlike anything in this country. In some respects it resembled a portion of the national museum at Washington more nearly than anything we can name. In a sense it might have been called an agricultural museum, as many of the collections were arranged with reference to their bearing on the subjects of the agricultural course. Some of the leading features of the old museum are here given as a suggestion of the things which might make up a new one.

Here was the best collection of Indian corn the writer has ever seen, including varieties, monstrosities and ways of preparing for food. One plant was sixteen feet and a half high. There were twenty or more kinds of sorghum, showing peculiarity of the panicle; wheat, oats, rye, barley, rice were well represented, including the details of the manner of preparing for food. Hybrids of wheat and rye were shown. There were 250 kinds of beans, many of peas, cow peas, plants of clovers as well as seeds, a cotton plant of full size in fruit, with numerous miniature bales, spools, etc. A considerable collection of the kinds of coffee and tea, castor-oil beans, chickory, vegetable drugs, dyestuffs, gums; a large collection of seeds, such as are grown in the vegetable garden and flower garden; plants affected with rusts, smuts, mildews and other fungi; a lot of puff balls and mushrooms, a popular illustration of mosses, lichens, algæ; gourds, various kinds of galls, monstrosities of fruits, roots, stems; a good collection of fossil plants. A leading feature of the museum was the collection of timber, considerable of which had been on

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