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Street railway system comprises over 231 miles of electric lines, owned by one company.

Over 110 public schools and 85 other educational institutions, and spends more than $1,600,000 annually for educational purposes.

Has long been recognized as a city of homes. Over 41 per cent of Detroiters own their own homes, and it is noted for its beautiful residences, broad streets and boulevards.

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Kindergarten Education in Michigan

Kindergarten education in Michigan has been quite conservative in its growth as an integral part of the Public School System.

While the legalized school age in our state is from five to twenty-one, this law has not always served to give the five-year-old child in the smaller towns and villages much more than a diluted form of the more formal school subjects, reading, writing, and arithmetic.

The Kindergarten has long flourished in the larger city centers of the State, but even now in many of the larger towns, as well as smaller, the Kindergarten is unknown. In its place the so-called equivalent sub-primary—has grown up through the demand of patrons who insist that the five-year-old child entering school shall be taught to read.

The play life of the child with its many worthy problems is not yet popularly regarded as holding possibilities for education. Results that cannot be measured directly in tangible form do not always grip the attention of school administrators, any more than that of a slowly awakening public; yet we find the Kindergarten gradually, but surely justifying itself wherever the work is founded upon general, broad educational principles rather than upon a biased philosophy.

The Kindergarten is coming into its own in this State wherever school authorities are intelligently recognizing that "This is a period of germination rather than fruition." That it is closely linked with the two early grades and is not a place of amusement set apart without plan or purpose.

The Normal Schools of the State may do much to foster a more intelligent interest in the Kindergarten by offering to grade teachers courses that will show effectively the continuity of aims and practices in this early period of education from four to eight years of age.

LUCY GAGE.
The children of the Third Grade have read with much pleasure "The Dutch Twins," by Mrs. Lucy Fitch Perkins, and life in Holland was studied with this piece of literature as a center. The following stage setting and program was worked out by the pupils. The children wore Dutch costumes, in many cases made by the children.

1. Dutch lullaby, first in English and then in Dutch.
2. A landscape in Holland. A screen with three panels, covered with bogus paper was used. Under the direction of the Art Department pupils made composite picture of a canal, dike, windmills, etc. This was explained by a pupil.
3. "The Day We Went Fishing," readings from "The Dutch Twins."
   a. The folk dance, "The Villagers."
   b. Spring songs, "Pussy Willows," "Daffy-Down-Dilly."
6. Dutch folk song, first in English and then in Dutch.

ROBIN HOOD PROGRAM.

The sixth grade gave a dramatization of Robin Hood at the assembly, March 23. The book was read and dramatized in the language period, by the children who are now in the seventh grade, as a culmination of their sixth grade language work. So the pupils in the present class elected to present the work of their predecessors instead of writing an original play. The children entered into the work with a great deal of enthusiasm, made their bows and arrows in manual training time, painted their stage settings in art periods, practiced old English games and pastimes in physical training, learned rollicking songs in music period, and used the regular literature periods for dramatic reading of the play. The costumes were planned in art periods, but made at home.

The scenes presented were:
1. Forest scene when Robin Hood becomes outlaw by shooting King's forester.
2. Shooting match at Nottingham.
3. How Robin Hood fell in with Will Scarlet.
4. Adventure with Midge the Miller.
5. Shooting match before Queen Eleanor.
6. Games and pastimes in Sherwood forest.
7. King Richard meets Robin Hood. The children played their parts so well that they were invited to present it again as part of the Shakespeare festival in May.

HOME FURNISHING PROGRAM.

The art work in grade eight during the winter term was devoted entirely to the problem of house furnishing. Cartoons of rooms in poor taste were made, rooms in good taste were drawn, appropriate colors for different room...
exposures were chosen on samples of wall papers, window treatments, pictures and furniture were criticized in written compositions. As a culmination of these various phases, an assembly program was given in the form of a little comedy designed to show the difference between poor and good taste and the effect of each on people living in the respective surroundings. A dramatization of this sort offers a wide field of possibilities, inasmuch as the conversation was an outgrowth of the children's criticisms and remarks during the art period; and (sorry to say) the stage setting, both good and bad, may be obtained from the children's homes. At first the children were shy about bringing any article for the play which was considered bad taste, but one by one, a "rosy lamp," a "puppy rug," a patch work cushion, several "crocheted tidies," family photographs and framed mottos appeared; finally it became a huge joke to contribute such accessories.

The last scene of the play showed the family settled in the new house. The plain walls of brown with harmonious tones in rugs and furniture were restful and pleasing. The bric-a-brac had all disappeared. The general setting was such as to suggest the ideals toward which modern art is aiming.

GRADE TWO.

Spring Notes.

The children in grade two have shown much enthusiasm in working out patterns for bird houses, and later on really making them of wood. The patterns were made of paper, each piece cut exactly as the corresponding piece of wood would be in the finished object. The children found it much easier to manipulate with paper and ruler than with ruler and wood. The patterns were then laid upon the lumber (which was obtained from old grocery boxes), and the saw could easily follow the guiding lines which the pencil had made. Some of the houses when finished were crude, but each showed the original thought of the child who made it. Some of the boys entered theirs in the contest given by the Y. M. C. A., and Fletcher Carney is now the proud possessor of a jack-knife, which he obtained as a prize.

Seed catalogues from different companies are being used in the nature study period to stimulate interest in gardening. It will soon be time to think about our own gardens on the terraces.

The returning birds are listed each day in bird diaries, which the children have made.

GRADE SEVEN.

The seventh grade is writing a dramatization of "Midsummer Night's Dream," which will be given at the Shakespeare festival in May.

In the literature period the pupils first read the story in "Lamb's Tales From Shakespeare." In the reading, attention was called to the peculiar expressions and unusual words which frequently occur. This was done that the pupils might have some appreciation of the language of Shakespeare, and, further, that they might have a basis for writing original bits of conversation in the dramatization.

The pupils outlined the scenes in the composition periods which they felt were possible to be given out of doors, with no change of scenery. This outline was filled in with the conversation from the "Tales" and with conversation which the children made up with an occasional reference to the original for suggestions.

When the dramatization is completed the characters will be selected and rehearsals begun. Undoubtedly, at that time many changes will have to be made in the lines.

Seventh and eighth grade boys have baseball once a week this term, and as soon as the tennis courts are in shape, the girls will be given instruction in tennis at the same hour.

ATHLETIC MEETS.

The result of the girls' first gymnastic meet was a surprise to all who witnessed the events. The form, skill, and finish shown by the girls was very pleasant. This may not only be said of a few individuals in it but as a group. The enthusiasm was controlled by re-
spective captains and one afternoon a week was given over to practice in the gymnasium.

The meet was won by the seventh and eighth grade team, by the score of 298 to 263, from the fifth and sixth grade team.

Herbert Shinberg, of the seventh grade, won a camp cooking kit, and Donald Graham, in the same class, won a hammer as a special prize.

Clifford Hamilton, of the sixth grade, also won a special prize, a licend

THE BIRD HOUSE CONTEST.

The boys of the Training School showed their interest in bird life by their enthusiastic participation in the bird house exhibit held at the Y. M. C. A., on Saturday, March 25. Although having only a little over two weeks' time in which to complete their houses for the exhibit, the boys from the Training School carried off seven of the ten prizes offered.

The second grade prize was a jackknife, won by Fletcher Carney.

A compass was won by Henry Westerville, of the third grade. The fourth and fifth grade boys did not enter the contest. Dick Westmidge was the winner in the sixth grade group, and received a set of bird books. Donald Graham, of the seventh grade, was successful in getting the first family of bluebirds to occupy his house, and in this way won another prize.

This is a very good showing, indeed. We hope the boys will plan for this exhibit next year so that we can have many more bird houses entered at that time, than were entered this year. It would be well if we could adopt the slogan for the Training School, "A bird house for every boy and girl."
THE FROGS AND THE OX.

The children in grades four, five, six, seven and eight are working on the group of songs and Cantata to be sung on May 20 at the first concert of May festival, when Florence Kinkle is soloist. They will be heard twice on the program, the first time singing four songs, with string accompaniment. "The Ring Miessner," "Fleecy Clouds," Beethoven; Zuni Indian Melody, H. W. Loomis; and "Morning Song," Tosti.

The second number will be the clever little cantata for children by F. Bridge, "The Frogs and the Ox," the words of which are founded on Aesop's Fable. The music is charmingly dramatic in its appropriateness to the text, and the singing of the work should be a pleasure to children, orchestra and audience alike.

NEWS ITEMS

Many interesting features have been planned for the thirteenth annual summer session of Western Normal, which will open Monday, June 26, and continue for six weeks, closing Friday, August 4. The new law requiring professional training of all teachers will be in operation July 1, and many will doubtless satisfy this requirement by attending the summer school of the Kalamazoo Normal.

Lectures by prominent educators, in the summer term have been arranged, the first, June 29, by Dr. Starbuck, of the University of Iowa; President James A. Burns, of Onenda Institute, Thursday, July 6.

On Thursday, July 13, Dr. Edward Howard Griggs, Boston, two lectures, "The World War and Ethics," and "The Influence of the Parent and the Teacher in Moral Education;" and the last of the series by Miss Luett E. Stearns, of Milwaukee, teacher, library expert, and general humanitarian.

For the fourth successive year the Redpath Chautauqua will be held on the Normal grounds, the fifth week of summer school.

Besides the regular Normal faculty, a number of well known superintendents, commissioners, and county Normal directors, will teach in the summer school. In this list will be Superintendent C. H. Carrick, Charlotte; Superintendent W. E. Conkling, Eau Claire; Superintendent J. C. Hoekje, Grand Haven; Superintendent C. A. Jensen, Benton Harbor; Superintendent M. W. Longman, Owosso; Commissioners Cynthia A. Green, Eaton County; F. E. Robinson, Branch County; E. V. Root, Van Buren County; Miss Nellie E. Dietrich, director Benzle County Normal; Miss Loreto Fitzgerald, director Cass County Normal; Miss Bessie Huntoon, director Mecosta County Normal; Miss Eva Warriner, Calhoun County Normal; Fred A. Middlebush, of Knox College faculty, Illinois; Miss Eleanor Rawlinson, Grand Rapids Union High School; Mrs. Vanetta Bissell, Kalamazoo public schools; C. D. Jennings, public schools, St. Joseph, and Fred Huff, Kalamazoo public schools.

NORMAL BAND.

The Normal Band, under the direction of Mr. Manley, is making fine progress. It has furnished the musical accompaniment for the basketball season, and now appears from time to time in chapel and at other functions.

ALUMNI NOTES.

Miss Cecil Brown, 1912, Art Department, was a recent visitor at the Normal. She is teaching in the seventh and eighth grades of the Jackson schools.

Robert L. Reeves, 1914, is traveling this year for an educational publishing firm of Chicago. He writes that he plans to return to the teaching profession next year.

Miss Maude Davis, now in Teachers' College, plans to go to the Pacific coast next year.


Miss Elaine Stevenson, Art Class, 1914, is attending the Chicago School of Applied and Normal Art this year.

Cleveland E. Rossman, Manual Training, 1914, has been elected supervisor of Manual Training at St. Joseph, Michigan, for next year. Mr. and Mrs. Rossman (formerly Miss Florence Stamp, a member of the class of 1914) will move to St. Joseph in June.

Fred Stuck, 1913, has been re-elected at Northport for the coming year.

Miss Emma Hanson, 1915, is teaching near Chicago, and resides at 2946 Fulton street.

John L. Snellink, 1915, writes interestingly from Denver, Colorado, where he is rapidly regaining his health.
A recent marriage of interest was that of Miss Alice Barron, a graduate of the Normal, to Dr. P. D. Krum, of Kalamazoo.

Miss Edith L. Johnson, 1913, of Grand Rapids, visited the Normal, April 11.

Archie D. Polley, of the first graduating class, that of 1905, called at the Normal, April 10. He is residing on a farm near Alma.

Ellsworth Monteith, 1914, is in Detroit and resides at 69 Pitcher street.

Carl Haner, of Mancelona, visited at the Normal the opening week of the spring term.

Miss Aseneth Peek, 1914, was married, late in March, to Mr. Baker, of Allegan, where they are "at home."

Miss Ruby Polley, class of 1913, is teaching in Akron, Ohio, this year.

**NEWS NOTES**

Superintendents from several places have paid Western Normal visits during the past month for the purpose of looking up candidates for teaching positions next year. Included in this list are the following: Superintendents E. E. Fell, Holland; E. J. Lederle, Hastings; A. L. Cook, Stanton; L. P. Koepfgen, Newberry; L. L. Forsythe, Ionia; F. W. Emerson, Watervliet; A. M. Nutten, Plainwell; H. A. Wood, Gobles; W. G. Coburn, Battle Creek; F. J. Knapp, Highland Park, and Rose, of Winnetka, Illinois.

Western Normal faculty was well represented at the Schoolmasters’ Club in Ann Arbor, March 25-28. Among those present were President Waldo, Dr. McCracken, Dr. Burnham, Dr. Harvey, Mr. Ellsworth, Mr. Everett, Mr. Hickey, Mr. Huntington, and Mr. Wood.

Dr. Burnham has a number of important engagements for the summer, and included in the list is a series of lectures at the biennial summer school of Massachusetts Agricultural College, at Amherst, Massachusetts, in July. Only graduates of the school are eligible, and distinguished workers along rural progress lines will attend. Dr. Burnham will spend three weeks at Michigan Agricultural College this summer, conducting a class in rural education. He has been engaged to give a series of lectures at West Chester Normal School, Pennsylvania, and will spend one week at Lake Geneva, Wisconsin, lecturing before the National Y. W. C. A. Congress. In August he will spend a week in Minneapolis, Minnesota, speaking before the High School Training School classes.

President Waldo was in Illinois the second week of April, visiting the University of Illinois at Urbana, and the State Normal School at Charleston.

Mr. Waldo has been engaged to deliver commencement addresses for the high schools at Coloma, Hopkins, and before the County Normal Training Class at Crosswell.

At the Easter holiday meeting of the Michigan Schoolmasters’ Club at Ann Arbor, Dr. Cameron presented a paper before the Educational Psychology Conference, and Dr. Harvey and Mr. Huntington presented papers before the Biological Conference. Mr. Hickey acted as chairman of the History Conference.

In the list of March and June graduates, who have been appointed to teaching positions for the coming year, are the following: Bernice Halladay, Ruth Longhead, Margaret Matthews, Florence Price, Genevieve Sherman and Lucile Spaulding, Battle Creek; Alfreda Anderson, Ironwood; Alice Bailey, Mae Carter, and Allegre Miller, Augusta; Edith Collins, Big Rapids; Harriet Crawford, Plainwell; Ethel Cronkite, Alpena; Audrey Cross, Union City; Floyd N. Drake, superintendent at Wayland; Julia Fries, Flint; Elizabeth McIntyre, Jackson; Anna McMaster, Highland Park; Ruth Misener, Union City; Marie Otis, Florence Robbins and Gladys Todd, Watervliet; Bernice Wakefield, Jackson; Lucile Worden, Owosso, Dessie Luttrull, Centreville; Myrtle Burkitt, Hartford; Bernardine Lynne, Pinckney.
BASKETBALL.

For the first time in the history of the Western State Normal School, the High School Department has had a representative basketball team. This team, besides playing good, hard basketball, has won the majority of its games. This is greatly to its credit, for usually the first year a team plays outside games, it experiences very hard jolts, but not so with this team.

OBITUARY.

It is with sincere sorrow that we announce the death of Robert Dwight Haynes, a member of our High School Department. He was a faithful and diligent pupil, who had many friends. He will be greatly missed by the students and the faculty. To his bereaved brother and mother we extend our heartfelt sympathy.

DONALD BROWNELL, H. S., '17.

PARENT-TEACHERS' RECEPTION.

In an effort to secure the co-operation of the parents of the High School pupils, a reception was held at the Normal, Wednesday evening, March 15. The parents were given an opportunity to meet the instructors and to inspect the buildings, particularly the new Science Building.

The High School chorus under the direction of Mrs. Bertha Shean-Davis sang, "Praise Ye the Father." Several musical numbers were given by Marjorie Loveland, Donald Sooy and Ruth Nichols. President Waldo gave a short address.

TWO LATIN PLAYS.

Plans are being made for the presentation by the students of the Latin Department, some time in May, of two plays in Latin. The members of the Cicero and Caesar classes will give one of Miss Paxson's plays, the "Roman School," and by the beginners' class, the tragic story of Pyramus and Thisbe, will be rendered in the version contained in the "Decem Fabulae," of the Oxford Clarendon Press series.

In the first banquet ever held exclusively for the boys of the High School Department the Normal High School basketball team was honored Tuesday evening, April 11, at the Park-American. Every boy in the department and many of the men of the faculty were present on this occasion, which proved to be one of the most enjoyable gatherings of the year. As toastmaster, Carleton Wells made a splendid impression, and the following program was executed to the pleasure of everybody:

"Athletics," Walter Olson.
"The Boys," Professor J. E. Fox.
"Vocal solo, Donald Sooy.
"Echoes From the Basketball Captain," Edgar Smith.
"Remarks," Mr. Spaulding.
"Talk," Dr. Burnham.
"Apologies from Section B," Bruce Shepherd.
Duet, mandolin and guitar—"Gipsy Sweetheart," Edgar Smith and Milton Naylor.
"The Normal High School"—Mr. Blair.

The High School girls' gymnasmium class gave a pleasing exhibition, which showed what is being done along physical education lines.

The event that was most interesting, to the student body, at least, was the basketball game between the Niles and the Normal High School teams. The game was closely contested throughout, both teams showing some good playing. Niles tied Normal in the last few minutes of play, but the latter won by a score of 22-30. Especially noticeable was the brilliant passing and basket shooting of Shepherd, and the equally good guarding of "Lefty" Naylor, who blocked Niles every time they threatened to score. Great enthusiasm was displayed by the rooters of each team.

After the game, light refreshments were served by the girls of the High School Domestic Science class.

NETA PAYNE, J. S., '18.

Wanted, H. S. Glee Club.

NOTICE!

The Girls' Glee Club had charge of the assembly program last Tuesday morning. The work done by the girls showed much training and some good talent.

Doesn't that sound good? Why don't the girls of the High School Department show some school spirit along the musical lines.
Don’t let the Normal students do so much more than we do. We are capable of it, so let’s get busy. Glee Club meets in Mrs. Davis’ room every Monday and Friday, at three o’clock. All come!

MARJORIE LOVELAND.

THAT LITTLE BILL.

When going to the Normal Hill,
You bring a very small bill
And get on the car which will give you a chill,
Now this very small bill will take you all over the hill.
The first twelve weeks you get acquainted.
The second twelve weeks you are sure wanted.
The third twelve weeks your vacation has come.
Here you are glad because the year’s work is done.
When the vacation is over you are ready for more.
Because this you have never had before.
So bring your little bill,
And go back to the Normal Hill.

NOEL KRUM.

SUGGESTIONS TO BALDHEADS OF THE FACULTY.

Little Helen, of six, had gotten a box of paints for Christmas, with which, of course, she wanted to experiment. She climbed up behind her father, who unfortunately had lost most of his hair in previous years, and began rubbing her brush softly on his bald head.

“What are you trying to do, Helen?” asked her father.

“I am trying to paint a rabbit,” she answered.

LEO BOYLAN.

“Mrs. Jones, of Cactus Creek, let a can opener slip last week and cut herself in the pantry.”

“A mischievous lad, of Piketown, threw a stone and hit Mr. Pike in the alley, last Thursday.”

“Joe Doe climbed on the roof of his house last week looking for a leak and fell, striking himself on the porch.”

“While Harold Green was escorting Miss Violet Wise from the church social, last Saturday night, a savage dog attacked and bit Mr. Green on the public square.”

“Mr. Fong, while harnessing a broncho last Saturday, was kicked, just north of his corn patch.”

HAROLD STOLL.

Dr. McCracken to Mr. Holmes: “Have you any excuse for such laziness?”

Mr. Holmes: “I haven’t any that will work.”

The New Pedagogy: “Tommy, what did you study today?”

Tommy: “We had two films of history and one reel of geography, Ma.”

A Smile: The lighting system of the face and the heating system of the heart.

W. H. C.

WHERE MICHIGAN BEGINS.

Out where the handclasp’s a little stronger,
Out where the smile dwells a little longer,
That’s where Michigan begins,
But where the sun is a little brighter,
Where the snows that fall are a trifle whiter,
Where the bonds of home are a wee bit tighter,
That’s where Michigan begins.

Out where the skies are a trifle bluer,
Out where friendship’s a little truer,
That’s where Michigan begins.
Out where a fresher breeze is blowing,
Where there’s laughter in every streamlet flowing,
Where there’s more of reaping and less of sowing,
That’s where Michigan begins.

Out where the world is in the making,
Where fewer hearts in despair are aching,
That’s where Michigan begins.
Where there’s more of singing and less of sighing,
Where there’s more of giving and less of buying,
And a man makes friends without half trying—
That’s where Michigan begins.
The Study of Michigan As a Type Region

It is very gratifying to teachers of geography in the State to note the growing interest in the study of Michigan as a home land, and as a type of the world at large. Michigan has samples of practically all the kinds of weather found on the earth, as well as most of the minerals, soils, physiographic processes, all the types of industry and human activity, specimens of most kinds of plant and animal societies, and in general types of nearly all those elements of geography necessary for furnishing through sense or near at hand impression, the basis for interpretation of the world beyond the ken of the senses. In brief, Michigan and the home land furnish the key to the great world beyond; and the glory of the subject is the fact that the imagination of man that has grown out of the environment can rise above it, and reach on to comprehend it all. If we could only believe, accept and work on this capacity of the human mind, we might build clearer concepts of the regions of the earth than are possessed by people who inhabit them, but who, alas, like ourselves, fail to comprehend and appreciate the beauty and glory of the "kingdom of Heaven," in which they live.

Progress in Michigan

The trend of activity among the various lines of agriculture in the State, the awakening of interest in soil studies under the far reaching and practical system of extension work initiated by the State Agricultural College, the call to organization and more economic selling of crops, the building of the common highway, the ways to mill and to market for the common
folk, and the regenerating influence of the new group of rural sociologists, are all signs of a renaissance from the dark age of agriculture that prevailed during the lumber period.

**Sequence in Geography**

This is the soil, that nature made. This is the corn planted in the soil that nature made. This is the rain that waters the corn that man has planted in the soil that nature made. This is the cloud that drops as rain to water the corn that man has planted in the soil that nature made. This is the wind that brings the cloud that drops as rain to water the corn, etc. This is the sun that warms the air and the land to make the pressure that drives the wind, etc.

Teachers. Place the figure of the corn plant on the board, show how in its tiny laboratory the plant uses the carbonic acid gas from the air, the water and salts from the soil, and the heat and light of the sun to produce the oxygen of the air and the starch of the seed, without which there would be no animal life possible on the earth.

To think the earth as round like a ball, rotating like a top, axis inclined, revolving, made of land, water and air, heated and lighted by the sun, coming to fruition in plants, animals, man, and thinking man, and to correlate all these things,—this is not only the duty but the divinely given prerogative of the teacher who would help the pupil to build a concept of the world into which he is born, and the garden out of which he has grown.

**The Region as a Unit**

A great step in for Geographic Study. advance for general method in geography is made by this recognition of the region as a unit of study. After the general principles of geography have been mastered, the student finds the region the most simple, direct, and rational field for the correlation and application of principles. The study of principles,—the subject matter of physical geography, is to the region what the study of composition is to literature; and the regions, masterpieces of Nature and human activity combined, furnish the student an inexhaustible field of research. In this contemplation of the world of beauty and variety the geographer finds the goal of his work.

It is to be hoped that this idea of the study of geographic masterpieces may come more and more to prevail with the teacher to the exclusion of the all too prevalent method of study in which the end of the work seems to be obtained in a superficial survey of the whole earth. Such a survey may be necessary for children, but more detailed and rational study of a few of the many regions is the only way by which one may obtain culture and appreciation through the geographic window of his soul.

**The Situation in Respect to the Teaching of Geography.**

In grades four to seven, and usually in grade eight, geography is classed as a fundamental subject. What preparation have the majority of the Normal graduates received for teaching it?

A high school graduate has pursued the subject for four or five years in the elementary school where it is acknowledged to be the most poorly taught of any of the fundamentals, and has had, possibly, one year of physical geography in the high school. One twelve weeks' course is required of all General Life and Graded School students. So-called specializing students do not take even that minimum, despite the facts that many go into general grade work. With this meager preparation a teacher is supposed to be evolved, equipped to do effective teaching in a subject more complex in content, requiring a greater range of insight and information and more difficult of organization than any other of the elementary subjects.

When geography was regarded as a mere description of the surface of the earth and its inhabitants the drain upon the teacher was not heavy. For the pupil it was a weary round of isolated items, enlivened occasionally by
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some spectacular fact, introduced to interest the class. No other subject has undergone such rapid transformations in purpose and content. With the acceptance of the concept of geography as a study of the earth in its relations to life, it has become a human science, basic in the interpretation of human affairs, with a far-reaching subject matter. It is concerned with the forces that have made and are sculpturing the earth's surface, with the conditions of the earth that make it a habitat for life, with the relationships between the organic and inorganic worlds, with the needs of mankind and the uses made by him of his environment to satisfy these needs.

Is it strange, then, that with no more preparation than outlined above, the vast majority of grade teachers are unequipped to meet the problem and are still rattling the dry bones of formal statements and definitions, totally unaware of the features and influences vital in the growth of their own locality? They are ignorant of forces potent in the development of nations of the world and hence stress their points of dissimilarity and inferiority, emphasizing our assumed superiority, thereby fostering prejudice.

No student can in the one term of required work acquire a sufficient knowledge of principles and their application to teach a geographic province. Notwithstanding the argument often made that, with a knowledge of method a teacher will "work up her subject matter," the teaching of grade geography will remain on its present low plane until more preparation for their work in this subject is made by prospective teachers.

L. C. H.

Physics in Theory and Practice.

In this day when manual arts are receiving such prominent attention in our schools it behooves the teacher to pause and ask upon what foundation we may expect to stand in the future. Three positions assert themselves for our consideration: 1. The purely practical, finding its method principally in imitation and exemplified by the artisan who learns to do a piece of work from another workman and pursues this method in the future; 2. the purely theoretical, finding its method in rampant speculation without ever checking up his speculations in practice; and 3. the combination of the practical and the theoretical.

A symmetrical development of the individual demands the last mentioned method and in order to realize it a closer connection must exist between the mere doing of a thing and the underlying principles involved in the doing. Nothing of any importance to the world may be expected from haphazard doing of things. There must be keen observation by a mind trained in fundamentals and laws as observed by students and experimenters of the past if any real progress is to be expected. Most of the discoveries of the past were not haphazard discoveries. They came to men seeking to investigate some hypothesis.

Physics at the Western Normal is not satisfied with the mere use of tools and apparatus. It is not satisfied with the mere use of levers, screws, planes, thermometers, psychrometers, ammeters, voltmeters, watt meters, motors, dynamos, lenses, etc., but it inquires into the principles governing their construction and working. It is willing to spend a fair share of the time in understanding the fundamental principles governing the working of these instruments.

Who will not say that this is what is needed by artisans in the world today? Why does the average garage offer such poor service in diagnosing car troubles? Because artisans, as a rule, do not understand fundamentals. It is not because they have not worked at the work long enough, but because their work has been a mere imitation and repetition. It is possible for school work—particularly work heralded as "strictly practical"—to degenerate to the same plane.

In some laboratories it is disappointing to find theory and practice at wide variance. The laws commonly accepted are frequently disproved by the student leading him to serious doubts as to their value. This has been largely
overcome in our Western Normal laboratories by the purchasing of a number of standard instruments. Recently we have added a standard watt meter made by the Weston Electrical Co., and standard volt meters for both alternating and direct current made by the same company. Very recently we have added a standard type of Wheatstone bridge for measuring electrical resistance. With these instruments other cheaper instruments in the laboratory are calibrated, with a consequent clearing up of discrepancies in results obtained with instruments of inferior grade.

JOHN FOX.

OUTLINE OF GENERAL GEOGRAPHY AS PRESENTED IN COURSE 101.

The course is antecedent to all other courses in geography, and is intended to furnish an introduction to further work in regional and commercial geography. For those students who plan to work in the High schools, many of whom will be called upon to teach physical geography and general science—subjects growing in favor as candidates for the Junior High School, courses 105 and 106, combined with the nature study courses in plant and animal life, and in physics and chemistry, should be elected instead of 101. These courses cover the same field as 101, but more intensively. No student should attempt to teach geography in the grades without having the preparation offered by course 101, and the application of its principles to the study of a region as given in some one of the courses, 102, 103, 104, 107, and 108.

Courses 1 and 2 of the ninth grade include the same topic, and two terms are taken for the work.

THE EARTH IN ITS UNIVERSAL RELATION.

Lesson 1—The universe, solar system, and plants.

Lessons 2 and 3—The earth as a planet. Mathematical elements, form, size, rotation, revolution, inclination of the axis, parallelism of axis, and the consequences of these fundamental elements: Seasons, day and night, sunrise and sunset, twilight. Altitude of sun and latitude, etc.

Lesson 4—Elements of earth and Venus compared with respect to heat, zones, altitude of sun, pressure, winds, clouds, and rainfall.

THE AIR PART OF THE EARTH.

Lesson 5—Composition and use of the constituents of the air. The corn plant in its relation to the elements of climate.

Lesson 6—The properties of the air.

Lesson 7—Heating the earth.

Lesson 8—Development of pressure belts, cyclonic and anti-cyclonic areas.

Lesson 9 and 10—Mapping of the pressure areas, January and July.


Lesson 12—A correlation of the elements of climate of Asia.

Lesson 13—A correlation of the elements of climate of Africa and Australia.

Lesson 14—A correlation of the elements of climate of South America.

Lesson 15—A correlation of the elements of climate of North America.

Lesson 16—A correlation of the elements of climate in Europe.

Lesson 17—The climatic regions, plants in relation to climate, animals and man in relation to climate and plants.

Lesson 18—The tropical rain forest.

Lesson 19—The Savannas.

Lesson 20—The deserts. Irrigation.

Lesson 21—The steppes or prairies. Grazing.

Lesson 22—The tundras and Arctic regions.

Lesson 23—Forests of the cold temperate zone. Lumbering.

Lesson 24—Forests of the warm temperate zone. Lumbering. Agriculture.

Lesson 25—Mediterranean climate. Agriculture and irrigation.

Lesson 26—Alpine regions. Mountains and mountain peoples.

LAND PART OF THE EARTH.

Lesson 27—The great fundamental processes in relief formation.

Lessons 28 to 32—The materials of the lands. Volcanoes. Excursions for the study of rocks and minerals, and soils.

Lesson 33—The work of the winds.

Lesson 34—Ground water.

Lessons 35 to 44—Work of water, erosion.

Lesson 45—Work of ice.

Lessons 46 and 47—Work of ice.

Lesson 48—Physiographic provinces.

Lessons 49 and 50—Ocean in its life relations. Currents, tides, etc.

ODDS AND ENDS.

The Englishman spells saloon as follows: One hess, one hay, one hell, two hoes and a hen.

"Are you hungry?"

"Yes, Siam."

"Well, I'll Fiji."

N. G. M.

Dean Howard—Please send me "Through the Wilds of Africa" by return mail.—Allen McLagan.

Mr. Fox to Mr. Plum—What is the effect of heat and cold on bodies? Answer—Heat expands and cold tracts them.
Mr. Fox—Give me an illustration.
Why, the long days of summer and
the short days of winter.

SEEING THINGS.
Party passing through Panama canal
looking for the equator through field
glass. A hair blows across the field
and the lady says: "Yes, I see the
equator, and a Ford car is running
along the top of it."

SUGGESTION TO PROSPECTIVE
TEACHERS.
1. Application from young lady for
position in Southern city.
2. Reply, "What is the color?"
3. Answer: Find enclosed a photo
and a lock of hair (very red) and ques-
tion "What do you call this?"
4. Reply: "I call this reddy wit,
and you are it."

PICKED UP IN THE TRAINING
SCHOOL OFFICE.
If you can dress to make yourself at-
tractive,
Yet not make puffs and curls your chief
delight,
If you can swim and row, be strong
and active,
But of the gentler graces lose not
sight;
If you can dance without a craze for
dancing,
Play without giving play too strong a
hold;
If you can master French and Greek
and Latin.
And not acquire as well a priggish
mein;
If you can feel the touch of silk and
satin
Without despising calico and jean;
If you can make good bread as well as
fudges,
Can sew with skill and have an eye
for dust;
If sometime you should meet and love
another,
And make a home with faith and peace
enshrined,
And you its soul, a loyal wife and
mother,
You'll work out pretty nearly to my
mind
The plan that's been developed through
the ages,
And win the best that life can have in
store.
ELIZABETH LINCOLN OTIS.

NORMAL NEEDS.
A high school baseball diamond.
A short step-down circuit from the
main building to the science hall.
A smoke consumer for the janitor.
A garage for faculty cars.
A waiting room for the car line.
A wireless outfit to gather news for
the Record.
A fire escape for the janitor.
A lifeboat for girls who fall into the
swimming tank.
A corn patch for the R. S. C.

HELPs IN GEOGRAPHY.
The National Geographic Magazine.
Vol. 39, 1915, Michigan Historical
Collections—fine for index—and sub-
ject author catalog of all the other
thirty-eight volumes.
Michigan Mineral Resources, R. C.
Allen, Lansing.
Report of the U. S. Department of
Agriculture, 1915.
Reports of the Pan-American
Bureau on the South American Repub-
lies, Washington, D. C.
Statistical Abstract of the U. S.
Bureau of Statistics, Washington, D.
C.
A useful weekly paper: Current
Events, 40c, Current Events, Michigan
Building, Chicago.
The World's Almanac, 30c, at news-
stands.
Huntington's Asia; Bowman,
South America; Fairbanks,
Western United States; Chamber-
lain. Food, clothing, shelter. (Sup-
plied by McClurg, Chicago.)
The Journal of Geography, $1.00,
University of Wisconsin.
Herbertson's Man and His Work.
ART IN MICHIGAN.

Michigan is surely awakening to the need and value of the art interests applied to everyday life.

One naturally opens the door to the state at Detroit—one of the most beautiful cities of the world. Nature has done much for this city and its broad boulevards and beautiful residences, parks and public buildings make it a most attractive home city. On Woodward avenue is located the Art Museum and Gallery where may be found a fine permanent collection of paintings, statuary, rare books, coins, porcelains, etc. The public is privileged to enjoy a fine course of lectures and concerts here during the year.

Classes for art study have been a feature of the museum work. The School of Design on Woodward avenue, under the direction of Mr. Hamilton, affords an excellent opportunity for students to prepare themselves along the lines of general and commercial art.

Have you ever heard of the celebrated peacock room, designed and executed by the famous American artist, Whistler? It is in the home of Mr. Freer in Detroit, and is sometimes opened to the public.

Several pictures justly celebrated are to be seen at the museum in Detroit. Representative works by the great Flemish painter Rubens; the Dutch by Peter de Hooch's, David Teniers and Quentin Massys; the famous Italian Bellini and many others.

Of the smaller art museums in America perhaps none is more worthy of special mention than the Hackley gallery at Muskegon. Its fifty-four oil paintings in the permanent collection from English, French, Dutch, Spanish and American art are the keystone for further additions that no future critics can displace. It is, indeed, rare good fortune for an art gallery to start with so perfect a nucleus around which to build.

Several artists of national and even international distinction have started their careers within the borders of the state. Frederick Frieske, born in Owosso, Michigan, is a leader in the most prominent art circle in Paris. Many of his pictures have been seen in the best exhibitions of this country. His favorite subjects are figures posed in the out-of-door effects, and are full of the color and atmosphere of the French gardens. Frederick Church is another Michigan artist who has climbed to distinction—commencing his early work in the city of Grand Rapids. Gari Melchers, a native of Detroit, received his training in Paris and has won recognition as a leader of a unique style of technique in oil paintings.

ART IN KALAMAZOO.

No other city of its size in Michigan or any other state contains a more valuable collection of works of art than have been brought together by Hon. A. M. Todd, whose private gallery occupies two floors in his business house on the corner of North Rose and Kalamazoo avenue. In his extensive travels abroad he has collected a large number of copies of the old masters and a rare and valuable collection of hand-made books, porcelains and examples of the pottery from different countries, and other curios, in the way of old musical instruments, armor, beautiful examples of wood carving from Switzerland and Germany. A recent addition of pictures, and examples of various arts from the oriental countries, recently purchased at the Panama exposition in San Francisco has nearly doubled the collection.

The gallery was opened to the public on Saturday and Sunday, April 8 and 9, and afforded the hundreds who visited it a rare opportunity to see some of the world's great art in painting, sculpture, carving, embroidery, mosaics, porcelains, rare books, basketry and a number of other arts.

When the opportunity again presents itself the student body of the Normal should make it possible to attend.
CONVENTION OF ART AND MANUAL TRAINING.

The week of May 3 to 6 will bring to our neighbor city—Grand Rapids—several hundred teachers from the east and west to meet in their annual association. The teachers will send exhibitions of their school work which will be held in the large Klingman furniture building and a fine program of addresses has been prepared in which supervisors from various cities will take part. The students are urged to consult the program posted on official bulletin and make plans to attend at least one day.

EMELIA M. GOLDSWORTHY.

THE CLASSICAL CLUB.

The last meeting of the Classical Club, held on Wednesday evening, April 12, was devoted to Roman comedy. A talk on the costuming of these plays in ancient times was given by Dr. Ballou, illustrated with stereopticon slides reproducing in color such evidence as that furnished by vase-paintings, Pompeian wall-paintings, terra cotta figures and the miniatures contained in one of the Terence Mss. in the Vatican library. These slides, which were very generously loaned for the occasion by the Classical Department of the University of Michigan, were the ones exhibited by Dr. Orma Butler of the university in connection with a paper on "The Costuming of Roman Comedy," given by her at the recent meeting of the Schoolmasters' Club in Ann Arbor. The Menaechmi of Plautus was then read by Dr. Ballou in the English translation which was furnished as a play book at the very successful presentation of this play by the students of the University of Michigan on March 30.

RURAL SOCIOLOGY IN MICHIGAN.

The development of rural sociology as a subject of study in Michigan began, I believe, with lectures in the subject given at the State University in 1901 by Kenyon L. Butterfield, under the guidance of Professors Henry C. Adams, and Charles H. Cooley of the department of political and social science.

A direct outgrowth of this beginning which brought the subject to general public attention, was the joint meeting of the seventh annual State Farmers' Institute and the eleventh annual meeting of the Michigan Political Science Association at the State Agricultural College, February, 1902. A program running through four days was presented and several speakers of national fame in rural progress activities participated. This meeting is now known as the first annual Rural Life Conference in Michigan. It is also one of the earliest meetings of the kind in the United States.

When courses of study for teachers of rural schools were begun here in 1904, rural sociology was included in the list of required subjects, and early in the school year a seminar in the subject was organized. In 1906 an annual rural progress lecture was instituted which grew into a conference and lecture in three years. The course, the seminar and the conference became permanent features of the work of this school.

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Annual rural life conferences are now held at the State Normal School in Mt. Pleasant and by the Michigan County Life Association in connection with the annual farmers' week at the Agricultural College East Lansing. Many less general conferences are held in various parts of the state. It can only be a matter of time when more
will be made of rural sociology as a subject for study at the Agricultural College.

The best general statement of the problem of rural sociology at hand is one made by President Butterfield two months ago:

"The union of efficiency and service; the farmers' obligation, is to act as the intelligent steward of the soil on behalf of the rest of mankind; his right is to a fair return for his labor. A broad grasp of the rural problem; it includes better farm practice, better farm business, better farm life. The co-operative method of work and life; farmers must plan together, buy together, sell together, aspire together, and in all ways, work together. Yet the man must not be submerged in the mass, the collective and the individual must be married. The building of a hundred thousand rural communities in the United States, each as a unit of work, of play, of brotherhood, of worship. A national rural policy as broad as the rural problem, as deep as the full rural need, as high as the national aspiration. Complete correlation of effort; each agency must find its work, develop a definite policy and program, and all must fit into a unified campaign for rural progress in local community, in county, state and in nation."

A statement of the problem in a less technical form was recently made by Jessie Field, as follows:

"Though there is yet much to be done before our dream of country life at its best is realized everywhere, the fact that here and there, from North to South, and from East to West, communities are finding the way to work together to this end, makes us know that the time is coming nearer and nearer when it shall be realized everywhere. Surely, there has never been a time when leaders everywhere have been thinking and doing so much in the country as they are now. And because these are leaders who do not count the cost in personal sacrifice or in sharing of their lives for the sake of country people everywhere, their leadership will count, and the work will last, and grow. The best is yet to come in the country life movement. The battle is well begun and victory for the forces of righteousness and unselfishness and community spirit is certain."

The keynote of the matter is the enlistment of leaders. Liberty H. Bailey puts it this way:

"The rural intention and the urban intention, the rural forces and the urban forces; these are the motives that together must shape human progress; opportunity for service lies in each of them separately and the wide relations between them. The rural forces are now in need of special direction, and this provides a field for interesting and useful careers."

Another current statement runs as follows:

"Progress in country community building calls for a more adequate provision through institutions founded for such purposes, of men and women selected, specifically trained and enlisted for life in rural communities service. Native talent, enriched intelligence, sensitive sympathies, resolute will—in short an individually refined and socially cultured personality—these are the presuppositions of a leadership equal to the constructive program by which the new country community is to emerge out of the old without losing the worthy ideals of old."

RURAL NEWS NOTES.

Several applications for experienced teachers of rural schools have been received. The salaries range from $60 to $75.

The two sections of the Rural Seminar will meet jointly this term. The first half hour will be used for regular class discussions and the problems of school management reviewing and elaborating the reports made in the Seminar the preceding two terms. Following this volunteer student programs will be given. The two sections will alternate in the programs, week by week.

Miss Mary Munro, who graduated from Denison University in 1913, and who completed her life certificate work here in March, is teaching the Rural Observation School at Oakwood.
Allan Petrie, who has entered the field service in horticulture of the State Agricultural College, is spending the month of April with a demonstration and institute train in the northern peninsula. He has also taken part in local institutes near Marquette.

The work in nature study and agriculture, which has been in charge of Mr. Petrie for the past two years is being taught by Miss Ellet, formerly teacher of the Oakwood Rural School.

Mr. Burnham spoke for the State Superintendents' Association at Lansing April 20. His topic was "Some Current Educational Needs in Michigan."

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**Athletics Schedule**

**Baseball and Track Schedule for Spring Term.**

- **April 14**, Hope College at Kalamazoo.
- **April 17**, Mt. Pleasant Indian School at Kalamazoo.
- **April 19**, Olivet College at Olivet.
- **April 21**, Hillsdale College at Kalamazoo.
- **April 26**, Michigan Agricultural College at East Lansing.
- **April 29**, Invitation track meet, M. A. C., at East Lansing.
- **May 5**, Defiance, Ohio, College at Kalamazoo.
- **May 6**, Notre Dame University at Notre Dame.
- **May 6**, Track meet, Notre Dame freshmen at Kalamazoo.
- **May 10**, University of Michigan at Ann Arbor.
- **May 11**, Wabash College at Kalamazoo.
- **May 17**, Albion College at Kalamazoo.
- **May 18**, Olivet College at Kalamazoo.
- **May 20**, Western Normal first annual interscholastic track and field meet at Kalamazoo.
- **May 26**, Defiance College at Defiance.
- **May 27**, Hillsdale College at Hillsdale.

Although only two men are left from last year's star baseball team, so much new material has reported for practice during the last two months that things look promising. Captain Corbat is back at his old stand at second, and Leon Hoke is the other veteran. Both are in fine fettle and improved over last year.

As the Record goes to press it is too early to give any definite "dope" on what the lineup will be when the men are finally picked. Just now the infield is about as follows: Olsen, first; Corbat, second; Bippes, short, and Flannery, third. Discher is also being used at third, but looks more like an outfielder, and if he can hit stands a good chance of making left field. Flannery is a good hitter and seems to show a great deal of promise as an infielder. Olsen and Bippes are fast on their feet and are natural ball players. Mullen is doing most of the catching, and can throw and use his head. Olsen can also catch, and has been used in this position for the past two weeks. He can step in and do the receiving on short notice. Anderson, one of the pitchers, can hold down first in case of an emergency.

The pitching staff just at present consists of a number of "crooked arms," as usual. Cookingham has plenty of speed and control and will be hard to beat with any kind of support. Anderson seems to be another Koob with his terrific speed and good control. He lacks experience only, and will win some games if things break his way. Hoke completes the trio of southpaws. He is far better than last season and has a fast ball this year to go with his famous hook ball. Leonard and Allen are right handers, and both are as good as can be found among the colleges. Both need experience and ought to be world beaters in another year. The farmer is six feet, three and one-half inches tall, and looks like Shore, of Boston. He has everything but is a little wild at present.

Thomas is trying for center field, and if he can field as well as he is hitting now, will not come far from making the grade. Dunlap and Burke are trying for the outfield, but have not shown as much form at bat as in the field, where they shine. Lyon is a good outfielder, but has not had time to come out regularly. He can hit and field, and has had several years' experience.

The second team has not been lined up as yet, and many of these men look good enough to beat out some of the others. However, with a little seasoning one or two of them may get on the first team a little later.
on when there might possibly be a "slump" in the varsity hitting. Passage is a good hitter, and when he learns to run bases will be a valuable addition to the squad. Slocum is a fast fielder, but needs to get to hitting. Possi and East are good football players, but have not had enough baseball experience to do better than get positions on the second team. Stryker is a good all-around man, and is showing up well on the slab. He has been shifted around in too many positions and will be a good ball player in another year. Austin is a good steady pitcher, but does not possess quite enough speed to break into the varsity class. He may make the outfield.

The cold weather has kept the track team from getting out to any extent, but most of the men are in good condition, as they worked during the winter in the gymnasium. A few of the best men are trying for the baseball team and this is a handicap hard to cope with. It is a difficult task to be sufficiently interested in both branches of athletics to do well in both.

Leon Yeakey, Burke, Welden, Hill, Drake, Spaid, Stryker, and Jacks are all fast men on the track. Yeakey and Burke will be counted upon to do the bulk of the point winning in the early meets but some of the others are expected to equal their class in the later tests. An invitation meet will be held at East Lansing among teams representing M. A. C., Albion, Olivet, Alma, Hillsdale, and Western Normal, on April 29, and just now the men are trying for places on the squad which is to represent the "Hilltoppers." For this meet the entries will be about as follows, though this is a little early to say definitely:

<table>
<thead>
<tr>
<th>Event</th>
<th>Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 yard dash</td>
<td>Yeakey, Burke, Welden</td>
</tr>
<tr>
<td>220 yard dash</td>
<td>Yeakey, Burke, Welden</td>
</tr>
<tr>
<td>440 yard dash</td>
<td>Burke, Spaid</td>
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<tr>
<td>2 mile run</td>
<td>Brown, Beam, Lackey</td>
</tr>
<tr>
<td>880 yard run</td>
<td>Yeakey, Hill, Lackey</td>
</tr>
<tr>
<td>Mile run</td>
<td>Brown, Beam, Lackey</td>
</tr>
<tr>
<td>2 mile run</td>
<td>Brown, Beam, French</td>
</tr>
<tr>
<td>120 high hurdles</td>
<td>Stryker, Welden, Holmes</td>
</tr>
<tr>
<td>220 low hurdles</td>
<td>Jacks, Burke, Welden</td>
</tr>
<tr>
<td>Shot put</td>
<td>Dunlap, Jacks</td>
</tr>
<tr>
<td>Discuss</td>
<td>Dunlap, Jacks</td>
</tr>
<tr>
<td>Pole vault</td>
<td>Gustafson, Holmes</td>
</tr>
<tr>
<td>High jump</td>
<td>Mitchem, Holmes</td>
</tr>
<tr>
<td>Running broad jump</td>
<td>Holmes, Lackey</td>
</tr>
<tr>
<td>Mile relay</td>
<td>Burke, Yeakey, Spaid,</td>
</tr>
<tr>
<td></td>
<td>Drake, Lackey, Brown</td>
</tr>
</tbody>
</table>

A meet will be held with the Notre Dame freshmen on May 6 at Kalamazoo, and on May 13 a triangular meet will be held in Kalamazoo, when Albion College and the Grand Rapids Y come here to meet with Western Normal.

WESTERN NORMAL WILL PUT ON A BIG TRACK AND FIELD MEET ON MAY 20.

Practically all the schools in southwestern Michigan are invited to send participants to this meet. First, second, and third places in each event will be given for first, second, and third places in each event. This is the first event of this kind ever undertaken by Western Normal, and from now on it will be an annual affair.

Several high schools already have said they would send some of their best men to compete in the events. The events will be as follows: 100 yard dash, 220 yard dash, 440 yard dash, 120 yard high hurdles, 220 yard low hurdles, 1-2 mile run, mile run, running high jump, running broad jump, pole vault, 12 pound shot put, discus throw, 1-2 mile relay.

The details of the meet are incomplete at this time but will be published in the next issue of the Record.

MANUAL TRAINING

SAW FILING.

NOTE—In response to inquiries from manual training men in the field for directions for saw filing, the following are submitted. While each woodworker has his own particular method of filing, the principles are invariable. By making a careful study and analysis of the principles involved the art can be easily acquired.

CARE.

A saw, like any high grade tool, must receive good care if it is to do effective work. Special attention should be given the teeth to keep them even, sufficient set for clearance, and a good cutting edge.

JOINTING.

A saw that has been used will first need to be jointed; that is, the points of the teeth filed to a straight line or even height. Place the saw in the clamp with the butt or handle to the right. Place the jointer on the teeth, and, beginning at the butt end, run it lightly along the teeth. Continue the operation until the teeth are even or with a slight crown in the center. If no jointer is at hand, lay a flat file lengthwise on the teeth, using the fingers as a gauge, and taking care not to tip the file, proceed as with the jointer.

SETTING.

If the saw is an old one the teeth must be filed to a uniform size before setting. This is done by filing straight through each tooth, but do not file to a point. Each alternate tooth must be set or bent over a little to give clearance for the blade in the cut. The average amount of set is one-thirty-second of an inch. The setting can be done with a hammer or an anvil, or with a hand set, which works on the principle of a pair of pinchers. Adjust the anvil so that the bevel most suitable for the size tooth is brought into position. Hang the saw-set on the blade.
so that the gauge rests on the blade. Adjust the gauge for the depth of set to be given, taking care that the top of the plunger is on a line with the top of the tooth to be set. Set the point of the tooth only. If a deep set is made the blade will become distorted and the teeth will break out. When the saw-set is properly adjusted, begin at either end and set every other tooth, then turn the saw around and set the teeth that were missed.

FILES.

On all saws, four to eight points, use a six inch slim taper or extra slim taper file. For nine to twelve, or finer, use a 5 inch or 4 inch extra slim taper file, according to the point. Set the files straight in a good file handle. When through filing clean the file and hang it up—don’t throw it down to be dulled or broken. Remember that a file is an EDGED TOOL.

FILING.

Crosscut Saws.

Place the saw in the clamp with the handle to the left, and file from handle or butt to the point of the saw. Lower the handle two or three inches and point the end of the file toward the point of the blade. In going over the saw do not file the teeth to a point, but file deep enough so that the points equal distances apart after the saw has been filed from the other side. If one tooth is larger than the others, don’t roll the file over to file more off the large tooth, but keep the file in the same position as to pitch, and crowd against the large tooth and bear lightly on the other until the large tooth is down like the others. Grasp the handle of the file with thumb up and hold securely in the same position as you file across the saw. Press on the file in different ways until it fills the space, thus getting the proper angle. Proceed to file every other tooth across the saw. Now place in the clamp with the handle to the right. Filing this side last brings the file directly in front, and squarely facing the saw and gives the only position to see the points of all the teeth at the same time. FILE THE TEETH TO A SHARP POINT ONLY. Begin filing from the toe to the handle. Hold the file the same pitch and bevel as on the other side, and file across the saw.

Rip Saws.

A rip saw should be filed square across the front of the tooth, with the handle of the file lowered from two inches to three inches, giving a bevel on the top of each tooth.

SIDE DRESSING.

Lay the saw on a straight edge and run the flat file lightly over the teeth, on both sides of the saw. Don’t use too much pressure. No setting will be necessary for the next two or three filings, but side dress the teeth with an oilstone to remove the wire edge and smooth the teeth.

TEST.

If a saw is properly set and filed you will find a long groove down through the center of the teeth through which a small needle will slide. A properly sharpened saw will cut smooth and run straight.

Study and analyze the saw and its work and remember practice makes perfect.

L. M. M.

MANUAL TRAINING IN MICHIGAN.

Not quite a score of years ago manual training found its way into the public schools of Michigan. Like most of the new ideas in business or education it had to fight its way through strong lines of opposition arrayed against it. It has been called a fad, fol-de-rol, etc., and a nuisance, as well as many good names, until, now the school folk of the state seem to be quite united in favor of this phase of education.

It seems that the smaller cities test out the practicability of manual training, and question its real value to the community and to the individual more than do the larger centers of industry and commerce. They want to see real results; they want to see actual work well done by the boys and girls, real ability developed in the fundamentals of some practical work, and this done in such a manner as to be truly educational.

But the increasing knowledge of the subject and of its limitations and its possibilities, is bringing it a sure place in the curriculum; and this place seems to be gaining in importance and public acceptance each succeeding year. I believe there never was a time when manual training (of the right type) was on such sure foundations and gave so much promise of a worth-while future as right now.

M. J. S.
MUSIC IN MICHIGAN.

The general growth of music in Michigan has gone forward by leaps and bounds during the past quarter of a century. Theodore Thomas was organizing what is now known as the Chicago Symphony Orchestra. Festivals of a large calibre were unheard of except in a few of the large music centers. The University of Michigan under the musical guidance of Prof. A. A. Stanley, was inaugurating the Choral Union series, which has grown to be of immense proportions. Many of the best orchestras in the country have assisted in the general growth and development of these concerts.

Music in the normal schools has had a slow but steady growth, extending over a period of a half century. The late Frederick H. Pease, for nearly fifty years, guided the musical life of Ypsilanti Normal College. Mr. Pease always maintained a high standard of music, but it was not until a few years before his death that his high ideals in concerts were realized when he was able to bring an organized symphony orchestra to the institution to assist in the production of oratorios.

Less than two decades ago high school choruses giving standard cantatas, such as Gaul’s “Holy City,” or Cowen’s “Rose Maiden,” were an extreme novelty, and regarded as impossible by many of the more conservative teachers of music in the public schools. Today the University of Michigan has a five-day festival preceded by high class concerts during the year. The normal schools have musical festivals or concerts by the best musical organizations in the country in addition to the regularly organized work of the department, such as classes, glee clubs, orchestras and choruses.

High schools all over the state are forging to the front musically. In many cases the supervisor of music is the main moving force in the community, having concerts of a high grade wherein children from the public schools participate, assisted by artists of no mean proportion.

The prospects for a great musical growth in Michigan are excellent. The general attitude of the public and interest manifest in such audiences as greeted the New York Symphony Orchestra and Hofmann at the Kalamazoo armory in a recent concert is of a most gratifying nature to all concerned.

Mr. Frederick Stock, conductor of Chicago Symphony Orchestra.

Up to the time of the death of Theodore Thomas, who organized the orchestra in 1864, Mr. Stock had been an assistant to Mr. Thomas for five years. After the death of Mr. Theodore Thomas in 1904 Mr. Stock, a brilliant musician (at that time only thirty-three years of age) and a great conductor, was chosen to carry on the work as conductor of the orchestra. Mr. Stock proves himself to be a leader of force, sure of himself and of imparting his firm convictions into his orchestra.
Second Annual May Festival
May 20 and 22, 1916

SATURDAY, May 20, 8:15 P. M.—Artists’ Recital and Children’s Chorus
FLORENCE HINKLE. Soprano

MONDAY, May 22, 2:30 P. M.—Symphony Concert
CHICAGO SYMPHONY ORCHESTRA
FREDERICK STOCK, Conductor

MONDAY, May 22, 8:15 P. M.—MENDELSSOHN’S ELIJAH
Normal Chorus
Florence Hinkle
Morgan Kingston

Harper C. Maybee, Conductor

Florence Hinkle, great American concert soprano.
By the wondrous beauty of her voice, her lovely method of singing and an individuality of style, Miss Hinkle has accomplished what many have declared impossible for an American-born and wholly trained American singer. The gifted soprano resides in New York, where she gives an annual recital before a distinguished paying audience.

Morgan Kingston, England’s greatest tenor, is in the front rank of the world’s greatest tenors. His voice has a remarkable range in both upper and lower registers, is rich and manly in quality and perfect control. His resources of expression are great and he sings at all times with the intelligence of a born artist.
Second Annual May Festival
May 20 and 22, 1916

Chicago Symphony Orchestra

NORMAL CHORUS (200 Voices)
CHILDREN'S CHORUS (175 Voices)

FLORENCE HINKLE . . . . Soprano
MARGARET KEYES . . . . Contralto
MORGAN KINGSTON . . . . Tenor
REINALD WERRENRATH . Baritone

Margaret Keyes, a favorite American contralto, is one of the singers who has elevated the standards of musical art in her country. Miss Keyes was born in Rochester, New York; she is wholly American trained, a fact in which she takes pride. Through the beauty of her voice and her genuine musical gifts Miss Keyes has quickly advanced to the foremost ranks.

Rein ld Werrenrath, noted American baritone, has a voice of beauty, rich in quality, of wonderful evenness throughout an extraordinary range. His appearances throughout the country have included concerts, recitals and oratorio performances. Mr. Werrenrath is an earnest student of his art.
CHEMISTRY IN MICHIGAN INDUSTRIES.

Until lately Michigan has lagged somewhat behind her sister states in industrial development. Her geographical position has been partly to blame for this. Lying north of the great east and west lines of transportation she has been a little out of the main industrial current. Again the early development of mining and lumbering to large proportions absorbed much of the capital which otherwise might have been turned into other channels.

WOOD PULP.

The lumbering business in general may be passed by as a non-chemical industry. Some chemical applications, however, are found in the manufacture of wood pulp and paper. The chips from which the pulp is made are digested with calcium bisulphite to dissolve the lignin and separate the fibers of cellulose. Later the pulp is bleached by using bleaching powder. This is about as far as chemistry is used in these industries, the principal processes being mechanical in character. Large pulp mills are found at Munising and Menominee, in the upper peninsula, while the largest paper manufacturing center in the United States is located in the Kalamazoo district.

SALT.

Michigan is a large producer of salt. This industry developed first in connection with the manufacture of lumber, and is still largely carried on in such localities, notably at Manistee, Ludington and the Saginaw, Bay City, Port Huron region. It is here almost entirely a mechanical process. At Midland, however, and at Solvay, near Detroit, we find well established chemical industries using salt as a raw product. At Midland chlorine and caustic soda
are produced by the electrolysis of salt. The brines at Midland contain also appreciable quantities of bromides. The mother liquor, after the crystallization of the salt, contains the bromide in solution. By passing chlorine gas into the liquor bromine is separated and obtained in the free state. Bromine is used to make organic dyes and bromides. Potassium bromide is used in medicine as a sedative. Silver bromide solution is saturated with ammonia and then with carbon dioxide. The white product which crystallizes out is sodium bicarbonate, or baking soda. Heating this substance leaves sodium carbonate behind, water and carbon dioxide escaping.

**SUGAR.**

Beet sugar is an important product of Michigan. There is but little chemistry connected with the process, however. At one stage the sugar solution is treated with milk of lime and subsequently carbon dioxide is passed into the solution. This precipitates calcium carbonate, or limestone, which, as it settles, carries down certain impurities with it. The filtering which follows separates the clear liquid from the solid impurity.

**COPPER.**

The mining of copper is a mechanical process. The ore is crushed and the earthy matter separated in so far as possible from the copper by washing. In the smelting of the metal the small
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amount of foreign matter is removed by means of a flux, limestone being used. This is a chemical process, slag, which is an impure glass, being formed.

IRON.

The mining of iron ore is entirely a mechanical process. The smelting, however, is chemical in character, fuel in the form of coke or charcoal, being required to reduce the ore and produce the free iron, and a flux to remove the earthy impurities. Although large quantities of iron are mined in Michigan, but little iron is manufactured. Most of the ore goes to the Chicago district and to Lake Erie ports. That which is manufactured at home is almost entirely charcoal iron, i.e., iron made by using charcoal instead of coke.

WOOD ALCOHOL, ACETIC ACID AND FORMALDEHYDE.

In connection with the pig iron plants of Michigan has grown up a by-product chemical industry of importance. The charcoal used for fuel in these plants is made right at hand from hard wood. This wood is placed in retorts and heated from the outside. This process is called destructive distillation. Wood consists of the elements, carbon, hydrogen, oxygen, and when treated as above yields hydrocarbons in the form of tar and combustible gases and wood alcohol, acetic acid and acetone in the form of vapors. This distillate is condensed by cold water and the alcohol, acid and acetone separated.

Wood alcohol is used in the varnish business as a solvent for organic gums. If the vapor of wood alcohol is passed over a hot copper spiral together with oxygen, formaldehyde is produced. This is an excellent disinfectant and is also largely used to preserve biological specimens. Formalin, which is a 40 per cent by weight solution of formaldehyde in water, is the most familiar form.

Acetic acid is the essential component of vinegar. Some of its salts, the acetates, have important uses. One such use is to act as a mordant to fix dye stuffs on fabrics.

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The Store for Men

The “POLYTECHNIC”

Acetone is a valuable solvent. It is especially used to dissolve acetylene gas, making it less likely to explode. It is also used in the manufacture of chloroform. Plants for the manufacture of these distillates from wood are located at Mancelona, Newberry, Marquette and Gladstone. At Cadillac is a plant for distilling turpentine and other products from old pine stumps.

GLASS.

At Saginaw is a glass factory. The manufacture of glass is essentially a chemical process, as it is made by fusing together two or more different substances which combine to form a melt, which when cooled is hard and transparent. The substances used are sand and mixtures of oxides or carbonates of sodium potassium, calcium and lead.

CALCIUM CARBIDE.

At Sault Ste. Marie is a chemical industry depending upon the intense heat generated in the electric furnace. Calcium carbide, made from coke and limestone, is the chief product produced. The carbide is used to make acetylene gas.

EXPLOSIVES.

The manufacture of nitroglycerine is carried on in the mining region of the Upper Peninsula. For this purpose glycerine and nitric and sulphuric acids are needed. It has become the custom to manufacture the sulphuric acid on the spot by the “contact process.” In this process sulphur dioxide gas and oxygen are passed through a heated tube containing the contact agent. The latter is often hematite, ferric oxide. Sulphur trioxide is the result, and this combines with water to form sulphuric acid.

CEMENT AND BRICK.

The cement and brick industries, which are important in Michigan, are mostly non-chemical. The manufacture of plaster of paris is chemical to this extent; that the gypsum loses one molecule of water when it is heated. When it sets after wetting it recombines with this water and becomes hard.
DRUGS.

The large pharmaceutical firms of Detroit produce annually large quantities of substances used for medicine or other purposes. These are very largely of chemical origin.

DR. McCracken.

The physics department is contemplating the installation of a wireless receiving and sending outfit in the near future. Such an outfit would be of value to the Normal in many ways. It would stimulate interest in this recent valuable method of communication and offer an opportunity for a limited number of young people attending the school to learn the code and perhaps be of public service later in life. Then, too, it would prove itself a valuable asset to the department of geography in getting weather predictions without waiting for the published reports. It would also furnish a means for getting accurate time as it is reported daily by wireless.

MICHIGAN PRODUCTS.

Few of the people who live in Michigan realize what a wonderful state it is. There is hardly another state of its size in the Union that produces such a quantity and variety of goods. It is not dependent on its wheat crop, or corn crop, alone, or even on its agricultural pursuits in general, for its maintenance, but draws wealth from its soils, its mines, and its factories. It can produce its goods the most cheaply of any state in the Union.

Following are a few statistics showing current values for 1913 to 1916, of Michigan's products, compared with the leading states:

- Potatoes—Michigan, 44,000,000 bushels; New York, 46,000,000 bushels.
- Rye—Michigan, 6,045,000 bushels; Wisconsin, 7,770,000 bushels.
- Oats—Michigan, 64,260,000 bushels; Iowa, 198,000,000 bushels.
- Wheat—Michigan, 20,448,000 bushels; Kansas, 105,938,000 bushels.
- Corn—Michigan, 56,000,000 bushels; Nebraska, 213,000,000 bushels.
- Hay—Michigan, 3,458,000 tons; Missouri, 4,636,000 tons.
- Sugar beets—Michigan, 110,630 short tons; Colorado, 220,799 short tons.
- Apples—Michigan, 5,700,000 barrels; New York, 16,500,000 barrels.
Beans—Michigan, $10,000,000.
Pears—Michigan, 840,000 barrels; California, 1,958,000 barrels.
Cabbages—Michigan, 70,000 tons; Wisconsin, 176,000 tons.

LIVE STOCK.
Horses—Michigan, 673,000; Iowa, 1,584,000.
Milch cows—Michigan, 814,000; Wisconsin, 1,626,000.
Other cattle—Michigan, 707,000; Texas, 5,121,000.
Sheep—Michigan, 2,033,000; Wyoming, 4,127,000.
Swine—Michigan, 1,392,000; Illinois, 4,358,000.

MINERAL RESOURCES OF MICHIGAN FOR 1913-14.
Copper—135,853,409 pounds.
Iron—12,668,560 long tons.
Coal—1,231,786 short tons.
Total value of all minerals in 1914 was $72,143,211.

Beet Sugar—$10,477,000.
Flour and grist—$15,399,000.
Foundry and machine—$34,861,000.
Copper smelting—$21,222,217.
Carriages, wagons—$10,189,000.
Furniture—$28,642,000.
Automobiles—$96,651,000.

This is an age of trained workers, who must have theoretical as well as practical training. This means a certain length of time spent in school. There are many people actively engaged in some line of work who want to fit themselves for something better, but they are not able for many reasons to give up their pursuits in order to make a study of subject matter. This problem has been solved by the extension movement which has become so popular within the past few years, essentially the co-operation of those
desiring help with the institutions able to give it. Schools all over the country are doing some form of this work. It is carried on by lectures, correspondence study classes which meet at regular intervals with the instructor in charge at the time, summer schools, short courses, and evening schools. Perhaps the most extensive instruction is carried on by agricultural colleges and normal schools.

The Michigan Agricultural College has carried its work into every county in the state and is the means of bringing:

The Western State Normal School is a pioneer in this movement. Its work is carried on by correspondence classes which meet in centers at convenient distances from the Normal, and summer schools. Centers where classes have been held during the past year are Allegan, Battle Creek, Big Rapids, Charlotte, Grand Rapids, Kalamazoo, Ludington, Muskegon, Niles, South Haven, St. Joseph, Traverse City and White Cloud. Each subject given in absentia is definitely outlined to cover eighteen weeks of time, and when satisfactorily completed counts for twelve weeks credit on the life certificate course. One who is a high school graduate and who has taught successfully for at least six years may receive the extension certificate by earning six twelve weeks credits in residence and six in absentia. Those who do not care for the credit join the classes for the cultural value of the subject presented.

Hundreds of people have availed
themselves of extension privileges presented by the Western State Normal School within the past few years. Many have graduated from the extension life certificate course and many more have found it possible to come into residence to earn the residence life certificate.

The sudden death of Archie D. Polley, a member of the first class to graduate from Western Normal School, came as a distinct shock to his friends in the school, which he had visited only a day or two previous to his death. Mr. Polley, until the past year, had been in educational work, holding positions of importance, including an instructorship in the State Normal School at Winona, Minn. This year he has been engaged in farm work at Alamo, but had planned to return to the teaching profession next year. His death, Saturday, April 15, occurred at his home, from which the funeral was held Thursday, April 20. The sympathy of his friends in the Normal, to which he had always been a credit, is extended to his wife, also a graduate of the school, to his sister, and to the parents, Mr. and Mrs. W. F. Polley.

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2. Library of 14,000 volumes, all selected in recent years. 180 standard periodicals, 40 standard periodicals in complete sets.
3. Splendid new three-story Science Building 147 1-2 feet long and 79 1-2 feet wide, one of the best planned structures of its kind in the United States.
4. The Training School building is one of the best equipped in the country. It is regarded by educational authorities as a model.
5. The largest Normal School gymnasium in the "Old Northwest" Territory. The floor measures 119 feet by 68 feet. Running track, swimming pool, shower baths, lockers.
6. Fine new athletic field of over 13 acres. Will include two football gridirons, two baseball diamonds, running track, hockey field, tennis courts.
7. Graduates in demand. Now teaching in 33 states and in every section of Michigan. 117 cities and villages engaged members of the last senior class.
8. Young men who have completed the life certificate course receive from $700 to $1100 the first year. 65 graduates of Western Normal are holding important administrative positions in Michigan, including superintendencies, principalships, county normal directorships, and county commissionerships.
9. Manual Training. The Western Normal is the only Normal School in Michigan granting a special manual training certificate. Graduates of this department are teaching in thirty-two cities in Michigan and in twelve states outside of Michigan.
10. Graduates of the Normal School complete the A. B. course at Ann Arbor in two years. Twenty-five former Western Normal students are now in residence at the University. Five Western Normal graduates of recent years who have completed the A. B. course at Ann Arbor are receiving an average salary of more than $2000 this year.

Spring term begins April 3, 1916.
Summer term begins June 26, 1916.
Fall term begins September 25, 1916.
For catalog address Secretary,

WESTERN STATE NORMAL SCHOOL,
Kalamazoo, Mich.