The M. A. C. RECORD.

MICHIGAN STATE AGRICULTURAL COLLEGE.

VOL. 13. LANSING, MICHIGAN, TUESDAY, JUNE 30, 1908. No. 38.

COLLEGE YEAR CLOSES WITH APPROPRIATE FESTIVITIES.

EIGHTY-FOUR BACHELOR AND FIVE ADVANCED DEGREES CONFERRED.

Last Tuesday brought to a close the college year and with it the graduation of the class of 1908 consisting of 84 members of which 22 were of the agricultural course, 45 of the engineering course, 14 of the home economics course and three foresters. Five advanced degrees were also given.

The first exercise of the week was the Baccalaureate service held at the armory at three o'clock Sunday afternoon, June 21 according to the following program:

March—Miss Freyhoffer and Miss Bates.
Hymn—"Great God of Nations."
Invocation—Rev. W. S. Sly, of Lansing.
Scripture Reading—Rev. H. R. Snyder, of Pacific Grove, Calif.
Anthem—"I Will Sing of Thy Power," M. A. C. choir.
Prayer—Rev. J. S. Dice, of Enon Valley, Pa.
Solo, "O Lord Be Merciful," Mr. E. G. Killeen.
Anthem, Hallelujah Chorus from "Mt. of Olives," M. A. C. choir.
Address, "A Truce or A Challenge." Rev. Ernest Bourner Allen, of Toledo, Ohio.
Solo, "Come Unto Him"—Mr. E. G. Killeen.
Hymn—"Jesus Shall Reign."
Benediction—Rev. Corbit, of Adrian, Mich.

Rev. Allen's address was strong and forceful, and as a former pastor of a Lansing church, he is familiar with the college and its work. Next to his alma mater he considers M. A. C. his college home.

DEDICATION OF ENGINEERING BUILDING.

On Monday, following the baccalaureate service, occurred the dedication of the engineering building which was finished last fall and which has been in use during the year. The exercises were held in the grove in front of the building at three o'clock p. m. Following the exercise the building was opened for public inspection. The following is the program:

Music, Overture, "Lustspiel," Kelar-Bela.
Invocation—Rev. Wm. C. Hicks, Lansing.
Music, cornet solo, "Columbia Fantasia," Rollinson—Mr. Fortune Dogneaux.
Announcements—Prof. G. W. Bissell.
Music, Selection Operatic, "Bohemian Girl," Balfe.
Address—"The Education of an Engineer"—Dr. Rolla Clinton Carpenter, Cornell University, Ithaca, N. Y.
Music, March, "Gloria," Losey.

Fischer's orchestra furnished the music.

Dr. Carpenter is an alumnus of M. A. C., having been graduated with the class of '73. Later he was graduated from the engineering department of the University of Michigan, was at one time Professor of Mathematics and Civil Engineering at M. A. C., and is now Professor of Experimental Engineering at Cornell University.

PRESIDENT'S RECEPTION.

The annual President's reception was held at the home of President and Mrs. Snyder Monday evening. From 8 till 11 o'clock the house was thronged with faculty, students and friends, all enjoying the last general social function of the college year. The receiving line was composed of President and Mrs. J. L. Snyder, Dr. R. C. Carpenter, W. A. Hopson, president of the senior class, Dean and Mrs. G. W. Bissell, Rev. W. H. Snyder and Hon. William J. Oberdorffer.

Refreshments consisting of punch, ice cream and candies were served under the direction of Miss Bessie Beemis of the Domestic Science Department. Fischer's orchestra furnished the music. The rooms were simply and tastefully decorated for the occasion and numerous electric fans helped to modify the otherwise oppressive heat. Several parents of members of the graduating class were present.

LAYING THE CORNER STONE.

The rapid construction of the new agricultural building made possible the laying of the corner stone just preceding the commencement exercises Tuesday morning. It had not been anticipated that this could be done at this time and no preparation had been made for the occasion so that the services were very informal. President Snyder made a few remarks, Hon. A. J. Dougherty, of the State Board, held the trowel, and Dean R. S. Shaw read a list of articles placed inside the stone as follows:

1. Copy of original resolution by the Board of Agriculture, making appropriation for an agricultural building.
2. Record of the first meeting of the State Board of Education in its capacity of governing board of the State Agricultural School organized under the provisions of Act 130, Session Laws of 1855.
3. Copy of the contract with H. G. Christman Company for the erection of the building.
4. Copy of 1908 catalog.
5. Copy of general catalog, 1857–1900.
6. Cut of the building.
7. Copy of the last legislative act granting aid to Michigan State Agricultural College.
8. Statement regarding plans for heating, ventilating, lighting and plumbing prepared under the direction of Prof. Geo. W. Bissell.
9. Copies of M. A. C. RECORD June 16, 1908 and April 7, 1908.
10. Remarks of Pres. Snyder at the laying of the corner stone.
11. Report of the laying of the corner stone of the Botanical Building.

P. C. Schroyer, of the senior class, sealed the box which contained these articles.

COMMENCEMENT EXERCISES.

Departing somewhat from the usual custom of commencement exercises no representatives of the class spoke at commencement exercises this year, the time being given up to an address by Miss Jane Addams of Hull House, Chicago. Aside from last year when President Roosevelt gave the address, it is doubtful if so large a crowd was ever before present at commencement exercises. Disregarding the sweltering heat, people from the college community and Lansing poured in until the Armory was crowded to its utmost capacity.

At 10:30 o'clock, to the strains of the march "Commencement," Mr. C. C. Taylor and Mr. W. D. Frazer, of the junior class, led the way to the platform followed by Pres. Snyder and the speaker, who in turn were followed by the members of the State Board of Agriculture, the faculty, and lastly the senior class. The members of the board and faculty occupied seats on the platform and the class occupied seats directly in front, a pretty tribute to Glenn Dodge, a member of the class claimed by death a few weeks ago, being a pillow of flowers occupying a vacant chair.

The invocation, pronounced by Rev. M. D. Carrel, of Charlotte, was followed by an overture by the orchestra, after which President Snyder introduced Miss Addams, who spoke on the subject, "The Changing Ideas of Education." As the speaker unfolded her subject the utmost interest was evidenced. She spoke with the firmness of conviction, which comes from the successful accomplishment of an undertaking and an earnestness coming from a life given unselfishly for others. It was an address both instructive and inspiring, so much so that at all times she held the closest attention.

Music followed the address, after which degrees were conferred upon the following:

BACHELORS OF SCIENCE

Agricultural graduates are designated by A, Engineering by E, Home Economics by H, and Forestry by F.

ALLEN, MARSHALL R., A
ANDREWS, NEINA F., H

BAKER, PHILIP J., E
BARDEN, FLOYD M., A
BARLEY, ARTHUR T., E
BARLOW, FLORENCE M., H
BEAL, FANNIE E., H
BEARD, HAZLE A., H
BORN, FRANK G., E
BOYLE, JESSE, A
BREWSTER, ARCHIE W., E
BROWN, WALTER P., E
BURRELL, LEROY L., A

CAMPBELL, JAMES R., E
CARR, RALPH, J., A
CARR, ROSWELL G., A
CARREL, RUTH, H

(Continued on page 2.)

THE BAND.

As the RECORD aims to acquaint its readers with the growth and advancement of M. A. C. along every line, in this issue the group picture of our military band will call your attention to the best military musical organization which our college so far in its history has ever had. Trained by the efficient and able work of Director Arthur J. Clark it has come to be considered as one of the best amateur bands in the state.

The complete list of instrumentalists playing with the organization during the past year is as follows:

Clarinets—Applin, Baden, Bursma, Hill, Hopphan, Jordan, Saier.

Piccolo—Martin.

Cornets—Brault, Cavanagh, J., Cools, Johnson, Keith, Spurway, Werner, Wilhelm.

Altos—Clark, W., Fowler, Hodgeman, Kurtz, Yuill.

Trombones, Slide—Beardsley, Cavanagh, G., Clippert, McGillvray, Shaw.

Baritone—Hallock.

Bass—McWilliams, VanWagenen.

Drums—Crosby, Ellison, Gibbs, A.

Director—Arthur J. Clark.

Drum Major—Roy H. Gilbert.

The Band is a part of and under the direct control of the military department. Its members serve as musicians in the Band in lieu of military drill. During the fall and winter terms the Band rehearsed regularly three hours per week, and in the spring term appeared with the battalion on the parade ground at drill. During the year the Band has contributed to the enjoyment of life on the campus by playing at five football games as well as several games of baseball. They also gave two promenade concerts which were much appreciated and appeared on the Farmers' Round-Up Institute program. Co-operating with the Athletic Association they gave a highly successful minstrel performance. The Band also appeared with the cadet battalion in the Decoration Day parade and furnished music for the Masonic memorial exercises in Lansing.

The college community greatly appreciates the band and its work, and extends its congratulations to the Band membershipand its popular director for what has been accomplished during the year just closed. May its success the coming year be as well marked.

NEW PURCHASING SYSTEM.

At a recent meeting of the State Board a plan for a new purchasing scheme for the college was adopted whereby everything needed by the different departments is to be purchased through the secretary's office instead by the departments themselves as is done at present. The system will go in force in a few weeks.

The M. A. C. RECORD

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TUESDAY, JUNE 30, 1908

In Retrospect

In this last issue of the year we cannot help but reflect upon the past year, the beginning of the last half of M. A. C.'s century run, with a considerable degree of satisfaction. In many ways it has been most remarkable. The attendance has been larger than ever before, the total enrollment for the year being 1191. A large additional teaching force has had to be maintained to accommodate this extraordinary increase. The engineering building was completed in the early fall and provides excellent quarters for the engineering departments and increased class room facilities. The agricultural building is now well under way and when completed will be one of the best in the country. The United States government has made appropriation for a weather bureau and meteorological station here which is soon to be erected.

Two deaths and two resignations among the faculty have been chronicled during the year, with whom a large number of the alumni were acquainted. The first to pass away was Prof. E. E. Bogue, of the forestry department, who died from the result of an operation for appendicitis August 19 last. Prof. Holdsworth's death occurred September 18 at his home just north of the campus, resulting from tuberculosis. Prof. Fletcher, of the horticultural department, resigned early in the winter to accept the directorship of the Virginia experiment station, and Prof. C. D. Smith accepted the presidency of the Agricultural College at Piracacaba, Brazil.

In athletics the college has made good by securing the state college championship on football and basketball, and withdrew from the M. I. A. A. to enter athletic relations with the larger institutions, in competition with which our baseball and track teams made good. The track team won sixth place in the conference meet at Chicago, one of the team being chosen for the Olympic games at London.

And last, but not least, is the noticable good feeling and fellowship that has existed throughout the year whereby every one has upheld the honor of M. A. C.

THE RECORD is unfortunate this week in being unable to give in full the address of Miss Jane Addams given at commencement. It was clearly the type of address coming from long experience along educational lines and the result of a life's work; a life sacrificed for the good of others, the foreign population of Chicago, among whom she has worked to uplift and make desirable citizens. But her work has not stopped there. She has invaded the politics of the city and by providing play grounds and healthful places of amusement, is assisting in breaking up the "gangs" in which are bred and flourish that menace to good government, the political "boss." Fortunate indeed were those who heard her.

COLLEGE YEAR CLOSES.

(Continued from page 1.)

CHARLTON, IRVING D., E
CHRISTENSEN, LEONARD, E
COBB, MYRON A., A
CONOLLY, HENRY M., A
COVELL, BESS, H

DARBEE, ACASTUS L., A
DICE, JAMES R., A
DIKEMAN, MYRON J., E
DODGE, GLEN W., E
DWIGHT, ALBERT C., E

FERGUSON, MAUD E., H
FULLER, LEWIS S., E

GILBERT, ROY H., E
GONGWER, J. VERNE, E
HAGAMAN, HARRY W., E
HALL, MARION E., E
HELLER, CHAS. S., A
HILL, NEWELL J., E
HOPSON, WALTER A., F
HORTON, SAMUEL W., A
HURLBURT, AMY D., H
HYDE, LORA M., H

INGLIS, JEAN A., H

KIEFER, FRANCIS, F
KOEHLER, IRVING G. E
KREHL, EDWARD C., A

LEMMON, KELLEY B., E

McVANNELL, GEORGE H., E
MARSH, HERBERT E., E
MARTIN, EVAN S., E
MERWIN, CLYDE E., E
MOSHER, MABEL, H
MUSSELMAN, HARRY H., E

NORTON, CHARLES B., E

O'GARA, FRANCIS, E
OWEN, GRACE, H

PARKER WARD H., A
PEARSALL, ROPHA V., E
PRATT, MARY E., H

RACE, SHELBY E., E
RIDER, WILLIAM M., A
RIGTERINK, ALBERT, A
RILEY, EARLE F., E
ROGERS, B. CARL, E
RORK, ELMER J., E
ROSEN, JOSEPH A., A
ROUSE, HERBERT M., E

SCHROYER, PERCY C., E
SHASSBERGER, ERNEST J., E
SHERMAN, HAROLD C., E
SHULL, HUBER, A
SMALL, RAY A., E
SMALL, WALTER H., E
SNYDER, ANTHONY L., E
STEPHENSON, OIE W., E
SUTHERLAND, CLARENCE H., E

TENKONOHY, FRANKLIN V., E

VALENTINE, GILBERT S., E

WALKUP, JOHN M., A
WARNER, GRACE L., H
WILBUR, JOHN W., A
WILCOX, ARTHUR R., E
WILCOX, EUGENE I., A
WILLIAMS, CLAUDE V., E
WILSON, FRANK B., A
WOOD, LLOYD E., E

ZIMMER, WALTER E. A., E

Five advanced degrees were conferred. To Louis C. Brooks, B. S. '92, the degree of Electrical Engineer. To William D. Hurd, B. S. '99, the degree of Master of Agriculture. To Frank F. Rogers, B. S. '83, the degree of Civil Engineer. To Alva T. Stevens, B. S. '93, the degree of Master of Science. To Dr. Edward A. A. Grange the honoray degree of Master of Science.

SOCIETY REUNIONS.

The society reunions and parties were held this year on Tuesday evening after commencement and were a fitting close to the week's festivities and the year's work.

The Aurorean party was given in the Hotel Downey. After a reception the guests adjourned to the grill room for a twelve course banquet which was followed by toasts by Claude Nash, A. W. Brewster and Z. C. Goodell. The dancing was given in the convention hall, the music being by Boos' Orchestra, of Jackson. The Patrons were Dr. and Mrs. L. M. Hurt and Prof. and Mrs. Polson.

The Columbian banquet was held in the dining room of the Women's Building, which was prettily decorated for the occasion. C. I. Auten of Flint acted as toastmaster and introduced the speakers of the evening, Mr. J. R. Dice, A. L. Snow, C. W. Lapworth and P. H. Piper. After the banquet the party adjourned to the engineering building, where dancing was enjoyed. The chaperones were Pres. and Mrs. J. L. Snyder and Coach and Mrs. C. L. Brewer.

The Hesperian party was held in the Masonic Temple. The banquet was served by the ladies of The Church of Our Father. Francis Keifer acted as toastmaster, the following members responding to toasts: W. A. Hopson, D. N. Hanson, F. R. Sweeney and L. C. Christiansen. After the banquet the party returned to the ballroom to enjoy the dancing. The party was chaperoned by Dean and Mrs. Shaw and Secretary and Mrs. Brown.

The Olympic party was held in the society rooms and began with dancing. The banquet was served at 10 o'clock in Club A. P. A. Shuttleworth acted as toastmaster, and called upon the following members who responded with toasts: W. H. Parker, R. E. Rudzinski and C. A. Griffin. After the banquet the guests returned to the rooms and danced until three o'clock. Dean and Mrs. G. W. Bissell chaperoned the party.

The Phi Delta society held an informal reception at their society house from 7 to 8 o'clock, and then repaired to Club B, where the banquet was served. J. R. Campbell was toastmaster, the toasts being given by C. A. Lemmon, M. A. Hall, Carl Rogers and Paul Ellis. The armory was the scene of the dancing and was most handsomely decorated for the occasion. Prof. and Mrs. F. S. Kedzie and Prof. and Mrs. C. P. Halligan were the chaperones.

The Union Literary party began with class day exercises at their rooms, the program being given by J. V. Gongwer, J. G. Boyle, J. S. Wells, J. W. Knecht and L. Hidrosollo. Immediately following a banquet was served in Club D. R. T. Carr acted as toastmaster and A. J. Anderson, O. A. Kratz, M. S. Johnson, and C. C. Taylor responded with toasts. Cars were then taken for Pine Lake were dancing was enjoyed at the pavillion. Dr. and Mrs. Gordon and Mr. and Mrs. Glenn Boyle were the chaperones.

Miss Norma Gilchrist has been ill as a result of a slight operation on her throat.

PRESIDENT SNYDER HONORED BY THE UNIVERSITY OF MICHIGAN.

It will be a matter of congratulation to the friends of the college to learn that the University of Michigan at its annual commencement last week conferred upon the president of this college its highest honorary degree, that of Doctor of Laws. This honor is the more significant from the fact that it was liberally bestowed by our great university. Only two persons were so honored this year, the other honor going to an ambassador to Japan, Hon. Thomas J. O'Brien, who is a former graduate.

This action on the part of our university authorities is a fine tribute to this college, but more especially to Pres. Snyder, whose administration during the past twelve years has been marked by a period of rapid development and harmonious relations both within the college and with the public at large.

A TRUCE OR A CHALLENGE.

BACCALAUREATE ADDRESS BY REV. ERNEST BOURNER ALLEN.

A single sentence often sums up a man's life purpose and gives the key to his character. Grant revealed his pertinacity of purpose when, after those six days of fearful fighting in the Wilderness, he sent his decisive message to the President, "I propose to fight it out on this line if it takes all summer." When Lincoln delivered his second inaugural, the historian tells us there was a perceptible thrill passed over the multitude when he uttered the memorable words, reflecting his own magnificent endeavor, "with malice toward none; with charity for all; with firmness for the right as God gives us to see the right, let us strive on to finish the work we are in." And Lowell catches us in the spirit of his splendid purpose when he says, "My life shall be a challenge not a truce."

We live in a challenging age. It attacks. It does not hesitate to take the aggressive. Principles of government which we supposed were long since settled are vigorously questioned. A system of education which has been the marvel of Europe is being subtly changed. The age challenges our beliefs, our fundamental conceptions of God and the hereafter. It declares the great obligations of human brotherhood and demands the homely virtues of honesty, fidelity, usefulness. Whether the youth of this generation shall meet the challenge of the times with the white flag of fear or the red flag of courage is the question you are to answer. Whether like Lowell you make the great decision and cry: "My life shall be a challenge, not a truce," is what the world is asking, for we need men and women who dare to think, to act, to live in good conscience before God.

Today and in the next ten years there comes to you, young men and young women, the challenge of youth. It comes but once — what will you do with it? You have fine powers of body and brain, of heart and hand. Are they to be used in service or in self satisfaction? Some men, like Lord Byron, answer thus: "I will work the mine

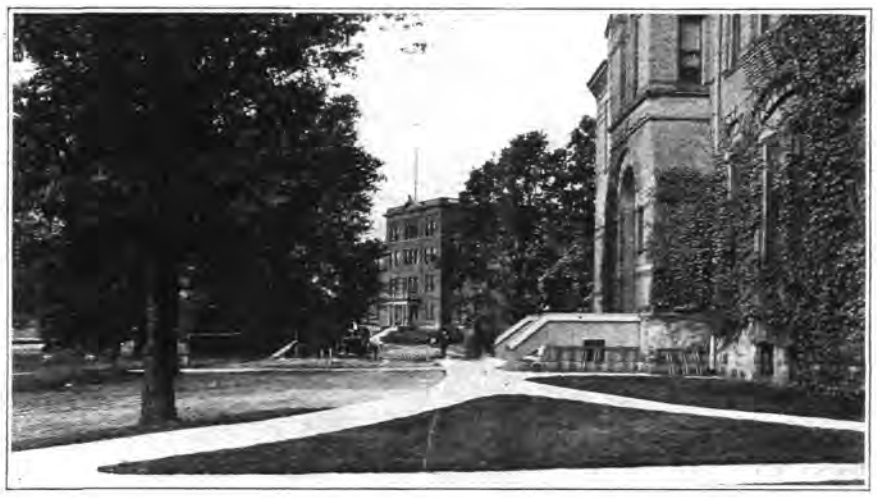
of my youth to the last vein of the ore, and then good-night" And so this man, who at thirty-three declared his days were "in the sere and yellow leaf," whose father was a brilliant roysterer, whose mother was a passionate lioness, burned out the powers of a fine personality to the tragic end. The pathos of life is that men are doing it today. Some of the splendid ships launched at graduation in the colleges and universities of America this week may come back only shattered wrecks unless they meet the challenge of their powers with a balanced and growing mastery.

There is upon us the challenge of current events. We have had exposures of fraud, of careless administration, of deplorable stewardship. New and higher standards of honesty and service have been demanded. The responsibility of college-trained men for the right type of public leadership is heavy and plain. When 19,000 men in a certain city fail to register and therefore cannot vote, what can we expect in city government? Men who do not register their convictions are not entitled to suffrage. The country man who is flimflammed by the city shark is no more an object of ridicule than the college man who is fooled by the political boss. It is well to remember that if "the wicked flee when no man pursueth," they make a great deal better time when some one is after them! The past four years will be remembered "for the moral uplift given to the business of the country" declares the Wall Street Journal. It is yours to maintain this uplift, by personal righteousness and unselfish service for the public good in any community into which you may go.

Let no one betray you into the hands of the pessimist. This is as good and glorious an age as the world has ever seen, not worse but better. There were cancers in the body politic in 1776 and in 1873. They had to be cut out. I do not care so much whether the next president comes from Minnesota or Nebraska, from New York or the old reliable state of Ohio, provided only he be a man of the same fearless spirit as the man now in the White House, who dares to rebuke sin, bid sinners fear, and demand a square deal for black and white, for labor and capital, for Cuban or Chinaman.

In view of certain current but veiled attacks on the home life of our country it is reassuring to find institutions like this whose curriculum recognizes the home as a mighty factor in our national life. Whatever capacity some women may have for public service, the majority will doubtless influence the republic most through the home. Home-making and motherhood are as grand and direct service for God and humanity as some more spectacular methods sought by extremists. An education which gives woman equal opportunity with man, which trains the hand, the head and the heart, will fit her for the queenliest service, whether she write books, make speeches, manage a farm or preside over her home. In the modern battle for position and supremacy, manhood depends upon the purity and inspiration gathered in the fortress of the home.

Upon no group of men and women in our population do we depend more than those from our colleges for recognition and response to the highest moral ideals. One of the most discriminating students of our national character declares that the gravest defect is here; upon the serious side of existence men are largely without aim. The challenge to a Christian character is the hardest and highest that will ever come to you. It is the challenge of the matchless life, that of the Nazarene Carpenter. Whatever you may think of Him now, if you stay with Him He will grow upon you. The sublimity of His courage, the purity of His life, the magnitude of His plans, the sacrifice of His service,—these will all make their contribution to the shaping of your life. He is the best the world has seen. You have no reason to choose aught but the best. He makes His appeal to you today as you stand on the threshold of a new career. President Hadley of Yale was right when he said to the students of Yale: "The really fundamental thing in a man's life is his choice of a religion. Two religions are today struggling for the mastery. There is the religion of Mammon, whose dominant purpose is selfishness and whose creed is indifference to moral considerations, except so far as they may be regarded as instruments of individual advancement. There is the religion of God whose purpose is service and whose creed is loyalty to something larger than yourselves."



WOMEN'S BUILDING FROM PRESIDENT'S OFFICE.

EDUCATION OF AN ENGINEER.

DEDICATION ADDRESS BY ROLLA C. CARPENTER, L. L. D.

Engineering can be defined as an application of the laws of nature as revealed by a study of the physical sciences to the practical and useful arts. It deals with all branches of industry which are founded on or related to the physical or chemical sciences, and is divided into numerous branches depending upon the field of application.

In very early days such engineering as was practiced related solely to the art of war. Even in the days of the Romans the art was considerably advanced and the military engineer was a man of great importance. He was depended upon for and produced plans of fortifications and instruments of warfare, many of which even at the present time would be considered as showing considerable knowledge of the properties of materials and the laws of action of mechanical forces.

As time progressed the demand for public works and large constructions such as light-houses, roads, docks and apparatus for handling heavy machinery led to the development of a class of engineers whose productions were devoted to civil rather than to military purposes. These engineers were distinguished from the military engineers by the term "civil."

The term "civil engineer" included practically all members of the profession not carrying on military work until approximately fifty years ago. At about that time there was a further subdivision of the profession into special branches, as for instance Mechanical and Mining and in later times Electrical.

The latter subdivisions have become of great importance during the last 20 years, because of the great development of the manufacturing and electrical industries in this country.

The mechanical and electrical branches have created special fields which are now well recognized by the engineering profession generally. It is also interesting to note that the development of these branches has acted to practically limit the term "Civil Engineer" to a specialty as narrow as the other branches. Thus at the present time while the term Civil Engineering might in its broad sense cover all branches of engineering not military, as a matter of fact the actual civil engineer is one educated for special work and generally with a practical training for only one branch of engineering.

Neglecting military engineering, we find that in the field of education there is broad recognition given to the professions of Civil, Mechanical, Electrical and Mining engineering; in addition special branches of engineering comprehended by a single industry are also often recognized.

Considering the various branches of engineering as they exist to-day, the fields of industry covered are practically as follows:

Civil Engineering. — Devoted principally to surveying, construction of static structures, bridges, dams, etc., and to public works.

Mechanical Engineering.—Devoted principally to dynamic structures, including machines, engines of all kinds, construction of machinery and factories, and operation of works.

Electrical Engineering. — Devoted to the application of electricity, principally to mechanical engineering constructions. (This is generally considered a branch of Mechanical Engineering and in most institutions there is a tendency to bring the mechanical and electrical engineering courses together except for certain special studies.)

Mining Engineering. — Application of engineering to mining operations. It includes surveying, assaying, mining processes and machinery.

The number of sub-branches of engineering relating to the special industries can it is evident be as numerous as the industries themselves. Among the sub-branches of engineering mainly mechanical which are organized into national societies may be mentioned Heating and Ventilation, Marine, Automobile, Electric Railroad, Railroad Master Mechanics, Sanitary, etc.

From the above it is noted that these various branches of engineering differ from each other principally as to the field of application and the character of industry dependent thereon.

The above statements tend to give an idea of the work required of an engineer. It is to be noted that this work covers nearly the entire field of human activity. It is an engineer's business to *understand* and *control* the *forces of nature*. We owe all our great productions in practical lines to the engineer; it is he who designs and takes in charge the construction of our bridges, our railroads, our engines, our electrical machinery and all the great practical appliances of science.

There is a difference between engineering and invention; invention, in order to produce practical results, may require the services of an engineer and may involve engineering but nevertheless the work of an engineer is materially different from that of an inventor. The difference is so great that it is rare to find that a great inventor has the practical instincts or the ability to produce practical results which must be possessed by the great engineer. No college course could safely undertake to give instruction in the "art of inventing" if any such art can be said to exist, but it should instruct in the underlying sciences whose field of application if extended into new domains might lead to discoveries which we term invention. It is true, that many engineers in carrying out engineering work have had occasion to take out patents or to make what might be termed a minor invention; but this class of invention is more in the nature of design, and while in many cases it may have proved remunerative it pertains rather more to the field of engineering than to the field of invention.

While engineering does not necessarily include invention, it is in many respects closely allied. An invention may be defined as a discovery in the application of the forces of nature which results in the production of new machines or new processes. Engineering makes the discoveries of the inventor of practical use by giving shape and proportion to all the parts and reducing the invention to a practical and useful form. The engineer extends the field of practice by experiment and research rather than by brilliant discovery. In his productions, if he

is not confined to the field of practice with its definite and well-known boundaries, he extends the field of development cautiously and slowly and only to such an extent as warranted by well-known theories which are proved, checked and verified so far as may be by experiments. This makes the development of the engineer's art a slow one, since it is rarely ever safe or prudent to base large expenditures of money in great construction or results of theoretical considerations unproved by practical experience.

Serious mistakes have resulted where engineers have not been content to follow the slow period of development through the natural processes of design and practical trials, one striking recent example of which is the failure of the Quebec bridge, which failure never would have occurred had the form of the bridge and the proportion of its parts been the result of a slow development instead of the application of a theory whose coefficients were developed only for lighter and smaller structures.

What an engineer does is largely the work of application of well known laws of nature along well developed lines to fields of industry whose limits are well defined or at best are extended slowly.

The above consideration of what an engineer is *required to do* also gives somewhat of an idea of what an engineer *must know* in order to produce satisfactory results with the least waste of energy and money.

It is also evident that if an engineer is to succeed in his various undertakings, he must be an educated man and must understand the laws of nature and the method of application of these laws so far as such information can be obtained from the schools and colleges.

When the fact is considered that very few of the engineering schools have an age exceeding 50 years, it is clearly perceived that the early engineers and many of those who have performed the most noted achievements, did not possess the special college training which is now believed essential for good engineering. The early engineer often arrived at his conclusions from studies based on experience with similar previous constructions, and his knowledge of the laws of nature obtained perhaps in unsystematic and laborious ways and often imperfectly, but obtained in some manner, was sufficient to enable him to design and produce constructions which while safe and reliable did not extend the field of practice to any great extent.

As illustrating the achievements of the early engineers without a general college training it will suffice to mention James Watt, who is often classed as a great inventor. A study of Watt's life, experience, and so-called invention must lead to the conclusion that his work was principally engineering, and the success which the steam engine attained under his hands was due more to the engineering processes of construction and development than to the fact that its condenser was separated from the engine cylinder. Watts was perhaps as well trained for this work as any man at that time living, since, although not a college student himself, he had all the benefit which could arise from the use of the scientific apparatus of Glasgow University and the advice of the most scientific men of his times. The practical results which he produced were largely due to the engineering improvements brought about by the use of better tools and better workshops, and the training of workmen in the art. As illustrating the low state of the engineering art at the time of Watt, I may mention the fact that Watt, after three unsuccessful trials in the casting of a cylinder for his engine, expressed himself as greatly elated when a cylinder was secured which was not more than $\frac{1}{8}$ in. out of round. The engineering genius of Watt and his associates overcame such difficulties, and the development of the steam engine, which was in his hands extremely rapid, was assured more by engineering advances and developments than by invention.

From the consideration of what the engineer is required to do, much light is thrown upon what he must know and some of the fundamental things which he must study.

It is evident that if he must make application of the laws of nature he must be familiar with them to as great an extent as possible. In colleges these laws, which are of principal value to the engineer, are taught under the head of Physics and Chemistry. It is at once evident that in some branches of engineering the composition of materials and the internal molecular laws governing such composition as taught in chemistry may be of little importance, whereas in certain other branches of engineering the laws of nature as revealed in geology and mineralogy may become of great importance.

The engineer must also be familiar with the tools for using and applying the laws of nature; hence he must know mathematics. Mathematics are the tools necessary in all computations, estimates, and all the preliminary engineering calculations essential for the production of a successful result.

Fundamentally, then, the basis of all engineering studies is a training in Mathematics, Physics and Chemistry.

I lay great stress on these particular studies for they are often distasteful to the student, for the reason that he does not perceive any immediate practical use and does not like to put forth the hard mental work required to master and understand them. I wish to state to such students that in my opinion these fundemental scientific studies are the most important in a practical way of any taught in the engineering courses. One reason which makes them of great importance is this fact that the fundamental studies are usually of such a nature that if they are not acquired in college they will never be acquired in after life. The practical application of these fundamental studies gives us our various engineering courses and if one is well grounded in the fundamental studies the practical applications can often be obtained as well or better outside of a college course as in the course. To an engineer, the most important of all fundamental studies is without doubt mathematics. It is true that many noted engineers have succeeded in certain lines of work without the use of much mathematics; but it is not certain that even in those lines of work they would not have succeeded better and produced better results had the training in mathematics been better.

I feel sometimes that a few engineers have described the advantages of the higher mathematics simply because they have not been required to practically apply them to any great extent, and they have entirely overlooked the fact that the logical training produced by the study of mathematics has been to them of great practical use even though many of the applications have been unused.

The hard beaten and closely defined paths of mathematics give little opportunity for flights of the imagination or the poetical dreams of fancy. However, its logical methods produce precision of thought, accuracy of statement and soundness of conclusions without which an engineer could not produce useful or practical results.

I should also add as a fundamental study for an engineer, English, since there is no profession so much dependent upon description as relating to the development of any engineering work in question, the probable expenses and the financial results produced. It is perhaps fair to state that few engineers have succeeded who are not to a great extent masters of their mother tongue. They might be deficient in the art of spelling without serious detriment, perhaps, but not in the art of speaking or writing if they succeed as engineers.

For these various reasons, English should occupy an important place in the course of every American engineering college. A criticism of many of the English studies taught in our colleges can be made on the ground that they are not confined to teaching students how to use the English language but on the other hand, waste the time of engineering students by taking up matters which although of interest to the specialist in language, is of no earthly value to a man who merely needs to learn its use.

It is necessary that an engineer should know how to apply the fundamental studies of a college course so as to produce practical useful results. To secure that end students in college courses should be trained by lectures, recitations and laboratories in the application of mathematics, physics, chemistry and English to the various specialties which they propose to master as a preparation for their future work. These specialties I will not discuss in this place, since they must necessarily differ in different colleges with the time available for instruction, conveniences at hand in the laboratory, and various surrounding circumstances.

The student should also be expected to obtain a certain amount of manual training which shall give him skill in the handling of the instruments of his profession, and it is right and necessary that he should become practically familiar with surveying instruments, shop tools and drawing instruments, and should have as much practice as the time at hand will give in those particular branches.

In my opinion the practical training which is obtained in the shop, drawing room or surveying is valuable to any engineer even though his line of practice may take him into other fields. I believe that an engineer should be trained in as many of the practical branches of the art he is to follow as possible while he is in college, although it is doubtless that such training could be obtained in greater amplitude after the college days were over in a practical profession. The college training has the advantage over the special training obtained later that it is generally broader and more fundamental, and it is given the student as an application of principles which have been enunciated in text books and laboratories. It presents the matter from a field of view different from that of later life and one which is more beneficial, since it involves the method of application of theoretical principles giving a broader and more general culture.

It is unquestionably desirable for the engineer to know foreign languages, philosophy, economics, history, etc., for the same reason that these studies are desirable for any educated man. These studies will doubtless give him a broader view of life, and a culture desirable for an

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engineer to have and unattainable without them. The practical question, which is of great importance respecting this class of studies, is the amount of time that can profitably be devoted to them.

The engineering courses as they are at present constituted require four years of a student's life, and have very few of the so-called culture studies as enumerated above. The tendency of recent times has been to reduce rather than increase the number of so-called culture studies, because of the pressure to give the student more technical work in his college course. This desire to make the student practically familiar with nearly all the applications of engineering principles to the various engineering industries has led in late years to the introduction of a great many special studies, and I am afraid in some cases to the reduction in time which had previously been given to the fundamental studies, especially mathematics and its application to physics in the broad fields of mechanics and hydraulics.

My own impression from a long experience with the education of engineers is that we have carried this application to special studies somewhat too far in many instances, and by so doing have weakened rather than strengthened the engineering student. It is my opinion that the fundamental studies well and thoroughly taught, together with methods and practice in application to the principal engineering processes, give us better educated and more capable engineers than the forcing of students through a long list of studies of application, to each of which can necessarily be given only a limited time. This raises the question as to whether or not we have improved our systems of engineering education.

It is frequently claimed that the old fashioned engineering course of 30 years ago with its limited number of subjects did produce engineers as good and great as those which are now educated in the modern engineering college with its more complete course and its highly developed and organized laboratories, and that this fact constitutes an argument against our present elaborate equipment and course. It is probable, however, that the engineer educated in the college of 30 years ago could not complete or hold his own under the same conditions with the recent graduate of the engineering course. The men of to day are better and more thoroughly trained both along general and fundamental lines of engineering as well as in the special applications. It is not to be doubted that the engineering school of 30 years ago produced many successful and great engineers. The greatness of a man in any profession is in a large measure dependent upon his opportunity, the amount of competition and the surrounding conditions, so it is not certain that under different circumstances, limited opportunities, and greater competition, the earlier and less educated engineer would have succeeded so well. Hence a comparison of the work done in different generations is hardly a fair one from which to draw conclusions as to the value of an educational training. It is my opinion that the engineering college course of today produces better trained men than the course of 30 years ago. These men are not only better trained but they are better able to solve the engineering problems which arise, and in many cases are producing results not dreamed of or considered possible 30 years ago. I am, however, of the opinion, that the college engineering courses will become more successful as they increase the thoroughness of training in the general fundamental studies and as they make the students thoroughly understand the application of the fundamental principles to practical construction. For this latter purpose extensive laboratories, shops and drawing rooms are required, since it is impossible in practical life to secure the training and its method of application in a broad and fundamental manner to practical constructions.

While engineering is founded upon the application of the law of nature, as expressed in various sciences, it also depends to a great extent upon the results of experiment and research. The immutable laws of nature call for a perfect mode of operation and perfect materials to produce theoretical results. Such materials are not to be found by the engineer. No operation conducted by man is perfect; as a consequence all results fall short of the theoretical. The engineer must know how close to the theoretical results he can reach in actual practical construction. Such knowledge comes only from research and experiement which gives coefficient and constants which enable him to calculate with reasonable certainty how far the practical results will deviate from the theoretical. This indicates that an engineer's knowledge must be a combination of the theoretical and the practical, and that he must make both branches of knowledge harmonize with each other or his results will be unreliable and uncertain.

The question has been frequently raised, especially during the last year or two, particularly by our friends, who are interested in education along the so-called classical courses, as to whether or not the engineering courses afford sufficient culture studies to make the engineer a broadly educated man. Such discussions have been of intense interest to engineers and they have generally conceded that additional so-called culture studies in history, economics and philosophy would doubtless be desirable for the engineer, although I do not know that any engineer has admitted that mental discipline of high value was not obtained in the arduous mental work required to complete the various engineering studies. It is also interesting to note in this connection that the engineering college course has obtained an excellent reputation as being of great value to men having business interests of any kind, and this has been one of the reasons why there has been during the last few years such an increase in numbers in the engineering courses and a corresponding diminution in the old classical courses. I am certain that Sibley College has graduated in its engineering course many students, who never expected to be engineers, but who took the course believing that the combination of theoretical-practical training would give them culture of a useful kind which would be of more benefit to them in business than that obtained in any other course. As indicating how prevalent such sentiments are, I merely quote a few words from a recent letter of a graduate in a course of mechanical engineering.

"I am intruding further upon your time only to say that since 1896 I have been permanently located in Toledo, engaged in real estate development. My technical training, however, stands me in good stead in the work I have to do, and I seem never to lose the deep interest I have always had in mechanical matters."

It has been proposed to increase the length of the engineering course by requiring additional studies along the lines of philosophy, economics, history, etc., and such a proposition has been received with considerable favor by most of our engineering papers and by a few of the engineering colleges. This proposition if accepted would require the students to spend an additional year in obtaining what are frequently called culture studies before taking up the technical work. The objections which have been urged to such requirements are mainly those of a practical nature. It is not for instance certain that many students who are now able to take the engineering courses could afford either the time or money for the additional culture studies which have been suggested. It is not certain that even if these additional culture studies were taken the men would become better engineers or that they would be better trained for performing any work which engineers are required to do. It is generally considered a calamity if a man is kept in college too long. The effect of too long a course is to dampen his enthusiasm and reduce the energy which is necessary in order to obtain and successfully prosecute engineering work.

There is danger as well as benefit in the proposed addition to the engineering course and for that reason the large engineering colleges are proceeding cautiously in increasing the length of the course although generally agreeing as to the advantage of the additional year for the broader training.

The engineering courses during the last 30 years have been greatly advanced in colleges principally by increasing the entrance requirements. As an illustration, the entrance requirements for the courses in Sibley College take two more years in high school at the present time than in 1890. At the present time two years of foreign languages, one year of English, one year of methematics, in addition to that required in 1890, are required at entrance. The fact that such an increase in requirements is possible indicates great improvement in the work done by the high schools during this period. It also makes it possible to give the students much more technical training. The experince at Cornell indicates that studies of the nature of foreign languages and English are taught with better results in the high school than in the university. This is probably also true of geometry and trigonometry, but possibly not so true with respect to advanced algebra and other studies which require well developed reasoning powers on the part of the students.

It is, I think, universally conceded that a college course should not compete with home schools in the

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education of students, and that the requirements to colleges should be based on the possibilities of obtaining trained students in the various home schools. For this reason the location of a college must have much to do with the requirements for admission, since the college work naturally should begin at the point in a young man's educational course where the training of the preparatory school is completed.

I have intended to convey the idea in the foregoing discussion that the work of the engineer is one of great responsibility and requires thoroughly trained minds as well as natural ability. Considering the engineering profession as compared with others, in my opinion it is the most important from all points of view of any. Financially, it controls practically all expenditures for material improvements of any kind. It deals with sanitary, life-saving structures, and with every mechanical construction productive of better health and increased life. It deals with the production of manufactured articles and consequently the demand for engineering work must increase so long as the industries of our country improve.

From these various facts, the importance of engineering schools appear obvious, since without them we could not have properly trained and qualified engineers, and without engineers little material progress of the world could be made.

I have not touched in my discussion on the subject of what is termed "industrial education," which is generally defined as one which will provide for the world its supply of skilled mechanics in various lines.

This branch of education is one of extreme importance, and at the present time it is scarcely developed to any great extent. Until very recently schools for such lines of education were not needed, because skilled mechanics could be trained as apprentices in the various workshops. The tendency of trade unionism is to kill the apprentice system without supplying a substitute for it. At the present time there is an actual scarcity of skilled men due to this condition of affairs, and it has been proposed as a remedy to educate workmen and give them skill in special schools. It seems probable that the demand for these schools will, at no distant time, lead to their formation in nearly all the large cities.

It is evident that a course of study for such a school would be very different from that for engineering, and would involve what is commonly known as a grammar school course combined with a shop course where a student would remain long enough to acquire skill in the special trades in which he desires instruction.

It is obvious that my remarks have not been applicable to schools of this character.

After this general discussion as to the education of an engineer, it is a matter of some interest to note what this institution has contributed along these lines, as well as to consider what it is doing and what it is likely to do.

This institution, I am happy to say, has always been a leader in educational methods and has occupied a prominent position in the world of education during the entire period of its existence. It has especially been the leader in a certain form of industrial education and was the first to point out methods of applying scientific processes to the material advancement of the greatest industry of our country. In connection with the early work of this institution and preceding the establishment of mechanical or engineering courses, it obtained because of the excellent work done here, a reputation for scientific research unsurpassed in the annals of the educational world, which reputation has been increased by the excellent work of the last few years.

It was my own good fortune to be a student here some 35 years ago and when the total enrollment did not much exceed 100 students, and in later years, after graduating as an engineer in our neighboring university, I was called back as one of the teachers to aid in the preliminary development of an engineering course. While I have not been in close personal contact with the work here during the past 18 years, I have been in position to know in a general way what has been done and I now congratulate the college, its officers and students, for having passed through the period of development and having entered upon the period of production which is now so auspiciously inaugurated by the new structure with which your state has so generously endowed you.

It is a great step in the line of material improvement and advancement since the time when I first saw the institution and became acquainted with its officers and students. As the epochs of improvement which have marked the successful progress of the institution from period to period are matters of history and are well-known to nearly every person here, it is unnecessary for me to consume your time with a repitition, and I will not refer to the beginning nor intermediate stages of the period of development which finally led to the convenient, appropriate and magnificent building and to the perfect system of education for engineers which you now possess.

This structure in its completeness, with its well equipped laboratories, class rooms, drawing rooms and shops, speaks for itself in a way more eloquent than words can express of what has been accomplished in a material way, and leads me to extend again my congratulations to the president, faculty, students, and the state of Michigan for the magnificent equipment for engineering education, of which you are the proud possessors.

In conclusion I desire to call attention to the well known fact that although structures and material equipment are of great importance to the institution to which they belong, yet the real improvement on which the institution's reputation depends comes from the character and ability of the teachers to whom the material equipment is entrusted. With poor and inefficient teaching the best equipment is of little value. On the other hand, good teaching may make great engineers with a very poor equipment.

Respecting the officers and faculty of this institution, I can hardly say that they have always been men of character and reputation, and because of the work done by these men the institution owes the advanced position which it occupies to-day. The work of a college is in a very large measure influenced by the character of the President and it is very nearly impossible for a college to succeed when the executive office is weakly or badly administered. In this respect your college has been it seems to me remarkably fortunate. It has been my good fortune to know personally and quite intimately four out of the six presidents which this institution has had. All of these men have been of great ability and thoroughly devoted to the interests of the institution. The second president, T. C. Abbot, administered the affairs of the college for a long time successfully and carried the institution through periods of development, during which time its life and stability were threatened and until its value as an educational institution was fully recognized. He was a man beloved of all and doubtless all here are familiar with the history of his administration.

The present administration has been one of signal, material development, during which time the number of students has trebled, and the property and material equipment of the institution have been greatly improved and enhanced in value.

I am delighted that the necessity for engineering education has been recognized, and that so much has been done to upbuild a strong engineering department.

For the future I can only predict that good results and a steady growth are certain, and that the engineers from this institution will make a reputation for the course which will bring additional students and give to the alma mater glory and renown.

NIGHT-SHIRT PARADE.

The annual night-shirt parade was held on Thursday night preceding commencement. The usual program was carried out and in addition a pretty ceremony was rendered whereby the president of the Senior class presented to the president of the Junior class a banner inscribed with the numerals of the class, and the "prep" and sub-freshmen caps were burned.

ABOUT THE CAMPUS

Miss McDonald is taking work in the summer school at the University of Michigan.

Dean Bissell expects to sail July 18 for an European trip. He will go direct to Genoa.

Dr. Hurt is working on a case of cattle poisoning which is occurring near Big Rapids. It is thought that they eat some poisonous weed or plant.

Mr. A. J. Clark and Miss Minnie Elva Crawford were united in marriage at Barron, Wisconsin, June 24. Mr. and Mrs. Clark will reside at the college next year.

Mr. E. E. Nies, with '08, and Miss Grace Perry, sp., were united in marriage at Charlotte, Mich., June 20th. At home 324 West Henry St., Charlotte, Mich. Mr. Nies will engage in the newspaper business with his father-in-law.

The summer school in agriculture opened Monday with a good attendance and much interest. Instruction is given in seven different lines as follows: Soils and crops, horticulture, live stock, ornithology, entomology, plant life and agricultural pedagogy.

C. S. Heller, '08, has accepted a position with L. P. Height of Muskegon, as manager of a large tract of land and ultimately to form an agricultural or training school for foreigners to assist them in subduing the "pine barrens" in that locality and learn the crops best adapted.

Prof. Sawyer now rides in an Olds touring car.

E. C. Krehl has accepted a position on the Mumford farm, west of Ann Arbor, as herdsman and dairy man.

The marriage of J. E. Fiske, '06, and Miss Irene Way, with '08, occurred June 17, 1908. At home at 1204 E. 60th St., Chicago, Ill.

W. A. Hopson, Francis Keifer, and A. R. Wilcox, '08, forestry, have received appointments in the U. S. Forest Service. They reported for duty July 1.

LOST—At commencement exercises, a broach set with small pearls and amethyst. Finder please leave at secretary's office or notify Mrs. H. C. Hedges, 921 Washington Ave. N., Lansing, Mich.

Dean Bissell, Professors Vedder, Sawyer and Babcock and Instructors Lodge, Bates, Wendt, Wilcox and Polson attended the society for the promotion of engineering education at Detroit last week.

The Lansing Gas Co. have extended their main, work on which was discontinued last fall, to the college. East Lansing residents may soon be using gas. It may also be used in the laboratories.

Mr. J. C. Button, '07, and Miss Z. Estella Angell were married at the home of the bride's parents at Farmington, Michigan, Saturday, June 20th. At home after August 1 at Bitter Root Valley, Hamilton, Mont.

The junior class officers for next year are as follows: President, T. A. Jordan; Vice-President, Lois M. Garber; secretary, G. A. Bancroft; Treasurer, R. P. Holdsworth.

Prof. and Mrs. W. B. Barrows left Monday for Boston, Mass., to attend the marriage of their son, W. Morton Barrows, '03, which occurred at Appleton Chapel, Cambride, June 25.

Director Brewer will have charge of the Boston branch of D. M. Ferry & Co.'s stores this summer, and will also take summer school work at Harvard University along the line of physical culture.

James R. Dice, '08, has engaged for the season with C. S. Bartlett, of Pontiac, for the coming year. He will assist in caring for Mr. Bartlett's herd of thoroughbred Berkshires and also assist in managing the dairy.

Pres. Snyder will attend the opening of the Graduate School of Agriculture at Cornell University, July 6, held under the auspices of the Association of the American Agricultural Colleges and Experiment Stations of which he is president.

J. M. Walkup, '08, has engaged for the season with E. N. Moore, of Orchard Lake, Mich., and will have charge of the fitting and showing of his extensive herds of merino sheep. Mr. Moore is the largest breeder of fine merino sheep in Michigan.

Captain Fuger now rides in a new touring car.

Prof. French began his duties as professor of agricultural education July 1.

A Fourth of July celebration and picnic will be held in the grove near C. B. Collingwood's house in the afternoon and evening.

Many repairs are being made on the college buildings this vacation. The Women's Building is receiving particular attention.

President Snyder and family are attending the N. E. A. at Cleveland this week. From there they will go to Cornell to attend the opening of the Graduate School of Agriculture at which President Snyder will speak. They will also spend a few weeks in Pennsylvania.

The People's Church, of East Lansing, has extended a call to Rev. Corbitt, of Adrian, who takes up his work July 1. The society has also purchased a lot of Prof. Pettit just east of the brick store, and will begin work at once on plans for a church building.

'99.

W. K. Brainard has recently been appointed professor of dairy husbandry at the Virginia Polytechnic Institute at Blacksburg, Va. He had previously been offered a similar position at the Utah State University, but declined, to accept the Virginia proposition.

SOCIETY OFFICERS.

The following society officers have been elected for the fall term of 1908:

TAU BETA PI.

President, Albert Sobey.
Vice President, Claude Greenhoe.
Rec. Secretary, C. B. Gorton.
Cor. Secretary, Hubert Pratt.
Treasurer, O. W. Fairbanks.

ALPHA ZETA.

Chancellor, B. B. Pratt.
Censor, W. Postiff.
Scribe, G. A. Gilbert.
Treasurer, H. L. Kempster,
Historian, C. H. Spurway.

ECLECTIC.

President, H. C. Pratt.
Vice President, E. J. Allett.
Secretary, L. A. McGillivray.
Treasurer, W. N. Moss.
Marshal, D. Coulter.
Record Editor, L. F. Blunden.

ERO ALPHIAN.

President, Olive E. Graham.
Vice President, Lois M. Garber.
Secretary, Marjorie Bird.
Treasurer, Louise Kelley.
Marshal, Helen M. Eichele.
Record Editor, Catherine E. Koch.

HESPERIAN.

President, H. E. Silcox.
Vice President, J. N. Bidwell.
Secretary, C. L. Brackett.
Treasurer, F. E. Leonard.
Registrar, R. W. Sloss.
Marshal, R. R. Evans.
Record Editor, D. N. Hanson, Jr.

ENGINEERING.

President, R. L. Kurtz.
Vice President, C. Gorton.
Member Executive Committee. C. G. Burroughs.
Rec. Secretary, G. G. Tyler.
Treasurer, E. A. Hallock.
Record Editor, C. C. Waterman.

COLUMBIAN.

President, G. H. Allen.
Vice President, C W. Lapworth.
Secretary, L. P. Walker.
Treasurer, R. L. Kurtz.
Marshal, A. H. Sargeant.

PHI DELTA.

President, F Danes.
Warden, C. · Lemmon.
Secretary, E· H. Gunnison.
Treasurer, C. M. Jewell.
Marshal, S. Burritt.
Record Editor, J. A. Miller.

EUNOMIAN.

President, R. A. Turner.
Vice President, L. A. Spencer.
Secretary, H. C. Dennison.
Treasurer, T. C. Whyte.
Record Editor, G. H. Smith.
Marshal, C. Geagley.
Registrar, A. Sobey.

THEMIAN.

President, Wilhelmina Bates.
Vice President, Hazel Taft.
Secretary, Florence Hall.
Treasurer, Evelyn Kopf.
Cor. Secretary, Lowella Sherrod.
Record Editor, Harriet Weston.
Janitor, Ruth Brady.
Treasurer of Sinking Fund, Zoe Coleman.

SORORIAN.

President, Helen Esselstyn.
Vice President, Mary Allen.
Secretary, Margaret McClurg.
Cor. Secretary, Edna Chamberlain.
Treasurer, Hannah Williamson.
Record Editor, Florence Copson.

JUNIORS, BASEBALL CHAMPIONS.

The Juniors, class baseball champions, added to their glory Thursday, by winning from the Subfaculty team to the tune of 9 to 2. Belknap for the Juniors served up a style of pitching which put the old time stars of the Subfaculty to the bad and was largely the cause of their defeat.

The score:

Sub-Faculty	0	0	0	0	1	0	1	0	0	—2
Juniors	0	3	0	0	0	2	3	1	0	—9

Batteries — Belknap and Burrows; Miller and Smith.

STUNG!

The leap-year girl had just proposed.

"But I don't earn enough to support a wife," protested the cautious young man.

"Oh, that's all right," assured the maid eagerly. "We can live on bread and cheese and kisses."

But the cautious young man shook his head.

"No," he replied, "that would never do. If you baked the bread it would kill me, I could never endure cheese and there are microbes in kisses. Good night!"

Calling for his hat and cane, he vanished into the blackness of the night.