

# THE NAUTILUS

VOL. 2

NOV. 1



NOVEMBER '96.  
MANUAL TRAINING  
HIGH SCHOOL  
KANSAS CITY MO.



# CONTENTS.

Ref.	Page.
Board of Education and Faculty .....	2
Directory .....	7
Our School .....	9
LITERARY .....	11
A Tonic .....	11
A Hallowe'en Story .....	12
Aesthetics in the Flower in the Crannied Wall .....	13
Kansas City's New Museum .....	13
Arlington .....	15
The Farm at Five O'clock in the Morning .....	17
Poem .....	18
SOCIETIES .....	19
The Belles Lettres Society .....	19
History of the Art Club .....	20
ATHLETICS .....	22
EDITORIALS .....	23
SCIENCE .....	26
The Migration of Birds .....	26
Some Hawk Moths of this Vicinity .....	28
The Physics of the Bicycle .....	32
THE BOYS' MANUAL TRAINING .....	33
Something About Education and Morality .....	33
Saw Dust .....	34
Gouge Shavings .....	35
The New Shop .....	35
Drawing .....	36
THE GIRLS' MANUAL TRAINING .....	37
Domestic Art .....	37
The Past and the Present .....	38
Free-Hand Drawing .....	39
EXCHANGES .....	40
LOCALS .....	41

# Kansas City School of Law

Follows the most approved plan for giving a legal education.

....Faculty is composed of  
judges and practicing  
lawyers as follows:

HON. F. M. BLACK,  
HON. O. H. DEAN,  
HON. E. L. SCARRITT,  
HON. E. P. GATES,  
MR. S. B. LADD,  
MR. C. O. TICHENOR,  
HON. R. J. INGRAHAM,  
MR. J. H. HARKLESS,  
MR. J. W. SNYDER,  
MR. W. P. BORLAND,  
MR. E. D. ELLISON.

All sessions held in the evening so that students may be self-supporting.

Two years course of nine months each leads to degree of Bachelor of Laws.

## DIPLOMA ADMITS TO THE BAR

Tuition, Fifty Dollars per year and students have magnificent library privileges.

Send for Catalogue and full information to

Wm. P. Borland, 714 N. Y. Life Bldg.,  
E. N. Powell, 614 N. Y. Life Bldg.,  
E. D. Ellison, 627 N. Y. Life Bldg.

ESTABLISHED 1886.

TELEPHONE 1453.

WE MAKE A SPECIALTY OF PRINTING MAGAZINES  
AND PERIODICALS.

 **CHAS. E. BROWN**  
**PRINTING CO.** 

WE PRINT "THE NAUTILUS" AND SEVERAL OTHER  
FIRST-CLASS PUBLICATIONS.

SIXTH AND WALNUT STS.,

KANSAS CITY, MISSOURI.



## BOARD OF EDUCATION

HON. R. L. YEAGER, President.

HON. J. V. C. KARNES, Vice-President.

HON. E. F. SWINNEY, Treasurer.

HON. W. E. BENSON, Secretary.

HON. J. C. JAMES.

HON. JOS. L. NORMAN.

HON. J. SCOTT HARRISON.

HON. F. A. FAXON.

J. M. GREENWOOD, Superintendent.

## FACULTY

GILBERT B. MORRISON, Principal,  
Director of Physical Science Course.

E. D. PHILLIPS, Vice-Principal,  
English Literature, and Director of English  
Course.

JAMES A. MERRILL,  
Botany, Zoology, Geology, and Director of  
Biology Course.

JAMES C. RICHARDSON,  
German, French, and Director of Language  
Course.

MARY FISHER,  
American Literature.

A. A. DODD,  
Director of Mathematics Course.

B. T. CHASE,  
Mathematics.

ANNA C. GILDAY,  
History and Economics.

HERBERT M. PAGE,  
Physics.

M. ALICE MURPHY,  
Free-hand Drawing.

STANLEY H. MOORE,  
Woodwork, and Director of Boys' Manual  
Training.

JOSEPHINE G. CASEY,  
Director Domestic Art Course.

P. B. S. PETERS,  
Bookkeeping, Typewriting, Stenography, and  
Director of Business Course.

BERTHA H. BACHELLER,  
Domestic Science (Cooking).

ARMAND MILLER,  
Chemistry.

J. M. KENT,  
Electrical and Mechanical Engineer, Instruc-  
tor in Applied Electricity.

W. A. CONNELL,  
Mensuration, Mineralogy and Physiography.

OLIVE B. WILSON,  
Music.

CLIFTON B. SLOAN,  
Mechanical Drawing.

SARAH E. VAN METER,  
English.

DELLA DRAKE,  
Latin.

SALLIE ELSTON,  
English.

GEO. ARROWSMITH,  
Turning and Pattern-making.

JESSIE L. GRIFFITH,  
Sewing.

CHRISTINA M. THOMPSON,  
Dress Making.

R. H. KNIGHT,  
Mathematics.

KATHARINE DUNN,  
German and Latin.

STELLA JENKINS,  
Study Hall and English.

FLOY CAMPBELL,  
Drawing.

MRS. THOS. M. SPEERS, Matron.

ETHEL OSGOOD, Clerk.

L. R. CLAFLIN, Janitor.

R. R. SHELTON, Fireman.





Mrs. Belle Martin  
History



Henry C. Beckwith  
Principal



Anna C. Moore  
English



George A. Brown  
Mathematics



Julia Dean  
Music



W. A. Howell  
Physical



Frank Fuller  
Chemistry



Mary Anderson  
Art



J. A. Jones  
Geography



Alice K. Nelson  
Latin



E. T. Jones  
Bookkeeping



T. A. Fitch  
Industrial



Mary Jones  
Domestic



William B. Johnson  
Drawing



W. B. Hill  
English



Florence Jones  
Penmanship



Jack Howell  
Gymnasium



Mary Brown  
Reading



Stanley B. Smith  
Special Training



Susan A. Gardner  
Drama



J. A. Hill  
Bookkeeping



Annie Brown  
Music



Edna Jones  
Drama



George H. Hill  
Reading



Sam. Greenough  
Special Training



Mrs. John A. Howell  
Reading

FACULTY  
of the  
MANUAL TRAINING  
HIGH SCHOOL.  
Kansas City, Mo.  
1898

*W. B. Hill* *Principal*

# R. T. THORNTON,

## Druggist,

Telephone 449.

Cor. 15th St. and Virginia Ave.

KEEPS A FULL LINE OF SCHOOL SUPPLIES.

Choice Candies. Funke's Chocolates a Specialty.

Prescriptions delivered to any part of the City.

Give him a call.

Always go to —

S. H. WALES  
J. H. WALES

## WALES BROTHERS

FOR

# Staple and Fancy Groceries,

1317 EAST FIFTEENTH STREET,

Telephone 1904.

KANSAS CITY, MO.

## Drawing Supplies

Drawing Sets 75c up

Drawing Boards, Easels, Thumb Tacks. All grades of Drawing Paper from cheapest practice paper to Water Color Paper.

Special prices on all Supplies to Pupils of the Manual Training High School.

### Milton Bradley Company,

H. O. PALEN, Mgr.

418 East 9th St., (Old Y. M. C. A. Bldg.)

SCHOOLS,  
CHURCHES,  
COURT HOUSES  
AND OTHER  
PUBLIC  
BUILDINGS A  
SPECIALTY.

The American  
Automatic  
Flushing Closets  
and Dry Closets.

E. C. Lewis,  
J. H. Kitchen, { Proprietors.

3,500 PUBLIC BUILDINGS CONTAIN  
OUR APPARATUS.

## LEWIS & KITCHEN,

### HEATING AND VENTILATING ENGINEERS.

Office and Warerooms: { Ninth and Broadway, Kansas City, Mo.  
435 Wabash Avenue, Chicago, Ill.

Manufacturers of **MODERN** Warming and Ventilating : : Apparatus for Public Buildings

The American Automatic Flushing Closets used in the Manual Training High School.

SEND FOR  
NEW CATALOGUE



PAUL HALLECK  
MAY PERKINS  
LEE STALEY

GEO. MCKENZIE  
CHAS. CLAYTON

GRACE PHILLIPS  
LUCILE EDWARDS  
DWIGHT FROST

CARL BRYANT  
\*  
JAMES N. RUSSELL

WALTER BURTON  
PERRIN ROUSE

ANNIE WINN

GRACE CASSEL  
WALTER HIDDEN  
WILL HALL



TIN AND STAMPED WARE.  
 BARBED AND WAIN FENCE  
 WIRE.  
 WAGON WOOD WORK.  
 SPRINGS AND AXLES.  
 BUFFALO SCALES.  
 LAFLIN & RAND POWDER  
 COMPANY.  
 MACNEALE & URBAN SAFES.  
 CIRCULAR SAWS.

*Ads*

# Richards & Conover Hardware Co.

## Tinners' Stock, Cutlery, Iron, Steel and Nails.

Cor 5th and Wyandotte Sts ,

KANSAS CITY, MO.

### R. KRIETE.

I sell Supplies for Naturalists and Students  
 in Zoologic, Entomologic, Taxidermy,  
 etc., at the same prices as  
 when ordered in the East.

406 East 12th Street, Kansas City, Mo.

### L. E. MILLER,

Manufacturer of Fine Jewelry,  
 School Badges and Medals.

DIAMOND SETTING,  
 FINE ENGRAVING.

1022 Main Street, up Stairs. KANSAS CITY, MO.

### W. A. PITRAT,

SUCCESSOR TO

OSBORNE & PITRAT,

Books, Stationery and Wall Paper,

1109 Walnut Street,

Telephone 1891. KANSAS CITY, MO.

### At Mrs. S. J. Jackson's Book Store,

N. E. Corner Twelfth and Locust Streets,

You can find all kinds of

HIGH SCHOOL BOOKS AND SUPPLIES.

All text books for Manual Training,  
 Central High and Ward Schools.....

THE CORRECT STYLE

# Hat for \$2.25

Same quality you have been paying \$2.50 and \$3.00.

THE FASHION,

A. B. LEWIS, Mgr.

1102 Walnut St.

### PURITY CANDY

### KITCHEN,

1025 Main Street.

502 E. 12th Street.

My  
 Vehicles  
 are  
 Equipped  
 with  
 Rubber  
 Tires.

## J. M. McINTIRE, LIVERY, BOARDING AND SALE STABLE,

1124 WALNUT STREET

Telephone 706.

Carriage  
 and  
 Baggage  
 Calls  
 Promptly  
 Attended  
 to.

*Secretary*

# DIRECTORY

*7/8*  
*3*

## Officers of the Belles Lettres Society.

C. LEE STALEY.....	President
GRACE PHILLIPS.....	Vice-President
WALTER BURTON.....	Secretary
CORINNE COLGAN.....	Treasurer
LUCILE EDWARDS.....	Critic
WALTER GILLHAM.....	Sergeant-at-Arms
WILL SMITH.....	Reporter

## Officers of the Art Club.

JAMES N. RUSSELL.....	President
FLORENCE PIERSON.....	Vice-President
MYRTLE CHRISMAN.....	Secretary
PAULINE ADLER.....	Corresponding Secretary
WILL HALL.....	Treasurer
PAUL KIRTLEY.....	Mewtadjraesmd
HOWARD WHITEHEAD.....	Sergeant-at-Arms
GRACE CASSEL.....	Critic

## Orchestra Members.

MR. ARMAND MILLER, Director.

FIRST VIOLINS.

ANNA JAMESON.  
LITA ROGERS.  
GEORGE CONKEY.

SECOND VIOLINS.

MERLE ROGERS.  
EDWARD LEGG.  
JOE EASLEY.

THIRD VIOLINS.

CLARA HOERING.  
ANNA GIFFIN.

CELLO.

LON ROGERS.

PIANO.

CLARA LINDSLY.

## Foot Ball Team.

Centre.....	PETERS	R. End.....	TATE
R. Guard.....	KILROY	L. End.....	DOUGLAS
L. Guard.....	BALES, ESTELLE	Q. Back.....	McCURDY, MURPHY, HEWITT
R. Tackle.....	LINDSLY	R. H. B.....	MURPHY, BASEY
L. Tackle.....	ARNI, FRAZIER	L. H. B.....	VITTUM, ROWE
Full Back.....			BRYANT



ESTABLISHED 1869.

# KANSAS CITY MEDICAL COLLEGE,



Washington and Seventh Streets.

Three years graded course. Lecture and recitation system of instruction. :: Well equipped laboratories.

Annual session begins September 15, and continues six months.

For announcement and other information address,

J. D. Griffith, M. D.,  
Dean.

Franklin E. Murphy, M. D.,  
Secretary.

## Attention!

STUDENTS OF THE MANUAL  
TRAINING HIGH SCHOOL  
GO TO

# A. SUTORIUS'

## Vienna Bakery

FOR CAKES, PASTRY, PIES,  
BREAD, ETC., FOR YOUR  
LUNCHES.

Best Place in Town...

1400-1406 East 15th Street,

Two Blocks from School.

The **Unit of Value** <sup>ES</sup>  
in  
Typewriters is the

# REMINGTON

It sets a known  
and tested **Standard**

of Excellence.



Everyone knows  
what it represents — the Best  
Work with Least  
Labor, Enduring  
Service, Unequalled  
Economy and  
Convenience. The

Number **6** Model

bears the stamp of  
Unqualified Public Approval





## OUR SCHOOL.

Our school begins the work of this year with that confidence which comes from one year of success. We mention this not boastfully, nor with a spirit puffed with pride. It is simply a fact in the history of the school which we are now building. Last year the total enrollment reached eight hundred and forty-two pupils, boys and girls, the girls being slightly in the majority. Notwithstanding the many obstacles incident to pioneering in an unfinished building, the work laid out for the first year of the course was accomplished. The work of the pupils was cheerful and earnest. The work of the teachers possessed the open-eyed, steady intelligence which characterizes the explorer into regions unknown. Each had his part to perform, and a wholesome spirit of co-operation was everywhere manifest. During the year thousands of visitors inspected our work and the verdict was to our credit. The new curriculum with its rounded course of studies and exercises seems to work well. The correlation of the exercises in which the work of each department feels the necessity of every other department is no longer a figment of the brain. It is a fact. But the auspicious year was not cloudless. The hope that our building could be finished by the erection of the east wing provided in the original plan was shat-

tered at the spring election. The bond proposition for more school houses failed to carry. This failure was a serious blow not only to our school but to almost every other school in the city, owing to the crowded condition which everywhere prevails. The defeat, serious as it was, possessed one consoling feature; it was not the result of a popular vote, as five votes were cast for the proposition for one against it. The accident was due to a misunderstanding on the part of the voters; to a technicality of law which requires that the vote on the loan shall be two-thirds of all the votes cast for school directors—an entirely separate proposition;—and to a mistaken confidence that such a plain necessity as an appropriation to build needed school houses would carry any way. In the shadow of this cloud we pondered the question: How can we carry forward our second year's work which the course prescribes? The silver lining was finally woven by the Board of Education which found its way to make an appropriation for the necessary tools; and by some of our teachers who gave without remuneration the whole of their vacation to the installation of the apparatus, and who with their own hands did all the heavy work incident thereto. For this generous service the community is indebted to Mr. Moore, our director of boys'



manual training; to Mr. Kent, our engineer and teacher of steam and electricity, and to Mr. Claflin, our janitor. At the opening of school everything was in place and ready for the "push of the button." Our enrollment at the present writing, November 1st, is one thousand and one pupils. To accommodate this number, an afternoon session one period in length is added and four new teachers have been added to the faculty; these are Mr. R. F. Knight, Mathematics, Miss Stella Jenkins, English, Miss Katherine Dunn, Latin and German, and Miss Floy Campbell, Drawing.

Last year we started with the opening of school a new system of keeping the pupils' record which consists simply of daily credits for work successfully performed, no attempt being made to advertise that difference in natural ability which always exists among pupils of a large school. A credit is given for an honest, painstaking effort when successful enough to insure an intelligent advance to the next subject in the course. The chief merits of the plan are: 1. It enables each pupil to do his best work without fear of odious comparisons. 2. It gives no opportunity for a pupil to squander away his time during the term and then by sharp practice and cram to "make his grades" at the end of the term. 3. It places a premium on daily effort, and proper motives. 4. It stimulates the daily attendance, and the natural consequences of absence suggests to the pupil the notion of cause and effect. 5. It requires from the teachers a more intimate individual attention.

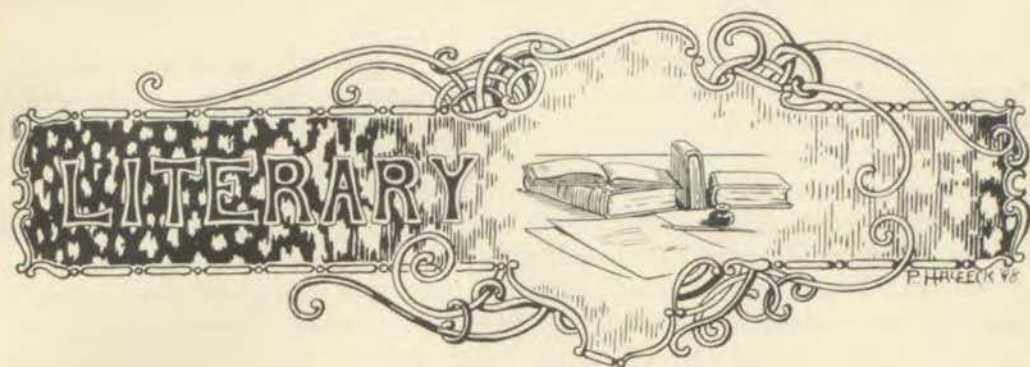
In order to secure the advantages to the academic departments of a longer recitation period, which were so conspicuous last year in the Manual Training departments, it was decided at the beginning of this year to make the eighty minute period general, and to have all recitations and exercises in all branches come on alternate days. This being a departure from the conventional length of period we are treating it as purely experimental, and are carefully watching the results. A request was made at the start that all objections or complaints against the plan be reported to the principal. Thus far not a single ob-

jection has been offered from pupil or teacher.

The advantages of the longer period seem to be: 1. It secures more consecutive attention to an object of thought and tends to correct that fugitive, changeable mental habit so noticeable in the average pupil. 2. It enables the teacher, especially in large classes, to more nearly reach the personality of each pupil at each recitation; and at best it gives only about two minutes to each pupil. 3. It requires of the pupil only one-half as many lessons to be learned each day, diminishing by half their burden of books to be carried to and from school; and while the lessons are twice as long, it appears to be easier to carry the studies, more requests to take on more having been made this year than ever before. 4. It tends to improve the method of teaching by giving variety to the work, and by relieving it of that purely didactic character which often begins and ends in mere talk. With the eighty minute period there is time for each pupil to do something as well as to say something, and for the teacher to know whether the pupil has earned his credit. 5. The teacher meets but half the number of pupils and the pupils half as many teachers each day, thus relieving both of that nervous strain which comes from mental contact with many individuals. Mental energy no less than physical energy is always dissipated by the inertia of starting and stopping and readjusting. To teach well the teacher must feel the personality and sense the needs of every pupil he meets during the day, and the nervous strain necessary to this effort is proportional to the number. 6. It gives the teacher more time to round up his instruction and the pupils more time to assimilate it.

But with all these advantages which have stood out so conspicuously during the past few weeks and which seem to elect this as our permanent plan, it is easy to conceive that under different conditions it might become a hardship. Every undertaking requires a certain skill. The teachers of our school are not only skillful but they are ever ready to break ground in the open field of progress.





## A TONIC.

To the tired, over-worked school-boy or girl, an excursion to the country during the month of October is better than six bottles of Hood's Sarsaparilla.

Imagine yourself let down at some little way-station and you tramp two or three miles to an old farm house through the crisp October air so invigorating that you open your mouth and take in great draughts of it—enough, indeed, for you to feel almost the renewed blood coursing through your veins, bringing life to wasted tissues and giving your cheeks the rosy flush of health. After your walk and a hearty greeting from the farmer and his wife, who by the way are old friends of your father's, and who knew you in the old days when you were a toddler and have marked since then every step of your progress, though you confess now to yourself that the steps have been few and the rise slight, you are ushered into a dining room. In the center stands a table loaded with the good things of this life. You haven't eaten anything like this for a long time, and the hospitable mistress of the household can find no cause for complaint, however exacting she may be. You haven't received very lately, many greetings as cordial and as heartfelt as these, either.

A stroll around the farm with your father's old friend comes after dinner.

You take a sort of delight in clambering over all the rocks in sight and jumping across all the little streams that flow through the woods. You throw stones at any stray birds or dogs that may come in sight. Then you sit down on some dead leaves and lean against an old log at the edge of the woods. You pull your cap over your eyes and let the sun warm you, while you listen for an hour or so, to the cheerful gossip of the farmer.

You take supper after a while and you take it as you took dinner.

You sink into the downy depths of an old feather-bed that night, with a sigh of contentment. Distance has softened the dread of long lessons, so that they are only memories now. You sleep dreamlessly until morning. You have not slept like this for such a long time.

The family carriage is drawn up to the door the next morning bright and early, to take you to the station. You all clamber in. You sit in front with the farmer. You enjoy the ride over the hills. The leaves are scarlet and purple and brown and yellow now—the frost has touched them. He is on them when you start that morning. The air is clear and sharp; the horses are spirited. A dash through the woodland, a sharp run over a bit of level ground and your homeward journey has begun. The



manual training; to Mr. Kent, our engineer and teacher of steam and electricity, and to Mr. Clafin, our janitor. At the opening of school everything was in place and ready for the "push of the button." Our enrollment at the present writing, November 1st, is one thousand and one pupils. To accommodate this number, an afternoon session one period in length is added and four new teachers have been added to the faculty; these are Mr. R. F. Knight, Mathematics, Miss Stella Jenkins, English, Miss Katherine Dunn, Latin and German, and Miss Floy Campbell, Drawing.

Last year we started with the opening of school a new system of keeping the pupils' record which consists simply of daily credits for work successfully performed, no attempt being made to advertise that difference in natural ability which always exists among pupils of a large school. A credit is given for an honest, painstaking effort when successful enough to insure an intelligent advance to the next subject in the course. The chief merits of the plan are: 1. It enables each pupil to do his best work without fear of odious comparisons. 2. It gives no opportunity for a pupil to squander away his time during the term and then by sharp practice and cram to "make his grades" at the end of the term. 3. It places a premium on daily effort, and proper motives. 4. It stimulates the daily attendance, and the natural consequences of absence suggests to the pupil the notion of cause and effect. 5. It requires from the teachers a more intimate individual attention.

In order to secure the advantages to the academic departments of a longer recitation period, which were so conspicuous last year in the Manual Training departments, it was decided at the beginning of this year to make the eighty minute period general, and to have all recitations and exercises in all branches come on alternate days. This being a departure from the conventional length of period we are treating it as purely experimental, and are carefully watching the results. A request was made at the start that all objections or complaints against the plan be reported to the principal. Thus far not a single ob-

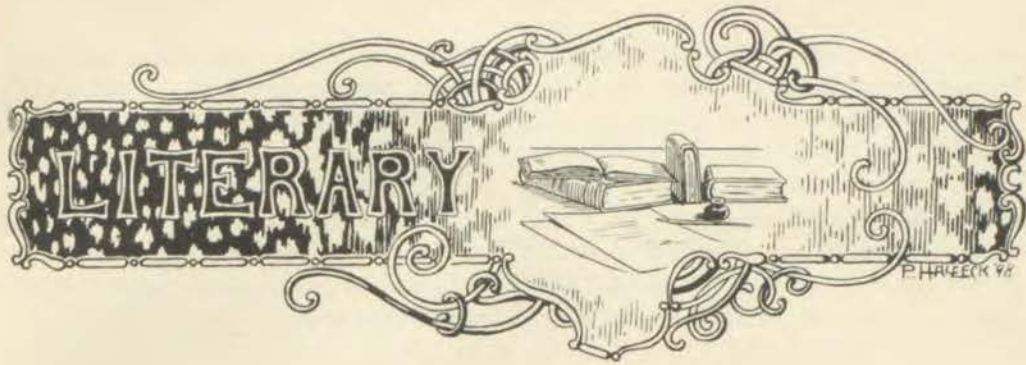
jection has been offered from pupil or teacher.

The advantages of the longer period seem to be: 1. It secures more consecutive attention to an object of thought and tends to correct that fugitive, changeable mental habit so noticeable in the average pupil. 2. It enables the teacher, especially in large classes, to more nearly reach the personality of each pupil at each recitation; and at best it gives only about two minutes to each pupil. 3. It requires of the pupil only one-half as many lessons to be learned each day, diminishing by half their burden of books to be carried to and from school; and while the lessons are twice as long, it appears to be easier to carry the studies, more requests to take on more having been made this year than ever before. 4. It tends to improve the method of teaching by giving variety to the work, and by relieving it of that purely didactic character which often begins and ends in mere talk. With the eighty minute period there is time for each pupil to do something as well as to say something, and for the teacher to know whether the pupil has earned his credit. 5. The teacher meets but half the number of pupils and the pupils half as many teachers each day, thus relieving both of that nervous strain which comes from mental contact with many individuals. Mental energy no less than physical energy is always dissipated by the inertia of starting and stopping and readjusting. To teach well the teacher must feel the personality and sense the needs of every pupil he meets during the day, and the nervous strain necessary to this effort is proportional to the number. 6. It gives the teacher more time to round up his instruction and the pupils more time to assimilate it.

But with all these advantages which have stood out so conspicuously during the past few weeks and which seem to elect this as our permanent plan, it is easy to conceive that under different conditions it might become a hardship. Every undertaking requires a certain skill. The teachers of our school are not only skillful but they are ever ready to break ground in the open field of progress.

M.





## A TONIC.

To the tired, over-worked school-boy or girl, an excursion to the country during the month of October is better than six bottles of Hood's Sarsaparilla.

Imagine yourself let down at some little way-station and you tramp two or three miles to an old farm house through the crisp October air so invigorating that you open your mouth and take in great draughts of it—enough, indeed, for you to feel almost the renewed blood coursing through your veins, bringing life to wasted tissues and giving your cheeks the rosy flush of health. After your walk and a hearty greeting from the farmer and his wife, who by the way are old friends of your father's, and who knew you in the old days when you were a toddler and have marked since then every step of your progress, though you confess now to yourself that the steps have been few and the rise slight, you are ushered into a dining room. In the center stands a table loaded with the good things of this life. You haven't eaten anything like this for a long time, and the hospitable mistress of the household can find no cause for complaint, however exacting she may be. You haven't received very lately, many greetings as cordial and as heartfelt as these, either.

A stroll around the farm with your father's old friend comes after dinner.

You take a sort of delight in clambering over all the rocks in sight and jumping across all the little streams that flow through the woods. You throw stones at any stray birds or dogs that may come in sight. Then you sit down on some dead leaves and lean against an old log at the edge of the woods. You pull your cap over your eyes and let the sun warm you, while you listen for an hour or so, to the cheerful gossip of the farmer.

You take supper after a while and you take it as you took dinner.

You sink into the downy depths of an old feather-bed that night, with a sigh of contentment. Distance has softened the dread of long lessons, so that they are only memories now. You sleep dreamlessly until morning. You have not slept like this for such a long time.

The family carriage is drawn up to the door the next morning bright and early, to take you to the station. You all clamber in. You sit in front with the farmer. You enjoy the ride over the hills. The leaves are scarlet and purple and brown and yellow now—the frost has touched them. He is on them when you start that morning. The air is clear and sharp; the horses are spirited. A dash through the woodland, a sharp run over a bit of level ground and your homeward journey has begun. The

old farmer talks of his horses and his neighbors; comments on the way James Brown or Deacon Jones cultivates his wheat or has shelled his corn; shows you where the continentals camped during the war of the revolution, and tells how a gang of cut-throat Hessians stole on them at the dead of night, and how they were repulsed; shows where the rebels forded the river during the war of the rebellion and drove our brave boys in blue. He can point out the exact spot where the river overflowed several years ago and drowned the two children of the blacksmith. He can show the

exact spot on the limb of a certain tree where an old recluse, living in that neighborhood years ago hanged himself. He talks the usual gossip of the countryside and you listen and enjoy it until you have just time enough to say good-bye and promise to come back again Christmas. Somehow your work is easier and more interesting at school the next day. You have found a wonderful tonic—guaranteed. It tastes sweeter and costs less than any you have ever tried before or ever will try again.

M. S.



### A HALLOWE'EN STORY.

"This night is hallow-eve', he said,  
 'And tomorrow is hallow day'"

—*Child's Ball ds.*

"Honey" said Aunt Chloe to her youngest child, a dark urchin of ten, "does yeh know dat to-night's Halloween? I'se jist been thinking how we us'ter gather 'round der fire on dis night, 'bout twenty years ago, when all de old niggers on dis plantation wuz young, an' afore th' younguns had sprung up. We us'ter tell der awfulest stories yeh ever heird; how yeh can see de person you'se gwine ter marry, if yeh comb yer hair and eat an apple befo' a lookin'-glass at midnight. It's de same way if yeh run round a bean stack three times. Dey say you can see all the folks dat are gwine to die next year if yeh go at night to a church-yard. Why don't you try dat, Sam?" "Laws, now, I think I will" said Sam, rolling his black eyes. "I heard of a parson who did it, and he saw hissself, just think!" "Guess mighty near everyone could do dat," returned Sam. "But did he die sure nuff." "Of cos' child," answered Chloe.

"But here comes Mas'r Henry, I do declare." "Mas'r Henry," said Sam as the young son of the owner of the plantation approached, "I'se gwine to go to de grave yard to-night, and see the people whose gwine to die next year."

"You are?" said Henry in amazement, then he exploded into a fit of laughter. "Law, now, Mas'r Henry, what you laffin' at, I'se goin', aint I, mammy?" "Dat you is chile, I spect" answered Chloe. "I wasn't laughing at that, I just had an idea" explained Henry.

That night, in the full moon-light, Sam cautiously wended his way to the grave-yard. He was determined to go. Every object in the road seemed to be a human form ready to spring upon him. Every noise which his own steps made startled him. At length he reached the little village cemetery. All was still. Sam's heart was in his mouth as he approached the oak tree in the corner, which Henry had assured him was a good place to watch the ghostly procession. He could see every white tomb-



stone, beaming in the moonlight. Involuntarily, he closed his eyes. He reopened them; he was facing the oak, when horror of horrors, he saw his own face. Yes, it was, it must be his—but Sam was already half-way home, running through stubble fields, leaping fences, and cutting his feet on stones.

"Mammy, mammy," he screamed as

he flung open the door of the little cabin, "Mammy, I'se gwine to die, I'se gwine to die," and it was all Aunt Chloe could do to prevent his falling to the floor.

It was some months before Sam was convinced that he had only seen his face reflected in a mirror, which Henry had hung on the oak tree.

S. R.



### AESTHETICS IN THE FLOWER IN THE CRANNIED WALL.

A flower widens our aesthetic sense through many channels. A red rose is a beautiful flower. The rich, warm coloring fascinates the eye, the fragrance is a charm in itself, and the velvety petal, as I pass it across my cheek, is as soft as the morning sunshine. Something in my soul echoes an answer to the delicate harmony of the rose. But the beautiful red rose has lost a beauty the wild rose has. It is artificial in a sense. The wild flowers have a simplicity that is sublime. There is no waste of material in the structure of a wild flower.

There on the cliff grows the columbine. Who knows where the seeds will fall, when the wind comes to break them away from their protection.

My little "flower in the crannied wall" perhaps owes its existence to the crannying wind. The wind carried the dust

there, and made a resting place for the little seed it was soon to bring. Through the long winter you lay, little seed, waiting for spring to come. Then God put life into your little self. How it was done, I don't know, but I am always wondering. The rain and the sunshine brought you your food. You grew and were strong. One day you were so happy, because on that day you gave your all, a flower, to help make the world better. A mite, perhaps, but it helped. The same wind that brought you to the cranny carried away the little seeds from your flower. Then suddenly you grew old, brown, and so lifeless. You had served your time in this world and served it well. You died, but you were remembered. The sleet and the snow built your tombstone.

Was it by chance that the seed was blown there in that cranny? G. C.



### KANSAS CITY'S NEW MUSEUM.

In Kansas City a museum is a curiosity in itself, and few seem to understand its true object and the uses to which it should properly be put.

The museum is not for them who merely wish to kill time; neither is it for the person who is taken thither only by his morbid curiosity to see the knife

with which scar-faced Charlie committed his atrocities, or some similar attraction. Not so; it is an educational institution, and its object is to give Kansas City students aid in the study of the various branches of Natural History and Archæology.

Just inside the museum doors are two cases of stone implements from the haunts of the Mound Builders. The collection includes hoes, spades, axes, gouges, knives, mortars and pestles. Most of these tools show, by the polish on them, that they have been used. When dull, the stone edged tools were sharpened by clipping off flakes of the rock, as is shown by the chipped edges that are in marked contrast to the rest of the tool. That the habit of smoking is not "a product of modern civilization," (?) is shown by the presence of pipes in nearly all of the mounds, and that it was not confined to any particular locality is proved by the great variety of shapes, sizes and materials.

From the evidence furnished by the tools they left, one may safely conclude that the Mound Builders were an agricultural race, but need not conclude that they were anything but Indians. This archæological collection was donated by Mr. M. C. Long, the curator of the new Museum.

Mr. Sidney J. Hare, a former high school student, has on exhibition his geological collection which, according to the label on the case: "Dana, the great geologist, pronounced the finest collection of crinoids in America."

Mr. W. W. Findley has on exhibition a mounted silver tip grizzly bear for the edification of those who have derived their ideas of the ruler of the Rockies from the published fantasies of people who have never been West, or from the bear hunt of some newspaper space writer.

Will Howard and Frank Rogers, two high school boys, have shown their in-

terest in the public welfare by donating a collection of insects, which shows careful work in entomology.

A collection of Indian curios that took the World's Fair medal has been loaned by Colonel D. B. Dyer. This collection includes two very large cases of miscellaneous bead work, implements of warfare, historic arrows, religious totems and rattles, and pictures of typical Indians, both civilized and savage, the only noticeable difference being that the pipe is substituted for the bow.

One of the finest features of this collection is a complete set of trappings for a chief's horse, including the buckskin bridle, saddle, saddle-blanket and rifle scabbard, all hand made and finely decorated with colored bead work. There are also several buffalo hides covered with picture writing, which is the Indian method of recording personal or tribal history. One Indian mother certainly displayed great ingenuity by decorating her son's coat with a United States flag which she embroidered on the garment in red, white, and blue beads.

Another coat is decorated with seven hundred Ute, Pawnee, Crow and Black feet scalps. Some people imagine that an Indian, when taking a scalp, removes all the hair, in the shape of a wig, and in truth, quite a large piece is sometimes taken in the heat and frenzy of the fight, but there is finally retained only a small piece of the scalp the size of a *thumb* nail, but this must contain the swirl of hair on the crown of the head, to show that each scalp represents a victim.

The most beautiful of the Cheyenne maidens had the honor of wearing a jacket that is decorated with fifteen hundred eye teeth of elk, so seven hundred and fifty elk "gave their eye teeth" for that maiden.

In Col. Dyer's collection are numerous specimens of fine baskets from



nearly every tribe that makes them. These baskets are made of dyed reeds and canes, giving them an odd, though scarcely artistic appearance.

Walter Davis has a complete Esquimaux hunting outfit, besides spears, tools, toys and clothes. This is a very interesting display, as it shows the ingenuity of the Esquimaux in making use of every piece of metal he can obtain.

An interesting exhibit is the Samoan blankets or curtains which are made from the inner layer of tree bark, and resemble coarse felt.

Borneo, Sumatra and the Malay Islands are represented by a display of idols, musical instruments, clothes, tools and weapons belonging to Mrs. Hal Graylord.

A large case of well classified Ological specimens has been presented to the Museum by Mr. E. P. Holbert. These eggs have come from all over the world and many of them are very rare.

An oddity comes from Kansas in the shape of fossilized rhinoceros bones. It is well known that Kansas is very prolific in the production of fossils. The most numerous variety being commonly known as fossilized "Pops." Not elegant.

Several classes from our schools have visited the Museum and have been very much pleased.

A number of views of early Kansas City have been framed and one can see plainly, by glancing from them to his present surroundings, the rapid advance from a trading post to a great commercial metropolis. As such a metropolis, Kansas City should have the ranking museum of the state. Whether or not we have such a museum depends entirely upon the manner in which the people respond to the invitation to contribute what they can. So "come one, come all," and bring your curios to help in the education of our students.

CLIFFORD BURTON.



## ARLINGTON.

What and where is it? Many know and have journeyed there; some have yet to learn and to breathe the sacred air enveloping the "Nation's monument to its Immortal Dead," for such is Arlington. The very name is a synonym for sacred rest and natural beauty unadorned. The landscape-gardener has vied with Nature in his artistic designs of plants and of shrubs; but far-sighted nature has through all time past, it would seem, been moulding the very earth and trees and heaven above for the final resting-place of Humanity's honored heroes. The graceful slopes, the shady ravines, and the wooded hills; the stately magnolias making rich

the air with their sweet perfume; the watchful care of the Nation's Capitol not far distant; and the ceaseless sighing of the Potomac—these make Arlington the ideal spot for the burial of the Nation's dead.

Another surprise, and perhaps a greater one, than the beauties of the place awaits the visitor who enters the white pillared gates. From Washington he has seen beyond these gates six white columns, sentinel-like against the rich green foliage of the trees, and has marveled at the beauty of the scene. Crowning the summit of the highest hill, strangely and yet fittingly, too, the visitor approaches a mansion none other



than the home of the able and illustrious general, Robert E. Lee. Fittingly, yes—for what more symbolic of the reunited states than that his home, preserved by the Government, should be guarded by all that remains of his former enemies. The six white columns which the visitor has seen now prove to be the portico pillars at the entrance, and the open doors invite him to enter and register his name. Though in exterior it is a model of the Athenian Temple of Theseus, its interior arrangement is that of the Southern home with wide halls and stairways; large rooms; massive doors and windows; and high ceilings. In the rear, are the slave cabins, the windows overgrown and the walls heavily hung with the gorgeous Virginia creeper and trumpet-vine, heralding to youthful imagination and to aged memory the busy, yet happy times once spent within their shelter, silenced now these thirty years. The old-fashioned well is there and the moss-covered bucket. The Nectar from its depths intoxicates the drinker and he is strangely carried back to the scenes these objects typify. The pickinies frolic at the cabin door; "Old Mammy" croons her plantation songs; oblivious to the clatter of the dancer's boots, keeping time with the twang of the banjo, "Uncle" reads his future in the curling rings of smoke ascending puff by puff from his pipe; the woods reverberate again and again with sounds of merriment, and life is care free. No, weary traveler, this "life is but an empty dream, and things are not what they seem."

Returning to the portico, Washington monument may be seen towering from the heart of the city till its white cap is lost in the blue of the sky. We send the salute to that patriot's Mt. Vernon home across the Potomac miles away; and note the spires of his church in Alexandria, silhouetted in bold relief against the sky.

On our right and left, lie officers and privates of the Civil and Revolutionary Wars, equal in the ranks of death. Meigs, who proposed to President Lincoln the idea of a military cemetery, Baxter, Cook, Burns, Shelby, and many others lie in picturesque spots, their graves marked by splendid monuments. In front of the house near the flag-staff lie General Sheridan and Admiral Porter, their lives conspicuous for their brave deeds, their graves, for the magnificent monuments erected to their memory. The Temple of Fame dedicated to famous generals; near by, the splendid monument to two thousand, one hundred and eleven unknown soldiers; and the sylvan amphitheater for services on Decoration Day add to the sublimity of the place. But the most impressive sight of all awaits the visitor as he takes his farewell view of this garden spot. Row after row of small headstones stretch across the velvety carpet of green in lines endless to sight, a "silent army sixteen thousand strong," marshalled and arrayed for final review—these headstones of the privates bearing the names and companies of the soldiers.

This is summer at Arlington. But autumn now has changed the tints of this picture, and the richly covered trees cover the ground with a russet carpet of their leaves; wrap the flowers in cloaks of ruddy glow; and leave the gaunt trees as sentinels of the long night. Where thirty years ago, Confederate camped against Federalist, three months ago at Camp Alger not five miles from this peaceful spot the camp-fires of a country joining hands again in the cause of humanity, blazed and illumed the heavens from whose shining portals was sent the message of peace spread broadcast over a land "that flows with milk and honey." Another war is ended, and a priceless inheritance awaits the

soldier whose death in war entitles him to burial at Arlington.

Could that general again tread the halls of the place he once called home, a scene vastly different from the former one would meet his eyes. Different from the turbulent Potomac and the war—devastated country is the now peaceful river

and the grass-grown banks; and different, too, to the extent that, from what we know of the man, we feel that Robert E. Lee would smile benignly on the union and retire with the satisfaction of a hope realized which, we would all believe, he had long cherished.

J.



### THE FARM AT FIVE O'CLOCK IN THE MORNING.

It is so warm and comfortable in the room, and so early to be out in the crisp, frosty November air, that I am tempted not to go, but how shall I ever get that essay written if I don't? So come let us take up our vigil by the big chestnut tree next the garden fence. We can see for miles to the eastward from there, that is, we can in daylight; to the south the big barn looms up dark and silent save for the farmer's lantern as he goes about feeding, milking and caring for the stock.

It is still dark with that peculiar grayish color that comes only early in the morning and seems to fold everything in its soft mantle. Even the sounds seem distant and muffled; yet "the darkest hour is just before dawn."

The chickens, with their customary salutation are flying from their roosts, evidently believing "the early bird gets the worm." The turkeys are going across the clover field, flying, jumping, and giving vent to their feelings in short, quick notes of their own language, bound for the woods just a little farther on in search of breakfast.

A belated whip-poor-will flies screaming through the air; the swallows seem actually swarming about the barn and a large, white cat comes swiftly across the yard and waits at the kitchen door for its chance to slip in, which is never long coming.

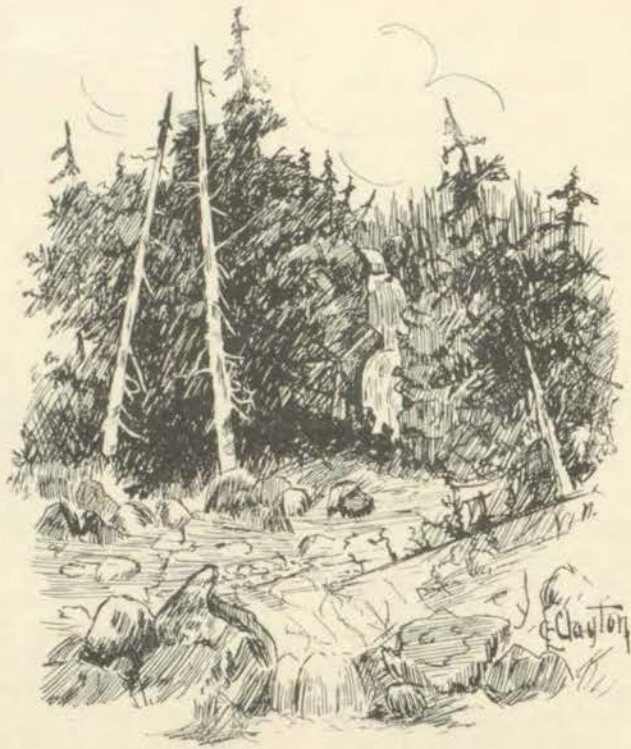
The stillness and solemnity of the

morning is broken only by the sounds which belong to it; it seems the waking up of all nature. The very air is full of dim, uncertain murmurings and whispers, which might be the leaves calling their roll, as many of their number have perished since the last morning, or it might be the tall, yellow and white chrysanthemums, just over the garden fence nodding and kissing one another as swayed by the breeze, and exchanging morning courtesies and messages of love. This is nature's own hour, when the breath of the creator is stirred in everything, and called forth by his own voice borne on the air, all creatures, all things break forth in songs of ecstasy and praise for His goodness.

It has grown much lighter now and long gray and crimson streaks of light stretch far along on the horizon and into the sky above, radiating from a brilliant mass of purple, gold, crimson and blue clouds piled in fantastic forms on the eastern horizon announcing with such splendor the common, every day event of the rising sun.

But even with all these wonders and beauties a person can not long remain in such invigorating air without feeling the need of some breakfast, especially if various savory odors have been wafted to him from the regions of the dining room, such as I have noticed lately. Let us go in. CHARLOTTE PERDUE.





The summer is gone and vacation is past;  
 We welcomed its coming but it sped like the wind,  
 And in beautiful autumn it left us at last  
 To can o'er our books with studious trend.

To the front in our work! Let each do his part,  
 We have come from the fields, the mountains, and plain,  
 From our play to our books we have come with glad heart,  
 From the haunts of the gay, to where duty must reign.

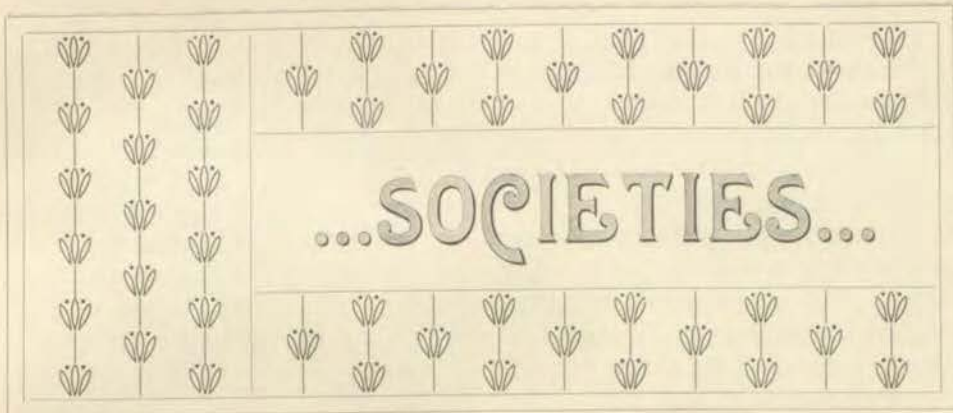
We will brush from our minds all the cobwebs and dust,  
 And will throw to the wind all our sighs for the past,  
 And we'll open our books with a right cheery trust,  
 To do well while we may for the time will fly fast.

We shall laugh and be merry as merry can be,  
 For to work with no smiles would be poor at the best,  
 And we hope to be cheerful and happy to see  
 While we work for the culture, forgetting the "test."

But while we shall study our books all we may,  
 Let us try to do more than to cultivate minds;  
 Let us see that our hearts and our souls in the fray,  
 Are so strong and so faithful and true that the winds

Of (hostile) adversity infest not our track.

Oh school-mates, let's find when this year is all o'er,  
 That our hearts are more tender, yet firmness not lack,  
 And our souls are more bright and more pure than of yore.



### THE BELLES LETTRES SOCIETY.

Last year on October 12th, eight boys and girls—Ethel Osgood, Grace Stover, Louise Ollis, Louis Swan, Grace Phillips, Sadie Kinley, Marie Uebelmesser and Lee Staley—met for the purpose of organizing a literary society. The school had not long been in session and the sound of hammers was still echoing through the building. Everything was new, not only the building, but the teachers, the pupils and their acquaintances, and we all felt the need of something to draw us together socially as well as intellectually. As yet there was no society in the school, and we all felt the need of such an organization to arouse patriotic enthusiasm and rivalry among the pupils. So these eight progressive students drew up a constitution and the following week announced their determination publicly by appearing at school wearing a knot of wine and rose colored ribbon as the representative colors of their proposed society.

All beginnings are the hardest, and we progressed but slowly at first. But we knew what the work would be before we went into it and were not to be over-awed by difficulties, so it was not long before we, under the name of the "Asteroids," applied for a charter. It was granted, and as the

"Asteroids" we began our work. In accordance with a wish of the faculty, we soon changed this name to the more significant one of the "Belles Lettres Society."

Our society must, as its name implies, lay great stress upon literary work; but we also seek to emphasize the social side of our natures. Hence we do not reckon our social sessions among the least important events of our history. Last year five social sessions added much to our year's pleasure, and this year we look forward to just as much enjoyment in the same line. The social side of our organization has so strongly united us that last year when our seven seniors left, we felt it would not be well for us to give up society work at graduation. So our graduates have organized a Belles Lettres Alumni in which to perpetuate the happy memories of our society work.

This society has been in existence but one year, yet its history shows a life of varied events too numerous to mention in full. Our first president was Louis Swan; he was followed by Sadie Kinley, Karl Zimmerschied, Marie Uebelmesser and now Lee Staley reigns supreme. The society made two public appearances last year; the first Assembly Hall entertainment was given during Mr. Swan's



administration, and the last, during Miss Uebelmesser's. Fitting it seems that in our first Manual Training High School, the first society program should be given by the first organized society.

A year has passed by and our society has increased from eight to nearly fifty members. The members this year have profited by the experience of those of last year, and we find the society's standing correspondingly better socially,

morally and intellectually. May it always be so is the sincere wish of us all. May each departing year leave behind it a donation which shall increase the society's worth and render its life long and prosperous. May it so live that the members who go forth from this school and leave their society's pleasures, shall be proud to say in the far off future, "I was once a member of the Belles Lettres Society." GRACE D. PHILLIPS.



### HISTORY OF THE ART CLUB.

In the fall of eighteen hundred and ninety-seven, began the history of the Manual Training High School, so also began the history of "The Art Club." This club was first known as "The Agenda Society," a name which signifies "a circle for the purpose of formal discussion."

Shortly after school opened, a literary society "The Asteroids," which afterwards changed its name to the "Belles Lettres Society," was organized, and a few weeks later "The Agenda Society" was on the road to existence; last, but surely not least.

A number of the boys and girls had become interested in art and wished to organize a society whose "object it is to study History, History of Art, and Art in all its branches." For this line of work, it was decided by the Faculty that a more simple name be substituted for "Agenda." "The Art Club" was suggested and thus it was organized November the twenty-fourth, eighteen hundred and ninety-seven, under this new name.

Art exists in all things. This becomes evident to us, when we turn our mind, heart and hand to accomplish that which we undertake; whether it be a study of

the classics or the kneading of bread. Art is an interesting and extensive subject; just where to commence is a question. An artist's work is never ended; his path, although a beautiful one, is not always the smoothest and easiest to travel. The path or plan of work of the "Art Club" is not an easy one, but the diligent and loyal members make it less difficult, by carefully and conscientiously doing that which is in his power and is his duty to do. It is a young club, but has the intellectual and artistic qualities if developed in the proper way. If it be the good fortune of this club to have some day a club room, which she can call her own, it is the desire of the members to decorate this apartment with the masterpieces and collect a library of books upon art. Yale-blue and orange were chosen as the club colors.

During the year of eighteen hundred and ninety-seven, the progressive club arranged two appropriate and artistic programs. The first was presented on the morning of January the thirty-first, eighteen hundred and ninety-eight, at the Manual Training High School. This programme consisted of music, literar

productions and papers illustrated by the stereopticon.

The last open session was given the morning of May the sixteenth, eighteen hundred and ninety-eight. Mr. Will Todd, the president, had gone abroad and while in Paris, had distinguished himself as an artist and secured a very beautiful, interesting and artistically arranged "Art Studio" in which was held a very enthusiastic reunion of the traveling members of the "Art Club." A voluntary program was rendered.

One pleasing feature of the "Art Club" is the social gatherings held during the year.

Miss May Perkins entertained the "Art Club," the evening being a highly enjoyable one.

Near the close of the year, Miss Mira Dewey entertained both the club and the faculty, and the Friday before school closed the "Art Club" gave a farewell social session to the faculty in the halls of the Manual Training High School.

Intermingled with the flowing colors of the club was smilax and roses. The refreshments were prepared by the young ladies of the club, assisted by the young gentlemen.

The pin decided upon by the society, is enameled orange and Yale-blue, with gold trimmings. In the center is engraved "A. C."

In the election of members the club encourages literary as well as artistic talent, by awarding membership to the most scholarly pupil. Their object is not to obtain quantity but quality.

The idea of an "Art Society," in a school, is seldom entertained and for this reason, as is the case with all new ideas, it was looked upon as a difficult undertaking; but through the energy and vim of the charter members who are interested in this line of study, the undertaking has proved a success and will continue in its course refreshed by the beauty and environments of "Art."

MYRTLE CHRISMAN.



## OUR FLAG.

All hail! all hail! to the flag of the free,  
Our nation's great banner to shield you and me.

Its broad stripes of red of love ever tell,  
The blood shed by heroes who under it fell;

Its bars of pure white tell ever of peace,  
Of freedom and glory, from bondage release.

Loyalty true, fidelity strong,  
The blue of our nation tells all the great throng.

May the stars of our flag ever shine for us true,  
May we ever be faithful to red, white and blue.

HELAN HIGGINS.





In this age when so much time is devoted to science, let us not neglect our physical being. We can easily imagine the effects of too much indoor life; we may even see them.

It is very necessary that the bodies of young people be kept in good health in order that their lives may be prolonged and that they may enjoy them better. Human nature craves for outdoor exercise and one who does not satisfy this craving soon gets sickly and cannot go out of doors without running the great risk of catching cold. Looking at the matter in this light one cannot help realizing the necessity of athletics.

The first we have taken in the way of athletics is in organizing a foot-ball team. A team was organized last year, but on account of its being the first year it did not thrive well until late in the season. This year it is making a better start and has shown its superiority over the Westport team in beating both practice games which they played.

The first regular game was played in Wyandotte with the College of Physicians and Surgeon's team of that place. Though the bonesawers were victorious we nevertheless fought stubbornly against the heavier team. The defeat we suffered only served to encourage us and the score of 12 to 0 was small considering our opponents' advantage in weight.

Our next game was with the picked team of Independence, which we beat by a score of 6 to 5. Both teams played a good game and we cannot help but congratulate the Independence boys for having done so well with so little practice as they have had. They had the

advantage in weight and could only gain by bucking the line. Our line was weakened on account of the absence of both of our regular guards, whose positions had to be filled by other men.

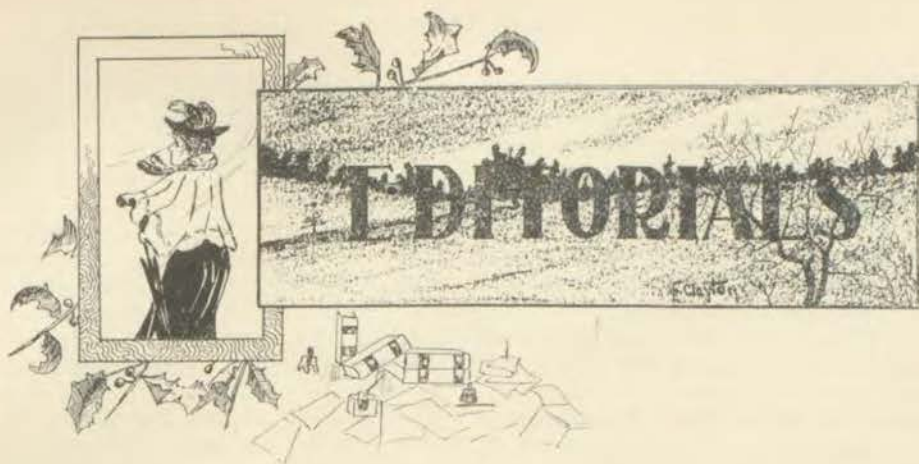
Our third game was an easy victory, as may be seen by the overwhelming score, 23 to 0. It was played with the Kansas City, Kansas, High School. They stood up very well at first but soon crumbled before the powerful plunges against their line. We also made large gains around the ends which goes to show that we clearly outclassed them. Our boys broke through their line and blocked most of the punts.

We look forward with eagerness and hope to the game between the Central High School team and ours. Of course both teams feel confident of winning but the result can be told in no way but by playing the game, and this we are anxious to do.

Though foot-ball is not the only thing we expect to have, yet it is the only thing we have so far. The absence of a gymnasium in the school is due to the fact that there is no room for it. Next year, however, we expect to add an east wing to the building. This may give us room for a gymnasium. It will be a splendid addition to the school and will be heartily approved by the pupils.

Boys and girls, do not forget that old expression. "Sana mens in sana corpore." When we get the gymnasium, make good use of it and strengthen your bodies, for they are frames in which we must dwell while on earth; therefore, let us strengthen them that they may not break down easily.

CARL BRYANT.



### EDITORIAL STAFF.

PERRIN ROUSE, . . . . . Editor-in-Chief  
 GRACE PHILLIPS, . . . . . Associate Editor

### LITERARY EDITORS.

GRACE CASSEL. . . . . WALTER BURTON

### SCIENTIFIC EDITORS.

ANNIE WINN. . . . . GEORGE MCKENZIE

### LOCAL EDITORS.

LUCILE EDWARDS. . . . . DWIGHT FROST

### ARTISTS.

PAUL HALLECK. . . . . CHARLES CLAYTON

CARL BRYANT, . . . . . Athletics Editor

LEE STALEY, . . . . . Exchange Editor

### BUSINESS MANAGERS.

JAMES N. RUSSELL, . . . . . Manager

WILL HALL, . . . . . Assistant

Entered at the Kansas City postoffice as second class matter.

THE NAUTILUS is published once every two months in the general interest of the Manual Training High School, at Kansas City, Mo.

The subscription price is 30c per year by mail; 25c to pupils of the school. Single copies 10c. There will be four numbers this school year.

Contributions are requested from all members of the school.

Address all communications to

### THE NAUTILUS,

Manual Training High School,  
 KANSAS CITY, MO.

merited, and that we may be able to uphold and to maintain the high standard set up by our predecessors. The paper is the organ of the school as a whole, and not the mouth-piece of any organized class. The members of the staff were elected by the whole school. This is we think one of the chief characteristics which will insure, not only the usefulness of the paper, but also its perpetuity. With the ideal of impartiality constantly before us we hope to make this year's issues worthy representatives of the school's best interests.

It was not till the ideal of the founders of our school had been realized—an ideal that placed Kansas City in a new light before the world—that the idea of starting a school paper suggested itself. When the venture was fully decided upon, and a staff with Mr. Francis Black as chief, elected by the school, these pioneers started the paper in that straight and narrow path, which made it a success. Their efforts were rewarded at the first issue which made its appearance in December, 1897. Since that time none but good words have been spoken for it, and these compliments have come from the daily press, from exchanges, and from individual critics. Four issues made their appearance during the year, and this is the number we shall aim to furnish our readers the present year.

Again THE NAUTILUS offers itself to public favor and we earnestly hope that the universal approval with which it was received last year may again be

On September 12th 900 boys and girls—Kansas City's future citizens—assembled in the Auditorium, to start the



second year's history of the Manual Training High School. Some were here for the first time and their anxious faces revealed that doubtful expectancy which comes from the remembered traditions of their elders of "roastings" and hazings. But their fears were soon dispelled when they found themselves lost to special notice, and passing unheeded with the moving throng. Their reassurance was still further strengthened when they did not hear any of the taunts from their fellow-students which they had expected their position as a "Freshman" would subject them.

To the Sophomores it was a day of deliverance, for they were no longer Freshmen and they could enter into the full enjoyment which is supposed to come from looking down upon something.

The Juniors enjoyed the day as one on which they could look over through the sweat of the brow into the "Senior" land of promise.

And finally to the Seniors the day was one of hope and a feeling of increased responsibility. Looking forward to the end of high school life where a broader field of experience already awaited them, they forgot the woes of earlier days and entered upon their new duties with the steadier energy which comes from a desire to bear themselves as becomes their station and to leave a good impression upon the memory of teachers and classmates.

---

### Our Monday Morning Exercises.

---

One of the useful, as well as entertaining features of our school, is the Monday morning entertainments. On these occasions the pupils of the whole school come together to hear the weekly announcements, and to enjoy an hour in listening to a musical program, or to an address by some speaker selected by a committee.

The first of these entertainments, on September 19th, was an address by Dr. W. F. Kuhn on "The Students' Regulator." This regulator, the doctor explained, is the brain; he showed by the aid of charts that a healthy action of this controlling organ depends upon a

scrupulous observance of the laws of health; that every action of the body leaves its impression on the brain's delicate mechanism; that habits are formed by the exercise of the normal powers. He said that the Manual Training School offers the ideal education, as it brings into action all the powers of both mind and body. The lecture was supplemented with a vocal solo by Mrs. Jennie Kiebler Gordon, which was enjoyed by all.

\* \*

On September 26th Prof. Busch and Mr. Zimmerschied, with their full orchestra, treated us to some of their grand music. It was thoroughly enjoyed and appreciated by pupils, teachers and visitors.

\* \*

October 3, Dr. Quayle delivered his address on "Westminster Abbey." He drew a very beautiful historical word picture of this memorable place, and made an interesting comparison of the relative value of the lives of the noted personages who lie buried there. The worthlessness of the lives of many of the Kings was contrasted with the fruitful lives of some of the world's best scholars and scientists. Mr. George Ormsby sang one of his best songs.

\* \*

October 10th, Mrs. Schultz, a popular teacher of music, entertained the school with her pupils. The music, consisting of piano and vocal solos, was excellent, and showed that the pupils had been carefully trained.

\* \*

October 17, Mr. D. Austin Latshaw gave us a practical talk on "Amusements." He said that the melodrama is a wholesome form of play for the youth, because it is not difficult to understand, and while it is not always artistic, it is always moral. He cautioned young people against certain forms of farce comedy, which not unfrequently transcends the bounds of legitimate satire. He urged the cultivation of music as a most worthy form of amusement, and that a taste for the music of

the best masters should be cultivated. Mrs. W. W. Morse added to the enjoyment of the morning with a song, and Mr. Miller, our teacher of chemistry, with a violin solo.

October 24th was "Elocution" day. Mr. James Wood read "Poe's Raven" in that simple, touching style which characterizes all of his readings. It was followed with a parody, the "Ager," by Mr. Phillips of the English department, read in his happiest style. Miss Redding, a teacher of elocution, read several selections much to the enjoyment of the audience. The music was furnished by Miss Reynolds, who played several choice piano selections.

October 31st Hon. John L. Peake delighted and instructed the school with his eloquent lecture on "Switzerland." The address taught us many important lessons in history and in government. He said that the system of education and the form of government there is probably the best in the world. Switzerland has manual training in its schools, as well as honesty and ability in the planning and in the execution of its various governmental departments. Mr. Peake described with glowing eloquence the beauties of Switzerland's scenery and the pathos of her traditions of freedom, which have all been kept alive down to the present time. He urged the cultivation of those higher forms of spiritual and ethical life which form the best character.

October 19th was "Lafayette Day" which was a day set apart by the U. S. School Commissioner for each pupil of the public schools of the United States to contribute a penny toward the building of a monument to Lafayette whose services during the revolutionary war are so much appreciated by this country. The monument is to be built in Paris, and to be unveiled at the World's Exposition to be held there in the year 1900. This was an occasion of a great intellectual treat, for Dr. J. E. Roberts was asked to deliver the address on Lafayette.

He paid a glowing tribute to liberty and to Lafayette for the undaunted courage he displayed in breaking away from the traditions of the past, leaving a young bride and a home of ease and luxury to espouse a doubtful cause in an unbroken wilderness. The fervid eloquence, and the choice and beautiful language commanded by Dr. Roberts in treating his subject will be long remembered by all who heard him.

On the evening of November 4th, the lower hall of Manual Training High School was comfortably furnished and brilliantly lighted for the reception of the members of the "Art Club" and of the "Belles Lettres Society" who met there with a mutual desire to become better acquainted and to enjoy a relaxation from school work. Miss Gilday and Mr. Morrison acted as chaperones and all in attendance seemed to enjoy this first joint social session of the two societies. "A game from Virginia" was one of the principal features of the evening and its thirst-generating exercise was followed by a general movement toward the alcove where an attendant stood ready to serve the guests a cool and delicious fruit drink. Ice-cream and cake were also served and the remainder of the evening was spent in social talk. At about eleven o'clock the friends separated leaving the building to its nightly stillness. The merry-makers went reluctantly home to dream of delightful experiences that were all too brief.

The literary editors of THE NAUTILUS most earnestly solicit your aid in the publication of this department. It is expected that the contributions will be furnished chiefly by those not members of the staff. All should feel it their duty to contribute to this, or if not to some other department. It is our intention to elevate the character and tone of this department. Contributions for this department need not be "stories," although GOOD stories are much needed. All articles should be in three weeks before THE NAUTILUS is issued.





## THE MIGRATION OF BIRDS.

While we have been enjoying a little winter weather early in the fall, we have not, probably, been aware of the distress and discomfort it has brought to our feathered friends. Winter weather so early in the year causes a wild rush of all migratory birds to warmer climates.

This traveling by the birds from south to north each spring, and from north to south each fall, is not caused directly by a change in temperature, but by a physical necessity; that is, the change in temperature gives them a better or worse chance for obtaining food. Few of us are aware of the great variety of food necessary for the existence of so many kinds of birds. For example, there are upwards of two hundred and twenty genera of birds more or less abundant throughout the United States, each of which subsists on a distinctly different kind of food.

By far the greater number of birds feed on insects. Hence when cold, wintry weather suddenly cuts off the food supply, and leaves thousands of birds several days journey to where the insect supply is abundant we can imagine the distress and hunger caused by such a change.

Normally the migration is not in such a rush and hurry as it is this year, but those birds whose food supply first gives out, go farther south as necessity requires.

A few cold days cause many insects, which are usually flying about, to remain quiet, so we may expect those birds which feed while flying, to be the first to migrate. Thus through September we see flocks of swallows and night-hawks on their southern journey. A little cold

weather causes the numberless larvæ to hide more closely, and then we miss our little wren who has been making such music, or rather noise, all summer.

It is during this period that the woods lose most of their bird companions, as hundreds of vireos and warblers leisurely go their way to where food can be found more abundant. When these little songsters leave us, and we happen to be taking a walk through some piece of woodland, we cannot but feel that something is missing. The stillness is unbroken except for the weird cawing of some crow, the cry of a solitary blue jay, or the drumming of a wood-pecker. But as these sounds die away we are made to realize more distinctly how deserted the woods are.

About the second week in October, while on our way to school some morning, we may notice a flock of robins or blue jays silently flying to their southern home, or we may see them hopping about in the tops of trees, busying themselves catching a few insects for breakfast before going further.

At this time of the year if we were to take a ride into the country, we would be met on all sides by notes and calls from various birds. In the meadows would be flocks of meadow-larks, along the hedges many species of sparrows, and probably we would see a flock of some thousand or more black-birds.

While watching a number of sparrows hopping about in the hedge or on the ground, we are suddenly startled by a cheep-cheep and the disappearance of all little birds within a radius of a few rods. Upon investigation a little hawk is seen hovering and wheeling about overhead.

For a moment he hovers, with outstretched wings and expanded tail as if suspended by an invisible thread; then with arrow-like swiftness he darts toward the ground. But other eyes were upon him and he was disappointed but not discouraged, for we see him fly off and hover again and again until some sleepy bird, or more likely mouse, feels his sharp claws and then—well you know.

This little hawk whose movements are so graceful, is commonly known as the sparrow-hawk and scientifically as *Falco sparverius*. He is a typical falcon and the smallest of hawks. It is from his size that he gains the name sparrow-hawk, and not from his food, for he more often catches mice or even large grasshoppers.

The reason why these hawks migrate at this time, is that when the growth of vegetation hides the mice and insects, they must then depend upon catching little birds for food, and so must follow them south.

While rambling through the fields we may scare from some hiding place an owl or even half a dozen of them, for the owl, like the hawk, has to follow the migratory train of little birds in order to sustain an existence. If a little bird catches a glimpse of him, however, it will give the alarm and then all the birds in hearing begin an attack upon their unwelcome visitor, and they have great sport with him.

As the days grow shorter and the nights colder we may notice some day a little "file" of birds passing rapidly overhead, or perhaps see a number of ducks hanging in front of some meat market. From this we at once infer that the ponds and lakes in the north are beginning to freeze, and that the ducks have had to go in search of new feeding grounds.

It is at this time that those who live near some large lake or large tract of marsh land enjoy a few days of duck shooting.

When winter weather commences in earnest, and snow begins to hide the ground, and ice to cover the rivers and lakes, far up in the blue atmosphere there may be heard a honk-honk, as long lines and V's of geese pass to where they can find open fields and rivers. Flocks of

prairie chickens may also be seen leaving their snow-bound fields.

A journey during the winter from the city to the country, will bring to our view hills, valleys and woods all covered with snow. As we go along we may notice many little birds hopping about, and scratching for seeds under the snow. These merry little birds we at once call snow-birds. But they are not all snow birds, for upon investigation we see red-birds, titmice, linnets, sparrows, nut-hatches and many others. Here also will be seen blue jays busily searching for hidden acorns, and woodpeckers pecking away at dead limbs where they will get insects and larvæ that are hibernating.

When the snows in the mountains cover the pines and cedars, we have with us bird visitors that do not often appear. It is then that a flock of bohemian or cedar waxwings may be driven by hunger to pecking at the frozen apples that are still hanging on the trees, or to swallowing hackberries.

We have probably all noticed, early some morning or evening, numbers of crows passing overhead. Whether we have noticed them or not, they pass over this city twice every day by hundreds, if not thousands. These crows are not migrating but are flying to and from their roosting place. Crows are very sociable birds, so when cold weather begins they gather together every night at the same place, and thus we have what is known as a crow roost.

Of the vast number of birds which migrate every year, we have thousands which make their winter home with us, going farther north in summer. A few individuals of several species remain with us all the year round, but the majority prefer to go south in winter.

In their migratory journey these feathered friends meet with many difficulties such as storms, scarcity of food, hawks, owls and carnivorous animals, but probably the most destructive of all is the heartless sportsman who shoots them simply because he can.

"Our outward life requires them not  
Then wherefore had they birth?  
To minister delight to man,  
To beautify the earth."

T. ROWE.



## SOME HAWK MOTHS OF THIS VICINITY.

All moths belong with the butterflies to the order Lepidoptera. They are, however, separated from the latter by certain characteristics, the principal one being the form of the antennæ which in the moths are tapering, while those of the butterflies are knobbed.

The group of moths enlarged upon in this article is known as the family Sphingidæ. Filling the place it does in the ranks of the enemies to agriculture this family has been well worked up with regard to classification and life history, and represents a type of insects which the farmer has had to contend with ever since the pursuit of agriculture has been engaged in. The protective coloring of the sphinx larvæ affording, as it does, the main chance for escaping observation, is naturally very highly developed and the worm is rendered still less conspicuous by the immovable attitude which it maintains during the day, and which first suggested to Linnæus the title of sphinx. The egg of the sphinx moth is laid singly on the underside of a leaf of a food plant, and the larvæ are usually harmless and are voracious vegetable feeders, often defoliating a plant in a single night. Some of the mystery of the sphinx seems to have been imparted to these caterpillars, as naturalists have never been able to explain the uses of the caudal horn which the majority of the larvæ possess. After moulting four or five times, the larvæ attain their greatest size and shortly after, descend to the ground and there bury themselves that they may pass the winter in the pupa state. The pupa is usually distinguished by the conspicuous tongue case which contains the proboscis of the imago, and the absence of a cocoon; however, in some cases the cocoon is imperfectly formed, and the insect winters in some pile of rubbish on top of the

ground. When the moths emerge the following spring, they occupy their time in gathering the nectar from flowers and in laying eggs for the succeeding generation.

Of the hawk moths, one of the largest and most attractive is the *Marumba modesta* (Fig. 1.) which is well known for the quiet splendor of its hind wings. The fore wings are olive gray and are divided into halves by two different shades, the darker half is the fartherest from the body. The hind wings are also gray, but at the basal angle there is a deep plum colored area and immediately below this is a bluish gray spot which blends perfectly with the plum coloring. The larva feeds on poplar and cottonwood, is coarsely granulated, and is light green in color.

*Ampelophaga chærilus* (Fig. 2.) has chocolate brown fore wings and thorax, with each wing bisected in regard to coloring; the outer half being one or two shades darker than the inner one. The hind wings are uniform fawn color, with a faint suggestion of black on the inner halves of the hind margins.

The sphinx represented in Fig. 3 has light gray fore wings, which have a white spot in the center of each wing. The head and the dorsal portion of the thorax below the tegulæ are white, the tegulæ are gray, and are outlined with black. The hind wings are grayish black, banded with white and the abdomen has five black spots on each side.

*Smerinthus myops* (Fig. 4.) is a chocolate brown moth with more or less yellow upon its wings. The brown fore wings have their yellow spots in the two outer angles, while the yellow in the hind wings borders a black eye spot, with a bluish white center, on the outer side. The larva feed on the wild cherry tree.

*Philampelus pandorus* (Fig. 5) is olive gray varied with dark olive green, the green being represented in the figure by dark spots. The larva feeds on grape and American ivy, and when at rest, the caterpillar withdraws the first two segments into the third. The larva is usually reddish brown and has five cream colored spots on each side.

*Philampelus achemon* (Fig. 6) has the body and fore wings of a soft brown color with darker spots as shown in the illustration. The hind wings are of a delicate pink and have a brown border with four spots on each hinder margin. The larva is a voracious grape vine feeder and is similar to the *P. pandorus* except that the *achemon* sphinx has six spots instead of five on each side. These two sphinx larva reach their largest size in the last of August or the first of September. The winter is passed in the ground.

*Hemaris thysbe* (Fig. 7.) The wings possess few or no scales and are clear with the exception of a marginal border of brown. The thorax is more or less covered with long yellowish hair. The last two segments of the abdomen are also yellow and the abdomen is terminated by a brush, which is composed of a number of long black hairs. On the under side the yellow is very much brighter in color. The larva of the division to which this moth belongs are different in a number of respects from the other sphinges and the most striking is the habit of boring in the roots and branches of the food plant instead of eating the leaves. This division which is called by Harris, *Aegeriæ*, is also usually found flying in the daytime instead of at night. I neglected to say that these *Aegerian* larva do not possess the caudal horn which so many sphinx larva possess, that they feed on ash and hawthorne during the larval stage, and are very fond of phlox in the imago.

*Sphinx cingulata* (Fig. 8.) This moth,

of which only a few specimens have been found here, is supposed to be a southern species and is listed by Snow as one of the lepidoptera of Kansas. The markings of the wings are almost identical with those of the *Phlegethontius Carolina*, with the exception that there is a delicate shade of rose in the basal angle. The abdomen is beautifully marked. The median line is a narrow black streak and lies in a broader band of gray. On either side of this median band, the insect is marked with alternate rose and black stripes. The larva feeds on sweet potato.

*Sphinx* (?) (Fig. 9.) Owing to the late date at which this specimen was obtained, it has not yet been satisfactorily classified. The forewings are intermingled shades of white, brown and gray, with many irregular transverse lines of black. There is also a small white dot in the center of each wing. The hind wings are black, with a delicate edging of white, and have two white lines which, at the inner angle of the wing, are quite distinct but gradually fade out as they near the vertex of the wing.

*Smerinthus geminatus* (Fig. 10.) The fore wings are marked with a number of different shades of brown, and at the outer margin there is a faint suggestion of black. The hind wings suggest the name which refers to the twin spots. The basal angle is a beautiful rose color and the shade gradually fades into the fawn color that makes the margins. In the center of the wings are velvety black eye spots which have the bluish dots in their centers. The larva feeds on apple, plum, elm, ash, and willow.

*Ampelophaga myron* (Fig. 11.) The fore wings in this species are a greenish brown and the broad band which covers the outer half of the wing is of a deeper shade. On the outer margin of the wing and of the band also is a triangular gray-



ish black marking, which is roughly triangular. The hind wings are light fawn color and have an indistinct black band on the hind margin of each wing. The larva of this insect does much damage to grape vines and is called by Riley the "Hog Caterpillar of the Vine." The reason for this name is the appearance the larva presents when at rest, the first segments being retracted into the third and fourth; thus reminding one of the small head and immense cheeks and shoulders of a blooded hog. This sphinx spins a cocoon of coarse brown silk and is prevented from becoming too numerous by small parasitic flies, which build their cocoons on the outside of the caterpillar, with one end of the cocoon attached to the larval skin.

*Sphinx chersis* (Fig. 12.) This moth is of a uniform grayish brown color, more or less marked with black. The fore wings are characterized by a number of dashes, which look very much like pen marks and are found between the veins. The hind wings are of the same shade as the fore ones and are banded on the margin with a broad, dull black, line. There is a lateral line on each side of the abdomen, with a fine median line between them. The tegulae are delicately edged with fine black lines and there is a light yellowish spot in the center of each fore wing. The larva feeds on ash and lilac.

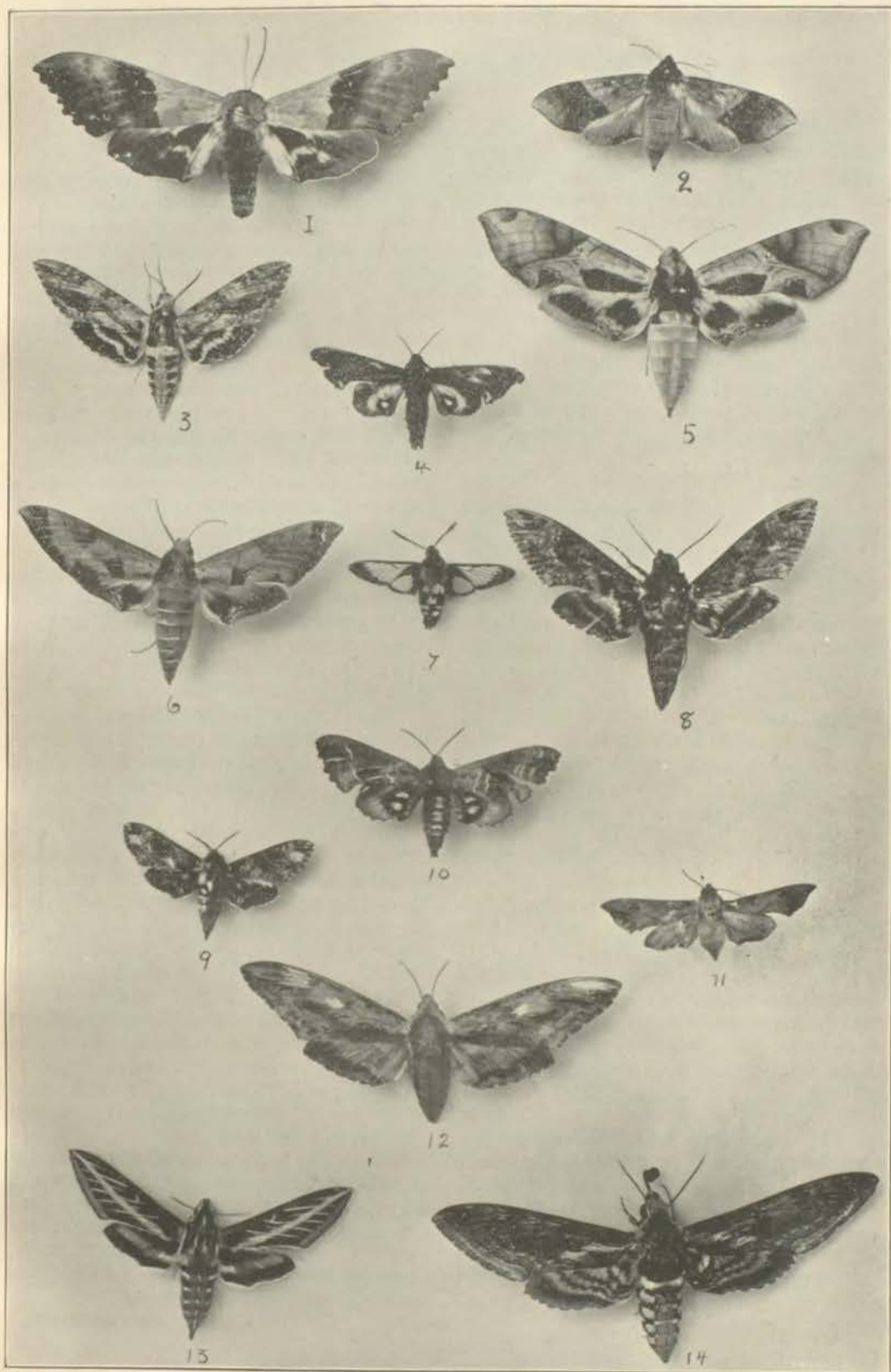
*Deilephila lineata* (Fig. 13) is a very attractive moth because of the strong clear markings which give it the name. The thorax is brown with lines running at right angles to the wings. The fore wings are brown with a single yellow band running down the center of the wing to its vertex, while the cross veins are marked by narrow white lines. The hind wings are black with a single pink stripe running across them. The larva feeds on turnip, buckwheat, watermelon and grape, and after entering the ground the last of July, it emerges as the imago the following May.

*Phlegethontius celeus* (Fig. 14.) The fore wings have a dirty brown background with uncertain grayish lines running across their surface. The only distinct marking is a narrow black line which runs uncertainly along the outer edge of the wing. The hind wings are a little clearer and are banded with four black lines on a grayish white ground. There are five large yellow spots ranged on each side of the abdomen. The larva is a light green with seven oblique lines on each side of the body and feeds on tomato, potato and tobacco. The pupa is known by the tongue case which extends out from the head and in form resembles the handle of a pitcher.

JAMES ANDERSON.

#### EXPLANATION TO PLATE.

- |                                  |                                    |
|----------------------------------|------------------------------------|
| 1. <i>Marumba modesta</i> .      | 8. <i>Sphinx cingulata</i> .       |
| 2. <i>Ampelophaga chœrilus</i> . | 9. <i>Sphinx</i> (?)               |
| 3. <i>Sphinx</i> sp.             | 10. <i>Smerinthus geminatus</i> .  |
| 4. <i>Smerinthus myops</i> .     | 11. <i>Ampelophaga myron</i> .     |
| 5. <i>Philampelus pandorus</i> . | 12. <i>Sphinx chersis</i> .        |
| 6. <i>Philampelus achemon</i> .  | 13. <i>Deilephila lineata</i> .    |
| 7. <i>Hemaris thysbe</i> .       | 14. <i>Phlegethontius celeus</i> . |



SOME HAWK MOTHS OF THIS VICINITY.



## THE PHYSICS OF THE BICYCLE.

It is very interesting to trace the evolution of the bicycle. Everyone, doubtless, knows that it first took the form of the ancient velocipede. Not a three wheeled velocipede, like that of today, but a two wheeled one that was propelled by walking astride it and not by means of pedals. This type of machine rapidly gave way to the more recent "high wheeler" and was eventually replaced by the bicycle of today which is ridden by millions of people, very few of whom ever stop to think out the physics of the "wheel."

The first thing that must be learned by the prospective rider is to be able to find and sustain his center of gravity. As soon as he can keep his center of gravity over an imaginary line drawn between the points of support he has learned to ride. The points are those points where the wheels are in contact with the ground. The equilibrium obtained on a bicycle is unstable, as any motion tends to lower the center of gravity, and will do so unless there is some other force to counterbalance that of gravity. During the last few years manufacturers have been making their wheels with a "drop" in the frame, the object of this being to lower the center of gravity.

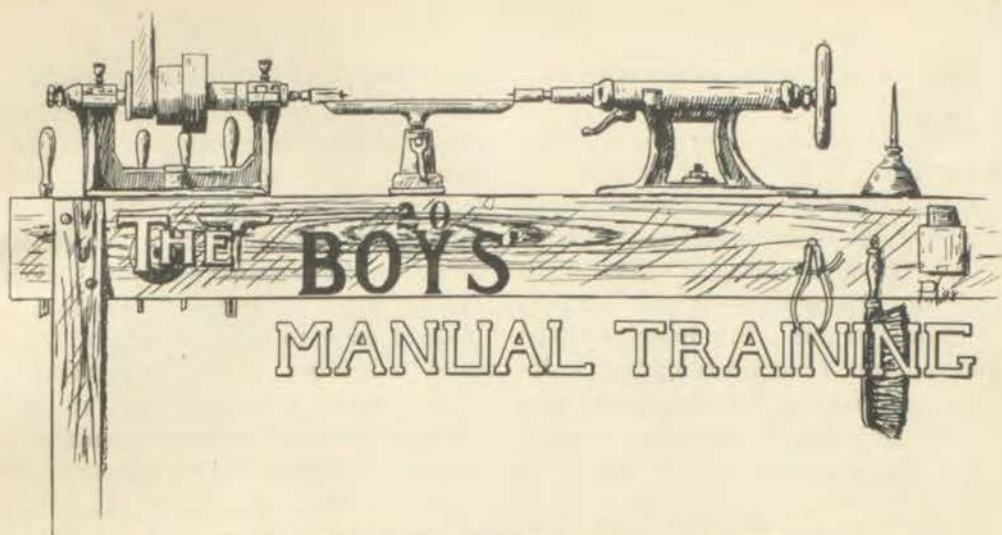
Every one that rides a wheel has probably noticed that more effort is required to start a wheel than to keep it moving. This is because the inertia must be overcome. It would require no energy whatever to keep a wheel moving were it not for friction. Not only is there friction in the bearings but there is friction with the air. The latter, however, is a very small per cent. Almost all old wheelmen have discovered the fact that hard tires "ride" easier than soft ones. The reason for this is that a soft tire flattens out on the ground and is continually compressing the air in front of the flattened place, and it requires energy to compress air. In a hard tire this is reduced to a minimum.

Gear. This is something that every one who owns a wheel or ever did own one is continually talking about. The assurance with which they speak of it is astonishing when we know that scarcely one of them knows what he is talking about. When we speak of an eighty gear, for instance, we mean that one revolution of the pedal will carry us as far as one revolution of the pedal on a "high-wheeler" that has an eighty inch front wheel. Multiply your gear by 3.1416 and you will have the number of inches you go at each revolution of the pedal. It would seem from this that a high gear is an advantage to the rider. It is. It also has its disadvantages. It is to be hoped that those who have taken physics will remember that the ratio between the length of the arm of the lever to which the force is applied, and the length of the arm on which the load comes is the ratio of the mechanical gain or loss. If we consider the bearing as the fulcrum, the crank as one arm and the distance from the center to the circumference of the sprocket as the length of the other, the mechanical gain or loss can be easily calculated by the method given.

Thus it will be seen that it is a mechanical advantage to have a small front sprocket and as long a crank as possible. To obtain a high gear we must have a large front sprocket or a small back one. There is always a loss in power on an ordinary wheel and the smaller it is the greater the loss. The ratio between the radius of the wheel and the radius of the sprocket is the ratio of the loss in power. So we see that both high and low gears have their advantages. To gain speed at the cost of power use a high gear and vice versa a low gear.

These are only a few of the many instructing facts about the physics of a bicycle. It is the simple things, like those mentioned, that we might see every day and yet are so interesting, that go to make the study of physics both pleasant and instructive.

CLARK HENDERSON.



### SOMETHING ABOUT EDUCATION AND MORALITY.

As we pause in the busy way of life to observe the passing forces of Progress we ask ourselves the question put to us by our classic friends: "What is the moral value of a technical, or manual training education?"

The time was when the people sat at the feet of the poet, followed with willing step the musician, and stood silent before the painting. The time is when the world stands in awe at the achievements of the engineer, yet it mutters "soulless," "materialism"

For hundreds of years, and even far into the sunshine of the nineteenth century, it was the work of the student to study about things, rather than the things themselves. That such studies were interesting and enchanting I do not deny for (and here I recall a passage from one of Prof. C. M. Woodward's works) on my right I see the yellow Tiber, rolling by the temple of the gods, near which I see the toga'd Cicero swaying the people with his eloquence. I see the gentle Virgil chanting his thrilling lay in the halls of the Cæsars while Livy is embellishing history for the glory of Rome. On my left I see the Olympian mountains, the groves of Athens and the thronged Acropolis. I behold Demos-

thenes lashing the Greeks into a frenzy of rage against Philip of Macedon. A crowd is rushing to the theater to be thrown into a whirl of passion by a tragedy of Euripides, or convulsed with laughter by a comedy of Aristophanes. A blind bard is singing from house to house the wrath of Achilles, the fall of Troy, and the woes of the brave Ulysses; while in a quiet garden, with a small band of pupils, Plato and Aristotle walk in the cool retreats, discussing life, duty and the causes and ends of things.

But what are we doing? A little group here, with divers drawings, gaze upon the oozy swamp; tomorrow the "White City" flings its banners of light to the heavens and the Columbian Exposition rivals Athens and the Parthenon itself.

Here a spider thread of steel is swung on towers, and thousands upon thousands are the people who daily crowd the ways of the Brooklyn Bridge.

There a trio of lean individuals work incessantly with pencils drawing a net work of lines on dirty paper and throwing sheet after sheet of scratch-paper, heavy with its weight of figures, into the waste basket. The months go silently by and one morning the world is startled







## DOMESTIC ART.

"Many favors which God giveth us ravel out for want of hemming, through our own unthankfulness."

There is doubtless not a girl in this school who has not, at one time or another, been obliged to listen to stories of the wonderful industry of the young ladies in her grandmother's time. Although there were then no Manual Training Schools, the girls were considered proficient in the art of sewing, and would even cut up pieces in order that they might sew them together again. We believe that the Training Schools of today teach a healthier kind of industry than this. The mind, the eye, and the hand are taught to work in harmony. What the eye sees or the mind conceives, the hand executes.

The object of girls' manual training in these schools is not to turn out so many dress-makers or milliners a year, but to make the girls truer, more womanly women by teaching them the simple duties of a home, and at the same time a love of the beautiful and orderly. We have all visited the home where mother and daughters take a pride in keeping it the cheerful, restful place it should be; where the wearing apparel is always in good repair and harmonious in color and design, and where the whole house bears the impression of a feminine hand, guided by an artistic and intellectual mind.

There is a charm about such a place which none can fail to appreciate, and the world has reached a stage where a woman who can keep a home like this will be infinitely more loved and esteemed than the one who has all the ologies and isms at her tongue's end, without the true home-wifely instinct.

This fact has begun to be recognized by all, and our new high school is the result of such a realization on the part of Kansas City's people. Here, in addition to the regulation high school course, the girls receive instruction in the good, old-fashioned, but until lately somewhat neglected, arts of sewing and cooking.

One object of the former, aside from its usefulness in every-day life, is to teach girls the value of exactness and neatness. It is impossible to make the models acceptable to the teacher without learning valuable lessons in both. Another object is to teach them an appreciation of beauty in color and design. There can be little or no originality in the latter during the first year, as the work consists mainly in learning the stitches in common use, together with their proper application.

As the work progresses, however, and the girls become more skillful with the needle, their eyes become better able to perceive artistic effects in color and proportion. This quickness of perception



comes into play, to some extent, in the second year's work, when the shirt-waist and skirt are taken up, but it will be still more necessary this spring, when the girls, with Miss Casey at their head, expect to make their first attempt in the hat-trimming line. Here the girl who is possessed of an artistic soul will be in her element, and glorious must be the first production of her nimble fingers. We

will expect to see her next Easter, resplendent in a beautiful creation of lace and flowers, the outward visible sign of many hours of patient labor, and we heartily wish her and the rest of her kind, unbounded success in their new undertaking, and may each of their productions be "a thing of beauty and a joy forever."

B. B.



### THE PAST AND THE PRESENT.

Glancing back over the years that have gone to return no more, you will notice that woman has occupied many different places, and the farther you go back the worse becomes the condition of the fair sex. You will see her in places where, if she were even to intimate a suggestion, she would be severely dealt with, by the then superior sex, man. Father Time and his doings are great, and he has done more for woman than for any other being. Step by step, degree by degree, you see her coming to the front to fill the prominent position in the great race of life. Can you conceive of such a contrast as that of her present position and the one in which she trudged along weary and heart broken, and no better than the very oxen at her side? Look at her in all her accomplishments and beauty today. Do you not call this progress? From these progressive steps you would infer that she has conquered man. Has she not suggested ideas to him? She has indeed; but not only that, she has gracefully and cunningly tapped on the weary brow of the man child and

said, "This is the age of criticism—why stand you here dreaming?" "Your ways are the ways of the past and your methods slow. We have come bringing the 'new idea' that the world is calling for. What must you do? Go bear your defeat like men! Go! Go and fill the places we have deserted; the places that more rightly correspond with the capacities of your brains. Go! Go!"

Man, seeing that it is useless to protest, and thinking that woman will soon ask forgiveness and quietly seek her own honored and respected place, obeys her commanding summons, and today she is still facing the strife. The great question of today is, "What will put an end to it?" If all cities in the United States were like Kansas, City, we could soon answer, "Manual Training Schools." Here the girls are given a taste of the real business life, and the boys are boasting that in the future they will be qualified to confront the girls and emphatically say, "Which end of the life rope will you take?"

M. E. S.

## FREE-HAND DRAWING.

It is the idea of very many people that the power to draw a straight line is necessary in free-hand drawing. How many students have said, in answer to the question, "Why don't you take drawing?" "Why, I couldn't draw anything. I couldn't even draw a straight line."

This is a very erroneous idea. If we wish straight lines we go across the hall into the mechanical drawing room and procure a ruler and other necessary instruments. Crooked lines, for the most part, are used here, and it is the art of placing these crooked lines in the right places which is hard, and which we learn in free-hand drawing.

It is difficult at first to place the lines on paper as they appear in the object, to make both sides of our vase or jar alike and to get the proper proportions. But, as we advance, our facility in doing these things correctly becomes greater and greater until a true and harmonious whole is the result?

A certain lecturer says that each word that we write and each line that we draw makes the tiny cells in our brain larger, stronger and more mature. This is especially manifested in free-hand drawing. The brain has a direct influence on all other parts of the body. It not only teaches the eye to perceive the graceful outlines, and the mind to grasp the true proportions of the object, but it cultivates that firmness and accuracy of the hand which is indispensable in scientific and mathematical work, and that freedom which is so necessary to artist and artisan alike.

Sometimes, however, the proportions

and outlines may be correct, but there will still be something lacking. This something, or rather lack of something, is called character. The figure on the paper is a vase or teapot—there is no mistaking that. But it is not *the* vase nor *the* teapot on the table. The general character or outline of the object on the table is round while that of the figure on the paper is long. This subtle and elusive thing called character is very trying at first, but "labor conquers all things," and with patient work even this is soon overcome.

That "there is no royal road to learning" is as true of drawing as it is of other studies. Patient, study work will accomplish wonders, and many an artistic soul, now lying dormant and sleeping, unknown to the possessor, will awake and respond willingly to the summons, "I'll try."

L. H.

The domestic art department has recently received a very interesting exhibit of cotton from the O. N. T. Clark factory. It shows the cotton in the different stages through which it passes in being made into thread.

The department has also received an exhibit of Millward's needles showing the various processes in their manufacture.

The teachers and students of the department extend their thanks to the Emery, Bird, Thayer Dry Goods Co. for their generous gift of straw hats for the use of the millinery class.







### TO OUR EXCHANGES.

Just have patience. We have not discontinued our school paper. As it is a bi-monthly paper, many of our exchanges of last year who had forgotten or never noticed this fact, have no doubt been wondering they did not receive *THE NAUTILUS*. But we have a complaint to make. What is the matter with the exchanges that are published monthly? As yet we have received but ten for the month of October. By the next publication of *THE NAUTILUS* it is the exchange editor's desire to have received copies of all the papers found on our list of last year, and as many new ones as possible.

'The first arc-light—Noah's candle.—Ex.

A curling iron  
A cunning curl  
A powder box  
A pretty girl.

A little rain  
Away it goes  
A homely girl  
With freckled nose.—Ex.

The commencement number of the Vermont Military Academy Life, is a credit to that institution. Besides several well edited articles, cuts of members of the faculty and of the base ball team add to the general good appearance of the paper.

Fond Mother:—"I want to get something for my little boy of eight—something that he will remember me by."

Floor Walker:—"Ah yes! Here, Cash! Show this lady the slipper counter!"—Ex.

A drawing room—the dentist's office.

The Oak, Lily and Ivy, from Milford, Mass., presents a very neat and tasty appearance.

The bald-headed man in his family pew  
Leaned back on the cushion and slumbered,  
And he dreamed that the preacher these words  
had proclaimed:

"The hairs of your head are all numbered."

The bald-headed man now awoke with a start  
From his weekly devotional slumbers.  
Then he sank to his knees and fervently  
prayed

"Oh! Lord! Send me down the back numbers."—Ex.

The Recorder from the Brooklyn Boys' High School gives one a good idea of the work being done among the different societies of this school.

"Where are you going my pretty maid?"

"Collecting souvenirs, sir," she said.

"May I go with you my pretty maid?"

"My fad's not spoons, kind sir," she said.

The worst organ grinder is a hollow tooth.—Ex.

O, I don't like to study;  
I'd rather have some fun:  
But I have to learn my lessons  
Or I'd "flunk" in every one.

I do not know my Latin  
My History the same;  
They give us such long lessons  
I think it is a shame.

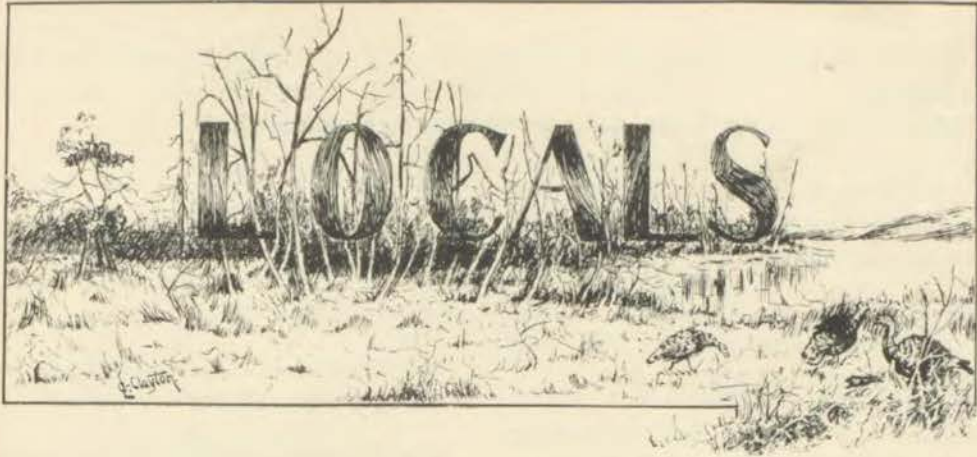
I ought to do my Algebra,  
I think 'tis almost time  
I started in to studying,  
And stopped my foolish rhyme—Ex.

He—"Well, I must be off."

She—"Yes, a little. I noticed that the first time I met you."—Ex.

The Rocky Mountain Collegian, although it is a well edited paper, would be more interesting if it had one or two good stories in it.

Other exchanges received are the Messenger, Wichita, Kas.; High School Chat, Ypsilanti, Mich.; High School News, Chateaugay, N. Y.; The Fence, New Haven, Conn.; High School Leader, Montana; The Mercury, Milwaukee, Wis.; and The Tack, Storm Lake, Iowa.



Inquiring Pupil—"Has everything dimensions, Mr. Dodd?"

Mr. Dodd—"Well, my son, has love dimensions?"

Sentimental Young Lady (anxiously)—"It certainly has, Mr. Dodd, when it is very deep.

A certain young lady was heard to say that she could not see how anyone could prefer Mr. Sloan's beautiful hat rack to his own charming self.

Visitor (in cooking laboratory)—"Do you select the peaches which you preserve?"

Mr. S.—"We do if the girls give us permission."

Visitor—"Why is their permission necessary?"

Mr. S.—"Our selection of peaches is from the girls."

Go back and start over—you forgot to read the advertisements.

Miss S. thinks that Mr. Dodd is too sweet to be an old man.

We all sympathize with the young lady who wished to join one society but her affections were centered on a young man in the other.

Can George Conkey reach the black-board?

Miss Gilday—"What is a hung jury?"

Pupil—"A hung jury is one that decides the criminal should be hung."

Who said Miss Jameson was too young to be out after dark?

Encourage Miss Miller, boys. She has proudly informed us that she succeeded in making shavings.

Judging from the celestial sounds which issue from the music room, we are inclined to believe that we will soon have angels with us.

The girls are wondering whether Mr. Sloan could carve as handsome a boy as he did a hat rack. Handsome boys are in demand by some, even though they are "Wood."

There was a statement on the board in Miss Gilday's room to the following effect: "The Goths fled." Miss Gilday thinks perhaps they were troubled by these animals.

If Mr. Rowe wishes to primp after wood working, he would better not use the mirror in the wood working department.

Some visitors wondered why the girls seemed so glad to go to the cooking class. Do we wonder why?



Miss Van Meter—"Your essay is not paragraphed."

Pupil—"Oh! I never write in paragraphs."

Girls! To avoid embarrassment for the boys, please sign the young man's last name to your notes in the future.

Have you seen Johnson's dollar photos? Southwest corner 12th and Grand. Over the Grand Market.

Satisfaction is to be had by having your half-tones made by Teachenor-Bartberger Engraving Co., Sixth and Wyandotte, in the Baird Building. Those in this issue were made by them.

Mr. Dodd—"Would you call this room a solid, Fred?"

Mr. McClure—"No, sir; I believe I would not."

Mr. Dodd—"Why?"

Mr. McClure—"Because there is nothing in it, I suppose." Class applauds.

We understand that Mr. Dodd is performing miracles in Geometry classes. He must entertain us some Monday.

We are glad to see that Lee has a new overcoat. He initiated it one night when the thermometer was at 90.

Miss Martha Miller desires pupils in Botany. Free lessons to all who will listen. Please go to Mr. Paul Halleck for recommendations.

We have a Bachelor-Knight in our school.

Helen—"Hold your hand a minute?"

James—"I would rather hold yours."

Nellie—"You are a case."

John—"Of what, eggs?"

Nellie—"Yes, bad ones."

Ask Miss Berger what committee she is on.

Prof. P—"It is not necessary to die to find hell; you can make one in five minutes if you wish."

Mr. Dodd—"What is the sign of equation, Mr. Smith?"

Mr. Smith (looking puzzled)—  
"Really, I don't know, Mr. Dodd."  
And he is a Senior.

Mr. Russell—"Which weighs more, Mr. Page, wet water or dry water?"

Miss Phillips has started new names for boys. Go to her for further particulars.

Ask Mr. Russell how many times a year he gets his dinner.

Isn't Mr. Sloan accommodating? He stopped the Flower Parade to allow a lady admirer to take a snap shot.

Mr. Dodd's Solid Geometry class is very original. They have long cubes.

It is a pity Mr. Staley is not a girl. He has such a beautiful complexion.

Consider yourself up-to-date by reading our "ads."

Our foot ball team is very active in chasing squirrels. We hope it will be equally as active in playing a game.

Mr. Rouse must learn to walk at "lover's pace" before long. He says he doesn't know what a lover's pace is.

Can't someone help Mr. Staley? He can't pronounce "unanimously."

First Girl—"Where is Pauline?"

Second Girl—"I haven't the least idea, have you?"

That Senior French class still keeps up its record. Every lesson Mr. Richardson spoils some of his French. Poor man! He won't have any after a while.

*Fred Wolferman*  
*"Good Things to Eat"*

1108-1110 WALNUT STREET,

TELEPHONES { 638  
 2988

KANSAS CITY, MO.



Telephone  
 1275

**E. J. GUMP,**

Trunks, Bags and Leather Goods,  
 Pocket Books and Christmas  
 Novelties.

APPROPRIATE XMAS PRESENTS.

821 Main Street, Junction

**CENTRAL COAL & COKE CO.**

SUCCESSOR TO

THE KEITH & PERRY COAL CO.

**COAL, LUMBER, TIES AND TIMBERS**

KANSAS CITY, MO.

**Queen of the Pantry Flour**

Is not only a good Flour—it's the **BEST**. It gives the most satisfactory results in every kind of baking, and is all that its name implies. All grocers handle it—in response to the universal demand.

**D. B. KIRK & CO.,**

KANSAS CITY, MO.



We understand that Mr. Campbell eats watermelon beautifully.

Why did Mr. Shide spell Mr. Beard's name "Beer?"

Didn't the B. L. S. have a fine time at Miss Phillips'?

Mr. H. (translating)—"It contained eight pieces of Luther."

Mr. Page attempted to view the parade from a ladder but the result was disastrous.

Mr. S.—"Look at Rusty chase that squirrel."

Miss M.—"I thought he would be too dignified for that."

We will take one credit from your general average if you forget to glance at our "ads."

Miss Drake (correcting mistakes at the board)—"This is bad spelling and I am surprised to see that the name is 'Hidden.'"

Mr. Dodd—"Mr. Pauline, explain your problem!"

Mr. Hopkins should see that the heat is turned off before he again attempts sitting on the radiator.

Do we need English in our school? Here is a sample: "Loan me a nickel to ride home on."

Miss M.—"I wonder if Mr. Moore was late in Assembly Hall just so he could exhibit that flower."

Pupil (after lengthy experiment on hydrogen had been performed)—"That is an awful amount of time spent for just one little 'pop.'"

Mr. Rouse (in staff meeting)—"What a lonely I. I wonder if the other is glass."

Miss Casey (to pupil who has lost part of draft)—"Oh! Miss Brainbridge, have you lost your back?"

The staff understands that Mr. Rouse got '0' on his Rhetoric paper."

The startling statement was made that the placidity of Miss Osgood's temper was really disturbed, merely over the recovery of a piano key. How remarkable. But there is another side to the story.

Does Mr. Simpson need quick-silver to hold him down?

IF

Overcoats fit as well,  
Are as swell,  
Look as swell;  
Why not as well  
As those made to order?

Don't go to Helen Hunt for them, but to Harry B. Woolf, the  $\frac{1}{4}$  size shirt man, 1119 Main.

Mr. Phillips—"Don't allow your pencils to become absent minded."

Hurrah for the social session of the two societies.

Mr. Page—"Mr. Simpson, you seem to know even less about your Bible than you do about your Physics."

Mr. Phillips told the Rhetoric class while studying imagination to "get off the earth."

Mr. Simpson does not think we are able to take Mr. Dodd's word in Geometry. He has too many suppositions.

Miss Gilday says that, of course, man always embraces woman.

Miss Gilday made the remark that the Northmen could not think of Heaven with woman in it; but when the boys applauded she added the statement that the women were reserved for a better place.

We understand that Mr. Sloan rushed down one night to save Manual from devouring flames and found a barn on fire. His effort is praise-worthy at least.

**BRYANT & DOUGLAS BOOK & STATIONERY CO.**  
**1002 WALNUT STREET,**

Have now a very complete stock of Books, Calendars, Christmas Cards, Etc., for the Holidays.

**SCHMELZER ARMS CO.,**  
*Athletic and Sporting Goods,*  
*Fire Arms and Ammunition.*

710-12-14 Main Street,

KANSAS CITY, MO.

**Go to Campbell Paint and Glass Co.**  
 FOR ALL KINDS OF  
**GLASS AND PAINT,**

Telephone 270.

1228 Main Street.

**MEN'S MATTERS WORTH READING.**

Here are some of the customary matters for men. Goods of our own standard at prices which really mean economies.

**A Matter of Gloves** We have told you about these gloves before—what did it mean? —a big selling of Gloves. No wonder we are giving you the values, the styles and colorings as you like to have them, and priced within reach of all. Gloves for business and street wear—

**Fifty Cents up to Two Dollars.**

**A Matter of Colored Shirts** New, nobby styles in Colored Shirts, perfect in fit and make. The newest designs and colorings in All-Over Percales and Madras—one pair detached cuffs. Choice of many patterns—

**One Dollar Each.**

**A Matter of Winter Underwear** Surprising how many suits we've sold of these Norfolk and New Brunswick Co.'s Fine Underwear. You know this big store has always been known as a good Underwear store. It's better this year than ever. Full, complete lines of sizes; endless variety of styles—

**Fifty cents up to Two-Fifty.**

**A Matter of Night Shirts and Pajamas** Everything bright, fresh, new—Outing Flannel Night Robes, soft and warm, plenty of length and width—

**Half Dollar Each.**

As to the Pajamas, made of extra weight outing flannel in neat patterns—

**One Dollar and Twenty-five Cents Suit**

The above are just a few pickings from our Big Men's Furnishing department. But they are not all—we haven't said a word about the big showing of Bath Robes, from \$2.98 to \$10.00; the Smoking Jackets, from \$5.00 to \$12.50; the almost endless variety of Neckwear, from 50c to \$2.00, and so on. You'll learn about them when you come in.

Walnut  
 11th Sts.  
 Grand Ave

**Emery, Bird, Thayer & Co.**

Walnut  
 11th Sts.  
 Grand Ave



Mr. Dodd says he must treat some geometrical problems like he does his photographs. Write the name upon it.

Miss Gilday says she is getting old. We don't believe it.

Who said that the "Belles Lettres girls" were "Belle Dames?"

Miss Gilday excellently entertained a history class with an up-to-date recital of "Curfew Shall Not Ring Tonight."

According to a pupil in Miss Fisher's class we have a teacher in our school by the name of "Dood."

Freshie—"I didn't know that married men were allowed to teach here?"

Senior—"Why, there is Mr. Dodd, Mr. Phillips, and—"

Freshie—"Oh! Is Mr. Phillips married I thought he was a widower."

Go to E. Moorehead's for your groceries and meats.

Mr. Rouse says that he intends to be a preacher. We hope that we will be in another congregation.

Miss McDearmon (translating)—"Between she and I,"—

Mr. Richardson—"Pretty good for a Senior."

What caused Mr. Phillips to use the following slang expression: "Now, you are warm, but not hot."

Friend—"Is Mr. Frost interested in the staff?"

Staff Member—"Yes, he is so active. Especially in moving for adjournment."

Prof. Morrison (illustrating recreation)—"I rode ten miles on my bicycle yesterday and I also walked ten." I wonder why he walked ten?

If you have books to buy, sell or exchange you will consult your best interests by going to Glick's, 710 Main St. He pays top prices for second hand books.

Miss Gilday—"What is a jelly fish?"

Grace—"It is a fish made of jelly?"

Mr. Miller—"Bombeck, you have a pretty good forgettery."

Myrtle—"Let Dwight and me do this?"

My, but wern't those chrysanthemums pretty, Miss Pierson?

Miss Van Meter—"Look right at me. I never speak for my own amusement."

Teachers discussing apperception. Miss Gilday—"I wonder why negroes are so interested in this subject?"

Miss Fisher—"I guess it is because it is such a dark subject."

Sale of McGowan's style hat.

Mr. Chase has given a new axiom to his Freshman class. "Empty wagons make the most noise." Quite appropriate.

Mr. Nathan (giving the past tense of climb)—"She clamb into the boat."

Ask Mr. Peters who the coach of the Lincoln High School team is.

Go to Perrin, girls, to get the latest style in hat pins.

Val has evidently settled down since last year. Think of it! He has gone into business.

A certain Freshman seems to have a natural tendency to sit on the floor in Mr. Sloan's room.

Go with Ben and James to get a hair cut, for 25 cents; they go to Geo. Herold's Shaving Parlor, 322 Ridge Building.

Editor Rouse—"Down in the manual room we turn in what we turn out."

Mr. Staley—"It's just exactly the same size, very near."

Who says Miss Gilday has kissed the Blarney Stone?

**CLARK THE HATTER,**

906 MAIN STREET.

Correct Styles for Young Men.

GLOVES AND UMBRELLAS.

Dunlap Agency.

**HENRY NAST,**

PIANIST and TEACHER,

For three years with Scharwenka and  
Moszkowski, of Berlin.

Studio: 537 New Ridge Bldg.



1030 Main Street,

Eyes tested free.

KANSAS CITY, MO.

**RUSSELL GRAIN CO.,  
WHOLESALE HAY AND GRAIN,**

Orders received for  
Corn, Oats, Bran Chop and Hay.

Office and New Warehouse, 13th and Mulberry,  
WEST BOTTOMS.

TELEPHONE 889

**CARLTON AND ROSE**

PHOTO ENGRAVERS  
ELECTROTYPERS  
STEREOTYPERS

PROCESSES  
HALFTONE  
ZINC ETCHING  
RELIEF LINE  
WOOD ENG.  
ETC

TELEPHONE 1632.

1016 WYANDOTTE ST.  
KANSAS CITY MO.

Persons wishing advertising space in  
this paper please address

BUSINESS MANAGER  
OF THE NAUTILUS,

Manual Training High School.



Something interesting—the advertisements.

Miss Gilday—“Tell James his other girl is here now.”

Have you seen Mr. Page’s dunce’s stool?

That’s not right, Miss Hart, to say that “the Freshie’s are too small.” You’re not so large.

It would be a good idea for Mr. Page to have office hours for the benefit of the girls.

Henry Hopkins—“O, the whole thing.”

Mr. Dodd—“What do you mean?”

Henry—“O, the whole shootin’ match.”

Mr. Knight—“How many yards in one foot?”

Read the story pertaining to the business side of the question on page six.

Teacher—“Give me a sentence containing the three principal parts of the verb see.”

Freshman Kerfoot—“I seen a see-saw.”

Miss Cassell says she only chews gum during Carnival week.

Miss Fisher (to pupil)—“Do you want to be a clown and stand on your head in the corner?”

Sophomore—“When you want to get light on a subject what shall you do.”

Freshman—“Turn on the electric light.”

What are the modern implements of Chase? A — compass, ruler and protractor.

Old veteran soldiers are called old veterinary surgeons in one of the English rooms.

Mr. Miller—“It would be very singular if that name were plural.”

His heart was fired with love for her,  
The old man had retired,  
But soon he ambled in and then,  
The rest of him was fired.

According to Miss Van Meter the “Art Club” should be called the “Skill Club.”

Will Klein says that he was standing on the spokes of a chair.

Ask Bruce what shape the bottom of a beer bottle is.

Mr. Morrison doesn’t eat pretzels.

Which was the best story in the last Nick Carter? Apply for this information to Mr. Gunther.

Mr. Peters—“I’ll bet you a soda water that I am right.”

Some one got fresh and stole the salt.

What boy was it who called the sugar sweetness?”

Don’t forget to look on page 4.

Perrin—“I am looking for a stray article.”

Mr. Sloan—“Come to me.”

Jack to Dudley—“I am a ball player since you saw me last.”

Isn’t the Assembly Hall a fine place to carry on a quiet conversation? Ask Mr. K. and Miss McG. as to this.

Miss Van Meter—“What does ‘invisibility’ mean?”

Sophomore—“Out of sight.”

Miss Fisher—“My pupils have wonderful memories for forgetting.”

The latest—Donal Henry has learned to ride a bicycle.

Miss Pierson—“You may borrow my cuffs.”

# Studies in Zoology

is a supplement to

## The Nautilus,

printed by The Nautilus Pub. Co.

**T**HIS SUPPLEMENT  
CONTAINS SIXTY-  
FOUR PAGES OF MAT-  
TER ON SCIENTIFIC  
SUBJECTS, \* ILLUS-  
TRATED BY HALF \*  
TONES. \* THIS BOOK  
IS GRADED FOR HIGH  
SCHOOLS, \* \* ACAD-  
EMIES AND UNIVER-  
SITIES. \* \* \* \* \*





Everything Seasonable...

— IN —

Hats, Caps, Mackintoshes,  
Furnishings, Smoking Jackets,  
Suits, House Coats,  
Overcoats, Bath Robes.

LARGEST ASSORTMENT IN THE CITY.

Browning, King & Co.,

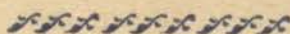
1101 and 1103 Main and 11 Eleventh Street.

# The Midland Hotel.

THE ONLY ABSOLUTE  
FIRE PROOF HOTEL  
IN THE CITY.

AMERICAN ::

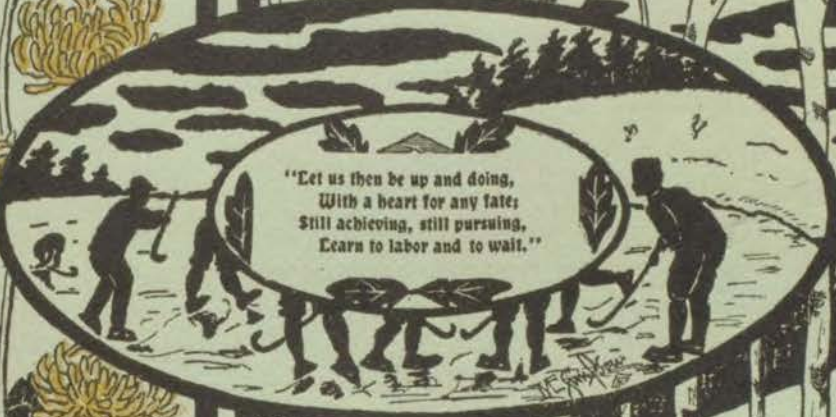
:: EUROPEAN



Restaurant Unexcelled.

G. T. STOCKHAM, Mgr

# THE NAVIIGS.



"Let us then be up and doing,  
With a heart for any fate;  
Still achieving, still pursuing,  
Learn to labor and to wait."

VOL 2  
No 2

JANUARY '99.  
MANUAL TRAINING  
HIGH SCHOOL.  
KANSAS CITY, MO.



# CONTENTS.



	Page.
Board of Education and Faculty.....	51
Directory.....	53
LITERARY.....	55
A Strange Coincidence.....	55
A Winter Evening Spent in the Country.....	57
The Confession.....	58
A Visitor at the Zoo.....	59
A Christmas Story.....	60
The Old Captain's Story.....	61
Yesterday, Today, and Tomorrow.....	63
An Open Letter.....	64
ORCHESTRA.....	65
ATHLETICS.....	67
Games of '98.....	67
Manual Foot Ball Team, 1898.....	68
EDITORIALS.....	69
SCIENCE.....	72
Rock Layers in Burge Park.....	72
Some Orthoptera of This Vicinity.....	74
Some Grasshoppers of Kansas City.....	78
THE BOYS' MANUAL TRAINING.....	83
Brains In Our Shops.....	83
Gleanings From the Shop.....	84
First Experiences of a Freshman.....	84
THE GIRLS' MANUAL TRAINING.....	85
Girls' Manual Training—Second Year.....	85
A Manual Training Story.....	86
THE UNIVERSAL LANGUAGE.....	88
Charcoal Scrapings.....	89
EXCHANGES.....	90
LOCALS.....	91

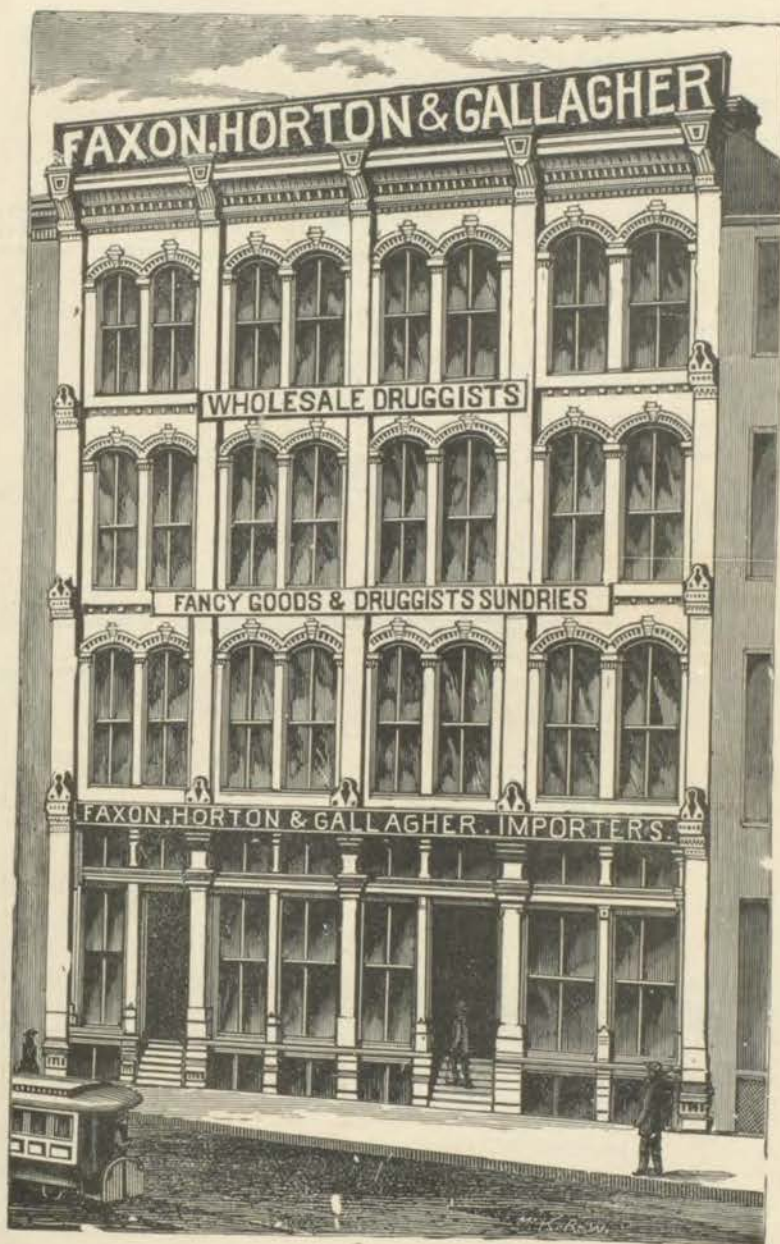
F. A. FAXON.

J. C. HORTON.

J. A. GALLAGHER.

# FAXON, HORTON & GALLAGHER,

1206, 1208 and 1210 Union Ave., Kansas City, Mo.



Wholesale Druggists and Dealers in Druggists' Sundries,  
Paints, Oils and Glass.

NO GOODS SOLD AT RETAIL.



# Kansas City School of Law

Follows the most approved plan for giving a legal education.

....Faculty is composed of judges and practicing lawyers as follows:

- HON. F. M. BLACK,
- HON. O. H. DEAN,
- HON. E. L. SCARRITT,
- HON. E. P. GATES,
- MR. S. B. LADD,
- MR. C. O. TICHENOR,
- HON. R. J. INGRAHAM,
- MR. J. H. HARKLESS,
- MR. J. W. SNYDER,
- MR. W. P. BORLAND,
- MR. E. D. ELLISON.

All sessions held in the evening so that students may be self-supporting.

Two years course of nine months each leads to degree of Bachelor of Laws.

## DIPLOMA ADMITS TO THE BAR

Tuition, Fifty Dollars per year and students have magnificent library privileges.

Send for Catalogue and full information to

- Wm. P. Borland, 714 N. Y. Life Bldg.,
- E. N. Powell, 614 N. Y. Life Bldg.,
- E. D. Ellison, 627 N. Y. Life Bldg.

ESTABLISHED 1886. TELEPHONE 1453.

WE MAKE A SPECIALTY OF PRINTING MAGAZINES  
AND PERIODICALS.

**CHAS. E. BROWN**  
**PRINTING CO.**

WE PRINT "THE NAUTILUS" AND SEVERAL OTHER  
FIRST-CLASS PUBLICATIONS.

SIXTH AND WALNUT STS., KANSAS CITY, MISSOURI.

# BOARD OF EDUCATION

HON. R. L. YEAGER, President.

HON. J. V. C. KARNES, Vice-President.

HON. E. F. SWINNEY, Treasurer.

HON. W. E. BENSON, Secretary.

HON. J. C. JAMES.

HON. JOS. L. NORMAN.

HON. J. SCOTT HARRISON.

HON. F. A. FAXON.

J. M. GREENWOOD, Superintendent.

## FACULTY

GILBERT B. MORRISON, Principal,  
Director of Physical Science Course.

E. D. PHILLIPS, Vice-Principal,  
English Literature, and Director of English  
Course.

JAMES A. MERRILL,  
Botany, Zoology, Geology, and Director of  
Biology Course.

JAMES C. RICHARDSON,  
German, French, and Director of Language  
Course.

MARY FISHER,  
American Literature.

A. A. DODD,  
Director of Mathematics Course.

B. T. CHASE,  
Mathematics.

ANNA C. GILDAY,  
History and Economics.

HERBERT M. PAGE,  
Physics.

M. ALICE MURPHY,  
Free-hand Drawing.

STANLEY H. MOORE,  
Woodwork, and Director of Boys' Manual  
Training.

JOSEPHINE G. CASEY,  
Director Domestic Art Course.

F. B. S. PETERS,  
Bookkeeping, Typewriting, Stenography, and  
Director of Business Course.

BERTHA H. BACHELLER,  
Domestic Science (Cooking).

ARMAND MILLER,  
Chemistry.

J. M. KENT,  
Electrical and Mechanical Engineer, Instruc-  
tor in Applied Electricity.

W. A. CONNELL,  
Mensuration, Mineralogy and Physiography.

OLIVE B. WILSON,  
Music.

CLIFTON B. SLOAN,  
Mechanical Drawing.

SARAH E. VAN METER,  
English.

DELLA DRAKE,  
Latin.

SALLIE ELSTON,  
English.

GEO. ARROWSMITH,  
Turning and Pattern-making.

JESSIE L. GRIFFITH,  
Sewing.

CHRISTINA M. THOMPSON,  
Dress Making.

R. H. KNIGHT,  
Mathematics.

KATHARINE DUNN,  
German and Latin.

STELLA JENKINS,  
Study Hall and English.

FLOY CAMPBELL,  
Drawing.

MRS. THOS. M. SPEERS, Matro .

ETHEL OSGOOD, Clerk.

L. R. CLAFLIN, Janitor.

R. R. SHELTON, Fireman.



# R. T. THORNTON,

## Druggist,

Telephone 449.


Cor. 15th St. and Virginia Ave.

KEEPS A FULL LINE OF SCHOOL SUPPLIES.

Choice Candies. Funke's Chocolates a Specialty.

Prescriptions delivered to any part of the City.

Give him a call.

Always go to S. H. WALES  
J. H. WALES

## WALES BROTHERS

FOR

# Staple and Fancy Groceries,

1317 EAST FIFTEENTH STREET,

Telephone 1904.

KANSAS CITY, MO

## Drawing Supplies

Drawing Sets 75c up

Drawing Boards, Easels, Thumb Tacks. All grades of Drawing Paper from cheapest practice paper to Water Color Paper.

Special prices on all Supplies to Pupils of the Manual Training High School.

## Milton Bradley Company,

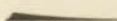
H. O. PALEN, Mgr.

418 East 9th St., (Old Y. M. C. A. Bldg.)

# Queen of the Pantry Flour

Is not only a good Flour—it's the **BEST**. It gives the most satisfactory results in every kind of baking, and is all that its name implies. All grocers handle it—in response to the universal demand.

## D. B. KIRK & CO.,

 KANSAS CITY, MO.

# DIRECTORY

## Officers of the Belles Lettres Society.

GRACE PHILLIPS, '99.....	President
WALTER BURTON, '99.....	Vice-President
EMMA BARTON, '99.....	Secretary
SARAH REED, '01.....	Treasurer
MINNEWA SHOEMAKER, '00.....	Critic
LEON BLOCK, '00.....	Sergeant-at-Arms
CLIFFORD BURTON, '00.....	Reporter

## Officers of the Art Club.

MYRTLE CHRISMAN, '99.....	President
ALICE DEWOLFE, '99.....	Vice-President
GRACE BERGER, '02.....	Secretary
JOHN H. TATE, '01.....	Corresponding Secretary
RICHARD MERIWETHER, '00.....	Treasurer
MAURICE SIMPSON, '01.....	Mewtadjraesmd
CARL BRYANT, '01.....	Sergeant-at-Arms
JAMES N. RUSSELL, '01.....	Critic

## Officers of the Manual Society of Debate.

HARVEY FRAZER, '00.....	President
RICHARD SCAMMON, '01.....	Vice-President
JAMES ANDERSON, '01.....	Secretary
BRUCE FRAZIER, '01.....	Treasurer
ROY ALEXANDER, '01.....	Critic
EDWARD KNAPP, '01.....	Sergeant-at-Arms
NOBLE SHERWOOD, '01.....	Reporter

## Officers of the Senior Class.

LEE STALEY.....	President
CLARA LINDSLY.....	Vice-President
MYRTLE CHRISMAN.....	Secretary
TRUMAN ROWE.....	Treasurer
GEORGE JOHNSON.....	Sergeant-at-Arms
GRACE CASSELL.....	Critic

## Officers of the Science Club.

FRANK WYNNE, '00.....	President
J. LEE HEWITT, '99.....	Vice-President
FLOSSIE REINHARDT, '00.....	Secretary
TRUMAN ROWE, '99.....	Sergeant-at-Arms
FRED DAVIS, Chmn., '98 } CORINNE BAER, '99 } EMORY MERSHOM, '01 }	Ways and Means Committee
WARNER KEITER '00.....	Membership Committee

## Orchestra Members.

MR. ARMAND MILLER, Director.		
FIRST VIOLINS.	SECOND VIOLINS.	THIRD VIOLINS.
ANNA JAMESON.	MERLE ROGERS.	CLARA HOERING.
LITA ROGERS.	EDWARD LEGG.	ANNA GIFFIN.
GEORGE CONKEY.	JOE EASLEY.	
CELLO.	PIANO.	
LON ROGERS.	CLARA LINDSLY.	



TIN AND STAMPED WARE.  
 BARBED AND FLAIN FENCE WIRE.  
 WAGON WOOD WORK.  
 SPRINGS AND AXLES.  
 BUFFALO SCALES.  
 LAFLIN & RAND POWDER COMPANY.  
 MACNEALE & URBAN SAFES.  
 CIRCULAR SAWS.

# Richards & Conover Hardware Co.

## Tinners' Stock, Cutlery, Iron, Steel and Nails.

Cor. 5th and Wyandotte Sts.,

KANSAS CITY, MO.



### The Crowning Triumph

of a long and successful career—

THE NEW MODELS  
of the

## Remington

Standard Typewriter.

The Always-Best Typewriter  
made better yet.

WYCKOFF, SEAMANS & BENEDICT  
327 Broadway, New York

Kansas City House, 105 W. 9th Street.

### At Mrs. S. J. Jackson's Book Store,

N. E. Corner Twelfth and Locust Streets,

You can find all kinds of

HIGH SCHOOL BOOKS AND SUPPLIES.

All text books for Manual Training,  
Central High and Ward Schools,.....

THE CORRECT STYLE

## Hat for \$2.25

Same quality you have been paying \$2.50 and \$3.00.

THE FASHION,

A. B. LEWIS, Mgr.

1102 Walnut St.

## PURITY CANDY

### KITCHEN,

1025 Main Street.

502 E. 12th Street.

My  
Vehicles  
are  
Equipped  
with  
Rubber  
Tires.

# J. M. McINTIRE,

## LIVERY, BOARDING AND SALE STABLE,

1124 WALNUT STREET  
Telephone 706.

Carriage  
and  
Baggage  
Calls  
Promptly  
Attended  
to.

# THE NAUTILUS

Vol. II

KANSAS CITY, MO., FEBRUARY, 1899

No. 2

## LITERARY DEPARTMENT.

### A STRANGE COINCIDENCE.

I had known Alida for just one year, but in that year we had formed the closest friendship. She was certainly an extremely pretty girl, and, if it had not been for her dislike for all sentimentality, I have no doubt but that I would have fallen in love with her. She had such a bewitching way of smiling when I grew serious, and her blue eyes were so charming, that, more than two evenings, I found it necessary to leave her earlier than usual for fear that I would act foolish, as she called it.

She claimed me as her confidant and told me of all her "affairs," as they were termed by her, and asked my advice concerning them. She told me several times of a certain fellow by the name of Grey, who seemed from her description, to be most badly smitten; and Alida complained of his persistency in calling and showing her such decided attentions after she had tried in vain to

show him that it was useless. He certainly was a handsome fellow, if one can judge from a photograph; and, down in the bottom of my heart I had the deepest sympathy for him, for I had begun to have the faintest suspicion that Alida was a flirt and I well knew how she could make one almost crazy with her willful yet charming manner.

One evening, I started for Alida's house in a most amiable mood and decided on the way that I would take her to see one of our friends and spend a pleasant evening at cards or cribbage; but when she met me at the door, all of my anticipations vanished, for I saw that Alida was troubled and that meant that I must attempt to straighten the difficulty. I took her hand sympathetically in mine and told her to tell me all about it as I was ready to listen; but, instead of giving a sweet little smile as



was her usual way, she drew her hand from mine and said decidedly:

"I have judged for myself in this instance, Charles, and my decision is sealed. Here it is, please post it this evening."

Of course, an explanation was necessary, and after a slight hesitancy, she told me that Grey had proposed to her the night before and she had felt so sorry for him that she almost lost her composure to such an extent as to accept him, but she regained it in time to save herself, and told him that she would send him an answer on the following day.

My embarrassment can be imagined when I say that she finished by laying her head upon my shoulder and sobbingly saying that she wished I would mail the answer right away for she was afraid she would change her mind. After standing stupidly for a few seconds, I awkwardly patted her pretty head and told her not to worry, for I was going immediately.

As I started to leave the house, she came running to me and told me that I might just as well tell her good-bye then, as she was to leave early in the morning to visit a friend in the West; and, before I had time to say a word, she had snatched my hand and kissed it, shut the door, and left me standing on the porch with the pale light from a street lamp faintly shining upon my face as I gazed at the letter I held in my hand.

\* \* \* \* \*

Two years had passed, and one evening I was going home from my day's employment, standing on the back platform of the coach car. When we came within some blocks of my boarding place, we struck a tight slot, and, as we were compelled to wait a while, I began

conversing with a handsome fellow who was standing near me on the platform. His face seemed familiar, but I had no remembrance of where I had seen it before. As we waited, another car drew up behind us, and on the front seat of the grip were two very pretty girls. My new friend and I remarked about their beauty, and, strange to say, we both felt that we knew the prettier of the two, but could not positively identify her. As we were talking, my fellow passenger stopped suddenly and gazed earnestly at the girl in question, then turned to me and said calmly,

"Sir, I once asked that girl to marry me and it was only on account of a friend of hers, that I was refused. In fact, I have the strongest convictions that she would not have been so heartless to every one, had it not been for the influence of this particular gentleman friend."

While he was speaking, I was looking intently at the girl and there came to me, almost in a flash, the remembrance of that last night with Alida; and here, beyond doubt, was Alida on the front seat of that grip car and beside me was poor Grey. Turning to him I asked,

"Would you mind telling me your name?"

Without a moment's hesitation he answered, "Christopher Grey."

"Well, sir," I said, looking him straight in the face, "I am that gentleman friend, and I posted the note of refusal which she wrote to you."

The man looked at me in utter astonishment, and then with a few muttered words of apology, he swung from the car which had now started, and I lost sight of him in the darkness.

Which man did she love, or did she love either?

LUCILE EDWARDS.

## A WINTER EVENING SPENT IN THE COUNTRY.

School had just been dismissed. The halls and rooms appeared deserted for the night, but for the presence of a group of boys, who still loitered in the cloak room. They were discussing what seemed to be a very interesting subject, and were conversing in low tones. "What do you say to it, Ned?" asked Harry Palmer of his chum, Ned Gibson. "I think Friday night would be the very time to go. The evenings are glorious now, and while the moon is full, we should make the best of such an opportunity."

"Well boys," replied Ned, "suppose we do go. We can have a glorious good time, for the old folks are the jolliest of fun makers and would give us a great evening." This answer of Ned's settled the question, for he had been undecided about going, and his decision generally settled all questions.

A week before this conversation had taken place, the boys had been discussing the plan of having a sleigh-ride to the country. An old friend of Ned's father owned an immense farm and had often invited Ned to come out and bring his friends to spend an evening with them. The five boys of the crowd were to ask five girls, and a teacher was to be invited to chaperone the party.

At last the night had been decided upon and the girls were informed of the plan. They were delighted, and seemed in high glee over it. Word, too, had been sent to the farmer and his wife.

A large wagon bed had been obtained and placed on runners. The boys filled this with hay and the girls brought shawls and blankets, for the nights were cold and the wind stinging, and plenty of warm wraps would not be out of place. Two strong horses and several bands of sleigh bells completed the outfit.

The farm was about ten miles distant, and the road ran directly south. There was always plenty of travel upon this road, it being the main one, and the snow was ground down hard and as smooth as glass.

In order to give themselves plenty of time for the drive and their visit, the party left town shortly after dark and were well on the way when the full moon appeared above the horizon. The night was perfect, still, clear and cold. The young folks were wild in their pleasure, and the woods rang with their laughter, songs and shouts.

Thus the distance seemed too short, and they were inclined to disbelieve their driver when told that they were at their destination. The sound of their laughter mingled with the tinkling of the merry bells, announced the arrival of their young guests to the waiting host and hostess.

On being told of the intentions of the crowd to spend the evening with them, the farmer and his wife, together with their three charming daughters, had invited some of the young folks of the neighborhood to join them in their evening's pleasure. This they did, and the two parties became congenial from the first.

The rooms of the house were long and low. The dining room had been cleared of its furnishings which meant that dancing should be a feature of the evening's entertainment, a fiddler being one of the merry party. The long table had been spread in the front room and was loaded down with all the delicacies of a country wife's larder. Baskets of apples and nuts stood in rows upon the hearth in abundance. Holly and mistletoe were arranged in artistic groups around the walls.



After becoming fully acquainted with each other, the company began to form circles for games and tricks. The country boys and girls showed their city friends some of their favorite amusements. Others of the party were popping corn and roasting apples in the ashes.

These games were soon broken for the dancing, which is the main feature of entertainment in the country. Grandma was gracefully led forth in the quadrille

by the gallant young city gent and was given plenty of attention by the city folks. Waverly Wheat, Todio Four-hands around, Swing that Girl, and the rest of the long list of country dances participated in.

At the hour of twelve they were called to a supper of eatables of a country menu, and at one o'clock the party dispersed, after heartily thanking their host and hostess for the most enjoyable evening spent in the country. V. S.



### THE CONFESSION.

It was moon-light. And the artist sat  
Within his room and dreamed,  
Of the work he soon would finish,  
An endless task it seemed.

For the face he could not summon,  
Of the heroine he wooed,  
To place upon that canvas,  
In her truest life and mood.

'Twas a painting of the idea  
Of that greatest author's mind;  
From Othello,—Desdemona,  
When she suddenly doth find

She's accused of infidelity  
Towards him who holds her love,  
And the artist stops—and here, alas,  
Prays to the Powers above,

To help him in this need so great,  
To show him such a face,  
In all its anguish, all its pain,  
And help him this to place

Upon the canvas. Then he paused,  
His eyes begin to close,  
When suddenly, before his mind,  
A fairest vision rose.

His wife! Ah, could he do it?  
Could he pain her all in jest?  
And then explain, 'Twas for Art's sake  
And she'd forgive the test?

His wife! This very evening  
Her he loved best of all,  
Was at a party far away,  
With her husband's cousin, Paul.

He paused! Yes, he will do it,  
She'll forgive it ere the day,  
And now he hears the latch-key turn,  
And thinks his part to play.

A frown upon his high, broad brow  
As she comes into the room;  
She stops,—the smile dies on her lips,  
Replaced by looks of gloom.

He rises—walks toward her,  
His features all unwrought,  
Accusing, as Othello did,  
(It pains more than he thought).

But, what is this! She's on her knees  
Before him, as I live,  
And feebly from her lips these words,  
"For God's sake, John, forgive."

Oh, there's much that turns to earnest-  
Which begins a seeming jest, [ness,  
There's often greatest truth evolved  
From some such trifling test.

CARRIE BACHRACH.



"Yes, madam, the performance will begin in just ten minutes," spoke up a cracked and wheezy voice at my elbow. I started, and a quick turn brought me face to face with a red faced individual standing beside me. "Yes, I have shortened the performance somewhat," he continued, "but it is still worth the money. I did it on account of—Look out, there!" A rough hand was laid upon my shoulder and I was given an unceremonious push which caused me to bump against a woman standing near and also sent me out of hearing of the conversation.

"Let the elephant pass," growled the interrupting voice again, as an attendant in gold lace and brass buttons poked his way among the spectators, closely followed by the elephant and a camel in charge of a man in Oriental costume.

"Ye-o-w ye-o-w" howled a cub lion from another direction.

Strange sounds filled the air and stranger sights greeted my eye upon every turn. All was a whirl and go, and everything was coming my way apparently. But I was just getting my money's worth—this was what I came for—to see, to hear and to feel. When one goes to the "Zoo" one must take whatever comes.

Separating myself from the crowd I proceeded to survey the situation. Before me the tinsel bedecked cars of the merry-go-round roared up and down the artificial hills to the tunes of a box of tooting pipes, dignified with the name of organ. On either hand, lines of barred cages were ranged against the walls. Before them ranged a picket fence which

served to keep back the careless and venturesome.

A small number of people walked about, peering into the depths of barred houses and dodging the elephant or the camel or the ever present ticket seller of the merry-go-round.

There was an air of restlessness one always finds about such a place. The ceaseless pacing, pacing of the animals, the hum of voices, the flickering lights and the unfamiliarity of the scene gave the whole an air of unreality.

Shortly the sharp blast of a whistle and the same far away phonographic voice of the red faced individual caused a rush of all toward a cage at the side of the hall. He announced to the assembled crowd that the following performance "is intended" for their entertainment and that it "is not dangerous." A short man with sharp, piercing eyes and lowering eyebrows leaps into the cage, club in hand, and begins his little show by *chasing* a lion into each corner. It is merry while it lasts; the crowd holds its breath. The lions watch the man and he watches them.

They jump over his leg or arm; he shows their claws and teeth, the women say, "Ah!" and "Oh!" and look horrified. The grand finale is a general hubbub with red fire and blank cartridges. Of course it was not a dangerous performance for the lions, nor for the lion tamer.

When all is over the squeaky voice begins again and the visitor takes a last look around and departs into the night to the tune of, "Pay a nickel to see the wild beasts fed." A. N. ONLOOKER.



## A CHRISTMAS STORY.

"Oh! mamma," said Thomas, "are we going to Grandma's tomorrow? Are we going to hang up our stockings to-night? Will Santa Claus come down the chimney, and leave a lot of good things for us? Is Grandma going to have a big turkey, with cranberry sauce, and a whole lot of other good things?" and so many other questions that she hardly knew where to begin.

"Well," said his mother, "if you will promise to be good, and not get sick, I will take you to Grandma's tomorrow."

And before she had time to answer another question, he was off to tell his brothers and sisters. Into the room he bounced, and before any of them could get a word out of him, he was jumping up and down all over the room; next standing on his head, turning somersaults on his mother's clean pillows; then teasing the poor cat until she could stand it no longer, and retaliated by scratching his hands.

This stopped that part of the proceedings, and with hands held out, and crying at the top of his voice, he went to his favorite sister, Lucile, for sympathy, when that young miss took him by both shoulders, and giving him a hearty shake, said between his sobs, "I am just glad enough for you. Any body seeing you would think you didn't have a *drop* of sense left. The idea of your running here into my lap, with those hands and soiling my work." And with this she placed him upon the floor while he was at the same time crying loudly.

"Well, never mind," said an older sister, "come to me, Pet."

She picked him up, and by kind words and caresses, finally pacified him, and got him to tell her the cause of his exuberant spirits. Lucile, on hearing what was said, forgot all about the work

he spoilt, which she was trying her best to finish for a Christmas present for her mother, and joined in eagerly for the good time that was promised them at Grandma's.

Nothing else, except the one important topic, was talked about that evening, and so swiftly did the time pass, that it was bed time for the children before they knew it. They did not need to be coaxed, and with loving kisses from father and mother, they closed their eyes to dream of Santa Claus and his reindeer.

The next morning every one was up early, and after exchanging Christmas greetings, and viewing each others' presents, began preparing for the journey. As they had about six miles to drive, it was thought best to start early, and with many fond remembrances for the aged grandparents tucked snugly under the wagon seat, they commenced the journey.

After a ride of an hour's duration, they arrived at the large comfortable-looking farm house, where they were met by the aged couple, who saw them as they turned the bend of the road; and who had a hearty welcome for the well-nigh frozen travelers.

"Mamma, mamma, I smell turkey," said Thomas, as the delicious odor of the Christmas dinner came through the open door.

"Well, just listen to that child," said his mother. "I haven't heard a thing but Grandma and turkey since yesterday."

"Bless his dear little heart!" said Grandma. "He can have all the turkey he wants."

After the older people finished talking, and the children had seen everything to be seen, they went in to dinner, and such a feast! Everything a person could

wish was there, and besides the room was profusely decorated with holly and mistletoe, which gave it a holiday appearance.

While sitting around the table, Thomas happened to look toward the window, and there standing with his face pressed against the window pane, was a little boy about the age of himself. Without a moment's delay Thomas had the little stranger inside, and after he was taken in charge by the grown people, who washed and combed him, he presented a pleasing appearance. He had blue eyes, and fair, rosy complexion. He said his name was Charles Williams, and told in a simple, childish way, a sad tale of poverty and woe for one so young.

Thomas found room beside him for this new acquaintance, and helped him to the best things on the table; and, in fact, was so much absorbed with his new duties, that he seemed to forget himself.

After an afternoon of jollity and feasting, they started for home, all expressing reluctance in going back to the crowded city. Thomas had his own way in taking Charles with him. There he was fitted with a cast-off suit of

clothes that Thomas had outgrown, but which were neat and respectable, a new overcoat and gloves. Other things in proportion were showered upon him, and a happier child you would not wish to find. After the supper was over Thomas threw his arms around his mother's neck, and kissing her over and over again said that this was the happiest Christmas he had ever spent.

His mother was truly thankful for his demonstration, and folding the child closer, said "Yes, Thomas, I think it has been, and do not forget in the future years, the lesson you have learned today. On this festive day, never be so selfish as to forget the troubles and sufferings of others."

As she tucked them in bed that night, she kissed two boys, who had equally been made happy that day. Unconsciously a tear stole down her cheek, as she gazed on the one with love and admiration, and on the other with love and pity, and before leaving them, she knelt beside the bed and asked God to bestow his blessings on the heads and hearts of those two children, who had that day learned the one great lesson in life.

GRACE GREENE.



## THE OLD CAPTAIN'S STORY.

While I was on a visit to Mackinac Islands, Mich., I made the acquaintance of an old, retired lake captain. He was of doubtful age, old and withered as an ancient oak of the forest, with a skin like wrinkled parchment, eyes set far back in their sockets and his grizzled head covered with a few sprigs of gray hair; he looked as if he might have been

the original "Ancient Mariner." He had one possession, which was his sole reminder of former days, a trim little sail boat, which, with its owner, might be hired for two dollars a day.

One day, having been entrusted with a commission to one of the neighboring islands, he invited me to accompany him on the boat. Of course I accepted



the invitation and was on board promptly at the time set for sailing. By an ingenious arrangement of ropes he was able to loosen the boat from its moorings and set sail without leaving the tiller.

The wind was good and the captain's humor was above par, so, after the trolling lines had been set and an ancient cob pipe produced from a convenient locker, he dropped his habitual reticence and condescended to tell me the simple story of his life. I shall attempt to reproduce this story in his own words, which, strange to say, were not in the dialect used by novelists in *making* such characters talk.

"I was born in Chicago," he began, "and at the age of ten was left an orphan. Of course I had to support myself and as it seemed natural that I should take to the water, I shipped on board a small fishing schooner. Being of an economical disposition and not inclined to go out much with the 'boys,' I was able, at the age of twenty-one, to buy a fishing schooner of my own. With this I increased my little savings rapidly. About this time I became acquainted with a little fisher girl about my own age and,—but never mind the details,—the long and short of it was that the captain decided to take a first mate."

Here the story was interrupted by a yell from me, caused by a sharp tug at my trolling line which I immediately began pulling in. The captain merely glanced at my line and said nothing, and I was soon to find out the reason for his silence. When I had pulled in three hundred feet of line all that was on the hook was about fifteen pounds of water-grass nicely tangled up.

After this break in his narrative the captain continued, "Well, some do say as marriage is a failure, but as long as Jane, that was my wife's name, lived with me we prospered and were happy.

"Well," he said, as he glanced over the rigging to see that everything was all right, "after one of the most unlucky fishing seasons in many years we turned towards home in the fall of '71, and the nearer we got to home the more uneasy I felt until at last when we rounded up to the old wharf there was nothing of my cosy home but a pile of ashes, and they told me that Jane had been buried three days." Here the captain gave me the tiller and went forward, ostensibly to fix the jib but in reality to hide his emotion.

To resume his story, he continued, "I did not care much what happened after this so I took to the business of boat piloting. Being very successful in this, one of the lake transportation companies offered me the position of captain on one of their finest steamers. I accepted this offer and remained in that capacity until some new directors of the company used their influence to get me out, urging as their reason that my eyesight was poor. Why, even now I can look across from Mackinac to St. Ignace, about fifteen miles, and read the weather signals on the lighthouse. But to make it worse they put on some game-cock of a captain who doesn't know the difference between a triple expansion engine and a wash-boiler. So now I've just settled down to a life of ease, doing nothing but taking passengers on excursions from the hotel."

So ended the captain's story just as we touched at our destination. The errand being accomplished, even to his satisfaction, we started on our return voyage. No amount of questioning could induce the captain to say any more, as he had relapsed into his usual clam-like existence, so I finally gave it up in despair and turned my attention to the admiration of the scenery until we again reached the hotel.

R. E. S.

YESTERDAY, TODAY, AND TOMORROW.

"Merry Christmas!" screamed one. "Just look at the snow on the ground."

"Why, it isn't Christmas; yesterday was Christmas. See our room, Santa Claus has come and painted it all blue."

The third little girl rolled over on her pillow and opened her eyes. "What you getting up for? it isn't time, it's all dark yet." She pulled the covers over her head and went to sleep again.

"Did you dream anything about Santa Claus?" began the first little girl. "I did. I dreamed that he came and put his hands on both my eyes"—

"Yes sir, that is just what I dreamed, too."

"And he said, 'to-day, to-day, to-day,' so many times that it seemed as if it would always be to-day. Then when he was gone, I opened my eyes and everything was all white—wasn't anything but just white everywhere."

"No, I didn't dream that way. I dreamed he rubbed my eyes and said, 'yesterday was Christmas, yesterday was Christmas, yesterday, yesterday, yesterday,' as many times—more times than one could count, and everything was all dark blue. That's how I knew it was Santa Claus that painted our room blue."

"Blue? Why it isn't blue, it's white. Can't you tell the difference between blue and white, yet?" The third little girl rolled over again.

"Get up! it's Christmas" cried the first little girl.

"No it isn't, tomorrow's Christmas. Santa Claus said so."

"All right, if you don't want any presents, cause it *is* Christmas."

"Well, I guess I ought to know, Santa Claus came and told me it was tomorrow. Anyway, you wouldn't have Christmas when it's dark."

"It isn't dark, just look at the snow."

"I can't see any, wait till it's light."

But she starts to dress. The three sit on the edge of the bed, putting on their shoes. Three faces—one sombre, one bright, one cloudy. Yesterday, Today and Tomorrow.

They went down stairs to tell mamma what Santa Claus had said. She laugh-

ed at their queer dreams and led them into the room where the tree stood, lighted and covered with presents.

Today clapped her hands and said, "O, mamma, I knew it was to-day."

The mother turned to little Yesterday and said, "don't you see, it's today?"

Yesterday looked up, opened wide her eyes and mouth—"why, mamma! you're all painted blue, too, like our room."

What's put that notion into her head? "Look, see the tree!"

"I did see it yesterday. O! I wish this was yesterday."

The mother was bewildered.

The third little girl had sat down in a big chair—"O! I wish tomorrow would come, so it would be light and I could see."

In the evening the children gathered about the fire. Today took the tongs and stirred the coals. It seemed as if all the flames of a thousand years would come to life at her touch, and as the flood of light spread over her face, she cried, "God must like us awful well to make such a big fire as that for us."

But little Tomorrow sat with her face between her hands and sobbed, "mamma says we can't have any Christmas tree next year."

Yesterday, Today and Tomorrow are old and as they sit about the hearth each face looks thoughtfully into the fire.

"Listen! What is going on among the young flames over behind the black coal? Such sputters and sparks!"

"Listen!"

"She is beautiful, I know."

"Who?"

"Life."

"O, I have heard there never was a face so sad as hers."

The old coal looks amusingly down on the little flames and says, "if you will stop sputtering for a moment I will let you look over my shoulder to see for yourselves what life really is in the great world. Now one at a time."

A tiny red flame flickers up from behind the black coal. It gives its head a toss and darts back behind the coal again.



"You were right," it says, "life's face is very sad. I should think she would rather leave off being than be so sad. No ray of my light could touch her eyes, for over them hung the blue memory of the past."

"Yes, that is life," said the old coal, "but you must have thrown your ray of light into the face of Yesterday."

Another tiny flame flashes up, stands quivering, for an instant, then hides itself behind the black coal.

"I should not call the face sad," it says, "only dark and cloudy. It looks as though she had longed to live but had worn herself out before she begun

and her eyes they have never seen because they have always looked over beyond the range of sight. Is this, too, life?"

"Life," says the coal, "but your ray of light fell on the face of Tomorrow."

A third flame burst into brightness and peeps its head over the black coal, then rises and sways itself in the air and cries, "I have found life's true face—in it is happiness, peace; from her eyes shines back my own little ray of light made pure."

And the old coal says, "the face of Today."

E. A. S.



### AN OPEN LETTER.

PASEDNA, CAL., Jan. 1, 1899.

*Dear Girl:*—How strange it seems to date my letter January first. It may not seem so to you, but in my present surroundings, it seems more like June. If you could only be with me to enjoy all the freedom of Nature which exists here so abundantly, I would be saved much time and thought, as words cannot express nor picture to the mind's eye, the beauties of this country.

You asked me where, and how I live, and I know when I tell you, you will be green with envy. My home is a small cottage at the foot of a mountain about a mile high. Around our cottage is a garden, in which roses are in bloom, the grass is green everywhere on mountain and plain, and the trees are sprouting with young leaves, yes, and blossoms, which bow and bend, and seem to say, "don't you think our green dress is pretty?" In the back-ground as though to protect our little home with its garden of fragrance, rises the majestic mountain, whose top is often covered with snow. In the mornings I take a long drive and as we pass along the valleys, I am greeted on right and left by the beautiful blossoms of the orange, lemon and lime trees. The fragrance that these breathe out into the pure, light air makes one feel more appreciative of the multiform beauties of Nature, and hence

enjoy his life every moment and hour. Sometimes in my drives, I ascend quite steep mountains, and as the ascent is often long and difficult, I stop to rest my horse, and to enjoy the view from the mountain to the valley, and to ponder on the realization of the saying, "Hills are green far away."

After driving for an hour or more, I return to my home in the valley and prepare to enjoy a good dinner. When I say prepare, I do not mean that I need any tonic to sharpen an appetite, but that I take an hour's rest, that I may enjoy my meal more, and I assure you I do enjoy it. Just think of having large, luscious strawberries for dinner on December twenty-fifth. In fact, we have here in December and January, all the green vegetables which you have in Kansas City in June. I spend my evenings in reading. At present I am reading Shakespeare's plays and find them very interesting as well as historical.

Well, my dear girl, as I have endeavored to explain to you how my days are passed in California, I will end this letter by hoping that the old year before she died saw accomplished some of your ambitions and that the New Year brought with her new aspirations, hopes and health.

Your old associate,

A. DE. W.



It seems strange that it is always so much more difficult to organize an orchestra or other musical clubs than it is to organize a literary society. It may be because of the responsibility resting upon each and every member of an orchestra, which does not, though it should, rest upon the individual members of a literary society; or it may be caused by an aversion to appearing in public that makes some players hesitate to volunteer their services to an orchestra, and only those who will serve are wanted.

Mr. Armand Miller, director of Chemistry in our school, is proficient not only in the Sciences, but equally so in the Art and Science of Melody, and through his untiring efforts and vigilance organized and maintains the orchestra of the Manual Training High School.

The orchestra as first organized consisted of four violins, three mandolins, a 'cello and piano.

Eight of the ten original members remained and worked faithfully throughout the year, and shortly before commencement two new members were taken in.

We had no constitution, no officer except the director, and no regular days on which to hold our meetings; but we practiced usually twice a week, when every one could be present. In this way our rehearsals were a benefit to all, for all were present. Mr. Miller, as director,

attended to all necessary business; and by his kindly authoritative manner, won the respect of all the members of the orchestra.

We appeared in public three times during the year. First, in our Assembly Hall on March 21, we furnished the Monday morning program, which consisted of orchestral and solo numbers. In this entertainment we were assisted by the Misses Miller.

The second appearance was at commencement, when we furnished the music for the evening orchestral numbers only.

Then we were surprised and pleased by being invited to play for the last meeting of the Teacher's Institute. The success of these programs was an honor to our director, and a proof of his faithful work with us, as well as an honor to our school.

In a school of this nature the public often conclude that more attention is given to the mechanical or industrial side of education, but as a proof that this is erroneous, our school has prosperous societies in Art, Literature, Music and Science, which are fostered and encouraged by the faculty.

The orchestra has been reorganized this year with the same leader, five of the old members, and five new ones. It is composed, however, only of violins, 'cello and piano. There being a new

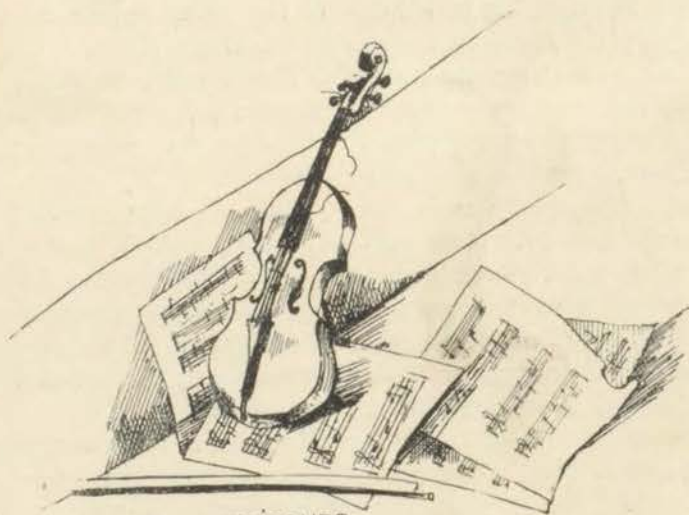


musical society in the school known as the Mandolin Club, the mandolins were omitted from the orchestra. This is considered an improvement as mandolins are not orchestral instruments; but we hope to make further improvement by the addition of a flute, cornet or clarionette, if performers upon such instruments can be found in the school.

This year's first open session of the orchestra was held on Tuesday morning, January third. Those assisting were

two vocalists, Mrs. Brisbane and Mr. C. C. Rogers. The novel feature on the program was a Kinder-Symphony by Romberg, in which four violins, a 'cello and piano were accompanied by a drum, triangle, cuckoo and nightingale. A male quartette which we were to have enjoyed was omitted because of non-appearance of two of the members, otherwise the orchestra is to be congratulated on the success of its entertainment.

CLARA LINDSLEY.



FRIEDA FRISCHER



## GAMES OF '98.

Westport.....	5
Manual Training High School.....	10
Westport.....	0
Manual Training High School.....	5
Kansas City, Kansas, Medics.....	11
Manual Training High School.....	0
Independence.....	5
Manual Training High School.....	6
Kansas City, Kansas, High School.....	0
Manual Training High School.....	23
Beacon Hills.....	0
Manual Training High School.....	11
Central High School.....	12
Manual Training High School.....	6
Independence.....	0
Manual Training High School.....	11
Olathe.....	6
Manual Training High School.....	11

An account of the first five games was given in the November issue of *THE NAUTILUS*. At that time we were looking forward with eagerness to the game with the Central High School team, thinking it would be the hardest game of the year; but after we had lined up against them we found that their opinion of themselves as foot ball players was much exaggerated, and that in spite of their haughty egotistical manner they were only human beings; in fact, we were rather surprised to find them not so great after all their loud talk about themselves. They say they "permitted" us to make one touchdown. Yes, and they came very near "permitting" us to make another and thereby tie the score. It was really amusing to see the look of astonishment come over their faces as we began to carry them across the gridiron for a touchdown and repeat it to a point

about five yards from the goal line where we fumbled the ball.

The next game was with the Independence foot ball team—the team which we beat before on their own grounds when our team was in a very crippled condition. The halves being only twenty minutes long and their team being so much heavier, we had to be satisfied with the score of eleven to nothing in our favor. We would like to advise them to play our second team so that they might run some chance of scoring and leave big boys alone else they might get hurt.

The last game of the year was played Thanksgiving day with Olathe. That song entitled "Enjoy Yourselves" would have been very appropriate for we did enjoy ourselves to the utmost. As for the dinner it was a real feast. We almost felt that we had done wrong in beating them, but we had to close the year successfully and could not let other things stand in the way.

We were sorry to see the snow come so soon for we wanted to get another chance at the Kansas City, Kansas, Medics. The first real game we played was with them and we were in no foot ball condition.

In order that we may get in shape better and sooner next season the team thought it best that it elect its captain and manager this school year. A meeting was called and Carl Bryant was re-elected captain and Burr Douglas manager.



Since the foot ball season is over, we feel more than ever the need of a gymnasium.

The most that has been done in the way of athletics for some time was an attempt to organize a fencing class, but as nothing has been heard of it recently we infer that the idea has been given up.

We look for an early Spring so that the base ball nine can get out and limber up. We hope and expect to see a great deal of interest manifested in base ball this year.

The whole school is becoming more interested in athletics since we have shown that there is material in the school if only it can be used. It is a deplorable fact that we have had so many muscular boys who not only would not take part in athletics, but would not even take an interest. There is no reason why we should not have a good base ball team this Spring, since we have already shown the school that we have a good foot ball team.

C. H. B.



MANUAL FOOT BALL TEAM, 1893.

- |  |   |
|--|---|
| 1. Carl H. Bryant (Capt.)..... Full Back.    | 9. Bailey Hewitt..... Quarter Back (sub.)       |
| 2. John Murphy..... Right Half Back.         | 10. James Kilroy..... Right Guard.              |
| 3. Bert Moses..... Left Tackle (occasional.) | 11. Earl Newman..... End (sub.)                 |
| 4. Ben Lindsly (Mgr.)..... Right Tackle.     | 12. James Vittum..... Left Half Back.           |
| 5. James Murphy..... Quarter Back.           | 13. Lille Harrison..... Half Back (occasional.) |
| 6. William Estelle..... Left Guard.          | 14. Burr Douglas..... Left End.                 |
| 7. Melville Arni..... Left Tackle.           | 15. Frank Moore..... End (occasional.)          |
| 8. Arthur Peters..... Centre.                | 16. John Tate..... Right End                    |
| 17. Bruce Frazier..... Tackle (sub.)         |   |



### EDITORIAL STAFF.

PERRIN ROUSE, '99. . . . Editor-in-Chief  
 GRACE PHILLIPS, '99, . . . Associate Editor

#### LITERARY EDITORS.

GRACE CASSEL, '99. . . . WALTER BURTON, '99

#### SCIENTIFIC EDITORS.

ANNIE WYNNE, '00. . . . GEORGE MCKENZIE, '99

#### MANUAL TRAINING EDITORS.

WALTER HIDDEN, '01. . . . MAY PERKINS, '00

#### LOCAL EDITORS.

LUCILE EDWARDS, '00. . . . WILL HALL, '01.

#### ARTISTS.

PAUL HALLECK, '99. . . . CHARLES CLAYTON, '99

CARL BRYANT, '01. . . . Athletic Editor

LEE STALEY, '99, . . . Exchange Editor

#### BUSINESS MANAGERS.

JAMES N. RUSSELL, '01, . . . Manager

DWIGHT FROST, '01, . . . Assistant

Entered at the Kansas City postoffice as second class matter.

THE NAUTILUS is published once every two months in the general interest of the Manual Training High School, at Kansas City, Mo.

The subscription price is 30c per year by mail; 25c to pupils of the school. Single copies 10c. There will be four numbers this school year.

Contributions are requested from all members of the school.

Address all communications to

### THE NAUTILUS,

Manual Training High School,  
 KANSAS CITY, MO.

Since our last issue the ever progressive spirit of our school has again been illustrated by adding a new impulse to the collection of minerals for the Nat-

ural History department which will, when our building is finished, occupy the handsome room now used by the department of Domestic Science. Two of the cases in the room are already filled with specimens placed there last year by Professor Merrill. A valuable addition was recently made by Mr. A. R. Meyer, president of the Kansas City Smelting and Refining Co. This donation consisted of a large phial of gold and one of silver as they come out of the refining process; also several specimens of ore representing the several stages of assaying, and a mammoth cluster of sulphate of copper crystals weighing about twenty-five pounds.

The honor for the first gift of pictures to the school falls to Professor Schultze, the well-known teacher of music. He gave two portraits, one of Frederic Froebel and the other of Theodore Thomas, the noted orchestra leader. These welcome tributes were, at one of our recent Monday entertainments, hung on the walls of our Assembly Hall. We hope this may become a nucleus around which a whole gallery of similar gifts from other donors will gather. THE NAUTILUS would suggest the propriety of each graduating class leaving on the walls of our building, in addition to its own group picture, a picture presented by the class. This would not only contribute to the aesthetic influences of our school but it would leave a memento which would be a perpetual satisfaction to the alumni in after years.

Another fine exhibition of department work was given by Miss Wilson's sing-



ing classes on December 17, in the Assembly Hall. Notwithstanding the fact that this recital was given in the afternoon of the Saturday before Christmas the hall was well filled with appreciative listeners. Our music is another of the æsthetic influences which adds much to the success of our school; for "music hath its charms to soothe the savage breast."

"He that hath no music in his soul  
Is fit for treason, stratagem and spoils;  
Let no such man be trusted."

Another series of moves has been made on the office chess board which admits nearly a hundred more new pupils to our second term which opened on the 23rd inst. How this was done with a program already full is not easy to see; but each new readjustment fills some previously unoccupied corner and lengthens the circuit of some of the teachers. But there must be a limit to all human ingenuity and this must be nearly reached in receiving pupils into our building in its present form, and we hail with enthusiasm the cheering prospect of getting our new wing next summer. A revision bill has been drafted and placed before the legislature, which if it passes will empower the board of education to call a special election to vote on the proposition of bonds for new school buildings. Additional school rooms are much needed in various parts of the city, but the need is probably no where so urgent as in our school. The nature of our work makes the renting of outside rooms impracticable; and the continuation of the course of study begun in good faith by hundreds of pupils demands the necessary additional shops and apparatus. We hope the legislature will do its duty.

It will be a source of encouragement to those who seemed to doubt the ability of our school to prepare its pupils for college, that letters have already been received by our principal, which places us on the approved list of nearly all the leading colleges and universities which admit without examination. Many of the most prominent institutions like those of Harvard, Yale and Princeton do not admit students from any school without examination; and this we think

is the proper course, for the best incentive to real, genuine work comes from the feeling of the student that he must stand on his real merit at each step in his advancement.

An excellent practice introduced in some of the departments gives the pupils the advantage of physical culture. A short breathing exercise with arm movements is a grateful relief from bodily inactivity and comes at a time when it can be made spontaneous and therefore beneficial. If all the teachers would give attention to this, and in a systematic manner, more real good would be accomplished than by the use of a gymnasium, even if we had one.

We hope the Athletic association will not lessen its efforts to organize a successful base ball team. This is a game which should be cultivated in our school; it is invigorating; it requires skill, strength and activity, and is free from danger to life and limb. Let us have the game, and pursue it not so much for contest with other schools as to secure for our own good the exercise and pleasure which comes from health-giving out door sports. Much of the real good which might come from a moderate indulgence of out door games is lost in the mistaken use of them in contesting "professionalism." A good game of "town ball" or "two-o-cat" played on the spur of the moment serves a truer educational purpose than the excessive strain of the professional contest. Let us learn to play for health—not for a mushroom strength which is often followed by a reactionary weakness.

#### Our Monday Entertainments.

November 4th saw us traveling with intense interest over the journey made by Mr. Curtiss, a well-known Kansas City photographer, and Mr. Richardson of *The Star*, through Cuba with *The Star* Relief Fund. Although this trip was not made in person, we enjoyed, nevertheless, the scenes as they were presented by our stereopticon. The scenes reviewed the journey from Kansas City to Mantanzas. They were interspersed with views of the Spanish residents, reconcentrados, characteristic views of

the scenery and of Moro and Cabanas castles. The pictures were accompanied by interesting remarks and explanations by Mr. Curtiss. This interesting lecture was preceded by a piano solo.

November 21 we enjoyed the most varied programme of the year, which consisted of a fancy Indian club swinging exercise by Mr. Kettner, a massino flute solo by Miss Ethel Hughes, two piano solos and a piano duet by the Pruzan sisters, and a song recitation by Little Ethel May.

The first programme of the season given by a society of the Manual was given by the Art Club on November 28th. This consisted of a regular meeting of the club during which each member answered to roll call by some witticism, and of the regular report of committees. The following programme was then rendered: A declamation by Miss Pierson; vocal solo by Mr Bryant; original story, Miss Harte; instrumental solo, Mr. Segur; current events, Miss Berger; vocal solo, Miss Filley, and a tableau accompanied by reading, Miss Messenger and Miss Moore.

A programme by Mr. Nast was presented on December 5th, as follows: A piano solo by Mr. Nast; a song by Mr. Forster; song by Miss Nofsinger. The musicians responded to the vigorous applause with several encores.

The Belles Lettres Society presented their third open session on December 12. The stage setting represented a ward in a military hospital and was ingeniously arranged. The exercises given by the various members were for the entertainment of the patients and were of a novel and interesting character. The paper read by Clifford Burton was especially appreciated for the sparkling wit with which it abounded.

Our entertainment for December 19th was a very enjoyable one. It was given by Miss Cole, Miss Fontaine, Mr. Prowell and Mr. Forster. The numbers

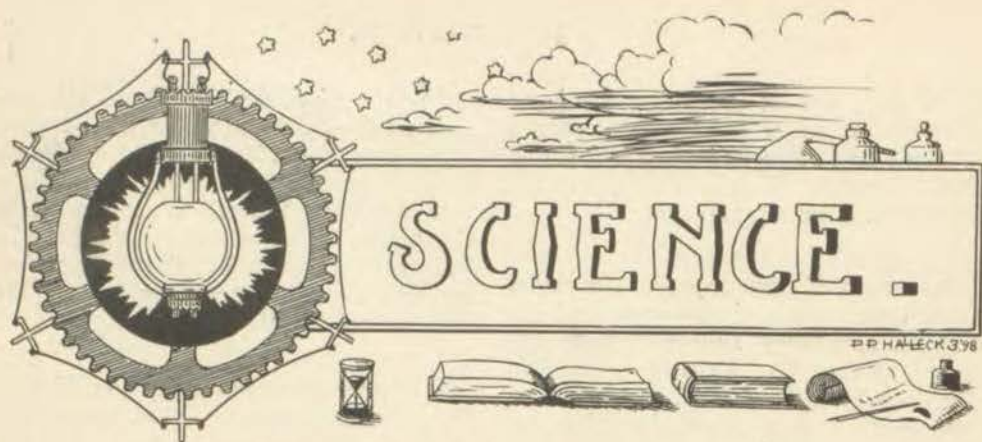
were a duet by Miss Cole and Mr. Prowell on the harp and violin, a reading by Miss Fontaine, a harp solo by Miss Cole, æsthetic poses by Miss Fontaine, a violin solo by Mrs. Prowell accompanied by the piano. The exercises closed with "Nearer my God to Thee" in pantomime by Miss Fontaine, accompanied by Mr. Forster and Miss Cole.

We were entertained by the Manual Orchestra on January 3, which furnished us four very enjoyable pieces: A vocal solo by Mrs. Brisbane and one by Mr. C. C. Rogers, and a piano solo by Clara Lindsly. We think we have good reason to be especially proud of our orchestra and we hope it may prosper and remain one of the uplifting elements given to Kansas City by the Manual Training High School.

Our long cherished desire to build up a museum in our school was much stimulated by the address of Mr. Long on the 9th of January. Among the interesting features of his address were his conclusions as to the mound builders and the explanation of the uses of various stone implements which he exhibited to the school. He thinks that the early Indians did not use tobacco for smoking but left that use of the weed for the "latter day savages." Before the lecture we enjoyed two songs.

One of the most instructive and interesting talks of the year was by Mr. Meyer, of the Kansas City Smelting and Refining Co., who told us of the separation of the precious metals from the ores. This talk included a description of the furnaces, the way in which the fire is used, the action it causes on the ore, the description of the various methods of separating one element from another, the methods of obtaining chemicals for commercial use and in fact, enough to make us realize the great importance of the great smelting and refining industry. He brought some specimens of the different metals and their combinations to explain his talk, and these he generously gave to the school collection of minerals. Miss Schutte sang a solo which was accompanied by the piano and violin.





## ROCK LAYERS IN BURGE PARK.

Next to the land, extending from the land into the sea, is a gradual slope called the continental shelf. This runs out usually only a few miles, rarely if ever, over a hundred. From this place where the continental shelf ends there is generally a very sudden descent to the lowest bottom of the ocean. This is caused by the nature of the continental shelf; it being composed chiefly of materials brought down to the sea by rivers and other land waters. This material is respectively pebbles, gravel, sand, mud, and shells. These fill up for some distance, then suddenly break off and are washed away. The continental shelf, therefore, has five distinct parts or layers.

As sedimentary rock is a secondary stage of the material, it must come from some source. Granite is the principal igneous rock. It is composed of feldspar, quartz, mica, and hornblend. Now quartz is the only one of these four minerals which does not weather. Therefore in due time the mica, feldspar, and hornblend weather away making soil and leaving only the small particles of quartz, or sand. This sand with other rocks is carried down to the ocean by land water, mixed with the debris of the waves against the shore, and left on the continental shelf. The heavier rocks are dropped first and so on. Therefore we have next to the shore, conglomerate composed of large rocks which have not been ground up, then next the gravel which forms into coarse stone, then shale which is made of mud, and last the shells which make limestone. From this we see that the two main original

sources of sedimentary rock are granite and shells.

Sedimentary rock is all deposited in a horizontal plane or nearly so. But because of the different forces of the earth which are continually changing it, we very seldom find rock in its original position. The principal force is the continental swing or the gradual rising and falling of the coast line. Earthquakes and volcanic actions also do a good deal in breaking up the material layers of the rock. And lastly the mountain-making forces which make great folds in the earth's crust. Sometimes these folds are regular so that they have the appearance of a wave. The upward fold of the rock is called anti-cline and the downward fold, syn-cline. The breaking and moving of the rocks caused by earthquakes and volcanic action or faults are quite important. These faults are not regular folds. Usually a part of the rock is lifted up higher than the rest. Often in these faults are found what is called a mono-cline or a single slope.

At Burge Park at the stone quarry on the northern side, we find a splendid example of the position and structure of sedimentary rock. Go first to the spring a few yards below the quarry. At first sight, the bank above the spring seems to be simply layers of rock one above the other with a substance between them resembling dirt or soil of some kind. But examining the bank closer we find that the rock is in decided layers which can be easily distinguished from each other by the difference in color, texture,

and composition. The expectation is, of course, to find on top, soil and sub-soil, but here is only a thin layer of soil on top of the rocks, not over six inches deep at the deepest. This layer is principally made from decayed vegetable matter. Next the soil is a soft layer of shelly limestone, about sixteen or eighteen inches deep. This layer is not pure limestone, that is, it contains a good many impurities and seems to have a good deal of calcitic cement in it. Underneath this layer is a thin, dark, bluish streak which proves to be shale. As this layer is only about an inch or two thick it is not very noticeable. Underneath the shale is another thin layer of shelly rock which resembles the layer of shelly rock above. This rock rests on a layer of rock which is much more solid than any of the rock that we have examined before. It is about twelve inches thick, and is the purest of limestone, being made completely of shells. All these layers incline to the west, the solid rock becoming gradually thicker. There are other layers under the solid rock that we shall not study in this work.

Now let us go to the quarry about fifty or a hundred yards west of the spring and study the strata of the bluff, the composition of the rock, the anticline and syn-cline of the strata, and the formation of the rocks respectively.

First, the strata of the bluff: At the first glance it is easy to distinguish five distinct layers. They are very much more marked than those at the spring. The first one, counting from the bottom, is solid rock from ten to twelve feet thick; on top of that a layer of shelly rock about six feet thick; then shale about four feet thick; next shelly rock again about eight feet thick; and lastly the soil. There are two very striking things about the cliff. First, the shale is divided into four distinct layers: two dark and two light blue; the light layers being on top and between the dark layers. And second, the solid rock at the bottom slopes up towards the center of the cliff, like a hill. This is especially striking as we naturally suppose from what we have seen at the spring that it would slope westward. Another noticeable thing is that the upper layer of

shelly rock seems to grow more solid towards the bottom, while the lower layer of shelly rock is more solid on top.

Second, look at the composition of the rock. On close examination we find that the solid rock is made completely of shells. It seems to be a compact mass of innumerable little shells with here and there larger shells. We can find nothing but shells in this rock except a few crystals of calcite inside the large shells where a few drops of water have remained. Some calcite cement is found in this rock but the shells have made most of the cement themselves by being pressed together. The shells are not broken up to any degree, nearly all of them having held their original shape. The next layer, as we have already noticed, is soft and shelly, the softest part being next the solid rock. On close examination we find this to be limestone also, but the shells are not so perfect as in the solid rock. There are a great many impurities in it, and the cement is more calcitic with some mud mixed in. The color of this layer is gray, while that of the solid rock is a brownish hue. This shows that the shelly rock contains some mud and clay, while the solid rock does not. The next layer is shale. There is nothing peculiar about this except the difference in color of the layers, which is caused by the different amount of iron that the different layers contain. The next layer is shelly rock which is just the same as the shelly rock below. Last comes the sub-soil and soil.

On looking closely at the cliff again, we find a slight anti-cline and syn-cline in the shelly rock above the solid rock west of the quarry. These have been caused by the irregularities in the formation of the rock.

Let us now study the formation of this rock. As the rock of this bluff is either limestone or shale, we know that it must have been an old continental shelf, as the continental shelf is composed of first boulders, then gravel, sand, mud, and shells; and as we only found shale and limestone here, we know that it was at the inner end, or near the end of the continental shelf. The different kinds of layers show that the coast line had changed, that is, risen and fallen as each different layer was formed. The pure



limestone shows that the coast had sunk, the shelly rock that it was slowly rising, the shale, that it had risen considerably, the shelly rock again, that it was sinking, and then as soil is next, that the coast line had risen above water. As the strata slopes towards the west, the land must have been in the east. The solid rock, as we have before stated, slopes up on both sides like a hill instead of sloping gradually to the west. This proves that the shells for some reason had been piled up in a heap instead of having been laid down in the regular way. The fact that the solid rock is pure limestone proves that at first it must have been coquina, and that it had been made into limestone by the pressure of the strata above. At the spring we notice that the solid rock is not very

thick, but quite near the top, and that the shelly rock above is right on top in some places. As we find the rock, above the solid rock at the quarry, shelly; and as there is no cause for it that we can see, because water will not easily go through the shale above it, we are brought to the conclusion that the water must have attacked the rock at the spring and seeped down on top of the solid rock thus weathering the rock. It is easy to see that the surface water has caused the upper layer of limestone to weather. As we know that the solid rock has been laid down before the other layers, and that some of the rock has weathered when there seems to be no cause for it at that place, we come to the conclusion that position of rock determines age but not density.

PEARL BARTLETT.



### SOME ORTHOPTERA OF THIS VICINITY.

The general characteristics of the order Orthoptera are as follows: four wings, upper pair leathery, overlapping when at rest, forming a protection for the underwings delicate and folding like a fan. In some cases, the Orthoptera are without wings, or they are rudimentary. The mouth-parts are formed for biting and chewing food. The young insects resemble the adults except in size and the absence of wings. The straight upper wings give the order its name.

The order includes six families. These are Blattidæ, Mantidæ, Phasmidæ, Acrididæ, Locustidæ and Gryllidæ.

The roaches belong to the family Blattidæ, with oval depressed body, almost or wholly withdrawn beneath the shieldlike pronotum, and the legs flattened. They are rapid-running insects and eat all kinds of provisions, even to the paste used in book-bindings. The roach is the oldest known insect, about eighty known species of fossils having been found.

The peculiar looking, praying mantis belongs to the family Mantidæ, and its more peculiar relative, the walking-stick, to the Phasmidæ. The mantis is the

only one of this order which is not injurious to vegetation, as it is strictly carnivorous, indeed, it is rather cannibalistic.

The locusts or shorthorned grasshoppers belong to the family Acrididæ, with short antennæ, and supposed organs of hearing situated in the first abdominal segment.

The long horned grasshoppers, including katydids and meadow-locusts belong to the Locustidæ, with long antennæ and supposed organs of hearing situated in the anterior tibiæ and the pronosternum.

The crickets form the last family, Gryllidæ.

No. 1. *Schistocerca americana*. This is one of the most injurious grasshoppers and is quite large. It is reddish brown, with a yellow stripe along the back from the head to the tip of the abdomen. The wings are quite large, tegmina reddish at the base, marked with large dark spots and the inner wings transparent.

No. 2. *Hippiscus rugosus*. This insect is a little shorter than No. 1, but is quite heavy. Head and thorax are dark brown with two yellowish bands running back from the eye. The tegmina are

marked with large dark blotches, from which the tip of the wing is nearly free. The inner wings are yellowish or red with a broad black band, the tip transparent.

No. 3. *Dissosteira carolina*. The color of this insect varies with the color of the soil upon which it is found, so that it is found in all shades of light or dark yellowish, brown, red, or black. The tegmina are of the ground color of the body, under wings black, with a band of pale yellow or dull white.

No. 4. *Arphia xanthoptera*. This insect is dark brown, with deep yellow or orange under wings, with a black border which does not extend up to the body. The pro-thorax has a high ridge down the middle.

No. 5. *Melanoplus differentialis*. This is large and heavy bodied, uniformly yellowish brown. The wings have no marks. The tip of the male abdomen is enlarged.

No. 6. *Syrbula* Sp.? This is a small grasshopper with narrow wings. It is olive-gray, marked with gray and black.

No. 7. *Encoptolophus sordidus*. The ground color is dusky brown, tegmina pale, spotted with brown, with two transparent spots. The wings are transparent, with a dusky tip and a dark narrow edge on the front margin.

No. 8. *Tettix granulatus*. This insect has a most peculiar form. The pronotum is extended over the wings and beyond the abdomen. The tegmina are merely scales, the under wings transparent, with a dusky band on the front margin. The body is very slender.

No. 9. *Syrbula* Sp.? The head of this insect is very narrow and pointed in front. It is brown or green, marked with white. The wing-covers are green, with a row of small square black spots.

No. 10. ———? This is one of the wingless cockroaches. It is pale brown in color. All of the roaches illustrated were caught under lights.

No. 11. *Periplaneta orientalis*, (male.) It is dark brown, almost black, very shiny, no markings. The wings do not reach quite to the tip of the abdomen.

No. 12. *Periplaneta americana*. This is very much larger than No. 11. It is reddish-brown, with pale, indistinct bands. The wings are much longer than the tip of the abdomen.

No. 13. *Periplaneta orientalis*, (female.) The wings are rudimentary.

No. 14. *Diaperomera femorata*. One of the most peculiar insects in this neighborhood is the walking-stick. Its body is very much lengthened and its legs are long and slender. It has not the slightest sign of wings or wing-covers. The color is green or brown. The young insect is green and resembles the adult except in size.

No. 15. *Blatta germanica*. This is the well known Croton bug. It is light brown, the pronotum marked with two black stripes. The wings extend beyond the tip of the abdomen.

No. 16. *Oecanthus fasciatus*. The snowy tree-cricket varies in color from ivory-white with dark markings to deep black. The wing-covers are broad and turned down at the sides. Most specimens are greenish white with three black stripes on the head and pronotum and a broad dusky line along the abdomen beneath.

No. 17. *Udeopsylla nigra* (?) Black Cave Cricket. Its color is shiny black with faint reddish markings. It is heavy bodied and has no wings. The femora of the hind legs have sharp spines.

No. 18. *Phasmomantis carolina*, (male.) The praying mantis is another peculiar looking insect. Its pro-thorax is very much elongated and the fore legs fitted for grasping. The head is triangular and loosely joined to the neck. It is brown, with long slender wings.

No. 19. *Phasmomantis carolina*, (female.) The female is so different from the male as to be often mistaken for another species. It has a broader and shorter abdomen and short, broad wings. These wings are green with a black and yellow spot upon them. The name is given them on account of their peculiar habit of elevating the elongated prothorax and peculiar fore legs in an attitude of prayer and remaining there motionless, until some unwary insect comes within reach, when the praying position becomes a preying one. These insects are very tenacious of life and require a long stay in the cyanide bottle.

No. 20. *Gryllotalpa columbia*. The mole crickets are peculiar insects, burrowing in the ground like a mole. The anterior legs are very stout and broad



forming a sort of claw. *G. columbia* is cinnamon brown, covered with fine short hair. The wing-covers are more than half as long as the abdomen and the under-wings extend beyond the tip of the abdomen.

No. 21. *Conocephalus ensiger*. This is one of the meadow-locusts, which have long antennæ and green or light colors. This is green in color, with the head elongated into a point between the eyes. The ovipositor is very long.

No. 22. *Ceuthophilus maculatus*. This peculiar insect resembles a wingless cricket, but belongs to the family Locusticæ. It is, however, often called "Cave Cricket." In color it is spotted clayey and black, with black marks predominating. The hind femora are much marked on both sides. This is a most common species, especially under decaying wood, loose bark, in cellars and under stones.

No. 23. *Conocephalus robustus*. This insect is much larger than *C. ensiger*, (No. 21,) which it much resembles. General color is either pea-green or a dirty brown, though sometimes, it is a mixture of each. These insects are very noisy, especially at nights, near electric lights.

No. 24. *Conocephalus nebrascensis*. This is much like the preceding, but is more slender and has a lighter body. It occurs in the tall grasses along ditches and swamps and also under electric lights. It is a yellowish brown or tan in color with narrow yellowish lines along the sides of the pronotum. The ovipositor of this, as of *C. robustus* (No. 23) and *C. ensiger* (No. 21) is very long and slender.

No. 25. *Microcentrum laurifolium*. Angular Winged Katydid. Although this insect is called a katydid, it is not the true one. The true katydid is a small flat insect, admirably adapted to act as a sounding board for those remarkably discordant sounds, of which poets write. These sounds may be all right at a distance, but if you have any regard for your ear-drums, keep your distance. A close acquaintance with a colony of them in full swing, makes one's head feel the combined effects of quinine and a nightmare. Nervous people declare that they can see the vibrations in the air, but, then we must make some allowance for nerves and imagination. This interloper has a note which is less unpleasant, because it is not so loud. The insect has very broad wings, broader at the middle, outer pair grass-green, inner ones transparent. The body is lighter in color than the wings. It is also found at electric lights.

No. 26. *Orchelimum vulgare*. Common Meadow Grasshopper. This is a much smaller insect than No. 25, quite stout, with the general color green or light-reddish brown. The face is light green or light brown without dark markings. A reddish brown band upon the top of the head is often bordered with a darker line. The male has two short black dashes on each wing cover, the four forming the angles of an assumed square.

These insects are all found around Kansas City, especially around the electric lights. For much valuable aid in classification, we are indebted to the report of Professor Lugger, the Minnesota State Entomologist, for the year 1897.

ANNIE L. WYNNE.

#### EXPLANATION OF PLATE ONE.

- |   |   |
|---|---|
| No. 1. <i>Schistocerca americana</i> .          | No. 14. <i>Diapheromera femorata</i> .        |
| No. 2. <i>Hippiscus rugosus</i> .               | No. 15. <i>Blatta germanica</i> .             |
| No. 3. <i>Dissosteira carolina</i> .            | No. 16. <i>Oecanthus fasciatus</i> .          |
| No. 4. <i>Arphia xanthoptera</i> .              | No. 17. <i>Udeopsylla nigra</i> .             |
| No. 5. <i>Melanoplus differentialis</i> .       | No. 18. <i>Phasmomantis carolina</i> (male.)  |
| No. 6. <i>Syrbula</i> Sp.                       | No. 19. <i>Phasmomantis carolina</i> (female) |
| No. 7. <i>Encoptolophus sordidus</i> .          | No. 20. <i>Gryllotalpa columbia</i> .         |
| No. 8. <i>Tettix granulatus</i> .               | No. 21. <i>Conocephalus ensiger</i> .         |
| No. 9. <i>Syrbula</i> Sp.                       | No. 22. <i>Ceuthophilus maculatus</i> .       |
| No. 10. ———                                     | No. 23. <i>Conocephalus robustus</i> .        |
| No. 11. <i>Periplaneta orientalis</i> (male.)   | No. 24. <i>Conocephalus nebrascensis</i> .    |
| No. 12. <i>Periplaneta americana</i> .          | No. 25. <i>Microcentrum laurifolium</i> .     |
| No. 13. <i>Periplaneta orientalis</i> (female.) | No. 26. <i>Orchelimum vulgare</i> .           |

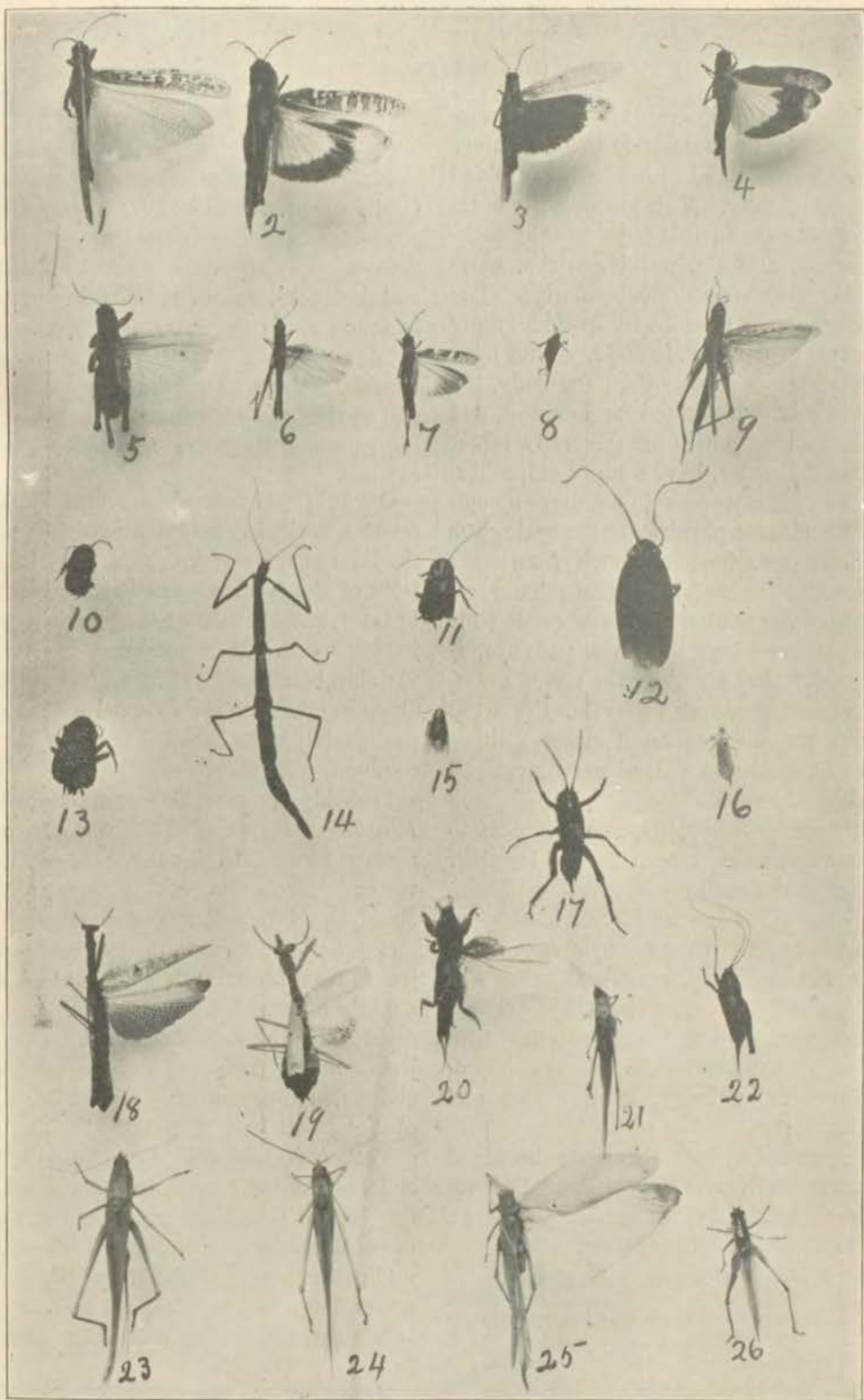


PLATE ONE.—SOME ORTHOPTERA OF THIS VICINITY.



SOME GRASSHOPPERS OF KANSAS CITY.

(FIGURES IN PLATE TWO.)

Among the insects is a group characterized by the possession of masticatory mouthparts, and hind wings folded longitudinally. This group is the order *Orthoptera*. In this order are the cockroaches, crickets, walking-sticks, katydids, grasshoppers and earwigs. The grasshoppers form a very distinct family in this group, the *Acrididae*. They have the antennæ shorter than the body, the hind pair of legs fitted for jumping, and the females, which are generally larger than the males, have a blunt ovipositor.

The grasshoppers do not have a complete metamorphosis. In the spring the young grasshoppers hatch from eggs laid the preceding autumn. They resemble the adults; but have small pads in place of wings, and these pads are inverted. As they grow the young grasshoppers moult at intervals, the wing pads growing larger and larger, until at the final moult a pair of well developed wings is formed.

Some grasshoppers, such as *Schistocerca americana*, hibernate, and lay their eggs in the spring.

Sometimes we notice a grasshopper more sluggish than his fellows. When examined closely, small red mites will often be found under the wings. These form one of the many enemies with which the grasshopper has to contend, others being fungi, tachina flies and hair worms.

Around Kansas City may be found representatives of four sub-families, for the classification of which Fernald's simple table is given below.

- |   |   |  |                     |
|---|---|--|---------------------|
| 1 | { | Pronotum extending back to the tip of abdomen.....           | <i>Tettiginae</i> . |
|   |   | Pronotum not extending back to tip of abdomen.....           |                     |
| 2 | { | Prosternum with a prominent spine, .....                     | <i>Acridinae</i> .  |
|   |   | Prosternum not spined, or with only an oblique tubercle..... |                     |

- |   |   |  |                     |
|---|---|--|---------------------|
| 3 | { | Face very oblique.....                     | <i>Tryxalinae</i> . |
|   |   | Face not oblique, or but slightly so. .... |                     |

*Tettiginae*. The members of this sub-family are distinguished by having the pronotum extending to the tip of the abdomen. The species are usually small and dark colored, and are most frequently found along the margins of streams, in damp woods where they feed on moulds. They take to wing very readily, and as they resemble in color their feeding grounds, they are very difficult to capture.

Our brightest colored species is *Tettix ornatus*, which is easily distinguished by the form of the vertex. This projects in front of the eyes, is somewhat rounded in front, and the mid-carina forms a projecting tooth. It is ash colored, with variable black and yellow markings, is about one-half an inch long and is proportionately quite broad. It is not very common.

Probably our most common species is *Paratettix cucullatus*. This also may be readily recognized by the form of the vertex. From above this appears to about equal in width one of the large and prominent eyes, and does not project in front of them; its front margin is slightly hollowed, the indentation being divided by the mid-carina, which projects a little. The crown of the head is channeled longitudinally on either side of the mid-carina. Fig. 20.

*Tettigidea lateralis*. The head and sides of the body are brownish black, the ventral side is dirty yellow and the top of the pronotum is clay yellow. The mid-carina is very distinct, and the pronotum has other longitudinal striations. It is about one-half an inch long. Fig. 21.

*Tryxalinae*. These grasshoppers are characterized by distinctly receding

faces. Nearly all of them are examples of protective resemblance, but the most notable is the female of *Syrbula*. This grasshopper is marked in such a manner that it cannot be distinguished from the grass when resting upon it.

*Dichromorpha viridis* has two forms; a brown one and a green one, of which the former is the more abundant. The wings are shorter than the body. A dark band extends from either side of the vertex, curving inwards and then outwards to midway between the median and lateral carinæ. This species is common. Fig. 17.

*Orphula pelidna*. This species varies a great deal. The wing covers extend beyond the tip of the abdomen, are green in color, and have a row of square black dots along the middle, with other scattered dots. Length, male, five-eighths inch; female, seven-eighths inch. Fig. 13.

*Orphula speciosa*. This is our smallest perfect locust. Like the preceding species it also varies considerably, being sometimes green and sometimes brown. The face and under parts are pale yellow. There is a narrow, straight, white streak from the eye to the lateral carinæ. The apical half of the wing covers is clear. Length, male, one-half inch; female, three-fourths inch. Fig. 14.

*Syrbula sp?* This is about one and one-half inches long. The median carina is distinct, from the vertex to the end of the pronotum. A broad, reddish brown stripe extends from the crown of the head along the median carina to the end of the pronotum. At the outer end of the hind femur is a broad, yellowish brown band. The general color of the males is brown, of the females green. The marking of the sexes is also slightly different. Figs. 4 and 9.

*Oedipodinae*. These locusts, the well known "road-dusters," are among the first grasshoppers to receive the attention

of the collector. Their brightly colored wings, their large size, together with their habit of frequenting roads and clearings, make them very conspicuous. The males have a habit of remaining suspended in the air a few feet from the ground and vibrating their wings with a rattling sound.

*Dissosteira carolina*. This is our most common road grasshopper. Its wings are black with a pale border, which varies from dull-white to yellowish-buff.

*Dissosteira longipennis* is smaller, has longer wings, and instead of a yellowish border, that portion of the wings is transparent. The wing-covers are more distinctly marked than in *D. carolina*. It is not abundant. Fig. 8.

*Arphia sulphurea*. This is of a uniform dusky brown with the wing covers somewhat paler than the pronotum, and more or less distinctly spotted with dark brown. The wings are sulphur-yellow next to the body and dusky at the tip; the yellow portion being bounded beyond the middle of the wing by a broad dusky brown band, which curves and is prolonged on the hind margin, but does not reach the angle next to the extremity of the body. A very distinct ray runs inward nearly to the base near the front margin, leaving a yellow stripe in front. The hind process of the pronotum is right-angled.

*Arphia xanthoptera* is readily distinguished from *A. sulphurea* by the dark ray near the front margin of the wing, extending but one-third the distance to the base. The thorax also is generally darker than in the preceding and the hind process of the pronotum is acute-angled. The color of the inner half of the wings varies greatly, generally being a shade of yellow or orange, sometimes reddish.

*Chortophaga viridifasciata*. This common locust is quite variable. The females are generally green, the males



brown. The wings are a pale greenish-yellow next to the body with a large dusky cloud near the middle of the hind margin and a black line on the front margin. This species hibernates and is one of the first seen in the spring. Fig. 15.

*Encoptolophus sordidus* is dusky brown, the wing covers pale, clouded, and spotted in such a manner that two transparent spots are distinctly marked. The wings are transparent, faintly yellowish at the base, dusky at the tip, with a narrow dark edge on the front margin. The hind femora are brown with three black bands separated by four light brown spaces. The hind tibiae are brownish black with a white ring below the knees. Fig. 11.

*Hippiscus tigrinus*. This is a very large road-duster. The rugosities of the pronotum are arranged more or less distinctly into series parallel to the side of the metazona. The wing covers are ashen gray, with dark brown bars, mostly crossing the wing. The wings are very pale-citron at base; the yellowish being bounded by a broad dark band. The tip is pellucid. The tibiae are clay yellow, with black tipped spines.

*Hippiscus tuberculatus* is also a very large grasshopper and is known as the "coral winged locust." The wing covers are of the body color, or blotched with dark brown and black. The wings are coral red at the base, the band which surrounds the red, black in color, and the apex is nearly hyaline. Fig. 3.

*Hippiscus variegatus*. The basal color of the wings varies from pale yellow to coral red. The markings of the wing covers is distinctly like that of a panther. The hind femora are bright yellow within, thrice heavily banded transversely with black, dull clay yellow without and very obliquely banded with blackish. The hind tibiae are yellow with black tipped spines. Fig. 6.

*Mestobregma cincta*. The pronotum of this species is short, the length not exceeding the depth. The median carina is slightly elevated on the front lobes and twice distinctly notched. The hind femora have a sharp elevated upper carina. The species is colored with dark and pale yellow, about equally distributed in stripes and spots. The wings are transparent, with the base greenish yellow. The hind tibiae have a broad white ring near the base, the rest being blue. Fig. 19.

*Spharagemon collaris*. This is not at all common, the tegmina are mottled with fuscous blotches and dots, which form three irregular bands, one at the base which is broad, the middle one narrowest, the apical one sometimes lost in the nearly equal mottling of the tip. The wings are pale yellow at the base with a brown median black band occupying the middle third, crossing the wing at right angles, decreasing along the posterior margin, around which it curves to the anal angle, throwing out a short blunt sub-frontal spur about one-third the distance to the base. The apical portion is transparent with the tip clouded or transparent. Fig. 5.

*Acridinae*. In this group are found the most destructive of all insects. From the time of Pharaoh we find records of their devastation. Their powerful mandibles, great appetites, and immense numbers, together with the migratory habits of some of them, place them among the most powerful of our insect enemies.

This group is sub-divided into two divisions, the *Acridia* and the *Melanopli*. The latter division is notable for the number of species it embraces.

To the first group belongs the well known "bird grasshopper," the *Schistocerca americana*. This is the largest and most handsome of all our locusts. It is reddish brown in color, with a slight vermilion tint. A yellow stripe

extends from the vertex along the middle of the head and pronotum, and also upon the suture of the closed wing covers as far as the tip of the abdomen. On each side of the pronotum is a yellow stripe, directed a little obliquely downward. The legs are bright vermilion and the spines of the posterior tibia yellow, tipped with black. The wings are transparent and very well developed. When this locust assumes the migratory habit, it is very destructive.

*Schistocerca rubiginosa* is smaller than the preceding and of a uniform light rust-red. The wing covers are opaque and rather paler on the overlapping portion, while the wings are transparent, yellowish at base and slightly reddish towards the tips. The spines of the tibiae are whitish and tipped with black. Fig. 7.

The group *Melanopli* is here represented by four common species.

*Melanoplus differentialis* is a large olive brown locust without any decided markings. The hind tibiae are yellowish with black spines. This is a very large and common locust and is well known to students of zoology.

*Melanoplus bivittatus* resembles the differential locust in form and general color but is distinguished by having a yellow stripe on each side of the head, pronotum and folded wing covers. Fig. 2.

*Melanoplus femur-rubrum* is of a general dark brown color and about one inch long. The tibiae are red or blue. On the side of the pronotum is a shining black stripe which extends to the metazona. The wings are transparent. The sub-genital plate of the male is not notched. Fig. 16.

*Melanoplus atlantis*, the lesser migratory locust, is distinguished from the preceding by having the red of the tibiae and the black stripe of the pronotum less intense, and by the notched sub-genital plate of the male. The median carina is nearly obsolete on the prozona, but is distinct on the metazona. This is one of the most common forms of *Melanopli*. Fig. 12.

A vast deal of assistance in the preparation of this paper, especially in the description of species has been derived from Dr. Otto Lugger's excellent work on *The Orthoptera of Minnesota*.

FRANK L. ROGERS.

#### EXPLANATION OF PLATE TWO.

- |   |   |
|---|---|
| 1. <i>Hippiscus variegatus</i> female.    | 13. <i>Orphula pelidna</i> female.            |
| 2. <i>Melanoplus bivittatus</i> female.   | 14. <i>Orphula speciosa</i> female.           |
| 3. <i>Hippiscus tuberculatus</i> male.    | 15. <i>Chortophaga viridifasciata</i> female. |
| 4. <i>Syrbula</i> sp. male.               | 16. <i>Melanoplus femur-rubrum</i> female.    |
| 5. <i>Spharagemon collare</i> female.     | 17. <i>Dichromorpha viridis</i> female.       |
| 6. <i>Hippiscus variegatus</i> male.      | 18. <i>Syrbula</i> sp male.                   |
| 7. <i>Schistocerca rubiginosa</i> male.   | 19. <i>Mestobregma cincta</i> male.           |
| 8. <i>Dissosteira longipennis</i> male.   | 20. <i>Paratettix cucullatus</i> .            |
| 9. <i>Syrbula</i> sp. female.             | 21. <i>Tettigidea lateralis</i> .             |
| 10. <i>Eutellix tricannalus</i> .         | 22. <i>Paratettix cucullatus</i> .            |
| 11. <i>Encoptolophus sordidus</i> female. | 23. <i>Nomotettix parvus</i> .                |
| 12. <i>Melanoplus atlantis</i> male.      | 24. <i>Tettigidea polymorpha</i> .            |



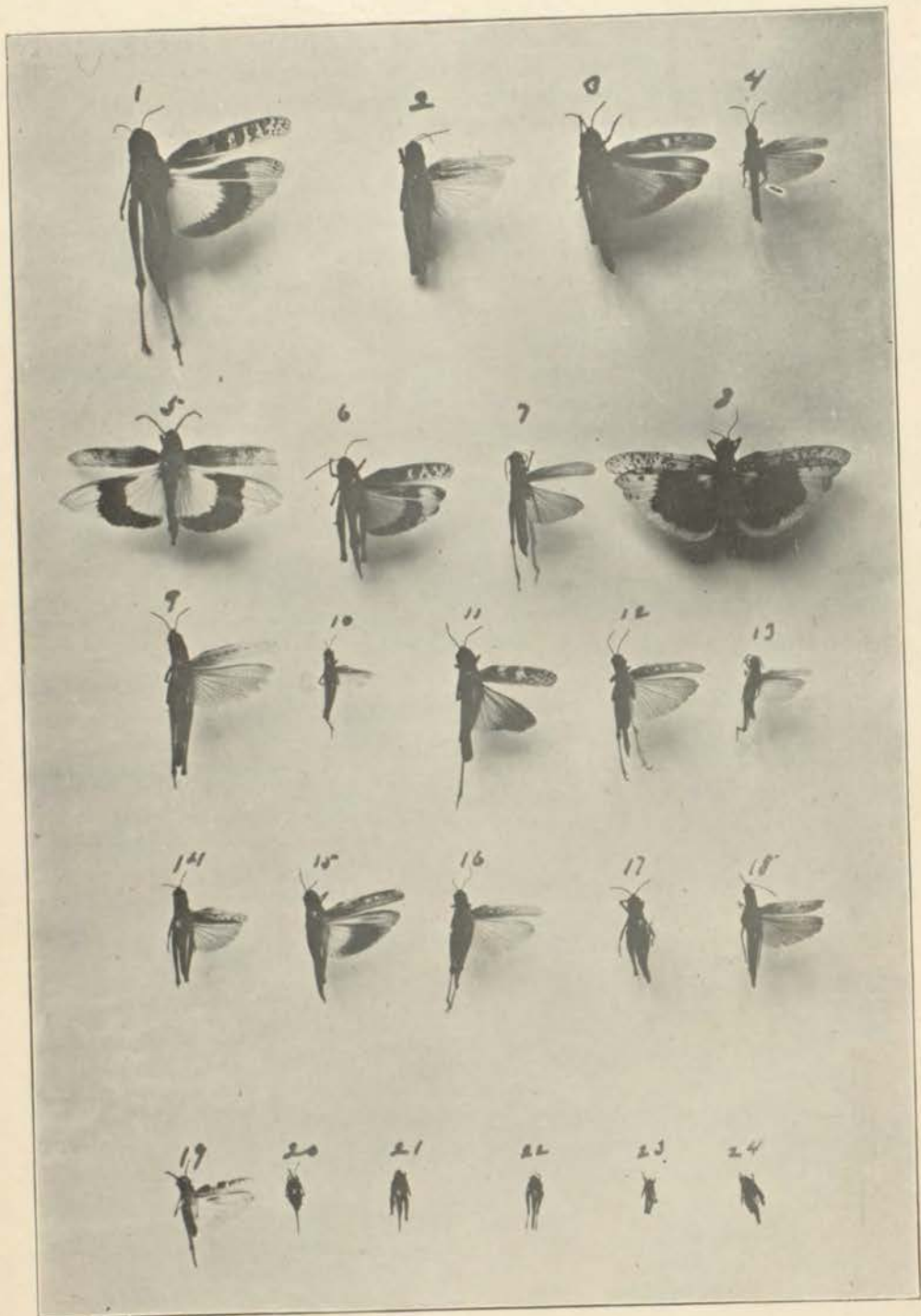
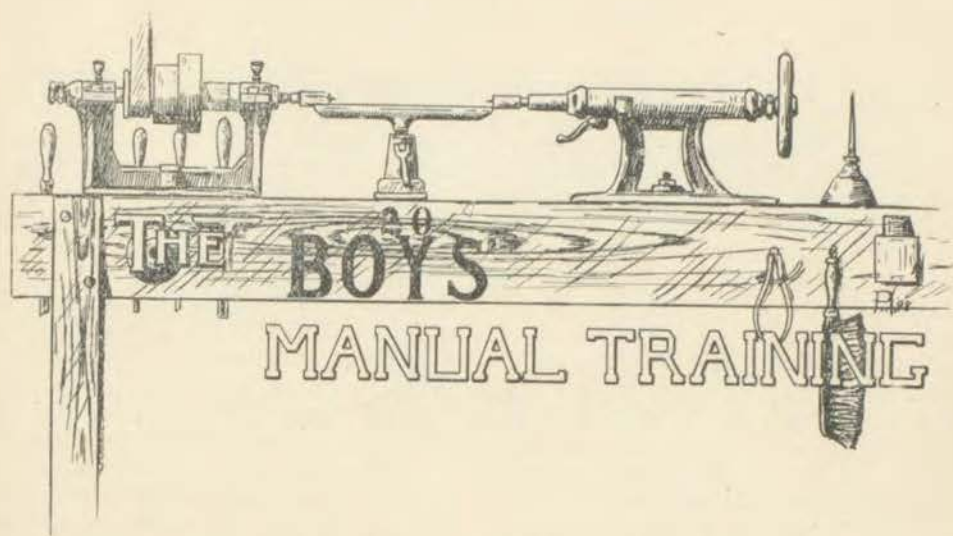


PLATE TWO.—SOME GRASSHOPPERS OF KANSAS CITY.



### BRAINS IN OUR SHOPS.

Some of our friends who are so unfortunate as to believe that there is but one high school in Kansas City, are surprised when informed that brains are the important factor of our shops. I am very sorry for some of the people of our city, who are laboring under the belief that Manual is a place for Numskulls only. If a boy has an extraordinary amount of muscle and is gigantically proportioned in all respects excepting the gray matter, then, "he is just the kind of a boy to go to Manual where they have large 'shops' where he can apply his terrible strength to the hammer and sledge." No, I think this particular individual could find a more appropriate place than Manual. The Manual Training High School is an institution that solicits for its pupils, people who have brains, and if there is any place in the school where brains are essential, it is by all means in the shops. It is not necessarily the boy that has the largest arm that does the best work; it is as in all things the boy who thinks, though in some cases it is a good thing to have plenty of strength.

From first to last in shop work thinking is the principal element. As we advance from term to term, the nature of the graded exercises keeps pace with our mental development.

In the first year when we were learning how to use tools, the exercises were more simple, increasing gradually in complexity as we progressed. Those who went slowly and did their work well and to the best of their ability, as a general rule, made first class progress. But in the turning shop the science of it is becoming more and more visible. Through the instrumentality of the lathe, many of the boys have had to take several lessons in patience, some of which have been rather severe. But taking all things into consideration, the boys have taken hold of the turning in the right manner and all expect to reap good results at the end of the year. All evidence points to the fact that we are progressing, and we think in a very short time every one in Kansas City will find out that Manual is no place for Numskulls.

SIMPSON.



## GLEANINGS FROM THE SHOP.

In the Manual Training High School, one of the rooms in which the pupil will always enjoy himself and where time never drags, is the turning room. It might properly be called a recreation room, for everyone seems to feel freer and works better there. There is music and rhythm in the noise coming from the lathes when one becomes accustomed to them.

It is wonderful the amount of beautiful work which can be turned out from rough and uneven timber. A visitor entering the shop might stop at a lathe where a beginner is turning the rough edges from the lumber, and he would not be much impressed by the beauty of the work. Should he return in a day or so, our visitor would be astonished at the change wrought in the appearance of an old piece of lumber.

Many people have a mistaken idea as to the object of the Manual, thinking our fine, new school was created solely for the education of the hands, but with the physical training goes the mental, one is merely the supplement of the other.

If one has applied himself to his studies while attending the Manual, he will be able to hold his own in the struggle for existence after he graduates, for not only are his hands trained, but also his brain, and the two working together are a hard combination to beat.

I hope the Manual Training High School will be appreciated by future generations and that many more such institutions be established. And here is to her health, may she live long and prosper.

John Humphrey Tate.



## FIRST EXPERIENCES OF A FRESHMAN.

"Now boys, you are to make a block eight inches long by one and one-half inches square. You plane it in this manner and gauge it in this manner and saw it like this," our teacher in Manual Training told us.

Well, I went to bench eleven and started my first exercise. To plane and saw a piece of pine stock seems simple enough, and so it is, if you know how, but the terrific but fruitless efforts of a poor "Freshie" who never handled tools in all his life must be amusing to those who have had experience.

I got along moderately well with my jack-plane but my thumb-gauge seemed adverse to following a straight and narrow path and instead went meandering all over my stock, here making an upshoot and then coming down again, and at last winding up by making a glorious curve, by which means it cut off the corner.

But the interesting period came when I took up my saw. I commenced to saw to my knife-line and tried to keep with it, but my saw was inclined otherwise,

and so when I looked at the stock, after I had sawed part of it off, I found that my block, to be even, should be about a quarter of an inch shorter on one side. So I tried again, but with not much better success, and it was not until I had sawed about four or five pieces of stock into bits about two inches long that I could saw anything at all straight, and I found that I sawed my hand in two places for every movement of my tool.

It is ever so, things may look easy, but nothing, however simple it may be, is easy until you know how or have had practice.

Every boy who takes bench work is not necessarily skilled in carpentering at the end of the year, but every effort to use your hands strengthens the mind and a person is thus benefitted. Every exercise being more complicated, a person, after learning how to use his tools, has to watch all the details and so learns that which is most valuable to every man throughout life, exactness.

GEO. HUNT.



## GIRLS' MANUAL TRAINING—SECOND YEAR.

When we entered the sewing class at the first of the year, we were all anxious to commence work immediately. When school closed the preceding spring, we had been told that the first work this year would be the making of a shirt-waist; even going so far into details as to make our own patterns.

The first thing necessary before we could draft our pattern was to take each others measures, which process caused no little excitement. The awkward manner in which some of the girls would attempt to take the measure for the under-arm seam, was very amusing for the rest of the class, but our teacher was kind enough to come to the rescue and show us that there is grace required even in so small a matter.

The next step was the drafting of the pattern which each girl did for herself. For this work the tape-measure, pencil, paper, and yard-stick were necessary; and in the drafting we found a practical application of geometry, mechanical and free-hand drawing. It is as necessary for the girls to be accurate and neat in this work, as it is for the boys to be so in the wood-working department; for a slip of an eighth of an inch will cause the finished garment to fit improperly, and perhaps the mistake will be of such a nature that it can not be remedied. After the drafting was finished, a trial waist was made of some plain material, and it is in this waist that we decide what style of garment will best become the individual girl. For example, we decide where the shoulder seams should come, as the placing of this seam affects

the apparent slope of the shoulder and flatness of the back. A flat back and sloping shoulders being marks of beauty in the feminine figure. We then decide upon the size of the yoke and the amount of fulness which will be most becoming.

It is now time to buy the goods for the shirt-waist, and the teacher gives a short talk upon the selection of material, judging of the color and design which will best suit the figure and coloring of the prospective wearer. She also impresses upon us that it is not the expense of the material which gives character and style to the garment, but the correct choice of color and the finish of the garment, its neatness, and finally, the manner of wearing it, which gives the most pleasing effects.

Each girl now takes a trip down town and for the first time, has the experience of selecting material without an older person to help her decide.

We are now ready to make the waist; and, after cutting it according to our decisions upon the trial waist, we proceed with the sewing of it, applying the principles learned in the first year's work, and taking care that the garment interferes in no way with the physical requirements of the body. That is, that the chest is left free for deep, full breathing, and that there is no pressure upon the stomach which will interfere with the process of digestion.

The most worrying part of the entire shirt-waist is the sleeve and cuff, as it is with these parts that the most delicate and accurate work is required.



One does not realize what real delicacy is required in sewing until an attempt is made upon a garment. It is necessary to have a light, yet firm touch in the management of the soft material, and each line of sewing must be straight and even in order to give a finished appearance to the shirt-waist.

It is true that the girl's patience is tried in various ways, such as the ripping of a seam she thought finished, or cutting an entirely new yoke, and above all, the working of the button-holes. But the real pleasure gained when the waist is finished and ready to be worn, is ample reward for all the trials in the making of it.

Only one who has experienced it knows how proud a girl feels, if, when wearing the shirt-waist, she hears some one remark upon the neatness of the work and excellence of the fit.

Besides the pleasure I have spoken of in the sewing class, there is one other of which I wish to speak especially, and that

is the variety it gives to the school work.

It is so resting, both to mind and body, to come from a class in which the brain has been taxed with geometrical problems or German translations, and worried by the necessary noise of the recitation room into a class of girls where every one is quiet because intent on her individual work. Though the gray matter of the brain is possibly used to as great an extent, it is in such a different manner that it is a decided rest.

The shirt-waist will soon be finished and the lined woolen skirt begun, after that the spring millinery. We will then have a skirt and shirt-waist to wear in the spring which we have made ourselves.

We are anxious to reach the millinery as this will be an enjoyable work. It will be necessary to have a talk upon the combining of colors before we take up this work, and the originality of each girl will be exercised in the trimming of the hat.

LUCILE EDWARDS.



### A MANUAL TRAINING STORY.

Vivian Arnold was just seventeen, with a fair delicate face that was encircled by a mass of golden curls, and about as pretty as the average school girl.

At the time of my story, Vivian was a student in the Manual Training High School. Being of a studious nature she had overworked herself with study and the doctor said that she must be taken out of school in order to give her mind a rest. Her parents also thought that perhaps a little trip would help to strengthen her and bring back the bright, healthy girl of the past.

Now Mr. Arnold, who was very wealthy, owned a large cattle ranch in the little town of B— in the southern part of Texas and his son Vernon, who had just graduated from Yale and was anxious for a little jaunt, had gone down to look after the place, but perhaps more to have a good time.

It was there that Vivian's father and

mother had decided to send her, so the following week saw Miss Vivian on her way to Texas to have a jolly good time as she thought, but she little knew how suddenly all these pleasant times would be dashed to pieces soon after her arrival.

The train drew up to the station late in the afternoon and Vernon was there to welcome her. They exchanged greetings and as Vivian looked up into his handsome face, she noticed for the first time that it looked pale and almost careworn. This really alarmed her and putting her arms about his neck and drawing his face down to hers, she said, "Why Vernon, what is the matter? You look so changed. Are you ill?"

He passed his hand across his forehead and hastily straightened up, saying, "No, little sister, I'm all right, only my head does ache a trifle."

"Then Vernon, you must let me make you a cup of tea when we arrive at the

ranch, for you know I have learned to cook while at the Manual and mamma says I do real well, so you'll let me fix you something nice, won't you?"

But Vernon replied almost scornfully, "No, indeed, Vivian you don't need to think you can come down here and feed me on any of your old Manual truck. No, I won't eat it if I am sicker than a horse you can be assured, and please don't mention *Manual* cooking to me again."

"But Vernon," exclaimed Vivian the tears starting to her eyes, "You ——"

"Now don't commence that I need so and so, for I don't. I'll turn in early tonight and feel all right in the morning without any Manual food poked down me, either."

As he turned away, Vivian saw that his face looked flushed and hot and his eyes had a feverish stare. This worried her, but she resolved that before a day had passed she would make Vernon think that Manual cooking wasn't so bad after all.

When they reached the ranch, Vernon did "turn in" and remained there for several weeks.

Vivian went into the kitchen and immediately set to work to make a hot cup of tea. When it was done, she brought it to Vernon. He drank it with a relish and as he sank back upon his pillow, he smiled faintly and said, "Well this isn't so bad as I thought Manual cooking was."

That night when Vernon had tossed himself to sleep, Vivian sent for the doctor. He shook his head, looked sober and said that he thought he had an attack of fever and that she had better send for Mr. and Mrs. Arnold at once.

At this Vivian's heart sank and when the doctor left saying that he would telegraph for them, she wished then that they were here or that Vernon and she

had never gone down to the ranch for a vacation.

The next morning dawned bright and clear and with it rose Vivian's hopes, but only to fall again, for she received a telegram from her father, saying that they would not be able to start for three or four days, as the only railroad that passed through the town of B—— had had a wreck and the track could not be fixed in less time.

Vernon gradually grew worse and when Vivian would bring him the little delicacies that she had learned to cook at the Manual, he was too weak even to smile, but still he tried to eat them just to please her. Vivian racked her brain to remember the recipes that her cooking-book contained and which was so far off in old Kansas City. She succeeded admirably and each day Vernon had some new dish that had been taught at the Manual.

At last Mr. and Mrs. Arnold arrived and Vivian, throwing herself in her father's arms, knew that her troubles were ended.

Two months later a little group are standing on the platform in the town of B—— waiting for the train. The group consists of a tall gentleman, a lady, a pale thin lad of the brunette type and a pretty blonde girl.

They are talking, and I pause involuntarily to listen to the merry conversation, just in time to hear the boy say, "Well, I have had a pretty tough time of it and I think I have learned a lesson never to say anything against Manual cooking, so here little sister, let's shake, for if it hadn't been for your knowing how to cook and what to cook for sick people, I would not be here at the present time."

"Little sister" blushed rosy red and stretched forth a slender gloved hand, while a merry smile played about her pretty mouth.

GRACE BERGER.







There seems to be a no more natural expression for a child than to draw, and as a usual thing children love to draw. I have in mind now a child three years of age who will sit for a long time drawing a "choo choo" train. He will take a pencil (but prefers the ink medium) and will make a circular mark over the paper which he calls the 'moke; he will make circles for the wheels (not as round as Giotto, to be sure) two lines coming together into a point for the cow-catcher, a would-be square for the coal box and two straight lines for the track—that to him is a real, puffing engine. Would anyone intentionally discourage this child in expressing himself in this way? I think not; and yet many parents discourage a child's feeble efforts by laughing at them. They usually encourage until its powers become equal to their own, then they ridicule. The child then recoils within itself and is afraid to do for fear of being laughed at, and of course without exercising any power becomes weakened. The child has great power to appreciate art in its early years, long before it goes to school and it is happy in expressing itself in this way. It has greater imaginative power than and least power of expression. Is it not unfortunate that when it is able to execute more easily its imaginative power is

weaker? But that is the case, for pupils in the lower grades of the ward schools will do better work in imaginative drawing than pupils in a high school, and here it is that the teacher may open the doors and let a little light shine in, not enough that the thought may be lost, by preaching this kind of line, that kind of line—the soft gray line, but instruction that shall bring out that particular thought of that particular child.

Objections are sometimes made that only a few become artists and why should time and money be spent upon something which will not be of any material benefit to the child. This objection would not be made if a few moments of thought were given the subject. Not every one who studies art expects to become an artist; we need art artisans as well as artists. A boy who has studied drawing and lettering and afterwards becomes a grocer may letter his own signs of "potatoes fifty cents a bushel" and do it neatly and evenly and thus make the front of his store more attractive and that will bring better trade. The Tiffany Company, staid, practical men, do not employ girls unless they have had art training, for the inartistic, unappreciative artisan has been found to be unable to do the work as well as one who has had this training. But then aside from the prac-

tical benefits derived from this study, every soul receives culture from a study of art, and this is the greatest benefit derived therefrom. Our natures are broadened, we begin to lose sight of the small things, the disagreeable things of life and to look up higher and beyond. Some one has said that "the highest art culture cannot alone form true character, but the highest character cannot be formed without art culture." And we can begin to give this art culture while the baby is kicking with delight in his cradle, at the sight of bright colored piece of worsted hanging above him, looking at the decorations on the wall, and the figures and coloring on its blocks. In infancy decorative art is the side of art which is brought more closely to the child and it should be seen that these decorations are of the best, those things which contain the elements of true beauty rather than of a fad. There are many homes wanting to be rescued from the gayly colored chromo, the HAND painted

banner and the \$1.50 crayon portrait. Whenever a child notices the sunlight and shadow upon a blade of grass, whenever it holds in its hand a butterfly and notices its rich and beautiful coloring, whenever it notices the paintings, by that wonderful artist Jack Frost, upon the window pane, his soul is becoming awakened to a sense of beauty and he is making a beginning in decorative art. Now the teacher's time has come; she should enter with it into its pleasures of seeing and then slowly encourage him to express in his own way what he feels, for ten children will see ten different pictures upon Jack Frost's canvass. If we awaken this sense of beauty, train the eye to see and to see correctly, to see things not for themselves alone but in relation to other things, when we teach this, we are helping the boy or girl to make a beginning in life, and when we fail in this, we have failed in giving them the best that can enter into and become a part of their lives. A. M.



## CHARCOAL SCRAPINGS.

Do your work in your own way. Don't embroider other people's work upon your own, or you make an extinguisher to put out your own light, you can't have *all* the good qualities—the drawing of Raphael and the color of Titian.

The pupils in the Art Department have been drawing hands and feet lately. They usually begin by making a hand all fingers, but they are learning that fingers belong to a hand; not the hand to the fingers. A comb isn't all teeth. You see the comb first, and then the teeth.

Those dull, foggy days we had during the quarter, were spent not in making gray day sketches, but in looking at the great artist, Millet. He knew how to

paint the things about him. Millet used to say that "Any artist could go East and paint a palm-tree, but very few could paint an apple tree."

The drawings were looked over carefully this month and a number showing good, careful study, were selected and are hanging on the wall in the drawing room. A study of the block head drawn by Honor Wilkins, a skull by Edith Hill, a hand by George Leach, a sketch from life by Paul Halleck, are all good. Lassie Lane, Louis Sills, Clara Hoernig, Edgar Kelly, Jack Schwitzgebel, May Eveleth, B e r t h a Newman, Lockart Richarts, Rea Barrick, Elizabeth Simpson and Lillian Lauffer, also have good drawings up this month. Each month the best drawings will be hung.





We notice in looking over our exchanges that in several of them the exchange department is taken up by the discussion of the all important question: "The object of the exchange department." If these departments would fill the space occupied by their lengthy and monotonous discourses with clippings of interest from their exchanges, they would greatly benefit their readers. If this department is to be used entirely for the criticism of other papers, let that criticism be not one of the old roast kind, but suggest something whereby the paper referred to can improve the criticised column. Nothing does more harm than adverse criticism given in the roast style. I quote an article from one of our exchanges, "We are always glad to see the ——— when it comes to our table. It is a relief after looking through so many exchanges, to read one which is really worth reading." The above is the kind that helps a paper to see its many faults. We would like to have such criticisms more specific; they are too broad. If this kind of a criticism would be more specific I am quite sure the editor would be relieved of his quite arduous task.

The Review, published by the Boone, Ia., High School, was received by us for the first time, and was among the best of our exchanges.

Socrates—"Demosthenes, you're not the only pebble on the beach."

Demosthenes—"No, I have the other in my mouth."—Ex.

Miss—"I read a funny story about a baby five days old who can talk."

Wiggins—"That's nothin'; the Bible says Jacob cursed the day he was born."—Ex.

The Literary department of The Record, Sioux City, Ia., deserves special mention. It contains several good short stories.

As Charles was going out one eve,  
His father questioned "whither,"  
And Charles not wishing to deceive,  
With blushes, answered "with her."—Ex.

Jim—"I'd like to know, Jack, why you don't call on Miss Smith now?"

Jack—"Don't ask me, Jim; the reason is a-parent."—Ex.

The Recorder from Springfield, Mass., comes to us with its usual neat appearance. The school should be complimented, not only on its paper, but also on its extremely good looking mandolin club.

"For me one hope in life I trace"  
A Freshman said, "'Tis this,  
That I may sometime find the place  
Where ignorance is bliss."—Ex.

#### "TALE OF A STUDENT"

Craeu,  
Exam,  
Flunk,  
Trunk.—Ex.

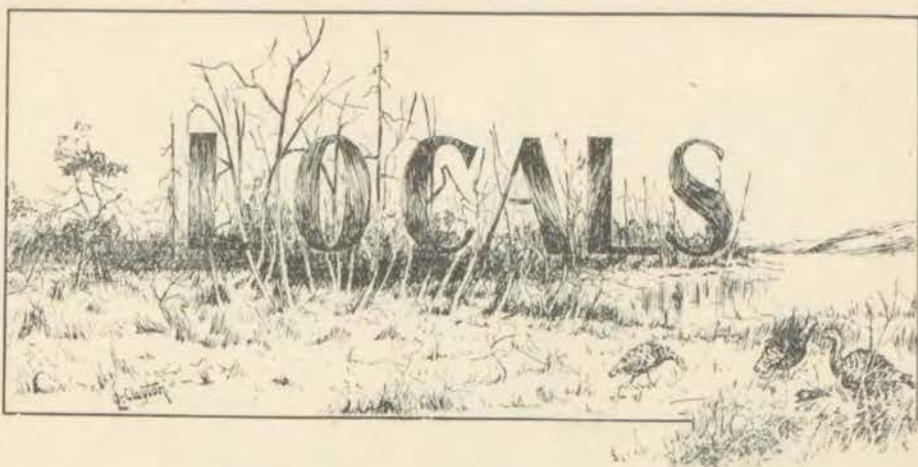
All departments of The Messenger from the Wichita High School are exceptionally well edited.

Prof.—"You should be ashamed of yourself, sir. George Washington was surveying Virginia at your age."

Dull pupil—"And at your age he was president of the United States."—Ex.

If a cat leapt out of a window  
And it killed her when she lit,  
Would a jury decide that the animal died  
In a cat-a-lep-tic fit?—Ex.

The Steele Review from Dayton, Ohio, comes to us with its regularly well edited departments.



Have you seen Johnson's dollar photos? Southwest corner, Twelfth and Grand—over Grand Market.

Is that Mr. Tate's real (?) name on page eighty-four?

Captain Bryant, like Lieutenant Hobson, lost his fame on account of his desire for mistletoe and its effects.

Mr. Russell singing "Just One Girl," looked at Miss Pierson. How strange!

The latest way of addressing Manual High School:—"The Immanuel High School."

We are informed that Mr. Bayshaw can sew the buttons on his coat. Girls, take notice.

Rhetoric pupil (reading title) "Hoosier Schoolmaster."

Professor Phillips—"Well I suppose I am your school-master."

Miss Pierson (to Mr. Segur)—"I wish my man were here."

Mr. Segur (promptly)—"Mr. Russell you are wanted."

Will Osgood (after Christmas holidays)—"Well, if I look like I feel, I don't want to be seen."

The boys want to know why he didn't keep out of sight.

Miss Fisher—"You can always whisper to some one else what he should say, so why can't you recite when you are called upon?"

Pupil—"Because no one whispers to me what to say."

Miss A (sweetly)—"Oh, I have the best trade last for you."

Mr. H. (cynically)—"My dear girl, do you really suppose any one would say anything nice about you?"

Miss VanMetre says we are like the moon; we shine by reflection.

Nellie Douglas—"Well, the whole thing is 24-ft."

Mr. Knight—"What do you mean by the whole thing?"

Nellie—"The basis."

Did she mean "Bacy?"

Our boys can be amused by trifling things indeed. Mr. Russell wasted fifteen minutes in admiring a toy mouse exhibited on "Petticoat Lane."

Will Mitchell says he would like to talk to the girls in the hall, but every time he opens his mouth to say anything he gets his foot in it.

Miss Bacheller tells her Geometry class that she is either forty or twenty years old.

Mr. Leavitt says he would be glad to have the opportunity of standing in the hall and playing Hobson.

Mr. Crain—"Mr. Richardson, I knew it before I got it."

Miss Bacheller insisted upon each of her girls having a "date."

If some of the people at Mr. Meriwether's "Horror" party had entered themselves, the award of prizes would have been different.



# UNDER HOBSON

# THE WEED



My kingdom for a step-ladder



Easy



She takes a detour



Fighting the good fight.



Where's her?



Letting women to keep off the boys



Making up for lack of girls!

THE END

**Y**oung Man improve your time, mind and body. This

**M**ay be done at the **YOUNG MEN'S CHRISTIAN ASSOCIATION.**

**C**all and see the plans for new improvements, such as plunge, Lecture Room, etc.,

**A**t 810 Wyandotte Street. All privileges, only \$7.00 per year.

**HARRY L. MARKELL,**  
ACTING GEN'L SECRETARY.

**F. H. CLARK,**  
PHYSICAL DIRECTOR.

A. A. DREYFUS, Pres. and Gen'l. Mgr.  
C. N. ROUSE, Sec'y and Treas.

PAID UP CAPITAL,  
\$10,000

REFERENCES:  
The National Bank of Commerce.  
The Wholesale Grocery Trade.



1216, 1218 and 1220 West Eighth Street.

**CENTRAL COAL & COKE CO.**

SUCCESSOR TO

THE KEITH & PERRY COAL CO.

**COAL, LUMBER, TIES AND TIMBERS**

KANSAS CITY, MO.



How did it happen that Lee and Dwight entered the wrong house on New Year's Day?"

We are sorry that Clark is not able to distinguish between sour and fresh chocolates. He missed school for a day on account of it.

Hobson gallantly withstood the assault of smokeless powder in Kansas City.

Miss Campbell gave a lesson in æsthetic posing by showing the class how to sit gracefully upon the floor instead of the stool.

What did James and Lee want in the toy department at Emery's? We want to know, and so did the cash girls.

Reporter—"Is Professor Morrison in?"

Miss Osgood—"No."

Reporter—"Then I will wait for him." Twenty minutes later.

Reporter—"When do you expect him?"

Miss Osgood—"Why, he is home sick in bed."

A new motion—"I move that you go to Geo. Harold's Shaving Parlor, 322 Ridge building, to get a hair cut for 25 cents."

"So near yet so far," said Lee after four attempts under the mistletoe.

James spent so much money Christmas week that now he has to walk to school. Five miles of K. C. hills.

Mr. Phillips said that what everything man did was to please woman. Mr. Clifford Burton adds that woman seems to do everything to trouble man.

Mr. Simpson (scrubbing table)—"If only the girls could see me now, wouldn't they admire me?" "Would you, girls?"

Lee (giving report)—"The bust committee almost busted in their attempt to find a bust.

Miss Stevens, you must wear your hair some other way so you can wear your cap.

Mr. Halleck wishes to know what the "formula" for air is. And he is a chemistry student too.

Mr. Nathan, (translating)—"As he the pretty pitcher seen."

Miss B.—"I cannot understand what James Anderson says."

Miss Kelly—"Oh, never mind, it is only some of 'Anderson's Fairy Tales.'"

Miss Gilday—"In which column does your name belong? Are you lacking in: Ability—Application—Department—Preparation?"

Mr. Mitchell—"Just put mine right on top."

It was doubtful a few weeks ago that THE NAUTILUS was to be out this month. Look on page 52 for your information.

Miss Berger has evidently seen Mr. Simpson, as she does not ask for him any more.

"Flossie can't keep from talking, can she?"

Who is the "Indian?"

We would be pleased to be informed as to the dimensions of that collar Bessie wore to school.

Miss Harzfield lives so far from school that she must necessarily be tardy. She lives about three blocks away.

We wonder if Cornelia's study of human hearts is very extensive?

When Miss Adler is wanted she can readily be traced by the gentle tinkle of that heart bracelet.

Walter Burton, (after receiving a severe blow in the eye)—"Well, the next time I box I am going to have a pretty girl around so I can take advantage of these shooting stars.

A certain young lady is now the proud possessor of Robert Clemens' photograph.

Why did Grace say that she thought a handsome man should have curly hair?

Our new business manager, Miss Harzfield, secured an "ad" for this issue. Her good will is appreciated and we only hope the good work will go on.

Teacher—"James H., give the degrees of the word sick."

James H.—"Positive, sick; comparative, worse; superlative, dead."

Grace—"Lee isn't going to stay to staff meeting so I think I'll not stay either."

**SCHMELZER ARMS CO.,**

*Athletic and Sporting Goods,  
Fire Arms and Ammunition.*

710-12-14 Main Street,

KANSAS CITY, MO.

**Attention!**

STUDENTS OF THE MANUAL  
TRAINING HIGH SCHOOL  
GO TO

**A. SUTORIUS'**

**Vienna Bakery**

FOR CAKES, PASTRY, PIES,  
BREAD, ETC., FOR YOUR  
LUNCHES.

Best Place in Town...

1400-1406 East 15th Street,

Two Blocks from School.

**CLARK THE HATTER,**

906 MAIN STREET.

**Correct Styles for Young Men.**

GLOVES AND UMBRELLAS.

Dunlap Agency.



1030 Main Street,

Eyes Tested Free.

KANSAS CITY, MO.

**R. KRIETE.**

I sell Supplies for Naturalists and Students  
in Zoologic, Entomologic, Taxidermy,  
etc., at the same prices as  
when ordered in the East.

406 East 12th Street,

Kansas City, Mo.

**PARISIAN CLOAK CO.,**

—RETAILERS OF—

**Ladies' Wearing Apparel.**

1108-10 Main Street,

KANSAS CITY, MO.



Miss Osgood says that God made the world, but man made it up-to-date.

If you wish to know the effect of tooth-powder on the complexion, ask Aaidie Bigley.

Mr. Richardson (to pupil in German) — "Why does heart in little Snow White end in 'en'?"

Pupil—"Because it is plural."

Mr. Richardson—"Oh, she was too young to have two hearts."

Read the notice on the boards in the hall.

Freshie (to Mr. Sloan)—"Mr. Sloan, are you a frat?"

The report is out that Perrin is to take sewing. (The printers suggest a course in penmanship.) What next?

Mr. Dodd—"Now, Miss Alice, a younger man might follow you, but you must follow me."

Miss Chrisman's latest sobriquet, "Hay."

Miss Gilday, (rapping the desk as she imitates Speaker Reed in Congress)— "Class, come to order. Class, come to order."

Visitor (who has entered)—"Well, I think I will beat a hasty retreat."

And he proceeded to do so, but Miss Gilday quickly explained matters to the amusement of the class.

Darwin "paid dear for his whistle."

Mr. Kent—"What is work, Mr. Pingree?"

Pingree—"I don't know."

No, Maurice, you will need more than a rolling pin and a sofa pillow to start house-keeping.

Miss Rowe—"The attraction of the bigger is the extremer."

What do these letters signify, "H. M. P." "Why, that means 'Her Majesty's Page.'"

A witticism by a Freshman—"Why did Smith leave home?" "He saw What Happened to Jones."

Mr. Page—"Mr. Conkey, please don't sit so near the thermometer."

Mr. Chace—"We don't know that zero equals nothing."

Miss Rouse (translating)—"And his nose which always preceded him like a trunk."

"Mr. Seymour is very systematic, isn't he?"

"Indeed."

"Yes, he wears the same collar to school every day."

Jas. Russell and Cliff Burton are called the Apollos of the "Art Club" and "B. L. S."

Query—"Is cooking political economy?"

No, it wasn't the Freshmen coming to enroll, only the Art Club sitting for their pictures.

The hand that wields the excuse punch is the one all loiterers dread.

Miss Jenkins said she could hear a coupling pin fall in her second hour study class—doubtful.

Ask Miss Gilday how she makes a maltese cross.

Mr. Miller—"Guess again, Clifford, the third time is a charm."

Miss Murphy—"Yes, girls, Apollo was the god of the sun and Clytie was deeply in love with him."

Interested Pupil—"I suppose you could call her sun-struck then, couldn't you?"

Miss Murphy—"Mr. Bryant, take the pipe out of your mouth, and give this note to Miss Jenkins."

The Note—"Please accept bearer with my compliments and see if you can make him behave."

Mr. Frost is becoming quite a musician. He can now turn the leaf at the right time.

Mr. Schwitzgebel—"And maybe he will flunk me, too."

Miss Van Metre—"What does 'anti' mean?"

Maurice—"Against."

Miss Van Metre—"Well, then, what does antithesis mean?"

Maurice—"Against thesis."

Miss Baer has a new way of remembering ideas in chemistry. She pounds them into her head with a pestle.

# Go to Campbell Paint and Glass Co.

FOR ALL KINDS OF

## GLASS AND PAINT,

Telephone 270.

1228 Main Street.

---



Persons wishing advertising space in  
this paper please address

BUSINESS MANAGER  
OF THE NAUTILUS,

Manual Training High School.



## Spring Novelties Now Arriving.

Stylish Suits,  
Elegant Top-Coats,  
Novelties in Hats,  
Neckwear and  
Furnishings.

We carry the Correct Essentials for Careful and Stylish Dressers.

## Browning, King & Co.,

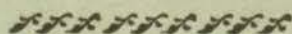
MAIN AND ELEVENTH STREETS.

# The Midland Hotel.

THE ONLY ABSOLUTE  
FIRE PROOF HOTEL  
IN THE CITY.

AMERICAN ::

:: EUROPEAN



Restaurant Unexcelled.

G. T. STOCKHAM, Mgr.



# THE NAUTILUS

VOL  
2

NO  
3

Build thee more stately mansions, O my soul,  
As the swift seasons roll!  
Leave thy low-vaulted past!  
Let each new temple, nobler than the last,  
Shut thee from heaven with a dome more vast,  
Till thou at length art free,  
Leaving thine outgrown shell by life's unresting sea!

—*Oliver Wendell Holmes.*

MARCH  
'99

MANUAL TRAINING  
HIGH SCHOOL



# CONTENTS.

	Page.
Board of Education and Faculty .....	99
Directory .....	101
LITERARY .....	103
Guardian and Ward .....	103
A Visit to Ashland .....	106
The Decrease of Our Feathered Friends .....	107
Revelations of an Autograph Album .....	110
Beauty (Poem) .....	110
Applications of the Sayings of Poor Richard .....	111
ATHLETICS .....	112
The Girls' Athletic Association .....	113
EDITORIALS .....	114
SCIENCE .....	118
Some Boring Beetles of This Vicinity .....	118
Why Study Geometry? .....	123
Natural Science .....	125
THE BOYS' MANUAL TRAINING .....	128
Value of Technical Drawing .....	128
Second Year's Work .....	130
More Room Needed .....	131
THE GIRLS' MANUAL TRAINING .....	133
An Experience With a Sewing Machine .....	133
The Science and Art of Cookery .....	134
EXCHANGES .....	136
LOCALS .....	138

# Kansas City School of Law

Follows the most approved plan for giving a legal education.

....Faculty is composed of judges and practicing lawyers as follows:

- HON. F. M. BLACK,
- HON. O. H. DEAN,
- HON. E. L. SCARRITT,
- HON. E. P. GATES,
- MR. S. B. LADD,
- MR. C. O. TICHENOR,
- HON. R. J. INGRAHAM,
- MR. J. H. HARKLESS,
- MR. J. W. SNYDER,
- MR. W. P. BORLAND,
- MR. E. D. ELLISON.

All sessions held in the evening so that students may be self-supporting.

Two years course of nine months each leads to degree of Bachelor of Laws.

## DIPLOMA ADMITS TO THE BAR

Tuition, Fifty Dollars per year and students have magnificent library privileges.

Send for Catalogue and full information to

- Wm. P. Borland, 714 N. Y. Life Bldg.,
- E. N. Powell, 614 N. Y. Life Bldg.,
- E. D. Ellison, 627 N. Y. Life Bldg.

ESTABLISHED 1886.

TELEPHONE 1453.

WE MAKE A SPECIALTY OF PRINTING MAGAZINES  
AND PERIODICALS.

*CHAS. E. BROWN*  
**PRINTING CO.**

WE PRINT "THE NAUTILUS" AND SEVERAL OTHER  
FIRST-CLASS PUBLICATIONS.

SIXTH AND WALNUT STS.,

KANSAS CITY, MISSOURI.



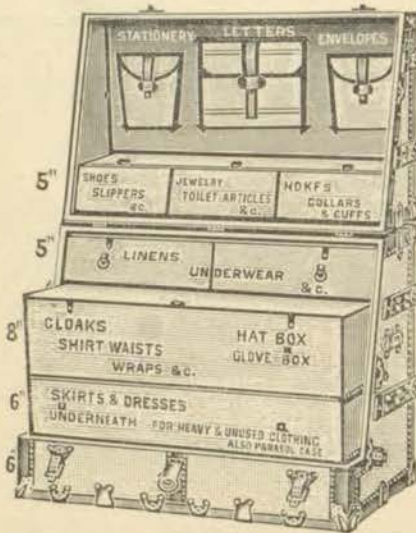
TIN AND STAMPED WARE.  
 BARBED AND FLAIN FENCE WIRE.  
 WAGON WOOD WORK.  
 SPRINGS AND AXLES.  
 BUFFALO SCALES.  
 LAFLIN & RAND POWDER COMPANY.  
 MACNEALE & URBAN SAFES.  
 CIRCULAR SAWS.

# Richards & Conover Hardware Co.

## Tinners' Stock, Cutlery, Iron, Steel and Nails.

Cor. 5th and Wyandotte Sts.,

KANSAS CITY, MO.



**E. J. GUMP,**  
 Trunks, Bags and Leather Goods.  
 821 MAIN STREET.  
 JUNCTION.

Tel. 1275.

Trunks Repaired.  
 Best Assortment. Lowest Prices.

At Mrs. S. J. Jackson's  
 Book Store,

N. E. Corner Twelfth and Locust Streets,

You can find all kinds of  
**HIGH SCHOOL BOOKS AND SUPPLIES.**

All text books for Manual Training,  
 Central High and Ward Schools.....

**The Chicago Tailoring Co.**

**F. ALTERGOTT.**

Pants from \$3.50 up. Suits from \$15.00 up.

606 EAST 12th ST., KANSAS CITY, MO.

**PURITY CANDY  
 KITCHEN,**

1025 Main Street.

502 E. 12th Street.

My  
 Vehicles  
 are  
 Equipped  
 with  
 Rubber  
 Tires.

**J. M. McINTIRE,**  
 LIVERY, BOARDING AND SALE STABLE,

1124 WALNUT STREET.

Telephone 706.

Carriage  
 and  
 Baggage  
 Calls  
 Promptly  
 Attended  
 to.

# BOARD OF EDUCATION

HON. R. L. YEAGER, President.

HON. J. V. C. KARNES, Vice-President.

HON. E. F. SWINNEY, Treasurer.

HON. W. E. BENSON, Secretary.

HON. J. C. JAMES.

HON. JOS. L. NORMAN.

HON. J. SCOTT HARRISON.

HON. F. A. FAXON.

J. M. GREENWOOD, Superintendent.

# FACULTY

GILBERT B. MORRISON, Principal,  
Director of Physical Science Course.

E. D. PHILLIPS, Vice-Principal,  
English Literature, and Director of English  
Course.

JAMES A. MERRILL,  
Botany, Zoology, Geology, and Director of  
Biology Course.

JAMES C. RICHARDSON,  
German, French, and Director of Language  
Course.

MARY FISHER,  
American Literature.

A. A. DODD,  
Director of Mathematics Course.

B. T. CHASE,  
Mathematics.

ANNA C. GILDAY,  
History and Economics.

HERBERT M. PAGE,  
Physics.

M. ALICE MURPHY,  
Free-hand Drawing.

STANLEY H. MOORE,  
Woodwork, and Director of Boys' Manual  
Training.

JOSEPHINE G. CASEY,  
Director Domestic Art Course.

P. B. S. PETERS,  
Bookkeeping, Typewriting, Stenography, and  
Director of Business Course.

BERTHA H. BACHELLER,  
Domestic Science (Cooking).

ARMAND MILLER,  
Chemistry.

J. M. KENT,  
Electrical and Mechanical Engineer, Instruc-  
tor in Applied Electricity.

W. A. CONNELL,  
Mensuration, Mineralogy and Physiography.

OLIVE B. WILSON,  
Music.

CLIFTON B. SLOAN,  
Mechanical Drawing.

SARAH E. VAN METER,  
English.

DELLA DRAKE,  
Latin.

SALLIE ELSTON,  
English.

GEO. ARROWSMITH,  
Turning and Pattern-making.

JESSIE L. GRIFFITH,  
Sewing.

CHRISTINA M. THOMPSON,  
Dress Making.

R. H. KNIGHT,  
Mathematics.

KATHARINE DUNN,  
German and Latin.

STELLA JENKINS,  
Study Hall and English.

FLOY CAMPBELL,  
Drawing.

MRS. THOS. M. SPEERS, Matron.

ETHEL OSGOOD, Clerk.

L. R. OLAFLIN, Janitor.

R. R. SHELTON, Fireman.



# R. T. THORNTON,

## Druggist,

Telephone 449.

Cor. 15th St. and Virginia Ave.

KEEPS A FULL LINE OF SCHOOL SUPPLIES.

Choice Candies.      Funke's Chocolates a Specialty.

Prescriptions delivered to any part of the City.

Give him a call.

---

Always go to —

S. H. WALES  
J. H. WALES

## WALES BROTHERS

FOR

# Staple and Fancy Groceries,

1317 EAST FIFTEENTH STREET,

Telephone 1904.

KANSAS CITY, MO

## Drawing Supplies

Drawing Sets 75c up

Drawing Boards, Easels, Thumb Tacks. All grades of Drawing Paper from cheapest practice paper to Water Color Paper.

Special prices on all Supplies to Pupils of the Manual Training High School.

## Milton Bradley Company,

H. O. PALEN, Mgr.

418 East 9th St., (Old Y. M. C. A. Bldg.)

---

# Queen of the Pantry Flour

---

Is not only a good Flour—it's the **BEST**. It gives the most satisfactory results in every kind of baking, and is all that its name implies. All grocers handle it—in response to the universal demand.

## DAVID B. KIRK & CO.,

---

KANSAS CITY, MO.

# DIRECTORY

## Officers of the Belles Lettres Society.

WALTER BURTON, '99	President
LUCILE EDWARDS, '00	Vice-President
MARTHA MILLER, '99	Secretary
PEARL BARTLETT, '98	Treasurer
RUSSIE SPYER, '98	Critic
CLARK HENDERSON, '00	Sergeant-at-Arms
GEORGE MCKENZIE, '99	Reporter

## Officers of the Art Club.

ALICE DEWOLFF, '99	President
PERRIN ROUSE, '99	Vice-President
CORNELIA HÄRZFELD, '01	Secretary
LINDA LOOMAS, '01	Corresponding Secretary
RALPH SEGUR, '00	Treasurer
MAY PERKINS, '00	Mewtadjreemid
MYRON ALBERTSON, '01	Sergeant-at-Arms
WALTER HIDDEN, '01	Critic

## Officers of the Manual Society of Debate.

HARRY S. FRAZER, '00	President
GEORGE CONKEY, '01	Vice-President
BRUCE LOCKWOOD, '01	Secretary
JAMES ANDERSON, '01	Treasurer
DARWIN DELAP, '01	Critic
FRED McCLURE, '01	Librarian
JAMES KILROY, '01	Sergeant-at-Arms
HERMANN KUBE, '00	Reporter

## Officers of the Senior Class.

LEE STALEY	President
CLARA LINDSLY	Vice-President
MYRTLE CHRISMAN	Secretary
TRUMAN ROWE	Treasurer
GEORGE JOHNSON	Sergeant-at-Arms
GEORGE MCKENZIE	Critic

## Officers of the Science Club.

FRANK WYNNE, '00	President
J. LEE HEWITT, '99	Vice-President
FLOSSIE REINHARDT, '00	Secretary
TRUMAN ROWE, '99	Sergeant-at-Arms
FRED DAVIS, Chmn., '08	Ways and Means Committee
CORINE BAER, '99	
EMORY MERSHOM, '01	
WARNER KEITER, '00	Membership Committee
GEORGE MCKENZIE, '99	Critic

## Orchestra Members.

MR. ARMAND MILLER, Director.

FIRST VIOLINS.

ANNA JAMESON.  
LETA ROGERS.  
GEORGE CONKEY.

SECOND VIOLINS.

MERLE ROGERS.  
EDWARD LEGG.  
JOE EASLEY.

THIRD VIOLINS.

CLARA HÖRRING.  
ANNA GIFFIN.

'CELLO.

LOU ROGERS.

PIANO.

CLARA LINDSLY.



**I**N THE whole list of personal belongings nothing so perfectly indicates the owners' taste as the carriage and harness. A correct carriage and harness is produced only by careful attention to an almost infinite number of details.

The Studebaker Carriage and Harness are the result of constant study to unite perfection and style with beauty of line and fineness of finish. They are made in every desirable form for city or country use.

**Studebaker Bros. Mfg. Co.,**

810 to 814 Walnut Street,

Kansas City, Mo.

---

## R. S. ELLIOTT & CO.,

...DEALERS IN...

*Guns, Ammunition, Fishing Tackle and  
General Sporting Goods.*

*Complete Line of Spaulding's Base Ball and Athletic Supplies.*

*Agents for Deuts' Dog Remedies.  
Write for booklet on treatment and  
care of Dogs.*



807 Delaware Street,

KANSAS CITY, MO.

---

## CENTRAL COAL & COKE CO.

SUCCESSOR TO

THE KEITH & PERRY COAL CO.

• • **Coal, Lumber, Ties and Timbers** • •

---

KANSAS CITY, MISSOURI.



## LITERARY DEPARTMENT.

### GUARDIAN AND WARD.

Mr. Howel Gilbert was the president of the largest and most prosperous banking house in St. Paul. He was a man not far on the road of life, but well on the road to success. Every speculation was a successful one and he had begun to think that he should be more than grateful to kind Providence, and hence we are introduced to Mr. Gilbert, the most charitable and well-beloved man in all St. Paul.

He sat in the private office of his banking house one balmy afternoon in September, his head resting on his hand and his thoughts far from the many unanswered letters which lay on his desk before him.

While he sat thus the door opened and a boy handed him a card.

"Miss Fuller," he said softly to himself, "what does she come for, my boy?"

"I don't know, sir, she just asked if you were in and I said 'yes.'"

"Very well, tell her if her errand is important I will see her now, if not, ask her to call again."

He picked up a letter but before he could peruse it a woman of about twenty-eight or thirty years stepped into the room.

"Pardon me for taking your valuable time but"—and here she stopped—"I wanted to speak to Mr. Gilbert, the president of the bank."

"I am Mr. Gilbert, the president of the bank, what can I do for you?"

"But I thought you were an elderly gentleman, and that you were married and had children."

"And so I am, madam, but will you kindly tell me your errand? My time is valuable."

"Mr. Gilbert, I am the guardian of a very beautiful girl. I am to be married soon, and I must find a home for this child. I have so often heard of your



many kindnesses, and as she is too clever and bright to put in a home where her education and talents might be neglected, I have come to you to ask your help and advice. It would be asking too much of you to take her into your own home, but perhaps you know of some worthy one who would take her."

"I should like to see this young girl, Miss Fuller, and talk to her. If suitable to you, may I call at four?"

"I will be at home," she replied, and left the office.

The banker lost himself again in his thoughts, but soon aroused himself and wrote some letters.

Promptly at four Mr. Gilbert stepped from his imported coupe and rang the bell of Miss Fuller's home, it was answered by a waiting maid who ushered him into the parlor. Presently Miss Fuller entered and following her a beautiful young girl of about sixteen. She was tall, fair hair, blue eyes, and she scarcely noticed the man who had risen to greet her.

"Olive," said Miss Fuller, "this is Mr. Gilbert; he has called to see you and hear you play and sing."

"I am glad to meet you, Mr. Gilbert;" and her voice struck him with its clearness and sweetness; and too he noticed and admired her coolness, and that she was entirely regardless of self.

She seated herself at the piano and played a simple minuet. When she had finished, without heeding Mr. Gilbert's compliments, except with a smile, she sang the soft, pleading solo "Mignon." And when she had finished the man whom had been politician, banker and singer, knew that the girl before him was to be one of the world's finest musicians.

"I am very much pleased with Miss Olive, and for the present, Miss Fuller, I would prefer her home to be with me.

My wife is an invalid and in need of a companion. Olive will have the same advantages as my eldest daughter, and when I see fit her education shall be continued in a boarding school."

"Ah, Mr. Gilbert, you are too kind; I had not expected this when I came to you for help." And Miss Fuller's eyes too, expressed gratitude.

"Not at all, Miss Fuller, it will be a pleasure I know. But you spoke of Olive's father; where can I find him, I would like also to see him."

Miss Fuller gave him the address and he bade them good-bye, and stepping into his carriage drove to the given address.

Olive's father was an exiled Dane. Stricken with paralysis, he was confined to his bed and unable to provide for his beloved daughter.

\* \* \* \* \*

When Mr. Gilbert had stated his errand the old man's eyes filled with tears and he grasped the hand of his daughter's benefactor.

The next day Olive went to her new home and began the duties assigned to her. The greater part of her day was spent with the children; a walk in the morning in the park, and in the afternoon a lesson was given to the eldest, and an hour she read to Mrs. Gilbert.

Time went on and she was as one of the family, dearly loved by all.

One night while Mr. Gilbert sat in his study, he heard a footstep and turning from his reading he saw Olive standing before him.

"Why! my child," he exclaimed, "why are you not in bed?"

"Do not scold me, please, Mr. Gilbert, but since papa died I cannot sleep, and to-night I grew so tired there, and Mrs. Gilbert is sleeping and I knew you were here, so I came down; do let me stay awhile," pleaded the soft voice.

"But it is mid-night, and time you

were asleep; put all thoughts from you and rest." And Mr. Gilbert's voice was not so gentle as it was wont to be.

If a person helps or is in any way of service to a Dane, the aided one feels that his life belongs to his benefactor. Olive's heart was not at rest for her calm, peaceful life gave her no opportunity of repaying her guardian.

The next day Mrs. Gilbert asked her husband if he had not noticed Olive's increasing infatuation for him; he said he had not, and told his wife it was her imagination. But she contended she had noticed it and that Olive was no longer a child, but a woman.

Mr. Gilbert was worried and decided that Olive should be sent away to study with the best teachers in New York. He wrote to a friend and asked that Olive be placed under her care, and mailing his missive, went to his ward to tell her his plans.

"And I must go away from you?" she asked in a tearful voice.

"Yes, my child, I have taught you all I know; you are as wise as your teacher, and I must not allow your talents to be neglected. And where you are going you will find one who will make of you a grand artist."

"When shall I go, Mr. Gilbert?"

"You will leave the latter part of the week; that will give you plenty of time to get ready. I know you will like your future guardian and will study hard with your master."

"I shall always have but one guardian, and that one is you, Mr. Gilbert. Papa gave me to you when he died, and I must do as he wished, obey you in all things, and since you will I shall go

away to continue my studies, I can but obey. I shall be ready." And before he realized she was gone.

\* \* \* \* \*

"I have come to tell you good-bye, Mrs. Gilbert, and to thank you for all you have done for me," said Olive as she stood dressed for journey.

"Good-bye, dear child," said the pale beautiful woman who had so long been an invalid, "and I wish you every success; let us hear from you often."

Olive's good-bye to Mr. Gilbert was said with tears in her eyes, and a promise to be brave and work diligently.

She went to New York, studied there for two years with her friend, left for Europe on the advice of her guardian. While there she met the Baron X—. He soon learned to love her and asked for her hand in marriage, but she refused. Her companion, Mrs. Grey, wrote to Mr. Gilbert about the affair and he answered stating that it was his wish Olive should marry the Baron, and she obeyed.

"Baron, I will be your wife, but my heart I cannot give you. I have none to give, half lies with my father, and the other half—but no matter, I will do my duty and be a faithful wife.

To-day she is the court singer to the Queen of Italy, and frequently a letter from the faithful Olive comes to the guardian, who is now alone, deprived of wife, his little ones being educated as the girl, Olive, and he roaming over the world with only the remembrance of a little lonely girl who loved him, and a thought now and then of the beautiful, noble woman who is singing her life away at the feet of a king.

HELEN W. HIGGINS.





## A VISIT TO ASHLAND.

Ashland, the beautiful home of Henry Clay, is situated just outside the City of Lexington, Kentucky. After leaving the pike and entering the gateway, we at once noticed the beautiful ivy vines growing and hanging down over the terrace, peeping out from behind the trunks of trees—for ivy seems to flourish in the "Blue Grass Region" better than anywhere else, as everything does in that favored land. On either side the driveway there is a dense growth of trees, and on a hot summer day you feel very thankful for their shade. Soon we perceived the house through the trees, and an imposing spectacle it is. The mansion is situated on a slight elevation and originally consisted of a building two stories and a half high. On either side there are wings, the full breadth of the house, and since Clay's death *Ls* have been added, projecting to the front. The house presents an unusual aspect because of the many additions so different in architecture from the original structure, but all lack of unity is hidden by the luxurious growth of the Virginia Creeper.

It does not seem to be generally known that the Kentucky building at the World's Fair was an exact copy of the main building at Ashland, without the *Ls* and modern additions.

Entering the house, we found ourselves in a lofty, octagonal hall and almost opposite the front entrance is an immense mirror which causes many laughable mistakes by persons trying to walk through, thinking it an extension of the hall. To the right is the staircase, to the left is an office used by Henry Clay himself. Directly opposite the entrance is the drawing room and dining room connected by a large, arched doorway. Passing to the North

wing is the imposing library, an octagonal room with a dome ceiling, all furnished with panels of highly polished walnut and ash, and the whole room is lighted from above. The entire woodwork of this apartment is of walnut and ash cut from the forests on the place. Hanging on the wall by the staircase is a portrait of Clay, when a young man, painted by Matthew Jonett, the celebrated artist of Kentucky. In the library is another portrait of him more advanced in years, painted by a member of the family. In the library is also a bust of Clay taken from Hart's statue. The furniture in use at Ashland today is the same that he used so many years ago. The dining table, side board and chairs are of walnut and have the spindled legs. On a side table is an odd looking silver water pitcher, a coffee-urn rests on the side board from which several presidents have drunk. Also, besides the urn, is a silver cup presented to Clay by the Kentucky horsemen. After his death, his son, James B. Clay, lived at Ashland. At his death it was purchased for the use of the Kentucky University, but in the last few years it has again come into the hands of the family, the present owner being Henry Clay McDowell, whose wife is a daughter of Henry Clay, Jr. In Clay's time, it became necessary to tear down the house on account of defect of masonry, but it was rebuilt and the same materials used, so it stands now almost the same as the original.

Leaving the house, we next wended our way to Clay's walk to the left of the house. It is most picturesque twining its way among the tall pine and cedar trees.

Our next steps were traced to the stables, but on our way we were stopped

by seeing near us the ice-houses. They are built under ground with only the top and door appearing on the outside. These are composed of small pieces of stone plastered together with mortar. They are still in use, and I suppose if they were in Kansas, would be called cyclone cellars. We at last reached the brick stables all covered with vines.

The owners of Ashland have always

been lovers of fine horses, and we surely did see some beautiful animals, several of which are considered the finest trotters in the "Blue Grass Region." We returned to the house and before leaving this historic spot, took a look over the rolling plains to Lexington. But above all towered the statue of Henry Clay erected by his loving admirers in the state of Kentucky.

MARGARET C. TATE.



### THE DECREASE OF OUR FEATHERED FRIENDS.

The rapidity with which the birds of this country are decreasing is rather alarming. A few facts will suffice to show, that unless laws are enforced for the protection of these feathered beauties, there will be repeated the same sad results that happened to the buffalo.

To prove that the native birds of this continent have suffered great loss at the hands of man, I will show that one helpless species has been totally exterminated, while others have not fared much better.

The first species of American birds exterminated was the great auk. This bird was once abundant along the coasts of Labrador, Iceland, Newfoundland, and other Islands of that vicinity. The height of this bird was about three feet, and its weight nearly that of our domestic goose. The greatest hindrance to the existence of these birds was that they had lost the use of their wings as means for flying. Although these appendages were mere flippers at their sides, they were of great assistance when swimming. As an example of their swiftness as swimmers I take the following from a report by Dr. Fleming in 1821:

"An auk had been seen off the coast of Papa Westra, one of the Orkney

islands, but in spite of the efforts of the crew of a six-oared boat, continued for several hours, the auk could not be overtaken."

Although these birds seemed so difficult to capture they were very easily exterminated.

As they could not fly, and being clumsy on foot, when found inland they were very easily driven into enclosures and wantonly slaughtered, their slayers saving only feathers and what meat they cared to consume.

The destruction of this helpless bird was entirely due to man's destructive, selfish nature, and had it not been for the work of scientists nothing would remain to show that these birds once existed. The scientific collection consists of seventy skins, nine skeletons, sixty-five eggs, and various bones from different individuals.

Perhaps the species of bird which has suffered the greater loss in numbers than the auk, though not exterminated, is that one which is the perfect picture of peace and innocence. Its near relative, the dove, is emblematic of innocence and love. The bird to which I refer is the wild pigeon.



When our forefathers settled along the eastern shores of this continent, their meat was taken almost entirely from the forest, field and stream. Among others the wild pigeon contributed a large share.

These birds were then so numerous that the destruction of many of them was necessary in order that the ripening crops of the colonists would not be devoured.

A few facts taken from reliable statistics will give a small idea as to the numbers of these birds which must have then existed.

From the year 1650 to 1680 these birds were so numerous that flocks of them frequently passed which were of such magnitude that they hid the sun like large clouds. The following taken from Audubon shows the magnitude which some of these flocks attained: "Quite frequently flocks were seen which occupied three hours in passing, and were a mile in width and thirty yards in depth, flying about three birds to the square yard."

Frequently birds with rice in their crops have been killed in New York. The nearest place that these birds could obtain rice was in North Carolina or Georgia, a distance of five hundred miles, hence they must have traveled at about one hundred and twenty miles an hour in order to reach New York before the rice would pass from the crop.

If a flock of pigeons were three hours in passing, and moving at a rate of one hundred and twenty miles per hour, it would be three hundred and sixty miles in length. So such a flock as the one Audubon describes would contain over 1,115,000,000 birds. Wilson reports flocks which would contain 2,230,000,000 birds.

Think if a flock of pigeons of this magnitude would alight in a man's wheat field. The result would be a total devastation of his crop. So we see that the partial destruction of these birds

was very necessary. But man was not satisfied with necessary results, he has continued the destruction until extermination has been almost complete.

While the disappearance of the wild pigeon is far greater than that of any other species, we find an alarming decrease among those birds classed as water fowls. Though the disappearance of the greater portion of water fowl is due to man's cruelty, part is accredited to the fact that much of their former haunts and breeding places are being turned from marshes into tillable farms.

Instances by the hundred can be cited which show the decrease of these birds, but let us turn our attention to those which are more dear to us, those which are constantly about our homes and are a source of much pleasure and enjoyment.

The South Carolina paroquet, though not a bird of song, is about as handsome a bird as we have. This beautiful bird is the only parrot native to the United States and was once numerous throughout North Carolina, South Carolina, Georgia, Arkansas and the Indian Territory. It is now nearly extinct, there being but a few in parts of the Indian Territory.

Strange as it may seem this bird was killed for no other purpose than to satisfy the desires of the society ladies of the United States and Europe.

This fashion of wearing feathers for ornament has caused the extermination of many of our most brilliantly plumaged birds, but it has also caused the introduction of a new industry, that of dyeing the feathers of our domestic fowls. The manufacture of plumes from the feathers of the domestic birds is quite an art and no doubt will be a paying industry so long as feathers are worn. Plumes which, if genuine, would cost about twenty-five dollars, and sacrifice the life of some beautiful bird, can be manufac-

tured for a small cost. So while these manufactured articles will satisfy the desires of our feather wearers the lives of thousands of our beautiful songsters will be saved. Charged against the feather wearers are the lives of thousands of bluebirds, grossbeaks, tanagers, buntings, warblers, orioles, finches, blackbirds, etc., etc.

But to the disappearance of our house pets such as the wren, bluebird, martin and many songsters which love the habitation of man, we are sorrowfully indebted to that gentleman who brought from England several pairs of English sparrows. These foreigners became numerous with incredible rapidity and were not checked, and now it seems impossible to cause an appreciable decrease in their number.

They have by their quarrelsome nature, toward other birds, driven from our groves and parks, such songsters as the catbird, thrush and mocker. It has also taken the home of the wren, martin and bluebird. Not only have these birds deprived us of this source of enjoyment, but they are becoming so numerous in the East that the damage done by them annually amounts to millions of dollars.

If the girls of this generation will wear feathers, let them adopt a fashion of wearing all the English sparrows they can possibly use on their hats. With this demand for a beginning we might succeed in causing the decrease of this bird to such an extent that our parks would once more be made cheerful by the songs of the woodthrush and mocker, and also beautiful, by the sight of the warbler and tanager.

It is not to women and English sparrows entirely that we owe the disappearance of many of our song birds, but to

boys, who having a crazy notion in their heads, satisfy it by robbing every bird's nest they can get their hands upon. This they call egg collecting. Another name for this which seems far more appropriate, is nest robbing.

This egg taking may seem a little thing, but it not only causes a decrease of our birds, but promotes in the youth an inclination to take something which is not his own. For this reason alone such practice should be suppressed. But to the boy who has a desire to kill every bird he can, and remove its skin in a haphazard way and throw it into a box, calling this a collection of birds, I can only suggest a term in a reform school.

To collect birds requires much hard work as well as exposure to all kinds of weather and conditions. Furthermore to prepare a skin scientifically requires much skill and the patience of "Job." Hence the reason why so few of the so-called bird collectors ever make a really scientific collection.

Having been shown that our birds are forever leaving us are we not ready to say that stringent laws should be passed to the effect that no bird should be wantonly killed. There are, however, laws to the effect that those who kill a song bird or any bird not specified as a game bird, are subject to a fine of not less than five dollars and not more than fifty dollars. But this law is a dead letter on the statute book.

There being no enforced laws to aid us in saving our birds, cannot we as individuals use our influence in some way that will tend to check the useless slaughter of our feathered beauties?

"On mountain top, on billowy sea  
On the leafy stems of the forest tree  
How pleasant the life of a bird must be."

T. ROWE.



## REVELATIONS OF AN AUTOGRAPH ALBUM.

The other day while hunting something in the garret, I came across a little faded brown leather book. I did not recognize it at first, but on turning the leaves, I saw that it was a relic of my childhood days—my autograph album. I sat down and looked at it, and I must confess that a few tears came in spite of my efforts to keep them back. How many who wrote in this little book are now dead and perhaps forgotten!

On the first page I see the words: "Dear son John, may your life be as pure and white as the leaves of this book. Your loving mother." She has been dead these twenty years, and yet it seems but yesterday that I complacently viewed the book, which was her Christmas gift to me.

On one page in a school-girl's handwriting, are the lines: "Roses are red, violets are blue, sugar is sweet, and so are you. From Mary Smith." Not very appropriate, but I was very proud of this, for she was my sweetheart. She was the belle of the school, and all the boys envied me. I once had a fight with Tom Jones because he called her a "cotton-head"—she with those beautiful golden curls! A few years

later I was best man at their wedding.

In another place, these words are written, or rather scrawled: "Dere Jon, I luv u frum litel Bob." This was written by my brother who has little tots of his own now, that write just such notes to their old uncle.

How many memories my little album recalls! One writer went west to seek his fortune, and was killed in the caving in of a mine. One is a missionary, one an explorer, one is a general in the army, and has lost an only son in the battle of Santiago. Most of them have "settled down" with a wife and children, but a few are old bachelors like myself. Of the girls who wrote in my album, all are married except one.

If any one had told me thirty years ago that Mary Smith and Tom Jones would be married, I would have considered him or her as a fit inmate for an insane asylum. Nothing could show me plainer than my old album, that no one knows his own destiny. Shakespeare said: "All the world's a stage, and all the men and women merely players," and we must perform our part in the great drama of life.

ELSIE GANZ.



## BEAUTY.

Beauty 's in the clover,  
Beauty 's in the air;  
Beauty 's in the fragrant grass,  
Beauty 's everywhere.

E'en the brook is beauty,  
As it ripples on its ways  
Laughing, dancing, dipping,  
In the bonny May.

In the silent twilight,  
With the peeping pearls,  
'Tis the time that beauty  
All her wealth unfurls.

But this earthly beauty,  
Which Thou giveth me,  
Are but mirrors only,  
My sweet Lord of Thee. H. H.

## APPLICATIONS OF THE SAYINGS OF POOR RICHARD.

Written in Class, by a First Year Pupil, after a discussion of Benjamin Franklin's Proverbs.

As I was traveling from Chicago to St. Louis, I went to the end of the car to wash my hands. There I saw a train-boy reading a novel called "A Brush with Three Murderers," by the author of "Nick Carter."

He must have been reading where the murderers disposed of their victims, because when I touched him on the shoulder he jumped as if he were shot. I said to him, "Dost thou love life, then do not squander time, for that is the stuff that life is made of."

He looked at me as if I were some kind of being whom he had never seen before, and asked me what I meant.

I sat down beside him and told him that "Lost time is never found again," and that when he was reading that trashy novel, he was wasting time, and that if he loved life, he should not read such books.

I told him that if he had any time to read, to read "Poor Richard's Almanac" and he would find out where I learned the proverbs which I quoted to him. I left him saying, "A word to the wise is sufficient."

Many years afterwards, as I was traveling over the same road, the conductor came to take my fare. After we had

gone about two miles, I asked him if he was in a hurry, and if there wasn't time enough to take up fares between Chicago and the next station. He looked down at me, smiled and said, "Time enough is always little enough."

I recognized the voice and also the proverb. But before I could say anything, he began thanking me, and said he was helped very much by "Poor Richard's Almanac."

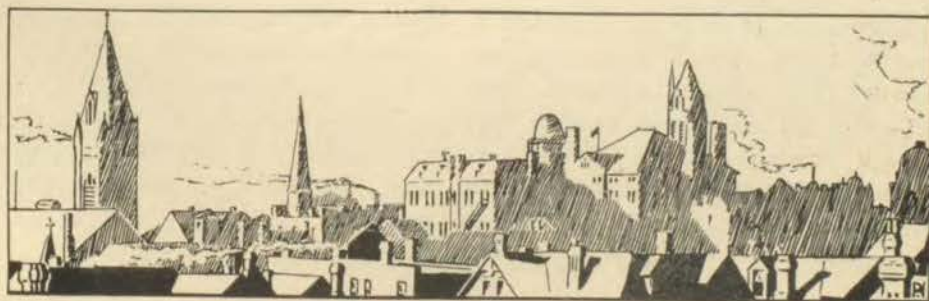
He furthermore stated that Poor Richard was right when he quoted the proverb, "Diligence is the mother of good luck."

I asked him how he knew me, and he said that he was the train-boy whom I told not to read trashy novels.

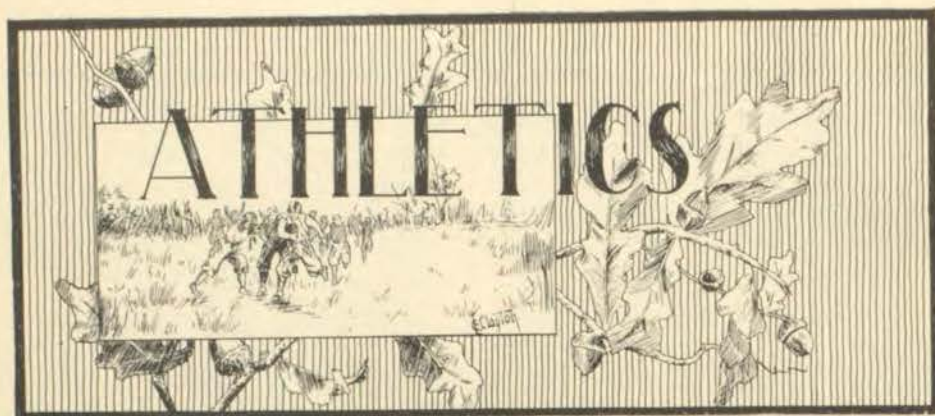
It was now my turn to be surprised. I asked him to tell me a little of his past life.

He said, when I was talking to him that day, that he had resolved to quit reading novels, right then and there, and to work hard. He said that he found the proverbs, "The sleeping fox catches no poultry," "God helps those who help themselves," and "Sloth, like rust, consumes faster than labor wears," and many others which Poor Richard quoted, to be true.

WILLIE F. WILD.







Considerable has been done concerning athletics in our school since the beginning of the year. An Athletic Association has been organized. This association has long been needed to govern the many athletic teams organized. It has, however, done more than govern sub-organizations; it has started a gymnasium and from present prospects it will make quite a success of it. So far all articles in the gymnasium are those loaned by members of the association; later on, we expect to have many things made by our boys in the shop.

This association was organized on the 30th of January, when a meeting of all interested in athletics was called. The attendance was large and all were anxious to organize. Mr. Sloan was elected chairman, protem, and Cliff Burton, secretary. A committee of five was appointed to draw up a Constitution and By-Laws. The next meeting was devoted to the election of officers. The following are the officers elected: Carl Bryant, President; James Kilroy, Vice-President; Burr Douglass, but now James N. Russell, Secretary; Richard Merri-

weather, Treasurer; Arthur Peters, Sargeant-at-Arms.

The association now consists of 100 members. It outfits the teams and receives the proceeds made by them. The Baseball team has now been organized with Walker Campbell as Captain and Arthur Peters, Manager, and has begun practice. The association expects good work from the boys, as it has purchased all the necessary things, willingly and freely. The subject now thought of in the association is the sending of representatives to Columbia to complete in the field-day given on the ninth and tenth of May. It is impossible as yet to state whether or not we will send representatives. Of course our boys might do marvelous things in the way of athletics, but whether or not we will be able to cope with men is another question. At any rate, we are glad to say that at last we have our long desired gymnasium, and should we fit it up well we shall be still more pleased.

Judging from the active work of our gymnasium and carpentering committees, it looks as if our last hope shall be realized.

C. H. B.

## THE GIRLS' ATHLETIC ASSOCIATION.

It has long been an understood fact that the reason women have not accomplished as much in the world as men, is because they have not the physical strength. This question of physical strength stares nearly every one in the face, to some extent, but ten times more so with the average girl than with the average boy. To many of our girls of today it becomes a very serious question whether she will have strength enough to finish her high school course even, and if she does muster up will power enough to carry her through the four years, what is she afterwards? In many cases, an almost complete physical wreck. And why is this? Simply because the girls for generations, have let the physical side take care of itself as best it could, at the same time drawing on it and expecting it to furnish the muscular strength and brain power to keep them up. Every girl will admit the absurdity of such a method. But this is just what girls have been doing to a greater or less extent, trying to do the same work that the boys do, mentally, and at the same time shutting off the source of supply that was intended to furnish them with the power necessary to accomplish this. The body is the machine, and the only one by which we can accomplish that which we wish to do. And if we neglect this machine of our's, how can we expect to accomplish anything? As Henry Ward Beecher has said, "My body is an engine. If I keep it well oiled and every screw tight, with fire in her box and water in her boiler, I can

accomplish great things. But if I neglect to attend to these matters, I must either wear out or break down."

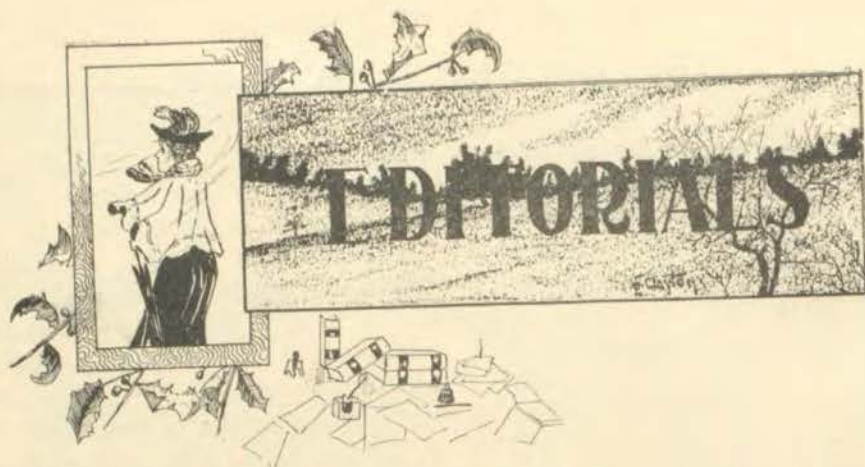
Realizing the need of gymnasium work and athletics in general, the girls of the Manual Training High School have organized a Girls' Athletic Association. The Association is open to every girl who is a member of the school.

The Boys' and Girls' Athletic Associations are working together to fit up the gymnasium and to raise money enough to obtain the apparatus necessary. Quite an interest has been shown in this work and a good deal has already been accomplished. The Girls' Athletic Association has been in existence only about six weeks, but it is thoroughly organized and ready for work. The officers are: Miss Pearl Bartlett, President; Miss Anna Wynne, Vice President; Miss Harzfeld, Secretary; Miss May Perkins, Treasurer, and Miss Bachrach, Sergeant-at-Arms. Miss Gilday has graciously consented to help the Association, not only by directing the gymnasium work, but by giving lectures on hygiene principles. It is also the intention of the Association to organize teams for basket ball etc., as soon as possible. All the notices are put on the boards in the halls, so watch and come to our next meeting prepared to join the Association. Every girl ought to be a member; it guarantees a pleasant time, good systematic work under a competent instructor; its members will be better able to cope with the problems of life both physically and mentally, than they would have been otherwise.

PEARL BARTLETT.







### EDITORIAL STAFF.

PERRIN ROUSE, '99, . . . Editor-in-Chief  
 GRACE PHILLIPS, '99, . . . Associate Editor

#### LITERARY EDITORS.

GRACE CASSEL, '99. . . . WALTER BURTON, '99

#### SCIENTIFIC EDITORS.

ANNIE WYNNE, '00. . . . GEORGE MCKENZIE, '99

#### MANUAL TRAINING EDITORS.

WALTER HIDDEN, '01. . . . MAY PERKINS, '00

#### LOCAL EDITORS.

LUCILE EDWARDS, '00. . . . WILL HALL, '01

CHARLES CLAYTON, '99, . . . Artist

CARL BRYANT, '01, . . . Athletic Editor

LEE STALEY, '99, . . . Exchange Editor

#### BUSINESS MANAGERS.

JAMES N. RUSSELL, '01, . . . Manager

DWIGHT FROST, '01, . . . Assistant

Entered at the Kansas City postoffice as second class matter.

THE NAUTILUS is published once every two months in the general interest of the Manual Training High School, at Kansas City, Mo.

The subscription price is 30c per year by mail; 25c to pupils of the school. Single copies 10c. There will be four numbers this school year.

Contributions are requested from all members of the school.

Address all communications to

### THE NAUTILUS,

Manual Training High School,

KANSAS CITY, MO.

The visit of Mr. J. Liberty Tadd to our school, and his lecture in the Assembly Hall on the evening of the 13th of

March was a significant event both from the standpoint of general education, and from that of Art, Manual Training, and Nature Study. Standing as Mr. Tadd probably does as a typical exponent of the best Eastern ideals of educational processes, his visit to the various departments of our school brought us into direct comparison with the best which has been done elsewhere. It was of course gratifying to us that Mr. Tadd was so well pleased with our school and that he so expressed himself in such positive and unmistakable terms. He did not hesitate to say that he considered ours the ideal school from the high or secondary school standpoint. But Mr. Tadd's work is chiefly in the grammar school grades, he being the director of the industrial art work in the schools of Philadelphia. He was especially impressed with the correlation of the various studies and exercises and with the prominence everywhere given to the aesthetic side of the work. The large audience which greeted Mr. Tadd was another evidence of the growing interest in Art and Manual Training. The school principals, teachers, parents, pupils and friends of education generally who united to fill the Assembly Hall were all pleased with the lecture. The chief lesson which Mr. Tadd brought to us was that drawing should begin early in the child's education, that it should

begin with free arm movements, and that it should be done not only with one but with both hands as well. He urged that drawing from objects should become automatic by constant repetition, and that the various forms of nature should become organic in the mind so that they can be reproduced from memory.

Since our last issue another improvement has been added to our school which gives health, satisfaction and recreation to many boys and girls. The attic of the main part of the building is very high and large, and has been fitted up for a gymnasium for both boys and girls. The equipment has so far been furnished chiefly by the pupils, and consists of turning poles, rings, Indian clubs, dumb-bells, boxing gloves, etc. The girls are at work on their new gymnasium costumes which they expect to have ready in a few days. The work in the gymnasium has been undertaken with the proper spirit. We are greatly in need of a physical director, but strict and necessary rules and regulations have been drawn up by the Athletic Associations governing the use of the gymnasium and the conduct of the members while using it. One special advantage of a gymnasium which is already noticeable is the opportunity it gives for all to exercise—the weak as well as the strong. Occasional contests may have their uses, but when the idea of contest becomes predominant all but a few of the strongest who need physical development least are ruled out, and the real object of school athletics is subverted. Our gymnasium is lacking in light and ventilation, and we are hoping that when our building is finished the Board of Education will give us a sky light on the south slope of the roof, which would serve also for ventilation. With this improvement we

will have a gymnasium as good as could be wished.

The Forty-Ninth Report of the Public Schools of the State of Missouri has this to say of our school: "The Manual Training High School of Kansas City, now a year and a half old, was the first public school of the State to exemplify fully the forms of industrial education, for both boys and girls, in correlation with the ordinary high school instruction. The Principal of this school was given a year to study education in other parts of the country before venturing upon the new enterprise. In no other city of this country, so far as I can learn, has better opportunity been given to harmonize and put into effective operation the best conceptions of secondary education, and there is good reason to believe that this Manual Training High School, though so young, is not surpassed by any similar institution in the country. It exemplifies sound education, and I believe it is typical of the general high school instruction of the future." We thank the State Superintendent for his good words, which we think are fully merited, and it is the hope of THE NAUTILUS that the high ideals, the unity of purpose, and the business tact which has made our school what it is may be perpetuated, and guarded from all disintegrating agencies.

We are glad to report progress on the special election bill now before the General Assembly at Jefferson City, which if it becomes a law will allow the Board of Education to call an election this spring for the purpose of voting on the proposition of bonds to build more school buildings. The bill, introduced into the Senate, has passed that body, and is at present waiting to be taken up by the House of Representatives.



There seems to be no opposition in the House; and it only remains for those interested in its passage to keep it moving. The importance of the measure can be emphasized by thousands of ward school pupils who are crowded into incommensurable quarters, and by the eleven hundred and ten anxious students of our Manual Training High School, who are doing the best we can in our unfinished building which is already filled to overflowing. Besides, the work on metals provided for in the course of study will demand the addition of new shops and their equipment.

The current expressions we hear about liquid air again remind us of the popular and erroneous belief that every step in advance is a great "revolution" in science. We hear it gravely asserted that Mr. Tripler has "discovered" liquid air. Liquid air was discovered when it was found out that the physical condition of any substance depends simply on the temperature and pressure. No substance is so solid that it will not vaporize under sufficiently high temperature; and no substance so gaseous that it will not solidify under sufficiently low temperature. The liquefaction of air is not new but has been practiced in the laboratory for experimental purposes for several years past. So-called "new discoveries" usually consist in the utilization of some well known principle in science. In the instance of liquid air Mr. Tripler, and others, have perfected a mechanical device for highly compressing the air so that when it is allowed to expand it freezes by the lowering of the temperature caused by the rapid change of heat units into the mechanical units of expansion. When the expansion of liquid air, and its vaporization is resisted mechanical power results the same as when the ex-

pansion of steam is resisted and we utilize the force in moving the piston of the engine. The alleged claim of Mr. Tripler that the power furnished by three gallons of liquid air can liquify ten gallons will of course be doubted by the scientific world until Mr. Tripler furnishes more substantial proof than his *ipse dixit*.

#### Our Monday Entertainments.

A musical programme, under the direction of Mrs. Mabel Haas-Speyer, was given on January 23, which consisted of a piano solo by Miss Concanon, a violin solo by Miss Russell, and vocal solos by Mrs. Speyer and Mrs. Herbold. The numbers with their encores were very much appreciated by all, and we hope to hear from these musicians again.

On January 30th we listened to an address by Mr. Homer Reed on the subject, "My Mind to Me, a Kingdom Is." He related several of his experiences since his talk last year, which illustrated the subject of his address. To illustrate how little of the daily experiences of the average pupil are remembered, Mr. Reed asked how many remembered the subject of his talk of a year ago. Only a few could remember the subject though all remembered that the talk was given. Two cornet solos by Prof. J. G. Pearson preceded this much enjoyed address.

A violin recital by the pupils of Mr. Boucher was given on the morning of February 6th. It consisted of a duet by the Pruzan sisters and solos by Miss Gladys Baldwin, Miss Laura Reed, Miss Margaret Fowler and Miss Olive Whiteley. Mr. Boucher played a solo as a

concluding number. These young violinists showed remarkable development, and their proficiency was admired by all.

Mr. H. M. Beardsley, one of our city councilmen, talked to us very entertainingly on February 13th. He gave some wholesome advice on the "Proper Ideals in Life." He said that while our ideals could not always be realized, we are made better by having a high aim, and that there is one ideal which can be reached by all,—that of doing good to our fellowmen. To be of some use in the world is within the reach of the humblest individual, and the effort brings happiness and dignity to him who strives. Mr. S. R. Mills favored us with a vocal solo.

The programme for February 20th, was given by the "Schubert Quartette." Mrs. Catherine Conway, Mrs. Catherine Donnelly, Mrs. Daisy Brindley and Miss Lucy Whitney. They were assisted by Miss Frances McCartney, Miss Claudia Johnson and Herr Jos. Raach. They gave several excellent numbers, and were enthusiastically encored.

On February 27th, one of the most instructive as well as enjoyable entertainments we have had this year was given by Mr. J. P. Raymond. With the aid of the stereopticon and some views which he prepared he took us on a delightful trip through the "Land of Ponce de Leon." The views gave us an excellent idea of the wild and beautiful scenery of Florida and of the peculiar architecture of the buildings in St. Augustine and other cities of that region.

The views were interspersed by songs and instrumental accompaniment by Misses Minnie and Netta Wright, vocalists, Miss Ethel Knickerbocker, violinist. Appropriate pictures were thrown on the screen while the songs were being sung.

A musical recital was given us by the pupils of Mrs. Cora Lyman, assisted by Mrs. Burnett and Mr. Wallis, on the 6th of March. The numbers consisted of selections played by Miss Edith Flanders, Miss Mary Edmonds, Miss Irene Woods, Miss Marion Bangs, Miss Mary Burnett, Miss Inez Filley, Mr. Fred Wallis, Miss Gertrude Edwin, Miss Lyman and Miss Bertha Wheeler. The careful training of these pupils was shown in all the numbers.

On March 13th, Supt. J. M. Greenwood gave an address on "The Recitation." He illustrated by means of stories and by concrete examples, the necessity of learning what we had before us so well that a "review" would be unnecessary. He also spoke of the relation of one study to another and the bearing of new studies on those which we have had before. Before this we listened to a piano solo.

A musical programme on the 20th of March was rendered by Mrs. J. W. Stowe, Miss Martha Miller, Mrs. H. B. Brisbane, Mrs. A. E. Blachert, Miss Leta Johnson and Miss Harriet Turner. Miss Ella Perry added to the musical part by a reading entitled, "What the Violin Said." The numbers were liberally encored and much appreciated.





### SOME BORING BEETLES OF THIS VICINITY.

In the yards and vacant lots about the city, we see hundreds of forest trees, chiefly hickory and oak, nearly all of which are dead or dying, very few indeed being in a perfectly healthy condition. The reason generally given for this is the smoke of the city, or the lack of sufficient moisture in the ground, due to the draining off of water by the streets.

It is quite probable that this has a great deal to do with weakening a tree fitted for the shade of a forest, but when the tree once becomes unhealthy, a new enemy appears which in most cases will quickly cause its complete destruction.

When one of these trees is cut down, it is generally found to be riddled with small holes, or the bark is almost completely separated from the wood and traversed by wonderfully shaped galleries. In the latter case the mischief is probably done by some species of a family of very small brown or black beetles known as "bark engravers." In the first case, if the holes are followed up, a soft, white, generally footless grub, possessing a pair of thick, strong jaws, may be found. This is most likely the larva of a longicorn beetle or "borer," as it is commonly called, the first name being applied on account of the very long antennæ which the beetle

usually possesses, and the second referring to the boring habits of the larvæ.

These beetles belong to the family *Cerambycidae*, one of the largest and most important economically, of the order. Generally they may be known by the apparently four jointed tarsi, the third joint of which is bi-lobed, and by the long antennæ. They all have a general habitus, very hard to exactly define, which renders them easily recognizable after one has once become acquainted with them.

Although some of the species are quite general feeders, most of them have a preference for some certain tree, and so many take their popular names from the tree in which their larvæ bore.

We repeatedly meet with people, and even occasionally see articles in the newspapers, declaring that these white grubs are spontaneously generated from the sap of the tree, and indeed, to those who know nothing of the subject, it might be a mystery to otherwise explain their presence in such numbers in a tree.

The eggs are laid by the female beetle in some crevice—sometimes produced by the beetle itself—in the bark, and, upon hatching, the young larvæ at once begin to dig into the tree, there to live in extreme cases, as long as thirty years.

They keep growing all this time and finally pupate, becoming inactive like the chrysalis of the moth or butterfly, and in the following year the beetles emerge to continue this cycle of life by laying more eggs.

The family is a difficult one to study, owing to the great number of genera into which it has been divided on account of the structural peculiarities possessed by nearly every species. It is divided into three sub-families separable as follows:

- A. Prothorax margined, antennæ not pubescent, labrum conuate with epistoma ..... *Prioninæ*.
- A. A. Prothorax not margined, labrum free ..... B.
- B. Front tibiæ not grooved, last joint of palpi not acute at tip.....  
..... *Cerambycinæ*.
- B. B. Front tibiæ with an oblique groove on inner side, last joint of palpi cylindrical, pointed at tip....  
..... *Lamiinæ*.

The sub-family *Prioninæ* is of comparatively small extent, and as far as I positively know, has only two representatives in this immediate vicinity, though several others will doubtless be found. They are large, brown insects, easily recognized by the margined prothorax.

The most common species is *Orthosoma brunneum* (Fig. 1) varying in length from less than an inch to one and three-quarter inches. It is found rather rarely at the electric lights and still less often at sugar. The larva probably feeds in rotten oak in this vicinity, though in the northern states it feeds on pine.

Figure 2 shows a very rare species, *Tragosoma deparium*, and its occurrence here probably increases its known range somewhat. It is of a dark color with the thorax covered with hairs and having a single spine on each side. The specimen figured was captured at arc light.

The sub-family *Cerambycinæ* contains a great number of species and when taken systematically, there is a good deal of difficulty in their determination. The sub-family can, in most cases, be easily separated from the following one by the characters given, and by the fact that the head is horizontal, while in many of the *Lamiinæ* it is vertical. This difference can be easily seen by comparing a *Romaleum* and a *Saperda*.

Our first species is *Smodicum cucujiforme* (Fig. 3), a rather small, flattened, yellowish-brown beetle often found under bark. It bears considerable resemblance to the family *Cucujidæ* from which its specific name is derived, and it is one of the very few species of the family over which confusion might arise.

Figure 4 represents a common and very beautiful species, *Physocnemum brevilineum*, found on elm trees. It is of a general blue color with two or three short white lines on each wing cover. The thighs are enormously developed, and this together with its quick movements, gives it considerable resemblance to the common black ant while running up and down the trunk of a tree.

*Eburia quadrigeminata* (Fig. 5) is a rather rare species found about arc lights or on hickory trees after dark. It may be easily recognized by the general yellow color, and the two pairs of ivory spots on each wing cover.

A species found in the same situation as the preceding is *Chion cinctus* (Fig. 6), a brown species having very long antennæ and sometimes an oblique yellow mark on each elytron.

*Romaleum simplicicolle* (Fig. 7), is our largest species of this sub-family and is rarely found around arc lights. Belonging to the same genus we have two slightly smaller species, *R. rufulum* (Fig. 8), and *R. atomarium*, figured in a preceding paper. They are of about the same size, the former of a mottled



yellow color, and the latter of a mottled grey.

Belonging to a very closely allied genus, we have two species of *Elaphidion*, *E. incertum* (Fig. 9), and *E. villosum* (Fig. 10). The former varies greatly in length and looks much like a small *R. atomarium*. The latter is parallel sided with more or less evident longitudinal lines on the upper surface. I have found *E. incertum* very common on oak trees after dark, and both are sometimes found at arc lights.

Of *Tylonotus bimaculatus* (Fig. 11), I have only two specimens, one found at sugar and the other at light. The species is easily recognized by the two yellow spots on each wing cover.

About the middle of June there can be found quite commonly on the flowers of sumac, a beautiful little beetle with red thorax, leaden grey wing covers and long, thin thighs, suddenly swollen near the apex. This is *Rhopalophorus longipes* (Fig. 12). It can also sometimes be taken by general sweeping.

*Tragidion fulvipenne* (Fig. 19), is a large species with orange red wing covers and black thorax. It is sometimes found during autumn on thistle heads.

The member of this family most commonly taken at flowers is *Batyle saturalis* (Fig. 13). It is of a bright red color with almost entirely black legs and antennæ. It is found generally on *Compositæ* during the summer months.

One of the first of the *Cerambycidæ* to be found in the collection of a beginner, is *Cyllene picta* (Fig. 14), a black beetle with three straight yellow or white bands across the thorax, and a number of ivory ones across the elytra. It is often found in the early days of spring on the windows of barn or cellar where freshly cut firewood is kept. I have also found it running up and down the trunks of oak trees.

*Neodytus scutellaris* (Fig. 15), I once found rather sparingly on the trunk of a dying hickory tree. It can be recognized by the three curved bands on the elytra, the first two forming a diamond shaped space at the center. *N. capraee* (Fig. 16) is black, with a circular yellow mark at the base of each elytron, and two oblique fasciæ behind. *N. erythrocephalus* (Fig. 17) is reddish brown with three oblique yellow marks on the elytra.

*Xylotrechus colonus*, (Fig. 18) is one of our most common hickory borers, and can be recognized by the black humeri surrounded by a narrow yellow line, and by the two black bands across the wing covers.

In company with *R. longipes* on sumac blossoms one often finds a small species, *Euderces picipes* which might very readily be mistaken for an ant. There is an oblique ivory mark on the middle of the wing covers which are entirely black or partly brown. This species may be separated from *E. pini*, which is probably found here, by the fact that each eye in *pini* is completely divided into two parts, while in *picipes* the parts are slightly connected.

*Distenia undata* (Fig. 20) is a large grey insect with a large spine on each side of the thorax and two black W marks across the elytra. I have found it at sugar on hickory and oak trees.

The elder borer *Desmocerus palliatus* (Fig. 21) is one of our most beautiful beetles. It is found on elder bushes in the summer and can at once be distinguished by the general blue color with the basal half of the elytra orange or yellow.

*Typocerus velutinus* (Fig. 22) is sometimes found on flowers in summer time. The thorax is black, covered with golden pubescence, and the wing covers are brown with four bands of a lighter color crossing them.

The sub-family *Lamiinae* is not of such great extent as the last, and as a rule contains less brightly colored species.

A very important species economically is the current borer, *Psenocerus supernotatus* (Fig. 23) which does a great deal of damage by boring into the stems of currant, grape and gooseberry. The beetle is less than one-fourth of an inch in length, of a slightly reddish color, the elytra marked with a black blotch and two white bands, and each having a small elevation at the base.

Figure 24 represents *Heteremis cinerea*, a grey beetle, having long antennae and no spine on the sides of the thorax. I have found it eating the leaves of mulberry.

The largest lamiid in this vicinity is *Plectrodera scalator* figured on page 123 of Volume I. It can be found around cottonwood trees, in which the larvae bore, or sometimes at arc lights.

Belonging to the genus *Acanthoderes*, we have two species, *A. decipiens* (Fig. 25), and *A. quadrigibbus* (Fig. 26). The former is a dull brown species with four tubercles on the thorax, while the latter has a broad white band across the wing covers. In both, the first joint of the antennae is strongly clubbed.

Boring into the rag-weed we find a medium sized gray species with annulate antennae and a short, acute spine on each side of the abdomen. This is *Dectes spinosus* (Fig. 27), one of the comparatively few Cerambycids that bore in weeds.

Closely resembling *A. decipiens* is *Graphisurus fasciatus* (Fig. 28), commonly found about hickory trees. It can be separated from *Acanthoderes* by the cylindrical first joint of the antennae.

*Saperda calcarata* (Fig. 29), is a beautiful and easily recognized species. The

larva is a poplar borer. *S. tridentata* (Fig. 30), bores in elm, and can be known by the three oblique yellow marks on each elytron. *S. discoidea* shows a great variation in the sexes, the female (Fig. 31), having a yellow thorax and head, and brown wing covers with a semi-circular spot at the middle, while the male is smaller, grey in color, with two longitudinal black marks on the thorax.

Very injurious to the blackberry grower is *Oberia tripunctata*, an elongate beetle having many varieties, the most common of which are *tripunctata* (Fig. 32), having a yellow thorax with three black spots, and black elytra with a broad longitudinal yellow line in the middle of each; and *bimaculata* (Fig. 33), having only two spots on the thorax and completely black wing covers.

We find a number of species of *Tetraopes* on milkweed, the commonest being *T. tetraophthalmus*, a red beetle with three black spots on each elytron, four on the thorax, and entirely black antennae. This species was figured in a previous paper. *T. femoratus* can be distinguished by the annulate antennae and the smaller elytral spots.

The species given in this paper are not all common ones; some in fact are among the rarest, but they are found either around arc lights, or in some situation where the beginner would be more likely to find them than other more common species.

I have seen about seventy-five species of *Cerambycidae* from this vicinity, but the total number probably approaches one hundred. It is very hard to get a complete list of them from any one locality, owing to the fact that their capture is so much a matter of chance.

GEORGE MACKENZIE.





SOME BORING BEETLES OF THIS VICINITY.  
 UPPER\_HALF OF PLATE IS TWICE NATURAL SIZE.

## WHY STUDY GEOMETRY?

The writer has been asked many times during the year why pupils should study geometry.

Suppose we look at the question from two standpoints in order to find a partial answer. The first way of viewing the subject is from the *useful knowledge* standpoint, the second way is from the *discipline* received. Let us examine the first.

Did you ever stop to think that nearly every trade and industry has a mathematical basis?

Every contractor, carpenter, builder, tinsmith, mason, pattern maker, moulder, and other artisan must appeal to geometry to avoid waste of material by experimenting.

Without geometry as a basis the architect could not construct buildings nor could the machinist build his engines; the civil engineer must use his geometry in laying out the sewerage, the water works and the railway systems. The surveyor could do practically nothing without his geometry. It is by an extended knowledge of the study in hand that the wonderful discoveries of astronomy are given to us, and with a knowledge of practical astronomy the sea captain takes his unerring way across the trackless deep.

Since Sir Isaac Newton began to apply the principles of geometry to the making of instruments for investigating purposes, the natural sciences have made rapid progress.

The microscope, which has given man a new world, the telescope, the prism, the mirror and many other complicated instruments used by the scientist have all been constructed according to principles developed in geometry.

Even in our beginning class we learn that there is a geometrical truth invol-

ved in making gallon, quart and pint vessels for liquids, fruits, oysters etc., of a *cylindrical* rather than any other shape. A further study will teach us that there is economy of cost in making the quart cans of a certain diameter and height, rather than of other dimensions.

Steam and electricity have revolutionized the world, but had not a knowledge of geometry preceded the application of these powerful agents to man's use and comfort, we should be far behind the present stage of civilization.

But ere these statements have been read by Miss English Language, or by Miss Foreign Language, I hear the expression, "It's all very well for boys to master geometry and, perhaps, algebra, but is there *any earthly use* for a girl to know some geometry?"

The writer believes that *every* girl should know how to be a good, attentive house keeper. Of course every Manual Training girl knows this is orthodoxy in our school.

Did you ever notice how many objects about home that tend to beautify, and make things more pleasant are based on principles of geometry? Principles of symmetry, and geometrical figures meet the eye at every turn. Do you prefer plain domestic for tablecloths, napkins and curtains? Even the handkerchiefs have certain geometry figures. Notice the figures on the wall paper, the pictures, the picture frames, the piano, the furniture, the dishes, the lamp, and the humble domestic kitchen stove.

Maybe they have some figures that we do not understand, but the designer knew what geometric combination would make a pleasing effect.

A pin cushion at the writer's hand is found to contain double segments, equilateral and isosceles triangles, lunes,



prisms, circles, semicircles and quadrants. Can you find a piece of fancy work in your home that does not have several geometric forms? Do you ever have occasion to divide a line into three, five, six or more equal parts?

Now let us look at the study of geometry from the *discipline standpoint*.

Mr. Beardsley recently emphasized the value of knowledge and power because of the service one may render, while Mr. Reed laid great stress on having a "kingdom" one could control successfully.

In acquiring the valuable knowledge of geometry, when properly taught, we gain much power. What kind of power, some one asks? Well, first of all, some power to discover and *tell the truth*. The power to weigh every statement and conclusion as to its correctness. How we do miss the truth in our first efforts in geometry! But before the year is over the pupil returns his "blued" paper, and challenges the teacher's mark through a particular statement; and it happens not unfrequently that the teacher must admit the reasoning correct. Some power is being gained when a pupil can challenge the statements of classmate, teacher or book. He is being trained to look at *all sides* of the problem. Geometry is a typical branch to train the mental powers for reasoning. Your result is *right or wrong*. If you have considered every condition possible to your problem, and have allowed no fallacies in your reasoning, the correct conclusion must follow.

Whom do you consider good in English? He whose flow of talk reminds you of an empty wagon moving rapidly over a rough road? No, it is he who first has *related* ideas, *related* thoughts, and correct conclusions drawn so that he may give utterance to them in the most

forceful and pleasant manner. Correct method of study in geometry has, in the writer's opinion, a peculiar value in laying a foundation for good English work.

It tends to make one clearer, more accurate, and more consecutive in thought. Concentration, which is absolutely necessary to successful work of any kind, is developed. The pupil learns in geometry that his steps must all be logical, or the entire structure falls. Moreover he must *discover* something. This requires thinking, patience, perseverance and a determination to conquer. These elements enter into every well trained mind. No study surpasses geometry in avoiding that state of mind which Mr. Homer Reed recently called the "garret" or "back alley" state. It requires *system* to demonstrate theorems and to solve problems.

"But," says one, "will I ever have problems or propositions to deal with when I leave school?" Ask father, ask mother. Yes, our parents work on problems every day, and often hours of sleep are sacrificed in trying to solve them.

That person is most likely to succeed in solving his daily problem, who conquered his geometry, algebra, or other hard subject in early life. It is he who first *sees* a problem before him, then looks at it from *all sides*, and then *thinks* logically about it, who accomplishes something. Men fail in their undertakings because of the lack of sufficient *discipline* in clear thinking.

It is not intended to make mathematicians in this school, but to *train* the mind in clear, logical reasoning so that pupils may be prepared to enter any calling. Our minds should be "orderly kingdoms."

A. A. D.

## NATURAL SELECTION.

Natural selection is the principle by which each slight variation if useful to the organism, is preserved. The expression "survival of the fittest" is more accurate. We see around us on every hand variations which we in our ignorance call freaks of nature. Children of the same parents are very unlike in personal appearance, temperament, and general ability. It is evident to the most superficial thinker that some of these varietal traits will conduce more than others to the organisms existence and success.

Another fact recognized by every horticulturalist and stock raiser, and patent to every observer is, that characteristic traits of parents are transmitted to their offspring.

That children of the human family furnish no exception, to this law no one knows better than the teacher. Another fact is that use develops. Now in the struggle for existence those traits will be exercised and thereby strengthened which conduce to the welfare of the organism. What traits conduce most to this welfare will depend upon the environment and the conditions of its existence. If the surroundings change, the organism must change its traits or death is the inevitable result.

It is a current error that by the "survival of the fittest" is necessarily meant the survival of the best. For what is ultimately and absolutely best no man can know. Natural selection has to do only with existing conditions, choosing those traits which best fit the organism to overcome existing obstacles. Now whether a low type of organism will ever develop into a higher depends on its environments, its requirements, and upon whether any varieties occur whose nature points in that direction. The laws which govern the conditions of existence, as well as those of extermination

and defeat, are extremely complicated. A single example selected from Mr. Darwin's "Origin of Species" will serve for illustration. The ordinary observer sees no relation between the fostering of domestic cats and the supply of red clover. But red clover can be propagated only through the assistance of a certain kind of bumble-bee which transports the pollen from stamen to pistil. This bee builds its nest in the ground; and its comb and honey is the favorite food of a certain variety of field mouse. Domestic cats prevent these mice from becoming sufficiently numerous to destroy all the bee's nests and thus prevent their propagation. It is therefore plain to see that the extermination of cats might also exterminate red clover.

Let us see if we cannot understand how this law of the survival of good and bad things—this natural selection—applies to education. Why is the school of a Froebel and a Dr. Blimber possible in the same century? Dr. Blimber's school is both fictitious and real. It still exists. The following quotation from Dickens will illustrate its main features: "In fact Dr. Blimber's establishment was a great hot-house in which there was a forcing apparatus constantly at work. All the boys blew before their time. Mental green peas were produced at Christmas, and intellectual asparagus all the year round. Mathematical gooseberries, (very sour ones, too) were common at untimely seasons, and from mere sprouts of bushes, under Dr. Blimber's cultivation. Every description of Greek and Latin vegetables was got off the driest twigs of boys under the frostiest circumstances. Nature was of no consequence at all, no matter what a young gentleman was intended to bear. Dr. Blimber made him bear to pattern somehow or other."



Dr. Blimber had an assistant, one Mr. Feeder, B. A., who was as, Dickens expressed it "a kind of barrel organ with a little list of tunes at which he was constantly working over and over again without any variation." He played Dr. Blimber's tunes. Mr. Feeder was a product of natural selection, for he selected those tunes which prevented his becoming acephalous. So long as there are Blimber's there will be Feeder's. Blimber environment will always be accompanied with the Feeder degree of development. Certain mollusks protected by the deep sea and subjected to unchanging conditions through the ages have existed till the present as undeveloped acephaloids. Certain species of domestic animals in Egypt—engraved on the pyramids—still exist owing to the non-progressive and unchanging conditions which have always prevailed in Egypt. It is not a land of breeders and stock-raisers. Hence the unchanged perpetuation of these species. Now Blimber's have been protected by the ignorance of majorities, and hosts of Feeder's have been protected by Blimber's. The organized protection of primitive characteristics constitutes an environment which limits progress and has been a social characteristic of all time. Why is mediocrity sometimes protected by the benign smile of popular approval while true genius and superiority is often crushed? It is because this popular approval is itself the judgment of mediocrity passed in favor of that which most resembles itself, and against that which is different, and therefore considered detrimental to the general good. This kind of protection—this perpetuation of an unchanging environment is especially conspicuous in educational affairs—the chief reason being that the common people who constitute the majority are, from one cause or another always a little below the plane

of intelligent critics. An animal transported to the everglades of Florida, if not an alligator, would have to become something very like one or lose his head. This is natural selection, and furnishes another illustration that the "survival of the fittest" is not always a survival of the best; it may sometimes mean retrogression.

In certain unchanging conditions of the deep sea and other sheltered places in certain latitudes there have been preserved and perpetuated some of the lower undeveloped forms, while in the other localities not thus sheltered change either gradual or abrupt, has been the law. Let us suppose a case from nature where the change has been gradual. We know that the temperature on the earth's surface has been gradually lowering through long ages. Suppose that a certain place at a certain time, owing to the mildness of the climate the plant buds required little covering to protect them through the winter. Owing to the infinite variety always presented by nature some of the buds will have in the form of little hairs or cotton like fibres more protection than others. A change of temperature now begins, lowering more rapidly than before. The majority of these buds are unprepared for the new conditions and will die from cold. A few, happening to have a covering unusually thick will survive; and from the well recognized law that like begets like they will transmit this characteristic to the next growth which in its turn will produce occasional buds with covering thicker than those of the parent—thick enough to withstand the increasing vigor of the changing climate. Thus by the survival of the peculiar varieties of each season best adapted to that season a species will be produced with a covering adequate to protect the buds from the severest winter of a moderate temperate zone; and

we have before us the woolly covering of the embryo branch which little resembles its ancient torrid ancestor. Who would ever expect a tropical plant to develop into a temperate zone plant without the gradual change of a tropical climate to a temperate one? Who would ever look for an Egyptian dog to develop into another marked variety even where the conditions of his existence have not changed since history knew him. But in our own country we know that distinct types have been produced by the skillful selection of breeders in a few generations only.

Another fact which is necessary to a full understanding of natural selection is that some organisms have developed in an environment while others in the same environment has not. This fact is not difficult to explain. It is because some varietal trait possessed by some organisms enables them to enjoy certain things which their fellows, not possessing these traits, do not discover. These traits are cultivated and exercised because they are found useful and are transmitted to offspring which in turn improve it by exercise, and it results finally in a form differing wholly in function and organization from its remote progenitors some of which by exercising other traits may have developed in quite the opposite direction.

Similarly two boys of the same parents and subject to the same educational influences may exhibit varietal traits quite dissimilar. One may go wrong, become a thief, marry, raise a family of thieves, who will in time perpetuate a community—perchance may populate a "Toad a Loup" of Kansas City or a "Hell's Half Acre" of Chicago. The other boy with opposite tendencies, or perhaps by some accident, be led to cultivate such tendencies as make him to become a great and good man whose sons in their turn become leaders in

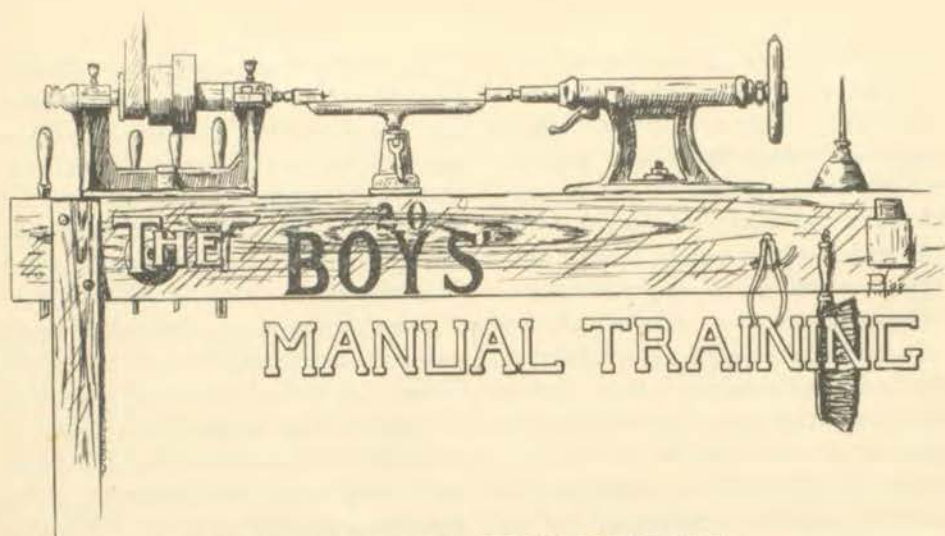
good things fixing perhaps the environment of thousands who may come under the influence of their example and teaching. It thus sometimes happens that men make environments. Hence the great local differences existing in matters of education between communities not far separated.

In conclusion it may be asked what does this theory give us to hope for? Where will it lead the individual and the race? The answer can best be given by reference to a tree, itself one of the most beautiful illustrations of the process under consideration. The topmost twig pointing upward and kissed by the pure air of heaven is higher than the corresponding one last year. The lower ones, some pointing upward, some downward, help to make the eminence of the topmost one possible; while thousands of scars stand as silent tombstones of buds—branches in embryo which failed to survive the struggle for existence. They died that others might live. The tree stands a grand monument of the past—glorious index of the future. So with our race; "There is always room at the top" has been, is, and always will be true; and the top of the present is always higher than the top of the past. There always will be lower branches in the great tree of human progress destined never to scale the intellectual and moral heights. Natural selection has conditioned them.

There always will be classes, like the under twigs of the branches, looking backward. But the tree of progress will grow onward and upward, with its histories, its biographies, its graves, with its modern literature, art and science, it stands as a complete and growing unit. To each individual it furnishes an ideal more lofty with each succeeding age. To the race it points to infinite possibilities and immortality.

SIMON SEEDLING.





### VALUE OF MECHANICAL DRAWING.

This being an age of material progress and of the development of resources which were latent in the early ages, we find mechanism taking the first rank in science. To him who is not initiated in the technical knowledge of mechanics, mechanical genius and construction have become the wonder of the civilized world.

With the conditions of climate, habits of life and commercial relations all clothed with a genius superior to anything yet produced, Greece reached the Periclean age. She triumphed over barbarism by producing an art superior to anything which has existed before or since and has handed down to posterity her genius in the highest art, architecture.

After ages of exploration and development we find ourselves a busy people. We are not trying to rival the Athenian in his perfect Parthenon, but treasuring his share of the world's knowledge. To problems that were impossible to the Greek mind, we are applying our ingenuity and are succeeding with them.

The Athenian's commerce was chiefly carried on on the Mediter-

anean Sea. The commerce of today traverses all oceans of the globe, and brings forth those wonders in marine architecture, such as the Grayhounds of the Atlantic, and a high type of battle ship, for example the Oregon. The Greeks or early inhabitants of the earth had no such problems as crossing the American continent by rapid transit in a modern palace car.

How has the thought been carried that our development is due to developed genius in mechanics? Each idea has been put in the written language of mechanics—a mechanical drawing. A drawing is made of every mechanical device before it is put into material form. Mechanical drawing is the essential factor in the manufacturing arts. It is a language read by all nationalities. Go into a workshop and you are likely to find an American, a German, an Englishman, a Swede, an Italian, a Spaniard, all of whom are not able to read English, but are working intelligently from the same drawing.

Do you, as one of the interested public, appreciate the ever present results of drawing? What has drawing

to do with the preparation of one's breakfast? We come to the dining room with morning paper in hand, and find there a table and chairs constructed by the cabinet maker after drawings. The carpet, table cloth and napkins have their appropriate design. The knives, forks, spoons and dishes were all constructed after working drawings, and even the wall paper is of special design. Breakfast is brought in, having been cooked on a mechanical device. Steak and bread may be the principal part of the breakfast. What has mechanical drawing to do with the providing of them? The beef from which the steak was taken had been killed at one of our modern packing houses. Have you ever examined a packing house plant? You can not conceive the extent of this business unless you have spent some time in investigating the subject. A plant usually consists of from ten to twenty acres of ground covered with extensive buildings convenient to each other, all constructed for special purposes and fitted with mechanical appliances. A modern packing house is a marvel of engineering genius.

The bread was made from wheat flour. To produce the wheat the farmer plowed and harrowed the ground with manufactured instruments. When the ground was in condition, the seed was planted with a patent wheat drill. After the growth of the grain it was cut by a self-binding reaper. In due season it was put through the thresher whose power was transmitted from a portable steam engine. The wheat is ground and bolted in its milling process. You hurriedly scan the paper at hand, reading the news, not thinking what was required in mechanical skill to produce the printed copy before you.

After breakfast you go to your employment by rapid transit; probably boarding a cable or an electric car. You pay your fare by giving the conductor a small coin milled by the United States Government. Have you ever visited a mint? If you ever have an opportunity, do not miss it. The visit will cause you to feel the respect due to even a penny. The conductor, upon receiving your fare, records it on the bell punch, an ingenious device. You have come to your destination leaving the car, and rarely thinking what was necessary to produce your transit. The details of the entire system had to be first worked out in drawing, from the brass buttons on the conductor's uniform to the platting of the streets. Drawings were made of each detail of the car's construction, the motor, or the grip for the cable, the track and switches with cable or trolley wire, the power plant containing the dynamo and steam engine. The steam engine is the keystone to our present civilization, the seat of mechanical power.

The Greek and the Egyptian were not ignorant of mechanical drawing, for it was they who gave us the first lessons in geometry. The artist is able to draw an isolated human figure but he falls short of genius if he does not intuitively bring mechanical drawing in his perspective composition. What kind of success would greet a wall paper designer, whose designs would not join or match at the edge of the roll; or have in them symmetrical repetition. The same is true of carpets, oil cloths, upholstering, tapestry and all fabric designs. Good designing is based upon geometrical repetition.

Drawing quickens the perceptive powers, brightens the intellect, strengthens the faculty of reasoning,



thereby developing the powers of the brain; it also trains the eye and controls the hand, enlightens the soul by noble production, softens and soothes the heart by beauty and grace of line. There is no man or woman who is entirely free from the necessity of using drawing. If the patrons of public schools

appreciated its full value, drawing would be one of the principal studies from the primary grade through school life. So as we are an ambitious people we will take Greek genius for what it is worth; and let coming generations decide whether we have rivalled or surpassed it.

C. B. S.



## SECOND YEAR'S WORK.

Our manual work for the second year is turning, which offers rare opportunities for boys with quick minds and steady hands to make many articles both for use and ornament. Besides being instructive this work is very entertaining, judging from the amount of time which the boys devote to it after school hours, many of them spending all their spare time in the shop, taking eighty minutes for their required period and the remainder in the afternoon, for recreation. The zeal with which the pupils work is often remarked upon by visitors as wonderful.

The present shop is only temporary, and when we get the new wing to our building we will have a better one, but let us make the most of what we have, and thank the school board and some of our worthy instructors that we have so much. Our instructor, Mr. Arrowsmith, deserves credit for making for us certain tools, and thus saved the school board the expense of buying them.

It is surprising to note how many things are turned. Almost every piece of furniture has parts that have been turned, and we are finding more use for

it every day as the work progresses. Mr. Arrowsmith gives out many good hints and the boys work them out. Thus pretty little ornaments are made but still there is abundant room for originality and a great deal of it takes form.

After learning the use of the different tools on the rough stock, we began to make different little articles, tool-handles, potato mashers, rolling pins, roseate boxes, napkin rings, card trays, goblets, vases and balls. The vases were of the boys' original design and some of them are very pretty. We have yet to make a towel ring and Indian clubs or dumb-bells, after which we will begin pattern making. Some of the boys are now making up stock for the Indian clubs and they promise to be very attractive.

When this term closes we will have a grand exhibition, and I think it would pay anyone to come and see what opportunities Kansas City offers for her youth. Then surely no one could say that Manual was not helping to make Kansas City a good place to live in.

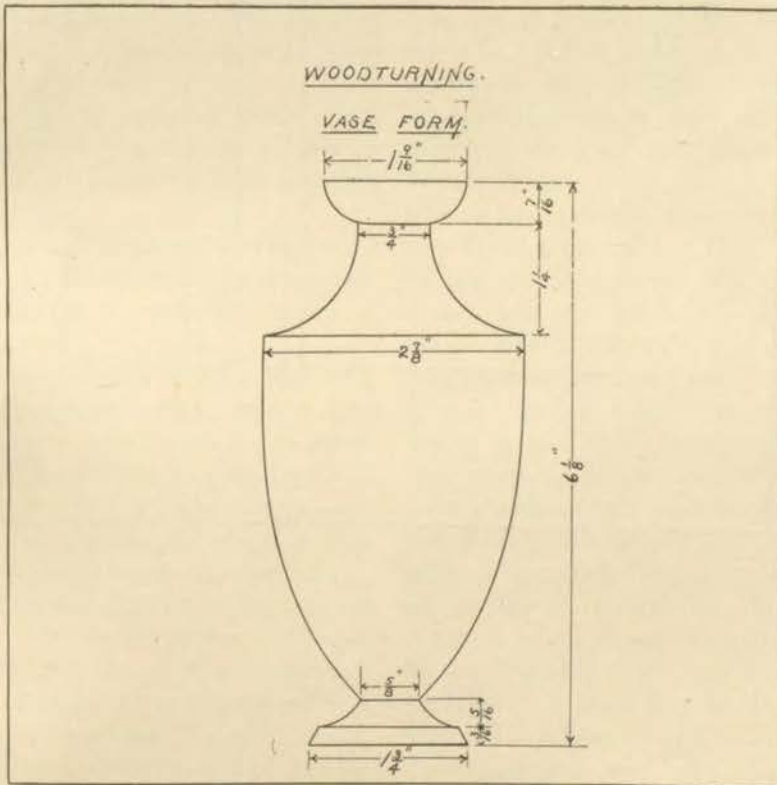
H. W.

MORE ROOM NEEDED.

As our classes advance to new branches of the course in Manual Training and require new apparatus for their work we cannot but realize the necessity of more shop room. We are very anxious to see the new "shop" wing materialize, and we are waiting patiently and hopefully for it. When the addition is built we will have large, well lighted rooms for shops with abundant space for lockers, while we are now suffering many inconveniences under the present crowded conditions. But we have not waited thus far entirely in vain, for the Senate has

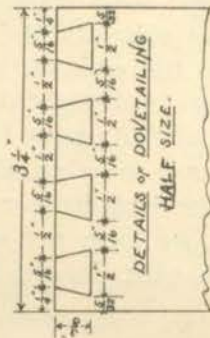
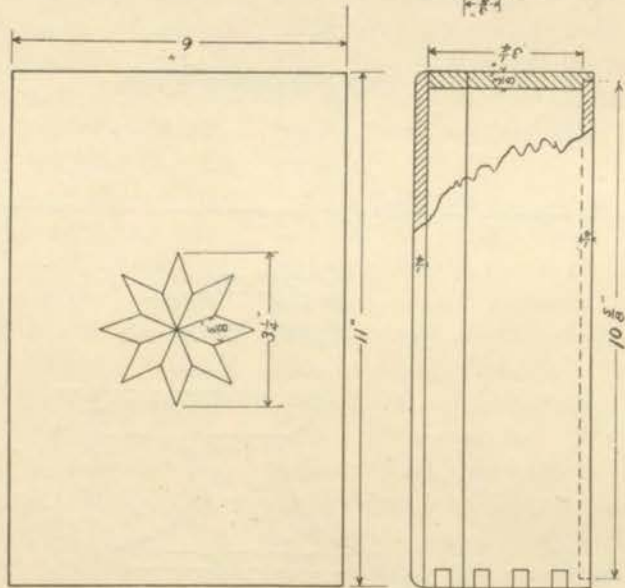
recently passed a bill granting the city a new election in the fall for the appropriation of school bonds. Our school has been so successfully maintained and has so won the favor of her patrons that we feel confident that the people of Kansas City will grant us the means to finish our building. The classes are already so crowded that without the new wing it will be very difficult to accommodate the new pupils or provide room for the forges which will be used by the advanced classes next year.

H.





BENCHWORK.  
DOVETAILED BOX.





## AN EXPERIENCE WITH A SEWING MACHINE.

(Essay taken from English Department.)

"If at first you don't succeed,  
Try, try again."

I was greatly surprised when entering the sewing room about a week ago to find that the aisles were filled with sewing machines and of course that meant we were to start sewing on the machine.

I had never sewed on a machine as I had been taught that it was best never to touch one until I was able to sew by hand.

You can never imagine how I felt while I was waiting for the teacher to call the roll and give us some instructions.

It was a sort of fluttering of the heart, such a sensation as comes over one when about to deliver a recitation before a large audience.

At last the roll-call was finished and the teacher stepped back among the noisy monsters and called us to come and receive directions in threading and treading. As I approached the wheeled animal I felt the fluttering increasing and a terrible shaking of the knees. This made me feel like a bashful country school-boy who is so pigeon-toed that when he walks his knees knock together.

Why I should be so frightened at a poor harmless machine, I do not know. Whether I had any thought of the big

wheel running over me or the capricious needle sticking me I do not know. I was told to sit down and see if I could make this waltzing wheel waltz. I sat down timidly, first looking at my enemy and then at my teacher who, smiling, told me to put my feet on the treadle. At this I lifted first one and then the other and placed them on the treadle which happened to move down. This made me jump and look around to see if I had broken anything. I was then told to use the ankle movement and not the knee movement. This I did, and behold what happened! The wheel made a turn and the needle bounced up and down. At this I looked up at my teacher who again smiled and said, "Now work it right on as evenly as you can." When I had first ended treading my heels were up and my toes were down, I gave a tremendous push with my heels and behold, the wheel went backwards with a grunting and groaning sound as if this turn hurt it. My teacher laughed and I began to get interested, feeling I should find success if it was to be found. I started again, this time it would have been right, if, at the end, the wheel had not been so mean as to



fall backwards with the same kind of a grunt. I tried again and succeeded.

Next came the tedious threading which, when I had finished, proved to be all wrong.

Then there was the foot to put down every time you begin to sew, which I would forget. But I can sew a little better now. I have lost all fear of the needle and now I love to watch it bob

up and down. I compare it to a happy little school-girl who is hopping and skipping on her way to or from school. The next thing I will have to master is the cloth. When sewing the cloth will slip from under my hand and the seam reminds you of a curling rattlesnake instead of a nice straight seam.

If I follow my maxim I will succeed, "Practice makes perfect." M. M.



### THE SCIENCE AND ART OF COOKERY.

Every healthy person appreciates palatable food. In the good old days when the science of cookery was unknown, when women practiced the art of cookery without knowing the whys and wherefores, America was not known as a nation of dyspeptics. A man at hard labor in the open air may eat what he chooses without fear of serious injury. Fifty years ago fresh air, sunshine and abundant exercise had not been replaced by the close room and the worry and hurry of our advancing civilization.

Americans have been too busy to give much thought to the relation of food to the human body. The mechanic has studied the engine in all its economic relations. He has made careful calculations as to the kind and quantity of coal necessary to produce the energy that shall carry the American products to the ends of the earth. All the Yankee ingenuity has been exercised in trying to invent the best mechanism for transforming the potential energy of the coal into the kinetic energy of the engine. The solution of these problems affected not only the income of the individual, but the wealth of the whole nation. We, as a people, have not been slow to recognize the advantages to be gained by the

possession of wealth. The stockman has long since realized that certain foods are best adapted to produce growth and others to produce fat. In the Agricultural Colleges and U. S. Experiment Stations throughout the various states, careful experiments in stock feeding have been conducted and valuable conclusions drawn. No successful stockman expects corn fed pigs to make the best growth. He knows wheat is better adapted to produce growth and corn to produce fat. His own diet, however, gives him little concern. He eats anything that tastes good and whenever he craves it. Alcoholics, tobacco, black coffee, strong tea, fried potatoes, doughnuts, pie-crust, and half-baked bread are common articles of diet. It never enters his thought that the bill of fare has anything to do with his physical well being, not to mention his mental and moral.

Development in cookery, as in other lines, has come through experience. First we become a nation of dyspeptics and then we look for the reason. Progress has been slow, because, as a people, we have considered domestic work degrading. There are no servants in American civilization except in the kitchen. It is only within the past ten years that

reliable scientific books have been written on the subject of food. For these we are indebted to the Englishman.

Is it of any advantage to the art of cookery to understand the underlying science? One might as well ask, "Is it of any benefit to the artist to understand the principles of perspective, light and shade, coloring, etc.?" If each generation is to stand on the shoulders of the preceding it will do so by generalizing their experiences.

Yes, the old colored "mammy", who gave her whole attention to cooking, prepared nutritious, palatable food without knowing the whys and wherefores of the process of preparation, or even without the use of a measuring cup. She followed the natural line of development. In the beginning of any science, the experiment precedes the discovery of the principle. The woman of to-day finds demands on her time and attention from almost every direction. She is the wife, the mother, the home-keeper. She is the buyer. She has social, church and club relations. If her household has good food, she must know how to cook, for probably the kitchen girl knows little about it. She has not time to learn to cook simply by imitation or

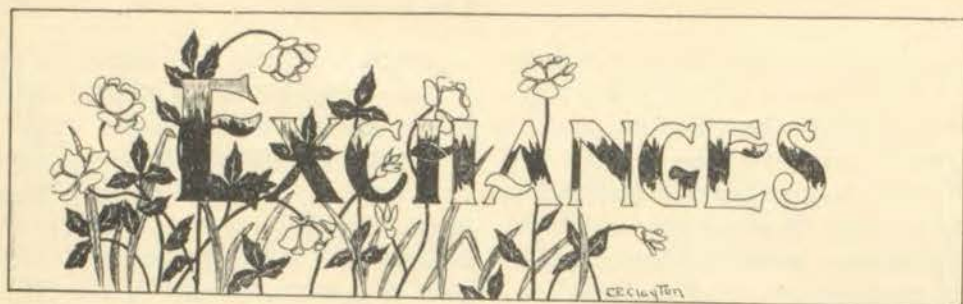
experiment. She needs to know that albumen coagulates at a temperature of 134° to 160° F. This in connection with a knowledge of the composition of foods gives her a basis for cooking eggs, meat, soups, custards, or any mixture composed largely of albumen. Tough meat, poor soup, wheyed custards and tough or heavy angel-cake no longer worry her.

When one understands the culture of the yeast plant, the composition of flours, and the whys and wherefores, or in other words, the science of making a good loaf of bread, poor bread becomes an unknown quantity and the nutritious, palatable loaf the easiest loaf to make.

The study of the relation of food to the body, both in health and disease is a new science. The physician who directs the diet, as well as the giving of drugs is today delegated the honor of being a crank. The study of the kind and quantity of fuel necessary to the complex mechanism we call the human body is a much more difficult question to determine than the kind and quantity of fuel necessary for the engine. The time will come when the physician will doctor from the pantry shelf rather than from the apothecary shop. B. H. B.







"When you court a girl to wed her,  
Never let your questions stop.  
First you have to pop the question  
Then you have to question pop."—Ex.

A boil in the kettle is worth two on  
the neck.

Fat Citizen—"You are a pretty small  
chap to be running an elevator, ain't  
you, bub?"

The Small Chap—"Yes, I guess I be.  
They hired me 'cause the rope broke  
with the heavier boys."

And the fat citizen walked.—Ex.

#### THE HAND I HELD.

(Love Ditty).

I held a little hand last night,  
It made my heart beat fast,  
It filled my soul with such delight,—  
If it could only last.

'Tis such a hand I love to hold  
Which fate doth rarely bring—  
'Tis worth its weight in yellow gold,—  
Four aces and a king.

Columbus made an egg-stand, but  
some Italians of less renown have made  
a peanut stand.

A shrewd little fellow who had just  
begun to study Latin astonished his  
teacher by saying: "Vir, a man; gin, a  
trap; Virgin, a man trap."

A young man wrote home from college  
to his father:

The roses are red, the violets blue,  
Send me fifty, P. D. Q.

The father writes back:

The rose is red, and so is the pink,  
I'll send you fifty, I don't think.

Have you heard about that woman,  
Who is now behind the bars?  
Her crime was cruelty to animals,  
For she put cats up in jars.—Ex.

Life is short, only four letters, yet  
three-fourths of it is a "lie" and one-  
half an "if."—Ex.

A lank, awkward countryman pre-  
sented himself at the clerk's desk in a city  
hotel, and, after having a room assigned  
to him, inquired at what hours meals  
were served.

"Breakfast from seven to eleven,  
luncheon from eleven to three, dinner  
from three to eight, supper from eight to  
twelve," recited the clerk, glibly.

"Goodness!" ejaculated the country-  
man, "When am I going to get time to  
see the town?"

Judge—"Why did you steal this  
gentleman's purse?"

Prisoner—"I thought the change  
might do me good."

Little Jack Horner  
Sat in a corner,  
Taking a hard "exam."  
He passed it of course,  
With the aid of a "horse."  
Then said: "What a good boy I am!"

What relation is there between a loaf  
of bread and a locomotive?

Bread is a necessity; the locomotive is  
an invention; necessity is the mother of  
invention; therefore bread is the mother  
of the locomotive.—Ex.

"Have you felt slippers?" inquired an old lady in a shoe store. The clerk, who was new at the business, and young, answered, "Yes ma'am, many a time."—Ex.

First Soph.—"Hello, Jack, writing home for money?"

Second Soph.—"No."

First Soph.—"What are you taking so much trouble over then? You've been fussing and fuming over it for the last two years."

Second Soph.—"I'm trying to write home without asking for money."

Professor (dictating Greek prose composition)—"Slave, where is thy horse?"

Startled Student—"It's under my chair; but I wasn't using it, sir."—Ex.

There is gladness in her gladness  
When she's glad,  
There is sadness in her sadness  
When she's sad;  
But the gladness of her gladness  
And the sadness of her sadness,  
Aren't a marker on the  
Madness of the madness  
When she's mad.—Ex.

Dinnis—"Begobs, Oi full off a sixty foot ladder yesterday."

McSweeney—"Och, you're the luckiest man Oi ever saw. What saved you?"

Dinnis—"Oi full from the bottom round."

"I draw the line on kissing, sir,"  
She said in accent fine,  
He was a foot-ball player,  
And so he "hit the line."

Mary had a little lamb  
With fleece as black as soot;  
And into Mary's cup of milk,  
He put his dirty foot.  
Now Mary, a straightforward girl,  
Who hated any sham,  
Ripped out a naughty little word,  
That rhymed with Mary's lamb.

Rivers do their work without leaving their beds.

Law in Physics—The deportment of the pupil varies directly as the distance from the teacher's desk.

A kiss is a noun though generally used as a conjunction. It is never declined. It is more common than proper; it is not very singular and is generally used in the plural and agrees with me.

The Prof. (exasperated)—"Why don't you speak louder?"

Pupil—"A soft answer turneth away wrath."—Ex.

Brown—"Oh, yes, the world moves."

Jones—"Yes, it has to hustle to keep up with the United States."

A naturalist tells us that the snipe has a nerve running clear down to the end of his bill. So has the plumber.

How wonderful are Nature's works!

Tom—"What are you crying about Bill?"

Bill—"When my grandfather died, it was found that he made a large fortune in fire escapes."

Tom—"Well you should be happy over that; no doubt you got a good slice of it?"

Bill—"I am crying because he couldn't take one with him when he died."

A scientific boxer—An undertaker.

Why is it called the funny bone?  
The reasons why are numerous—  
The scientific one is that  
It borders on the humorous.—Ex.

Sing a song of touchdowns,  
A pig skin full of air  
Two and twenty sluggers  
With long and matted hair.  
When the game was open  
Sluggers 'gan to fight;  
Wasn't that for tender maids  
An edifying sight?





Miss G.—“The Chinamen have a festival they call ‘Burning the Devil,’ and they raise him, too.”

Sadie Davidson, translating—“And the organ went through my soul.”

Mr. Mitchell is willing to accommodate teachers with large classes by allowing the girls to sit with him.

Miss Gilday said after reading “Hiawatha’s Wooing”—“You have been there, boys.”

John Tate—“Sure, I have.”

Mr. Miller very admirably explained the effect of laughing gas, trying to light a gas lamp to which there was head gas connection.

Rah! Rah! Rah!  
 Shirt and Collar,  
 Easter Neckties,  
 Hear me holler  
 Woolf! Woolf! Woolf!  
 Harry B.,  
 1119 Main,  
 Come and see.

Miss Murphy—“Yes, the burglar took all except this heart. Not even a burglar will take that.”

Prof. E. D. P.—“Write clearly as Christ did, such as ‘Suffer little children,’ ‘Now I lay me—’”

Chorus—“He didn’t write that.”

Miss T.—“When your father leaves you money, it is called a ‘patrimony,’ isn’t it?”

Bright Little Girl—“Well then, when your mother leaves you money, it is called a ‘matrimony,’ isn’t it?”

Martha—“I want some braid.”

Cliff—“You have been upbraiding me all afternoon; who is it now?”

Maurice—“If I were a servant girl, I would dress up.”

Miss Fisher—“Yes and that would be all there was to you.”

Mr. Rowe, translating—“The statue had bought him a new hay wagon.”

A new rendition—“Franklin’s father was a tallow candle.”

Miss Gilday—“What may one be pardoned for not knowing, John?”

Tate—“Mathematics.”

We wonder whether Mr. Dodd drinks condensed milk?

A certain teacher said that while viewing the graves of eight old maids, she asked the guards if they would accept a ninth. When asked why, she declared the intention of applying.

Mr. Sloan—“Now, boys, I want you to pass out in sections.” How queer.

Miss Fisher—"Well, Mr. D., you needn't think you are the whole Paseo and all the fountains, because you spout occasionally."

Grace said that the first curves shouldn't be so square.

Miss Fisher said Irving was as fat and juicy in his old age as a Thanksgiving turkey.

Levere Nellis alias Nellie Levere.

Miss Gilday—"What do we mean by a monopoly of the fur trade?"

Harold—"A grand cinch in fur."

#### TO CAPT. BRYANT.

(With apologies to Kipling.)

Halleck can handle his pencil  
And I can describe with a pen,  
But you get out in the open field,  
And handle our foot-ball men.

Halleck takes care of his business,  
And I take care of mine,  
But you can coach a foot-ball team  
To win out, every time.

Halleck can handle his shadows  
And I can handle my style,  
But you can handle a pig-skin  
To cause the girls to smile.

'To him that hath shall be given',  
That's why these verses are sent  
To you, our gridiron idol,  
With good and kindly intent.—A. H.

Edna—"What do you do in your athletic meetings?"

Dwight—"Discuss Parliamentary law, mostly."

Grace, (in Latin)—"Romulus et Remus."

Linda—"He did not. He killed him."

Miss Wilson—"Will some one tell me what time this piece is?"

Myron—"Dinner time."

Frank Wynne is practically economical. He said he went out into a cutting wind and lost part of his hair.

A certain teacher says that the pupils wind her up and she talks the hour away. There are others.

The orchestra is becoming quite popular outside of school. It certainly deserves the popularity.

Did Shakespeare anticipate our plight when he said, "Throw physic (s) to the dogs?"

Frost, (in A. A. meeting)—"I think 'young gentlemen' too technical; I amend it to 'sports.'"

Albertson—"What does beats in that question mean? Beats in music?"

Mr. Page—"Certainly, this is not a botany class."

Mr. Page says one can get used to almost anything—even the noise of the steam pipe in the Physics laboratory.

Why do all the students go to B. Glick's, 710 Main St., for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

Miss Casey—"How do you spell needle?"

Pupil—"N-e-i-d-l-e."

Miss C.—"How do you account for that?"

Pupil—"It wouldn't be a needle if it didn't have an eye in it."

Miss W.—"I wish I were married and out of the way."

Miss Estill's essay said, "A woman who has a thin neutral tinted complexion."

Teacher—"You know I am an expansionist, don't you? I should think my physique would tell you that."

Donald Henry is not eligible to the Manual's base ball team. It is said for he always strikes for money."



Athletic Junior—"I always thought Prof. Phillips was a college man?"

Second Junior—"Isn't he?"

Ath. Junior—No, he asked one of the girls what to do with a punching bag."

A school board—a paddle.

One of the favorable signs of progress of the Manual is the excellent "Studies in Zoology", gotten out by Mr. Merrill for his classes. It is not only a laboratory guide, but a field guide as well. To show that pupils are thoroughly interested in this study it is only necessary to observe the classes at work. The plan is for the pupil to learn to discover as much as possible for himself. This naturally leads to independent thinking. The main question running throughout the work is: how does the structure enable the animal to fill its particular place in Nature? The pupils who study according to this method will get a great deal more out of life, to say nothing of the excellent preparation for advanced study.

Mr. Russell says a chicken has three toes and a thumb.

We wish to correct here a statement made on page 29 of volume II in regard to *Hemaris thysbe*. The larva of this moth does not bore in the roots of the food plant as was there stated but feeds on the leaves of the buckberry bush. The division *Aegeriae* to which this was wrongly referred consists of certain small clear wing moths belonging to the family *Sesiidae*.

A certain teacher said that like Priscilla she tried to get John to speak for himself, but like John Alden he never came back.

Where there is a will there is a way. There is a rumor that Wibur M—gilds his brain so as to appear bright.

Senior—"I wish I knew this English Literature lesson."

Junior (consolingly)—If wishes were horses beggars might ride."

Senior—"Oh I've ridden ponies until I am tired and want a change of mount."

Junior—"There is the bell; go mount the steps."

A business card—"Moore and Arrow-smith, 'stockmen.'"

Raymond Haven's—"If it wasn't for our hands we would starve."

Schnell—"Oh, no, I know a man who can carry a turkey with his feet; he has no hands and he eats nicely."

Havens—"Well, I should hate to eat the turkey."

Do you want good locals? If so, help us along.

Mr. Albertson, Mr. Hall, Mr. Parsons, Mr. Lindsly and Mr. Russell are some of the many Manual boys who have tried Geo. Herold's 25-cent hair cuts. Try him, boys, at 324 Ridge Bldg. He is fine.

It is well that Prof. Phillips told us he was born in the months of fools, for we never would have suspected it.

Mr. Dodd—"Are you telling the truth?"


Edwin Sutton, (expounding a geometric explanation)—"Well—n—no that is I was telling a—."

Why is a certain teacher's head like heaven? Because there is no parting there.

A promising young writer—"If you will excuse me this time, Miss Fisher, I will be sure to have my essay next time."

Prof. Morrison knows of a desirable kind of intoxication; he gets full of enthusiasm.

**“Just Tell Them  
Where You Saw Them  
And They Will Know  
The Rest.”**

If the Sidewalks of Kansas City could speak, they would tell you of the Popularity of 

**BONDS <sup>FOOT</sup>FORM SHOES.**

200 up-to-date Styles,

**\$2.50, \$3.50 and \$5.00.**

Question:  
“TO BE, OR NOT TO BE.”  
Think it Over.

**GEO. A. BOND,**

925 MAIN STREET.

**Ask Your Grocer  
for  
DINNER PARTY BRAND**

**CANNED FRUITS  
and VEGETABLES.**

HIGHEST GRADE. HAND PACKED.

**NONE BETTER.**

**LONG BROTHERS GROCERY COMPANY,**

SOLE AGENTS,

*Kansas City, - Missouri.*

**JOHN FRASER,**

**..Merchant Tailor..**



15 EAST TENTH St., KANSAS CITY, MO.

Opposite Bank of Commerce Bldg.



**The Dreyfus Produce Co.** INCORPORATED  
**WHOLESALE FRUITS  
AND PRODUCE**  
**KANSAS CITY, MO.**

1216, 1218 and 1220 West Tenth Street.



Mr. Moore, to Dudley who is sticking his hat with a pin—"Well, Dudley, what do you find?"

Carl Bryant is now the poet laureate of the M. T. H. S.

Noah was not from the Blue Grass state or he would not have allowed the ark to rest on "Dry land."

Dwight—"If that line is produced, it won't be the same line."

Mr. Dodd—"Well, if you are produced two inches in two years, you will still be Dwight Frost. Won't you?"

When buying for Easter "Patronize our advertisers."

Miss Higgins, correcting in English—"The eagle with white wings sits folded."

Prof. Phillips—"A genius should never marry."

Miss Miller groans and Prof. Phillips says, "Oh, I didn't want to discourage you, Miss Martha."

Notice.—There is a genius among us. One of the illustrious Seniors says that he is but thirteen years of age. He must have entered Manual from the ward school. Did you, Mr. McKenzie?"

Mr. Fulton—"This room is always warm when I am in here." Certainly.

Everybody join the Athletic Association.

People wondered what the "mysterious" circles, drawn on the city sidewalks, meant on the day following J. Liberty Todd's lecture. It was only the young idea learning to shoot.

Some of the Seniors are trying to find a way of making  $2 \frac{1}{2} \times 2 = 5$ .

Our principal:—"Let us have no juvenile pot house politics in the Manual Training High School."

It is honor, rather than trouble, which never comes singly to our Principal and through him to our school. Mr. Morrison has been invited to prepare a paper for the N. E. A. meeting at Los Angeles, and a monograph on "School Architecture, Hygiene, and Sanitation" for the government exhibition at the Paris Exposition.

Our school has lost one of its best pupils in the withdrawal of Charles Deatherage. He has secured employment, and will not return to school this year.

The Biological Department of our school has recently been presented with a full set of "Animate Creation," in sixty parts, magazine form, by Mrs. H. C. Offut. They will be bound into four large volumes at the Public Library.

Have you heard the M. T. H. S. March by Mr. Behr's Orchestra? It has been played frequently of late at the Auditorium Theater.

Teacher—"The sun is gradually cooling off and after thousands and thousands of years it will cease to give light or heat."

Pupil—"What will we do when that happens?"

Teacher—"Oh, we will be warm enough by that time."

Dwight—"I didn't hear you."

Mr. Dodd—"Well, it is rather hard to hear this morning; that dog commences to bark every time I do."

Miss Fisher to Hunter—"Please turn around this way; I like to look at pretty things, too."

Mr. Chase—"Well, what is a rhombus?"

Soph.—"It is a square with oblique angles."

**SCHMELZER ARMS CO.,**

*Athletic and Sporting Goods,  
Fire Arms and Ammunition.*

710-12-14 Main Street,

KANSAS CITY, MO.

**Attention!**

STUDENTS OF THE MANUAL  
TRAINING HIGH SCHOOL  
GO TO

**A. SUTORIUS'**

**Vienna Bakery**

FOR CAKES, PASTRY, PIES,  
BREAD, ETC., FOR YOUR  
LUNCHES.

Best Place in Town...

1400-1406 East 15th Street,

Two Blocks from School.

**CLARK THE HATTER,**

906 MAIN STREET.

Correct Styles for Young Men.

GLOVES AND UMBRELLAS.

Dunlap Agency.

Up-to-date Goods at Popular Prices.

**HUFF & STEVENSON,**

**HATS,**

Men's Furnishing Goods.

1003 Walnut St.

8 W. Ninth St.

**R. KRIETE.**

I sell Supplies for Naturalists and Students  
in Zoologic, Entomologic, Taxidermy,  
etc., at the same prices as  
when ordered in the East.

406 East 12th Street,

Kansas City, Mo.

**PARISIAN CLOAK CO.,**

—RETAILERS OF—

**Ladies' Wearing Apparel.**

1108-10 Main Street,

— KANSAS CITY, MO.



Miss VanMetre—"Who was Herodotus?"

Richard Scammon—"He was a biblical character who was killed for lying."

Mr. Dodd—" 'A rolling stone gathers no moss', Mr. Tate, and that makes the fifth time you have changed your seat within a day or two."

One of the small visitors from the ward school was seen munching an apple behind his hat. What will the poor little fellow do when he is here for good?

Mr. Tate was asked to usher at one of Mr. Dodd's matinees last week.

Mr. Connell—"What is a glacier?"

Boy—"It is a large body of ice that moves twenty-four hours every inch."

Mr. Chase—"If you divide by two, what is the quotient?"

Alfred, (waking from a reverie)—"Oh, seven and eleven."

Mr. Miller—"I wish you young ladies would not sport such weak voices."

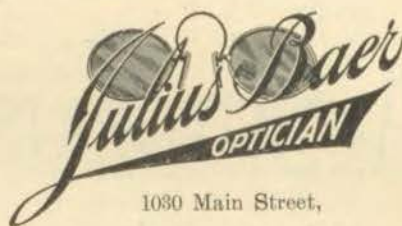
Have you seen Johnson's dollar photo's? Southwest corner Twelfth and Grand—over Grand Market.

A recent motion to buy cut flowers and present them, C. O. D., to Mr. Mackenzie caused much excitement. George opened the box, and, after having read the card of wishes, and carefully unfolding three layers of tissue paper, laid his hands tenderly on a bunch of spring onions, tied with blue and yellow ribbons; the excitement seemed to have reached its height. He raised the present fondly from its band box, and after having sufficed his olefatories with their obnoxious odor, he invited all present to participate in this joyful celebration. The climax was yet to come when he told of his inexplicable joy on re-

ceiving this most generous gift and he ended his answer by presenting those two-week-old onions moistened with an ounce of liquid asafetida.

The members of the "Art Club" seriously regret that Miss Tomlinson was called to her home, Cincinnati, and we hope her future will be a successful one.

Ask Mr. Arrowsmith for one of his new sleigh-bells for your cow, if you think their manufacture has not caused the return of winter.



1030 Main Street,

Eyes Tested Free.

KANSAS CITY, MO.

## STUDIES IN ZOOLOGY

IS A SUPPLEMENT TO

## THE NAUTILUS,

PRINTED BY THE  
NAUTILUS PUB. CO.

THIS supplement contains sixty-four pages of matter on scientific subjects, illustrated by half tones. This book is graded for High Schools, Academies and Universities. \* \* \* \* \*

PRICE, - 75 Cents.

Go to Campbell Paint and Glass Co.

FOR ALL KINDS OF

GLASS AND PAINT.

Telephone 270.

1228 Main Street.

CARLTON AND ROSE

PHOTO ENGRAVERS  
ELECTROTYPERS  
STEREOTYPERS

PROCESSES  
HALFTONE  
ZINC ETCHING  
RELIEF LINE  
WOOD ENG.  
ETC.

TELEPHONE 1632

216 W. WABDOTTE ST.  
KANSAS CITY MO.

Persons wishing advertising space in  
this paper, please address

BUSINESS MANAGER  
OF THE NAUTILUS,...

Manual Training High School.



# Browning, King & Co.,

MANUFACTURERS AND RETAILERS

Attractive Spring Novelties,

ELEGANT TOP COATS For Men, Youth and Boys.

STYLISH SUITS For all Ages and Occupations.

Latest Novelties in

HATS, CAPS, NECKWEAR,  
AND FURNISHINGS.

OUR STYLES ARE THE CORRECT CRITERIONS  
FOR CAREFUL DRESSERS.

# Browning, King & Co.,

MAIN AND ELEVENTH STREETS.

**Y**oung Man improve your time, mind and body. This

**M**ay be done at the YOUNG  
MEN'S CHRISTIAN ASSOCIATION. You

**C**an secure use of Gymnasium, invigorating shower  
baths, with water at any temperature desired  
and large plunge bath. Evening Educational  
Classes, Social Attractions, Reading Rooms,  
Bible Classes and Helpful Meetings.

**A**t 810 Wyandotte Street.  
All privileges, only \$7.00  
per year.

HARRY L. MARKELL,  
ACTING GEN'L SECRETARY.

F. H. CLARK,  
PHYSICAL DIRECTOR.



# THE NAUTILUS

MAY 1899



WANDAL TRAINING  
HIGH SCHOOL  
KANSAS CITY MO.



# CONTENTS.



	Page.
Board of Education and Faculty.....	147
Commencement Program.....	149
List of Graduates.....	151
Directory.....	153
LITERARY.....	155
Twentieth Century Flying Machine.....	155
Delphine's Diamond.....	157
A True Story.....	159
A True Story of a Dog.....	161
The Necessity of English to The Scientist.....	162
The Result of a Practical Joke.....	164
The Race is Not to The Swift.....	165
The Hunter.....	166
Overcoming Small Obstacles.....	166
When Doctors Disagree.....	167
ATHLETICS.....	168
EDITORIALS.....	170
SCIENCE.....	173
The Manufacture of Soap.....	173
The Silk-Worm Moths About Kansas City.....	175
THE BOYS' MANUAL TRAINING.....	180
The Shop Instructor.....	180
Growth of The Manual Training High School.....	181
THE GIRLS' MANUAL TRAINING.....	182
Art in Lace.....	182
Bread-Making.....	183
EXCHANGES.....	185
LOCALS.....	188

# Kansas City School of Law

Follows the most approved plan for giving a legal education.

....Faculty is composed of  
judges and practicing  
lawyers as follows:

HON. F. M. BLACK,  
HON. O. H. DEAN,  
HON. E. L. SCARRITT,  
HON. E. P. GATES,  
MR. S. B. LADD,  
MR. C. O. TICHENOR,  
HON. R. J. INGRAHAM,  
MR. J. H. HARKLESS,  
MR. J. W. SNYDER,  
MR. W. P. BORLAND,  
MR. E. D. ELLISON.

All sessions held in the evening so that students may be self-supporting.

Two years course of nine months each leads to degree of Bachelor of Laws.

## DIPLOMA ADMITS TO THE BAR

Tuition, Fifty Dollars per year and students have magnificent library privileges.

Send for Catalogue and full information to

Wm. P. Borland, 714 N. Y. Life Bldg.,  
E. N. Powell, 614 N. Y. Life Bldg.,  
E. D. Ellison, 627 N. Y. Life Bldg.

ESTABLISHED 1886.

TELEPHONE 1453.

WE MAKE A SPECIALTY OF PRINTING MAGAZINES  
AND PERIODICALS.

*MAS. E. BROWN*  
**PRINTING CO.**

WE PRINT "THE NAUTILUS" AND SEVERAL OTHER  
FIRST-CLASS PUBLICATIONS.

SIXTH AND WALNUT STS.,

KANSAS CITY, MISSOURI.



TIN AND STAMPED WARE.  
 BARBED AND FLAIN FENCE WIRE.  
 WAGON WOOD WORK.  
 SPRINGS AND AXLES.  
 BUFFALO SCALES.  
 LAFLIN & RAND POWDER COMPANY.  
 MACNEALE & URBAN SAFES.  
 CIRCULAR SAWS.

Richards & Conover  
 Hardware Co.

Tinners' Stock, Cutlery, Iron,  
 Steel and Nails.

Cor. 5th and Wyandotte Sts.,

KANSAS CITY, MO.

R. T. THORNTON,  
 Druggist,

Telephone 449.

Cor. 15th St. and Virginia Ave.

KEEPS A FULL LINE OF SCHOOL SUPPLIES.

Choice Candies. Funke's Chocolates a Specialty.

Prescriptions delivered to any part of the City.

Give him a call.

Always go to —

S. H. WALES  
 J. H. WALES

WALES BROTHERS

FOR

Staple and Fancy Groceries,

1317 EAST FIFTEENTH STREET,

Telephone 1904.

KANSAS CITY, MO

My  
 Vehicles  
 are  
 Equipped  
 with  
 Rubber  
 Tires.

J. M. McINTIRE,  
 LIVERY, BOARDING AND SALE STABLE,

Carriage  
 and  
 Baggage  
 Calls  
 Promptly  
 Attended  
 to.

1124 WALNUT STREET

Telephone 706.

# BOARD OF EDUCATION

HON. R. L. YEAGER, President.

HON. J. V. C. KARNES, Vice-President.

HON. E. F. SWINNEY, Treasurer.

HON. W. E. BENSON, Secretary.

HON. J. C. JAMES.

HON. JOS. L. NORMAN.

HON. J. SCOTT HARRISON.

HON. F. A. FAXON.

J. M. GREENWOOD, Superintendent.

# FACULTY

- |   |   |
|---|---|
| GILBERT B. MORRISON, Principal,<br>Director of Physical Science Course.                     | J. M. KENT,<br>Electrical and Mechanical Engineer, Instructor in Applied Electricity. |
| E. D. PHILLIPS, Vice-Principal,<br>English Literature, and Director of English Course.      | W. A. CONNELL,<br>Mensuration, Mineralogy and Physiography.                           |
| JAMES A. MERRILL,<br>Botany, Zoology, Geology, and Director of Biology Course.              | OLIVE B. WILSON,<br>Music.  |
| JAMES C. RICHARDSON,<br>German, French, and Director of Language Course.                    | CLIFTON B. SLOAN,<br>Mechanical Drawing.  |
| MARY FISHER,<br>American Literature.  | SARAH E. VAN METER,<br>English.   |
| A. A. DODD,<br>Director of Mathematics Course.  | DELLA DRAKE,<br>Latin.  |
| B. T. CHASE,<br>Mathematics.  | SALLIE ELSTON,<br>English.  |
| ANNA C. GILDAY,<br>History and Economics.   | GEO. ARROWSMITH,<br>Turning and Pattern-making.                                       |
| HERBERT M. PAGE,<br>Physics.  | JESSIE L. GRIFFITH,<br>Sewing.  |
| M. ALICE MURPHY,<br>Free-hand Drawing.  | CHRISTINA M. THOMPSON,<br>Dress Making.   |
| STANLEY H. MOORE,<br>Woodwork, and Director of Boys' Manual Training.                       | R. H. KNIGHT,<br>Mathematics.   |
| JOSEPHINE G. CASEY,<br>Director Domestic Art Course.  | KATHARINE DUNN,<br>German and Latin.  |
| P. B. S. PETERS,<br>Bookkeeping, Typewriting, Stenography, and Director of Business Course. | STELLA JENKINS,<br>Study Hall and English.  |
| BERTHA H. BACHELLER,<br>Domestic Science (Cooking).   | FLOY CAMPBELL,<br>Drawing.  |
| ARMAND MILLER,<br>Chemistry.  | MRS. THOS. M. SPEERS, Matro .   |
|   | ETHEL OSGOOD, Clerk.  |
|   | L. R. CLAFLIN, Janitor.   |
|   | R. R. SHELTON, Fireman.   |





ESTABLISHED 1869.

# KANSAS CITY MEDICAL COLLEGE,

Washington and Seventh Streets.

*GRADED COURSE,  
LECTURE AND RECITATION SYSTEM OF INSTRUCTION,  
WELL EQUIPPED LABORATORIES.*

Thirty-first annual session begins September 15,  
and continues six months. For announcements  
and other information address,

J. D. GRIFFITH, M. D.,  
Dean.

FRANKLIN E. MURPHY, M. D.,  
Secretary.

## Drawing Supplies

Drawing Sets 75c up

Drawing Boards, Easels, Thumb Tacks. All  
grades of Drawing Paper from cheapest  
practice paper to Water Color Paper.

Special prices on all Supplies to Pupils of the Man-  
ual Training High School.

### Milton Bradley Company,

H. O. PALEN, Mgr.

418 East 9th St., (Old Y. M. C. A. Bldg.)

## Queen of the Pantry Flour

Is not only a good Flour—it's the **BEST**. It gives the  
most satisfactory results in every kind of baking, and  
is all that its name implies. All grocers handle it—in  
response to the universal demand.

### DAVID B. KIRK & CO.,

KANSAS CITY, MO

SECOND COMMENCEMENT  
OF THE  
MANUAL TRAINING HIGH SCHOOL

IN THE  
M. T. H. S. ASSEMBLY HALL,

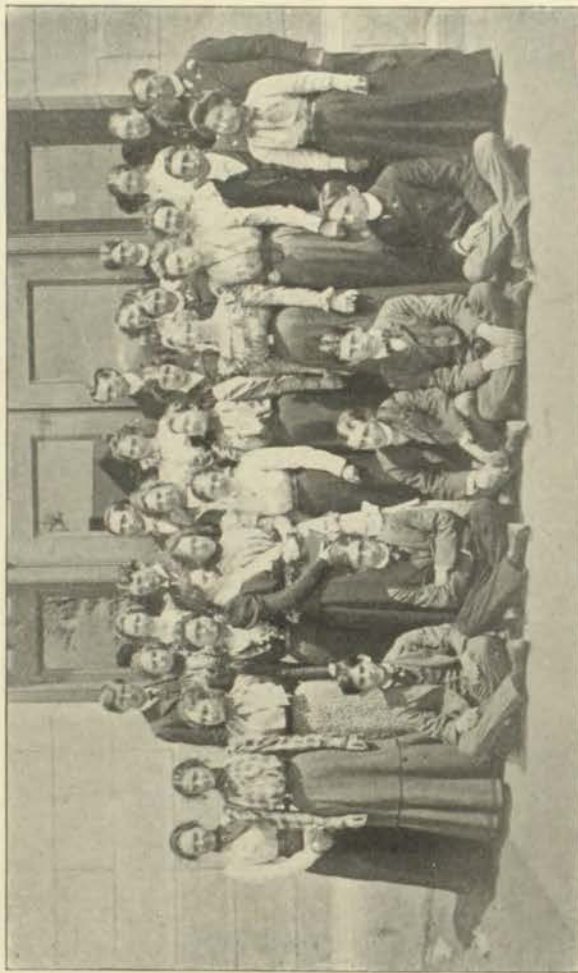
Wednesday, May 24, 1899.

•• Program. ••

Music—March,	M. T. H. S. ORCHESTRA
Invocation,	REV. HENRY HOPKINS
Song,	MARTHA MILLER
Essay—"Longfellow and Poe,"	GRACE D. PHILLIPS
Piano—"The Nightingale,"	CLARA LINDSLEY
A Review—"Anglo-Saxon Superiority,"	LEON BLOCH
Spring Song,	ALICE DEWOLFF
Paper—"Our Birds"	TRUMAN ROWE
Trio—"A Summer Day"	MEMBERS OF THE CLASS
ADDRESS TO THE CLASS,	HON. W. S. COWHERD
Music—March,	M. T. H. S. ORCHESTRA
Presentation of Diplomas,	HON. J. V. C. KARNES, Vice-Pres. Board of Education



CLASS OF '99



MANUAL TRAINING HIGH SCHOOL

GRADUATES  
OF  
MANUAL TRAINING HIGH SCHOOL.

---

MARTHA BAINBRIDGE,	PERRIN ROUSE,
LULU COHOE,	MORRIS SILVERMAN,
MARTHA MILLER,	GEORGE MACKENZIE,
WALTER BURTON,	BAILEY HEWITT,
CHARLES LEE STALEY,	LEON BLOCH,
OSMER HELM,	GRACE PHILLIPS,
GEORGE JOHNSON,	EDITH PURNELL,
OREN CARTTER,	MAMIE McCLEARY,
TRUMAN ROWE,	JESSIE GEORGE,
J. LEE HEWITT,	MYRTLE CHRISMAN,
FLORENCE SIMMS,	SUSIE HAGAN,
FLORENCE BOOKER,	REGINA KELLY,
ELLEN SINCLAIR,	EMILY JOHNSON,
CORINNE BAER,	GRACE CASSEL,
ALICE DeWOLFF,	LASSIE LANE,
CAMPBELL DAVIDSON,	CLARA LINDSLEY.
ELIZABETH SIMPSON,	CORINNE COLGAN,

Class of 1899—Colors: Light-blue and Yellow.



## SCHMELZER ARMS CO.,

*Athletic and Sporting Goods,  
Fire Arms and Ammunition.*

710-12-14 Main Street,

KANSAS CITY, MO.

# Attention!

STUDENTS OF THE MANUAL  
TRAINING HIGH SCHOOL  
GO TO

## A. SUTORIUS'

### Vienna Bakery

FOR CAKES, PASTRY, PIES,  
BREAD, ETC., FOR YOUR  
LUNCHESES.

Best Place in Town...

1400-1406 East 15th Street,

Two Blocks from School.

### At Mrs. S. J. Jackson's Book Store,

N. E. Corner Twelfth and Locust Streets,

You can find all kinds of

**HIGH SCHOOL BOOKS AND SUPPLIES.**

All text books for Manual Training,  
Central High and Ward Schools.....

### Eunice Wray Fulton,

TEACHER OF

**ELOCUTION.**

Summer Term begins June 10th.

Special Rates to Pupils  
of the Public Schools.

Studio,  
523 Pepper Building.

### CLARK THE HATTER,

906 MAIN STREET.

Correct Styles for Young Men.

GLOVES AND UMBRELLAS.

Dunlap Agency.

Up-to-date Goods at Popular Prices.

### HUFF & STEVENSON,

**HATS,**

Men's Furnishing Goods.

1003 Walnut St.

8 W. Ninth St.

### R. KRIETE.

I sell Supplies for Naturalists and Students  
in Zoologic, Entomologic, Taxidermy,  
etc., at the same prices as  
when ordered in the East.

406 East 12th Street,

Kansas City, Mo.

### PURITY CANDY

**KITCHEN,**

1025 Main Street.

502 E. 12th Street.



1030 Main Street,

Eyes Tested Free.

KANSAS CITY, MO.

# DIRECTORY

## Officers of the Belles Lettres Society.

CORINNE COLGAN, '99.....	President
EARNST ZIMMERSCHIED, '00.....	Vice-President
VELMA SQUIER, '00.....	Secretary
CLIFFORD BURTON, '00.....	Treasurer
FRED DAVIS '08.....	Critic
C. LEE STALEY '99.....	Sergeant-at-Arms
ROBERT CLEMENS, '90.....	Reporter

## Officers of the Art Club.

ALICE DEWOLFF, '99.....	President
PERRIN ROUSE, '00.....	Vice-President
CORNELIA HARZFELD, '01.....	Secretary
LINDA LOOMAS, '01.....	Corresponding Secretary
RALPH SEGUR, '00.....	Treasurer
MAY PERKINS, '99.....	Mewtadjraesmd
MYRON ALBERTSON, '01.....	Sergeant-at-Arms
WALTER HIDDEN, '01.....	Critic

## Officers of the Manual Society of Debate.

JAMES KILROY, '01.....	President
GEORGE CONKEY, '01.....	Vice-President
HERMANN KUBE, '00.....	Secretary
HARRY FRAZIER, '00.....	Treasurer
ROY GREGG, '01.....	Critic
ALFRED HERTZ, '01.....	Reporter
BRUCE FRAZIER, '01.....	Sergeant-at-Arms

## Officers of the Senior Class.

CLARA LINDSLY.....	President
WALTER BURTON.....	Vice-President
MYRTLE CHRISMAN.....	Secretary
TRUMAN ROWE.....	Treasurer
GEORGE JOHNSON.....	Sergeant-at-Arms
GEORGE MACKENZIE.....	Critic

## Officers of the Science Club.

GEORGE MACKENZIE, '99.....	President
ANNIE WYNNE, '01.....	Vice-President
EDITH PERNELL, '99.....	Secretary
CLARK HENDERSON '01.....	Sergeant-at-Arms
FRANK WYNNE, Chmn., '00 } ELIZABETH TUTTLE, '01 } BAILEY HEWITT, '99 }	Ways and Means Committee
OREN CARTER '99.....	Membership Committee
PEARL BARTLETT, '08.....	Critic

## Orchestra Members.

MR. ARMAND MILLER, Director.		
FIRST VIOLINS. ANNA JAMESON. LETA ROGERS. GEORGE CONKEY.	SECOND VIOLINS. MERLE ROGERS. EDWARD LEGG. JOE EASLEY.	THIRD VIOLINS. CLARA HOERNIG. ANNA GIFFIN.
'CELLO. LOU ROGERS.		PIANO. CLARA LINDSLY.



# Central Coal and Coke Co.

Successors to the KEITH & PERRY COAL CO.



## Coal, Lumber, Ties and Timbers.

KANSAS CITY, MISSOURI.

---

GO TO

# Campbell Paint and Glass Co.

For All Kinds  
of

## Glass and Paint.

Telephone 270.

1228 Main Street.

---

The Dreyfus Produce Co. INCORPORATED  
 WHOLESALE FRUITS  
 AND PRODUCE  
 KANSAS CITY, MO.

1216, 1218 and 1220 West 7<sup>th</sup> Street.

---

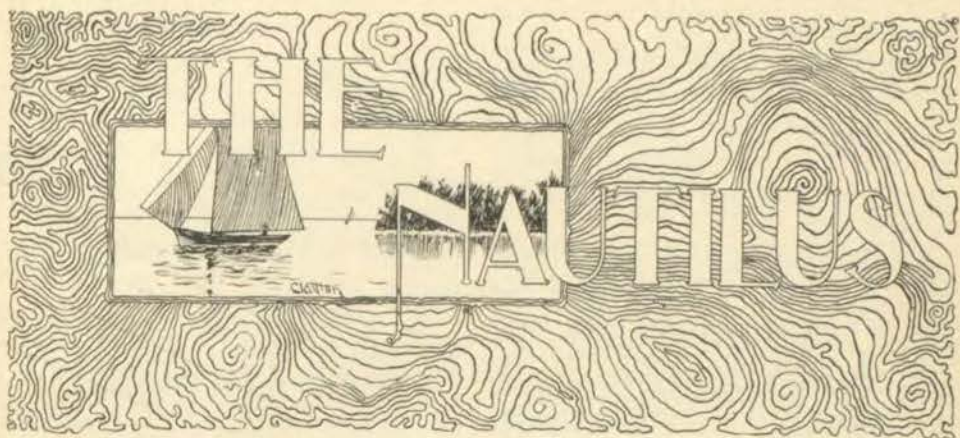
## O! How Nobby!! Our STRAW HATS,

From \$1.00 to \$2.25.

All Other Hats are \$2.25. Regular \$3.00 Values.

### THE FASHION, A. B. LEWIS, Mgr.,

1102 WALNUT ST.



## LITERARY DEPARTMENT.

### TWENTIETH CENTURY FLYING MACHINE.

When I was in Chili, not long ago, I met a certain man, who is one of the factors in this story.

It was one stormy night, when I was traveling in the Andes. I was looking for some kind of shelter when I saw a light, through the trees. I went towards it, and saw that it shone through the window of a hut.

I rapped on the door, and it was opened by a small, stoop-shouldered, grizzly-bearded man. He was dressed in fairly good clothes. He invited me in, speaking in a strong German accent. I told him I was an American, traveling to see the country as well as for my health.

In the course of conversation, I found he was a German Count, who had once been very wealthy, but had spent all his money in trying to perfect an invention. He thought that at last he had suc-

ceeded, but he did not seem inclined to tell me what it was.

The room was neatly furnished, and at one end there was quite a large space partitioned off.

We spent a very pleasant evening. The mysterious manner of my host, and my curiosity concerning the room partitioned off, kept me awake till long after midnight.

When I awoke in the morning the Count had breakfast ready. I ate very heartily, and prepared to take my leave, when he asked me if I would not like to stay all day with him and watch him work.

I consented with pleasure, as I wished to see what he was making.

He asked what my business was. I told him I was a capitalist, and that I owned three gold mines in California, and four in the Klondike.



He asked if I was willing to put five thousand dollars in a project that might bring me millions.

I knew that if I lost five thousand dollars it would not bankrupt me, so I asked what the project was. He then conducted me to the partitioned space, unlocked the door, and what a sight met my eyes!

At one side of the room was a work-bench, with all kinds of tools on it, and scattered over the floor were bolts, nuts, strips of steel, iron, copper, engine-wheels, fans, and almost everything pertaining to engines. Over the bench was a mechanical drawing, which reminded me of the ones I used to make in the Manual Training High School, in Kansas City, Mo. The drawing was cigar shaped, with two large fans between the center and the rear end of it. After he had explained part of it, I found it to be an air ship, such as I had read about. The plan seemed so plausible that I decided to invest the amount he desired in it.

We began work at once, and worked almost night and day until it was finished. The outside of the air ship was made of thin sheets of steel bolted together. The motive power was a one thousand horse-power engine run by compressed air. The air was drawn in by large fans through openings in the forward end. When the engine was full of air it would start and work a compressor, the compressor would send the air to the engine, thus making perpetual motion.

The engine ran the two large fans, those were the propellers.

The steering apparatus were sheets of

steel in the shape of wings, one on each side of the ship, these were operated from a small conning tower situated on the top of the ship.

The ship was about one hundred feet long by twenty-five feet in diameter.

It contained three large state-rooms, heated and lighted by electricity, the dynamos being run by the engine.

When we tried it, it worked to perfection.

We decided to start for Germany the next morning, by way of Kansas City.

We started bright and early. We steered due north and in twenty-four hours sighted Kansas City. I then steered for the Paseo. The first familiar sight was the Training School, which covered the whole block instead of part of it. When we were to land, the ship gave a sudden lurch forward into the fountain on Ninth street. The shock awoke me and I found it was 9 a. m., and that I had been dreaming, and that breakfast had long been ready. While eating I happened to notice the space partitioned off, and I asked the Count what it was. He told me it was his kitchen, and that made me ashamed to tell him my dream.

Misfortunes and solitude had unbalanced my host's mind and he informed me with a great deal of secrecy that his invention was a patent hair-dye. I was disgusted, so after paying him for my night's lodging, and thanking him for his kindness, I took my leave.

I often think of the night spent with the German Count, and of my dream, when I took a delightful ride in a "Twentieth Century Flying Machine."

E. D.



## DELPHINE'S DIAMOND.

## I

It was evening in the little mining town of St. Johns, and the setting sun cast its last rays upon the form of a young man. As he slowly lifted his dusty cap, one could see that Nature had bestowed upon him a generous share of her beauty, and had given him a fitting place amid her handiwork.

Frank Ralston's keen blue eyes and firm set jaw showed his strength of character. He had left his home in England and wandered to St. Johns, hoping there to gain fame and fortune. He had married long before leaving home; and Hetty, pining for the simple English life, soon left him a widower with a beautiful little child, Delphine.

The day grew duskiest, and as Ralston slowly wended his way homeward, his attention was attracted to a rock near by, from under which darted a gleam of light. First it appeared crimson, then blue, and this was replaced by tints of gold. Frank was soon on his knees inspecting what seemed to his eyes a magnificent jewel. And in this, he was not mistaken, for on closer observation he beheld a diamond of the most brilliant hues. He arose as in a dream, gazing first at the jewel in his hand, and then at the tinted skies in which shone one lonely star, twinkling its message from a far away world. He thought of Delphine, and what happiness and comfort the jewel could bring her. It was her birthday, and this stone came as a God-send to him. He would not inquire to whom it belonged. No one would suspect that a poor workman like he, would have in his possession such a gem; and in time, he and Delphine could move away and live in grand style, and no one be the wiser.

When Frank returned home, he won-

dered why Delphine was not out to meet him; but on entering the house, the cause was quite apparent. The child was confidently resting in the arms of a stranger.

"I beg your pardon, Mr. Ralston, but on inquiring in the village for a guide, I was directed here. My name is Mr. Slater."

Mr. Slater! Where had Frank heard that name before? It certainly sounded familiar, yet he could not place it. Soon his face brightened as he remembered that on the morning before he read that a certain wealthy gentleman would arrive in the little mining town. But why had he come to such a place? Ah! He wanted to inspect the mines, and the beautiful scenery around them.

"Mr. Slater," said Ralston, "we are poor folks, and I was taken back to see little Delphine in the arms of a stranger, the like of such as you. But sit down and make yourself comfortable, and maybe I can find a place for you to rest tonight; and we will get up bright and early in order to take a good look at the sights of our little town." Frank was as good as his word, and before long, the stranger was quietly slumbering.

In the meanwhile, he had not forgotten about the diamond, and when Delphine remarked, "Papa, div me a tiss," he drew the diamond from his pocket, and handed it to Delphine, saying, "Isn't it pretty, my little girl?" Then he put the stone away, and he and little Delphine followed the stranger to slumberland.

The next morning, Mr. Slater was shown the sights of the little town, and he determined to stay and study it for a short time. He and Delphine soon grew to be good friends. On the night before his departure, Delphine playing with a



box of her father's, accidentally came across the diamond. Mr. Slater, attracted by the happy cries of the little girl, was soon at her side, and seeing the treasure which she held in her hand, quietly took it from her, crossed over to Ralston, and said, "Mr. Ralston, you evidently do not realize the worth of this gem. Upon it, you and your daughter could live in luxury. Not in this small isolated town, but in a larger, grander one. And little Delphine, who reminds me so much of my sweetheart, could have the education of a rich man's child. How came you by this stone?"

"Oh," said Frank laughing, although nervously, "that belonged to my wife, and for that reason I treasure it."

"Come," said Mr. Slater, "come with me to the city, and live as you *could* do, upon this. Will you go with me?" "I shall think about it," answered Frank, and the next morning the rising sun found Mr. Ralston and Delphine on the road to a new home.

## II

But was Delphine's life in her new home a happy one? I cannot say it was. The exactions were too much for one not accustomed to the comforts of luxury, and she often yearned for the simple life of the little mining town.

During all this time the real owner of the diamond had not abandoned his search. He had not advertised his loss, thinking it best to find it by secret means, and knowing that the detective service was surer in those cases in which cunning is carried to its greatest height. In the world of the detectives, it was known to one and all, and each strove to find a clue to its whereabouts. Certainly, Ralston had found the stone, and had thought it queer that no question of its loss had ever come to him; and often he wondered if his possession of it were only a dream. At such times

he would open the little safe, and take it from its hiding place, to look and smile, or gaze and frown, at the giver of his all or the curser of his fate. But then, he would think, "What care I, so long as I can live in splendor and grant little Delphine her every wish."

Mr. Slater had the stone in keeping for Frank, and often thought that he would love always to keep it. It was such a beauty, that only the direst need would cause him to give it up.

Time went on, and Delphine grew up to be a beautiful girl, surrounded by all the luxuries her heart could desire. Then suddenly a change came into her life. Mr. Slater had been speculating somewhat, and had lost considerable wealth. The time was at hand when he felt it his duty to dispose of the diamond. But on attempting to sell it, he had been suddenly seized and dragged into prison, ere he was aware. The fatal stone had not been forgotten, and thanks to a vigilant detective service, an interested person was too near Mr. Slater at the time of his attempt to sell it.

On the evening that Mr. Slater was thrown into prison, Frank Ralston was slowly wending his way homeward. Delphine was out on the porch to meet him, and noticed that something was the matter with her father. After much persuasion, Ralston told her what he had just heard. That no doubt she knew of Mr. Slater's recent losses, and his reluctance to sell the stone, and how, in trying to dispose of it, he was suddenly seized and thrown into prison. That was all he knew or had heard, but Delphine must pretend never to have seen or heard of the stone. "What can it all mean?" thought the poor girl. But her duty was clear, and she resolved that in all things she would obey her father.

From that day Delphine grew sadder

and sadder, her sweet face lost its pretty color, and her actions seemed suddenly to change from those of a young girl into those of a woman. She would go to prison and sit for hours with her old friend, and upon leaving him, would try to think of ways and means to secure his release. She went before the judge, but her sweet face and charming manners had no effect. The law must run its course.

And what was Frank doing all this time? He was enjoying the luxuries of a fine home, while the innocent person was spending his days behind the prison bars.

One day Mr. Slater received a letter, and we can judge of Delphine's feelings by looking at its contents.

*My Dear Friend*—Alas, that you must spend your days thus. I have begged and pleaded for your release, but it is of no avail. Why will you not speak a word for yourself? Is there something to hide? Are you shielding a guilty man, and can I not help you? Ah! believe me, I know how innocent you are, and I pray to the Almighty Source of all that is *just* and *merciful*, to help you in this your hour of need. Command me, and I will do anything in my power to help you.

As Ever  
YOUR DELPHINE.

### III

About three months after the imprisonment of Mr. Slater, as Frank Ralston was leisurely walking home, he chanced to pass a place where some buildings were about to be erected. The workmen were blasting, and Ralston did not hear the cry of warning until too late. A moment afterwards he lay unconscious upon the ground. He was quickly taken home and regained consciousness just long enough to bid Delphine goodbye, and to reveal to her the secret of the stolen diamond, and the innocence of Mr. Slater. Then, amid groans of anguish and a panic stricken conscience, he fell into the sleep, from which no mortal awakes.

Can we realize the feelings of Delphine who had loved her father with a life's devotion? Her noble character revealed itself, and the release of Mr. Slater was a question of a few days.

Imagine, if you can, a calm, clear, cool evening. A crimson setting sun. A narrow path, hedged in on both sides and leading—well—a girl trod that narrow path, and with every foot-fall, a sob arose from her pure young heart. She was a saddened, heart-broken woman, and her steps slowly led her to the little mining town of St. Johns.

CARRIE BACHRACH.



### A TRUE STORY.

At the foot of the Rocky mountains, surrounded by the mountain peaks which look down with a protecting air as if afraid lest something might destroy the peaceful beauty of the little valley so carefully guarded on all sides by them, is situated Mr. C.'s ranch. In the middle of this valley, inclosed by lofty trees which lift their proud heads towards the sky as though vieing with the mountains

in their efforts to touch the fleecy clouds, stands the log house over-grown by beautiful vines. It would seem to the casual observer perhaps, at first glance, that this, one of the many ranches of Wyoming, was similar in all respects to the others except possibly the fact that Nature had spent a little more time here beautifying the valley. Yet on closer observation one can not help but notice



that there is something unique about this place. It could not have been by chance that the house commands the most beautiful view of the valley, nor could it have been merely by accident that the drive-way to the house was inclosed on either side by trees. Ah! no, Nature had here found a helpmate who had carried out her plans to the fullest extent.

It was morning. The sun had just peeped over the mountain tops, tinting the sky in the most delicate and yet brilliant manner, making the dewdrops on the grass look like sparkling jewels, dropped from heaven. A more beautiful spot could not have been found in all the state than Mr. C—'s ranch that morning. Around on one side of the house, through a half-open door, could be seen the happy little family of Mr. C— at breakfast. A baby in a high chair, a little girl between six and seven, the mother and father.

"Well, little woman, I will have to go. There is no getting out of it. I hate to leave you alone, but I don't see what else I can do."

"O, that is all right," said Mrs. C— cheerily, "there is nothing here to be afraid of. The children and I will get along all right. It isn't the pleasantest thing in the world to have you gone, but then, what can't be cured must be endured."

"That's so," he said, rising and looking lovingly across the table at his little golden-haired wife. "But I won't be gone long. I will be back for dinner tomorrow."

About an hour later Mr. C— rode off to Harrison, a small town forty-five miles distant. A man who had formerly worked for Mr. C— had got into trouble and he had been summoned by the authorities to appear at the trial. And as the ranchman had also been sent away on business some days before, Mrs. C—

was necessarily left alone with her two children. It was not a common thing for her to be left alone on the ranch, yet she felt no fear whatever. But about noon a sudden presentiment of evil came over her, and, fight against it as she would, it grew worse and worse. At last, thinking something must have happened to her husband, she gave herself up to walking the floor and praying for help.

\* \* \* \* \*

In a small, dilapidated cabin on a sheep-ranch about six miles from Mr. C—'s were two men lying down on the floor, looking through some cracks into the cellar below. It was noon. Not a breath of air disturbed the prairie grass. Not a sound except a queer grinding in the cellar.

"My God! Jim, what is that fellow doing? Can you see?"

"Yes, he is grinding a couple of butcher knives."

"He must have brought a jug of whisky home last night. My heavens, hear that laugh. He has got the tremens sure this time. But what shall we do with him? We must not let him get out of there or he will cut us up into sausage meat."

"Let us nail this door down."

"But he will get out of the window."

"Not if he stays in there ten minutes longer. Here, you nail this door down while I go around and close up the window. Hurry up, there."

Just as they rose up on their feet they were startled by the sound of a maniac laugh right behind them. There stood Gray looking at them through the open window brandishing his sharp butcher knives. They looked at him horror-struck, and before they had recovered sufficiently to speak, Gray had turned and run down the road.

"Great God, Jim, he is on the road to C—'s ranch, and Mrs. C— will probably

be alone at this time of day. Hurry, we must catch him at all cost."

Running to the stable they hastily saddled their horses and started after the fugitive, but Gray, having a few minutes the start of them, had disappeared from view.

\* \* \* \* \*

"Why, hello! Mike, I didn't expect you in Harrison today. Are you going on home this afternoon?"

"Don't know, C—, Brownny has gone thirty miles already this morning."

"Well, I am going whether you do or not."

"Why, what is the matter? I thought you were going to stay till morning."

"Well, I was, on account of my horse, but I have had such a presentiment of evil since dinner that I can't stand it any longer. I am afraid that something has happened to the folks at home."

"Well, if you are going I will go, too, and if our horses play out we can walk it and get there before twelve tonight."

\* \* \* \* \*

"See him anywhere, Jim?"

"No, he must be over there, though."

"Yes, look, there he is just going over the top of that hill. For God's sake! he is almost to the fence, We must rope him."

The two men leaning far over their horses' necks and driving their spurs in their flanks, dashed after the maniac.

"There, I have got him. Rope him around the arm so he can't cut my rope."

"Good, pull the rope tight. That's it."

"He has dropped the knives. Keep the rope tight."

"We have got him safe now, thank God. That little Mrs. C— doesn't know what horrible danger she has been in today."

\* \* \* \* \*

Well, here we are at last. Our horses have done well, haven't they Mr. C—?

"Yes, splendid. Here comes Mrs. C—."

"Well, dear, how is it that you are home tonight?"

"Well I don't know, but I had such a presentiment of evil about noon that I couldn't stay away. I thought sure that something must have happened to you. Poor old horse, I have very nearly killed him, though."

"How strange," exclaimed Mrs. C—, "I had the same experience. I thought something had happened to you."

"Well, never mind, we all seem to be all right. Let us go in and have supper."

Thus dismissing it from their minds, they prepared for the night, little dreaming how differently things might have ended that day.

PEARL BARTLETT.



## THE TRUE STORY OF A DOG.

It was the Fourth of July that I first became acquainted with this beautiful shepherd dog.

A number of friends had come to our home in the evening to see our display of fireworks; I was on the porch watching them send off sky-rockets, Roman

candles, and so forth, when I heard a low, moaning sound quite near me. I looked around to see what it was and there, crouched in the corner under the bench, was a handsome shepherd dog, with his sweet, pathetic eyes looking pleadingly into mine for protection, as



every sound from the fireworks made him tremble all over, but I soon petted and coaxed his fears away. His soft, silky hair was jet black, the under side of his body was a golden brown, the same color flecked his face, and never have I seen more expressive eyes. He almost asked in words, so plain was his desire to find the master from whom he had become separated. As he closely watched every wagon that passed, we concluded that he was a well-bred country dog that had come to town with his folks and in some confusion had become separated from them.

He stayed with us that night, and next morning at six o'clock he was at the front gate whining, and looking eagerly at every passing wagon, now and then making a dash out into the road, only to return homesick and dejected.

We could not be otherwise than kind to him, and for every act of kindness he seemed to say with his eyes, "Thank you very much, but all I want is to be with my master again." We could not succeed in making him forget the friends

he had lost. How we wished that he could speak! How gladly we would have searched for them if only he could have told us who they were!

One morning he refused to eat, and laid his pretty head on my lap as if to tell me it was no use, he could not endure the sorrow any longer. The evening of that day we missed him from the gate, where night and morning for two weeks he had taken his stand watching and waiting for the master that never came.

What a love that dog had for that master, and what a good master he must have had! Poor brute, we could do no more for him. Next morning "Shep", as we called him, did not come up from the barn so we went down to see him, and there, lying on his bed of straw, so weak he could just lift his head, he was dying.

He was only a dog, but we were all very sad at his death, so we buried him under a big tree in the back yard and marked the spot "Shep, a noble dog, lies buried here." A. C.



## THE NECESSITY OF ENGLISH TO THE SCIENTIST.

In the association of human beings, the facility with which one man can present in a pleasing manner his ideas to his fellow man to a great extent causes their reception or rejection.

The man who has something to tell the world, and who expresses it in a clear, precise, straightforward manner, can universally command respect and attention, whereas his less fortunate brother, lacking facility of speech, will scarcely receive a hearing.

There is a trait of human nature which all must learn to take into account, namely, a tendency to leave

whatever is unpleasant or distasteful and to cling to, or struggle to attain that which is the more pleasing, however harmful or dangerous at times, such a course may be. The man is but a child with experience, a fact which the student of science should ever keep in mind. If he has something to say, it behooves him to know how to say it, lest he shall offend.

In all ages of the world, man has always refused to receive new ideas; he is a conventional being; he loves things which he understands and with which he has associations, and steadfastly re-

fuses to seek new ideals so long as the old ones are tenable, the more ignorant and superstitious he is, the more he objects to improvement.

This tendency to conservatism is the safeguard of progress, but it is also a break upon the wheel. To take advantage of this tendency requires the skill of the diplomat, and the only way to attain this skill is by experience.

The world, collectively and individually has learned to take account of these traits.

We begin to gain experience in presenting ideas by perceiving how we are made to receive them ourselves. We perceive that it is only when an idea is presented in a clear, precise manner, that we entirely grasp it. We have to fully appreciate a thought presented before it becomes permanent stock in our store of information and will result in any action.

An idea but partially expressed, is confusing and misleading. It allows the listener to piece out the lacking connections from his own stock of ideas, a thing he will not do properly, unless his previous experiences have caused him to retain ideas closely related to the new one presented.

An idea embodying a step in progress should be placed in proper relation to the one over which it is an improvement. The breach should not be too great or the ever present tendency to conserva-

tism will cause the individual to hesitate, to seize the new idea, and to act upon its suggestion.

Today, as in times past, it is the scientist who is presenting to the world the greatest number of new ideas which embody steps toward material progress. In order that he be not hampered in the expression of his ideas in the most forcible manner, he should be acquainted *with* his mother's tongue and be able *to* make good use of it. He should have a free and natural style, free from conventional forms and special scientific terms. In other words, he should be an accomplished rhetorician in order to make his writings easily readable. For a material instance of this kind of accomplished writing, take the novels of the French astronomer, Flammarion. He has made his little novelettes, dictionaries of astronomical information, besides being entertaining and well worth reading on account of their literary merit.

I think such works the best style of books for the popularizing or spreading of scientific information, as they will reach many who otherwise would never look at, much less read, a book filled with dry facts or technical terms.

The *Chambered Nautilus* by Oliver Wendell Holmes, is a pleasing instance of the artistic combination of verse and scientific knowledge.

P. H.





## THE RESULT OF A PRACTICAL JOKE.

The lady residing at 2917 B— street had two young society women visiting her, and as is the custom, all the young gentlemen of her acquaintance were calling to pay their respects to the strangers.

Next door to this lady there lived a family whose chief member figuring in our narrative was a young girl, Florence by name, about seventeen years of age, not beautiful but exceedingly clever and original, and always ready "to go in for a good time."

On this particular evening two of Florence's school friends had come to spend the night with her and happened to be upstairs primping when the door-bell rang, and the maid ushered two young gentlemen, Phil Roman and Robert Smith, into the drawing-room. Florence, being the only occupant of the room, stepped forward to greet them, she knew the gentlemen only slightly, and also immediately divined that they had made a mistake in the house. But as has been said before, she was very bright and quick, and decided at once to have a little fun, and when the gentlemen asked if the young ladies were at home, she promptly answered "yes", and excused herself to call them.

When she got up-stairs she told Ruby and Pearl her little trick, with a laughing countenance and sparkling eyes. They laughed heartily, pronounced it a fine joke, and all three went down-stairs together.

Some men seem to be professional match-makers. Such was the case with Phil's best friend. As chance would have it, this match-making friend dwelt in the same town as the before mentioned visiting young ladies did, and was intimately acquainted with them. He was especially desirous to have the

elder become engaged, as she was fairly well advanced in years; and, not anxious to marry her himself, he thought she would make an excellent wife for Phil. So he had written in his last letter, "if you ever intend to marry, now is your chance; she is fairly good-looking, bright, witty, a fine *cook*, (she must have attended the M. T. H. S.) and in pretty good circumstances, in fact, Phil, she is just the right kind of a girl for you."

So Phil, desirous of getting married, had started out to make his call full of expectations and sincerely hoping his anticipations would be realized.

When the three girls entered the drawing-room, Florence very solemnly introduced her friends as the "visiting young ladies." Phil eyed them rather curiously but made no other remark than the usual acknowledgment of an introduction.

After a short time of general conversation, the young people began to sing and play, Phil constantly regarding Ruby, thinking her to be the young lady his friend had written about, and not at all displeased with her.

In the midst of their merry-making and gay laughter, the young men were reminded by the clear strokes of the wall clock that the hour for their leave-taking had arrived. The evening had passed so quickly and pleasantly that the young men said their adieus with genuine regret, at the same time expressing their intentions to call soon again.

When the door was closed upon the company the girls laughed and exclaimed in a chorus, "what a delightful experience; I wonder what will come of it."

If you had followed the young men along the garden path, you would have heard Phil say to his companion, "Isn't

Ruby just the sweetest girl you ever saw? She is just as I imagined her with only one exception, I thought her to be a trifle older, but perhaps Bill was fooling me." To this his companion answered in a low tone, "Well, I am not a fair judge because I—ah—well, in truth, I like Florence pretty well."

Several days had passed when they accidentally were made acquainted with the little trick which had been played on them. And it is needless to say this information did not prevent them from keeping their promise to call again, they only considering the girls cleverer than before.

\* \* \* \* \*

This little extract of Phil's letter writ-

ten to his friend about six weeks later will inform all interested in the result of Florence's practical joke: "I am sorry, old fellow, I could not accommodate you by marrying your friend; but your letter, in a very peculiar manner, introduced me to the dearest little girl in the world whom I intend to marry presently. And by the way, old chap, you did better than you think, you made four people happy instead of two; for Rob, the fellow that called with me that night, is going to marry Florence, the clever little hostess who played the joke on us. So you see there will be a double wedding, and Rob and I are the happiest men in seven states. As ever your friend, Phil."

CORNELIA G. HARZFELD.



### THE RACE IS NOT TO THE SWIFT.

You have doubtless heard the story  
Of the tortoise and the hare,  
How they ran a race together,  
On a morning mild and fair.  
How the hare though starting boldly,  
With a long and graceful leap,  
Of his running soon grew weary,  
Lost the race by going to sleep.

But there is another story,  
Not so often told, maybe,  
How a rose bush, on no wager,  
Raced a growing maple tree.

It was on a bright spring morning,  
That they both peeped through the  
ground.  
And throwing off their covering,  
Stood up and looked around;  
And when they spied each other,  
The tree—the first to speak, said,  
"We live so near together,  
I would your acquaintance seek."

But the rose tossed back her leaves,  
In the gentle morning light,  
And answered, "I'll have reached the  
Ere I've attained my *height*. [sun  
So, though I'm friendly with you now,  
I soon will leave you here;  
For I will taller be than you,  
Before another year."

The tree replied, "I'm very small,  
And maybe very slow,  
But though I cannot reach the sun  
I'll do my best to grow."

So for many summers after,  
From spring till blighting fall,  
The rose kept growing, growing,  
Beside the garden wall.  
Clasping it close with eager hands,  
She tried her best to raise  
Her branches green and budding flowers,  
To meet the sun's warm gaze.

The tree was growing slow but sure,  
And when the years had passed,  
The rose but reached the wall top;  
The tree grew most at last. N. P.



## THE HUNTER.

Written by a pupil after the study of Allegories in the Junior Rhetoric Class.

Olive Schreiner's allegory, "The Hunter", pictures to me the four stages of a man's life, and also of a nation's.

The first is the mythological stage when all is clouded in misty beliefs and vague phantasies. Man wanders here and there, now following one fancy, now another, and all is peaceful until suddenly gleams upon his vision a glimpse of Truth, and all rest is now destroyed; for, after one glimpse of Truth is obtained, there is a longing for another, and there commences a restless search for what has been but a mere vision.

Knowledge now comes to the rescue and gives hope and suggestions. The suggestions, however, are enticing enough to lure the mortal on in his search, but they do not contain definite instruction; for knowledge gained upon leaving the mythological stage is not as strong as it finally becomes. The stage of seeking for truth is the theological stage, and from this, man enters the possible stage.

In this there is a vain belief of having accomplished and won that for which years have been spent in seeking. We nourish false ideas in the hope that one will be the true one. Some wonderful attainment in the knowledge of science, literature and art is acquired, and the world comes swarming around us court-

ing favor, in the hope that they will gain from this collection of ideas a glimpse of truth and faith for themselves. It is not long, however, until knowledge and wisdom again come to the rescue and awaken us from our idle dream, by causing us to realize that the object of our search is not yet gained, but self-sacrifice and courage are still required to attain the goal we desire.

We now enter the fourth and last stage, the spiritual stage. It is few who reach this stage, and for him who enters it, is required a long period of toil and suffering, a denouncing of the world's follies and of old associates. Age usually comes before the human being has at last surmounted the many obstacles and gains, (at last) not all of Truth, but one pearly feather dropped from her wing. And after this ambition is satisfied as fully as is possible on this earth, it is not without regret that we recall those aimless days of credulity and faith in all things. For is not he who gains the spiritual stage, so far above his fellow beings that he can but pity them for their lack of belief and ambition; and himself for his loneliness. There is a consolation, however, in the knowledge that by him has been hewn the steps up which others shall climb.

L. E.



## OVERCOMING SMALL OBSTACLES.

"The heights, by great men reached and kept,  
Were not attained by sudden flight,  
But they, while their companions slept,  
Were toiling upward in the night."

A man, very successful in this world's affairs, was once asked, "What helped

you over the great trials of life?" His reply was, "The other trials gave me a lift."

A saying truer than this has never been uttered, and it is not only true

for him, but for every human being on this earth. It is hard to climb the small steps and overcome the little trials, for the steps are often steep, rough and very slippery. But when we once get a firm, strong hold on the top step and stand there without any assistance whatever, we will see that we can easily step to the summit of the great obstruction which we thought would surely baffle all of our efforts, and where we thought we should have to wait until another pilgrim, stronger than we, would give us a lift.

The power given any person by the conquest of small difficulties—the surmounting of the smaller steps—is inestimable. It gives us the light and freedom which nothing else possibly could, and it also gives us that strongest of all strengths, and most self-confident of all self-confidence—the strength and self-confidence which we gain by overcoming our impediments alone.

This principle of overcoming small difficulties in order to surmount greater ones is illustrated in every department of our school. The boys must climb the small steps—learning to use their tools—before they can overpower the greater obstacle of making the picture-frame; while girls must get the better of the intricacies of the sewing machine before they can master the intricacies of the tucks and ruffles of the skirt. In Latin also, we must climb those very slippery little steps called the principle parts, if we wish to overcome the greater obstacle of translation.

Thus we see that it is a great deal better to vanquish the smaller trials first than to try to overcome at once, without help, the greater obstacles, for "to him that hath made good use of his talents, shall more talents be given."

CECIL CLARK.



### WHEN DOCTORS DISAGREE.

The face of Blanche was pinched and pale,

They summoned the doctor at once,  
He looked very grave and felt her pulse,  
Then gave some significant grunts.

"Her pulse is irreg'lar," he whispered  
As he wisely shook his head, [low,  
With care he measured her medicine,  
"Can cure her with this," he said.

But ere he gave her the awful stuff,  
Said a voice, "All doctors are geese,"  
The doctor frowned with a mighty frown,  
At the small disturber of peace.

A curly headed boy it was,  
So young and yet so old,  
With bow and arrows by his side,  
So gentle and yet so bold.

"Avaunt!" he said with a superior air,  
The doctor knew him not,  
For many a year had marked his brow,  
Since he'd seen the little tot.

The doctor's large, robust form shook  
With anger as he cried,  
"The patient's mine, disturb us not,"  
"Nay, mine!" the boy replied.

"For I am Daniel Cupid bold,  
The ruler of this earth,  
The girl has had a lover's quarrel,  
It gave me such great mirth."

With a twinkle in his dark brown eyes,  
And a defiant shake of the head,  
Some half burnt letters the doctor he  
showed,  
"The battle's won," he said.

The doctor bowed and left the room,  
Hope gone from his heart,  
The fair maid Blanche was cured, in  
By Cupid's magic art. [sooth,  
R. S.





Pride has had a fall! At last the haughty blue and white of Central High School has been dragged in the dust by their superiors, the Manual. Were they defeated, is well answered by a look at the score, 51 to 39 in field events, and 8 to 4 in the base-ball game. Oh, how they did fire their guns, and beat their drums, and split their throats; but all in vain. Had they had Dewey's fleet, assisted by the Third Regiment band, the result would have been the same, for the sturdy boys of Manual far overmatched the Central boys. Even their favorite had much trouble in keeping himself from being drowned by the Manual tide of victory. Where are their athletes? We know not. They have been standing, as it were, in a cloud, upheld by nothing but their own opinion. We advise them to be seen, rather than heard, hereafter.

The field-day, held on the 6th of May, between the Manual Training High School and Central High School, resulted in an easy victory for the Manuals, they winning seven out of the ten events, and in one event, viz: the hammer-throw, left Central nothing but a goose-egg.

Douglas distinguished himself by easily winning every event in which he entered, giving him a total of 15 points.

This field-day is the first that has been held between the two High Schools, and we intend to follow it up each year, as we find it to be a great success in arous-

ing an athletic spirit in the schools. The following is the summary:

Standing broad jump—Henry, (Man.) 9 ft. 8¼ in.; Shaw, (Cen.) 9 ft. 3 in.; Stuckenburg, (Man.) 9 ft. 2½ in.

Throwing ball.—Green, (Cen.) 304 ft.; Shaw, (Cen.) 297 ft. 3 in.; Estill, (Man.) 285 ft. 4 in.

High jump.—Douglas and Tate, (Man.) 5 ft.; Christopher, (Cen.) 4 ft. 10 in.

Shot-put.—Shaw, (Cen.) 30 ft. 8 in.; Washer, (Cen.) 29 ft. 11 in.; Lindsly, (Man.) 29 ft. 10 in.

One hundred-yard dash.—Douglas, (Man.) first; Harrison, (Cen.) second; Mulford, (Cen.) third.

Running broad jump.—Tate, (Man.) 16 ft. 9 in.; Shaw, (Cen.) 16 ft. 7¾ in.; Lindsly, (Man.) 16 ft. 2 in.

Three-legged race.—Parson and Staley, (Man.) first; Davis and Rowe, (Man.) second; Shaw and Welch, (Cen.) third.

Hammer throwing.—Bryant, (Man.) 66 ft. 1 in.; Lindsly, (Man.) 63 ft. 2 in., Arni, (Man.) 62 ft. 1 in.

Forty-four-yard dash.—Douglas, (Man.) first; Morrison, (Cen.) second; Nation, (Cen.) third.

Hop, step and jump.—Christopher, (Cen.) 37 ft. 2 in.; Lindsly, (Man.) 36 ft. 6 in.; Offit, (Cen.) 36 ft. 5 in.

Immediately following the field-day events, our base-ball team played a five-inning game with the Central team.

For a while our boys could not touch Barnes' twisters, and were goose-egged for three innings. After that they kept Central's fielders busy fumbling balls. The following are the teams with their respective positions:

Central.	Manual.
C. Washer.....	Catcher .....Campbell
Barnes.....	Pitcher .....Corder
Cole.....	First Base..... Wolf
Shaw.....	Second Base..... Peters
Green.....	Third Base.....Bales
Mantz.....	Short Stop.....Ford
E. Washer.....	Right Field.....Urie
Smith.....	Center Field.....Arni
Cavanaugh.....	Left Field.....Carter

Our base-ball team has made a good record this year, as it has been beaten but once so far. The trip they took to Liberty, however, was a very unfortunate one for our boys. They played in a hard rain for three innings, when both teams decided it would be dangerous for some of the boys, who could not swim, to attempt to make first base. Our boys were far from satisfied with the result of this game. The games played this year resulted as follows:

Auditorium Ushers.....	4
Manual.....	19
Westport.....	1
Manual.....	23
Kansas City, Kansas, High School.....	1
Manual.....	20
Central High School.....	4
Manual.....	8
William Jewell.....	3
Manual.....	4

The field-day ended with a base-ball game between the faculties of the two schools. As it was getting late it was decided to play only three innings instead of five, which they had intended to play. The game was a circus in itself, and it did the scholars good to see their dignified professors come down enough to play base-ball. Had it not been for the professors of Central, their school

would have suffered utter defeat. The score was 10 to 7 in favor of Central.

One of the most important things of the field-day was the school yell. Both schools were well prepared to show their interest by making as much noise as possible, and brought everything conceivable that could make a great deal of noise. There were megaphones galore, and Central, knowing that the Manuals would drown them out if they resorted to yelling only, brought guns, drums and horns. All these together with the

Racka, Chicka, Boom!  
 Racka, Chicka, Boom!  
 Racka, Chicka!  
 Racka, Chicka!  
 Boom, Boom, Boom!  
 Rip, Roy, Rah!  
 Rip, Roy, Ree!  
 Kansas City High School!  
 Miz-zou-ree!

could not stand against the long-drawn-out and powerful yell

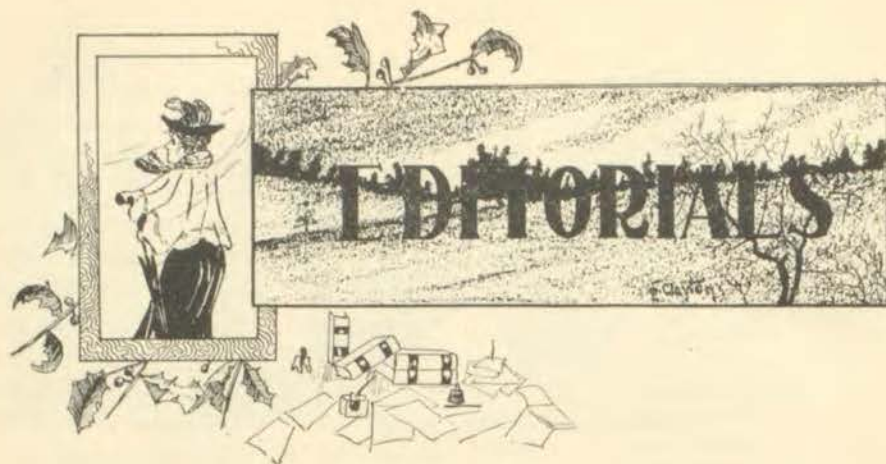
I yell!  
 You yell!  
 All yell!  
 Man-u-al!

Central, as in everything else, was beaten in the yell and could only frantically wave her colors, this being their last resort.

The increasing interest in athletics is plainly seen. The boys have found out that they can do something and the field-day tends to show that they have done something; but, as we all know, there is much room for improvement. The result of the field-day tends more to show how small Central is, rather than how great we are. We do not intend to become proud of ourselves, as they did after the foot-ball game last year, for "that," as Prof. Morrison says, "is the first step downward."

I wish to correct the mistake in last issue of THE NAUTILUS, saying Walker Campbell was captain of the base ball team. Corder has that honor. C. B.





### EDITORIAL STAFF.

PERRIN ROUSE, '99, . . . Editor-in-Chief  
 GRACE PHILLIPS, '99, . . . Associate Editor

#### LITERARY EDITORS.

GRACE CASSEL, '99. . . . WALTER BURTON, '99

#### SCIENTIFIC EDITORS.

ANNIE WYNNE, '00. . . . GEORGE MCKENZIE, '99

#### MANUAL TRAINING EDITORS.

WALTER HIDDEN, '01. . . . MAY PERKINS, '00

#### LOCAL EDITORS.

LUCILE EDWARDS, '00. . . . WILL HALL, '01

CHARLES CLAYTON, '99, . . . Artist

CARL BRYANT, '01, . . . Athletic Editor

LEE STALEY, '99, . . . Exchange Editor

#### BUSINESS MANAGERS.

JAMES N. RUSSELL, '01, . . . Manager

DWIGHT FROST, '01, . . . Assistant

Entered at the Kansas City postoffice as second class matter.

THE NAUTILUS is published once every two months in the general interest of the Manual Training High School, at Kansas City, Mo.

The subscription price is 30c per year by mail; 25c to pupils of the school. Single copies 10c. There will be four numbers this school year.

Contributions are requested from all members of the school.

Address all communications to

### THE NAUTILUS,

Manual Training High School,  
 KANSAS CITY, MO.

usually comes to them who overcome the obstacles which beset life's pathway, and in most cases it simply means good pluck. We wish them all the success that they deserve, and that is a great deal. This class represents two years of work in the Central High School and two in the Manual Training High School. In these two years the pupils have received those impressions and that training which will influence their whole lives. The atmosphere of our school, social, intellectual, industrial and moral, leaves its indelible imprint on all its students, and we believe that the members of this class will go out well equipped to take their places in the battle of life, or to continue their studies in college. We live in an active, industrial and practical age, and the lessons which our school impresses upon us will place the students who go out from it in a proper attitude toward the many occupations to which they must turn for a livelihood. The world needs men and women who are not afraid or ashamed to work. Men and women who, when the work of the day is done, can pursue and enjoy those ethical and esthetic pleasures of life which only an education along the lines of art, science and literature can give. May the present class realize the full measure of their brightest hopes, and fulfill the expectations of their parents and their teachers.

To the thirty-four graduates who will receive their diplomas on commencement night, THE NAUTILUS throws out the old shoe of wishes for their future good luck and prosperity. Good luck

The victory of our school over Central on the athletic field-day is of course a source of keen satisfaction to us, not so much that we rejoice in the humiliation of our brothers' downfall as that we ex-

perience satisfaction in the knowledge that we are growing and that our new gymnasium and our work-shop is bearing fruit. One reason for our success is probably due to the variety and all roundness of the events, bringing into exercise that physical versatility which constitutes the true test of physical excellence. A slow and moderate growth which comes from constant and temperate exercise—an exercise taken for its own sake—is better than a temporary and spasmodic effort which simply gets ready for a contest. Pursued properly, the contest for a measure of strength between two schools should be a mere incident, and not the end and aim of the training. Exercise for health and you will always be in training, and then with a few days of vigorous practice, you will be in condition to do your best. The recent field-day was a brilliant success in many ways; the weather was fine, and while the contest lasted, from 1 p. m. till 7 p. m., it was in the main, free from broils and disputes. While the cheering was enthusiastic, it was good natured and high spirited. The becoming modesty with which our boys carry their honors is highly commendable. They realize that defeat is the greatest of all stimuli, and that continuous howling after a victory is poor preparation for a subsequent one. The profits of the field-day exercise will add materially to our gymnasium equipment and furnish additional incentive for another year's work.

In closing the second year of our school we can say with a tinge of pride, that we are thankful for what we have achieved; not that puffed up pride that "goeth before a fall," but simply that satisfaction that our school is well patronized and that there is unity and steadfastness of purpose between pupils and faculty. Our enrollment has reached 1114 pupils, and while our accommodations are inadequate, the general needs of the various departments have been met in a general way, and the course of study carried forward in accordance with the original plan. The bill which empowers school boards to call a special election has become a law, and our Board of Education will soon

avail itself of the opportunities of its provisions. When the time comes to vote, the patrons of the Manual Training High School will need no instruction, and will, we believe, move as one man for more school rooms, not only for the Manual Training High School, but for the whole city. The ward schools are also badly crowded and more school rooms must come or many pupils will have to be turned away when school opens next fall.

One of the commendable characteristics of our school, is that yells are never given indoors. While we can probably out-yell any other school when on the athletic field, we confine our enthusiasm to hand clapping when in our Assembly Hall. This is certainly in line with the best taste and the highest refinement. It was believed that the enthusiasm caused by our recent athletic victory over Central, would break loose in vociferous yelling in the Assembly Hall the following Monday during the exercises there, but this was not the case; even the announcements of the score projected on the screen in a darkened room did not overcome the self-control of the pupils, and no yell was given, but the record for hand clapping was then and there broken.

Since our last issue our school has received two gifts; the first by Mr. W. T. Dole, consisting of four fine portraits, respectively of Webster, Clay, Calhoun and Choate; the second by Edgar Leon, consisting of a picture entitled, "The Sister Republics." These gentlemen deserve the thanks of the school and we wish to assure them of our hearty appreciation of their generosity.

#### Our Monday Entertainments.

An interesting lecture on the "Origin and Growth of Architecture," was given to our school on March 27, by Mr. Henry Van Brunt. Architecture was discussed from its use in Egypt to the stately buildings of the present day, and the causes of each change of style and the superiority of each variety was explained. Mr. Van Brunt had several stereopticon



slides illustrating his talk and we enjoyed seeing several views of the world's famous buildings. Mr. Ollie E. Renfro favored us with a vocal selection which was duly appreciated.

Two types of "rag time" were exemplified by Harry Kelley, before an instructive lecture on "Some Things European," by Mr. Henry Wollman, on April 3. Mr. Wollman seasoned his talk with anecdotes and we felt as if we had really been through Europe, instead of merely hearing of some ones else experience.

One of the most interesting and instructive talks which we have enjoyed this year, was given by Judge E. L. Scarritt, on April 10. His subject was, "Some Youthful Tendencies Toward Crime." He told us that one of the most prominent tendencies at the present time toward youthful criminality, is that of disrespect to parents and to persons in authority. He urged a more careful attention to the minor duties and daily occupations which contribute so largely to the formation of character.

A musicale of the following numbers was rendered on April 17. Vocal solo, Mrs. Jennie Kiebler Gordon, accompanied by Mrs. E. C. White; violin solo, Miss Hope Stoner, accompanied by Miss Velma Squires; mandolin and guitar duo, by Mr. Don Turley and Mr. S. S. Oakford; mandolin solo, Mr. Fred Wallis; saxophone solo, Professor Perry.

The first programme furnished by one of our faculty was a lecture, illustrated by the stereopticon, by Professor Merrill, on "The Growth of North America." Professor Merrill began his lecture by illustrating the earth as it first appeared, then through its several changes, and his belief seems to be that America is as old as either Europe, Africa or Asia. The animals and the series of evolutions were talked of. The lecture seems to have aroused considerable interest from the fact that many new things were put before us. A *reading* by Mrs. Emily L. Lockhart preceded a talk by Mrs.

Josie McKenzie Walker, on "The Band of Mercy." Mr. F. A. Faxon, a member of our School Board, spoke on "The Band of Mercy's Influence."

Our programme of May 1 consisted of a piano solo by Miss Florence Vance; a vocal duet by Mr. M. Vernon Styles and Miss Ruth Peeples; a violincello solo by Mr. Alfred Buch; a soprano solo by Miss Ruth Peeples; a reading by Miss Eunice Ray Fulton; a soprano solo by Miss Ella Devine; a vocal solo by Miss Pearl Warner; a cornet solo by Miss Linnie Biggs, and a tenor solo by Mr. M. Vernon Styles. The numbers were well rendered and appreciated by all.

An illustrated lecture on "The Lick Observatory" was given by Miss Gilday on May 8. Among the important views shown were: the pictures of the telescopes of that station, several views of the moon, scales of comparison of the sizes of the planets of the solar system, and several views of the changes of season. The lecture was very instructive and was so received by the school. Professor Sisson rendered several creditable piano selections.

The members of the Lympic Quartett furnished a most delightful program to the largest audience Manual has ever gathered. Of this quartett Mrs. B. T. Hollenback sings soprano; Mrs. Carrie Farwell-Voorhees, contralto; Mr. B. T. Hollenback, tenor, and Mr. E. K. Chafee, baritone. Mrs. E. C. White played their accompaniment, as well as several solos. The program consisted of three pieces by the quartett, vocal solos by Mr. Hollenback, Mrs. Hollenback and Mrs. Voorhees, and two piano solos by Mrs. White; a duo by Mrs. Voorhees and Mrs. Hollenback, and a trio by Mrs. Hollenback, Mr. Chafee and Mr. Hollenback. Miss Helen Fairlamb was to give two readings, but was prevented from doing so. Thanks by the school were extended to Mr. Phillips for his work on the program committee, and Mr. Moore for the framing of four pictures for the Assembly Hall.



## THE MANUFACTURE OF SOAP.

In this article an attempt will be made to give the process and a little of the theory of soap manufacture.

In olden times soap was made by carefully saving all the wood ashes, the ash of hickory being the best. After a quantity of ash was accumulated, they were treated in a hopper with water, which dissolved out the potassium carbonate. This solution of potassium carbonate was boiled with fat and allowed to cool. This constituted the old soft soap, which cannot be made into a solid.

### LAUNDRY SOAP.

In the first process a quantity of caustic soda is placed with a proper proportion of fats and rosin and boiled for about four days in a large open vat, twenty feet in diameter, and about the same in depth. It is made to boil, by means of a number of jets which discharge steam into the mass. The vats have a capacity of from five thousand to six thousand boxes of soap.

After it has been boiled for the required length of time, fifty barrels of salt are added to the vat, which causes the soap to separate and rise to the top, as it is not soluble in a solution of salt. The liquid at the bottom, after the soap has separated, is called the "glycerin liquor." This is run off and the soap is allowed to cool for three days to 150° F.

It is then run out in a still liquid condition and strained to remove lumps and then placed in a vessel equipped with a stirring apparatus somewhat resembling an ice-cream freezer, where the soap is thoroughly stirred and mixed with sodium carbonate, talc, sodium silicate, and an odorous substance called soap-stock which somewhat resembles vaseline.

After being thoroughly mixed, it is run into a mould, mounted on trucks, and having removable wooden sides. This mould will hold a block of soap, called a "frame," 4 ft. x 4 ft. x 1 ft., and weighing about 1,200 pounds. When the soap has hardened, the wooden sides are removed, and the cake of soap is allowed to dry somewhat. After drying a short time they are sent to the cutting room, where they are cut into slabs by a frame of wires. These slabs are cut into long strips, which are in turn cut into rough rectangular cakes. After this process they are sent to a steam heated drying room where they are further dried, and are then sent to a machine which presses them and stamps the name on them. After they are wrapped and boxed they are ready for the market.

The scum from the vats and all the scraps are reboiled and made into the cheaper grades of brown laundry soaps.



## TOILET SOAP.

The toilet soaps are made by a somewhat different process. In the laundry soaps, the glycerin was all removed, but in some of the toilet soaps, the glycerin is left in and a small quantity added, probably for the soothing effect on the skin.

The toilet soaps are of three classes; viz: the transparent, or so-called glycerin soaps, the opaque soaps, and the cocoanut oil soaps.

The transparent soaps are made by boiling caustic soda with fats and castor oil in a steam jacketed kettle, which is stirred by hand, to which is added glycerin, coloring matter and perfume. Alcohol and sugar are also added for the purpose of making it transparent. It is cast into small blocks, which are cut into cakes, smoothed, pressed, and wrapped in a manner similar to the laundry soaps.

The opaque soaps are made in a vat similar to that in which the laundry soaps are made, but smaller, and the process is the same, with the exception that a choicer quality of fats is used and no rosin is added.

It is run from the vats into moulds and allowed to dry for some time, after which they are scraped into fine shavings which are placed on a long, moving canvas belt in a steam drying room and dried still more. They are then taken out and put through a process called "milling." This consists of passing the soap repeatedly between stone rollers which revolve at different speeds until the soap has been made into a perfectly homogeneous mass. The perfume is then added and the soap is removed from the rollers in long strips resembling "noodles." These strips are placed in a machine which presses them into a long, compact stick, which is cut into pieces holding the same quantity as a cake of soap. These pieces are placed

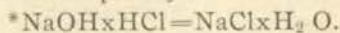
in a press, shaped into ovals or any desired shape, wrapped and packed.

The cocoanut oil soaps are made by what is called the cold process. In this the oil is added to the caustic soda and let stand for several days without the addition of any heat, after which it is taken out, made into cakes, pressed and wrapped.

Another style of toilet soap which has an extensive sale is the so-called mechanics' soap. This is made from the poorer grades of toilet soap and contains in addition some gritty substance which is generally pumice stone.

## THE PURIFICATION OF THE GLYCERIN.

The liquid called the "glycerin liquor," referred to in the paragraph on laundry soap, containing spent lye, salt, and glycerin is pumped from the boiling vats into another vat where it is treated with hydrochloric acid to neutralize the surplus lye.



It is also treated with iron chloride which has the property of coagulating any albuminous matter which may have been in the fat. The liquor is then filtered through closely woven canvas cloths to remove the coagulated albuminous matter, and is pumped into a retort, where the liquor is evaporated in a vacuum, when most of the salt crystallizes out. After several repetitions of the evaporating process, the liquor is obtained in a state of almost absolute freedom from salt.

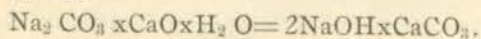
The glycerin which is left is in a crude state, having a color and consistency resembling red molasses.

This crude glycerin is refined by passing through it a jet of steam at a very high temperature and pressure, which mechanically carries the glycerin with it, and is carried through a vessel called a "catch-all" where the glycerin condenses and falls, while the steam is carried on and condensed to water in another tank.

The final purification of the glycerin has to be made with steam in the manner just described, as it will decompose when distilled alone with dry heat.

Having given a description of the process of soap manufacture, a few of the underlying chemical principles would not be inappropriate.

In the first place, all the caustic soda used in the manufacture of soap is made by adding lime to a boiling solution of sodium carbonate forming caustic soda or sodium hydroxide and calcium carbonate.



The composition of the fat is much more complex. Those who have studied chemistry know that compounds are divided into bases, acids and salts. A reaction of an acid with a base will form a salt. The bases are generally hydroxides. There is among the numerous alcohols one called glycerin, having the formula  $\text{C}_3\text{H}_5(\text{OH})_3$ , being, as we see, tribasic. Now fats are somewhat of

the nature of salts and are combinations of glycerin with organic acids, principally stearic,  $\text{HC}_{18}\text{H}_{35}\text{O}_2$ ; palmitic,  $\text{HC}_{16}\text{H}_{31}\text{O}_2$ ; and oleic,  $\text{HC}_{18}\text{H}_{33}\text{O}_2$ . For example, the fat stearin is a combination of glycerin with stearic acid, thus:  $\text{C}_3\text{H}_5(\text{OH})_3 \times 3\text{HC}_{18}\text{H}_{35}\text{O}_2 = \text{C}_{57}\text{H}_{111}(\text{O})_3$ . Stearin is the chief constituent of beef and mutton fat and nearly all animal fats.

When this glyceride is brought in contact with a base like caustic soda and boiled, the acid radicle,  $\text{C}_{18}\text{H}_{35}\text{O}_2$ , unites with the sodium to form sodium stearate or soap and liberates glycerin, thus:  $\text{C}_3\text{H}_5(\text{C}_{18}\text{H}_{35}\text{O}_2)_3 \times 3\text{NaOH} = 3\text{NaC}_{18}\text{H}_{35}\text{O}_2 \times \text{C}_3\text{H}_5(\text{OH})_3$ .

Rosin, which was spoken of in connection with the making of laundry soaps, is a complex organic substance, which is, like fats, capable of being saponified or changed to a soap called rosin soap. It has valuable cleansing properties and gives to laundry soaps their yellow color.

BAILEY HEWITT.



## THE SILK-WORM MOTHS ABOUT KANSAS CITY.

Probably no insect has been so long under man's care and cultivation as the silk-worm. As a result of this confinement the true silk-worm has degenerated into an almost wingless condition.

The silk-worm of commerce originally came from the northern part of China, where it was raised long before the Christian era; but the silk-worms which are found in this vicinity are all natives and belong to a closely allied family, the *Saturniidae*.

The *Saturniidae* are the largest of our

moths, and have brilliant wings and large hairy bodies. Nearly allied to them are the *Citheroniidae*, or royal moths, which may be distinguished from the *Saturniidae* by the fact that the antennæ of the males are filiform for only about one-half of their length, while with the *Saturniidae* they are entirely so.

These moths, excepting two or three rare species, may be taken around the arc lights in summer, and, when carefully spread, they make most beautiful additions to a cabinet. The species

\* X equals plus.



found in the vicinity of Kansas City are as follows:

*SAMIA CECROPIA.* (Fig. 1.)

This moth is the largest as well as the most common of our *Saturniidae*. It has an exceedingly large range, being found from the Atlantic ocean to the eastern slope of the Rocky Mountains. The female moths lay from seventy-five to one hundred and fifty eggs, of spherical form, from which the larva emerge during June; they pass through several moults, and by autumn have become full-sized worms.

At this stage they are bright green in color, having a pair of red or yellow tubercles on the dorsal side of each segment, those on the thorax being much larger than the others.

In the early fall the larva spins a cocoon of coarse, brown silk, which it fastens securely to the branch on which it is made; it consists of two parts, the inner and outer, the latter of loose, the former of dense silk. About two weeks after the cocoon is finished the larva transforms into a dark brown pupa.

The moths hatch out during May and June. The wings, at first limp and useless, soon become hardened and in condition for flying. In large specimens of this species the wings expand from seven to eight inches. In adults the ground color is of greyish black, on each wing is a prominent kidney-shaped spot of white, shading to brown, and near the tip of the front wing is an oval spot of black, on the primaries is a band of brownish-red which is present also, with a band of white, on the secondaries. The thorax of this moth is covered with dense red hair, the abdomen is striped in red and white, while between the head and thorax is a band of pure white. The male may be distinguished from the female by its small size and feathery antennæ.

The larva feeds on the leaves of apple,

maple, elm, plum, pear and other common trees; they are prevented from becoming too numerous by parasites and birds. Although this species may be taken at arc lights, the best way to procure specimens is to collect cocoons, which can be secured during the winter.

*TELIA POLYPHEMUS.* (Fig. 2.)

This moth, although somewhat less common than the preceding species, is often at arc light during the summer, and may be hatched from the cocoon in spring. The imago is somewhat smaller than that of the *Cecropia*, and is of a seal-brown color. On each wing is a spot, window-like and semi-transparent, which is surrounded with a yellow border; it is divided into two parts by a vein. On the tips of the front wings are two black spots and one pink spot, and from them extend along the edge of the wing two thin bands, the outer pink, the inner black, which are continued. Near the thorax, on the fore wings, is a double band of red and pink.

The larva is about three inches in length. It is of a bright green color and has an oblique yellow line on each segment except the first and last. There appear to be two broods of the *Polypheumus*, during the season, as they are found at arc lights during the late summer, but about this fact I am not quite certain. The cocoon, unlike that of the *Cecropia*, consists of one layer only; this is closely cemented by the larva. It is generally made between two leaves, and is hung by their stems to a bough. During the high winds of winter and spring these cocoons are often blown from the bough and fall among the dead leaves and are destroyed with them; this may account for the fact that the *Polypheumus* is somewhat rarer than the *Cecropia*.

After spinning its cocoon the larva transforms into a golden-brown pupa which hatches in the spring. The

cocoon is so closely woven and so covered with insoluble cement that in order to open it the moth secretes, in glands on each side of its mouth, a sticky fluid called bombycic acid, which dissolves its case and allows the moth to escape. The wings of the adult soon harden after the moth emerges, and it flies much better than the *Cecropia*.

The females lay their eggs in twos or threes on the under side of leaves.

*TROPÆA LUNA*. (Fig. 3.)

The most striking in appearance, and at the same time the most beautiful of our large moths, is *Tropæa luna*. It differs from the other representatives in having long tails on the secondary wings. Its general color is a light and very delicate green which shades off toward the base of the wings into creamy white. The front vein of the primaries is much enlarged and is covered with violet-brown scales. On each wing is the semi-transparent window-spot which is found in all *Saturniidae*. The body is clothed in pure white scales.

The male is somewhat smaller than the female, its abdomen being less than half as large as that of the female.

The larva feeds on the leaves of walnut, hickory and other forest trees. Its general color is a bluish-green. It is difficult to distinguish the cocoon from that of the *Polyphemus*, as they are of the same shape and are fastened to the tree in the same peculiar manner, but the cocoon of the *Luna* usually contains much less silk.

*AUTOMERIS IO*. (Fig. 3.)

This moth, although very common in the Eastern states, is of rare occurrence in this locality. The adult expands from two and one-half to three inches. The most prominent feature is the pair of large spots on the secondaries. The front wings are light-brown with two indistinct, wavy, white lines extending from back to front. The base of the front

wings is thickly clothed with orange-colored hairs, and the inner angle of the secondaries is covered with long red hairs. The head and thorax are of a deep orange color. On the under side of the front wings are two dark spots corresponding to the eye-spots on the hind wings. The male differs from the female in being of a darker color and smaller in size.

The larva is about two inches long and of a general green color, with a broad band of brown edged below with white on each side of abdomen. The dorsal side is armed with black-tipped spines, the prick of which is highly irritating.

THE CITHERONIIDÆ.

I will now deal with the *Citheroniidae* or 'royal moths'. Five species belonging to this family are found in this locality. They are most beautiful insects, with brilliant and harmonious colors. They do not build cocoons, like the *Saturniidae*, but pupate in cells in the earth.

*FACLES IMPERIALIS*. (Fig. 5.)

This moth may well be called imperial, for it is one of the most beautiful of our *Lepidoptera*. It expands from five to six inches, and has a ground color of sulphur-yellow, with markings of chocolate-brown. On each of the wings is a small brown spot or ring which corresponds to the window-spot found on the wings of the *Saturniidae*. Just below and above the spot on the second pair of wings are bands of brown which extend the entire width of the wing. On the upper wings the outer edge has a wide band of brown growing narrower at the tip of the wing, and at the base connecting with an indistinct band near the thorax. The thorax is densely covered with woolly hair. The abdomen is slender and tapering, the dorsal side brown, with a row of yellow spots, one upon each segment. The entire moth is covered with specks of brown.



The larva grow to be from three to five inches in length. They are thinly covered with long hairs and prominent spines on the thoracic segments. They feed on hickory, butternut, and other forest trees. This moth, although quite rare, is occasionally taken at the arc lights; it flies only at night.

*CITHERONIA REGALIS.* (Fig. 6.)

This magnificent moth expands from five to six inches. The front wings are of an olive-green color, spotted with yellow; the veins are very prominent, and are covered with red scales. The second wings are orange, spotted with light yellow, and usually with an indistinct band of olive near the outer edge of the wing. The larva of this species is our largest caterpillar, and bears several prominent horns on the dorsal side. It is perfectly harmless, although it has a reputation of being venomous. The moth is of rare occurrence at the arc light. The adult varies greatly in color.

*SPHINGICAMPA BICOLOR.* (Fig. 7.)

The most common of our *Citheroniidae* is *Sphingicampa bicolor*. The upper wings of the adult vary from a brownish-grey to an ochre-yellow, and there are usually two white spots near the first vein. Across the front wings, near the outer margin, is an indistinct black band. The hind wings are almost covered with two rose-colored spots. The body is about the color of the fore wings. On the under side of the fore wings are two red spots corresponding with those on the second wings. There is great variation in the appearance of this species which renders an accurate description difficult.

The male of this moth expands about

two inches, the female one and one-half inches.

The larva feeds on the leaves of the honey-locust.

*DRYOCAMPA RUBICUNDA.* (Fig. 8.)

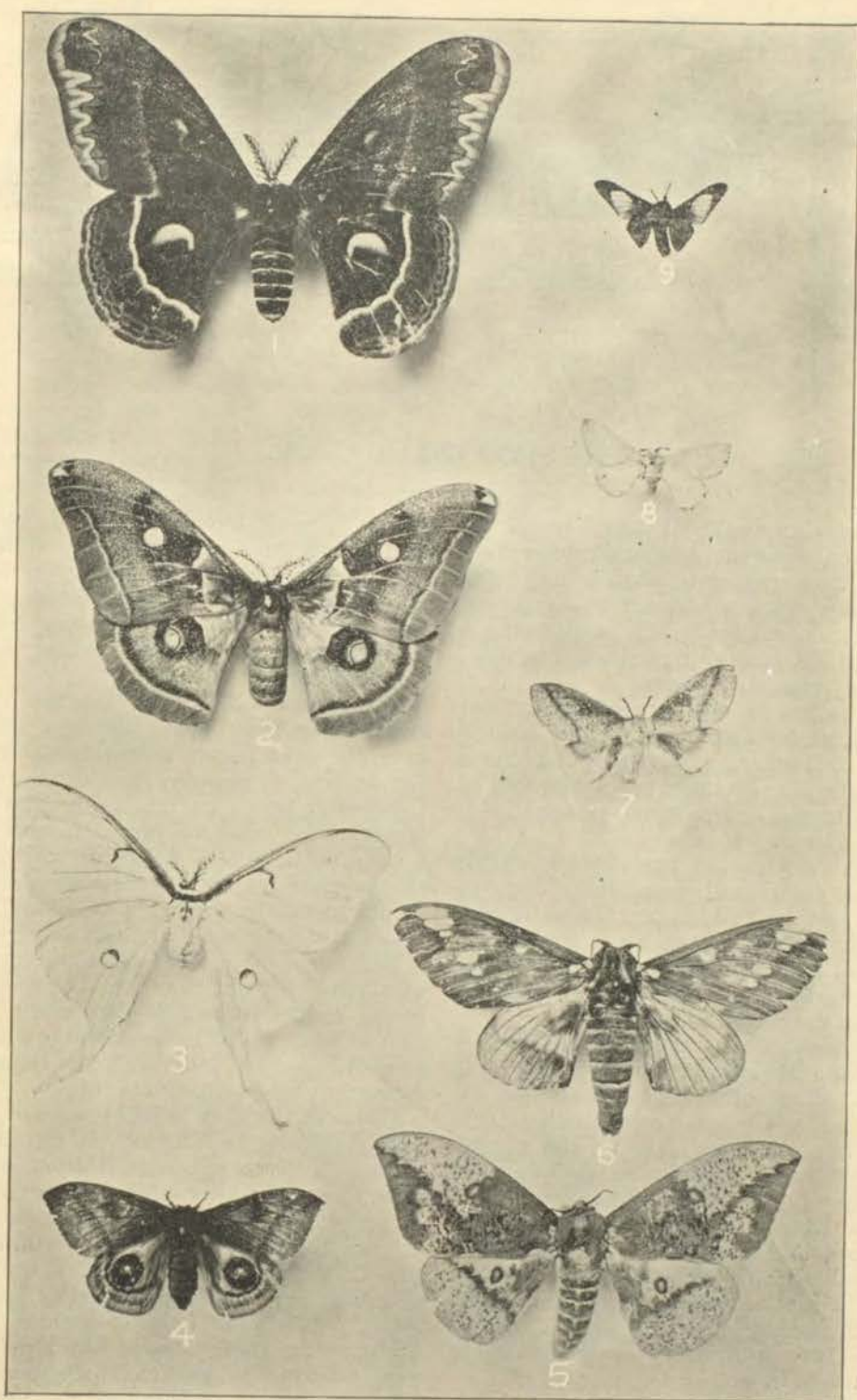
This moth is of very rare occurrence here, and only a few specimens have been taken in several years. It expands about one and one-fourth inches, and has a ground color of pale straw-yellow. On the outer margin of both the first and the second wings is a band of pink, and there is a similar band at the base of the fore wings, but this moth varies greatly in color and in the marking of the wings. The body is a shade deeper in color than the wings. The larva is known as the green striped maple worm, and feeds on the leaves of the maple and other shade trees. When fully grown it is about one and one-half inches in length. Its color is a pale yellowish green, striped with lines of lighter green. There are prominent spines on the last two abdominal segments. The moth winters in the pupa state.

*ANISOTA VIRGINIENSIS.* (Fig. 9.)

This species, like the preceding, is very rare in this locality. The larva feeds on the leaves of oak and other forest trees. They are grey or green in color, with stripes of dull yellow. A row of short spines is on the dorsal side, and two long spines are on the mesothorax.

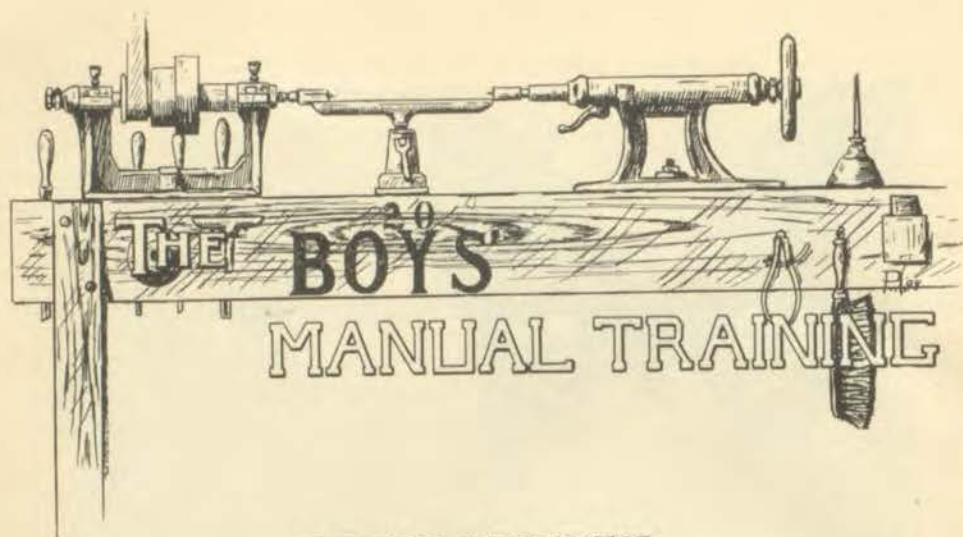
The wings of the male of this species are of a purplish-brown color, and there is a white spot on the primaries, near which is a large transparent space; the body is ochre-yellow in color. The female is somewhat larger than the male, and is very thinly scaled. The male of this species expands about one inch, and the female one and one-half inches.

RICHARD E. SCAMMON.



THE SILK-WORM MOTHS ABOUT KANSAS CITY.





## THE SHOP INSTRUCTOR.

Were the world at large better acquainted with the shop instructor, perhaps the erroneous picture too often painted of him would not be so unreal. He is comparatively new, and, being a man of extremely diversified training, must necessarily be rare.

He is not an ordinary carpenter, nor even a master mechanic, but an accomplished teacher, who, though perhaps not known as an inventor of any tool or machine built with tools, is equally at home on every bench.

This shop teacher has studied all his life, not the minute processes of any one trade, but the general and theoretic part of many crafts. Thus he is highly capable of explaining clearly and precisely just how the work should be done, leaving the execution to the pupil.

He must be a draughtsman and a linguist. He can express with pencil or chalk, ideas otherwise unable to be expressed. He must continually introduce into the vocabulary of the youth, words (usually technical terms) derived from nearly every civilized tongue.

The first teaching necessary is the use, care and safe handling of each tool. A pupil could work out little more with tools by himself without instruction than a child could with a pen. A chisel against the grain of the wood is like a pen upside down.

In class instruction the teacher gives only the important points of his work, makes particular mention of "stumbling

blocks", or extremely difficult parts, and shows just why each step follows the other for the economization of time and labor. Thus each boy has sufficient information without a confusing lot of unnecessary ideas, all distracting from the necessary ones.

After instruction the teacher may easily keep busy about the shop, going over and over points not understood by the dullard, or severely questioning the inattentive boy. In this individual instruction he must be just as careful not to take up the tool and do a difficult part of the exercise, as a language teacher would be not to prompt a pupil on the dreaded terminations of a familiar root.

Economy of space and convenience of arrangement are of vital importance in the execution of first-class work. A part of both these is the keeping of the shop in perfect order. This requires systematic and infrangible rules.

Order in the shop must of necessity be much different from that of the recitation room. Necessary communication and a little recreation after work is done, serve to encourage the boys to more work; but anything beyond this is ruinous. Mr. C. M. Woodward, of St. Louis, in speaking of the shop teacher, says: "His pupils soon become zealous and enthusiastic, there is no sense of drudgery, and no sordid motive impels to work. The pupils are as innocent of definite plans for utilizing the knowledge and skill they are acquiring (beyond the

making of a toy, a present for a friend, or a convenience for his home) as they are in their arithmetic and history. The consciousness of growing power, both

mental and manual, gives a satisfaction which throws a charm over every department of school work."

B. F.



## GROWTH OF THE MANUAL TRAINING HIGH SCHOOL.

It has been stated that "the purpose of education has always been to develop those powers and faculties which combine to make the ideal man of the age." The truth of this statement is apparent when we glance through history. In ancient Greece the ideal man was either a philosopher or one who possessed great physical strength. So the youths learned of the philosophers who talked in the public places, and contested in running and wrestling matches and other sports. The Romans trained their youths for orators and warriors. He was the ideal man of the time who could move the people by his eloquence, or who returned from battle wearing a crown of victory. And so it has been throughout the world's history.

At the present day we have our ideals both in literary and scientific achievements. We have our poets and our inventors. Men have written books that have moved the world; others have invented machines and tools that have advanced civilization by vast strides. But the literary world is greatly dependent upon the mechanical world. The invention of the printing press has brought within reach of the masses the culture and learning which was before available to only a few.

The prime needs of man's existence, food, clothing and shelter, must be supplied by manual labor. In this day of invention and scientific research, skilled men who can invent and operate machines and tools are absolutely necessary to the progress of civilization and the maintenance of good society. But in order to successfully supply this demand there must be preparation for it. Those who expect to engage in some business involving mechanical methods should begin early in their education for it. The opportunities for such an education

have heretofore been very limited. If a boy bound himself as an apprentice to learn a trade, all thoughts of his advancement were generally secondary to the master's interest, and he was obliged to do many things which he did not understand and the importance of which he could not appreciate. With the object of overcoming this difficulty many schools have been organized in Europe for giving instruction in the details of the national industries. These schools have been very beneficial to the trades, securing for them advancement and respect. But there was another requirement which the trade school did not fill. Unless the pupil had had some experience elsewhere it was very difficult to decide to which trade he is best adapted. This led to a plan to organize a school in which the pupils should spend the first year working at each trade a short time, and then spend the remaining three years at whichever trade he should choose. But this plan was found to be impracticable, as there are so many distinct trades that the cost of maintenance of such an institution was found to be too great. As a result of all these plans and experiments we have the present Manual Training School, not designed to teach trades, but to give the student habits and methods of investigation; to teach him to use the faculties which he possesses, so that he may enter upon the line of work which will be most remunerative and satisfactory. H.

### Some Re-filled Saws.

Some people, like our watch-dog, growl at everything they do not understand.

Six sturdy licks to replace a mishap are worth a dozen, either masculine or feminine darns.





### ART IN LACE.

Lace, though itself comparatively modern, is derived from two ancient kinds of work, netting and embroidery. We cannot decide when point lace was first made, so gradually was it evolved from netting.

A legend says that a young fisherman of the Adriatic was betrothed to a beautiful girl who, as industrious as she was beautiful, made a net for her lover. The first time he cast it into the sea he dragged therefrom a piece of petrified seaweed, which he gave his lady-love. Thinking ever of her lover and his gift, her deft fingers wrought the pattern of the seaweed into her netting, the first lace.

Lace is of two kinds, point lace and pillow lace. Point lace includes such varieties as Brussels point, Venetian point, Rose point, Point d' Alencon, and Portuguese point. Most of these are ancient and are to be seen only in museums. Point lace is all needle work, each part of the pattern being worked separately and then joined together by threads.

The pillow laces are made upon a pillow or cushion. These laces are known as Torchon, Valenciennes, Honiton, Mechlin, Chantilly, Spanish and Medici. The pattern is marked on a

piece of stiff parchment pricked full of holes. This parchment is then placed on a pillow and pins are stuck into the holes to hold the pattern. Bobbins filled with thread are arranged around the cushion so that the thread can be twisted around the pins. The bobbins are taken up one after the other and passed back and forth, twisting the thread around the pins according to the pattern.

As many as fifty bobbins are required to make a piece of pillow-lace half an inch wide, while for an elaborate pattern 12,000 bobbins may be used on a single pillow.

Lace, in the fifteenth and sixteenth centuries, was welcomed as a beautiful accessory to the rich costumes of the Renaissance. Great artists did not disdain to furnish designs for the decoration of textiles for gowns and household furnishings.

By importing skilled workers from Venice and Flanders, France gained a vigorous hold on the art and manufacture of lace. From the cloistered seclusion of the convent have come laces of priceless value, mute offerings that silently speak of exquisite art, infinite love, and endless patience.

C. M. T.

## BREAD-MAKING.

Of all the branches of manual training that which should appeal to us as one of the most important is the culinary art; for it is a fact that the health and happiness of a nation is greatly dependent upon its cooks.

Have you ever known a man with a case of dyspepsia to be truly happy, even though all other circumstances tended toward making him so? You know of no one; so I say that cooking *has*, and must always *have*, a prominent place in manual training. And considering all the branches of cooking, none seem to me so important as that of bread making.

How true is the old saying that bread is the staff of life. No food so affects the health of a family. With good bread the plainest meal is acceptable; without it the most elaborate and elegantly served menu is unsatisfactory.

Bread-making can be made the easiest, and also the most difficult branch of culinary science. Easy if only sufficient interest be taken to master a few principles and follow them; difficult if proper care and materials are neglected. It should be looked upon as one of our highest accomplishments; and if half the time spent in making pastries were given to this branch, how much greater the benefit would be. There are little things in bread-making that require attention, and although recipes are good enough in themselves, we all know that experience is the best teacher. Three things are indispensable to success: good flour, good yeast, and watchful care.

Bread has been made from a variety of substances—roots, fruits, and the bark of trees; but more generally from certain grains. The term is derived from the verb to bray or pound; but these brayed or ground materials are not properly bread until moistened with water. In

olden times this meal was baked in hot ashes, and made a firm loaf, very hard to digest. Finally some one discovered that by letting bread stand until fermentation took place, and then mixing it with new dough it lifted the mass and made it lighter and more digestible.

Bread is principally made from wheat flour, which is cultivated in the Northern hemisphere. It is classified as red or white, in reference to the color of the grains; as winter or summer—winter wheat being sown in the autumn, and summer wheat in the spring; and as soft or hard—soft wheat being tender, and hard wheat having strong outer coats.

A grain of wheat consists (1) of an outer coat, or husk; (2) bran coats, which contains a large proportion of mineral matter; (3) gluten layer, composed largely of proteid; and (4) starch, which occupies the center and larger portion of the grain. In the process of milling the husk and bran coats are removed for the fine white flours. The proteid or muscle and nerve producing portion of the flours varies in quantity about four per cent. Entire wheat flour contains the largest amount of proteid, fourteen per cent, and spring and winter wheat flours follow.

An ideal food contains about one part of proteid and one part of fat to three of starch. Flour contains only about one per cent of fat and hence has arisen the custom of spreading the bread with butter. The proteid and starch of flour have the relation of about one to five or seven; hence is seen the necessity of providing extra proteid for the meal.

Flours containing the largest amount of proteid are best for bread-making.

Good bread flour feels granular to the touch and does not hold together when squeezed in the hand, and when made



into dough is elastic and easy to be kneaded; while poor bread will stick to the board no matter how much flour is used. Having slightly discussed the subject of flour the next step is the different ways of making it into bread. These may be classed under two heads: fermentation, and that without fermentation.

Fermentation is a change in organic substances in which sugar, starch, gluten or cellulose are decomposed, forming new substances. There are different kinds of fermentation. The lactic is the change of milk when it sours, the sugar of milk forming into lactic acid and carbon dioxide. This coagulates the casein and gives it a sour taste.

It is not always convenient to wait for dough to be raised in this manner; so the process is hastened by means of some active ferment. Yeast has come to be considered the best ferment in producing alcoholic fermentation in bread, without any bad results. It is a plant of the fungus tribe, and under the microscope it is found to consist of minute rounded or oval bodies, which are vegetable cells. Each of these cells consist of an enveloping skin, containing a semi-solid. These expand and seem to bud off from each other, multiplying into millions to the cubic inch. In the presence of the yeast plant the sugar of the moistened starch of the flour changes into alcohol and carbon dioxide. The carbon dioxide becomes entangled in the dough, thus making it light.

Unfermented bread is made without yeast, and is not as indigestible when eaten hot, as hot yeast bread. But for bread that will keep well, and retain its sweetness, nothing is better than that made from yeast.

Flour is moistened or made into dough with water or milk. Bread made with milk is more nutritious, but it is often said that it has not the sweet taste of the wheat, and will not keep as long as that

made with water. The other ingredients added to the dough are salt and sugar, although many object to using sugar in bread. Flour in its natural state contains sugar, which is changed in fermentation, just enough sugar is necessary to restore its sweetness. The dough should be kneaded from forty-five to sixty minutes, just before putting into pans, or until the carbon dioxide is evenly distributed in small bubbles.

Bread, when set to rise, should be kept at a temperature of 65° to 70° F. or until it doubles in size.

Baking bread is an important point, for bread may be perfect, and be spoiled in the baking. The oven must be just hot enough, not too hot, for a firm, hard crust would be formed before the inside of the bread is well baked. The time required for baking is not less than forty-five minutes, and should be divided into three periods. During the first fifteen minutes it should rise and begin to brown, during the next twenty minutes it should brown, and should finish baking during the remaining time. Bread baked an hour is generally considered more palatable. "The little fairy that hovers over successful bread-making is heat, not too little nor too much, but uniform."

When removed from the oven the loaves should be taken out of the pan, and tilted on the edge, or put on a wire cooler, so as to secure a free circulation of air. When bread is cold it should be placed in a stone jar or tin box, which is scalded and dried every time bread is made.

There is a saying that she who has baked a good batch of bread has done a good day's work. This accomplishment should stand at the head of domestic sciences, and I hope there will come a time when every woman will do her share toward producing a healthy nation.

CARRIE BACHRACH.



# Exchanges.

## THE ART OF TEACHING.

Ram it in, cram it in,  
 Children's heads are hollow;  
 Slam it in, jam it in,  
 Still there's more to follow.  
 Hygiene and history,  
 Astronomical mystery,  
 Latin, etymology,  
 Botany, geometry,  
 Greek and Trigonometry;  
 Ram it in, cram it in,  
 Children's heads are hollow.  
 Scold it in, mold it in,  
 All that they can swallow;  
 Fold it in, hold it in,  
 Still there's more to follow.  
 Faces pinched sad and pale,  
 Tell the same unvarying tale.  
 Tell of moments robbed from sleep,  
 Meals untasted, studies deep,  
 Those who've passed the furnace through  
 With aching brows will tell to you  
 How the teacher crammed it in.  
 Rammed it in, jammed it in,  
 Crunched it in, punched it in,  
 Rubbed it in, slubbed it in,  
 Pressed it in, and caressed it in  
 When their heads were hollow.—Ex.

Young man, (to tailor, dubiously,)—  
 "Don't you think I am a trifle bow-  
 legged?"

Tailor—"The idea! Your lower anat-  
 omy is absolutely without parallel."

"Here, Jimmie, what do you mean by  
 taking Clarence's cake away from him?  
 Didn't you have a piece for yourself?"

"Yes ma'am, but you always told me  
 I should take my little brother's part."

At the opposite ends of a sofa  
 They sat with vain regrets;  
 She had been eating onions,  
 He, smoking cigarettes.

—H. S. Journal.

"May I print a kiss upon your cheek?" I asked;  
 She nodded a sweet permission.  
 So we went to press, and I rather guess  
 I printed a large edition —Ex.

"A trip on the sea when its stormy and rough,  
 What glorious sport there is in it;  
 Even those that are sick have excitement  
 enough,  
 Something new's coming up every minute."  
 —Ex.

Grandma—"What are you doing in  
 the pantry, Tommy?"

Tommy—"Oh, I'm just putting away  
 a few things."—Ex.

"Evolution," quoth the monkey,

"Makes all mankind our kin.

There's no chance about it,

Tails we lose, and heads they win."

—Ex.

"Speaking about the man who painted  
 fruit so naturally that the birds came  
 and pecked at it," said our artist, "I  
 drew a hen that was so true to life  
 that after the editor threw it in the waste  
 basket it laid there."—Ex.

"Caesar seized that awful knife,

And in his bosom stuck it;

Then with a most terrific yell,

Lay down and kicked the bucket."

—Ex.



Develop a faculty for work, but be shy about trying to work the faculty.—Ex.

Willie—"Pa, what do they make talking machines out of?"

Father—"The first one was out of a rib, my son."

Her Greek shaped head was classic,  
Her pose was rhythmic sweet,  
I thought her lines were perfect  
Until I scanned her feet.—Ex.

#### WHILE IN THE MOOD.

I've licked a dozen stamps today  
For telegrams I sent,  
I licked and stuck one on the bill  
With which I paid my rent.

I licked a stamp to paste upon  
A note which I renewed,  
And then I licked another one  
To make a mortgage good.

I've licked those stamps to show that I  
Respect my country's will,  
And now I'd like to lick the man  
Who introduced that bill.—Ex.

Ragged Rube—"I don't ask for alms, fair lady. No; I merely seeks de aid of your skillful needle. May I rely on your assistance?"

Housewife—"Certainly, my poor man. What can I do for you with my needle?"

R. R.—"I has here a button, mum, and I hopes ye will be kind enough to sew a shirt on it fer me."—Ex.

Said an irate German to a stranger, who had stepped on his toes: "Mein frent, I know mine feet vas meant to be walked on, but dat brivilege belongs to me."—Exchange.

#### WELL INFORMED.

Teacher—"What is a fort?"

Pupil—"A place for soldiers to live in."

Teacher—"And a fortress?"

Pupil—"A place for soldiers' wives to live in."

Mama to Willie, who is sliding down the cellar door—"Willie, what are you doing?"

Willie—"Making a pair of pants for a poor orphan boy."—Ex.

#### SUMMER.

They stood beneath a spreading tree  
And talked as lovers should  
And then to seal the compact, he  
Cut Mabel on the wood.

#### AUTUMN.

Now back to town they both have strayed,  
One day they chance to meet,  
And then and there the self same maid,  
Cuts Charlie on the street.

#### IN A GEOMETRY CLASS.

Teacher (severely)—"Now, sir, for the last time, what is the square of the hypotenuse of a right angled triangle equal to?"

C Grader—"It's equal to a lickin' for me, sir. Go ahead."—The Gleam.

He took her for an ice cream treat,  
His pretty blue-eyed Sal;  
But fainted when he saw the sign,  
"Cream, ninety cents a gal."—Ex.

Taken from a chemistry paper on "Water": If we had no water, we could not learn to swim and then, just think how many people would drown when they went bathing.

Young lady (translating): "Cæsar commanded single men that they be on their guard against Sallies from the town." (Great applause).—Ex.

Uncle—"What are you crying for, George?"

George—"Teacher whipped me (boo, hoo) 'cause I was the only one in school who could answer her question."

Uncle—"This is an outrage! What was the question?"

George—"Who put the tacks (boo, hoo) in the teacher's chair?"

## DON'T READ THIS.

If there's anything worries a woman,  
It's something she ought not to know;  
But you bet she'll find out anyhow,  
If she gets any kind of a show.  
Now, we'll wager ten cents to a farthing,  
This poem she's already read,  
We knew she'd get at it somehow,  
If she had to stand on her head—Ex.

A traveler meeting a settler near a house in the backwoods, the following colloquy occurred:

"Whose house?"  
"Nogg's."  
"What's it built of?"  
"Logs."  
"Any neighbors?"  
"Frogs."  
"What's the soil?"  
"Bogs."  
"The climate?"  
"Fogs."  
"What do you eat?"  
"Hogs."  
"How do you catch them?"  
"Dogs."—Ex.

Teacher (severely)—"Is that chewing gum in your mouth?"

Boy—"Yes ma'am."

Teacher—"Give it to me."

Boy—"Wait and I'll get you a piece that ain't chewed."—Ex.

## NOT FOR FRESHMEN.

Once a Freshman was wrecked on an African coast,  
Where a cannibal monarch held sway;  
And they served up that Freshman in slices on toast  
On the eve of that very same day.  
But the vengeance of heaven followed swift on their act  
And before the next morning was seen,  
By the cholera morbus that tribe was attacked,  
For the Freshman was dreadfully green.—Ex.

## FOR "RUBBERS" ONLY.

Although these words but little say,  
Observe they have their place;  
The editor has written them  
To fill this surplus space.

Girls often go to church not so much for the sermon as for the hymns.—Ex.

The Botany maid,  
Was sore afraid;  
The reason you should learn.  
The flowers had pistils,  
The buds were shooting,  
The grass had blades to burn.—Ex.

"Conductor! Conductor! stop the train;  
I dropped my wig out of the window,"  
Conductor—"Never mind, madam,  
there's a switch just this side of the next station."—Ex.

A lady, speaking of her daughter said:  
"My daughter has lived so long in Paris  
that she talks like a parasite."—Ex.

Father—"John, can't you possibly cut down your college expenses?"

Son—"Well, I might possibly get along without any books."—Ex.

Breathes there a man with soul so dead  
Who never to himself (?) has said,  
As he stubbed his toe against his bed:  
"—!—!—!—!—!—!—?"—Ex.

## THE ART OF DRIVING.

She can drive a blooded pacer  
Or a frisky four-in-hand;  
She can drive a prancing racer,  
And with tandems she is grand.

She can drive a bargain quickly,  
She can drive men to drink,  
She can drive away the thickly  
Coming agents in a wink.

She can do all things rightly,  
But her driving instincts fail  
When she grasps a hair-brush tightly  
And tries to drive a nail.—Ex.





Central thought she had a "pudding" but she found she had a "pill," and she made a face when she took it.

The Freshies forget where they are and run to the windows when a parade goes by.

Rob Clemens says Chicago is a foreign city.

Why don't Central get a track team of her own?

Miss Gilday (in political economy)—  
"What is the economical advantage of eighty minute periods over forty minutes ones?"

Don Henry—"It gives me twice as long to sleep."

A visitor took Max Knause's hair as a sign that he was a musician and asked what he played. Max replied that he could make a bicycle "hum."

Lew Sills knows how far it is from his stool to the floor, but he did not measure it with a rule.

Manual colors are sombre  
Central colors are gay,  
But their gay colors did not count  
Upon our joint field-day.

Manual's men were small  
Central's men were big,  
But we won out in a time  
That is usually known as "jig."

Don Henry is not an angel, but he certainly jumps as though he had wings.

Just after Mr. Phillips had assigned a hard lesson, Perrin Rouse was heard singing, "We're up against the real thing now."

Fred—"You are a peach."

Edith—"Oh, thank you."

Fred—"No thanks needed. You have a complexion which will rub off, and a heart of stone."

Martha Miller always has a secret to tell you, but don't think you are the only one who will know it.

Miss Messenger's orange was "Frost" bitten.

Some have wondered at the extra two inches added to Mr. Staley's height, but it is only a natural consequence of his achievement on field-day.

The professor's nine must have been going by the saying, "Variety is the spice of life," if one is to judge from their base ball uniforms.

Mr. Peters says long-hand is faster than shorthand — — on a watch.

Have you seen Johnson's dollar photo's and Fraternity groups? Southwest corner Twelfth and Grand—over Grand Market.

Teacher—"What is a hypothemuse?"

Darwin (who has been napping)—"An African animal."

Pupil (in Physics)—"What is the first thing to do with this thing-a-ma-gig?"

Mr. Page—"Call it by its right name."

Maurice says he would keep house if he had enough furniture.

The dog show which was held across the street was a "howling success."

First boy—"Central beat in the field-day."

Second boy—"Beat what? Not Manual?"

First boy—"No, beat her drum."

Is Fred Davis a palmist or is it a bluff to get to hold girls' hands?

The local editors wish to thank the school for its generous patronage and helping hand. It has furnished us two locals in two months.

Walter Gillam rode (you know where) on a car and the cars stopped; he rode on a horse, and it broke loose; then he tried a wheel and got a puncture, and he walked home each time.

Question—How will he go next time?

Rah! Rah! Rah!  
 Shirt and Collar,  
 Commencement Neckties,  
 Hear me holler  
 Woolf! Woolf! Woolf!  
 Harry B.,  
 1119 Main.  
 Come and see.

Mr. Dodd's matinees are increasing in number and are even more reasonable than those at the Auditorium; for they are perfectly free and all are cordially invited to attend.

Heavy-weight Hibbler (to small boy)—"You're too small."

Indignant Small Boy—"Good things are always done up in small packages."

He (musing)—"She and I are one, and she is won."

Friend—"Well,  $1-1=0$ , so that's what you are."

Horace Hamm is trying to raise a mustache. We hope he succeeds, but we can give him no encouragement.

John H. Tate  
 Girl schoolmate  
 Tete-a-tete.

Simpson says George McKenzie looks like Jonathan Edwards. Which is complimented?

Why do all the students go to B. Glick's, 710 Main St., for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

Miss Chrisman told Mr. Bryant that he came from the country, where turkeys "grow".

Miss Canon showed her patriotism to our school by attending field-day on a Central ticket, with a Central boy, and flourished Central's colors. Don't she wish she hadn't???

Miss Gilday thinks it is a man in the moon instead of a woman; as a man has the moon's habit—stays out at night.

Mr. Phillips—"Robert give me a simile suggested by something you see from the window."

Mr. Clements—"Trees are like Seniors, just getting ready to come out in the world."

Pupil (shortly after severely criticising Poe)—"I don't see how people have the nerve to criticise those who are greater than themselves."

George Conkey talked of drawing "eclipses." We think he means "eclipses."





Fred McClure knows enough to use vent holes the next time he moulds lead.

Prof. Phillips—"Woman is a sort of white elephant."

Mr. Cliff Burton—"Well, lots of men have elephants on their hands."

Taken from an essay read in class: Spring is the very loviest season of the year.

In order to thoroughly introduce their Columbian Special Bicycles, to the scholars of the Manual Training School, the Hall Cycle Co., 612 Main Street, will sell to any pupil for one month only one of these fine wheels, any style, for just one-half regular list price, which is \$40. Remember, this \$20 price is made only to the pupils of the school, and for one month. They have cheaper wheels, but the Columbian Special is the latest improved.

Mr. Morrison (when he had finished speaking)—"We now have another treat (?) in store for us."

Will Mitchell has a great deal of "Honor."

Lelia Moore is practicing with the snakes in the Zoological laboratory for her future occupation as snake charmer.

Miss Baer, when asked to sing replied that she was no longer a little "bear" but had become a little "ho(a)rse."

There are not many "Parsons" as lively as Dwight.

Knapp says that on warm days the turning room is truly a "fat man's misery", and he ought to know.

Field, of Central, lost the jump because the wind offered so much resistance to his bushy whiskers.

Since Central's defeat her boys wear hats two sizes smaller.

A strange sight to the intimate acquaintances of Mr. Henry Hopkins, one of our promising Freshmen, was to see this young man, neatly attired and driving a pair of mules hitched to a dirt-wagon.

Myron C. Albertson, Richard B. Merriwether, Dwight W. Parsons, Ben E. Lindsly and James N. Russell are some of the many Manual boys who have tried Geo. Herold's twenty-five cent hair cuts. Try him, boys, at 324 Ridge Building. He is fine.

Maurice bought tickets for field-day at wholesale price and tried to return them at retail.

Corrinne Baer is the "Pocket Edition of the Senior class."

Miss Fisher—"Roy Alexander, I believe you commenced arguing with your grandmother before you were out of dresses."

George McKenzie says that the walk from Swan's home to his is 21,120 steps and it takes from 11 p. m. to 1:55 a. m. to make it. He says he will get his papa to vote for better sidewalks in the South Park District.

Mr. Roeder (reading an essay)—"Just as her eyes became fixed upon the noble stranger he rode away."

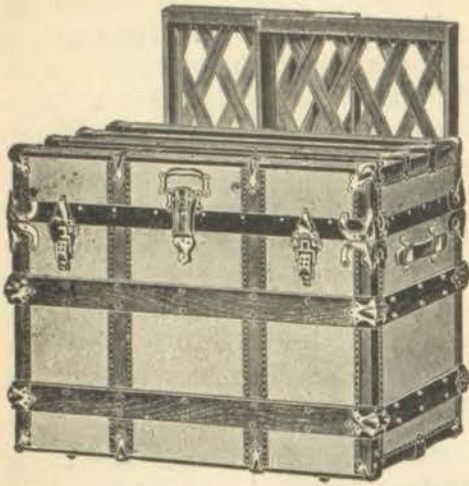
A good exercise is worth one red or two blue collars in either shop.

Most people who look sweet enough to eat really do.

Never drive the hammer-head into the wood; that's the way the nail should go.

We Kansas Cityans may be divided into three classes: those who fall into their stomachs; those who fall into their purse; and those who fall in line with what the Manual represents. M.





**E. J. GUMP,**  
TRUNKS, BAGS and  
**SUIT CASES.**

821 MAIN STREET.  
JUNCTION.

Tel. 1275.

Trunks Repaired.  
Best Assortment. Lowest Prices.

**FAULTLESS STARCH,**  
THE BEST FOR

FAULTLESS STARCH CO., Kansas City.



Shirt Waists,  
Shirt  
Fronts,  
Collars,  
Cuffs and  
Delicate  
Clothes.

Read our  
Booklets,  
Laugh  
and  
Learn.

**JOHN FRASER,**

..Merchant Tailor..  
\* \* \*

15 East Tenth St., KANSAS CITY, MO.

Opposite Bank of Commerce Bldg.

MADE IN KANSAS CITY, U.S.A.  
FOUR FAVORITE FOODS

**MURDOCK'S**  
"Opt" EXTRACTS, PURE SPICES,  
MANHATTAN BAKING POWDER,  
HECLA COFFEE

PARISIAN CLOAK CO., 1108-1110 Main Street.

*To the Young Ladies of the Class of '99:*

We are showing the latest styles in the new  
White Shirt Waists, Pique Skirts and Pique Suits.  
Every garment in our store is new with the  
Spring.

PARISIAN CLOAK CO., 1108-1110 Main St.



# STUDIES IN ZOOLOGY

IS A SUPPLEMENT TO

THE NAUTILUS,

PRINTED BY THE  
NAUTILUS PUB. CO.

This supplement contains sixty four pages of  
matter on scientific subjects, illustrated by  
half tones. This book is graded for  
High Schools, Academies and  
Universities.

PRICE, - 75 CENTS.

Patronize  
Our  
Advertisers



**BROWNING, KING & CO.,** MANUFACTURERS  
AND RETAILERS

**O**ur Stock of Summer Clothing and Furnishings for Men, Young Men and Boys, is Very Complete and Attractive.

*We Show Every Novelty of the Season in Thin Goods.*

**F**INE Business, Dress and Professional Suits are always in stock. : Just as good in material, style and fit as your Tailor's, at one-half his prices. : *We carry full lines of outing and tourists' goods.*

STRAW, CRASH AND FUR HATS IN GREAT VARIETY.

**BROWNING, KING & CO.,** MAIN AND  
ELEVENTH STS.

**Y**oung Man improve your time, mind and body. This

**M**ay be done at the YOUNG  
MEN'S CHRISTIAN ASSOCIATION. You

**C**an secure use of Gymnasium, invigorating shower baths, with water at any temperature desired and large plunge bath. Evening Educational Classes, Social Attractions, Reading Rooms, Bible Classes and Helpful Meetings.

**A**t 810 Wyandotte Street.  
All privileges, only \$7.00  
per year.

HARRY L. MARKELL,  
ACTING GEN'L SECRETARY.

F. H. CLARK,  
PHYSICAL DIRECTOR.

