

The M. A. C. RECORD.

MICHIGAN STATE AGRICULTURAL COLLEGE.

VOL. 14.

LANSING, MICHIGAN, TUESDAY, DECEMBER 1, 1908.

No. 11.

THE RELATION OF ENGINEERING TO AGRICULTURE.

EXTRACTS FROM AN ADDRESS BY DEAN G. W. BISSELL BEFORE THE NORMAL FARMER'S INSTITUTE.

An analysis of the daily life of the average American farmer of today, shows that he and his family depend upon the labor, skill and knowledge of those in other walks of life, for which make his lot to-day more enervating material comforts and luxuries viable than that of his forbears.

The engineer and the farmer have several points of contact. A noticeable one is transportation facilities. The engineer locates, builds and operates the railway lines, and the electric interurban lines, and builds the highways over which the farmer and his produce and supplies are taken to and from market. The engineer builds the wagons, electric and steam cars and locomotives and automobiles which are the vehicles of this immense traffic. Another point of contact is the telephone, which, while apparently a simple thing, represents in reality a vast amount of inventive and engineering skill in its present state as a cheap and reliable means of communication.

More intimately connected with the actual work of farming is the question of drainage, which from a haphazard scheme of limited application has been studied and developed on scientific principles by the engineer so that its benefits can be readily and certainly obtained for the individual farm, for the township, county, or district.

Akin to drainage is irrigation, which in certain parts of this country has been instituted on a mammoth scale by men having engineering skill to devise and construct the means of impounding and distributing as needed the waters of rivers and wells.

Transportation, communication, drainage and irrigation are the larger and broader points of contact between engineering and agriculture wherein the engineer renders material benefit to the farmer.

The various manufacturing industries which minister so largely to the professional and personal needs and refinements of farm practice and life depend to a large extent upon engineering and mechanical principles and skill in their actual conduct and frequently also for their raw materials as in mining and quarrying for fuel, iron, and stone and in lumbering.

Through this channel come building material, furniture, heating, lighting, plumbing and cooking appliances, farm and dairy machinery and tools, clothing, reading matter and a thousand and one articles of need and luxury without which farming would be an unprogressive and unprofitable and uncomfortable occupation, and to the further development and application of manufacturing to the agricultural field

(Continued on page 4.)

WILL LINE UP FOR YPSILANTI DEBATE.

The meeting next Thursday evening will give its time to the organization of the teams for the first preliminary debate on the Ypsilanti question. All persons who have expressed their intention to enter that preliminary should attend the meeting, and all persons who would like to have a place on one of the teams, but who have not let the club know of the fact, should also come to the meeting.

Every man in college who has done any debating in the past should take advantage of this opportunity for continuing in practice and for acquiring further valuable experience by entering the contest. Whoever is ambitious to become a member of the college team, which will debate with Ypsilanti, should enter the first preliminary debate.

TREBLE-CLEF CHORUS.

One of the most satisfactory concerts ever given at the college was presented by the Treble-Clef Chorus of Olivet College last Tuesday evening. The soprano solo by Miss Cooper, the piano solo by Miss Hungerford, and the reading by Miss Scott were delightful punctuation marks in the charming choruses of the sixteen young ladies. The program appealed alike to musician and to the untrained, being carefully balanced between the classico-popular and the popular-classical. All in all, Miss Bintliff, the conductor, is to be most heartily congratulated on having trained a chorus to do beautiful things in a beautiful way. Her young ladies will be warmly welcomed whenever they come to the college.

And why should not this kind of interchange between the colleges of the state be commended and encouraged no less than is the interchange in athletic activities?

THE BAND IN DETROIT.

The band, 28 men strong, made its first appearance in Detroit Thanksgiving day for the D. A. C.-M. A. C. game. Arriving in Detroit early Thanksgiving morning, the band did much to advertise the game by playing about town at the various hotels. A large number of very complimentary remarks were made concerning the band by the Detroiters, who seemed surprised that M. A. C. should have so good an organization.

In the afternoon, the 5,000 spectators at the game fully enjoyed and applauded the work of the band; the rooting and songs of the band, students and alumni, being quite a treat for them.

With so good a showing made this year, the trip to Detroit will undoubtedly be an annual affair in the future.

Now for a football banquet.

CLOSE SEASON IN A BLAZE OF GLORY.

AGGIES DOWN D. A. C. TEAM EASILY.

Using the onside side kick almost continuously, M. A. C. defeated the heavy D. A. C. team of Detroit by the onesided score of 37-14. At the close of the first half M. A. C. had scored a total of 27 points and D. A. C. had failed to register a single score.

McGilvary abandoned the use of the forward pass, as the high wind made it very uncertain, but substituted the onside kick which was directly responsible for five of our touchdowns. D. A. C. was helpless before it, having perfected no defense for such a play. Playing Vaughn back, to return punts, they were utterly unable to cope with the four or five M. A. C. huskies who tore down the field every time McKenna was called on to boot the ball. Before Vaughn could handle the ball, he was spilled by one or more of the Farmers, who then proceeded to regain the ball, with a gain of from 15 to 35 or 40 yards to their credit.

Coupled with this play the occasional use of Wheeler, Exelby, Allen and Campbell in line smashing served to tear D. A. C.'s line to shreds so that there was usually little trouble in making first down on one buck.

The second half found D. A. C. with a changed and much strengthened line, and managed to stop the furious line smashes which were directed against their tackles, at the same time being able to score 14 points, the largest score which has been registered against M. A. C. this fall. Two well placed kicks by "Cap." Finlayson and a touchdown by Britt Patterson were the plays by which D. A. C. scored. This was the first touchdown scored by straight football on M. A. C. during the entire season. Patterson was given the ball on M. A. C.'s five-yard line and attempted to puncture M. A. C.'s right tackle, but not finding the expected opening he whirled around and went back through left tackle, where he forced his way through for the coveted 5 points. Finlayson kicked an easy goal.

Two touchdowns were all M. A. C. got the second half, there being no tries at goal as the high wind made it almost impossible to catch the ball on the kick out.

Detroit papers handed out huge bouquets on the excellent manner M. A. C. played the game, the organized rooting of the spectators, and the splendid musical showing made by the band. Coach Brewer came in for well deserved praise from papers and spectators alike, for the way the boys were trained and coached.

Many complimentary remarks were heard for the fast article of ball put up by the team, and a Wisconsin student who was present, said it was faster ball than either Wisconsin or Chicago attempted to play.

ALUMNI

In the Record office there is kept a card catalogue of all students who have ever been connected with the college. In order that this may be kept up to date, please notify us of any change of address or occupation.

W. J. WRIGHT, Editor.

'01.

Geo. E. Chadsey, of Washington, D. C., was married to Miss Hazel Anderson, also of Washington, on Nov. 25. "George" is in the postoffice department.

'04.

In the *Iloilo* (Phillipine Islands) *Enterprise* for Sept. 21, we notice an article of considerable length on the work of the Passi Agricultural School, of which H. S. Severance, '04, is principal.

With '07.

The sad news has reached the college of the death of Harold L. Kimball, with '07, on Tuesday last, of typhoid fever. Mr. Kimball and Miss Cecil Alden, sp. '03-'04, were married on the 8th of October and he was taken ill shortly after. His brother was recently killed in the Detroit tunnel disaster.

Through the courtesy of Mr. D. J. Crosby we print this week the names and addresses of the M. A. C. people present at an informal dinner given at the National Hotel, Washington, D. C., during the session of the A. A. A. C. E. S. Nov. 17, 1908.

J. H. Tibbits, '73, State Department, Washington, D. C.

W. D. Hurd, Dean of the College of Agriculture, University of Maine.

Mrs. W. D. Hurd.

D. J. Crosby, '93, Specialist in Agricultural Education, U. S. Dept. Agr., Washington, D. C.

Mrs. D. J. Crosby.

P. G. Holden, Superintendent of Extension Department, Iowa State College.

Mrs. P. G. Holden.

E. A. Burnett, Director Nebraska Agricultural Experiment Station.

Mrs. E. A. Burnett and son.

H. T. French, Director Idaho Agricultural Experiment Station.

J. D. Towar, Director Wyoming Agricultural Experiment Station.

W. A. Taylor, '88, Pomologist, in charge of Field Investigations, Dept. Agr., Washington, D. C.

L. H. Dewey, '88, Botanist, in charge of Fibre-Plant Investigations, Dept. Agr., Washington, D. C.

Mrs. L. H. Dewey.

C. B. Smith, '94, Agriculturist in charge of Farm Practice, Dept. Agr., Washington, D. C.

W. F. Wight, '94, Botanist, in charge of Economic Herbarium, Dept. Agr., Washington, D. C.

H. R. Smith, Prof. Animal Husbandry, Nebr. School of Agr. and Animal Husbandman of Nebraska Experiment Station.

H. C. Skeels, '98, Assistant, Bureau of Plant Industry, Dept. Agr., Washington, D. C.

Mrs. H. C. Skeels.

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TUESDAY, DEC. 1, 1908

(Continued from page 1.)

C. F. Wheeler, '91, Botanist, Bureau of Plant Industry, Dept. of Agr., Washington, D. C.

L. R. Taft, Superintendent Farmers' Institutes, Mich.

Pres. J. L. Snyder.

Pres. K. L. Butterfield, '91, Massachusetts Agricultural College.

L. G. Carpenter, Director Colorado Agricultural Experiment Station.

Dr. W. J. Beal.

W. P. Snyder, Superintendent North Plat Substation, Nebraska.

Mrs. W. P. Snyder.

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G. H. True, Prof. of Agr. and Agriculturist of Experiment Station, Nevada.

Pres. Howard Edwards, Rhode Island Agricultural College.

E. J. Krause, Assistant, Bureau of Entomology, U. S. Dept. Agr., Washington, D. C.

Cora Feldcamp, '05, Library Assistant, Bureau of Plant Industry, Dept. Agr., Washington, D. C.

L. J. Briggs, '93, Physicist in charge of Physical Laboratory, Bureau Plant Industry, Dept. Agr.

Mrs. L. J. Briggs, '93.

E. Davenport, Dean and Director Illinois College of Agr., and Experiment Station.

M. H. Laphan, '97, Assistant, Bureau of Soils, U. S. Dept. Agr.

Mrs. M. H. Laphan.

Mrs. G. H. Hicks, Clerk, Bureau of Plant Industry, U. S. Dept. Agr.

L. A. Clinton, Director Connecticut Storrs Agricultural Station.

A. G. Gulley, Prof. Horticulture, Connecticut Agricultural College.

Mrs. A. G. Gulley.

C. P. Close, Prof. Horticulture and Horticulturist, Maryland Agr. College and Expt. Station.

Mrs. C. P. Close.

J. E. W. Tracy, '96, Assistant, Bureau of Plant Industry, Dept. of Agr.

R. E. Dolittle, Chief Food and Drug Inspection Laboratory, U. S. Dept. of Agr., New York City.

Dr. C. E. Marshall, East Lansing.

L. M. Spencer, '06, Draftsman, War Department.

F. E. Liverence, '06, Draftsman, War Department.

Floyd Robison, East Lansing, Mich.

A. C. Bird, East Lansing, Mich.

F. N. Clark, '89, Ludington, Mich.



SCENE IN THE BOTANIC GARDEN.

A FORESTER'S WORK, THE FIRST YEAR.

(Extract from a letter from A. R. Wilcox, Forester, '08.)

"We were in Washington, D. C., just eleven days and Mr. Kiefer was appointed to the Arkansas Forest, Mr. Hopson to the Weiser, in Idaho, and I to the Columbia. Mr. Hopson and I were on the same train from Washington to Chicago, but there he took the Great Western and I took the C. B. & Q.

"I think I had the longest trip of any man in our class that left Washington. The headquarters of the Columbia was in Portland, which is 3328 miles from Washington, the way I was sent. I was four days and five nights on the road, and didn't have to wait for trains more than five hours, all the way through. The government furnished us with transportation requests, both for fare and sleepers, so the only cash outlay that was necessary was merely in the dining car, and that, of course, was refunded. That made it pretty easy for we boys who were just out of college.

"The Columbia National Forest came into existence on July 1st, 1908. Formerly, it was a portion of the old Ranier Forest. It lies about fifty miles up the Columbia river from Portland, and on the Washington side, extending north beyond Mt. Adams and Mt. St. Helens. There is about forty-two townships in it, and the whole region is a nest of mountains. Years ago, when there were more Indians and more prospecting going on in this country, there were plenty of trails all through the mountains, but now they are mostly blocked, so it is impossible to use a horse on them, so most of the traveling this summer has been on foot. It is wonderful how soon one becomes toughened to camp life, so a ten mile walk is not minded any more than a two mile walk.

"The summit of the Cascade range runs across the forest diagonally from Mt. Adams to the Columbia River, and I have been over the range with Supervisor MacKenzie several times this summer, exploring trails and making working maps of the region. Where there is no timber the huckleberries take possession of the slopes. This was a particularly good year for them, and where they are to be found a

person can just about live on them. I picked the largest one I could find and measured it with a little one-inch rule I always carry with me, and it measured 9-16 of an inch across. Not quite as big as an apple but a fair size nevertheless.

"Both the dense red fir, hemlock and cedar forest, and the open yellow, or bull pine forest are to be found on the Columbia forest. The former is found west of the Cascades, increasing in density as the Pacific ocean is approached, and on the east side of the range where the climate is much colder in winter and drier in summer the yellow pine is found. Most of the latter area is also covered with bunch grass and makes elegant sheep ranges. There is only about three and one-half townships of grazing land on this forest, and that is on the slopes of Mt. Adams, and snow lies on it until about June 1st, but manages to graze better than 17,000 sheep without injury to the range or the forest.

"I turned out a twenty-page report the first of October, and have had to draw maps constantly. But there are no timber sales going on in this forest, and it seemed necessary that I should get acquainted with the various regions of the forest, the personnel, and the conditions in general."

OFF FOR CHICAGO.

About 75 agricultural students left over the Grand Trunk Sunday and Monday morning for Chicago, where they will attend the Live Stock Show. The college sends no judging team this year, nor does it exhibit any stock.

PAY OF COLLEGE GRADUATES.

"How much may a person earn after getting a college education?" The question is often asked, and best answered by saying: "Any amount. It depends upon the person."

There has been so much of speculation regarding the salaries of college graduates and especially regarding the incomes of engineers and men of technical training, that at a recent gathering of a class graduated ten years ago from one of the foremost technical colleges in the country it was decided to collect reliable information on this point.

There were about 180 graduates in the class in question, and as they had become scattered in all parts of the country, and had taken up a great variety of business and of engineering lines of work, it was evident that the results would be of great value. Furthermore, they would provide information of a kind that people in general have much interest in, but can ascertain little about.

A college man's success, like that of any other man in the business world of today, must of necessity be judged largely by his salary, or by the amount of money that he is able to make. Here and there a man is to be found whose labors have been the work of love, or one who keeps at his task largely for the glory or the honor that may be attached to the position that he holds, but such men are greatly in the minority.

Information blanks, asking for replies to certain questions covering location, business, etc., were sent out to all of the graduates of the college class referred to above. It was requested that the salary for the preceding year be marked on a blank card and returned in a separate envelope, and in order to avoid any occasion for exaggerating the salary, all of the "income envelopes" were opened by a stranger.

Of the 180 requests sent out, 151 replies were received. These came from thirty states in this country, one reply each from Canada, British Columbia, and Mexico, and three replies from countries in Europe. Of the 151 men who answered, seventy per cent. were married, and the married ones had a total among them of ninety-nine children. The great majority of the men were managers, engineers, or executives for successful manufacturing and business corporations, dealing with the work in electrical, civil, mining, and other engineering lines. A few were in business for themselves as consulting engineers, one was a lecturer, one a California ranch owner, and ten were in the service of the United States government. These details are mentioned to show the wide-reaching and representative character of those whose replies form a basis of the statistics of salaries given here.

The lowest salary received was \$728. The largest salary was \$20,000. The following table shows the salaries for the last year, separated into divisions of \$500 each, and

(Continued on page 4.)

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ABOUT THE CAMPUS

Military hop Dec. 4.
 Christmas bazaar in chapel December 4-5.
 The first military party of the season will be held in the armory Dec. 4.
 Anna Thomsson, with '10, was the guest of college friends Saturday and Sunday.
 H. C. Pratt and A. Sobey were at Syracuse University last week, attending a meeting of the Tau Beta Pi.
 Annual football banquet to be given in Wells Hall on the evening of Friday, Dec. 11. Watch for further notices.
 The horticultural department has on exhibit collections of apples from different parts of the country. One collection is from Iowa, another from Massachusetts, some from New York, and some from Michigan.
 The junior and senior horticultural students and the instructors in the horticultural department are at South Haven attending the annual meeting of State Horticultural Society. Prof's Taft and Eustace and Mr. Gunson will speak.
 The second team sprung a surprise Thanksgiving by winning over the Flint State School by a score of 22-5. There is much material in the second team which looks good to fill in the vacancies in next year's team caused by the graduation of Shedd, Frazer, and Allen.

Langrill (to Kowalski)—"I saw a sign in a hardware store today, 'cast iron sinks,' as though every one wasn't wise to that."
 With many students at their homes and 400 or 500 more at the D. A. C. game, Thanksgiving day was a quiet one at the college.
 The farmers' institutes begin in earnest this week and will continue until the last week in February, when they will close with a roundup at Mt. Pleasant.
 The entertainment at the chapel Friday evening was well attended. The program was well rendered, the talk on early college life by Dr. Beal being especially enjoyable.
 The reported case of foot and mouth disease in a herd of cattle south of Lansing proved not to be that dreaded disease. So far there has been none outside of Wayne Co. in this state.
 A suit-case was taken, probably by mistake, from the St. Johns car Sunday evening. If any student returning on that car has a suit-case not his own please leave at the Women's Building.
 The Y. W. C. A. box social at the Women's Building Saturday night was well attended, over 100 being present. The entertainment consisted of singing college songs and a short program and the auctioneer of the boxers which contained almost anything from a paper doll to a pound of home made candy. Refreshments were served.

SPECIAL SHORT COURSES.
TWO MORE TO BE ADDED THIS YEAR.
 The special short winter courses will be held as usual this year, beginning with the first day of the winter term, Jan. 5, except the course in cheese making, which will begin Feb. 15.
 Two new courses have been added, viz.: Poultry Culture and Forestry. Bulletin describing these courses may be obtained at the office of Dean Shaw, or the President's office, and will be gladly sent to all who apply.
 Office Boy—"The editor says he's much obliged to you for allowing him to see your drawings, but much regrets he is unable to use them."
 Fair Artist (eagerly)—"Did he say that?"
 Office Boy (truthfully).—"Well, not exactly. He just said, 'Take 'em away, Pimple; they make me sick.'"—*Ex.*
 "I guess my father must have been a pretty bad boy," said one youngster.
 "Why?" inquired the other.
 "Because he knows exactly what questions to ask when he wants to know what I have been doing."—*Ex.*
 Teacher in Geom.—"Well, continue Mr. S.—"
 Mr. S., (blankly)—"Well, that's all there is to it."

THE ENGINEER.

Who comes with saber sharpened keen,
 With profile long and sober mien,
 With transit, level, book and tape,
 And glittering axe to swat the stake?
 The Engineer.

Who sets the level, bends his spine,
 Squints through the glass along the line,
 Swings both his arms at rapid gait,
 Yells, "Hold that god-darned rod up straight?"
 The Engineer.

Who raves and snorts like one insane,
 Jumps in the air and claws his mane,
 Whene'er he sees a scraper take,
 A whack at his most cherished stake?
 The Engineer.

Who says he'll charge "an even ten
 For stakes destroyed by mules and men;"
 While on all fours he tries in vain
 To find the vanished stake again?
 The Engineer.

Who calls it your unrivalled gall,
 Whene'er you kick for overhaul,
 And gives your spine a frigid chill
 Whene'er you spring an extra bill?
 The Engineer.

Who deals with figures most profuse,
 And tells you solid rock is loose,
 That hard pan is nothing more than loam,
 While gumbo is lighter than sea foam?
 The Engineer.

Who, after all, commands our praise,
 In spite of his peculiar ways,
 While others harvest all the grains
 That spring from his prolific brains?
 The Engineer.

—*Exponent.*

THE TECHNICAL CLUBS

Brief Reviews of the Meetings

ENGINEERING SOCIETY.

The Engineering Society was favored Tuesday evening by having Mr. J. R. McCall, of Detroit, as a speaker. He spoke on the subject, "Modern Problems in Heating and Ventilation." Mr. McCall is a strong advocate for fresh air. He said that we have thermometers that tell the temperature of a room and we should also have some apparatus for detecting the amount of carbon dioxide in a room. Many companies are manufacturing devices which they claim will give perfect ventilation but drawing air from the outside by means of a fan system is the up-to-date method of ventilation.

Mr. McCall illustrated his lecture by slides. He first showed the disk type of fans which is limited in its adaptability. It gives only pressures of three-fourths to one pound and can only be used for ventilating one or two rooms. The centrifugal fans are more generally used. He showed how fans are used to ventilate mines where the air is not heated. The fans are made so that fresh air can be blown in or smoke and gases drawn out. He showed different types of heaters and stated that a blower system requires less heating surface than direct radiation. It is better still to heat by direct radiation and ventilate by the blower system.

The air that is used for ventilation is sometimes washed, i. e., passed through a partition of charcoal or coke that is kept wet by running water. In this way about 98 per cent. of the impurities are taken out.

Mr. McCall illustrated by his slides the difficulties in ventilating and heating factories, theatres and school houses, and the different ways in which they are overcome.

PAY OF COLLEGE GRADUATES.

(Continued from page 2.)

the number of college men receiving salaries in each of these divisions:

Yearly salary.	No. men each division.
Below \$1,000	2
\$1,000-\$1,499	15
1,500-1,999	30
2,000-2,499	27
2,500-2,999	19
3,000-3,499	18
3,500-3,999	11
4,000-4,499	7
4,500-4,999	0
5,000-9,999	15
10,000-20,000	7

Total 151

The average received for the year was \$3,107. The total amount of money received by the 151 graduates during the last year in their business work was \$469,157, or nearly \$500,000.

Another interesting item that developed from the replies received was that the seven states in which the largest incomes were earned, and these were also the seven states in which the largest number of men were employed, are as follows: Massachusetts, New York, Illinois, Ohio, Indiana, Pennsylvania, and Colorado.—*Boston Herald.*

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RELATION OF ENGINEERING TO AGRICULTURE.

(Continued from page 1.)

must we look in large measure for the improvement of the farm life, especially in the direction of relieving it of its drudgery and isolation.

It is by no means claimed that the application of engineering science to farming is a panacea for agricultural ills. Engineering can only help by connecting the science with the practice of farming.

A knowledge of the possibilities of soils of various kinds, their treatment to conserve their potency, of the principles of stock and plant breeding, a true perspective of the relation of labor and leisure, good business methods and acumen, ability to read human nature, a good disposition and oceans of common sense, are as essential to the farm as money and the material aids furnished by the engineering and other professions.

Moreover, the engineer is not the creditor only of the farmer. He, in common with the rest of the world, depends upon the farmer for food and to a large extent for clothing and gladly recognizes the obligation.

This is an age of specialization, and to each industry should be given encouragement to produce its best. Each industry contributes to the success of every other through exchange of products. After all is said and done man must live and for the wherewithal he looks to the field and pasture and to the aid and encouragement of him who works there, he should and does contribute his own, in ideas, in matter and in cordial applause for work well done.

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