

The M. A. C. Record.

VOLUME 2.

LANSING, MICHIGAN, TUESDAY, JUNE 1, 1897.

NUMBER 21.

Our Faculty.

Perhaps the most important thing that young men or women should consider in choosing a college is the kind of men they will find for instructors when they begin study. The faculty of the college is the college. It is no boast to say that few institutions in this country command the services of a stronger faculty than does this institution. They are select men, many of them well known in the state, and hardly need any introduction to Michigan people. Nevertheless we take pleasure in presenting the portraits of most of them, together with very brief sketches of their careers.

The young person who is thinking of going away to college should not miss the thought that at this institution the study comes directly under the instruction of the professors themselves. The instruction is not left to the immature work of young assistants, but as soon as a man enters college he begins to receive instruction under men who are competent to give the best instruction in their lines that can be given in this country.

This is something that every young person should think of seriously; it is an advantage that he will have at this institution.

PRESIDENT J. L. SNYDER.

President Snyder was born and educated in Pennsylvania; received his education in the country schools, and graduated at Westminster college. After graduation he taught school, and became superintendent of the schools of Butler county. After serving in this position three years, he took charge of a ward school in Allegheny City, one of the largest schools in the country, having over 30 teachers and 1,500 pupils. He succeeded in adding to this school a kindergarten and an industrial department, including sewing and cooking for the girls and manual training for the boys.

President Snyder has spent the greater part of his life upon the farm and among country people, and has traveled extensively, both in this country and abroad. He is comparatively a young man, being 37 years of age, and stands before the students as an example of what an ambitious country boy can make of himself although his possessions may consist of little but rugged health and earnest, dogged determination.

DR. R. C. KEDZIE

is the oldest member of the faculty, both in age and in years of service. He was born in 1823 in the state of New York, his parents soon after coming to Michigan. He graduated in the classical course of Oberlin college in 1848, and with the first medical class of the University of Michigan in 1850. He taught school for a couple of years, and practiced his profession for the ten years intervening up to his appointment as Professor of Chemistry at the College in 1863. He served a year in the army as surgeon.

Dr. Kedzie has become known to a multitude of farmers all over the state, who have recognized in him a successful champion of the application of the science of chemistry to agriculture. He has helped them to solve many of the hard problems of their business, and has fought to the death much of the

imposition and fraud practiced upon the husbandman. It is not saying too much to state that he has done more for agricultural chemistry than any other man in this country.

DR. W. J. BEAL.

Dr. Beal graduated at the University of Michigan in the classical course. After teaching for a time he entered the scientific school of Harvard University, and for one and one-half years studied botany, zoology, and comparative anatomy under Asa Gray and Louis Agassiz. He came to M. A. C. in 1871 as Professor of Botany and Horticulture, and in 1881 became Professor of Botany and Forestry, which position he now holds.

Dr. Beal is the author of many reports, lectures and papers, and a frequent contributor to agricultural and horticultural papers. In 1887 he published a volume on the Grasses of North America, and is now at work on his second volume.



PRESIDENT J. L. SNYDER.

His work among, and for, the farmers is well known, and there are thousands in all portions of the state that personally know Dr. Beal.

DR. E. A. A. GRANGE,

Professor of Veterinary Science, graduated at Ontario Veterinary College, and afterwards became Professor of Veterinary Science at the Ontario Agricultural College at Guelph, also holding the position of live stock veterinary inspector of Ontario. He came to M. A. C. in 1883, first as lecturer, then as Professor of Veterinary Science. Shortly after that time he became State Veterinarian of Michigan, which position he has held to this date. His courses in veterinary science are very popular among the students.

PROF. L. R. TAFT

is the well known Professor of Horticulture and Landscape Gardening. He is a graduate of the Massachusetts Agricultural College, and also served as assistant professor in that institution. After three years' work as Professor of Horticulture in the Missouri Agri-

cultural College, he came to our College in 1888, and since taking charge of the horticultural department has rebuilt the greenhouses and forcing house, and completed a fine horticultural laboratory, the first of its kind in the country. He is author of a valuable book on Greenhouse Construction.

DR. HOWARD EDWARDS,

Professor of English Literature and Modern Languages, is a Virginian by birth, being graduated from the Randolph-Macon College in 1876. He afterwards studied abroad, both in Germany and France. After a few years as principal of Bethany Academy and in public school work, in 1885 he became Professor of English and Modern Languages in the Arkansas Industrial University, which position he held until accession here in 1890. In 1891-2 Dr. Edwards spent six months in study in Paris. Dr. Edwards personally has charge of classes in literature and is a source of inspiration to all students

appointed deputy collector of customs at Port Huron, which position he resigned to accept his present one. Mr. Butterfield is also secretary of the State Board of Agriculture and is a member of most of the leading agricultural associations of the state.

PROF. CLINTON D. SMITH,

Professor of Agriculture and Director of the Experiment Station, was born at Trumansburg, N. Y., in 1854. His early education was received in the district school and academy. He graduated from the scientific course of Cornell University, with the degree of B. S. in 1873, and M. S. in 1875. For a short time he followed the teaching profession in New York city, then studied law and was admitted to the bar in 1879. In 1880 he engaged in the dairy business in Illinois and pursued this line of work until 1889, when he became assistant at the Cornell Experiment Station. In 1890 he was appointed director of the Experiment Station and Professor of Agriculture in the University of Minnesota, which position he held until 1893, when he came to the Michigan Agricultural College. In 1893 he organized the first special dairy class of this College, and in 1894 the second. January 1, 1895, he was appointed Director of the Michigan Experiment Station.

PROF. CHARLES L. WEIL,

Professor of Mechanical Engineering, was born at North Andover, Mass., in 1865. He graduated from the high school of that place in 1881, then entered a business house in Boston for a year, and again resumed his studies and began practical engineering and shop work. In 1888 he graduated from the Massachusetts Institute of Technology, and soon afterward secured a position as draughtsman with H. P. Worthington & Co. of Brooklyn, which he resigned to accept a place as instructor in the Lehigh University in 1891. Professor Weil entered upon his work here in September, 1893, and since that time has overseen the building and equipment of the foundry and blacksmith shop and the remodeling of the wood shop.

PROF. W. B. BARROWS,

Professor of Zoology and Physiology, is a graduate of the Massachusetts Institute of Technology. In 1879 he sailed for Buenos Ayres, Argentine Republic, under contract as a normal school teacher, but was transferred to the National College at Concepcion as assistant Professor of Chemistry and Physics, and served during his second year's vacation as geologist on an exploring expedition. He was Instructor in Biology at the Wesleyan University, Connecticut, and also Instructor in Botany at Trinity College, Hartford, Conn. He served eight years as Assistant Ornithologist of the United States Department of Agriculture in Washington. He came to Michigan in 1894. Prof. Barrows was one of the charter members of the American Ornithologists' Union, is an active member of most of our leading scientific societies and has recently been elected to the Zoological Society of France.

MISS EDITH F. McDERMOTT,

Professor of Domestic Economy and Household Science, is a native of Meadville, Pa. She received her literary training in the high school at Meadville, and also in Allegheny Col-

who have ever been in his class room.

PROF. H. K. VEDDER,

Professor of Mathematics and Civil Engineering, is a native of New York, graduating from the civil engineering course at Cornell University in 1887. He came to the College in 1891. He has had considerable experience in practical engineering work.

LIEUT. H. H. BANDHOLTZ

was detailed a year ago as Commandant in charge of Military Science and Tactics at this institution. He is a native of Michigan, doing work at the Michigan Military Academy and graduating from West Point in 1890. He has recently been appointed as first lieutenant in the United States army.

I. H. BUTTERFIELD,

the Secretary of the College, was born at Utica, Mich., in 1840. He attended the common schools, academy and State Normal School, and soon after went overland to California. He then returned to Michigan and was engaged in farming and stock raising in Lapeer county until 1893. In 1889 he was

lege, located in the same city. On the completion of her work in these schools, she took a very thorough course along the lines of domestic economy and household science in Drexel Institute, Philadelphia. After graduation she was placed in charge of the girls' department of a large industrial school. In this position she organized a line of work in cooking, sewing, and allied subjects, which was very successful and gave her a reputation which extended far beyond the confines of her native state. She took charge of the women's department of this College one year ago.

PROF. FRANK S. KEDZIE,

Adjunct Professor of Chemistry, was born at Vermontville, Mich., May 12, 1857. He received the usual common school education, attended a private school for a short time, and graduated from the Michigan Agricultural College in 1877. During 1877-8 he was cor-

the Michigan Agricultural College in 1886. In 1890 he graduated from the mechanical engineering course of Cornell University with the degree of M. E. While at Cornell he took special work in electrical engineering. He became Instructor in Physics at the Michigan Agricultural College in 1887, and in 1889 was accorded the position of Professor of Physics and Electrical Engineering. In 1892 he attended the University of Berlin.

PROF. ALVIN B. NOBLE,

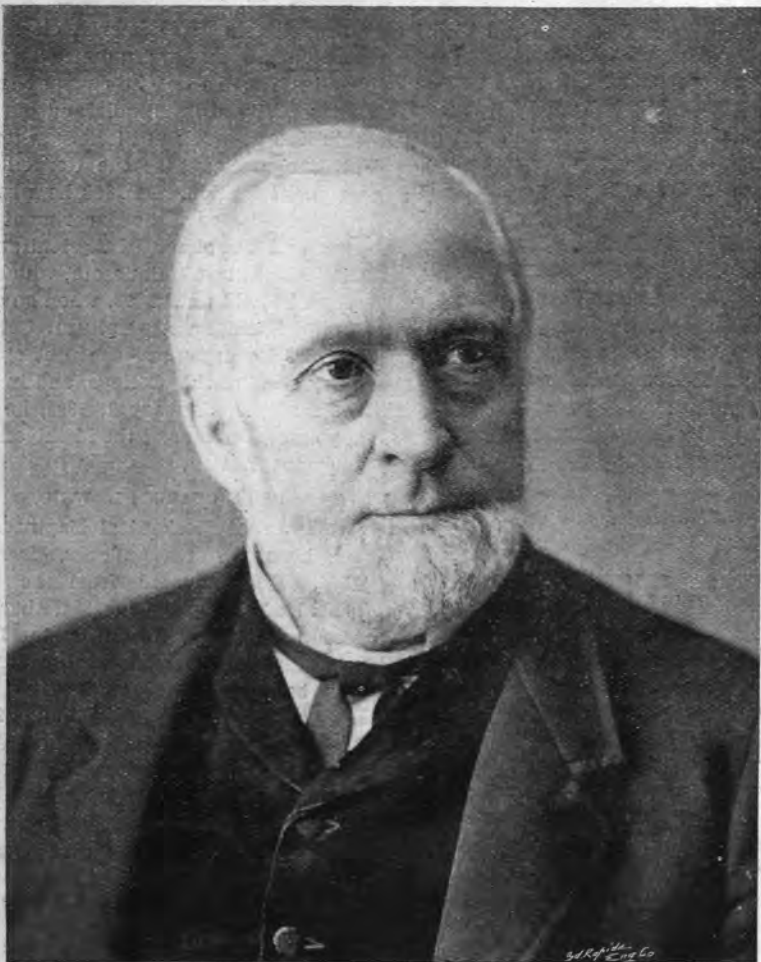
Assistant Professor of English Literature and Modern Languages, was born in Iowa in 1862. He attended a regulation district school and then a few terms at Howe's Academy, Mt. Pleasant, Iowa. He graduated from the philosophical course of the University of Iowa in 1887, ranking second in his class. One year was then employed in the study of English at his Alma Mater, and another as principal of the

periment Station Botanist, was born in 1842 in New York state, and entered Mexico Academy in 1857. In August, 1861, he entered the army, and after a serious illness was discharged in April, 1863. He began his botanical studies in July of the same year, studied medicine in 1864, and took the junior course

Instruction in Practical Agriculture.

CLINTON D. SMITH, PROFESSOR OF AGRICULTURE.

The instruction in practical agriculture begins in the first term of the freshman year by a daily study of two



R. L. Kedzie

respondence clerk to Dr. H. B. Baker, secretary of the State Board of Health, and the following year read medicine. In 1880 he was appointed Assistant in Chemistry, which was followed by the position of Assistant Professor in 1887, and his present one in 1890, receiving his M. S. in 1882. During the winter of 1890-91 he studied at the University of Berlin under Prof. A. W. Von Hoffmann.

PROF. WILLIAM S. HOLDSWORTH,

Professor of Drawing, was born in London, England, in 1856. His parents soon after moved to this country, and here he received a public school education. He graduated from the Michigan Agricultural College with the class of 1878, and afterwards studied art at Boston and elsewhere. Draughting and wood engraving then occupied his time for several years. Prof. Holdsworth came to his present position in 1887.

PROF. PHILIP B. WOODWORTH,

is Assistant Professor of Physics. The physical department of the College owes its organization to his efforts. Professor Woodworth graduated from

Bellevue (Iowa) high school. Professor Noble assumed his present position in August, 1889.

PROF. WILBUR O. HEDRICK,

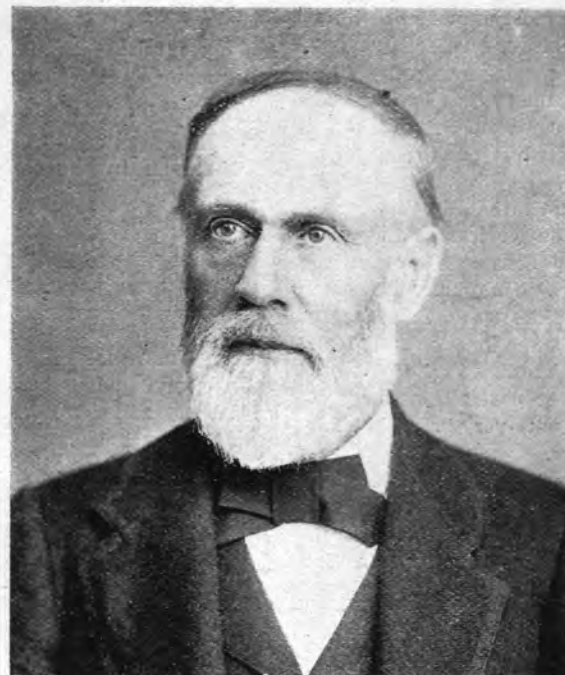
Assistant Professor of History and Political Economy, was born in 1868 in Indiana. His early life was occupied after the manner of the usual school and farm life, first in Indiana and afterwards at Harbor Springs, Mich. Graduating from the Michigan Agricultural College with the class of '91, he was at once appointed Instructor in Rhetoricals, and in 1893 to his present position. Taking a course in economics and history at the University of Michigan, during vacations, he received his M. S. in 1895.

PROF. WARREN BABCOCK,

Assistant Professor of Mathematics, was born in Washtenaw county, and graduated from this College in 1890. After two years' absence, he returned to the College, acting as Assistant in Mathematics, and soon assumed his present position.

PROF. CHARLES F. WHEELER,

Assistant Professor of Botany and Ex-



DR. W. J. BEAL.

in the medical department of the University of Michigan in 1866-67. Mr. Wheeler was appointed Instructor in Botany at the Michigan Agricultural College in the fall of 1889, graduated in 1891, and was appointed Assistant Professor of Botany in 1896.

PROF. HERBERT W. MUMFORD,

Assistant Professor of Agriculture, is a native of Michigan. He secured his education at the school in his district, the Hanover high school, Albion College, and the Michigan Agricultural College, where he graduated in 1891. For four years after graduation he had

hours' duration of specimens of the different breeds of live stock. This is kept up until the student becomes a somewhat expert judge. This work with live stock is continued in the winter term of the sophomore year, by an experience continued through six weeks in feeding, in the barns and stables, the College flocks and herds. In the last half of the same term six weeks are spent in the dairy, studying the best methods of the manufacture of butter, and later, we hope, cheese. A brief course of lectures follows in one of the succeeding terms on the



DR. HOWARD EDWARDS.

charge of a large stock farm, and commenced his present work in the fall of 1895.

MRS. LINDA E. LANDON,

our accomodating librarian, graduated from the Niles high school as valedictorian of her class. She was for two years a teacher in the Kalamazoo public schools. She was married to Rufus W. Landon in 1877, and came to Michigan Agricultural College in 1891.

breeding and management of domestic animals. If the student elects in his junior and senior year to make some line of live stock work his specialty, he is given advanced study in some phase of the work, either the chemistry of cattle foods combined with practical feeding, special work in the form of animals and what it indicates, combined with observations on line breeding and other methods of securing the

best types, or some special line of work like the breeding and feeding of poultry.

The study of the soil itself and methods of management begins also in the freshman year with the mechanical analysis of soils and the beginning of soil physics. This is continued through the spring and fall terms of the sophomore year by field work with crops and drainage. Later in the course, after a partial drill in horticulture, if the student elects as his specialty some line of crop or soil work, he is afforded opportunity to study in the fields and laboratories, either the present methods of growing any particular kind of crops and improvements of the same, or some branch of the chemistry and physics of the soil itself.

As far as possible the teaching in practical agriculture is done in the



PROF. CLINTON D. SMITH.

fields and barns and in the hours heretofore devoted to manual labor, which is made one of the elements in the education. The College is now well equipped with animals, machinery and land for giving this practical instruction, which will be broadened in its scope in the future.

The teaching of this subject is envied by a good many difficulties incident to its very nature. The succession of the seasons compels the teaching of certain topics at certain definite times, regardless of their logical sequence in the course. In many divisions of the work an instructor can handle but few students at a time, and hence a relatively large number of instructors is required. Much of the work must be performed in the field, and the frequent interruptions by rain tend to lessen the interest and the enthusiasm of the students. Notwithstanding these difficulties the instruction in practical agriculture cannot fail to be of the utmost importance to the student who will be a farmer after leaving college.

The College Grounds.

M. L. DEAN, ASSISTANT ON EXPERIMENT STATION.

The College grounds contain about eighty acres of land running west along the north bank of the Red Cedar river, in an irregular triangular shape, reaching a point at the west entrance about three miles from Lansing.

The soil of the campus is very diversified, ranging from the firmest yellow clay to deep marsh muck and the poorest sand with a quick-sand subsoil. This, together with the uneven surface and numerous drains, has necessitated great effort to perfect the plans of the landscape gardener and bring the grounds to their present condition.

The original plans of the grounds at the time of the establishment of the

College were formulated by Mr. J. C. Holmes. About 1874, Mr. Adam Oliver, a landscape gardener of Kalamazoo, revised the plans, and his report to the State Board of Agriculture was so satisfactory that the following resolution was presented: "Resolved, That Mr. Adam Oliver's report of plans for our College grounds be accepted, and that no future board be granted power to change them." It is needless to say that it was not adopted, when we see the yearly improvement.

The essentials for a perfect plan of landscape gardening, such as a beautiful lawn, gigantic trees and nature's winding stream, were provided. The style is neither geometrical nor picturesque, but diversified.

Upon entering the grounds from the west gate, at which is the terminus of the Michigan avenue line of the Lansing street railway, you follow the north bank of the Red Cedar river, which is high and steep, deeply draped with a vesture, as nature placed it, of a large variety of trees, shrubs and vines indigenous to Michigan.

As you reach the high ground near the President's house a scene of rare beauty is before you, and you find yourself looking out upon and across a natural park, consisting of stretches of velvety lawn shaded by the native oaks that have been spared, together with clumps of evergreens and other shade trees, including every variety of tree grown in Michigan and many from other climates.

As you gaze southeast from the President's house your eye catches a glimpse of the armory, in front of which is a fine drill ground encompassed by groups of beautiful shrubs and trees. Beyond are the greenhouses filled with luxuriant plants, which are things of beauty at all times. Near these stands a neat, red brick building, the home of the Union Literary Society; but this is overshadowed by the massive brick structure, Wells Hall, one of the large dormitories, standing about 100 feet to the southeast.

Leaving the elevation, following the cement walks, which encircle and traverse the entire grounds, you pass down "Faculty Row," the quiet, shaded homes of the College professors, each house being surrounded with trees that defy the sun's piercing summer rays.

Leaving "Faculty Row" and going south, you reach a clump of trees near the center of the campus, where you find one of the ornaments of the grounds, a huge boulder placed there by the class of '73. Looking west across a ravine that has been changed into a beautiful botanical garden that contains one of the best collections in America for the study of botany, you see Abbot Hall, a grand red brick building, named after the second president of the College. It is now the ladies' dormitory. To the south one finds himself facing College Hall, beyond which you might catch a glimpse of the X ray from the physical laboratory located in the north end of the chemical building.

At the east of College Hall is the large dormitory, Williams Hall, for young men, in which are located the Y. M. C. A. rooms, as well as boarding club rooms in the basement and society rooms on the fourth floor.

In the rear of this building, at some little distance, is seen the mechanical class rooms, work shops, and heating plant, to which, through the generosity of our honorable legislators, we hope to attach a new electric lighting plant.

Leaving this and going east, one

passes the veterinary laboratory and numerous stock, grain and tool barns, and reaches the agricultural laboratory, north of which are the botanical and horticultural buildings, with forcing houses, gardens and orchards in their rear.

This completes the circuit; but looking westward toward the place from whence you came, the view is intercepted by the library and museum building, containing the President's and Secretary's offices, and you say in words of one who visited M. A. C. during the summer of '96 after viewing nearly every college campus in the northern states: "These are the grandest college grounds I ever saw."

Chemistry as Related to Agriculture at M. A. C.

DR. R. C. KEDZIE, PROFESSOR OF CHEMISTRY.

The art of agriculture is as old as human society. The hunter and his family were solitary; with the herdsman came in nomadic life, but with the husbandman came in fixed habitations, the basis of human society by reason of denser population. In earliest history corn and wine, the fruit of field and garden, are as often mentioned as the peculiar charge of shepherd and herdsman. The spontaneous productions of the earth, whether plucked from the soil or derived from the chase, are insufficient to sustain a dense population, and herdsman and husbandman are twin leaders of civilization.

Agriculture is not only the oldest, but the most important of human industries. Aside from the trifling contributions from hunting and fishing, the food and clothing of the race are primarily produced by the cultivators of the soil, "the parent and forerunner of all other arts."

While the art of agriculture was among the earliest cultivated, the science of agriculture—the underlying principles, which explain and control the processes of the art—is of modern development. Indeed the basic science on which the art is founded is chemistry, and the discovery of oxygen, the central fact of the science was the work of Dr. Priestly in 1774. The science of chemistry is still in its youth. Yet its influence on human welfare is marked. It has revolutionized manufactures and placed its stamp on every trade. It is either the handmaid or the directing genius of every modern industry. It smelts ores, extracts metals, refines steel, makes glass, soap and pottery; makes bread, preserves meat, refines sugar, tans leather, makes paints, refines oils, dyes cloth, bleaches and washes and purifies. There is not a morsel we eat, a garment we wear or a room we inhabit that is not formed or modified by the supple fingers of chemistry. It gives laws to commerce, controls trade, and gives shape to modern civilization. It has revolutionized war and dictates terms of peace.

For the farmer, chemistry has done much, but less than for any other industry. While manufacturers of every class are eager to avail themselves of every suggestion of science, the farmer is often slow to believe, and doubt does not promote growth. Happily this condition is passing away, and farmers are beginning to demand the help they once declined.

At this college chemistry shows its hand by determining the changes in the soil by the various processes of drainage and cultivation; the food value of the various grains at matur-

ity and at different periods of ripening; the fodder value of different plants at various periods of growth, and modes of preservation, such as ensilage, etc.; the influence of various foods on animal secretions, such as milk, its composition, etc.; the quality and composition of butter; the composition and manufacturing quality of sugar beets; the composition of farm yard manures and influence of different methods of keeping; the value of ashes and marls for manure; the composition of commercial fertilizers; the quality of waters from various sources for potable and stock use, etc., etc.—in short, to make available and useful what chemistry can reveal of the conditions of living, and the aids to success on the farm.

When sufficiently advanced, the students that exhibit a taste for such applications of science to rural life, are given opportunity to work along these lines in the chemical laboratory. The laboratory is made to mean what its name signifies—a workshop for science.

Physics and Farming.

PHILIP B. WOODWORTH, PROFESSOR OF PHYSICS.

In connection with the profession of agriculture more than anywhere else, is there a demand for a knowledge of the laws of physics. Heat, light, moisture and gravitation are the silent keys which open the great treasure vaults of the soil, from which the riches are given up to plant life. Plant food is locked in the soil by both combination and time lock. Neither dynamite nor nitroglycerin are capable of breaking this safe. There is only one door to the vault and the only keys the physical agents. He who understands the keys and is ever on the alert must be the most certain of success. The producer must master the laws of production. The time is past, when the unintelligent, the uninformed and the uneducated can make a success of farming. The sharp and sharper growing competition, which the farmer is meeting, means a breaking away from the old customs and traditions. To the untrained, heedless, blundering sort of fellow who is following the same ruts from year to year, such a radical change means ruin. This is the age of steam and the trolley car, and the country is moving too fast to stop to allow him to catch up with the procession. In a country with over five acres of cultivated ground per person and no one person capable of consuming the produce of two and one-half acres, only those skilled and careful will succeed. The farmer who by nature or neglect is careless and untrained in the fundamental laws of his profession is lost in the very beginning of the struggle. Every advantage is offered the young farmer; the state is anxious to give him an insight into the researches of the past and a special training in his special direction. The markets of the world will be controlled by those who produce at the least cost. The more the farmer understands physics the more profitably he will cultivate his field.

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The M. A. C. Record.

PUBLISHED WEEKLY BY THE
MICHIGAN AGRICULTURAL COLLEGE

EDITED BY THE FACULTY.

ASSISTED BY THE STUDENTS.

SUBSCRIPTIONS SHOULD BE SENT TO THE SECRETARY, AGRICULTURAL COLLEGE, MICH.

SUBSCRIPTION, 50 CENTS PER YEAR.

Send money by P. O. Money Order, Draft, or Registered Letter. Do not send stamps.

Business Office with ROBERT SMITH PRINTING CO., Printers and Binders, Corner Washington Avenue and Ionia Street, 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.

PREACHING SERVICE—Sunday afternoons at 2:30 in the Chapel.

Y. M. C. A.—Regular meetings Sunday evenings at 7:30 and Thursday evenings at 8:30. C. W. Loomis, President. E. M. Hunt, Cor. Secretary.

Y. W. C. A.—Weekly meetings for all ladies on the campus, Tuesday evenings at 8:00, in Abbot Hall. Sunday meetings with the Y. M. C. A. Miss Clara J. Stocum, President. Miss Ella Phelps, Cor. Secretary.

KING'S DAUGHTERS—Meet alternate Wednesdays. Mrs. J. L. Snyder, President. Mrs. W. Babcock, Secretary.

NATURAL HISTORY SOCIETY—Meets second Friday of each month in the Chapel at 7:00 p. m. H. C. Skeels, President. W. R. Kedzie, Secretary.

BOTANICAL CLUB—Meets Monday evenings at 8:30 in the Botanical Laboratory. Thos. Gunson, President. W. R. Kedzie, Secretary.

SHAKESPEARE CLUB—Meets Wednesday evenings at 7:30. Dr. Howard Edwards, President.

COLUMBIAN LITERARY SOCIETY—Meets every Saturday evening at 7:30, Middle Ward, Wells Hall. S. H. Fulton, President. H. Caramanlian, Secretary.

ECLECTIC SOCIETY—Meetings every Saturday evening at 7:30, Fourth Floor, Williams Hall. C. D. Butterfield, President. W. A. Bartholomew, Secretary.

FERONIAN SOCIETY—Meetings every Friday afternoon at 1:00, West Ward, Wells Hall. Amy Vaughn, President. Katherine McCurdy, Secretary.

HESPERIAN SOCIETY—Meetings every Saturday evening at 7:30, West Ward, Wells Hall. C. B. Laitner, President. L. E. Sage, Secretary.

OLYMPIC SOCIETY—Meetings every Saturday evening at 7:30, Fourth Floor, Williams Hall. Elwood Shaw, President. W. K. Brainard, Secretary.

PHI DELTA THETA FRATERNITY—Meetings every Friday evening at 7:30, East Ward, Wells Hall. R. W. Clark, President. A. B. Krentel, Secretary.

UNION LITERARY SOCIETY—Meetings every Saturday evening at 7:30, U. L. S. Hall. L. S. Munson, President. G. N. Gould, Secretary.

TAU BETA PI FRATERNITY—Meetings on alternate Thursday evenings, Tower Room, Mechanical Laboratory. G. A. Parker, President. E. H. Sedgwick, Secretary.

CLUB BOARDING ASSOCIATION—L. L. Simmons, President. H. A. Dibble, Secretary.

M. A. C. ATHLETIC ASSOCIATION—C. B. Laitner, President. G. B. Wells, Secretary.

This edition contains, as will also the next, a number of articles on the different phases of college work. While these give an insight into the technical work of the College, they do not show by any means the full strength of the courses of study. The College offers three four year courses each crowned with the degree of Bachelor of Science. English, mathematics and science, as well as many other subjects, are taught very thoroughly, and the graduate of any one of these courses, in addition to a practical training, has a mind as thoroughly disciplined as it would have been by any other good four year course of instruction. Education should aim at two objects: first, to develop power, to enable the mind to think and reason; second, to store the mind with useful knowledge. If the mind has ability to reason clearly it must have some data, some knowledge of facts, upon which to base deductions and conclusions; on the other hand, knowledge is worth nothing to the mind unless it has the power to use

this knowledge in reaching conclusions and opinions. Discipline and knowledge should go together; the one is not of much value without the other. Mathematics and the careful analysis and classification required in the study of the natural sciences are acknowledged to be of the highest value as disciplinary studies. Mental power is gained by careful, diligent study; and as far as mental development alone is concerned, it does not matter very much whether that study is expended upon the animals that inhabited the country six thousand years ago or upon those which contribute so much to the welfare and happiness of the human race at the present time; upon the methods of building bridges and constructing roads in the times of Julius Caesar or upon those of our engineers at the present time; upon the language of an ancient people or the industries and inventions of a modern people. While the mental power gained in the study of these different subjects may vary but little, yet the knowledge gained differs very widely and is of the utmost importance. In the one case the knowledge is interesting but remote and of little or no practical value; in the other case the knowledge is of the present time and of great value. It is possible to gain power and useful knowledge at the same time and from the same study. This principle was recognized in forming the courses of study at this College, and special stress is laid upon the practical value of each study. The wisdom of building courses of study upon this principle is fully demonstrated by the success of the graduates of these courses, whether they are found upon the farm, in the shop, or in the professional life.

The Religious Life of the College.

S. H. FULTON, '97.

It has been said that a man's religion is the chief fact with regard to him. Carlyle holds this to be true, not only of a man, but of a nation. He makes clear his idea of the significance of this statement by defining religion to mean, not wholly, in many cases not at all, the church creed a man professes nor the articles of faith he will sign; but the thing he practically believes, lays to heart and knows for certain, concerning his vital relations to this mysterious universe and his duty and destiny here. Viewed from this standpoint, the religion of our colleges is a highly important consideration in regard to them because of the widespread influence they exert, not alone upon the intellectual, but also upon the spiritual realm of thought and activity.

It seems fitting to the Agricultural College, an institution of the state which is no respecter of creed or religious belief, that its religious life should be largely centered in two comprehensive undenominational organizations, the Young Men's and Young Women's Christian Associations.

The Y. M. C. A. has existed at the College since 1881, in which year it was chartered, and became the successor to the "College Christian Union," a purely local organization of the students. The Y. W. C. A. was chartered in 1896, immediately upon the opening of the College to women. Both hold, independently, Thursday meetings led by association members; and on Sunday evenings unite in a single meeting in charge of a student, member of the faculty, or occasionally some one engaged in Christian work in Lansing. The associations afford good op-

portunities for Christian labor and practical religious training, through the various departments into which the work is divided, and also through the Bible classes in charge of students or members of the faculty, frequently by both.

Another Christian body of the College is a circle of King's Daughters, organized among the ladies in 1895. The circle has now a large membership and has, in accordance with the purpose of the organization, performed many good deeds aside from furnishing aid to a number of needy people in and around Lansing. Not only is the circle doing a good work at home, but it is also supporting and educating a boy in India. Meetings are held every two weeks at the different homes of the members.

Morning chapel exercises are conducted by members of the faculty, and on Sundays preaching services are held in the College chapel. These Sunday sermons are usually preached by Lansing ministers and, being in general prepared with an appreciation of the needs of students, do not fail to exert a considerable influence upon the religious life of the College.

Botany as Taught at M. A. C.

DR. W. J. BEAL, PROFESSOR OF BOTANY.

My friends and acquaintances can hardly claim ignorance of my views on this important subject. The methods of teaching here are not new, nor did they originate with myself, possibly excepting some of the minor details. The methods are approved by nearly all leading botanical teachers in the world and many of them pursue a similar course to the one pursued here; but strange to say, of all those who teach botany in some form or other, a little or but very little, only a very small portion pursue the method we follow at M. A. C. We take extreme care to give the students an opportunity to see and learn for themselves by the use of an abundance of good materials at any season of the year, before they are instructed by a teacher or assigned lessons in books. Simple and compound microscopes are furnished each student. The aim from the start, is not to hurry. Each one is urged to do his best at some lines of the work. The constant effort is to teach the student to investigate for himself in preference to imparting much historical information. Laboratory work precedes lectures or the use of text-books.

The pupil acquires facts and details before generalizing or attempting to draw conclusions; he should know considerable about a good many species before attempting to study any system of classification.

In secondary schools there is too much pouring in by the teacher and too little worked out by the pupil; this tends to make intellectual tramps and not trained investigators. We aim to keep constantly in view how best to prepare students to acquire information for themselves. This is training for power, and, although not so pleasant at first, it is of far more value than the mere information acquired during a course of study in natural science. The power to work alone lasts through life. I object to telling students at every step what they are to see, or to imply as much by numerous direct questions. I think it unwise to place in the hands of beginners, books containing good pictures of what is to be learned from specimens. A text with pictures constitutes a pony, which the student is likely to

ride instead of strengthening himself by original work.

In some respects the botany taught in an Agricultural College should be unlike that introduced into a portion of the courses in a University. For example, the young person bent on agriculture or horticulture in any of their departments would not need to spend time in the study of mosses, liverworts, lichens, sea weeds or many of the saprophytic fungi. On the contrary, he does need to learn the names and many of the peculiarities of our native and introduced trees and shrubs, the same of the leading grasses, clovers and other forage crops; he needs a familiarity with our weeds, including their seeds; of cereals and other field crops, our parasitic fungi, especially those injurious to cultivated crops and weeds of all kinds, and some knowledge of the anatomy and physiology of the higher plants.

Especially should the agricultural student from the start take much pains to become a close and accurate observer of plants in the field, orchard and garden,—in fact of all plants wherever found.

We have hundreds of kinds of grasses, weeds and the like mounted at full length on stiff cards of heroic size; hundreds of jars of dry fruits and seeds and many jars of soft fruits preserved in formalin or alcohol, enabling us to illustrate everything regardless of the season or weather, though we make much use of our botanic garden and the other means of illustration at the College.

Animal Life and Structure.

WALTER B. BARROWS, PROFESSOR OF ZOOLOGY AND PHYSIOLOGY.

Although biology, the life-history of plants and animals, is constantly and thoroughly studied in several departments, no separate course in biology, as the term is now commonly used, is attempted, but its place is more than supplied by the courses in botany, zoology, animal and plant physiology and anatomy, entomology, veterinary science, and bacteriology.

Comparative anatomy, except of the most superficial kind, is not practicable with our present arrangement of studies. Since special attention is given to the anatomy of domesticated animals by the veterinary department at a later stage in the course, the anatomy of the sophomore year is mainly of the type known as "human physiology," with dissections and demonstrations from the frog, cat, or rabbit, and such material as can be obtained from the slaughter-house. Some members of the class already have studied "physiology" in the lower schools and are possessed of text-book wisdom in degrees varying from a mere tincture to full saturation. Several months are needed to sift and rearrange this material, or make room for a more satisfactory substitute, but in the course of the year a fairly good foundation is laid for future work.

In taking up zoology, or "economic zoology," as it is called in the catalogue, usually there are no preconceived notions to contend with, and though a single term is all that can be given to it, the classes invariably are willing, usually enthusiastic, and the work is good as far as it goes. No two classes go over precisely the same ground; a few typical forms among the lower animals, such as *Amoeba*, *Hydra*, the starfish, the earthworm, the fresh water clam, and the crayfish, are studied during the first half term, and after a brief glance at the vertebrates

as a whole, the remainder of the time is given to a more careful examination of some one vertebrate class. It may be reptiles, or fish, or birds, or mammals; but, whatever the group, enough is attempted to show the student how to work if he is so disposed, and usually enough is accomplished to lead him to collect and examine specimens for himself, as well as to read and think of what is seen. Lack of time limits the attention which can be given to laboratory methods, but those who can find opportunity outside class hours may get instruction in section-cutting, slide-mounting, and museum preparations, including taxidermy. In connection with these subjects some field work is insisted on.

In studying entomology, insects are put into the students' hands at the very first, and he learns the relations and names of parts at the same time, and fixes these ideas by careful sketches from the real specimens. Field work is taken up at the outset, and a well prepared collection, representing at least eight orders of insects, is required for completion of the course. The student is taken into the field and shown how to find, collect, kill, prepare and mount his specimens, and little by little in the laboratory he learns how to identify and classify them. In this work, as all through the course, particular stress is laid on the species which are markedly beneficial or injurious, and the best methods of avoiding, limiting, or destroying the pests are carefully discussed.

If advanced work in entomology is desired, an opportunity is offered in the senior year, and members of this class take up such work as each is individually fitted for, including the systematic study of as many families as practicable, the breeding and rearing of insects and their parasites, experimental work with insecticides, and the tracing out of the life-histories of such imperfectly known forms as are available.

Not much dependence is placed on the compound microscope during the regular class work on insects, although a few of the best instruments are always at hand for emergencies; but the constant use of the magnifying glass is encouraged and the student gradually learns that the simple lens is sufficient for nine-tenths of his work. Enthusiasm, which in some classes can be kept up—if at all—only at the expense of constant exertion and consequent fatigue, comes here without an effort, indeed in many cases it becomes necessary to repress instead of encourage it.

Instrumental Music.

Two years of free instruction on the piano is offered by the College to young women pursuing the regular Women's course and not deficient in more than two studies. The only charge is a fee of one dollar and fifty cents per term for the use of instrument one hour each day for practice. If a student desires further instruction in music it will be furnished as per course of study printed, at the rate of seventy-five cents per lesson, and the same rate as given above for the use of instrument.

It is not the purpose of the College to establish a conservatory and grant diplomas on the completion of the course in music, but it does offer every inducement to young women to take up this study in connection with other lines of work.

As in the other departments of the college, the instruction is given in accordance with modern and approved methods by a teacher of recognized standing and ability.

The Cooking Course.

MISS MIRIAM JACOBS, SPECIAL STUDENT
IN DOMESTIC SCIENCE.

To one who visits the school kitchen at the College during class hours it would seem that housework is not the dull monotonous work it is sometimes considered.

The perfectly appointed kitchen has been fully described and it is pretty well understood that cooking is one of the branches of the Women's course, but just how the class is conducted, just how the work is done, seems to be not so well understood when one hears even now the question, "Do they go through the real act of cooking things?" Yes, we cook real material, wash real dishes.

As a cooking class was something new here, there was considerable interest manifested by members when we met for the first lesson. "What will we cook first? Apple pie? Doughnuts?" We have learned since that there are A B C's, of cooking as well as of other things. We cannot expect to prepare elaborate and complicated dishes until we have learned to cook one material well and also learned the principles of combining materials.



COOKING CLASS.

And this is the course arranged: The work for the first term is making and care of fire, dish-washing, measuring, the principles of boiling, stewing, baking and broiling. The cooking of simple material. The winter term lessons are on combining material, batters, doughs, and the cooking of meats. Third term lessons include salads, entrées, and sauces, croquettes and fancy dishes and serving of dinners and luncheons.

During this first year of the Women's course, forty students have had the cooking lessons. As each class is limited to sixteen, there are three divisions, each division having a lesson of two hours twice a week. At the beginning of each lesson the pupil is given a printed card, which is the text for the work for that day, or, as it were, a formula for the experiment to be performed. Then Prof. McDermott gives a talk on whatever material is the subject of that lesson, illustrated by specimens in Food Museum, showing the relative amount of the constituents of our principal foods. One lesson which we cannot help but learn from these talks is, that the common everyday things are subjects of interest to chemists and naturalists, and our everyday tasks are made more interesting. We take notes on what is said, then from charts we learn the nutritive value of this food, and as

we learn the value of different foods, are able to make out a diet which shall not be one-sided out supplying all the material needed in proper proportions. Then a lesson in Household Economy is learned from other charts which give the cost of different nutritives in certain amount of material at ordinary price. So much we have learned of this food. Now we will take the article and see what is the effect of the application of heat. "Seeing is believing," and usually remembering also. This is the greatest value of our laboratory work.

The card for first lesson has rules for care of fire, rules for measuring, etc. We learn not only the way of doing but the reason why. The accurate measuring does away with the "luck," usually bad, of those who guess at it. "O, I don't want to wash dishes," is perhaps what some of us looked, during one of our first lessons, but we were taught to do it in an orderly way, and this order and system becoming a habit saves the housekeeper much time and work. The next card is Food Principles. This is very important for the knowledge of the composition of our food is necessary to the proper ordering of the dishes for a meal. The next lessons are on

starches, milk, eggs, cheese, etc. Each lesson comes along in sequence, each step preparing for the next. And in each lesson comes the chemistry of foods, which subject will be specially treated by Prof. Kedzie. A number of lessons are devoted to the cooking of food for invalids.

For the work in the kitchen each student has a desk which is provided with the most necessary articles, and everything which could be needed is found in the kitchen. The uniform is white apron, cap and cuffs. The group method is followed, two or three working together prepare one dish. At each lesson three housekeepers are appointed; these have, that day, the care of the stove, room, etc. No text book is required, but seventy-five or more books have been put in the Library for this department, and great is the surprise at end of term of those who think there is nothing to study about cooking.

At one lesson this term, each student was required to make out a menu for a dinner for six people which should cost 25 cents. The cost of each article was carefully calculated and a good dinner prepared not only on paper, but the material was bought, cooked and eaten; which makes the cooking school joke no joke at all for the cooking school girl can really cook a meal. From 25 cent meals we went

to 50 cent, and to more elaborate ones. To the graduate from the cooking course, the serving of a full course dinner will not be a formidable affair, for she will have become familiar with each detail, nor will it be so costly, for she can make all the dainties, at much less expense than they can be gotten from the confectioners.

Growing Flowers at the College.

THOMAS GUNSON, FLORIST.

Few educational institutions in this country possess such a wealth of flowers and flowering plants as can be found in the gardens, grounds and greenhouses of the M. A. C.

There can be found in this aggregation of plants representatives of every clime, which have been collected from time to time with great care.

They are not a mere collection of vegetable curiosities, but are plants having properties botanical, medicinal, or of some commercial importance. No effort is made to specialize on any particular plant, merely as a marketable commodity or to cultivate flowering plants for the purpose of having show days to satisfy the gaze of a curious public. It is more the purpose of the College to introduce to the student this mass of material in a way that shall be of use to them in the studies of the class room, the laboratory, on the farm, in the garden and greenhouse.

The inconspicuous flower of some northern grass may be of as much importance in this as some gaily colored representative of the tropics.

The practice, early in life, of learning the names and characteristics of the commonest plants has become a necessity, and teachers are laboring to explain to their pupils the mysteries of the plants and the affinities of the flowers.

It was late in the century before it was known how plants assimilated their food and what that food consisted of; can it be that ere the dawn of another, every youth in the land will know something about how the earliest of living things are built up, and how they came to be?

Growing flowering plants at the College—especially in the greenhouse,—is to more distinctly show the ever-present tendency in plants to vary; to show their adaptation to climate, to insects, to conditions and soils; to show what selection, cultivation and cross-fertilization have done; to study the flower, its parts and its function.

A further purpose of growing these plants is to show what wealth of vegetation there is in the world, and how some plants have specially distinguished themselves by their flowers, some for their leaves, others by the food they have learned to store up in their roots, leaves or stems; to show how some have learned to protect themselves against the vicissitudes of climate; against the encroachments and possible destruction by ruminant animal and insects.

In addition students are drilled in the practical operation of propagating plants by division of their roots, stems or leaves. They learn to water, air, shade and care for the rooted cuttings, until they take their final place either on the ground or in decorating the conservatory.

The list of plants grown exclusively for what is known as florists' flowers may, like the principle fruits and cereals, be enumerated on the fingers of one hand, though the varieties of each one of them may be counted by the dozen.

They have so little sympathy with

each other in common that to be successful in the cultivation of any one of them as a crop, a structure built to suit their tastes is a necessity.

At the College.

W. Z. Hutchinson of Flint was at the College Saturday.

Mrs. Joseph Warren spent Sunday with her son, Frank V. Warren, '98 m.

Strawberry blossoms being imperfect this season, a lighter crop than usual may be expected.

Miss Minnie and Ruby Newman have been visiting their brother, Chace Newman, for several days.

Mr. and Mrs. George C. Harvey, of Constantine, have been visiting Lieut. and Mrs. Bandholtz a few days.

Miss Jennie Shaddock, of Grand Rapids, spent the Memorial Day vacation at M. A. C., the guest of H. C. Skeels.

The officers of the Botanical club for the fall term are: President, B. Barlow; vice-president, H. C. Skeels; secretary, Miss Marie Bellis.

The club Boarding Association Stewards for the fall term are: Club A.—C. Chadsey, B.—W. J. Merkel, D.—F. W. Robison, E.—H. L. Becker.

The Horticultural Department is sending out about 50 collections of potatoes of ten varieties each, for experiment by Michigan farmers.

Miss Elizabeth Hedrick, who has been visiting several months in Detroit, is now spending a few days with her brother, Prof. W. O. Hedrick.

The College bees have been returned from Lapeer, where they have been for several years, and are now in charge of John M. Rankin, who will be a student at M. A. C. next year.

Miss Daisy Bennett, from Fort Wayne, Detroit, Mich., daughter of Col. Bennett, of the 19th infantry, is spending a week at the College as the guest of Lieut. and Mrs. Bandholtz.

Flower beds are being rapidly filled with plants from the greenhouse. Geraniums are now claiming attention. More cannas and foliage plants than formerly will be set this spring.

Injuries to peach trees from curl leaf, root galls, and germ disease are reported in large numbers this year. On this account the crop along the lake shore will probably be much lessened.

From the north side of the greenhouse may be seen in full flower three of the finest blossoming shrubs on the campus—the flowering dogwood, a spirea and a crimson English hawthorn.

Found, on the front seat in Chapel one day last week, Laitner, Cartland, Simmons and Redfern, all of '97. Owner can have the same by calling at RECORD office and paying for this notice.

While at Grand Ledge last Tuesday, Mr. Pettit met with a painful accident. He slipped and wrenched his knee in such a way as to rupture some of the tissues. He is now able to get around on crutches.

Prof. Taft will attend the meeting of the West Michigan Fruit-Growers' Association next Thursday and Friday. He will speak on "Fungous Diseases of Plants." C. W. Garfield of the State Board will also address the meeting.

Henry Keep, of Detroit, who is training our track athletes, has a record of 15 4-5 seconds in the high hurdles—equal to the world's record, a record of 5 ft. 10 in. in the high jump, 21 ft. 6 in. in the running broad jump, and 10 2-5 seconds in the 100-yd. dash.

Prof. H. W. Mumford left to-day for a four months' tour in Europe for the purpose of studying. He goes first to his

home for a few days, then on the way to New York will stop a day at Geneva and another at Cornell. He will sail for Liverpool one week from tomorrow on one of the White Star line steamers.

Among the recent additions to the equipment of the Mechanical Department are a Smith Premier typewriter; the Coffin averaging instrument, for measuring indicator cards; a Mannheim slide-rule, for speedy mathematical calculations, and a Brown and Sharpe's micrometer caliper of two inch capacity.

Mr. Crozier imported, last year, some orchard grass from France, and, when sown, it was found to contain seeds of several European weeds, new to American soil. They are: A sorrel, a cockle, the bladder campion, rib grass, a hawkweed, an ox-eye daisy, a wild mustard, and a sow thistle. This shows the importance of examining imported seeds before sowing.

Miss Amy Vaughn's friends gave her a little surprise party last Monday evening in consequence of her having become of age. She was presented with a birthday cake (angel food), on which were 21 candles. After various amusements down stairs, the guests repaired to the Domestic Science room where they were refreshed with "Scientific" lemon ice

impromptu toasts. Needless to say the thought was instantaneous, and the toasts in consequence a success. In closing, Mr. Laitner kindly rendered a vocal solo, and all adjourned without further ceremony to the lecture at the chapel.

Truth in Nature.

The last lecture in the Y. M. C. A. course for this term was given in the chapel by Dr. Kedzie last Friday evening. The lecture was a very interesting one, and it left a moral impression that will not soon be erased from the minds of those who heard it.

In seeking a definition of truth Dr. Kedzie emphasized its absolute unchangeableness, the harmony between one fact and every other fact, and the lack of harmony between truth and falsehood.

To illustrate, he described several notable cases in which crime had been detected by circumstantial evidence. One of these was the case of a forged will dated back 100 years. Those who might have been witnesses were all dead, so no direct testimony could be obtained. But a chemical analysis of the paper upon which the will was written showed that it had been tinted with ultramarine, a substance which

face; and why we implicitly trust first impressions when once we have learned to discern character and recognize kindred souls."

Changes in the Club Boarding Association.

The special committee, composed of H. E. Van Norman, C. C. Pashby, and J. W. Rigterink, reported the revised constitution to the Club Boarding Association last week. It was adopted as reported, except that the cook's wages were left at the old rate.

The management of the Association is placed in the hands of a Board of Directors, consisting of one from each club and the President of the college, *ex officio*. By thus centralizing the responsibility and authority it is hoped to increase the efficiency of the Association. It gives a stronger hold on delinquent boarders. As only two directors go out of office during any one college term the business of the Association will never be left in new and inexperienced hands.

The number of shares of stock are increased from 300 to 1200 and the value of the same reduced from \$20.00 to \$5.00 leaving the capital stock the same. All students, new and old, must show certificate and make \$15.00 payment on account of board the first day of each term.

Making Sextants.

The physical laboratory work for this term includes the making and using of a sextant. Heretofore the students have made them of wood; but these, although they served the purposes of instruction, were not sufficiently accurate for practical work. Accordingly, Prof. Woodworth made a pattern for a sextant, similar to that belonging to the department, and had a number of iron castings made. The students are now at work finishing and putting these together. When completed, they will be used for making determinations of inaccessible distances, as in military and field engineering; also for finding latitude and longitude by measuring the angle of the sun's rays. The graduating is done in the Mechanical department, on a milling machine. The instrument, when finished, will combine cheapness with efficiency and be both serviceable and instructive.

C. C.

Y. W. and Y. M. C. A.

Next Sunday evening at 7 o'clock the usual union services will be held in the chapel, at which time Rev. Martin T. Rainier, of the class of '74, will speak to the students. The subject for the evening's talk will be "The Biblical Christian Young Man," *i. e.*, the young man as he is in society, in business, and in the church from a Biblical standpoint. As it is the next to the last meeting of the term, and also as Mr. Rainier is a graduate of the college, let as many as possible be present and extend a hearty welcome to him.

...COLLEGE BUS...

Leaves M. A. C. for Lansing at 8:30 a. m. and 1:30 p. m. Returning, leaves Lansing at 10:30 a. m. and 4:30 p. m.

Packages left at Emery's will receive prompt attention. Livery or Bus for picnics at reasonable rates.

NEW PHONE

H. O. PALMER



IN THE GREENHOUSE.

and cake. All reported a very enjoyable time.

Prof. A. A. Crozier returned to the College Wednesday evening, May 26th, from a sojourn of two months in the land of Eternal sunshine, old and New Mexico. Although he is not yet ready to pose in a dime museum as a fat man, he is much improved in health and ready to undertake the hard work of a summer campaign in the Experiment Station. He went to Ann Arbor last Saturday to spend the Sabbath with his people.

The difficulties of adjusting the hours in the daily program for classes and laboratory work at M. A. C. are all the time on the increase. These troubles arise from several sources, some of which probably do not arise in any other college. Among the chief of these are the compulsory manual labor in the agricultural course, the military drill for all the men at one time, the need that students in two or three courses be placed together for a portion of the time in physics, chemistry, English, botany and a few other topics.

Last Friday evening Miss McDermott entertained the Seniors at Abbot Hall. It seemed fitting that at the close of the year the Seniors should have a practical lesson in Domestic Economy, so our worthy hostess introduced them to regular Abbot Hall board. When the feast of reason and flow of soul was at its height, Messrs. Laitner, Sedgwick and Munson were called on for appropriate

was not used to tint paper 100 years before. This seemingly trivial fact convicted the forger. Dr. Kedzie also related several incidents to show that the "truth in nature" may also disprove error.

The speaker then made a strong plea for truth in life, a plea that should be heard and remembered by every person who has a temptation to indulge in forbidden pleasures. We can quote but a few sentences:

"There is a truth of life as well as truth of word. A true life! What is nobler in all the earth? It is worth years of toil and struggle, of patient endurance, the sacrifice of every lower claim. Would I had words to fittingly portray its beauty before you, for the beauty of life leads to beauty of form. 'Sowing wild oats' may be a hilarious agricultural operation, but what shall the harvest be?"

"When you jostle your way thro' a crowd of strangers you meet persons toward whom you are instinctively drawn, and others from whom you are strongly repelled. You can hardly give a reason for the attraction or the repulsion. But when you consider that every marked event of life—every hope, aspiration, joy or sorrow; every passion, lust, degrading pursuit and crime—makes its mark on the face and stamps it for heaven or the pit—that the face is the index of the life—we see why we read, as in an open book, the lives of those we meet, by a glance into their

News from Graduates and Students.

Leon J. Cole, with '98, spent Sunday at the M. A. C.

Supt. C. L. Bemis, '74, will remain another year in Ionia at a salary of \$1,300.

Principal A. J. Chappell, '82, Alba, has been elected superintendent of Manton schools.

Carl E. Pray, with '90, has been elected professor of history at the Mt. Pleasant normal school.

N. C. Johnson, with '96, gets a salary of \$1,000 as head bookkeeper for a Chicago dry goods firm.

R. A. Clark, '76, Pittsburg, Pa., will renew his youth and old acquaintances as well, at the alumni reunion.

Guy L. Stewart, '95, has been re-elected principal of Gaylord schools at an increase of \$10 per month.

Commissioner of Schools E. P. Clark, '83, received a majority of 2,246 for his third term in Berrien county.

George C. Nevins, '73, Otsego, Mich., was granted a life certificate at the last meeting of the State Board of Education.

James Satterlee, '69, will entertain the meeting of the Greenville Hort. Society on Friday of this week (June 4), at his home in Greenville. Prof. Taft will be present.

Frank R. Poss, '94, and wife drove out to College from Lansing one day last week. Mrs. Poss has been very ill, at the home of her father, for some time but is now convalescent.

From the North Dakota Agricultural College *Spectrum* we learn that Prof. H. W. McArdle, '87, sings in the choir and Prof. C. B. Waldron, '87, has painted his buggy with college colors.

THE RECORD acknowledges the receipt of the commencement program of the Addison high school, of which C. A. Jewell, Jr., '96, is principal. The school graduates a class of six this year.

From the *State Republican* we learn that Superintendent of Public Instruction Jason E. Hammond, '86, has declined a tender of the principalship of the west side high school of Grand Rapids at a salary of \$2,000 per year.

From the *Globe-Democrat*, St. Louis, Mo., we clip the following item regarding the father of E. J. Rauchfauss, '79; May 16.—Charles Rauchfauss, aged 65, the wealthiest resident of Golconda, Ill., is dead. He removed to Golconda from Louisville, Ky., twenty-five years ago, and erected a palatial residence. His estate is said to be worth \$1,000,000.

Monday, May 24, Frank G. Clark, '90, Lansing, became the father of Albert Anderson Clark. The following Wednesday, at a reorganization of the firm of Clark & Co., the grandfather showed his appreciation of the new son by presenting Frank G. Clark with \$3,000 worth of personal stock in the firm. Frank G. Clark is assistant superintendent of the company.

The following from Archie D. Himebaugh, with '94, Burr Oak, Mich., is very gratifying: "A sample copy of the M. A. C. RECORD came to me on this morning's mail. I can liken it very aptly to a visit of an old friend, to me, while I was spending a year in the West among strangers. I can assure you that friend had a warm welcome, and the RECORD was just as warmly received. I hasten to subscribe for it. I am very much interested in M. A. C., having spent two of the most profitable and happy years of my life there."

Tom F. Rogers, with '74, who left the College at the end of his junior year,

which he has always regretted, called here Thursday, after an absence of twenty-four years. He came out on the street car, an improvement over the old foot path, which he often used. Scarcely a land-mark was recognized until he saw Doctors Kedzie and Beal, with whom he visited the new buildings. In the vicinity where "Saint's Rest" used to stand he began to feel at home. Mr. Rogers is publishing a newspaper, the *Times*, at Ravenna, Muskegon county.

A Successful Dairyman.

A beautifully gotten up advertising circular of Theodore A. Stanley, '86 who is supplying milk to the city of New Britain, Conn., was received lately at the College and was submitted to the Director of the station for comment. Prof. Smith says: If Mr. Stanley does as he says he does in his circular his products cannot fail to be the very best. He so far emphasizes absolute cleanliness that he provides for the men ample facilities for bathing as often as they wish. He wants his hired men evidently to be like Cauphurnia above suspicion. They must make frequent changes of outside clothing and wash their hands before milking. His barns are expensive, new, thoroughly ventilated, flooded with sunlight, and kept as near absolutely clean as possible. His cows are carefully selected as to health and quality of product, and by daily grooming and good feeding are kept in prime condition.

The milk, after straining is removed from the barn at once, passed over an aerator, cooled to 50° F. and put into glass bottles, which are sealed and are then ready for delivery to customers.

From milk purchased of neighbors as well as from his own surplus Mr. Stanley makes butter which he colors and salts to suit the tastes of his customers. He also furnishes cream, concerning the care of which he gives specific instructions; eggs and dressed fowls, which he assures the public "are bred for a purpose, kept in quarters entirely separated from other buildings and fed on wholesome food." He also furnishes sweet corn, potatoes, tomatoes, turnips and apples.

He guarantees his milk to be pure and to contain 4 to 5 per cent fat and the cream to contain 25 to 30 per cent fat.

Mr. Stanley is doing a first-class business in a first-class way, according to the highest style of the art. He sells what the public wants, in a way the public wants it. He regards "farming" as a business and succeeds because he knows how to take advantage of his opportunities.

All of the recommendations in the circular are to the point and exactly right in substance and method.

How the Experimenter Works.

CHARLES F. WHEELER, ASSISTANT PROFESSOR OF BOTANY.

The experimenter works according to the rules of science. Science is knowledge demonstrated and put in order for the use of everybody. It may be said to be the common sense of the best minds which have appeared in the world up to this time.

Methods of work vary with the individual characteristics and qualifications of the experimenter. The worker in an Agricultural Experiment Station, especially if this station be located and operated in connection with an Agricultural College, should have been born and reared on a farm. He should also have received an academic and collegiate education to supplement the farm experience. He should know something of the behavior of matter

in the mass—physics, of matter in the molecule—chemistry, and always keep in mind the fact of the conservation of energy. Something of mathematics must be known, and a good deal about animals and plants, and the relation they bear to each other; how they feed and grow and the laws governing their reproduction, the diseases to which they are subject and a knowledge of remedies so far as known.

The experimenter should know of the origin and composition of the different kinds of soil, climatic conditions, and, in short, should have had a large experience of out-of-door life, the more the better.

When the experimenter has these qualifications he is then ready to begin work. How should he proceed? Concerning any given subject to be experimented upon, the first requisite is to learn what has been done by previous experimenters, then to collect and study the literature bearing on the question, both of our own and of foreign countries. This done, a plan of operation may be outlined and a provisional hypothesis formed, if the results disprove the theory, then a new one must be adopted and a new line of work outlined. Plenty of time should be granted the experimenter. Possibly certain problems are insoluble; no one can foresee this; and, therefore, even if the result of experiments be negative, some good will have been secured and future experimenters warned. Perhaps keeping the notes and records of experiments is the most important part of an experimenter's work. To do this well and then to publish the results in good plain English, so that the farmers of Michigan may read and heed the results, is the way the experimenter works, or should work.

Memorial Day.

Sunday was observed as Memorial Day by appropriate exercises in the College chapel. The battalion of cadets formed at the armory and preceded by the band playing patriotic airs, marched to the chapel, where the cadets occupied the middle section of seats. A stirring patriotic sermon was given by Rev. C. C. Miller, a veteran of the Rebellion. Music was furnished by the College choir.

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ATHLETICS

A week ago today Olivet won her ninth game and Hillsdale lost her seventh.

Kalamazoo won from Ypsilanti Friday by a score of 17 to 2, and lost to Albion Saturday by score of 2 to 4. This brings Kalamazoo to field day with seven victories and three defeats.

We expected Ypsilanti to play two games here Saturday, but at the last moment that team failed us. M. A. C. has had considerable difficulty in getting games with the somewhat uncertain Normalites during the past two years, and this year is no exception. Two years ago we gave them a game here but could get none in return. Last year they would not play with us at all. This year we had two games scheduled with them, but when the first date came they informed us that they could not play—school closed the day before. They then agreed to play two games here on May 29 and to pay railroad fare one way if gate receipts did not cover all expenses. At the last moment they informed us that they would play but one game and would not pay any railroad fare. When Manager Krentel informed them that he should hold them to their agreement they said they would not play—so there it is.

Olivet at M. A. C.

Although rather cold Monday the game of baseball between Olivet and M. A. C. was well attended. About thirty of the Olivet students accompanied their team making quite a display of red. The game was the closest one that has been played on the home grounds this season. Several errors were made on both sides and some of them very costly. In the 6th inning a bad mistake was made by M. A. C.; two men were out and three were on bases when a grounder was batted to third, who instead of touching his base, thus forcing a man out, threw to first too late to get the runner out. This mistake gave Olivet three runs, tying the score 12—12 till the first half of the 9th, when Olivet got one more score winning the game. The score:

Innings—1 2 3 4 5 6 7 8 9 R. H. E.
Olivet 3 0 2 1 2 4 0 0 1—13 16 7
M. A. C. 0 7 4 1 0 0 0 0 0—12 10 7

Batteries—Wright and Moore, Warren and Krentel. Two base hits—Warren, Krentel. A. C., Wright. Three base hits—Steckle. Home run—Owen. Double plays—Olivet 2. Bases on balls—by Warren 2, by Wright 5. Struck out—by Warren 4, by Wright 5. Umpire—Owens.

STANDING OF THE CLUBS.

Won. Lost. Pr. Ct.

Olivet.....	10	0	1.000
Kalamazoo.....	7	3	.700
M. A. C.....	3	5	.375
Albion.....	3	6	.333
Ypsilanti.....	2	5	.286
Hillsdale.....	1	7	.125

Another Word About Professionalism.

Most colleges of the present day recognize the demoralizing influence of professionalism in college athletics. Amateur athletes are discouraged when brought into competition with men who are able to command, and have received, pay for their athletic ability. Besides, when professional athletes are allowed to participate in intercollegiate sports, the contests indicate not the athletic capital of the institutions, but their cash capital—their ability and willingness to pay for men who can win. Nothing could

be more remote from the real purpose of college athletics.

Recognizing these evils of professionalism, our best institutions of learning have adopted stringent rules to shut out from intercollegiate contests the man who plays for pay. The intercollegiate athletic association of which our own great university is a member, is waging a relentless warfare against professionalism. No man who has ever used his athletic skill for gain is allowed to participate in the contests of this association. The U. of M. baseball team is this year very weak as a result of this, but we are proud to know that every member of the team is an amateur in every sense of the word.

The Michigan Intercollegiate Athletic Association, of which M. A. C. is a member, is also making an effort to weed out professionalism. There are several reasons, however, why the association has not yet accomplished what it seeks.

In the first place, no rule has yet been adopted which really bars the professional—the man who has played for money or the man who plays for money during his vacations. The lukewarm reformers say, "But this would bar many really deserving students who entered college before any such restriction was adopted." Granted. But this condition will continue to exist so long as the rule remains as it is. It is time now to make a rule saying that no man who hereafter uses his athletic skill for gain shall participate in any athletic contest in the M. I. A. A. It is also time to say that at some given future time—say one year hence—we shall bar the man who has ever been a professional. These provisions would bar no deserving amateur.

Again, the rules we have are not enforced. Last year several infractions of the rules occurred, some of which have already been mentioned in THE RECORD. I need mention but one more. The college that now holds the baseball trophy won it with a pitcher and catcher who were not bona fide students. This year furnishes other examples; there is a rule of the association which says in substance, that no man shall be allowed to participate in any baseball game in the association who has not been in college ten weeks preceding said game. The team that now has a standing of 1,000 has for catcher a man who was not in college two weeks before the first game in which he participated. Bona fide student? Yes, but without any right to play, according to the rules; and for what do we make rules if not to be enforced? Then another team that stands high in the percentage column, occupies that position as

a direct result of having an acknowledged professional pitcher; and this pitcher has, within three weeks, participated in one of the state league games.

But why, in such clear cases of infraction, are not the offenders ruled out? Simply because the directors have not the backbone to do it. In the case of two protests recently brought before the directors, there was a tie vote in both instances, not because there was any doubt that the rules had been violated, but because the directors had paired off. "Help me out this time and I'll help you some other time."

One thing more; the Faculty Association of Michigan Colleges has been formed, and rules have been adopted to purify athletics. This association is in a position to assist greatly in eradicating professionalism if each faculty will make an honest, active effort toward that end. But faculties are human, and they sometimes show slight indications of weakness. This has been manifested several times lately in a sort of color-blindness, an inability to see anything wrong in the team playing under that particular color to which they seem to be partial. It is fair to suppose that no body of students will be more discriminating than the faculty, from which they receive their inspiration. In the name of fairness let us make a few good rules and then enforce them.

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