The M. A. C. Record.

VOLUME I. LANSING, MICHIGAN, TUESDAY, APRIL 28, 1896. NUMBER 16.

SHOP METHODS AT M. A. C.

PROF. C. L. WEIL.

In this issue and that of last week we presented our readers with illustrations of the interiors of the M. A. C. shops; these views being given in each instance in connection with an advertisement of the mechanical course. A few words of explanation as to the methods employed in giving instruction in shop practice in the mechanical course may be of interest to our readers.

First it must be clearly understood that it is not our intention to provide for complete training in particular trades at these shops, the object kept in mind being the furnishing of students with as comprehensive a view of those trades which bear most directly upon the engineering professions as time will permit.

We do not pretend, or intend, in the limited time devoted to shop practice during an engineering course of four years duration, to perfect a student in the practices of the pattern, machine and blacksmith shops, and the foundry; for the practice in each one of these shops constitutes a trade, demanding for its acquirement years of training.

What we endeavor to accomplish in our shop course is the pointing out of the relation of the work in the foregoing shops, and the relation of the whole to engineering work in general, the furnishing of a knowledge of the general practice and machines used in such shops, and the training of students in the actual operations of the shop to as great an extent as time will permit.

In the M. A. C. shops students make patterns of machine pieces from their own designs, make castings from these patterns, and finally bring the pieces to their finished or designed state in the machine shop; also prepare tools in the blacksmith shop to be used in machining the pieces.

It will be perceived that the student is required to obtain a clear idea of the sequence of shop work, and operations involved in making complete constructions, also to obtain some degree of skill as a workman along several lines. While we do not aim to give complete training in the trades, still it is generally surprising to note the proficiency acquired by young men, as mechanics under the system followed, especially in the case of those who are naturally inclined towards mechanical work. Inspection of the M. A. C. alumni catalog will show that many of the graduates of the mechanical course are successfully following lines of work calling for a knowledge of the various trades mentioned in this article, and the success of these graduates, along such lines is some measure of the efficiency of the M. A. C. course in shop practice.

Mechanical Department.

M. A. C. THIRTY YEARS AGO.

It is impossible for me to realize that nearly a generation has filled its place in the world's history since I entered the college in the spring of '66. It was a very different institution then from what it is today.

There was, if I remember aright, about ninety students in attendance that year. The faculty numbered six only, President Abbot, Dr. Kedzie, Dr. Miles and Professors Fairchild, Prentiss, and Cook. All faithful earnest workers and all living except President Abbot.

There were in those days but two college buildings aside from barns, greenhouse and residences. One was a three story brick dormitory, since destroyed by fire. Kitchen, dining room and steward's rooms occupied the basement and first story. The second and third floors contained about twenty rooms for the use of students, four usually being assigned to each room.

The other was the building known as College Hall. In those days it was usually spoken of as "The College." The Horticultural Department occupied the basement for tool and storage rooms. The first story rooms were used for "The Chapel" and the chemical laboratory. The second story contained, in addition to the two large class rooms, the apartments of Professor Cook and Professor Prentiss. The north two rooms of the third story contained, the east one, the Library (which failed to fill one side of the room) and the west one, the Museum. Professors Miles and Prentiss used the two south rooms of the third story for class purposes.

There was but one course, with no elective studies. The college year commenced the latter part of February and ended the latter part of November, with a two weeks' intermission about July 1st.

Our daily routine was about as follows: Breakfast at seven the first half year and at six during the last half. All students were required to be present at the chapel exercises, which occupied twenty minutes before recitations commenced. The roll was called occasionally and from the luckless students who failed to answer to their names, prompt and trustworthy excuses to the President were in order. Four hours were occupied with recitations, the first half, and five the second, of which each student had three of one hour each. From half past one to half past four was spent in labor upon the farm or gardens, for which the workers received seven cents per hour. Such students as desired to could frequently work until six and upon Saturdays, usually receiving twelve and a half cents per hour for this extra work.

Societies there were none in those days either secret or public, and "hops" and class organizations were as yet undiscovered.

"Athletics" was represented by a college nine which occasionally visited Lansing and the surrounding villages, usually returning without honors.

Great has been the improvement at the College during these years in facilities for, and methods of instruction. If I am not mistaken greater still will be its progress in the thirty years to come. Since the day of its foundation, it has been the leader among similar institutions. With its graduates doing it honor in nearly all the Agricultural Colleges of the country and upon some of the best farms in Michigan, its reputation and usefulness will increase more and more as the years go by.

A. H. PHINNEY, '70.

Tawas City, Mich., April 23.

SULPHUR IN MICHIGAN.

O. W. SLAYTON, '98.

When sulphur, in the elementary state was, discovered in Michigan I do not know. The Geological Survey does not mention it; however it does exist, in the native state in Michigan.

Last June my father, C. M. Slayton of Grattan, Mich., visited the quarries of "The Michigan Stone Supply Co.," which are situated one mile west of Scofield, Monroe Co., Mich.; he gives the following description of the formation:

"The rock, which is crushed for macadamizing roads, lies in horizontal strata, two to four feet below the surface. The upper stratum is an impure limestone four to six feet thick; then comes a stratum of calcareous sandstone two or three feet thick, which is filled with small cavities, some of them being large as a pail. These cavities contain celestite, dog-tooth spar, and black crystals of barite, which are mixed with mud; and sometimes contain bright crystals of pure sulphur. There was not enough sulphur to pay for gathering it up for shipment but the company had collected several barrels."

Specimens of native sulphur from this source are now in the chemical laboratory.

ANOTHER ALUMNUS GONE.

Died in Grand Rapids, Mich., April 19, Mr. Elihu Burritt Fairfield, of the class of 1871. Mr. Fairfield was the oldest son of Edmund B. Fairfield, former President of Hillsdale College, and was connected with that college for several years, as also with Oberlin College, Ohio, for a time. After completing the sophomore year as a classical student in Hillsdale, and wishing to take a more thorough course in Chemistry than could be had either there, or any where else in this State, except in the Michigan Agricultural College, he finished his course at M. A. C. It was during his course at M. A. C. that he formed the acquaintance of Miss Mary L. Jones, daughter of Col. Whitney Jones, of Lansing, who afterwards became his wife. The marriage took place on the 1st of January, 1872. Their family has consisted of three sons, two of whom are living, the older, Herbert L. Fairfield, being now a member of the sophomore class in our College.

Mr. Fairfield's life has been chiefly given to teaching. He has been Superintendent of Schools in Stanton, Mason, Howell, Tecumseh and Grand Haven. During these years he was often called to lecture and give instruction in Teacher's Institutes. Finding his work in teaching too confining for his best health, he entered into the service of the North Western Life Insurance Company, and has been a resident of Grand Rapids for the last seven years.

Mr. Fairfield became a member of the church early in life, and during his residence in Grand Haven served the Congregational church, of which he was a member, in the office of trustee, deacon, superintendent of the Sunday school, and church treasurer. His character through all his life, was marked by the most unimpeachable integrity, so that he was always trusted with the most unwavering faith by all who knew him. He seemed incapable of misrepresenting any thing. Whatever the truth might cost him he was always ready to pay the price.

As a student he stood very high in every department of study, mathematics, ancient languages, modern languages, science and metaphysics.

Born in June, 1848, in New Hampshire, where his father was then preaching, he came with his parents to Michigan, in October, of that year. Hence, Michigan has been his home almost all his life. For the last seven years he has been more or less of an invalid, but has kept steadily at work up to one month before he was called to "pass on and pass upwards."

THE PASSING OF THE PIGEON.

PROF. WALTER B. BARROWS.

The passenger pigeon or wild pigeon (*Ectopistes Migratorius*) is supposed to be on the verge of extinction. Twenty years ago it nested in Michigan in such numbers as to cover scores of square miles with its nests, while its migrating hosts darkened the sky for hours at a time. The old birds were netted by thousands and the young killed, salted, and shipped by the carload or boat-load. It no longer nests in communities, so far as known, and it is doubtful if enough of the birds survive in the entire United States to make a single old-fashioned, good-sized Michigan flock. Even stuffed specimens are few in museums and collections, and skeletons and eggs are rarer still. Our own museum is fortunate in having several good mounted specimens, but more would be welcome. Far better, however, would be a few pairs of the living birds, either old or young, from which others might be bred, and so artificially, the final extinction of the species might be postponed and perhaps prevented altogether. It is not improbable that the Passenger Pigeon could be permanently domesticated.

Anyone who may be able to give information as to recent or present nesting places of this bird, even of a single pair, would confer a great favor by notifying the writer at the Agricultural College, or the State Game Warden, Mr. Chase S. Osborn, at Sault Ste Marie.

It should be borne in mind that the state laws strictly prohibit, under heavy penalties, the taking of pigeons alive, or their disturbance, or that of their nests or young, at or near their nesting places. Before a single pigeon can be lawfully taken alive, the permission of the State Game Warden must be obtained. All that is asked at present, however, is information as to nesting places or nests, and such information will be considered strictly confidential, and used only to further the plan above mentioned, looking toward preservation and domestication of the species.

Zoological Department, April 24, 1896.

WILLOW ROOTS IN SEWERS.

The large willow trees in front of Abbot Hall have penetrated the joints of the trunk sewer with their roots and have necessitated the relaying of some sixty lengths. It was found that the roots entered at points where the joints were imperfectly cemented, and in no case was it evident that they had penetrated the cement, except where small lumps of clay had become mixed with the gravel.

In relaying the sewer pipe an endeavor was made to cement the joints as perfectly as possible, and the collars were then covered with coal tar. This is less likely to crack than the cement, and it was thought that the roots could not develop in close proximity to the tar, the fumes of which are fatal to plant life.

Some of the joints were caulked with oakum and then covered with cement, but the spaces between the tiles did not admit of doing this in a very thorough manner.

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In the recent issue of a paper published in one of the southern counties of the State occurs this paragraph, referring to M. A. C.:

"It is safe to say that less than five per cent of the graduates of this College have anything more to do with agriculture than to simply eat the bread and the pork aud beans grown by farmers whose only interest in the College is to be taxed heavily for its support. This institution should be merged into the State University, to the end that the annual three million dollars tax may be whittled down. Were the voters of Michigan permitted to take action upon the matter they would either vote for consolidation or the wiping out of the expensive Lansing concern altogether."

The paragraph was called forth ostensibly by the appearance in last week's RECORD under "News from Graduates and Students" of "22 individuals so classified not one of whom is engaged in agricultural pursuits."

In significant proximity to this paragraph in the Report of the Grass Lake Farmers' Club occurs this sentence:

"W. H. Smith thought the men that followed agriculture had changed, and we appreciate our profession. Higher education is needed by the farmer and family."

The names of 23 persons at one time or another connected with the College appeared in the division of the RECORD above named in the issue of April 14. Of this number 14 were graduates and 9 are either at present students at the College or left the institution without graduating. Of the graduates mentioned 5 are either actually engaged in farming or are managing some agricultural undertaking. Two were mechanical students, and finally, of the seven graduates remaining one is occupying a position in the Department of Agriculture at Washington and four others at least are now teaching school with the express intention of buying a farm as soon as they can get together sufficient funds to warrant them in doing so. This leaves two agricultural students out of twelve mentioned who are permanently disassociated from farmiug.

A committee of the faculty recently examined the records as to the occupation of the agricultural graduates of this College and have reported that 34 per cent of them are either actually farming or carrying on some branch of agricultural work. It is safe to say then that the statement that less than five per cent of the graduates have nothing to do with agriculture is absolutely false.

The further statement that the farmers are heavily taxed for the support of the College is equally misleading. Within the past four years there has been appropriated to this College the sum of $56,725.00 or an average annual appropriation of $14,181.25. The appropriation for 1895 was $13,000.00; for 1896, $10,000.00. The total tax levies for those years in round numbers were $3,000,000.00 and $2,500,000.00 respectively. These figures mean that if the assessed valuation of the farm be $4,000.00 the owner would pay for the support of this College a little less than $.04 a year. Surely so small an item could not be a heavy burden on the owner of a $4,000.00 farm.

Looking at this matter from another point of view we see that of the 518,306 men over 21 years old engaged in gainful occupations in this State 208,444 or 42 per cent are engaged in some form of agricultural work. Three-quarters of this number are farm owners or overseers. The total population of the State whose occupation is given in the last bulletin of the census department is 748,008 of which 31.8 per cent are engaged in agriculture. The gain in numbers of those engaged in agriculture since 1884 is 49,956 which is almost exactly equal to the increase in numbers of those engaged in trade, transportation, manufacturing, mechanical and mining industries put together.

The fact evidently needs emphasis that the general government recognizes the importance of higher education for the agricultural classes, in view of this growth and the great number of people engaged in the industry, by donating to each state annually a sum of money sufficient to pay a large share of the expenses of an Agricultural College. It is to be regretted that there are so many farmers and others who begrudge to the institution sufficient funds to care for the buildings and grounds and to pay such other incidental expenses as do not lie within the legitimate use of the funds derived from the general government.

The usefulness of the Agricultural College of Michigan, has been recently greatly extended by offering special courses in the winter to young farmers and fruit growers. These are designed to teach the art of dairying, fruit raising, and other special lines of work as well as the sciences upon which they are founded. Every young farmer, every employe on the farm who aspires to be a land owner, in fact every one connected with progressive agriculture is invited to make use of the opportunities here presented.

Again, the board at its last meeting decided to offer courses in domestic economy and kindred subjects to ladies. These courses will be parallel with the four years' course offered young men and will lead to the same degree. A suitable dormitory will be provided and complete arrangements made for the comfort and welfare of the farmers' daughters.

The college now, as in the past, hopes to be helpfully near to every phase of agricultural life in the state, and demands for its success the hearty cooperation and enthusiastic support of every thinking farmer in the state.

BIRD ARRIVALS.

PROF. W. B. BARROWS.

The towhee or chewink was omitted from our last list by mistake; it appeared as early as April 3, and became very abundant about the 10th. This species occasionally winters here, but not in any numbers. On April 7 the first turtle dove or mourning dove was seen, and on the 11th they were numerous. The 11th, or rather the night of the 10th, was evidently a time of activity among migrants, for on the following morning flickers or high-holders were here in scores, and the sap-suckers or yellow-bellied woodpeckers were equally plentiful though not so noisy. Chipping sparrows also became abundant the same day, though some had been seen for a day or two previously, the first report, by T. L. Hankinson, being April 8. Purple martins were common in Lansing on the 12th, and very likely came with the "bird-wave" of the night of the 10th. Other records are: Louisiana Water Thrush and Savanna Sparrow, April 12; Kingfisher, in pairs April 13; ruby-crowned kinglet, same day; catbird and rose-breasted grosbeak, April 16, swamp sparrow, wilson's snipe, spotted sandpiper, least fly-catcher, yellow warbler, palm warbler, and brown thrasher, April 18; Baltimore oriole, chimney swift, blue-gray gnat catcher, and yellow-throated vireo, April 19. Crows, crow-blackbirds, robins, blue jays, phoebes, song and chipping sparrows are nesting already. White-bellied nuthatches are feeding their young. Since April 19, no new species have been noted and there has been little northward movement. While chimney swifts and orioles have become more numerous, neither catbirds nor rose-breasted grosbeaks have been seen a second time. The first garter snake (*Eutainia*) was taken on the 11th of April, and three species of tortoises, Blanding's tortoise (*Emys*), painted tortoise (*Chrysemys*), and snapping turtle (*Chelydra*), were noted on the same date, though all but the last had been seen earlier.

THE THREE NEW WHEATS FOR MICHIGAN.

No. 2. The Buda-Pesth Wheat.

R. C. KEDZIE.

Continuing the history of the new wheats I call attention to the Buda-Pesth wheat imported from Buda-Pesth, Hungary by C. G. A. Voigt of Grand Rapids, in 1892.

It has been well known to our millers and flour merchants that the flour made at Buda-Pesth was considerthe best flour in the world, commanding $2.00 a barrel more than the price paid for any other flour in the leading markets of Europe. This great superiority could only come from one (or both) of two sources: 1. Better kind of wheat. 2. Better milling. The millers not being willing to concede greater skill to the Hungarian millers, it was determined to test the quality of the Hungarian wheat to see whether this would explain the superior quality of Buda-Pesth flour.

Mr. Voigt at his own expense imported six bushels of this wheat in 1892, at a total cost of $48, when received in New York. He obtained the wheat through the good offices of Louis Gerster, U. S. Vice Consul at Buda-Pesth. This wheat was given out in half-bushel lots to a dozen farmers near Grand Rapids, and the raising of this wheat has been mainly in the immediate neighborhood of Grand Rapids.

ANALYSIS.

The imported wheat was analyzed, the wheat produced by sowing this seed, and the wheat raised from the Michigan grown seed, to determine whether there would be a falling off in the quality of the wheat in consequence of the change in soil and climate. No deterioration of this kind is found, and the excellent quality of this wheat seems to be inherent, and not dependent on soil and climate.

BREAD MAKING QUALITY OF THE FLOUR.

The flour from this wheat was thoroughly tested as to its bread-making quality, and the report of the baker was excellent, and the bread was of the best grade. The miller, the baker and the eater unite in praising this wheat.

NAME.

Some inquiries have been made as to the Hungarian name of this wheat, but Mr. Voigt writes me "the Buda-Pesth wheat never had any other name that I know of."

As it has been called in this State Buda-Pesth wheat, it may as well continue to bear the name *Buda-Pesth Wheat.*

WHERE TO OBTAIN THE SEED.

As the wheat has been raised only in the vicinity of Grand Rapids so far as this State is concerned, farmers will have to look to Grand Rapids for the seed, A number of farmers have fields of this wheat now growing, and will be able to furnish the seed after harvest. Mr. W. N. Rowe, of the Valley City Mills of Grand Rapids, has engaged the entire crop from twenty acres and will furnish it at a moderate price for seed. Mr. Voigt will also have control of a considerable quantity of the wheat for seed.

For further information write to C. G. A. Voigt.

Chemical Department.

APRIL WILD FLOWERS.

C. F. WHEELER.

The continued heat during the third week of April has made a record not exceeded in a quarter of a century.

Consequently the flowers have come forth in troops where they usually straggle along in single file. The Blood-roots (*Sanguinaria Canadensis*) came forth in such haste that the flowers could not wait for the leaves that fold about them in the bud to unfurl, reminding a country boy of a young partridge running from the nest with egg-shell on its back.

The yellow Adder's-tongue (*Erythronium Americanum*) and its handsome relative, White Dog's-tooth Violet (*E. albidum*), the Toothwort (*Dentaria laciniata*), and the Pepperwort (*D. diphylla*), have joined the procession. The long sinuous root stocks of the pepperwort, called Crinkle-roots by New York boys and girls, are eaten with great relish.

Among the trees now in flower are the Large-toothed Aspen (*Populus grandidentata*), and the Cottonwood (*P. monilifera*). The Service-berry (*Amelanchier Canadensis*), called in New England June-berry and Shad-bush, because there it does not usually blossom till June and is a sign, so called, that the shad are ascending the rivers, here shows its masses of white in April and is the most conspicuous of our flowering trees before the coming of the Dogwood.

The Blue or Water Beech is now in modest flower, a useful but not showy member of the procession.

Flowering shrubs are becoming numerous, among which the willows, four or five sorts, are most common. The Spice bush (*Lindera Benzoin*), is frequent in damp woods with its slender branchlets covered with clusters of yellow flowers of curious construction. The bark has a delicate, aromatic flavor. The Leatherwood (*Dirca palustris*), is showing its little clusters of yellow flowers in the midst of the dark green bud scales covered outside with a dark hairy winter coat. Violets, blue and yellow, are now frequent. The Dutchman's Breeches (*Dicentra Cucullaria*), Blue Cohosh (*Caulophyllum thalictroides*), the Bellwort (*Uvularia grandiflora*), the Wake Robin (*Trillium grandiflorum*), the little Wind-flower and possibly others should be noticed.

Botanical Department, April 23.

Several important changes will be made in the bacteriological work-room soon. Lockers will be put up, in which each student will keep his apparatus and material. A partition will be put across the wide hall on second floor, and the north half will be fitted up into a work-room for Dr. Grange. While these changes are being made the class will take work in Pasteurization of milk under Prof. Smith.

NEWS FROM GRADUATES AND STUDENTS.

Fred. H. Yaple, with '98, is now a law student at the University of Michigan.

C. B. Collingwood, '85, Lansing, was a masonic pilgrim to the Saginaw "exemplification" last Thursday.

Edward R. Lake, '85, is the republican nominee for representative in the district including Benton and Lincoln counties, Oregon.

E. J. Mahan, '98, *m.*, is night machinist with the Illinois Steel Company, of Chicago. He expects to return to college in the near future.

W. Matsura, with '96, *m.*, is head draughtsman in the large establishment of Frazer & Chalmers, Chicago, engineers and manufacturers of heavy machinery.

Norton J. Miller, with '97, *m.*, has accepted a position as bookkeeper with the Wolverine Box Co., Detroit, of which J. N. Estabrook, '88, is one of the partners.

Zachary Veldhuis, *sp.*, '93, who graduated as a V. S. from the Detroit Medical College recently, will locate at Overisel for the present. He was a recent caller at the college.

W. J. Goodenough, '95, *m.*, has gone to Duluth where he will report for duty on the Northwest, the magnificent passenger steamship plying between Duluth and Buffalo.

W. S. Kedzie, '83, of Ouray, Colorado, nominated by the Republicans for alderman, was defeated at the polls. The Populists held the fort and it was impossible to scale the embankment.

Edward Bradford, *sp.*, '90, will graduate from the Detroit Medical College with the degree of M. D. the latter part of this month. He graduated from the veterinary department at that college two years ago.

The Pedal, a St. Louis bicycle publication of April 11, devotes a column and a half to the Central Cycle Company of which P. G. Towar, '85, is the founder and senior partner. An excellent portrait of Mr. Towar accompanies the article.

Rolla J. Cleland, '89, has moved his stock of jewelry to Coopersville, where his father will carry on the business for him. Mr. Cleland has accepted a position with the Furniture Commercial Agency of Grand Rapids, and leaves Lansing this week.

The sad news has reached the College of the death of May (Case) Redman, wife of Edwin W. Redman, '87. She died at Pasadena, California, April 9, where she had been for some time past in the hopes of regaining her health. Mr. Redman has the sympathy of his many college friends.

The following letter is self explanatory: Arrived at 2221 15th St., N. W., Washington, D. C., April 21, 1896, a *Junior Seed Expert*, Gilbert Henry Hicks, Jr., weight 9 pounds. First arrival after 13 years of married life, exploding the 13 unlucky number theory. Signed—His Dad, '92.

The Rural Northwest of recent date, presents an article on "A Model Spraying Outfit," by Prof. U. P. Hedrick, '93, of the Corvallis, Oregon, Agricultural College. An accompanying cut shows the professor mounted on the tank wagon operating the nozzle of the spraying pump.

"Our City's Breathing Places" is the title of a small pamphlet recently issued by the "All Souls Unity Club," of Grand Rapids. It contains some well chosen remarks on City Parks by Chas. W. Garfield, '70, of that city. It is a strong plea for the establishment and beautifying of the city's natural resources.

At Cornell University each year a prize of $100, known as the "Woodford prize," is awarded to the best speaker in the senior class. Members of the class submit their productions to a committee of judges who choose six of the best compositions and require the writers to demonstrate their abilities as orators. Among the fortunate six so selected this year is M. G. Kains, '95.

AT THE COLLEGE.

John King, of the Cleveland Linseed Oil Company, visited the College last Wednesday.

A boy at the terrace—came Saturday evening—has joined the regular army under the command of Lieut. E. A. Lewis.

A Brown-Swiss calf attracts no little attention at the stables. The Brown-Swiss are noted for their beauty while young, and this one is no exception.

W. Z. Hutchinson, Flint, Mich., editor of the *Beekeepers Review*, and secretary of the State Beekeepers Association, which met in Lansing last Friday, visited the college for the purpose of learning how to mount specimens for an herbarium, which he will prepare for his own use, of the leading honey producing plants of the State.

J. M. Perkins of Harvard University, President of the American Republican College League, has appointed B. A. Bowditch, '96, department chairman for Michigan and Ohio.

The class of '97 is contemplating the publication of a class annual similar to the *Harrow*. A committee consisting of Messrs. Sanderson, Munson and Fulton, has been appointed to look into the feasibility of the plan.

A fig tree attracts considerable attention in the east forcing house. Several blossoms have been noticed on the tree, but all have fallen off. It is attaining quite a size, and without doubt will produce fruit in a short time.

A large number of trees are being shipped this spring to prominent growers They will report the progress and grade the different varieties. Reports will be made to the department at stated times and the best varieties thus selected.

The Horticultural department has recently received a number of raspberry-strawberry plants for trial. The plant is supposed to be a hybrid between the strawberry and raspberry, and the outcome is looked forward to with no little interest.

Recent additions to the equipment of the mechanical draughting room are the Amsler solid arm planimeter, a patented 15 inch adjustable curve ruler, one volume each of Elements of Machine Design, parts I. and II., and of Kent's Hand-book for Mechanical Engineers.

Clarence E. De Puy, instructor in the machine shop of Chicago Manual Training School, made a thorough inspection of our mechanical department last Thursday. He is getting new ideas to take with him to the Lewis Training School which will be established in Chicago next September.

H. L. Fairfield, '98, *m.*, son of the late E. Burritt Fairfield, '71, will remain at M. A. C. only until the close of the summer term, and during the intervening time will take special work in chemistry and mathematics. He and his family will then move to Arizona, where they will make their future home.

Another breed of fowls, the Partridge Cochin, has been added to the poultry department. This makes a total of twelve breeds. Something over one hundred eggs is at present the daily product. The junior class is at present engaged in studying the characteristics of the various breeds, how to score fowls, how to test eggs, and in fact everything that may be of value to the expert chicken grower or the general farmer. The work is very practical and is much enjoyed by the students.

At the recent meeting of M. I. A. A. directors at Albion, it was decided to hold the next Annual Field Day at Albion, June 4, 5 and 6, provided Albion raise a bonus of $175 within two weeks. Hillsdale put up a bonus of $275, but as field day was held there last year it was thought best to give Albion a chance. Among other things done, fencing was thrown out of the list of sports. A. M. Flagg of Olivet was given the privilege of getting up a souvenir program, and the Victor base ball was adopted as the official ball. The next meeting of directors will be held at Ypsilanti, May 2.

The game of ball between M. A. C. and the Michigan Military Academy last Saturday was a much better article than was shown the week before. Our boys have not played together long enough to know all there is about ball, but it is gratifying to note that there is marked improvement. They batted steadily and well, and outclassed the visitors in stealing bases. Several brilliant plays gave the crowd an opportunity to exercise their lung power. The visitors were especially strong in team work and made a very good impression by their gentlemanly conduct. Score:

Innings	1	2	3	4	5	6	7	
M. M. A.	0	0	0	5	8	2	*	15
M. A. C.	4	1	0	0	1	2	2	10

The game was called in the seventh inning to allow the visitors to catch a train.

STUDENT EXPERIMENTS.

[Under this head will be given from time to time brief reports of experimental work done by students of the College on the farm, the garden, or in the laboratory.]

A Selection Experiment in Corn.

BY H. E. VAN NORMAN.

In the spring of 1894 the College obtained through the originator, Mr. Benjamin Hathaway of Little Prairie Ronde, Mich., sufficient seed of Hathaway's yellow dent corn to plant the main crop of corn upon the College farm. The corn had been grown by one of the neighbors of Mr. Hathaway and appeared to be about an average sample of that variety as grown in southern Michigan. The crop obtained from planting this corn showed, however, considerable variation. The cobs were ordinarily red, but out of 319 cobs inspected ten were pure white. The dented condition was also not quite uniform. In an average bushel saved for seed, which was of course better than the average of the crop, there were 55 ears that would be called well dented and 65 which were somewhat smooth. A typical ear might be described as having kernels of good depth and thickness, set firmly on the cob, with a distinct dent at the top, but having only slightly developed the pointed apex or roughness at the tip of the kernels often found in dent corn and especially characteristic of certain southwestern "horse tooth" varieties. From the above type or average condition the corn varied in one direction into more strongly dented ears, one occasionally being seen of the extreme "horse tooth" type referred to, with long kernels set loosely on the cob. More commonly, however, the variation was in the opposite direction into ears having short, hard, and comparatively smooth kernels which were of smaller size. Ears of this latter type are not ordinarily selected for seed, and the question arose whether or not there is any influence in our soil or climate, or any special tendency in the variety itself, leading to the continual production of such ears.

Accordingly, there were selected in the spring of 1895, from the crop grown on the College farm the preceeding year, two ears representing the opposite conditions found in this variety; one was a small, compact ear with shallow and nearly smooth kernels; the other was a medium sized ear with firm but well dented kernels which were of good but not extreme length and had a prominent apex. It was an excellent type of well dented corn. The corn on each ear was planted in a plot by itself, far removed from any other corn. Each cob however was reserved with a couple of rows of kernels upon it for comparison with the crop which should be produced. At husking time the plot from the well dented ear turned out 142 ears; of these 8 closely approached the type planted, one being even more strongly dented and with larger kernels; 18 had well dented, sharp pointed kernels, but with these points less developed than in the ear planted, making a total of 26 fairly well dented ears. There were three nearly smooth ears of the glossy degenerate type. The rest of this lot of ears, numbering 113, were of comparatively uniform character and scarcely differed from the main field crop of that variety. The kernels were of moderate length and thickness and were distinctly dented but were nearly or quite lacking in the sharp points.

The plot planted from the smooth or degenerate ear produced 241 ears of which 15 were sufficiently dented to be included in the first two classes of the preceding lot; 22 were of the type planted, and the remaining 204 of average character like the majority in the preceding lot. Reducing these figures for better comparison to tabular form and a percentage basis we have:

Type planted	Total ears in crop	Fairly well dented.	Smooth	Percentage of fairly well dented ears.	Percentage of smooth ears.
Well dented.	142	26	3	17.6	2.
Nearly smooth.	241	15	22	6.2	9.

From the above figures it appears that whichever kind of ear was planted by far the larger share of the product was of the general type of the variety and not of the particular ear planted. The last two columns of the table however are significant. They show that while the variety itself has the stronger influence the individual character of the seed planted has also a distinct effect upon the crop and that therefore a careful selection of seed tends to bring about the desired result. They also seem to show that the tendency to lose its dented character is no stronger in this variety here than the tendency in the opposite direction.

Another experiment connected with this also shows the direct influence of the seed upon the crop. It was stated above that in the corn from which the two representative ears selected for separate planting were chosen, there were ten ears having white cobs out of a total of 319 ears. One of these white-cobbed ears was also planted in a remote plot by itself. The product was 158 ears, of which 25 had white cobs. In other words there was in the original stock a little over three per cent of white-cobbed ears and in the crop grown from a white-cobbed ear nearly sixteen per cent. It was also noted in the product of the other two plots above described, both of which were planted from red cobbed ears, that there were no white-cobbed ears whatever.

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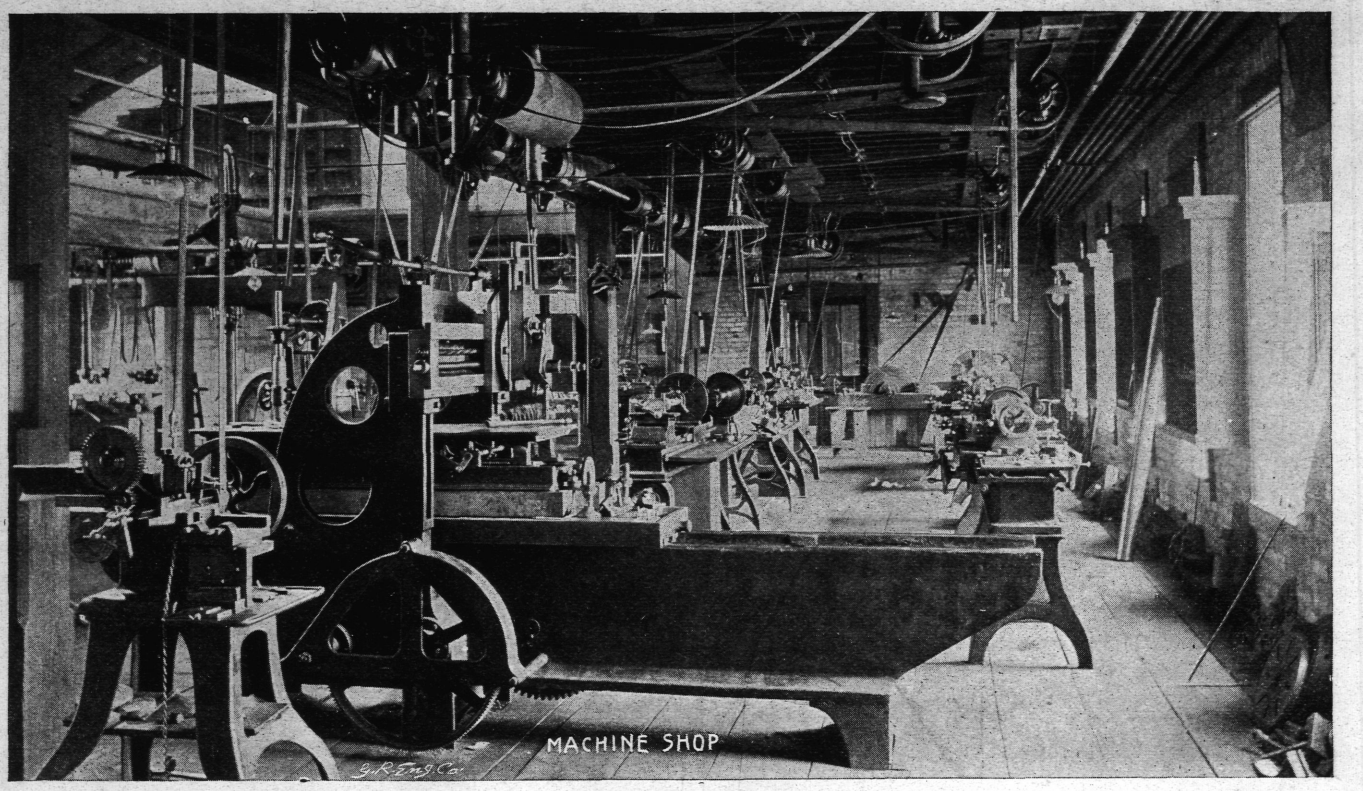

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