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The NAUTILUS



MANUAL TRAINING HIGH SCHOOL
KANSAS CITY MO.
VOL. 3 NOVEMBER '88. NO. 1

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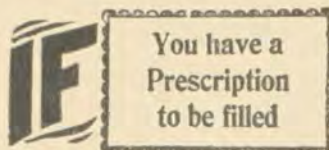
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Tramp, tramp, tramp, far down the avenue stretches the line of the regiment, nearer and nearer it comes, the band at its front playing blithely, and each soldier, with knapsack and musket, marching with rapid strides to the inspiring music.

Underneath the proud expression on the faces of the manly fellows of the —th volunteers, and underneath the happy expression on the faces of the spectators there is a tinge of sadness, for these young men, the flower of their country, are leaving homes and dear ones and will, in a few weeks, be separated from them by many miles of land and sea, fighting in a strange country far away.

"Halt!" At the word of command the regiment comes to a standstill. And now deep silence prevails over the multitude, while, from a raised platform, a scarred veteran of a former war rises and speaks words of cheer and courage and burning words of patriotism. Then

of a sudden, a silken banner flutters in the breeze; again the word of command is given and away march the boys of the —th volunteers, off to the west, off to the Philippines.

Among the officers is a young lieutenant, who eagerly scans the sea of faces as though searching for a familiar one. Suddenly his eye brightens as he recognizes his father and his mother; at the same moment they see him and his mother cries out "Good-bye, Jack; God bless you." Jack answered cheerily, "Good-bye, mother," and in another instant both are lost from his sight but they follow his blue-clad form far down the street until they, too, at last, lose sight of him.

More than a year has passed, and the —th volunteer regiment, through hard fighting and sickness, has been reduced to less than half its numbers. Every day Jack's father and mother have eagerly yet fearfully scanned the papers, hoping, praying that their boy's name

would not be among the number of killed or wounded. Once or twice they had received letters from him, scribbled off in almost unreadable form, while at the front; yet to them these brief messages were invaluable.

And now, after months of anxiety, they are looking joyfully forward to his home coming, for has not news been received from Washington that the —th regiment of volunteers will soon be mustered out of service? Impatiently they await the news of the arrival of the transport that bears its precious burden homeward. How long the time seems, as day after day goes slowly by without the looked-for word. Just a week before Thanksgiving every one is thrilled by the newspaper headlines which announce the arrival of the brave and gallant —th upon our western shores. But Jack's father and mother pay little attention to the glowing headlines; they are anxious to know if their boy is safe, and if his name is among those who have returned. Down the list they go with eagerness, farther and farther, still no sign of his name even to the end. How can it be? With blanched and sorrow-stricken faces they whisper huskily "It is not there!" Overwhelmed by this terrible disappointment they remain silent and stunned, to think that Jack, whom they believed to be safe, whom they had expected to have with them on Thanksgiving day, and whom they had so patiently and anxiously waited to see, had at the last moment been snatched from them—the thought was unbearable. The father telegraphs to headquarters in Washington but, unfortunately, they can give him no satisfactory information.

At last the great day arrives, Thanksgiving day! The entire city is decorated with gay bunting and inscriptions of welcome, and numerous flags and banners float in the November breezes; for

this is the day when the soldiers of the —th volunteer regiment are to arrive in their native town.

The day opens sadly enough to Jack's parents, however, for they cannot join the shouting throng to welcome home their son among the others, and they realize, more than ever, their loss.

Toward midday the ringing of bells and the blast of whistles proclaim the arrival of the regiment; it is a happy moment for those whose loved ones have returned. Tears of joy as well as tears of sorrow flow from many eyes. To witness such a scene thrills the heart with emotion.

Once more the regiment forms and marches through the familiar streets. Jack's parents hear the tramp of the soldiers but they have not the heart to look upon the thinned ranks, and the gay strains of the music only make them feel their sorrow the more deeply.

But who is it that suddenly falls out of line and rushes up the steps of his home and into the embrace of his astonished parents, and who mingles his tears of joy and Thanksgiving with theirs? It is Jack! yes; Jack, whom they had given up as lost.

His story is soon told: At the last moment when the transport was ready to sail, he was unable to leave on account of sickness, from which, however, he recovered in time to return by a steamer which sailed a few days later; this vessel reached port on the very day of the departure of the regiment for home. In order that he might join his comrades, there was no time left for sending a message to his parents. He did not realize their terrible anxiety, and thought he could explain matters better when he would see them face to face. And, after all, the Thanksgiving dinner proved to be a happy one, and the day a day of real Thanksgiving.

"THE SEVEN CITIES OF CEBOLA."

When Cabeza de Vaca (head of a cow) traversed this country in the sixteenth century, he learned from the Indians of a group of wonderful cities which were afterwards named "The Seven Cities of Cebola." These "cities" were situated along the valley of the Rio Grande del Norte, and were all in the territory of New Mexico. They exist to-day as they existed then, but now they are called the *Pueblos* or Indian Villages of Jemez, San Felipe, Santo Domingo, Santana, Zuni, Cochita and Laguna.

To Vaca, traveling across the wilderness of sand, the valley of the Rio Grande must have seemed a veritable paradise, for it is the only bit of green to be seen in a long day's journey.

Starting from Santa Fe, the capital of the territory, one travels by buckboard, or mountain wagon, all of one day over a road perfect in grade in all but two places. A supply of water is indispensable on one of these trips. One is wise, too, if he takes provisions to last two or three days, for Mexican and Indian cookery requires a leather-lined mouth to prevent blisters, from excess of "Chili Colorado." An interpreter and a pair of blankets are other necessities.

After we were about two hours from Santa Fe, a low black ridge appeared in the distance. The binoculars showed this as a small rise or divide extending as far on either side as the glasses would penetrate. About noon we arrived at this "small rise" to find a solid perpendicular wall of basalt of a dark sepia tone. The road turned suddenly to the left, and continued along the base of this enormous cliff. Soon we came to a platform from which rose an incline plane to another platform. A series of these platforms had been cut from the lava to form a practical means of ascent

for wagons and stages. This was the U. S. military road surveyed by the cavalry men at Ft. Wingate. It was afterward the stage and freight route known as the Santa Fe trail.

The top of this hill gained, we pushed on over the broad level mesa or tableland which is the third in a series of four rising from the bed of the river. This particular mesa is known as the "*Mesa del Canada del Pena Naegera*" (Plain of the Canon of the Black Rocks). A high sounding name, but "a plain by any other name would be as dull."

We still followed the old trail, the elevation slightly yet perceptibly increased, and although it was August a heavy coat was decidedly comfortable.

The crossing of this mesa occupied about two hours, so wide is the flat, unbroken surface. It was with a sigh of relief that we began the descent of the great hill leading to the level below. The view from the top of this hill must rival that of the vista from the top of Mt. Chimborazo, from where it is said one can comprehend an area of ten thousand square miles. We were at an altitude greater than that of Mt. Washington, and on three sides of us the mesa stretched away to meet a horizon of unusually wide expanse. On the fourth side, the mesa came to an end by the abrupt rise of the extreme southern Santa Fe spur of the Rocky Mountains, which, although they tower thousands of feet above our altitude, appeared mere hillocks in the misty distance.

One felt much safer on foot in descending this rough road, and only one or two remained in the vehicle. They reached the village at the foot of the hill some minutes in advance of the pedestrians, and when the latter reached the temporary camp, lunch was spread.

The settlement here was once the

stage station. It is known as "*La Bajada*," and is now only a Mexican village of a few families.

A small stream makes an attempt to flow but is soon absorbed by the sand.

There are ruins here of historic interest. The government corral and store house, which were used when the Santa Fe trail flourished, are in a good state of preservation, and show the good building properties of the black basalt of which they are constructed. There is an old hotel which was an eating station for stage-coach passengers; it is entirely in ruins and is a most picturesque object.

A short rest was given the horses in this interesting place, and then commenced the journey over another mesa the exact counterpart of the one before.

Our objective point was Thornton, a small way station on the railroad. We reached there about 6 p. m. and found a good hotel kept by a former Kansas Cityan. A night's rest well fortified us for the next morning's trip, which we anticipated with pleasure.

An early start brought us to the edge of the third mesa about eight o'clock, and we were soon at the river.

We were now on the direct road to two of the villages, Jemes (Ha'-mis) and San Felipe (Fa le' pa). The first is small and uninteresting; the second has a church worthy of notice on account of its antiquity.

Following the river road we reached San Domingo after a half day's journey. After looking over the village, remarkable for its straight streets, we ate lunch and wrapped ourselves in blankets and lay on the ground. This was a safe proceeding, for in New Mexico no dew falls.

The morning broke, and after breakfast we again resumed the journey. The village of Santana was next visited. Its chief attraction consists of numerous

relics of the great leader who was named for the village, and who committed horrible outrages during the outbreak of Mexicans and Indians in the first part of this century.

Cochiti has had a sad and dramatic past. The present village wears a sorry aspect, as if it had lost all interest in the world and, completely discouraged by its twice ruined state, had concluded to do as little as necessary to support and shelter its inhabitants. The facilities for grain raising are better here than in any other village, but the listless and the probable innate laziness of the inhabitants have something to do with their occupation of goat herding and of making native pottery. Some good examples of this latter may be seen in the art room of our school.

The journey from Cochiti to Lagunea occupied several days. This village takes its name from a large artificial lake, the largest body of water, perhaps, in all the southwestern territory.

Another long journey brought us to Juni, which is the best representative of the *Pueblos*. It has had a large population, but the annual epidemic of small-pox have left only a remnant of its former population.

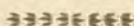
It is a hot-bed of disease. The dwellings are single rooms with one opening and that on the roof. This is the only means of ventilation and egress and ingress. These dwellings are placed one on top of another, and the whole structure makes a mass irregularly pyramidal in shape. The base, of course, is the first block of these rooms and those on the interior are used as granaries. The interior of the structures are pierced with tunnels, connecting and forming a maze, equal to that of the Catacombs of Rome. This structure has been forming for centuries, and were it not for the frequent epidemics of small-pox, they would become larger and larger, until

they would be dangerous for human habitation. As it is, they are more fit for rats and mice than for people.

The journey home became an unpleasant reality, for the novelty of sandy roads and hot water soon wears off, and leaves one in a tired condition that is bad for temper and comfort. We passed too far from the famous village of "Acoma" to visit it, and consequently missed it as did Vaca, one of the greatest as well as one of the most marvelously located "cities" of the group. The journey across the mesas was continued with as

few stops as possible, and, after an absence of a fortnight, we reached civilization, as represented by Santa Fe. The trip was made for the purpose of investigating the water resources of the villages, and the United States Commissioner who accompanied us expressed himself as more than pleased with the results of his journey; as for the rest of us, we were well contented with our observations, and glad once more to sit at a table and sleep in a bed.

WILL HALL.



THE ROBIN, A FABLE.

Once in the early spring, a robin, with a bright red breast and sober brown coat, flew into the garden of a country house. Fall trees reared their noble summits above the housetop, and their graceful forms were reflected in the window panes so that a dark and shady forest seemed to be within the dwelling. The robin paused a moment on a balcony; he saw the beautiful park within the window, and, anxious to enjoy its pleasures, he approached. But when he came to the window he perceived that an invisible barrier prevented his entering the forest of his dreams; and affrighted, he fluttered back to the railing. Still he saw the inviting vision and longed to be within the forest, to sing in its treetops and to nest in its boughs.

Once again he tried to cross the threshold, and once again he was foiled in the attempt. But he remained outside and looked and longed, and longed and looked. Day after day he returned to the garden and perched upon the balcony, where he could see the forest. All

his ambitions were centered upon that window and what was within; and now again he would endeavor to gain admission, but always failed.

One day, to his joy, when he hopped up to the window, nothing impeded his entrance. His waiting had been rewarded, and at last he could see and have within his touch the objects beyond the pane of glass. But when he entered he found nothing he had ever seen before. All was strange. He could not understand what he saw. He was disappointed, for instead of the lovely wilderness which he had expected to find, there was nothing which was of use to him or had any meaning for him. Turning, he flew out of the window, and in the free and open air which he had left he found the forest of his dreams. Then, indeed, was he joyful, and sang with all his heart, for he had found happiness in what was nearest to him, and not in what he had striven to obtain, and which was beyond his desires and comprehension.

S. R.

A VISIT TO THE HOME OF BISMARCK.

A few miles from the city of Hamburg, nestled on the edge of what now remains of the ancient Saxon forest, lies the small yet interesting village of Friedrichsruhe. Interesting on account of its being the spot where perhaps the most illustrious statesman of modern times, Prince Otto Von Bismarck, passed the last years of his life. Previous to his death, nearly every traveler who came to Hamburg would, partly out of curiosity, but mostly out of respect to this wonderful man, visit the home of the Iron Chancellor.

One fine morning in June, a party of us left Hamburg by rail for a day's outing at Friedrichsruhe. We jostled along pleasantly through gardens and green fields, and in an hour's time alighted at our destination.

The scene that first greeted our eyes was extremely disappointing; one or two stores and a few very unpicturesque cottages were clustered about the depot. It was almost impossible to associate the name of Bismarck with these unattractive surroundings. But soon came the reconciliation. As our party set off up a broad gravel road which leads to a little inn, beautiful lilac bushes, in full bloom, lined the walk on both sides. As we passed along, the loveliness of the scene increased with every step. Before us lay stretched an enchanting wood through which wound a sparkling brook. Directly in our path was the inn, and thither we hastened for our lunch, and while we partook of the feast on the table at the same time our eyes feasted on the beautiful scenery about us.

Greatly refreshed by our repast, we turned our steps in a new direction; and after following another walk found ourselves confronted by the dark outline of

the last remnant of the old Saxon forest; a forest which, at one time, covered the whole north of Germany, and in which the old Druid priests, before the time of Charlemagne, held their religious gatherings and offered their human sacrifices. Coming to the road we saw, through the trees that nearly bury it, the home of Bismarck, as plain and as unpretentious as the great man who lived there. The Germans call it a "castle" but, unlike most castles, it is devoid both of moss-grown walls or battlemented turrets; it was formerly a large inn, and converted by Bismarck into a dwelling place for himself.

Again taking the road, we entered the forest; but not content with treading on gravel, we left the road and soon our footsteps were silenced by a matting of pine needles, as soft and as elegant as the finest carpet. Our party soon dispersed, and we wandered off in groups of two and three. The scene is sublime. The stately pine trees, each rising to a height of fifty or sixty feet, are clothed with such a wealth of pine needles that the rays of the sun scarcely penetrate them; a purple mist hangs over everything; with each breath one inhales that fragrant, pitchy atmosphere peculiar to pine woods.

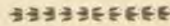
Enamored and awed by this enchanting and historic forest, we wandered still farther and farther into the enticing maze, until at last we felt entirely removed from human habitation.

It was with much reluctance that we finally retraced our steps, and found ourselves again surrounded by the works of man. Crossing the railroad, we came to the front gate of Bismarck's castle. It was almost time for the old prince to take his evening outing; generally, he walked into the forest with his Great

Dane dogs of which he was very fond and proud. Some of the party had taken bouquets of flowers, which he always very graciously received, to present to him; but, unfortunately, that day Bismark felt indisposed, and rode out in

his carriage instead of walking. As he passed through the gate a throng of loyal Germans surrounded his carriage. He lifted his cap, bowed, and drove on. That was all I saw of Bismark.

A. H.



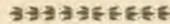
A WINTER DAY.

The sun arose one winter day,
And tore his veil of clouds away.
To look upon the earth;
Then started back in his surprise,
To see a million tiny eyes
A twinkling back in mirth.
For white robes decked the tree tops bare,
And draped their limbs in mantles fair;
And gems were every place.
The diamonds bright threw back the gaze

Of the sun, in blinding, golden rays,
Into his smiling face.

Then laughed the sun in quiet glee,
And said to them, "Come play with me;"
Which filled them with dismay;
The star drops, at his glowing smile,
In fright, stared for a little while,
Then paled and ran away.

NELLIE PHILLIPS.



BASS FISHING.

I spent two months of my summer vacation in Wisconsin, "the country of lakes," and found some of the best bass fishing, in the lakes around Oconomowoc, that it has ever been my good fortune to come across. The hotel was situated at the east end of the lake; at the west end the water flowed over an eight foot dam into Lac La Belle. It was in the latter that I found the best fishing.

There was a boy at the hotel from St. Louis, and as we were of about the same age, we spent a great deal of our time together. We had heard a great deal about the fine fish caught in Lac La Belle, and thought we would try our luck there. So one morning about five o'clock we set out with an old hunter and fisherman as our guide.

It was a half a mile to the dam, and then, after carrying the boat over it, we had a two mile row to the "bass grounds"

For bait we had fifty good sized minnows, for much bait is stolen by fish in a day's angling. Of course the guide caught the first fish, just to lower our spirits a little; but he was an expert, and the race was really between my friend and myself. It was about a half an hour later when the guide had another strike, but when it came to the surface it proved to be only a gar-fish.

The next hour brought nothing exciting, so we changed our position. We had scarcely anchored when Walter's line was given a vicious jerk, and the hum of the reel told the story of a hooked fish. It took several minutes to land his catch, which proved to be a two pound bass.

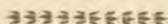
After several ineffectual casts I felt a slight pull on my line, but as it did not continue, I supposed it was a bunch of weeds, and soon started to reel in for another cast, when a hard pull some-

what checked my progress. From a series of short jerks I concluded that I had a bunch of, what the fishermen call, "juck-weed," so I set myself to the task of a long hard pull. Just when it was beginning to come a little easier, there was a sudden check; the handle of the reel was jerked out of my hand, and the reel began to hum and buzz as I had no idea it could. After about a hundred feet of my line had run out, I succeeded in checking and finally stopping it, by means of the drag on the side of the reel. The guide said, with a queer smile on his face, "That there aint no weeds, sonny." And I quite agreed with him. My fish made three runs before he was landed, but when he came off the hook, I felt fully repaid for all my work, for a prettier four pound bass I have never seen.

My other fish gave me a harder fight than the first one on account of his added strength and weight. When he was first struck he came to the top very quietly, and I was in hopes of landing him easily; but alas for my hopes, the fish completely drowned them when he made his

first leap. The guide had just reached out the landing net to scoop up Mr. Fish, when swash! splash! up shot the fish out of the water, and when he came down, he started for the bottom at a record breaking pace. Hum! whir-r-r! went the reel, as the line rapidly disappeared in the water, and we all three gazed in dumb astonishment at the place where the fish had been. That fish seemed to have more strength, electricity, fire, dynamite, and real downright meanness in him, than I would have possibly conceived of. The way he could leap out of the water, run for the bottom, and stubbornly tug, tug, tug, was a caution. At his last run he sought to clinch the argument by taking a double turn about the anchor rope. Whether or not this was done intentionally, I can not say, but at any rate the anchor had to be pulled up and the line untwisted before he could be reeled in to the side of the boat and landed. All this commotion was caused by a six-pound, big-mouthed black bass.

F. C. RUCKEL.



ON THE APPRECIATION OF LITERATURE.

In reading we are often led to wonder whether or not we should read a book, because of the presence of a tone which appears to be immoral. At the same time the question arises, is this tone really immoral or only apparently so? It may appear immoral to us but, as Emerson says, "What would be base or even obscene to the obscene, becomes illustrious, spoken in a new connection." However, if it does suggest something impure to us in our present condition of aesthetic development, this should not be considered sufficient grounds for condemnation. Paul says, "To the pure all

things are pure." In such a case we should judge the book by the total influence exerted upon us. If the downward tendency is greater, discard it, for it will not enrich the mind. On the contrary, if the upward force predominates then by no means should it be rejected. This, however, is a point which can be determined by the reader alone, not by the critic.

When reading we should put ourselves in the author's place long enough, at least, to ascertain the motive for writing the book. Were we to shun all books which could suggest in any possible man-

ner something impure to any mind, we cast from us forever some of the best books that have been written.

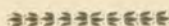
Art has suffered from the rabid attacks of a class of critics whose reasoning is to the effect that the children of the present day cannot look upon certain types of art and remain pure. If such is the condition of affairs, the standard of our morality is much below that of the Greeks some two thousand or more years ago. In that period the Grecian youth was continually brought in contact with this same class of art, and, contrary to the predictions of these modern critics, this style of art furnished him with inspiration and higher ideals. As a result of this method of aesthetic advancement, we have but to look at a few specimens of Grecian sculpture and compare them with some of our own work. If we do so, we find it is we, not the Greeks, who suffer by the comparison.

What has just been said about art applies also to literature. In this age of materialism, the critic is often more

materialistic than idealistic; and, being human, imagines himself to be aesthetically perfect and competent to pass judgment upon writings, the equal or superior of which he is totally unable to produce. This critic looks at the book from a coarse, common point of view, and consequently can give nothing but a similar criticism. Such persons need spirituality, enough idealism to enable them to appreciate art.

In reforming us, the critics would have us tolerate nothing but what seems to him pure literature, and would also have us allow ourselves to be guided along this line by what he says alone; but, as before stated, since the critic cannot be perfect, we cannot rely entirely upon his opinion. We can, however, rely upon a concurrence of critical opinions. But if the opinions are very nearly equally divided, as they sometimes are, we must be guided then, as in everything else, mainly by our own views.

J. W. K.



MR. RICHARDSON'S BOOK.

Those who are beginning German in the M. T. H. S. this year, have an immense advantage over their predecessors in the possession of Mr. Richardson's new elementary text book entitled "The Spade." Those who have studied the language know that there is hard digging in it, and are grateful for any tool that lessens the labor. The "Spade" is designed to do this by applying a simple and natural method to the study of a difficult language.

Mr. Richardson believes that construction goes before analysis,—that before anything can be torn down there must have been something put up. Therefore, instead of confusing the pupil by introducing him at once to the intricacies of technical grammar, the

author's first concern is to teach him to move with some degree of ease in the language itself.

There is nothing new in this method, nor does the author claim novelty for it. Had it been new, its value might be doubted, but it is as old as the lisplings of infancy, and it has always been employed by the very best teachers. But Mr. Richardson's skillful application of the method deserves recognition as novel and interesting. The anecdotes are well selected, and the grammatical instructions accompanying them are invariably clear, direct, and free from wordiness. To those who are familiar with the obscurities and useless padding of the ordinary grammar, this is no slight praise.

MISS CAMPBELL'S BOOK.

"Camp Arcady," the delightful little story which some will remember as having appeared as a serial in "The Ladies' Home Journal," has been published in book form, and is just issued from the press of Richard G. Badger & Co., Boston. It will be interesting to Miss Campbell's pupils and friends to note that the story is illustrated by the author. It is no common occurrence for author and artist to combine in the same individual, and Miss Campbell may justly be complimented, not only for undertaking a task requiring such versatility, but for success in both lines of work.

The story is of four girls who "kept house" in a New York "flat." The author's experience enables her to give the story a naturalness which at once impresses the reader as true to life. The conversations of the girls, revealing their ambitions, their trials, their joys,

and their sorrows, together with the main trend of the narrative, gives the story a sustaining interest throughout. The careful reader will see in it, too, several touches of philosophy bearing on the problems of happiness and success. To laugh and joke away the petty cares incident to daily experience is a lesson which these girls teach in their conversations—a lesson which all may study with profit.

Ambition and ability are not always commensurate, but there is a proper sphere for each and all. Happy the individual who finds that sphere before it is too late and, like "Maud" in the story, learns "to be content with the simple and cheap and satisfying things of life instead of struggling after the unattainable."

The book is attractively bound in blue and white, and well deserves a place in any private library.

MISS FISHER'S NEW BOOK.

Fortunate is the pupil who may enjoy contact with a teacher whose mind is a living growth and a constant creation—not the mind that parades every thing it does in a feverish concern that its lights will not be discerned, but the mind that communicates itself unconsciously, like the fragrance of a flower. The latest contribution to literature, from the pen of Miss Mary Fisher, comes under the title of "A General Survey of American Literature," and is published by A. C. McClurg & Co., Chicago. The book has grown out of the author's experience in teaching literature, and confines itself to that class of writing known as *belles lettres*, or polite literature. This selection is made, not so much because the author considers it of greater importance than other lines of composition, but because

to do anything well it must not cover too wide a range. The habit of saying a little of many authors and not enough of any to awaken an unabiding interest in the mind of the reader, has been avoided. The author has chosen a few authors, the character of whose lives and writings furnishes the requisite types for intelligent and profitable study.

In the treatment of these authors Miss Fisher has interwoven biography, history, and character analysis in a manner which at once reveals a keen insight into human nature and a facile power of comparison and analysis.

The reader of the book is not carried through lengthy analysis of selections or extracts from the various authors, but instead of this he is introduced to the author himself, and is carried with him

far enough to be permitted to share the same thoughts and the same feelings.

The book stimulates a desire to read the writings referred to, a quality possessed by all true teaching. While

the estimates of all the characters treated will not meet with universal assent, it will be generally conceded that the treatment is strong, optimistic and wholesome.

OUR NEW INDUCTIVE GEOMETRY.

"The Committee of Ten," composed of leading educators with President Eliot as chairman, appointed in 1892 to investigate and recommend changes in courses of study and methods of teaching in the high schools of the United States, says in reference to the teaching of geometry: "The method of teaching should be throughout objective, and such as to call into exercise the pupil's mental activity. The text book, illustrations and problems should, as far as possible, be drawn from familiar objects; and the pupil himself should be encouraged to devise as many as he can. So far as possible, rules should be derived inductively instead of being stated dogmatically. On this system the rules will come at the end, rather than at the beginning of a subject."

The Manual Training High School is the first to advance the suggestions of the committee to practical results. Pro-

fessor Dodd and Professor Chace have just issued a new text in which the inductive method is fully carried out. The proposition or theorem is stated last instead of first as by the old method. The proposition is in reality the answer to the last of a series of questions leading up to the final conclusion or proof. The difference in educational quality between a conclusion so reached and the old method is that the pupil arrives at it through his own reasoning instead of receiving it dogmatically at the start. This method has been in vogue in our school since its opening three years ago, and has been presented through mimeograph lesson sheets used as supplementary texts. The book as now published will still be used as a supplementary text until its merits have been thoroughly tested. It contains 400 pages and is published by Hudson & Kimberly, Kansas City, U. S. A.





The contest is over. The struggle that decided which is the champion High School foot ball team of Kansas City for '99 is past. Central won again; but not with the easy grace of '97, nor with the stubborn contest of '98; but with a struggle, the equal of which in both result and excitement was never before witnessed in Kansas City between rival High Schools.

The score was close and one point decided the result. It seemed that the fates were against the Manuals. In summing up the strength of the two teams we found to our surprise that Central had almost as heavy a team as did Manual. Central's line was much weaker than Manuals, as shown by the steady gains through the wearers of the blue and white. The stars for Manual were Lindsly, Bryant, and Murphy; while the strongest men for Central were Martin, Thomas, and Taylor.

A summary of the game is as follows:

FIRST HALF.

Central won the toss and chose the south goal, giving Manual the ball. Bryant kicked 40 yards to Thomas, who returned 10 yards. Morrison went through the centre for gains. Victor and Martin went around their respective ends for 5 yards each; Morrison again gained through the center. Central lost 5 yards on a fumble by Taylor. After a trial at our line by Morrison, the ball went to Manual on downs. The maroon and black now be-

gan to play in earnest, for the ball was on their 35 yard line; it was at this time that the superiority of Manual's backs became evident. Bryant and Murphy were put through Central's tackles on cross-bucks, and Lindsly made 18 yards through guard. These gains brought the ball to Central's 10 yard line, where they took a brace and held us for downs. Victor gained 5 yards, but Morrison failed and Martin was forced to punt; he punted only 10 yards but recovered the ball and made 15 yards more. Central being unable to gain. Martin was again forced to punt; this time with better success. The ball went flying through the air for 35 yards, and Murphy was downed in his tracks.

Manual then began some of its fine offensive work, Murphy, Lindsly and Bryant carrying the ball to Central's seven yard line, where Bryant was sent through right tackle on a cross-buck, and placed the pigskin safely over the goal line. Bryant failed to kick the goal. Score, Manual 5, Central 0.

With but two minutes remaining, Martin kicked 30 yards to Lindsly who came back 20 yards, Lindsly then punted 40 yards and Morrison came back 10 yards. The half ended with the ball on Manual's 40 yard line.

SECOND HALF.

Martin kicked 30 yards to Kilroy, who came back 6 yards; Lindsly went through right guard for 5 yards and Murphy

made 6 yards on the ends back formation. Manual then tried the fake kick and lost the ball.

Central played the close revolving formation and made good gains. Then it was that Martin was given the ball to go through left tackle. The preceding plays having been of close formation order drew the tackle in. It seemed as though the man with the ball was hitting between guard and tackle, when suddenly he darted out between the tackle and end. The full back was drawn up looking for a mass play and the man with the ball was soon away from both teams. Martin kicked the goal; score was now Manual 5, Central 6.

Bryant kicked 40 yards to Thomas. After several attempts at Manual's line Central was forced to punt. Bryant was downed without a gain. Then began the most stubbornly fought part of the game. Manual was determined to score, but found that Central's line had taken a brace by this time. It was at this unfortunate time that Bryant had his shoulder severely wrenched and had to retire. Newman took his place. The ball was advanced by constant line-bucking to Central's 10 yard line, where the Manuals lost the ball just as the whistle was blown by the referee. The game of '99 was finished.

The line up was as follows:

| Manual. | Positions. | Central. |
|-----------------|---------------|---------------|
| Tate, Jno. | Right End. | Doyle. |
| Kilroy, Jas. L. | Right Tackle. | Washer. |
| Knapp, Ed. | Right Guard. | McFarland. |
| Burton, Cliff. | Center. | Healy. |
| Estill, Wm. | Left Guard. | Moses. |
| Peters, A. | Left Tackle | Walker, Capt. |
| Douglas, B. | Left End. | Thomas. |
| Murphy, J. | Quarter Back. | Taylor. |
| Murphy, Jno. | Right Half. | Victor. |
| Bryant, Capt. | Left Half. | Martin. |
| Lindsly, Ben | Full Back. | Morrison. |

Officials: O. Swearingen and "Chub"

Morris. Time of halves: 30 and 25 minutes.

After a week of preliminary practice, our foot ball team opened the season of '99 in a game with the Westport High School. Although Westport was much stronger than last year, we defeated them by the overwhelming score of 24 to 0.

The feature of the game was the fine work of the Manual backs, and Bryant's punt of 65 yards at a critical moment. Estill did excellent work on the line.

The William Jewells of Liberty brought the Manuals to their home grounds October 14 for what was supposed to be a practice game. The college boys were to play the University Medics the following Saturday and they wanted some light team to play them a practice game. I assure the sympathizers of the maroon and black that they received what they were looking for, and more, too. After a brilliant and heroic struggle the game ended in a tie. The score was 0 to 0.

The William Jewells were dismayed, we were surprised—they at our pluck and endurance, we at our unity and strength. It would be hard to pick the stars for Manual in this game, as the honors were evenly divided.

After the game with William Jewell, the Manuals were invited to practice against the Medics at Exposition Park. This invitation we accepted to our future sorrow.

The Manuals met the cadets and professors of Wentworth Military Academy on their home grounds, October 21. Our team was not in its true form, most of the boys were bruised and sore from the previous week's practice with the Medics. The Manuals were considerably outweighed. After a stubborn contest, W. M. A. won the game. The score was, Manual 0, W. M. A. 18.

The game was clean and hard fought throughout. The treatment we received

at the hands of soldiers was excellent. The feature of this game was the ground gaining for Manual by Bryant and the tackling of Estill.

While the present season has not been conspicuous by the number of victories, yet to the close observer of the college game our record is far superior to that of any previous season. Every defeat was a substantial victory in the high school class, except Central, which was an accident.

A second team was organized about October 23. Heretofore a second team was an unknown quantity. A second team will benefit a first team in two ways: first, they will give them practice, thereby strengthening the team work, secondly, it affords the first team a chance to pick some strong players who were too modest to try for the first team.

Therefore, allow us to beseech all boys who are interested in their physical development, all who would have foot-ball honors, and above all, those of you who are interested in your school, to kindly make an appearance on the gridiron.

The officers of the second team are: R. Butler, captain; Walker Campbell, manager. They have played three games at the time of writing, winning one and losing two. The first game was,

Manual 2nd 11, Argentine H. S. 0; second game, Manual 2nd 0, Kansas City, Kansas, High Schools and Medics 7. The third game was against Liberty High School; the High School secured some boys who were subs in the college team and then only defeated them by a score of 5 to 0.

The line up is as follows:

Russell, Center.
 McClure, Left Guard.
 Whitehead, Right Guard.
 Kerfoot, Right Tackle.
 Gillham, Right End.
 Ford, Left Tackle.
 Lange, Left End.
 Shields, Quarter Back.
 Campbell, (Mgr.) Full Back.
 Butler, (Capt.) Left Half Back.
 Kendall, Right Half Back.

We wish to extend our thanks to Atty. William Buckholtz, who coached the team this year. He left nothing undone which would lead the Manuals to victory. His interest in our team was not emolumental. The team was very fortunate in securing the services of a coach whose thorough knowledge and experience in foot-ball was equal to that of Atty. Buckholtz.

JAS. KILROY.



GIRL'S ATHLETIC ASSOCIATION,

During the latter part of the last school year a girl's athletic association was organized in our school and maintained with much interest and benefit.

The object of the association was to promote the physical development of the girls, through the study of hygienic principles and the use of proper exercises with and without apparatus.

When the question of a proper gym-

nasium dress arose, the girls decided that the regulation blue gymnasium suit would be the most servicable; then the girls started to work in earnest and with the aid of their instructors in sewing, cut and fitted their own garments.

Miss Gilday, who has had special training and experience in physical culture, kindly consented to direct the work in the gymnasium and give such

individual attention as the limited time and means allowed. And in this manner we worked faithfully to the end of the year.

We did not participate in the exercises on field day save in our enthusiasm, which we expressed without reserve when the school yell was given.

We were justly proud of our boys on that day, and in the near future we expect to be able to give an exhibition of our work in the gymnasium in an open session of our association, which would be more appropriate for young ladies than the exercises of field day.

We are especially proud of the fact that we are the first organized Girl's Athletic Association in the High Schools of Kansas City, but progression is our watchword and we must be in the vanguard.

Our work so far this year has been limited on account of the crowded condition of our school. Our membership is not nearly so large as we desire it. We would like to have every girl in the school become a member of our society, and if you are not at present interested in our work, we are almost positive that if you come to visit one of our meetings, you will be convinced of the advantages offered.

While we are unable to use the gymnasium just now, our teacher is giving us a course of very interesting and instructive lectures on hygienic principles,

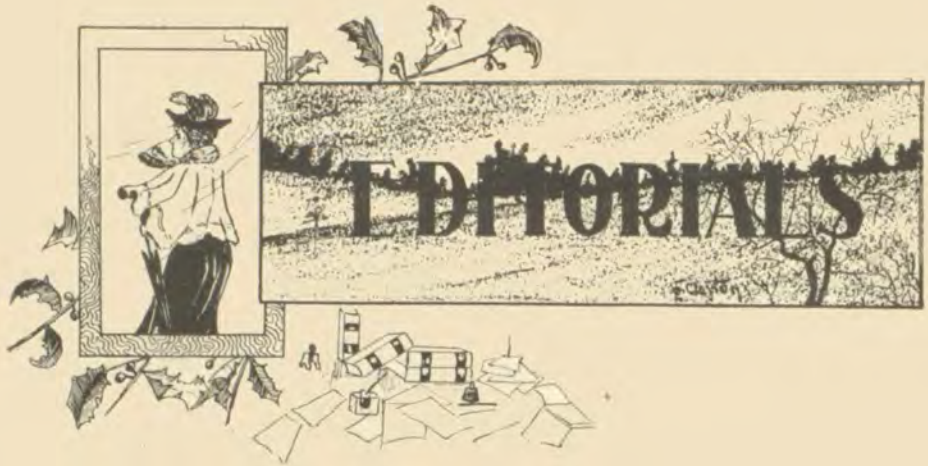
together with exercises to be practiced at home. Each exercise has a purpose which is definitely explained and illustrated, such as exercises for preventing sleeplessness, for developing self-control, and for graceful carriage. We are carefully instructed how to practice them at home, and results are recorded and discussed at our meetings. The lectures are made doubly interesting and profitable to the girls because they pertain, not only to the health of the girls, but to the method of increasing their personal beauty and grace also, a subject which ought to be studied by every girl, because, as Miss Gilday, says, "it is the duty of every girl to be just as healthy, beautiful and graceful as she possibly can be."

Even if you can not join our association you are all cordially invited to attend our meetings.

It may be well to add, in conclusion, that the girls not only rejoice in the victories of the boys but also sympathize with them in their defeat. We are truly sorry that they lost in their last game of foot-ball with Central, but the fact that they did their best and that, as the papers state, they played the better game, should console them. And our advice in regard to their defeat is that they should forget, this and remember not the Maine, but Field Day.

C. G. H.





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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.

With this issue, the NAUTILUS begins its third year and opens to its subscribers its third volume. It is pleasing to note the many flattering encomiums which have, from time to time, been passed upon our paper. The plan established at the start to make ours a high-class school

magazine and an unbiased representative of the school at large has been faithfully carried out, and it is the intention of the present management to sustain the reputation which the paper now enjoys and to keep it free from sectional strife and party bickering. It shall be the constant aim of the editorial staff to fill our columns with original reading material which will reflect credit on the various departments of our school. As in the past, the NAUTILUS will not be a vehicle for the intemperate effusions of fadists or the organ of any society or of any teacher. What it has to say of the individual work of pupils or teachers will be based on merit alone and not on sentiment or favoritism.

Since the last issue of the NAUTILUS, many important epoch-making changes have taken place affecting the history and the growth of our school. The special election held in June to vote on a proposition to issue bonds to build more school rooms carried in the ratio of six to one. This result insured the completion of our building—the addition of the east wing, which will provide quarters for all manual training work and for the business department, which has heretofore occupied temporary quarters in parts of our present building originally intended for other purposes. In

due course of time the contract was let and the work begun, and, notwithstanding many unforeseen drawbacks, it is progressing slowly but surely. Delay in obtaining iron and troubles with labor organizations have put back the work several weeks, but notwithstanding these annoyances the prospects at present are that the wing will be ready for occupancy at the beginning of the second term in January. The addition will greatly relieve our crowded condition, provide better quarters for the manual training work, and reduce the itinerancy of the academic teachers who have, at present, no abiding place.

Much has been said *pro* and *con* concerning the game of foot-ball—whether it is beneficial, and if so, whether the benefit derived from it overbalances the injuries received from it.

The distressing accidents, sometimes fatal, which at times will occur, have done much toward creating a prejudice toward this game. It is hard to get an unbiased opinion on this subject, for one is either an enthusiastic supporter of our national college game or is at the opposite extreme in denouncing it—the former seeing the good or the excitement only; the latter, the brutality.

The secret of its popularity is easily accounted for. Ambitious young life yearns, naturally, for a measure of physical powers, and such a test of it combines all the elements of offensive and defensive. A trial of strength, agility, and endurance is, almost of necessity, not free from danger.

Before criticising a book, the critic must thoroughly acquaint himself with it; so, in foot-ball, one should not attempt to criticise the game until he has first acquainted himself with it. Unfortunately this is not the case, for, generally, the most ardent critic knows nothing of the game beyond the fact

that the players "pile up" and occasionally break bones; furthermore he does not look up the record of the injured player, else he would generally find that the injured person was not in standard condition. By standard condition is meant the condition to which a player may be brought should he abstain from all intemperance and take the required exercise.

Foot-ball is a game which teaches many good qualities, when played in the proper spirit. It teaches perseverance as no person can teach it, and what is more necessary to reach the goal of life, it teaches self-control and hence to control others; it teaches many subordinate qualities, such as alertness and quick judgment; and, probably most important of all, it furnishes ample opportunity for the application of the Golden Rule.

We hope for speedy improvement in the manner of playing this game in the future but we want to retain the good qualities. This, we are certain, will take place in time, for time has wrought many changes.

It is greatly to the credit of our foot-ball teams that they have not only succeeded in excluding outside "professionals," but that they have maintained a high class standing in their studies and withal secured a reputation for high class playing. These tactics will, in the end, come in for a fair share of the "victories" and will secure for the players what is far better, an abiding victory over themselves. The least that can be said of the Manual eleven this year is that its work is highly creditable.

THE PAINT CLUB EXHIBITION.

Between November 27th and December 11th, the Paint Club of Kansas City will open to the public its third annual exhibition of paintings in the Library Building.

There are great things promised for this exhibition. The list of exhibitors includes such men as E. A. Bell, of New York, whose painting, "A Lady in Grey," was reproduced in the Art Catalogue of the World's Fair; Charles C. Curran, who has also a picture in that catalogue; Alfred Juergens, a young man who has been creating a sensation, of late, in European and American art circles, and who sends to Kansas City what he calls, "My two strongest works"; Greenbaum, of San Francisco; Rettig, of Cincinnati; and nearly a score more of names that would be notable in any art exhibition in America. It is probably the best collection of work that has ever been shown in Kansas City, and every person who cares about the city's progress should give it careful attention. In particular, every student, whether interested in drawing or only in general self-culture, will find this exhibition of deep interest; and to the art students, it will be a rare opportunity for seeing some of the best paintings their fellow-countrymen have done of late.

We are apt to undervalue things which, like this exhibition, cost us nothing, forgetting that, to make them "free" to us, there must have gone the hard work and liberal giving of other people. It is to be hoped that every student of the Manual Training High School will prove his appreciation of this fact by spending at least one afternoon studying this exhibition, and gaining all the good he can from it.

OUR MONDAY MORNING PROGRAMS.

The Monday morning programs of this, the third year of our school, began appropriately September 25, with an address on "Work," by Dr. Brummel

Jones, supplemented by a cello solo by Miss Beth Boright.

On October 2, Prof. Perry and his pupils gave us a musical program which was very much enjoyed by everyone who heard it.

The 9th of October an entertainment was given by young men, consisting of a piano solo by Mr. Herbert Sisson, an address on "Success" by Mr. William Borland, and a vocal solo by Mr. Vernon Styles.

A musical program, given by young ladies, the Misses Dorothy and Pet Lyle, followed on October 16. The young ladies were assisted by Mr. Carl Stubenrach, celloist, Miss Lynette Cole, harpist, and Miss Jessie Kirtley Herbold, contralto.

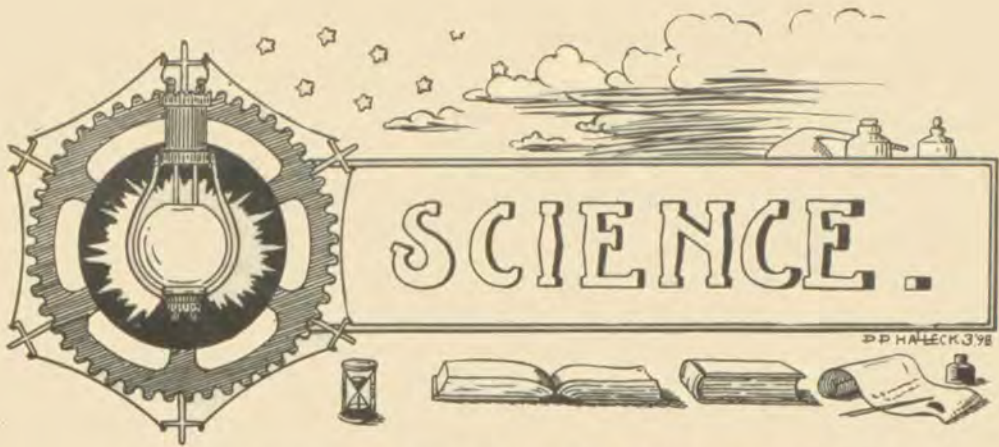
The program for October 23 consisted of pianola solos by Mr. Burton J. Pierce, a short talk by Mr. Jules Rosenberger, and a piano solo by Mrs. Josephine Kaufmann, of Berlin.

On October 30 a musical program was rendered under the leadership of Mr. and Mrs. Carl Busch. These delightful entertainers are so well known in the city that we need only to say that the program was up to their usual standard.

Following this, on November 6, another musical program was given by Mr. Rudolph King, Mr. Francis Boucher, and Mr. A. John Mundy. Mr. Mundy is a new baritone, lately come to the city, and the most of us heard his fine voice for the first time.

The program on November 13 was under the leadership of Miss Emma Wray Fulton and consisted of a vocal solo by Mrs. Pursley and Miss Smith, a violin solo by Master Howard Payne, artistic poses by Miss Martha Fontaine, and readings by Miss Grace Hawes and Mr. James Fulton.





THE COMMON DRAGON FLIES ABOUT KANSAS CITY.

The dragon fly belongs to the order Odonata. Correct knowledge of this beautiful insect seems a little diffused. It is a prevalent opinion among the ignorant, who dub them snake doctors, devil's darn- ing needles, etc., that they are deadly poison. The small boy looking at you curiously as you swing your long hand- led net over a pond and seeing you capture a fine specimen, with rapturous delight, exclaims with horror, "If that thing bites you, he will kill you sure." Nothing could be more erroneous. The insect is entirely harmless and a benefit to mankind in its destruction of the pestiferous mosquito.

One cause of there being little known concerning the dragon fly, is that they frequent out-of-the way pools on our hot and most oppressive days. Those that dart rapidly across our lawns or through our gardens seldom alight. Our eye is arrested for a moment by a scintillation of bright colors in the sun- shine and the insect is gone, with no time for inspection.

He who is hardy enough to rally forth in the heat of a midsummer day armed with the weight of a long handled wire net and cyanide bottle swung around the neck and has the patience and strength to stand on the edge of a still pool for two or three hours, swinging his net out over the

water as the dragon flies dart by in procession, will find his efforts abund- antly rewarded by at least a dozen specimens. By going frequently, I think that about fifty different species may be secured though that number has not yet been taken in this locality.

Care should be taken to remove the insect from the cyanide bottle as soon as dead, as the fluttering of the newly added insect will cause injury to the delicate wings of those previously put in. When taken from the cyanide bot- tle, an insect pin should be thrust through the center of the thorax and the insect fastened to the bottom of a box brought along for this purpose. On reaching home, a broom straw or fine wire should be thrust through each insect, inserting it through the center of the clypeus and allowing it to extend to the tip of the abdomen. This in- sures the retention of the head and the abdomen, the head being attached to the thorax by the slender oesophagus. Unless this is done the insect will be easily dismembered when dry.

One of the first specimens caught will probably be the large green darner *Anax junius* (Fig. 1). Whole swarms of this species are often to be seen flying about the woods during the month of August. It may be easily dis- tinguished by its large size, light green

thorax, and light blue abdomen.

Another less common species (Figs. 2 and 5) is the medium sized *Pantala hymenea*, having a yellow abdomen crossed with fine black lines.

Tramia lacerta (Fig. 3) has a dark purple color. It is not rare but is usually quite highly prized because it is so difficult to capture.

One of the most common as well as one of the most beautiful species is the ten spot, *Libellula pulchella* (Fig. 4). The male has ten milky white spots on its wings, the female differing only in lacking these spots.

The species *Libellula trimaculata* is represented by the female (Fig. 6), the young male (Fig. 7), and the old male (Fig. 8). The female closely resembles the female in Fig. 4, except that it is smaller. The young male has a brown abdomen while that of the old male is bluish white. This species is easily caught as it often alights on the low bushes around a pond.

Another common species, *Mesothemus simplicicollis*, is here represented by the male (Fig. 9) and the female (Fig. 10). The male is green and black, while the female is light blue. Both sexes may usually be found around the edge of a pond, resting on a floating stick of wood or on the pond grass.

Cannaeria furcata (Fig. 11) is a very rare species. Prof. Needham, of the Lake Forest College, to whom we are

indebted for the classification of these dragon flies, says that this specimen has not been taken before within the United States. It is about medium sized with a reddish brown body.

Libellula basalis (Figs. 12 and 13) is to be found flying over a pond in large numbers almost any day of the summer season.

The delicate, light blue damsel fly (Fig. 14) is *Ischnura verticalis*. *Sympetrum rubicundulum* (Fig. 15) is one of the small species to be found usually in late summer or early autumn.

The female (Fig. 16) and the male (Fig. 17) of *Calopteryx maculata* are a species not common to ponds around the city, but this specie may be found occasionally about swamps.

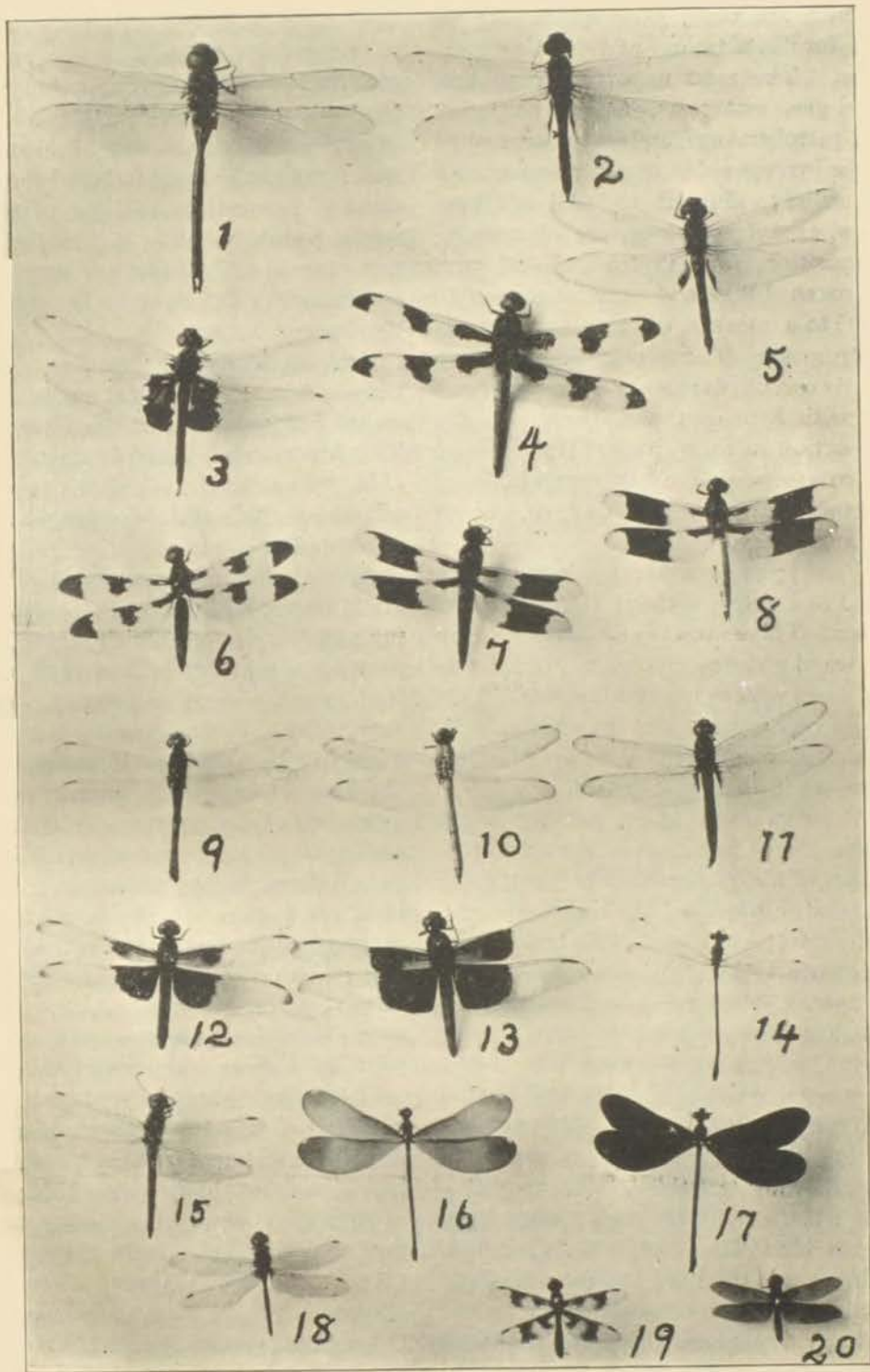
Sympetrum furcata (Fig. 18) is another species common to the woods in autumn. Hovering closely about the pond will be found the amber tinted *Perithemis stomitia*, the wings of the female (Fig. 19) being spotted with dark brown, while the wings of the male (Fig. 20) are clear.

These dragon flies, with the exception of *Cannaeria furcata*, are all very common and are to be found around the ponds or in the woods almost any day of the summer season. It is impossible to say exactly how many species are to be found in this locality, as this order has not been thoroughly worked up here.

BETH BORIGHT.

EXPLANATION OF PLATE (accompanying).

- | | | |
|---|--|--|
| 1. <i>Anax junius</i> . | 9. <i>Mesothemus simplicicollis</i> , (male). | 16. <i>Calopteryx maculata</i> , (female). |
| 2. <i>Pantala hymenea</i> . | 10. <i>Mesothemus simplicicollis</i> , (female). | 17. <i>Calopteryx maculata</i> , (male). |
| 3. <i>Tramia lacerta</i> . | 11. <i>Cannaeria furcata</i> . | 18. <i>Sympetrum furcata</i> . |
| 4. <i>Libellula pulchella</i> . | 12. <i>Libellula basalis</i> . | 19. <i>Perithemis stomitia</i> , (female). |
| 5. <i>Pantala hymenea</i> . | 13. <i>Libellula basalis</i> . | 20. <i>Perithemis stomitia</i> , (male). |
| 6. <i>Libellula trimaculata</i> . | 14. <i>Ischnura verticalis</i> . | |
| 7. <i>Libellula trimaculata</i> , (young male). | 15. <i>Sympetrum rubicundulum</i> . | |
| 8. <i>Libellula trimaculata</i> , (old male). | | |



ILLUMINATING GAS.

There are many gases which may be used for illuminating and heating purposes. The most important ones are, wood gas, water gas, natural gas, coal gas, petroleum gas, and acetylene, named in the inverse order of their importance and value as illuminants. All of these gases, except acetylene, are of varying composition, ranging from almost pure hydrogen (H) and carbon-monoxide (CO) to a mixture of very complex organic gases. These organic gases are mostly carbohydrates—compounds of carbon with hydrogen and oxygen in the proportion to form water (H₂O)—and hydrocarbons—all other compounds of carbon, hydrogen and oxygen, or of carbon and hydrogen.

Wood gas is made by heating dry wood in a retort without the admission of air. This extracts any gases held by the wood and decomposes any oils, forming gases which are combustible. This gas is very impure and expensive and, on this account, is not used for practical purposes to any great extent.

Water gas is made by passing steam over a bed of free carbon, heated to redness. (This carbon may be coal, coke, charcoal or graphite. Coal or coke is generally used because each will, under proper conditions, keep up its own heat, and is cheaper. When using coal or graphite, heat has to be supplied by some outside agent). This decomposes the water, the oxygen combining with the carbon to form carbon-monoxide (CO) and liberating the hydrogen (H) as shown in the following equations: $H_2O + C = CO + H_2$. Both of these gases burn with a blue flame which is very hot. Water gas is not used for laboratory and heating purposes, because it burns under ordinary conditions with a non-luminous flame; while gases which burn with a luminous flame under ordinary condi-

tions must be mixed with from two to ten times their volume of air to burn with a non-luminous flame, thereby using from one-third to one-fourth the amount of gas for a given amount of heat. As water gas can be manufactured for about one-half as much as coal or petroleum gas, the price would be higher for a certain amount of heat and we would lose the variety of flames made possible with the Bunsen burner.

Coal gas is made by heating bituminous coal in a closed retort until all of the gases and volatile oils are driven off. This leaves coke, which is a very valuable by-product. Coal tar is driven off and is collected, forming another valuable by-product.

As coal gas contains many gases which are of no use as illuminants or as heating gases, and some which are directly poisonous, together with tar and water, it of necessity must be purified. This is accomplished by first passing it through a coil of pipes immersed in water, called the "condenser" or "cooler," where a great deal of the water and any gases easily condensed are removed. It is next passed through the "scrubber," a tank in which a spray of water is continually playing, where the tar is removed, together with any solid particles of matter suspended in the gas. As water dissolves a gas much faster when it is in the form of a spray than otherwise, gases soluble in water are removed here. The most common soluble gas is ammonia (NH₃) which dissolves in water forming ammonium hydroxide (NH₄OH) or aqua ammonia. The next process is for removing the hydrogen sulphide (H₂S). This gas is very offensive if allowed in the air of a room, as it has the smell of rotten eggs. Most of this gas burns to form water and sulphur dioxide (SO₂), but some of it escapes. It

is removed by passing the gas over rusty iron (Fe_2O_3) which combines with the hydrogen sulphide forming iron sulphide and water, as is shown by the following equations: $\text{Fe}_2\text{O}_3 + 3\text{H}_2\text{S} = \text{Fe}_2\text{S}_3 + 3\text{H}_2\text{O}$. The gas is then ready for the consumer.

Gas prepared in this way contains three classes of gases: (1) those which burn with a luminous flame; (2) those which burn with a non-luminous flame, and (3) those which do not burn. These are simply adulterants and one of them, cyanogen (C_2N_2), is directly poisonous. The composition of coal gas depends very largely upon the heat of the retort in which the gas was generated.

In the first class are methane (CH_4), olefiant gas (C_2H_4), and a small quantity of acetylene (C_2H_2). The higher the percentage of these gases in an illuminating gas, the better the gas. In the second class are hydrogen (H), and carbon-monoxide (CO); and in the third class are nitrogen (N), oxygen (O), carbon-dioxide (CO_2), water (H_2O) and cyanogen (C_2N_2).

This last gas is a very deadly poison and on its account the gas is often condemned. Generally there is a small amount of sulphur-dioxide (SO_2) present, formed by the burning of sulphur in the generator which imparts to the gas a slight smell of burning sulphur. This is objectionable only on account of the smell.

Natural gas has about the same composition as coal gas or petroleum gas and is probably formed by the decomposition of organic matter. Its chief importance lies in the cheapness with which it may be obtained, as it requires no extensive treatment to make it ready for use.

The process of making gas from petroleum has not been in use very long. It has been used in Kansas City for the last few years, supplanting the coal process. It is a purer gas than coal gas, contain-

ing no ammonia, and it is claimed no cyanogen or sulphur-dioxide. (This was told me by the superintendent of the gas works). The reason that petroleum is used in preference to coal, is that it is cheaper than coal; it takes fewer men to make a given amount of gas, and the generators are cleaner than the coal gas generators.

As with coal gas, the composition depends upon the heat of the generator, but the variation is greater. The chief gases are, however, the same as those of coal gas.

This gas is prepared by spraying crude petroleum on white hot bricks in what is called the "generator," which decomposes the oil to gases and tar. It is then passed over other white-hot bricks in what is called the "super-heater," where the gases are decomposed. The heat of these bricks is kept up by passing the blast from a coke furnace over them every eight minutes. After running eight minutes the blast is shut off and the oil turned on. This runs eight minutes and the bricks are heated again.

For purification petroleum gas is treated the same as coal gas, passing through "cooler," "scrubber" and iron-oxide tanks.

Acetylene (C_2H_2) is one of the most important of the gases under consideration, as it burns with a much brighter flame than any of the other gases. It is of no use as a heating gas as it requires so large an amount of air to produce a colorless flame that it is not practical to use it, while a luminous flame smokes the cooking utensils. It is also the most convenient as it can be generated in the house where it is to be used. It is also cheaper than the other gases.

Acetylene is formed by the action of water on calcium-carbide (CaC_2) as by the following equation: $\text{CaC}_2 + \text{H}_2\text{O} =$

$\text{Ca}(\text{OH}_2)$ plus C_2H_2 . It is a colorless gas, lighter than air and has the smell of decaying oysters. It is easily decomposed by heat and pressure, and therefore cannot be delivered in mains as is the ordinary gas, for a slight increase in pressure would be liable to generate enough heat to cause a decomposition of the acetylene with disastrous results.

Acetylene is generally generated in the house where it is to be used. For this purpose a great number of generators are manufactured. The most popular and most practical is in the form of two cans, one inverted and fitting inside of a lower one. The upper one has a basket in the top of it in which the carbide is placed. The lower one is filled nearly

full of water, and the upper can is allowed to descend until the carbide comes in contact with the water when acetylene is generated which raises the can until the carbide is no longer in contact with the water. As this action is automatic the supply of the gas is practically constant.

There is another type of generator in use consisting simply of tanks, the carbide being placed in the bottom. Water is allowed to drip from a vessel in the top of the tank into the carbide, the amount of water being regulated by the pressure of the gas generated. This is not, however, a very successful generator because it is liable to get out of order.

FRANK WYNNE.



THE NOVEMBER METEORS.

On Wednesday night, November 15th, 1899, at about the 13th to 15th hour, by sun time, there is due at this earth a shower of meteors. They are to come from the north, apparently from the constellation Leo.

All have at some time or other probably seen "shooting stars" or "falling stars." These "falling stars" we see may be divided into three classes: (1) aerolites, (2) shooting stars, (3) meteors. Aerolites are solid masses of stone or iron which often fall to the earth; shooting stars are those flitting sparks that may be seen, almost any night, to appear far up in the heavens and disappear again in a small fraction of a second; meteors are shooting stars which are large enough, and come close enough, to deserve special attention and a name of their own.

Authentic accounts of the fall of aerolites date back to ancient times. Chinese records tell of one which fell about

616 B. C.; it "broke several chariots and killed ten men." In 1807, Weston, Connecticut, was the scene of a shower of stones, the largest of which weighed about 200 pounds. Yale College is the possessor of an iron aerolite weighing 1635 pounds. It is a peculiar fact, yet it is to be expected, because it is in accord with the Nebular Hypothesis, that no chemical element unknown to this earth has been discovered in these aerolites.

Meteors also have received historic notice. In the 15th century, Crema, Italy saw one, which in the eyes of the people of that age assumed all sorts of fantastic shapes. In 1876 a very brilliant meteor was seen to pass over Kansas, Nebraska, Missouri, Iowa, Wisconsin, Illinois, Michigan, Kentucky, Indiana, Ohio, Pennsylvania and West Virginia. It was accompanied by loud explosions. When over Illinois it was seen to break

into fragments, and when it reached Indiana and Ohio it formed a cluster estimated to be 5 miles broad and 40 miles long. In western New York the sky was entirely overcast by the cloud of fragments which had by this time become cold. Its whole flight occupied probably two minutes; some of its fragments may have fallen in New York state, but no authentic account of the discovery of them can be found.

Star showers have often been recorded, and there are some people living to-day who can tell you of the wonderful shower of 1833. Every year during August, there is a number of shooting stars to be seen; they are the Perseids.

It has been estimated that in the portion of the universe we know, there are in each volume equal to that of the earth some 13,000 meteoroids which, when they come into contact with our atmosphere, become meteors or shooting stars large enough to be seen with the naked eye. A person by watching the heavens any night, the morning hours are the best, may see from four or five, even to twenty shooting stars in a single hour. Once in awhile displays such as this year's showers may be witnessed.

Star showers are supposed to be caused by the earth's passing through the orbit of a cluster of meteoroids which revolves about the sun much as does a planet. When these meteoroids enter the earth's atmosphere, the heat generated by their friction with the air is sufficient to make them incandescent and visible. One such

orbit is crossed by the earth in November of each year, one in August, one in April; there are many others, but these are the most important. This year we happen to cross this orbit just when the cluster of meteoroids is passing the crossing point, consequently we intercept a number of them. This cluster of meteoroids makes one complete circuit of its orbit in about $33\frac{1}{4}$ years. The first authentic record of this shower was October 13th, 902 A. D. During each third of a century, the date of our crossing its path advances about one day, until now it falls on the 15th of November. It is this shower which appeared in 1799 and 1833, and to England in 1866, that we are looking for now in 1899.

A peculiarity of star showers is that all the "stars" seem to emanate from a common point in the heavens. The November meteors or Leonids seem to come from the constellation Leo, which rises now at about 10:20 p.m., in the northeast.

LATER NOTES.

Nov. 14th.—A report comes from New York saying that observers there have seen meteors coming from the vicinity of Leo. They are probably no more though than could be seen on any night.

Nov. 15th.—Astronomers say we entered the meteoric belt at about 9 this morning.

Nov. 16th.—American stations report cloudiness until after midnight and but few meteors were seen. Report comes from Russia of a brilliant shower "producing consternation among the peasants."



THE MUSEUM.

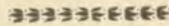
As soon as possible after the new wing has been completed and the dressmaking department changed from the botanical laboratory to its permanent quarters, a school museum will be commenced. It

was originally intended that room 26, now used as the cooking room (later to be used as a drawing room), would contain the museum, but on account of lack of space the collections will be ac-

commodated in the botanical and zoological laboratories. The botanical laboratory will contain the botanical and geological collections. These will be placed in the private laboratory. The geological collection will consist of three smaller collections; first, that of historical geology, which will contain fossils of all ages; second, that of mineralogy, which will consist of ores and minerals; third, that of physical geology, which, besides containing specimens of slates, shales, limestones, etc., will also have examples of faults, breaks, or the peculiarities of stratified rock. The zoological laboratory will contain the biological collection; it will consist of a synoptical cabinet, which is in the private laboratory, an entomological cabinet and a general bio-

logical collection, and with this a collection of slides for use in zoology and physiology.

There is at present much material in the school, but the greater part of it is unclassified and not properly labeled, but in time this will be done. Much more might be done if it were possible that the museum could have more commodious quarters. The collections will be considerably divided and it will even be necessary in the zoological laboratory to place shelves across the sliding door, which connects with Room 25, to make space for the biological collection. We hope the pupils will give the museum their hearty support that it may be an honor to the school.



SCIENCE NOTES.

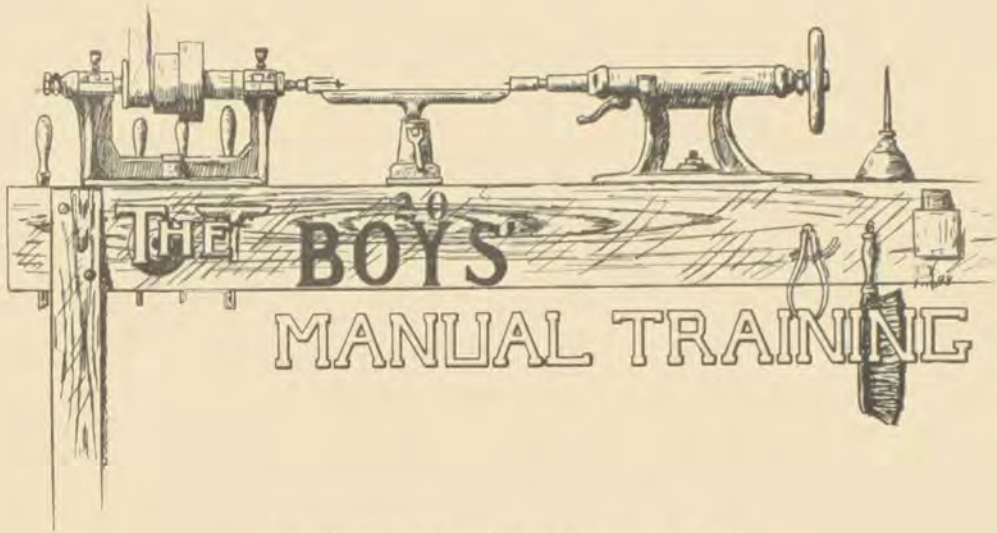
Kansas City seems to be rather backward in adopting the automobile, possibly because of her "seventy-seven" hills and the steepness thereof. One of our packing houses, however, has made bold to try the first experiment in this line. It has a neat little electric motor delivery wagon, which, by the way, seems to be mastering the hills in fine style.

It may be interesting to members of Manual Training High School to know that a member of the class of '98 is now chief engineer in the Electrozone Plant at Havana, Cuba. This Electrozone Plant is for electrolyzing sea water for disinfecting purposes. It is a United States government institution.

The biological department of this school has just received a large supply of apparatus from Bausch & Lomb Optical Co. This includes twenty microscopes and forty dissecting microscopes.

The astronomer at Lick observatory is reported to have discovered that Polaris is a triple system. Polaris and a dark star revolving about each other with a period of four days, and these two and a third, also dark, revolving about each other with a period of some years. It is not known definitely how many.

It is quite an interesting thing to note how one species of an animal, especially among the lower forms, is liable to become in one locality almost extinct or very numerous. An example of this occurred among our Cytheronidae or royal moths during the last season. In an article published in the NAUTILUS last year, the species known as *Dryocampa rubicund* was described as very rare; but during last summer this species appeared in great abundance, and even larger numbers are liable to appear in the coming summer.



AN HOUR IN THE LATHE ROOM.

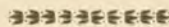
After spending an hour in close mental application in geometry or algebra, it is quite a rest to the mind of the pupil to spend a period in the lathe room. He no sooner dons his working clothes and starts his lathe than he becomes entirely absorbed in his work.

When a class enters the lathe room for the first time at the beginning of the school year, the teacher explains the construction of the lathe; how to shift the belting; how to make the lathe run at a high or low rate of speed; how to sharpen the tools; and last, but not least, how to hold the tools.

The first exercise to be turned out is a cylinder, eight inches in length and one and one-half inches in diameter. Each member of the class is given a piece of stock about nine and three-fourth inches in length and about two inches square. The pupil then takes a tool called the

gouge to the grindstone, which is run by electricity, and sharpens it; this tool is very hard to sharpen because its edge is very nearly a semicircle. He then goes to his lathe, and after making the center of both ends of the stock, places it in the lathe and adjusts the tool-rest so that it runs parallel with the stock. When this is done, he places the gouge upon the rest and runs it along the stock, holding the cutting edge at an angle of about forty-five degrees to the stock. This process is repeated until the stock is cut down to the size which the pupil thinks is about right; to make sure that the measurements are correct, he takes his calipers and sets the prongs an inch and one-half apart and measures the stock, which is then cut down to the right size and the ends are cut off, this completing the first exercise, the cylinder.

RODNEY KERFOOT.



WHY DO WE NEED A BUSINESS EDUCATION AT THIS AGE?

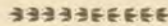
We are now living in the age of science, or as it is termed, "The Up to Date" age. Changes are frequent; the industries of our country are carried on to a

vast extent by science; inventions in machinery, to which the power of steam and electricity is applied, do the work of thousands of hands. Old methods are

called slow, new ones are rapid and very productive. Competition never was so great as it is at the present time; we may not look forward for this competition to diminish; if anything it will be greater, and the country never did need so many good young men of the right type as it now does. One of the worst beliefs is that "good times are coming." This trusting to good luck and chance has snapped off the foundation of many a young man's success; and waiting for a father or rich uncle to die and leave money has made many nobodies. Never before in the history of our country were there such opportunities for young men; there never were so many bids for them; banking institutions, business establishments, and the great importers are calling for young men, but they must be of the right stamp; they must be men who have studied, who have applied themselves, and who have had some training for the work. The great educators of

our land are coming to the conclusion that manual training is the great need. For more than a thousand years Latin and Greek were the principal things taught in the schools of Europe. But a new age is now upon us, the age of utility of business in all sorts of human industry, and education to meet this new age and its demands must be practical. "How is it," you ask, "that young men and women who have graduated from great colleges are not able to earn their bread?" Because they have taken classical educations, and are not fitted thereby to "take hold" of any part of the world's daily business. The young men of Kansas City should realize that they have a very rare opportunity; and with the manual training high school in connection with the public school system, no boy should ever want for a practical education.

I. P. BYRON.



NEED OF THE NEW WING.

The east wing of our school has not been completed as yet, and the prospects at present are that it will be several weeks before pupils may use it. This state of affairs has prevented the establishment of a forging room, as all available space in our present building is occupied.

There is manual training for the first and second year students, as the turning and joinery shops are open, but the third year boys must be patient and wait until our shops in the new wing have been completed. The addition to our building is assuming much larger proportions every week, and if the workmen of the different trades, who are employed in its construction, are diligent and work well,

we may expect to see our handsome new wing complete in every detail by the beginning of the next term.

There is no truer saying than, "Blessings brighten as they take their flight," because it is but human nature to take some things as a matter of course, and thereby not appreciate them sufficiently. Although I am sure that every one who took turning last year enjoyed the work, still I do not believe they appreciated its true worth until compelled to do without it altogether. I have asked, out of curiosity as well as a desire for information on the subject, how the boys felt about being deprived of their shop work, and the answers have generally been to the effect that they wish it very much and

that the want of it had heightened their desire for it. and we can then return to our interesting and instructive shop work.

But we will wait patiently, for the new wing is expected to be speedily finished

JOHN H. TATE.



THE NEW SHOP.

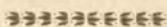
As the new wing gradually takes form, we begin to wonder what it will contain, especially for the third year boys' manual training. Forging is the course for that year and we will give a description of a few things that we may expect to find there.

This shop will be situated in the south basement room, which is suitable because of being fire-proof and also because of its proximity to the elevator. The floor is to be of hexagon tiling and the walls of rough coated rock, which cannot be affected by the pieces of red hot iron. There is plenty of light and heat and there could be no more ideal place for this subject to be taught.

All of the tools have been carefully selected and are the best that the limited amount of money could buy. The contracts have been let and the goods are now under construction. There will be twenty special down-draft Buffalo forges

and an instructor's forge. The latter will be arranged so that it can either be run by hand or by the regular blast. An emery grinder will be set up and run by electricity. This is used to grind the tools, and is a quicker means than an ordinary grindstone. There will also be one Beandry power hammer, one Buffalo bench drill, one combined punch and shear, and one No. 6 volume blower. These are for the use of the entire class, and the last one will furnish a blast for the forges.

In addition to the above named tools, there will be a sixty-inch exhauster to carry off the smoke; a ten-inch mandrill for making and spreading rings, and a leveling block for straightening the bars. The shop will also be equipped with the usual articles, such as anvils, hammers, punches, etc. This will be the room for the boys, and they will make the most of it.
H. W.



A FEW HITS.

Make your shavings thin and crisp like saratoga chips from the cooking department.

"Want of care does us more damage than want of knowledge."

Make your turning exercises circular, not oval.

"They that will not be counseled, cannot be helped."

Do not use the nut on the inside of gear cone to trim your finger nails.

Keep your hand off the dead center when you have failed to oil it properly.

Remember that nine-tenths of your "manual training" is head work.

Hold your tool, not your hand, on the grindstone.

We are now well started in the shops and expect to surpass the work of last year's classes before the school year is over. " H. W.



AN HOUR IN ROOM TWENTY-SIX.

"What do we make to-day?" inquired one pretty cooking-school damsel of another, during the general scramble preparatory to each girl's appearing properly equipped in cap, apron and sleevelets. "Why, cocoa, of course, haven't you any nasal appendage?" returned her companion airily, tilting her own "appendage" in an appreciative sniff of the aroma pervading the room. "We had coffee the last time, tea the time before, and you might know we'd have cocoa to-day," she continued, with an art of knowing all about it. "Yes," put in a third, perching her cap on one corner of her head and surveying the artistic effect in a mirror, "and its going to be lots of fun, too, only that the rap for order is warning us to hurry." So saying, the trio took their places with the rest of the class, and awaited orders.

"We'll make the cocoa first, study about it between times, and recite afterward," said the teacher, "so take your places, and south-side girls, fill tea-kettles." For a few moments all was confusion, especially as one unfortunate, hearing a joke that upset her gravity, and consequently her teakettle, inflicted a brief but undeserved shower-bath on several of her neighbors. The results were not fatal however, and soon each

girl was at her place, head bent studiously over her book, intent on the recipe:

- 3 tablespoons cocoa,
- A few grains salt,
- $\frac{1}{2}$ cup sugar,
- 4 cups milk,
- $\frac{3}{4}$ cup boiling water.

While the cocoa was being passed, the girls took out the necessary utensils and looked over their tables to see if anything was missing. One discovered that her linoleum had disappeared, but not knowing how to spell the word, decided to let it pass. Another made the startling discovery that she was "minus a match!"

As only one-sixth of the recipe was used, it required some mathematical knowledge to decide what quantity of each ingredient was to be used. This point settled, the milk was first scalded; then the cocoa, sugar, and a few grains of salt were mixed with enough boiling water to make a smooth paste. Remaining water was then added, and having boiled one minute, was poured into scalded milk and beaten two minutes to prevent scum from forming.

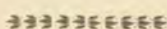
The result of these exertions was a cup of steaming, fragrant cocoa, fit "food for the gods," as its name, Theobroma, implies. In the absence of any-

thing more substantial, the girls indulged in a "dish of gossip" with their cocoa, and then proceeded with their dish-washing, which seemed much less irksome than at home. "Cooking's nothing but play, anyway, after our other studies," confided one pink-cheeked lassie to another over the festive dishpan, "and still, we'll have more use for it after we leave school than anything else we learn."

The last dishpan put in place, twenty-six bright-faced girls assembled to impart what knowledge they possessed on

the subject of cocoa—manner of growth and preparation, value compared with tea and coffee, and so forth. The bell rang in the midst of the discussion, and the girls were heartily sorry to leave their most pleasant recitation room. One of them, a French student, wishing to display her knowledge of French, turned at the threshold with the parting salute of,—"Vive la—!" but her French failing her at the critical moment, continued none the less enthusiastically,—"cooking-school!"

BETH BRADLEY.



COLOR AS APPLIED TO DRESS.

On coming down late to breakfast one morning, I found a letter by the side of my plate. I at once recognized the handwriting as that of my country cousin, Mary Ann, and on opening it, read that she would arrive within a few days to spend a month or two with me.

What dreadful news this was. My cousin from the backwoods, with no more idea of how to dress than a rabbit, coming to visit me, I knew it would be my duty to take her with me wherever I went, and I already saw such visions of colors contrasted as to make one have a nightmare.

Well, the fateful day arrived, as all days do, and with it my cousin.

Now Mary's complexion was of an olive hue and she wore, on her arrival, a blue dress that cast a grayish tinge over her face, making her look quite ghostly. I thought to myself, this would never do, and resolved, on the first opportunity, to give her a talk on color, such as I had received at the M. T. H. S., in the Domestic Art Department.

At last came my chance. When we got up stairs to my room I commenced. "Mary," I said, "do you know, I dis-

like that dress very much?" She looked rather startled, turned red, and asked, "Why?" "Because it doesn't suit your complexion, and besides, on the street, you should select colors that harmonize with your hair. The reason for this is, that the whole figure is considered and the effect is seen as a whole."

Mary was silent and seemed a trifle angry at my criticism. I thought perhaps I hadn't approached her in the right way, so I began again and said, "Well, I just can't help noticing your clothes and commenting upon them. A few days ago, at school, we had such an interesting talk on color and it has taught me to be more observing as to what one wears."

We began first by talking of color itself. We learned that from an artist's point of view the three primary colors are red, blue, and yellow. From the mixing of these pigments may be obtained every hue and shade in nature.

Laws of harmony were next studied and we found that there are a great many, but the most prominent are harmony of contrast and harmony of analogy. In harmony of contrast, the

colors are harsh and abrupt, being in extreme opposition to each other. In harmony of analogy, the colors are soft and blending. We find this more common than harmony of contrast.

Then came the most interesting part. The application of color to the individual. People in the temperate zones should use shades and tints a great deal, because the individual coloring is not strong enough to hold its own against stronger colors. On the other hand, Orientals, their color being stronger, are able to wear primary colors.

During all this time, Mary Ann had been unpacking her trunk, and my eyes fell on a blue street dress trimmed with bright orange bows. "Here," I said, "you have a direct harmony of contrast, because you have both a warm and a cold color contrasted. See, when you put this orange against your face it makes it appear to have a bluish tint, because orange is the complementary color of blue and a light surface, brought in contact with a strong color,

is apt to take on a tinge of the complementary color."

One of the things that was most strongly emphasized was, that dress was really decorative art, and we should try and make ourselves agreeable to be looked at. An old, old rule was given us, that might help in selecting colors for various occasions. It was something like this: for the street, select colors which harmonize with the hair; for the house, select colors that harmonize with the eyes, for then the eyes are the most noticeable features of the face; for evening wear, select colors that harmonize with the complexion. By artificial light the color of the hair is lost and the color of the eyes is deceiving.

Mary Ann had at last reached her party dress and I was just about to pass severe criticisms on it, when the luncheon bell rang, summoning us below and as we were both ready for something of this sort, we did not stop to discuss the most interesting and queerest of Mary Ann's wardrobe.

GRACE BERGER.





TO THE EXCHANGES.

Our paper, with this issue, is entering upon its third successful year of publication, and the NAUTILUS, through the exchange department, desires to extend a cordial greeting to all of the old and new exchanges and to all ye editors, we wish you success and continuance in the same way as heretofore.

This department regrets very much to say, that from our complete list of seventy-five exchanges we have only received the following: The Crescent, The High School Review, The Jabberwock, The Rocky Mountain Collegian, The Herald, The Vidette, The R. M. T. S. Register, The Helios, The M. S. U. Independent, The High School Sentiment, The Walking Leaf, The High School Record, The Log Book, The Record, University of Oregon Monthly, The Recorder, The Industrialist, The Central College Magazine, The Mercury, and The Western College Magazine.

Of course there may be many acceptable excuses to be offered by the missing monthly exchanges, as it is the beginning of a new school year, but by our next issue we hope to see our entire list checked off.

Foot { Ball.
Bald.
Bawl.

The whole undertaking is a burial.

"The Crescent" for October, one of our worthy exchanges, appears with a very attractive cover and a well edited literary department.

"Any one picking up a High School paper and glancing at an exchange column does not imagine the work that is involved in editing such a column."
—The Lowell.

We are anxious to hear of the success of "The Manual." As it represents a manual training high school we are desirous of its continuance. Let us hear from you.

(Scholar translating Caesar): "A thanksgiving of twenty days was decreed by the senate."

Professor: "Just think, no school for twenty days!"

(Voice from corner): "O, had we a Caesar!"

To our table we have added "The Herald," Denver high school, and the "Central College Magazine," Lexington, Mo. Both are excellent papers.

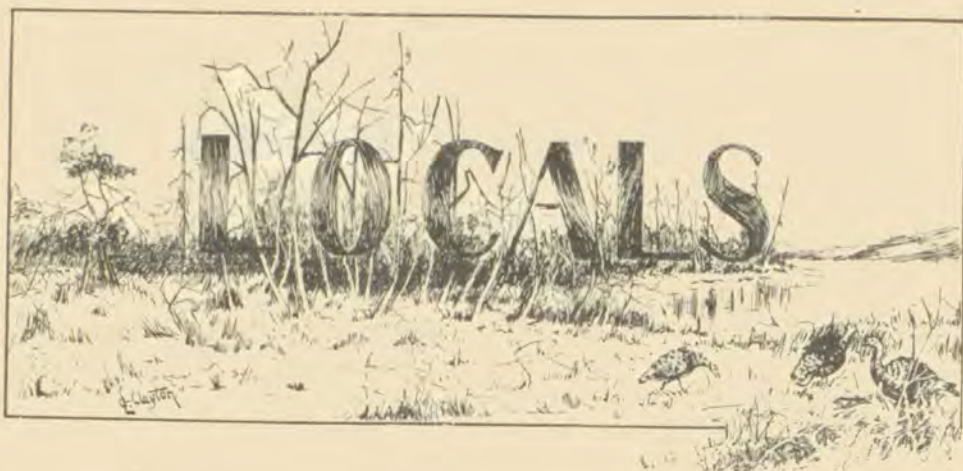
"The Helios" we are always glad to receive. It is one of our neatest exchanges, comprising up-to-date and interesting reading matter.

Mrs. Wickwire: "Our washerwoman always talks about 'wrenching' the clothes, instead of rinsing them."

Mr. Wickwire: "Maybe she says what she means. She has wrenched all the button holes out of half my shirts."

"The Mercury," with its "Philosophy of Wit and Humor," contains the President's speech at his Milwaukee banquet. This makes an interesting article for a school paper and the idea should be carried out by other exchanges when a speech, that is not political, is given. We may look to "The Mercury" for new ideas.

"You'll get run in," said the pedestrian to the cyclist without a light. "You'll get run into," responded the rider, as he knocked the other down. "You'll get run in, too," said a policeman standing near by. Just then another scorcher came along without a light, so the policeman had to run in two.



Miss Gilday still insists that she is over forty years old (*nicht wahr?*)

Cliff, after the game with William Jewell: "I feel like Rip Van Winkle when he woke up."

Miss Fisher: "Jack, I knew that was you coming. It sounded like a young earthquake."

Mr. Phillips: "The days of miracles are not over. You can buy two for a nickle at any florist's shop."

Some changes and additions have occurred in the faculty since last year. Mr. Connell resigned; Mr. Hansford McCurdy was elected to the Natural Science department; Mr. Wallace B. Shield to the department of History and Economics; Mr. Barry Fulton as an assistant in Manual Training and Drawing; and Mr. O. E. Herring to take charge of Manual Training work to be added when the new wing is finished.

Bobby says he likes physics for there are so many girls in there:—Telly Scope, Tilly Graph, Tilly Phone and Molly Cule.

A William Jewell man said to Tate at the beginning of the game: "We'll send you home in a band box." John replied, "If you do the band will be playing."

The girls in sewing can always tell when Mr. Sloane leaves the drawing room by the immediate increase in noise. *Naughty boys!*

Mr. Phillips: "Don't ice the cake until you have more ice than cake."

Prof. Richardson has published a text book for the use of his beginning classes. It is called "The Spade." It is much appreciated by the students using it.

Prof. McCurdy: "No, Mr. Wynne, everything that is green is not chlorophyll."

Miss Gilday says she enjoys a pleasant nap every Monday morning during assembly hour. *The effects of "old age."*

Freshie's mother, visiting school: "How is mamma's darling getting along, Mr. Chace? He hated to start to high school, but is becoming more accustomed now."

Miss Fisher: "Henry, I won't take the edge off this knife for there is none on it."

Miss Drake has inaugurated an up-to-date method of marking exercise work on the board. She writes *malus*, *puer* or *puellae* on the board above the work and compels the unfortunate to translate the phrase.

Prof. Fulton is the proud wearer of the black and red. Young ladies, ask him to show you his beautiful combination.

Myron C. Albertson, Carl F. Dieterich, James N. Russell, Ben E. Lindsly, Howard Whitehead and Maurice E. Simpson are some of the many Manual boys who have tried George Herold's twenty-five cent hair cuts. Try him, boys, at 324 Ridge Building. He's fine.

SOME SUGGESTED CHANGES:

Will Osgood, have some loose change.
 Horace, get shaved.
 George, talk less.
 Richard, abandon "science."
 Jack, increase in weight.
 Athletic association members, pay up their dues.
 That we hear less in the turning shop of St. Louis schools.
 The old order of seating restored.
 Classes in elocution and Spanish inaugurated.
 The average stature of the freshmen increased.
 The Juniors, organize.

Murphy in civil government: "The state would get seventeen 'electrical' votes." Is this a new method of stuffing the ballot-box?

Miss Drake: "Don't tell me a word looks wrong simply because it has two eyes." Suppose they would get crossed?

Miss Gilday defined love as a "flop-over affair."

Mr. S.: "What is the meaning of the old English word 'ham?'"

Henry: "Ham? (Aside) It has been so long since breakfast I don't know."

One of Mr. McCurdy's freshmen: "I removed the 'mantillas' of the grasshopper."

Miss Drake: "You must be a high jumper, Oliver. That is the highest conclusion I ever saw jumped at."

To the Rumford B'k'g Powder Co.: "I have used your powder and find it most excellent for raising the attention of the classes."

(Signed) ARMAND MILLER.

"James has loved not wisely, but too often."

If the girls liked to study English as well as they do one of their teachers, oh, what a brilliant school we would have.—The Other Fellow.

Bobby Clemens will be very grateful to any one who will give him old transfers.

A new figure of speech originated in Miss Van Metre's class—"A caterpillar."

Miss Murphy: "Have you plumbed your pears?"

"Do you take music?"

"Yes."

"You must not take things which don't belong to you."

"Don't lose your head over the compliments paid you, Miss Schutte, for if you do you will lose your 'bow.'"

Mr. Miller: "No, cistern water can't be very healthful; just think of the dead rats that jump into it." Peculiar!

Hubbard's "Korrekct Shape" Shoes for men and boys \$4.00 and \$5.00. 1005 Main.

Instructor: "Mr. Wynne, when did King Henry reign?"

Miss Jarboe, suddenly: "Oh, I know."

Instructor: "Your name isn't Wynne yet."

Harry Frazer says he has known Mr. Page ever since he was his (Harry's) size. The statement is doubted.

Why do all the students go to B. Glick's, 710 Main street, for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

Formula for a young lady's complexion: "K-AI-SO-Mn."

A few immortal names:

Fat—Ed Knapp.

Rusty—James Russell.

Chicken—Tod Murphy.

Turkey—Earl Newman.

Slim—Maurice Simpson.

Windy—Frank Wynne.

Gabble—George Conkey.

Punch—Dwight Frost.

Judy—Edna Messinger.

Boots—Lucile Edwards.

Grandma—James Kilroy.

Hiawatha—Minnewa Shoemaker.

Coach—Arthur Peters.

Corn—Cornelia Harzfeld.

Iceberg—Sadie Whitney.

Father Time—Howard Whitehead.

Kid—Margaret Hockett.

Sweet Heart—Miss Gerheart.

Baron—Bruce Frazier.

Miss Rothgiessier: "Mr. Frost, you are the first boy I ever saw blush."

Mr. B——e and Miss E——n seem to like the settees in the Paseo.

Lucile: "There comes my man." It was Mr. Russell just coming up stairs.

Ask Miss Carpenter why she jumped over the fence at Fifteenth and Lydia the other day.

Mr. Phillips: "What is one good way of gathering material for an essay?"

Pupil: "By plagiarism."

A great many people who heard a great wailing in the cooking laboratory thought perhaps Miss Bacheller was trying to make one of the Freshies eat some pickled peppers. Miss Bacheller indignantly denies doing anything of the kind.

Miss English, of the kindergarten, told Bobby that he belonged there. Goodness! and Bobby a Senior!

Mrs. C. J. Rudd, 1009-1011 Walnut street, manufactures, repairs and stores fine fur garments at moderate prices. Fifth floor. Take elevator.

"Mr. Phillips is not getting seedy, is he?"

"Seedy?"

"Don't you hear his *seed* thoughts every morning?"

"Oh!"

Miss Van Metre: "What is the significance of the title, 'Vanity Fair?'"

Pupil: "I guess there was a town named Vanity, and they held a fair there and the book was written about it."

"Girls in the cooking classes, be careful and wash the grease out of your dishpans, or you will never get a chance to sail the matrimonial seas."

The freshmen who always occupy the front seats in the Assembly Hall do not know that those seats are reserved for communicative pupils.

Mr. Phillips in his third hour A rhetoric class compares everything to a football eleven, to please (?) Mr. Douglas, who occupies a front seat.

Miss Gilday: "A *colored negro*."

Mr. Phillips: "A *vocal singer*."

Senior: "I think Walter Scott uses such beautiful language."

Junior: "Does he come up to school?"

The seven sleepers of Mr. Dodd's second hour B algebra class—who are they?

Can you tie

A tie?

A tie tied swell

Is well,

But a tied tie

Is never swell.

Follow the tie tide

And get

One of those

Swell ties

Of

HARRY B. WOOLF,

Quartersize Shirtman,

1119 Main.

The Virgil class of this year should make a record. There are just three in the class.

Miss Boley: "My mother says I would make a fine hired girl, I'm such a good hand at breaking dishes.

It is quite amusing to hear some of the beginning Latin pupils use the broad a.

Sutton (in algebra): "Twenty men plus thirty cents."

Poor Freshman (conjugating 'audio'): "Au(ow)-au-au.

Miss Drake: "Who hurt you? Say ouch and sit down."

Minnewa always takes more material than necessary in cooking, and so gets a free lunch.

Of all sad words

Of tongue or pen,

The saddest are these—

I've flunked again.

One view of a Monday morning entertainment: The view was all right as far as it went, but it didn't go any further than the row in front. There were nine tips on it (I think my count was correct), and two *lovely* buckles of brilliants. One buckle contained 'steen small brilliants and two large ones, and the other was nearly the same. The foundation was constructed of black velvet. Altogether it was very interesting, and I enjoyed the entertainment immensely.

Miss Campbell says she thinks she will change her name. We hope we will all get invitations.

When the local editors were lacking one thousand words, Miss Gillham suggested that they consult the dictionary.

Mr. R.: "What is a sallie?"

Mr. Frost: "A hired girl."

Boys, go to Mr. Richardson for the receipt for raising a moustache.

Have you seen Johnson's dollar photos? Southwest corner Twelfth and Grand.

Mr. Shields: "Before you come again I want each one of you to find out where you live."

Will Osgood: "O, I've paid taxes lots of times."

Mr. Richardson: "Miss Laura, what is the meaning of the word *rouge* in French?"

Laura: "It's the stuff you put on your face."

Mr. Richardson: "Please don't be so personal."

Miss Gilday: "A cow or a horse is a gentleman in comparison to an ancient Roman."

"These defeats are only apparent defeats. They are stepping stones to future victories." E. D. P.

Another "sad but glorious day" has passed."

Rusty (at the game): "Cheer up, young ladies, here we go again."

Oh, no, Gussie, it is Mr. Russell and not Prof. Page whom they call "Rusty."

Bobby had a terrible time at the game: He got into a nest of Centralites who beat him with megaphones and stuck him with hat pins.

Mr. Vincel said he wouldn't miss the game for anything. We all knew why when we saw that pretty little girl he was with.

Oh, yes, we would all like to see how Prof. Morrison stands on a foot ball. It is as great a problem as standing the egg on end was to the philosophers of Columbus' time.

You are mistaken, Henry Hopkins was not crazy; he was just excited over the game.

What made everybody so hoarse Monday, November 13th?

Rusty: "Oh, so easy!" But they got it back on you just the same.

Miss Fisher is a destroyer of hearts, or rather the fad of wearing them;

Rachel's last name was so long it fell off the end of the black board.

"Our Willie dear has left us

We'll see his face no more,

What he took for H₂ O.,

Was H₂ S. O₄."

Central player (seeing Ed Knapp coming through the line): "Here comes a gentle hippopotamus."

Jack Schwitzgebel is starting out as a second Achilles. Last summer he said was not dipped but ducked in the Styx.

About once in every two weeks the local editors find one little local in the NAUTILUS box. When the paper comes out everybody turns to the local department the first thing, and then roasts the editors if the work is not up to the standard.

The only reason for the score Saturday was that Al Hilgren broke a looking glass in the flag rush.

Freshman: "5 and 2, 1 and 4, 3 and 7, and 6 and 8 are equal."

Mr. Chace: "You've got 'em all right."

Mr. Page, when asked at the foot ball game between Manual and Central, where his maroon and black colors were, replied by removing his black derby hat.

Miss Gilday was explaining a point in history and said, "Why, it is as absurd as boys trying to get up a tally-ho party without a cent in the treasury.

Johnathan Tate: "O, Simpson!!"

Simpson vindicated himself by the Missouri method. He "showed her." Miss Gilday blushed and apologized.

That pleased expression on Miss Bacheller's face is in anticipation of the elevator in the new wing.

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JANUARY 1900.



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THREE,
NUMBER
TWO.

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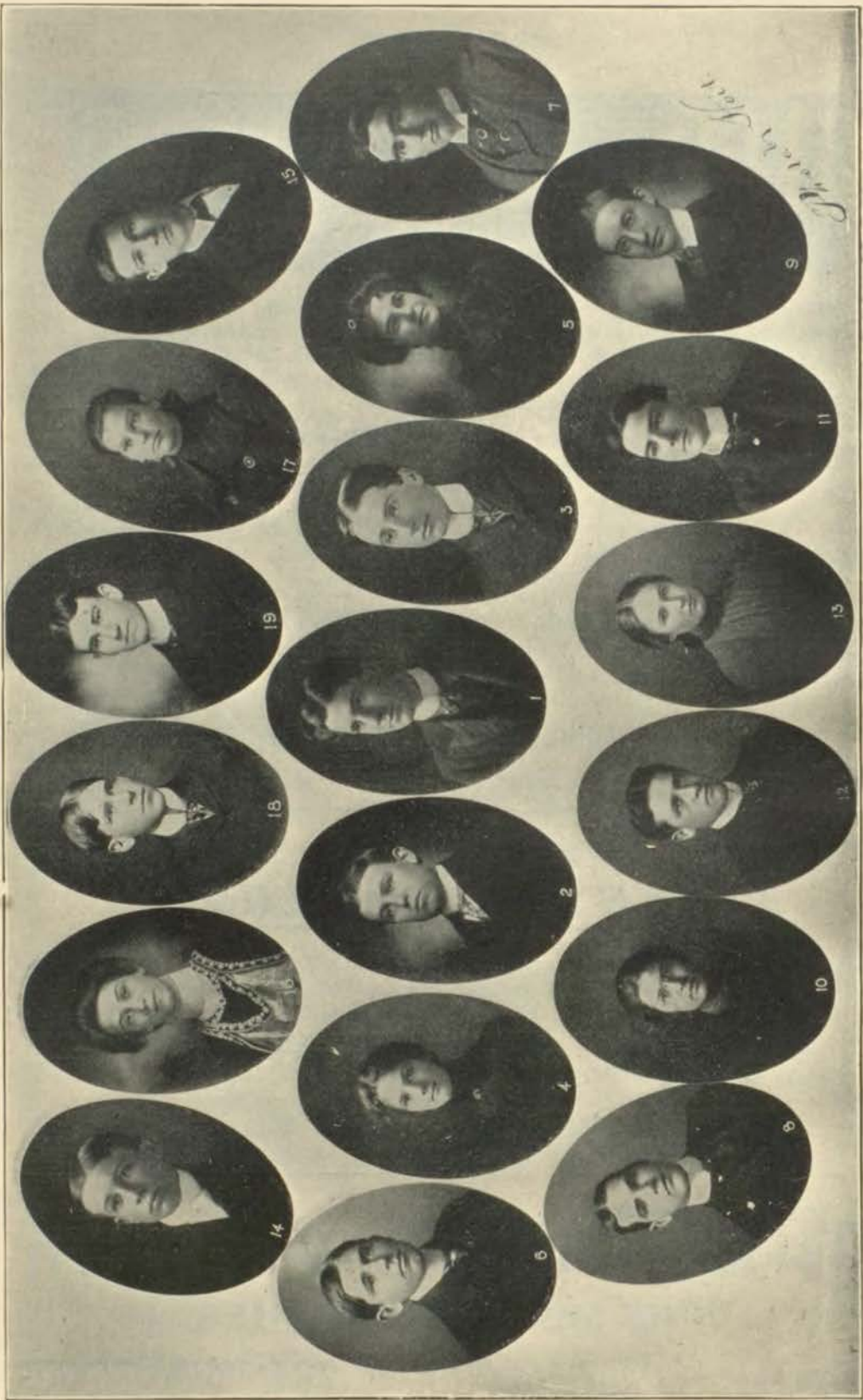
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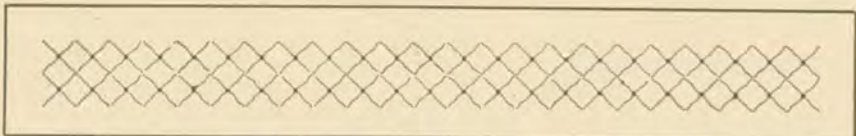
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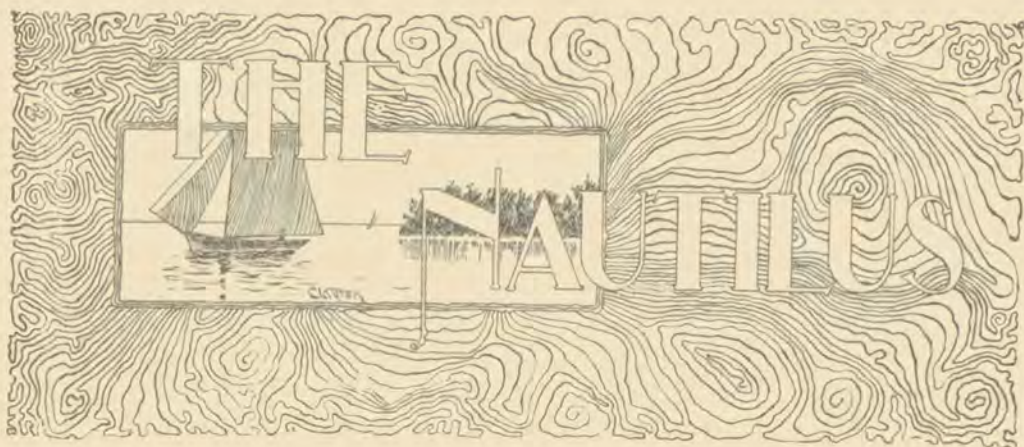
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VOL. III.

KANSAS CITY, MO., JANUARY, 1900.

NO. 1.

LITERARY DEPARTMENT.

TWO BOXES.

Paul Richards, Robert Hays, and Tom Dover were three boys who roomed together at a plain boarding house in a large city. Paul, "Poor Dick" as the boys named him, for he so frequently quoted Ben Franklin, and Bob worked at a large publishing house near their boarding house, while Tom was employed at the corner pharmacy as drug clerk. "Dick" was a model boy. His parents having died when he was quite small, he was forced to be his own guardian, and ever since his great loss he had been making an honest living, first as errand boy and later as compositor. He was quiet and saving, and possessed a countenance that would cheer anyone. He was always to be seen reading some good book or doing something that would build character. Bob and Tom were just the reverse; they were always ready for fun, and would go out of their way to play a good joke. They were good-hearted and kind and would divide their last penny with a friend in need.

Yes, they could be well called "a team." Tom was a city boy and his parents were living. He did not know what it was to be without father or mother, and was hardened to the sins of a city. Bob was unfortunate. He was once the only son of a rich man, but his father had acquired that devilish thirst for whisky, and had died a drunkard, leaving his widow a mere existence for her remaining years. Soon after the death of his father, Bob became dissatisfied with life in a small town and begged his mother to let him go to the city. So she did, knowing that he had to make his own way in the world, and hoping that it would prove for the best. Bob loved his mother so dearly that to even mention her name would bring the tears to his large, black eyes. Tom got paid on Saturday and Bob on Monday. Saturday night Tom and Bob would spend Tom's money for what they called "a good time"; so when Monday came Bob would have to divide his earnings to

help Tom pay his board and laundry bills, and sometimes "Dick" had to pay the bills, for he was always a little ahead financially.

It was a little after 6 p. m.—the last Saturday in October; "Dick" and Tom had just come from work and were getting rid of the printing ink on their faces and hands, which almost defied "Grand-Pa's Wonder Soap." A quick jerk at the door and in bounded Tom in excitement.

"Bad luck, boys!"

"What's the trouble?" asked the boys.

"Well, to be frank with you, I'm out of a job."

"What! How is that?"

"Well, all I know is that when I received my check a little note attached read, 'In full; your services are no longer needed,' and that's all the explanation I got."

"Well, cheer up, old boy," said "Dick," "we'll see that you don't starve; come on, don't you hear the supper bell?"

After supper they talked the matter over. All at once Tom broke out: "Boys! by this time tomorrow night I will be in Chicago. I have a friend there who wanted me to work for him when he was here last spring. He is connected with one of the largest wholesale drug firms in that city."

"That is business-like," said "Dick." "We will hate to give you up, but it's for your good, Tom."

"Oh, you're crazy," responded Bob, "You will starve up there; remember cold weather is coming on and your clothes are rather light."

"Nevertheless," said Tom, "I am going if I have to starve and freeze!"

Soon all were busy assorting their clothes, and at 11 o'clock Tom's trunk

was packed and all went to bed, as Tom was to take the early train.

Next morning all were up bright and early and were soon at the depot. It was a sad parting, and as the train pulled out the boys exchanged good-byes, hoping that the future would be bright for all.

On the way home "Dick" and Bob discussed the probabilities of Tom's success in Chicago. "Now, Bob," said "Dick," "for your sake I am glad that Tom has gone. He was a well-meaning boy, but he had a terrible influence over you, and if your Saturday night 'good time' had kept up much longer it is probable that both of you would have been doomed to drunkard's graves, and especially you have to guard against this evil for your poor father—." The tears began to trickle down Bob's cheeks. He was sad because Tom was gone, but to be reminded of the past and his mother was too much for him.

The rest of their journey home was made in silence. Bob sat down on the bed and stared at the floor with a distressed look on his face, as if in deep thought, while "Dick" paced the floor with a slight smile on his face.

"Say, Bob," said "Dick," "today is the last day of October; only two more months until Christmas; I say, Bob, I have a splendid idea."

"What is it, old man?" queried Bob in a broken voice.

"Bob! you haven't seen your mother for many a Christmas; I suggest that in the two months before us you save every penny you can scratch, go down to Stranburg and see your mother and make her witness a merry Christmas. You know that if her financial supply is not gone now it soon will be, and you are her only support, so brace up and be a

man. Make your old mother rejoice in the fact that her boy is her rod and her staff."

"It's a go! and, 'Dick,' as long as I live, I'll not touch another drop."

The weeks flew by. Business was rushing and the boys were compelled to work day and night. Bob liked this as he got double pay for extra work.

It was a week before Christmas; over forty dollars had been laid aside and by Christmas it would be over fifty. The papers were searched, all sales were attended by the happy boys, and their room was fast resembling a notion store. Sunday would be Christmas, so they appointed Friday night for packing the box. Bob came home Friday night with fifteen crisp one-dollar greenbacks.

After supper the boys began the delightful task. Nuts and fruits of all kinds, yard after yard of dress goods, shoes and slippers—just a regular store, and, wherever he could, Bob delighted in hiding a bill, imagining the fun he would have in seeing his mother unpack her treasury. The big dry goods box was almost filled, and it looked for a time as though another would be needed, but by cramming, the box was made to hold everything. The task was completed and two happier boys were not to be found.

The box was sent on the Saturday morning's train and arrived at its destination that evening. That morning the boys went happily to work, and were patiently awaiting five o'clock when Bob would take the evening train to Stranburg.

In Stranburg a messenger boy enters the Hays cottage, but finds Mrs. Hays sick in bed, wanting for food and medicine. At her request the boy reads the message: "My Darling Mother—Will be with you Christmas morning on 7:15 train; do not open box until I come.

Robert." Her sickness immediately leaves her and she sends for friends who share the good news. A wagon drives up and two men carry a large box to the house. Then neighbors shower gifts of all kinds on her, and Mrs. Hays is apparently well and happy.

* * * * *

It is 5 o'clock and "Dick" and Bob are on their way home.

"Here, Bob," said "Dick," handing him a ten-dollar note; "here is my present; it will buy you a ticket and pay expenses."

"'Dick,' you are a friend indeed. Words cannot express my obligation to you, and I am *so* sorry that I cannot lend to your happiness on Christmas."

"Oh, don't worry about me, Bob! I will be happy thinking of you."

"Dick" having some further business down the street, arranges to meet Bob at the depot.

Bob, dressed in his plain Sunday suit, starts for the station. As he nears the depot whom shall he meet but Tom.

"Well, hello! old fellow," shouts Tom, "how are you?"

"Oh, I am all right; just going down to spend Christmas with mother. How came you here, Tom?"

"Say, Bob, I've struck it rich up there and thought I would come down and give you and 'Dick' a real Christmas."

"It's very kind of you; just go up and give it to poor 'Dick'; I am all right."

"Now, Bob, come in and renew old friendship. A flippe would brace you up for your tiresome trip tonight."

Tom's influence was too great, and in his presence Bob possessed nothing that even resembled will power; so in the saloon they went.

* * * * *

By this time "Dick" was patiently waiting at the depot, and as he strolled

up and down the great waiting room he nervously glanced at the clock. In two minutes the train would leave and no Bob yet. "Dick" rushed out on the front sidewalk and scanned the street. To his surprise he saw a large crowd in the middle of the street. At first he thought the car had jumped the track. He rushed over and, pushing his way through the crowd, saw in its midst the mangled body of Bob. In terror he knelt down beside him—he was dead! He had attempted to cross the track while intoxicated, but fell and was horribly crushed by the approaching car.

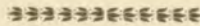
On Christmas morn as the snow was gently falling and the church bells were

chiming out their glad tidings of "Peace on earth, good will to men," Paul Richards is seated by the side of a long box in the city morgue, his head buried in his arms, which are resting on the remains of poor Bob, who had followed his father's footsteps to the grave.

* * * * *

In the Hays cottage at Stranburg a large box stands in the middle of the parlor floor. At its side lies the dead form of Mrs. Hays, her face downward, her hand outstretched grasping a telegram, which reads: "Bob met death last night in an accident. Paul Richards."

M. E. SIMPSON.



AN EXPERIENCE ON A TRAIN.

Mr. Davison had been visiting in the South, and was on his way to Pittsburg. The train stopped half an hour in Atlanta, and just as it was going to start again Mr. Davison went out on the platform. There he saw a woman with a little child and a large valise, trying to get on the train. He stepped down, put the valise on, and then tried to help the woman; but she refused any assistance until the child was safe. By this time the train was moving, but Mr. Davison lifted the child up the steps, helped the woman up after her, then jumped on himself, just as the child proceeded to fall off. Here, indeed, was a nice state of affairs.

Mr. Davison jumped from the moving train, ran back and snatched up the child, and started after the train, which was then half a block ahead of him. He ran as fast as he could run, causing a great deal of amusement for all those who saw him, but no one tried to stop the train. After running until he was exhausted, he

caught up with the end of the last coach and jumped on. He stopped long enough to get his breath, then started through the train in search of the mother. She was found sitting in her seat, looking contentedly out of the window, evidently enjoying the scenery.

"Is not this your child, madam?" said Mr. Davison.

"Oh, yes," she said, "I knew you would get her on the train all right."

She took off the child's wraps and placed it on the seat beside her, when suddenly a strange expression passed over her face and she jumped from her seat and cried out, "But where is the other one?"

"The other one? You had only one child," said Mr. Davison.

"I did not! Don't you dare tell me I had only one! I had two! You know I had two! Oh! oh! what shall I do? Where is my child?"

"Be quiet, madam," said Mr. Davison; "when I saw you, you had but one child."

As he sat thus in his chamber,
Entered unto him a stranger,
Bringing in with him a bright light,
Shedding radiance all about him,
Saying, "Well! My good King Midas,
You have here a goodly treasure,
Are you not contented with it?
Can you think of something better?"

Slowly good King Midas pondered:
Said that he would be contented,
Had he but the power of turning
Things he touched to precious metal.
The stranger smiled and said, "Tomorrow
With the sunbeams you shall have it."
And, so saying, quickly vanished.

In the morning with the sunbeams,
Came the gift the stranger promised,
And King Midas was delighted.
Touched he all the objects round him;
Left a trail of gold behind him,
As he rushed out in the garden,
Blighting all the blooming roses,
Turning them to yellow metal.

Went he then indoors to breakfast,
Thought to please his little Mary,
Turned her china bowl to golden.
But his daughter did not see it.
She was weeping for the roses
Robbed of all their rosy blushes.
She saw not her father's trouble
'Til he rose and left the table.
All his food had turned to metal,
And the molten gold had burned him.
Then she ran to give him comfort;
Threw her little arms around him
* 'Til he turned and stooped to kiss her.

Oh! The folly of that moment.
He had turned her to a statue.
As he felt her form grow rigid,
Knew his heart had changed within him;
Found that she was dearer to him
Than the gold the world held for him.
Then the father groaned in anguish,
The curse of gold at last had found him.

But even when his grief was highest,
And the world was darkest to him,
Entered again the radiant stranger,
Brought both cheer and comfort with him.
Gravely turned he to King Midas,
"Have you learned the lesson, Midas,
That your avarice has caused you?"

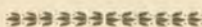
Sadly answered poor King Midas,
"I have learned it to my sorrow."
"Go and bathe then in the river,
Wash this Golden Touch far from you,
And whate'er the water touches
Will turn to its former substance."

Trembling, Midas seized the pitcher,
Ran he downward toward the river,
Sprang within and filled his pitcher,
Turned and ran back to the palace,
And sprinkled the miraculous water
O'er the statue of his daughter.

How he welcomed her returning
From the land of the immortals.
But the river ever after
Flowed o'er sands of sparkling gold.

Learn the task the gods set for you
To cure you of your greatest failing,
Just as Midas did in Grecia
Many, many years ago.

MARIE S. NETTLETON.



A FIRESIDE TRAGEDY.

In an old farm house, not far from our city, there is one of those old-fashioned fireplaces with andirons and crane, round which much of the romance of other days will always cling. Connected with this particular fireplace are many interesting memories; of a Confederate soldier hidden up its great chimney while his pursuers searched in the room below, of Hallowe'en frolics, gay sleighing parties, quilting bees, and all the enjoyments of a country fireside before the war.

But these memories were not all bright ones, as old Aunt Dinah, the prophetess, can testify. She lives in a little hut down by the creek, seldom speaking to anyone, but often muttering wildly. Among the ignorant negroes in the "quarter" she has gained great fame for her skill as a seer. But Aunt Dinah has not been thus always, and the tragedy of her life was enacted at that fireside.

The black girl, Dinah, had been the most intelligent slave on the plantation.

Her mother was an African princess, smuggled into the country long after the slave trade was abolished. On account of her brightness, the child, Dinah, had been chosen as a body-servant of the young Miss Dolly. After Miss Dolly's marriage, Dinah married a steady young farm hand, who died the next year, leaving her with a small child, Kate. She was transferred to the house and became chief cook in Miss Dolly's household.

This summer evening she was busy with the supper. Little Kate, a child of seven, hung over the gate, looking down the road to see if the moon would come up before the sun went down. She had seen it once and had always looked for it since.

The sun went down in all its golden splendor behind the western hills, the gray twilight stole softly over the earth and the great stars came out, but still no moon, and Mammy calling, she reluctantly left her post and went in.

"Mammy," she asked, crouching beside the fireside, her favorite place, "wha' do de sun go? He aint nebber wait fo' po' ole moon, but he make de sky all raid so de moon cain see wha he go."

"De Lawd take it, honey," said her mother, busy with supper.

"When am de Lawd gwine take me? I wan' go pretty soon, so's I'll see Him take in de sun."

"Don't yo be in a huh'y, chile; He take yo soon 'nough," and Dinah came over to the fireplace for hot water. She swung the crane with its iron pot out and started to lift the vessel. By some mischance the heavy pot slipped and fell. A terrible scream told of its results. Enveloped in scalding steam, drenched from head to foot with boiling water, poor little Kate lay on the hearth. Quickly Dinah picked her up and ran

for Miss Dolly; mechanically she performed the duties of a nurse, helping her, and they soon had the child in bed, wrapped in cotton. Dinah sat by the bedside, holding one of the muffled hands in hers, moving only to smooth the pillow or make the sufferer easier.

As she sat thus, her mind, as busy as her fingers were idle, ran over the events of the day. She kept dwelling with strange persistency upon Kate's question, and she murmured at times when the child stirred restlessly or moaned in pain, "De Lawd'll come, my po' lamb, bimeby. De Lawd'll come."

It was nearly midnight when Dinah was waked from her slight sleep by the hand which she held in hers being withdrawn. She started up in terror. Kate, with sparkling eyes, was sitting up in the bed, looking straight before her.

"Mammy! Mammy!" she cried in a voice that thrilled the listener, "He's come to take me home! De Lawd hab come!"

Dinah sprang up and threw a protecting arm around the child, while she put out the other to ward off the approaching evil.

"Yo sha'n't hab her, Lawd," she shrieked. "Yo sha'n't hab her. She's all I got lef' and yo sha'n't take her. O Lawd, I'se been wicked but don't take my chile. My po' innocent lil' lamb," and she rocked the child on her breast in agony of grief, not perceiving that what she feared had come to pass, and poor little Kate was in Abraham's bosom.

"My po' lil' Kate's a sleepin' soun', don't wake her," and with a wierd wail cry, half laugh, half shriek, she fell across the lifeless body of her child in a dead faint.

Poor, crazed Dinah, in her little cabin by the creek, never prophesies cheerful events, but always horror and death. She has never been in the farm house since the day when little Kate sat beside the fire and wished the Lord might take her.

ANNIE WYNNE.

A CHINESE TYPHOON.

The day was still and hot. We had grown tired of reading, of playing cards or chess, and even of napping in our steamer chairs. The vessel on which we had embarked, a small steamer sailing between Rio de Janeiro and New York, slipped and slid through an oily sea. The smoke from her funnel rolled away and rested heavily on the horizon. The listlessness and indolence on the part of everybody, ourselves included, was unbearable.

My three fellow passengers and I had gathered our chairs under the awning on the after-deck and idly watched the furrows made by the screw of our vessel on the smooth surface of the water.

"Say, old chap," yawned one individual to another of our group, "tell us another one of your exciting experiences." The "chap" whose reflections were broken in upon by this remark was a young merchant who had traveled much and had already entertained us by many tales of his adventures.

"Yes, do," yawned the rest.

"Well," he began, without waiting to be further persuaded by any of the company, "look at that sea out there. As smooth as glass, isn't she?" He paused. "And yet, do you know I have seen a sea just as smooth and as transparent as crystal lashed to shreds and made to foam like a maddened bull, all in the short space of half an hour."

"Where did it happen," we asked, showing a little interest.

"On the 21st. of September, 1873," he continued, without further introduction to his story, "the signal station at Hong Kong sent word to the ships in the harbor to get up steam or spread sail and move into the open sea as a storm was threatened. But as several storms had already been predicted during that month

which had not come to pass, the captains paid little attention to the warning. Only the mail steamers left the harbor. The stately three and four masters and the smaller steamers still laid at anchor in the middle of the bay; and a beautiful and picturesque sight it was which this bay presented.

"Looking across from Hong Kong one's eye stretches over two miles of the clearest water in which float ships of all nations, to the other shore, which is a succession of rolling hills, among which nestle small Chinese villages. Taking a boat, and after a half an hour's row, we reach the banks of the opposite shore. Facing the island of Hong Kong we see rising before us terrace upon terrace to a height of two thousand feet, finally crowned by the signal tower, which stands like a sentinel at the very top of the peak, where it commands a view of the surrounding sea. To the right and left the harbor stretches for four or five miles, until at both ends it widens to meet the China Sea. At night the scene is enhanced by the numerous lights in the harbor and on the island which glint and glisten like fairyland.

"On this particular night all was as serene and as beautiful as ever.

"At eight o'clock I left the office and walked over to one of the European theatres in the town of Victoria. At that time the stars were shining in the heavens and the air was wonderfully calm but rather sultry. At eleven, the play being over, I started for home. Before I had gone very far strong gusts of wind caught me, half carrying me off my feet. By the time I had reached the warehouse, which contained the office and living rooms of the manager and clerks, and which was on the street nearest the water front, I noticed that

the crests of the waves, as they dashed against the low sea wall, would occasionally wet the top of it and flow into the street. The wind, during my walk, had increased in violence and was blowing steadily.

"Hurrying into the warehouse, I went upstairs to my room. I did not undress but moved about, closing the iron shutters on the windows and barring the doors. Meanwhile the wind howled furiously and the walls of the warehouse groaned and shivered.

"Soon there came a heavy thud at the door, then another and another, and at each thud every timber in the house quivered. It was the ocean endeavoring to gain admission.

"By this time Mr. B——, the manager, and the clerks, who had rooms in the building, were up and working hard to make things secure against the wind and waves. The rain came down in torrents, adding to the din and turmoil outside. All this time the gale had been increasing; the sea wall and the street in front of our building had been entirely washed away; buildings on either side of us had been undermined by the waves and toppled over. Surrounded by a raging sea we feared lest we should meet a like fate.

"All of a sudden an extra loud thud set the whole edifice swaying, followed by a crash. We hastened to the scene and found that a heavy stone from the sea wall had been hurled by the wind and waves through the massive doors. Working to our waists in water we succeeded in stopping the opening and checking the inflowing flood. Gradually the storm

began to subside until at last all wind and waves died away.

"Next morning we looked out upon a scene of destruction and desolation. In the street the water stood five feet deep. Right before us lay a fine sailing ship, stranded on the street, her masts touching our building. Looking up and down the harbor we saw many wrecks and scores of dead bodies floating by.

"Dressed in old clothes we left the house and, wading up the street, beheld small steam launches, row boats, and Chinese sampans which had been cast high and dry on the hill. Turning a corner we met a European woman dressed in Chinese clothes crying pitifully.

"'Oh,' she exclaimed, 'have you seen anything of my husband?'

"She seemed distracted when we could not give her the desired information, and afterwards we learned that she was the captain's wife of an ill-fated vessel which had sunk during the night. She was the only one saved from the wreck and died a few days after, a raving maniac, in the city hospital.

"Many equally heart-rending tales were afterwards related. Over two thousand lives were lost and millions of dollars in property destroyed.

"Not long after that I left Hong Kong for New York in a sailing vessel and had an exciting experience on board, but that is another story."

"I believe," said one, as he concluded, "I should prefer six weeks of this weather to one hour in a Chinese typhoon."

We all quite agreed with him.

A. H.



"INNOMINATA."

At dawn the gay zephyrs blew pure and sweet;
The dew-drops sparkled 'neath the rising sun
As youth started forth with laughter and song,
For his journey was just begun.

His eyes were bright with exultant joy
Of the fair future he saw just ahead.
And he traveled on till his feet grew tired
And the dew-drops had silently fled.

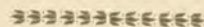
As the sun climbed high in the vault of Heaven
Its rays scorched the traveler's feet;
But its bright light showed to his hopeful eyes,
Just beyond was a happy retreat.

So he journeyed on in the rugged paths,
Keeping ever the bright goal in sight,
'Til his time-worn frame bent low with age
And his hair was bleached snow white.

The shadows were deep that silently fell
In a mist from the low setting sun—
He'd reached the bright goal—'twas Heaven-
sent Hope;
Ah, his journey was almost done.

The sun went down, but the traveler still clasped
The bright flowers he'd found in the way.
His dim eyes were closed, his worn heart still,
His life had gone out with the day.

—PEARL E. WOOLERY.



THE LOST KEY—BASED ON FACT.

Two fishermen, John and Samuel Andrews, having finished their night's work, were preparing to pull back up the Potomac to Washington, when John happened to notice a large key entangled in their net. Untangling it from the net he picked it up, and after examining it, put it away with the intention of brightening it up so as to be able to make out the letters which he could dimly see, but could not read because of the rust.

Reaching Washington, Samuel started out to find a purchaser for their fish. John, meanwhile, kept watch over the fish and at the same time pursued his way through the daily newspaper. One article especially interested him. It spoke of the services which were to be held the next day, the fourteenth of December, at Mt. Vernon. The article mentioned the fact that as this service was to be held on the hundredth anniversary of George Washington's death, President McKinley would speak and place flowers on the General's tomb. The only thing to be regretted was that there was no way of gaining an entrance, since the key had been thrown into the Potomac at the completion of the tomb.

Samuel had by this time returned with a purchaser, and after having disposed of their fish they returned home. After taking the rust off the key they made out these words inscribed upon it, "Washington's Tomb." You can imagine John's surprise and delight, and after telling Samuel of the article which he had read, they decided to go down to Mt. Vernon the next day when the services were to be held.

* * * * *

The services were drawing to a close. President McKinley and various others had spoken, and the President was just about to put some flowers through the iron bars, when a rough looking fisherman approached and handed him a key and told his story. It was now the President's turn to be surprised, but he quietly turned and unlocking the door stepped inside and placed his tribute over the body of the "Father of His Country," then stepped outside and locked the door. Thus was the vault opened, if our story is true, after being closed to human footsteps for sixty-two years.

EARL SHIELD.

HOW A UNITED STATES MARSHAL WAS OUTWITTED BY A BOY.
—AN INCIDENT OF THE CIVIL WAR.

During the Civil war, as you know, there existed in the North two factions or parties. The one in power believed in the war; the other thought there could be a compromise without bloodshed, and were therefore called Copperheads and traitors. Political feeling was at its highest, and anything fair or foul would be done by either side to gain a point. One of the most common things done by the party in office was to make and swear to a false statement concerning some prominent man on the other side whom they wished out of the way. Having sworn out a warrant for his arrest before the United States Attorney, who, of course, was one of their party, an officer would arrest him and he would be sent to a prison in the East. Here he would wait for his trial, which would never come before the court. This was done to weaken the influence of the Democratic party.

In a certain town in Michigan this political strife was intense. Near this town lived a farmer, Smith; he was well off, possessed a large farm, and was a prominent Democrat. He had three sons in the war, but was too old to go to the front himself. Toward the close of the war the government made requisitions on every township for so many men. If these men came forward and enlisted they were given a bounty by the state, but if the required number did not enlist they conscripted them and paid no bounty. It was the custom of rich men's sons, if they were conscripted, to hire poor men as substitutes.

At this time a young man, who lived near the town, and who had been conscripted, desired to get some one to take his place. There was a poor farmer, whose wife had just died and left him

alone with two children, and to him the young man offered one hundred dollars to take his place, which the farmer, after hesitating a long time, agreed to accept. The next morning the farmer awoke and remembered that, perhaps, that was the last time he would ever have a chance to see his poor motherless children, whom he was going to leave with his sister. He went over to their little trundle bed, and finding them asleep, did not wake them, but kissed them good-bye and rushed out. When he reached the road where he was to meet the soldiers he found that they had gone by, so he set out to overtake them. When he reached the village he found that they had had their dinner and left, so sinking into a chair in the village tavern he made up his mind that he would not go. He told the men in the room his story, and that he had resolved not to go any farther, but that he was so poor he did not know how he was going to clothe his children. Now, Mr. Smith, whom, I trust, you have not forgotten, heard him and gave him five dollars, saying: "You must spend every cent of it on your children." In the room, at the time Mr. Smith did this, was one of his political enemies, who shortly after, before the United States Attorney, swore out a warrant for Mr. Smith's arrest on the charge that he had bribed a man not to enlist. This, of course, was absurd, but the attorney was a member of the party in power, so it made no difference.

At Mr. Smith's farm there was a large farm house and three big barns, one after the other, almost in a direct line, and about one hundred feet apart. A quarter of a mile from these barns was what the Michiganders call a

pinery, a dense forest of pines and underbrush, through which it is almost impossible to make headway.

One day after Mr. Smith's generous gift, while he was in the barn farthest from the road, a man in blue uniform drove up and asked if Mr. Smith was at home and where he was. This question was put to the hero of our story. It at once dawned on the boy's mind that this man was a United States officer who had come to arrest his father, in accordance with rumors afloat. In order to warn his father he replied: "I will go and get him; he is in the barn." To which the officer answered: "No, I will go with you." Knowing that his father was in the farthest barn, the boy led the officer to the first barn, and going inside, called his father, but getting no response, said to the officer: "It's very funny; I saw him here a few minutes ago." All this time he was racking his brain to think how to warn his father. At last he was successful. Turning to his little brother John he said: "It's school time, John, you'd better hurry up and go." But John, boylike, wished to stay and see everything. He, at last, almost drove him to school. When he reached the gate our hero ran to him, saying: "Wait a minute, John, I want you to tell Joe Crane something," but when he reached him he said: "Go to the last barn and tell father the marshal has come to arrest him, and to run for the pinery." He then returned to the marshal and commenced to talk to him, saying: "My father will be around in a minute or two." But all the time he had every nerve strained to keep the marshal from

getting from behind the barn where he could see his father. At last the marshal became suspicious and told him he believed that he was lying to him. "Young man," he said, "show me where your father is or I will arrest you." The boy, looking around the corner of the barn, saw his father almost at the edge of the pinery. "If you want to see him, there he is," he said, pointing toward him.

Words cannot express the wrath of that marshal. He said to the boy at last: "You will have to go down to the pinery and find your father for me." The boy was a country boy and thought that whatever the marshal said he must do. The farm hand came up just then and the boy told him to hitch up the horses and wagon quick. Then he told the officer that they would drive down to the pinery. While the farm hand was fixing the horses' collars the boy told him what had happened, and for him to drive to town with all speed and get some men. Away dashed the wagon, and the marshal quickly exclaimed: "Where is he going?" "He is going," said the boy, "to tell some of father's friends." The marshal was now wild, but his respect for his skin was very great and he soon drove off, but in an opposite direction.

In about an hour the wagon load of men came with shot-guns and rifles. They went down to the pinery and blew the dinner horn, and at last found Mr. Smith. The boy was complimented on all sides for his shrewdness and bravery, as he had saved his father from arrest for a crime he had never committed.

EDWIN SUTTON.



NEWSPAPER READING.

A newspaper is written for everybody, and everybody reads it, rich and poor, educated and uneducated alike. They read it to keep abreast of the times, to know what matters are daily occurring, and to learn the opinions of others on important questions of the day.

In this way the newspaper, like the school, becomes a great educator, and as in school we carefully select the studies we pursue, so in reading the newspaper we should choose for ourselves that matter from which we may derive the greatest benefit. Injudicious reading of newspapers is likely to prove just as harmful as proper discrimination in reading them will prove beneficial.

Above all, do not read everything the daily newspaper contains. Many devote themselves for hours to its columns, reading every word from editorials and foreign news down to advertisements, thus wasting much time that might be far more profitably spent, and, after all, in the end retaining little, and that, generally, the least important.

Then, too much newspaper reading unfits one for the perusal of any book containing thoughtful matter. It is like trying to study after playing a game of foot-ball. An inveterate newspaper reader lacks the power of concentration. Changing constantly from one subject to another, hurrying through each article,

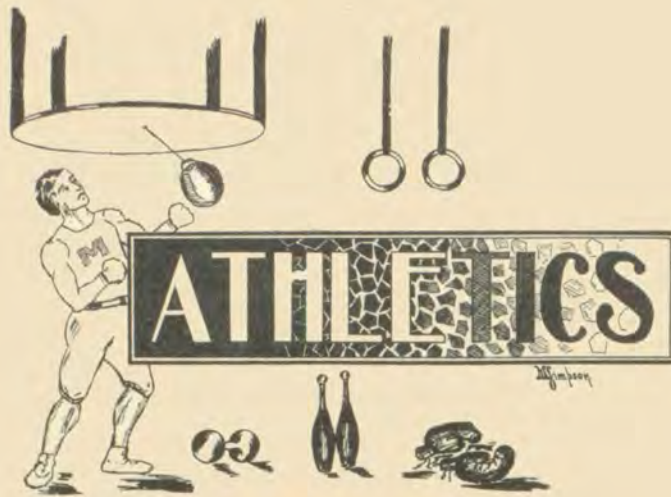
totally incapacitates him for deep research or thoughtful inquiry.

It is not the object of this article to instruct any one in what he should read of a newspaper. Each one, as before stated, must choose for himself. The sporting columns contain matter of interest to the athlete and sportsman, the latest murder trial contains material for the lawyer and detective, and the market reports are for the broker and merchant, and so we might run through the paper, finding in each column items of interest to someone.

There are, however, certain parts of a newspaper which everybody should read. These parts contain the leading events in politics in our own country and the foreign news which gives condensed reports of affairs in other lands. The editorials, though they have lost much of their importance in this age of rapid communication, should be of interest to all, and do, to a great extent, stamp the character of the paper.

Those who read the newspapers for entertainment alone would do well to devote the time spent this way to reading standard authors or magazines, wherein better literary style and more select material are to be found. So much time should not be wasted with the daily newspapers. They should not be read for entertainment, but for up-to-date information.

H.



Our foot ball season, as far as the first team was concerned, terminated in the game with Central, not because that game was lost, for in all probability the team would have disbanded even if that game had been won. All interest centered on this game, and as soon as it was over the team naturally broke up.

The season of '99 affords future managers a lesson, which was purchased at a high price by that team. The experience is, that the first of the season should be devoted to practice and games with teams around Kansas City; the middle, in playing larger teams; and finally, end the season with Central the last Saturday before Thanksgiving Day. An exception might be made to the last statement if a game can be arranged with some good out-of-town team. By following this method, the interest of the team would be centered on the last two games.

Our second team is something to be proud of. Out of a total of seven games they have won four, and scored a total of 68 points to their opponents 18. Since the last issue they have defeated the much renowned and valiant (?) Second Centrals. The score was Manual 6, Central 0. Captain Butler was easily the star for Manual.

Two days later the Kansas City, Kans., High School went down to defeat before

our second team; Manual won by the score of 17 to 0. The feature of the game was a 55-yd. run by Kendall. The following Saturday a part of the team was defeated by the Argentine High Schools and a return game was arranged. In this return game Manual, with the regular second team, easily defeated the "Smelting City" boys. The score was Manual 34, Argentine 0. It would be impossible to pick individual work in this game, for the whole team worked as a unit.

Before foot ball is entirely forgotten this year, I will take the responsibility of advocating the promotion of either an inter-state High School league, or an inter-city High School league. If such an organization could be formed, it would place Missouri Valley High School foot ball on a higher plane.

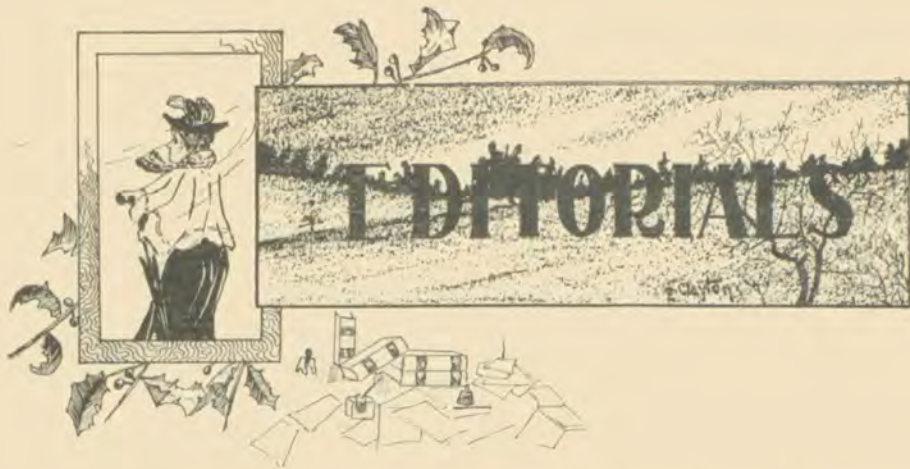
The inter-state teams should be Topeka, Ft. Scott, Central, and Manual. To carry on this league would require a great deal of money; but since each team, I think, is backed by an Athletic Association, the plan, it seems to me, is feasible.

The inter-city league teams might be Kansas City, Kansas; Central; Westport, and Manual. This organization, of course, would not require much financial backing; but the teams might not compare as well in strength as in the inter-state league.



SECOND FOOTBALL TEAM.

| | | | | | | |
|-----------------------|-------------------|-----------------------|----------------|------------------|------------------------|-------------|
| | BARRETT, E. G. | RUSSELL, C. | KENDALL, R. H. | GILLHAM, R. E. | MCCLURE, L. G. | |
| WHITEHEAD, Sub. R. G. | | | | HOPKINS, Mascot. | | FORD, L. E. |
| | BADER, Physician. | BUTLER, (Capt.) L. H. | BLOCK, Sub. | SHIELDS, Q. B. | CAMPBELL, (Mgr.) F. B. | |



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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.

In the delay of the work on our new wing caused by the hod carriers' strike, and in the belated issue of our November number, caused by the printers' strike, we are receiving an object lesson to supplement what we may be learning

about these troubles in the abstract in our study of political economy. It is not the purpose of THE NAUTILUS to take sides on the labor question, but one thing may be stated with certainty, that these difficulties have their cause in ignorance; and this ignorance is not all on one side. These troubles will not cease till education is made broad and sympathetic enough to dignify by a wholesome love for labor, and to adorn this labor with intelligence and true scholarship. If the influences and forces toward this end now at work in our Manual Training High School could be made universal, the labor question would be solved in a few years. Respect for labor can come only through an intelligent comprehension of its meaning and its difficulties. Respect for capital can come only through an education that can look deeper than to regard wealth—one of the necessary conditions of labor—as the enemy of labor.

That the fashion of wearing bird skins on ladies' hats is becoming obsolete, may be shown by the marked decrease in the number worn by the ladies of our city. This fad has been fought desperately for the last two or three years by societies organized among the

ladies under the name of "Audubon" societies. The members not only abstain from wearing such trimmings on their hats, but they influence others by example and petition. It has been found that thousands of birds are annually slaughtered simply to satisfy a fad. It has also been found out that in order to procure aigrettes, the plume of the snowy heron, it necessitates the destruction of the parent birds at a time when the young must be cared for, and hence the destruction of the young. Woman has never looked at this question in this light until lately, and now her sympathetic nature is beginning to shrink with horror at the thought of wearing scalps on her head.

The foot ball season is ended and we are now looking forward to our next annual field day. This will be the second field day between the two High Schools, and both schools look forward to it with hope of victory. Manual hopes to maintain her standing of victor and Central is striving to become victor. This contest is a measure of ability in several branches of athletics, and any pupil who can do any one thing well will have an opportunity of measuring his ability with that of the opponent. The success of such a field day was shown last year by the interest displayed, and this year we hope to eclipse even last year.

Another century is dawning and still war remains—a black spot on the soul of a Christian nation.

As yet no plan has been adopted by means of which international difficulties may be settled. The Czar of Russia called a council of the great nations of the world to adopt a more merciful and civilized means of settling international

difficulties, but even while this council was in session warships were being built, cannon were being made, and ammunition was being poured into the magazines by the ton. The council, of course, accomplished nothing, and to-day we are still in the age of war.

The war now in progress in South Africa does not lack its principles. The sturdy, home-loving Boers believe that they are being imposed upon in that the English are flooding their country in the desire to obtain the immense wealth the country contains; likewise, the English believe they are being imposed upon in that they are being taxed heavily and not allowed to vote.

The Boers are well equipped with the modern weapons of war; they have a perfect knowledge of the country, are excellent marksmen and have sound physical endurance. The English are far superior in numbers, but they do not know the country so well as the Boers; most of their fighting is done by regiments, that being their greatest number well organized, since their battalions are broken up, part of a battalion being on duty in one place and part in another.

So far the Boers have made an excellent showing against their far more numerous enemy. They have been fighting from ambush and their skill with firearms has enabled them to play havoc with the surprised British.

It remains yet to be seen which side will be the victor. Before the war it was considered almost a certainty that England would defeat the Boers; now it looks doubtful, for the Boers have shown their earnestness and stubbornness.

It has been suggested that the Girls' Athletic Association organize a company and drill with brooms instead of guns. This would be something appropriate and pleasing as well as beneficial.

We are pleased to note the vast improvement made in our gymnasium. A skylight has been put in, giving ample light; also a ventilator, providing pure air.

As a result of this improvement the athletic association has taken on new life. Our boys turn their own Indian clubs and dumb bells, and hence the association is saved the amount which might be expended for that purpose.

With such a gymnasium and proper spirit among our athletic association boys, we hope to furnish material for base ball, field day, and foot ball teams.

The new NAUTILUS office is a result of the progress of the paper this year. Previous to this the NAUTILUS' business has been transacted any place; now all the work pertaining to the paper passes through this office. We hope to see this institution upheld by our successors, and in the end prove to be money well spent.

OUR MONDAY MORNING ENTERTAINMENTS.

November 20—The program began with a piano duet by the Misses Bertha and Mabel Writhman. Then followed a careful analysis of the life and times of Sidney Smith, the wise and witty clergyman of the Church of England, by Dr. G. W. Stone. It was very instructive, but unfortunately it had to be read fast in order to get through in time.

November 27—A well rendered vocal solo by Miss Nellie Lucas and a read-

ing by Miss Nellie Hurley prepared the way for a stereopticon lecture on France, Switzerland, Great Britian, and Ireland, by Mr. R. E. Elmer. The scenes shown were out of the general line of travel, and were exceedingly interesting for their associations. The speaker's rich voice added much to the attractiveness of the lecture.

December 4—Signora Barducci, formerly a singer at the Court of Italy, accompanied by her husband, Signor Barducci, sang several Italian songs and then, encouraged by the enthusiasm displayed, rendered in broken English the popular song "Because." She was followed by Dr. W. P. George, who gave us the English side of the war in the Transvaal. Miss Bernice Lake, a pupil of our school, closed the program with a piano solo.

December 11—A violin solo by Prof. Carl Walther, played as he played, was a piece of art fittingly introducing Prof. E. A. Huppert in a talk on "Art From The Business Side and From the Aesthetic Side."

December 18—The program was given by the pupils of Prof. E. A. Scott and Prof. K. Dillenbeck. The pianists were Misses Mary Dryden, Nettie Anderson, Florence Vance, Fannie Brueser and Mabel Howard; the readers, Misses Ida Dunham and Guilla Myrl Adams. These young ladies gave a program which was very much enjoyed by all.



THE TELESCOPE.

Of all the grand sights which the human eye can behold, the telescope has revealed its share. What could be more beautiful than the rings of Saturn, the satellites of Jupiter, or even the mountain scenery of our chilly moon? All of these, and many other sights, the telescope enables us to see, although some of them are millions of miles away.

There are two kinds of telescopes, reflectors and refractors. The former is rapidly being replaced by the latter. The chief cause of this is that reflectors are so large and do not give so clear an image as the refractor, and then lenses are made very cheap now, consequently more refractors are made.

Reflectors consist of a large tube blackened on the inside; at one end is a concave mirror of speculum metal. This mirror is so placed that the focus of its rays is in a position where it can be magnified by the eye-piece on the side of the tube. The rays of light from the body observed pass into the tube and are reflected back from the mirrors and finally magnified by the eye-piece.

Although reflectors are now replaced by refractors, there was a time when they were considered the best, and consequently many good ones are still in use. Among these is one which was owned by the late Lord Rosse's, at Par-

sonstown, Ireland. It is the largest one ever built. It has a mirror made of an alloy of copper and tin, which weighs six tons and has a diameter of six feet. The tube is fifty-six feet long and moves between two solid walls. In 1889, Mr. Common, of Ealing, England, built a five-foot reflector, which has a higher power than Lord Rosse's.

At the Paris Observatory today is a reflector nearly four feet in aperture. There are several reflectors in the United States, the largest ones being at Yerkes Observatory and Harvard.

Refracting telescopes generally consist of two main parts, the objective lens or the one which collects the light, and the eye-piece or the lens that magnifies. The objective lens serves the same purpose as the mirror in the reflector. It always has a large focal length compared with that of the eye-piece. The greater the focal length of the objective, the greater the magnifying power of the telescope, provided the eye-piece remains the same. If the objective has a focal length of seventy-two inches and the eye-piece has a focal length of three-fourths of an inch, the magnifying power of the telescope is found by dividing seventy-two inches by three-fourths inches, giving ninety-six. This telescope would have to be at least seventy-two inches plus three-fourths of an inch long.

The largest ever built will be one made for the Paris exposition in the summer of 1900. The diameter will be ten feet and the magnifying power so high as to be able to see any object on the moon as large as an elephant. This telescope is so large it will not be mounted except flat and solid to the earth. The rays of light will be reflected to it by means of mirrors. One of the largest refractors is Lick telescope, which was built in 1887. It is well located, being on the summit of Mount Hamilton, California, 4300 feet above the sea. The objective of this telescope is thirty-six inches in diameter. Many discoveries have been made with it, including the fifth satellite of Jupiter, which Dr. E. E. Barnard discovered in 1892.

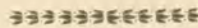
The Yerkes refractor at Lake Geneva, Wis., is a strong rival of the Lick refractor, in fact, it is the largest refractor in the world. Its object glass is forty inches in diameter and the tube sixty-five feet long. This telescope was exhibited at the World's Fair in Chicago, 1893.

The refracting telescopes of Pulkowa, Russia, and Mendon, France, and Nice, France, have an aperture of thirty inches. There is one in Vienna which is twenty-seven inches in diameter, one

in Washington, D. C., twenty-six and one-fourth inches in diameter, and one at the University of Virginia the same size. There are several others ranging from twenty-three to twenty-six inches in diameter. Some of these are Cambridge, Greenwich, Paris, and Princeton. Harvard has a refractor at observatory known as Boyden Observatory. It is in Arequipa, Peru, 8000 ft. above sea level. There is also one at Lowell Observatory in Arizona, 7000 ft. above the sea.

A very good and cheap miniature telescope can be made by any one handy with tools. For an objective, get a number thirty spectacle lens, and for the eye-lens get a number five. Then make two tin tubes, one made so as to slide smoothly into the other. Then fasten the number thirty into one end and the number five into the opposite end of the tubes. The combined length of the two tubes should be at least forty inches. The image will appear clearer if the tubes are blackened inside. This telescope will magnify six times and the mountains on the moon, spots on the sun, satellites of Jupiter, and some of the double stars may be seen with it.

VIRGIL H. JAUDON.



TACHINA AND SYRPHUS FLIES OF JACKSON COUNTY.

I. TACHINIDÆ.

In writing of this family I will first explain a few terms used in its classification. The term *macrochaetæ* designates the large, stout bristles, in contrast to the smaller bristles and hairs. The *frontal bristles* are two rows of macrochaetæ descending from the top of the head to or below the insertion of the antennæ. A pair of macrochaetæ placed

among the ocelli are known as the *ocellar bristles*. Two or more pairs of forwardly directed macrochaetæ situated between the frontal bristles and the eyes are the *orbital bristles*. That portion on each side between the lower end of the eye and the opening of the mouth is the *cheek*. Below the antennæ is the *facial depression*, with the *facial ridges* on each side. The *vibrissæ* are two macrochaetæ

tæ at the lower ends of the facial ridges.

In the middle of the dorsum of the thorax are two rows of macrochaetæ known as the *acrostical*, followed by two rows known as the *dorsal*; of these four rows the macrochaetæ in front of the transverse suture of the thorax are called *præ-sutural* and those behind it the *post-sutural*. Continuing latterly there is another row known as the *intra-alar*, and which seldom extends in front of the suture only by a single bristle called the *præ-suturæ intra-alar* bristle. On the transverse, triangular piece on the side of the thorax and between the front and middle coxæ are situated macrochaetæ known as the *sternopleural*; if there is only one it is the posterior, if two they are the anterior and posterior, if three there are two anteriorly and one posteriorly, and when four they form a downwardly curved row.

On the dorsum of the abdomen are macrochaetæ which are called *discal* when situated near the middle of the length of the segment, and *marginal* if near the posterior margin.

The venation adopted is that used by most students of flies, rather than that proposed by Professor Comstock. The vein marked V_1 in the Comstock system corresponds to vein IV of the system chosen; also the cell numbered III_5 is called the *apical cell*. The deflected portion of the fourth vein is known as the *apical crossvein*.

As to the habits of these insects, it is plainly to be seen that nature has not provisioned as wisely as in other groups. The Tachinidæ often deposits far too many eggs upon a single caterpillar, which causes the starving of a greater or less number, or perhaps all, of its newly hatched larvæ. Again, the egg is merely attached to the external surface of the host, and if molting takes place before it is hatched the parasitism is lost. In spite of these characters,

however, the Tachinidæ stand first among the beneficial flies.

TABLE TO THE GENERA OF OUR LOCALITY

| | | |
|-----|---|-----------------------|
| 1. | Palpi present, well developed... | 4 |
| | Palpi absent or rudimentary, facial ridges never bristly on more than the lowest fourth, first vein bare. | 2 |
| 2. | Eyes bare | 3 |
| | Eyes distinctly hairy. | <i>Linnaemyia</i> |
| 3. | Face on the sides bearing hairs or macrochaetæ. | <i>Trichophora</i> |
| | Face on the sides bare | <i>Ocyptera</i> |
| 4. | First vein bare | 5 |
| | First vein wholly or partly bristly | <i>Chaetoplagia</i> |
| 5. | Face on the lower half of its sides bare. | 6 |
| | Face bearing macrochaetæ or bristly hairs on at least a portion of the lower half of its sides | 10 |
| 6. | Eyes bare, or with indistinct, short, sparse hairs | 7 |
| | Eyes distinctly hairy | 8 |
| 7. | Antennæ reaching at least the lowest fourth of the face | <i>Parachaeta</i> |
| | Antennæ not reaching below the lowest third of the face | <i>Pachyophthalma</i> |
| 8. | Facial ridges never bristly on more than the lower half | <i>Exorista</i> |
| | Facial ridges bristly on at least their lower two-thirds | 9 |
| 9. | Bend of fourth vein bearing a long appendage or distinct fold | <i>Euphorocera</i> |
| | Band of fourth vein destitute of an appendage or fold | <i>Phorocera</i> |
| 10. | Eyes bare, or with indistinct, short, sparse hairs | 11 |
| | Eyes distinctly hairy | <i>Winthemia</i> |
| 11. | Ocellar bristles present | 12 |
| | Ocellar bristles wanting | 15 |
| 12. | The ocellar bristles directed obliquely forward | 13 |
| | The ocellar bristles curving backward, very robust | 14 |
| 13. | Last section of fifth vein less than half as long as the preceding section | <i>Metopia</i> |
| | Last section of fifth vein almost as long as the preceding section, hind crossvein nearly midway between | |

- the small crossvein and the bend of the fourth vein . . . *Metaphlagia*
14. Front opaque, the vitta deep brown or black *Spallanzania*
 Front shining, largely semi-translucent yellow, the vitta light yellowish *Gonia*
15. Vibrissæ inserted near lower edge of face *Archytas*
 Vibrissæ inserted near the middle of the face, cheeks broader than the eyeheight *Microphthalma*

SPECIFIC CONSIDERATION.

Genus *Linnaemyia* Desv.

L. comta Fallen. Medium or large size, possessing three dorso-postsutural and three sternopleural macrochaetæ. Cheeks are destitute of black macrochaetæ near the centre, frontal vitta light yellow, hind crossvein nearly straight; length 9 to 12 mm. Found over greater part of the United States. My specimen was taken on the wing July 12th, near Atherton, this county.

Genus *Trichophora* Macq.

T. ruficanda v. d. w. The second and third segments of the abdomen bear only marginal macrochaetæ, apex of fourth segment yellowish; the third vein bristly almost to the crossvein. Ocellar bristles absent; scutellum wholly black; length 8 to 10 mm. This is a very common species, and is to be taken during the whole season. I have never noticed it reported this far West, it being an Eastern species.

Genus *Oomyia* Latr.

O. carlinae Desv. A very pretty insect, with black abdomen, the sides of the second and third segments partly or wholly reddish yellow; three dorso-postsutural and two or three sternopleural macrochaetæ, scutellum with two pairs of long marginal and a short apical pair of macrochaetæ; length 8 to 12 mm. Found in many parts of the United States, and has been reported from Mis-

souri before. My specimens were taken on the 4th of July.

Genus *Chaetoplogia* Coq.

C. atripennis Coq. This, the only species of the genus, is black; the second antennal joint and the palpi yellow; wings blackish along the veins of the costal half; length 7 mm. Known heretofore only from District of Columbia and Southern Illinois. My specimen was taken by sweeping rank vegetation, July 10th.

Genus *Parachoeta* Coq.

P. bicolor Macq. General color is black; first two joints of antennæ, palpi, hind corners of thorax and the scutellum yellow; sides of first three segments of abdomen has a tinge of yellow; orbital bristles absent, frontal bristles descending to base of third antennal joint; thorax thinly gray pollinose, marked with four black vittæ, four dorso postsutural and three sternopleural macrochaetæ, scutellum bearing four pairs of long marginal; wings hyaline, the bases brown; calypteres brown; length 13 mm. Known heretofore only from New York. My specimen taken Aug. 1st.

Genus *Pachyophthalma* Dr. and Berg.

P. floridensis Town. This species has the thorax gray pollinose and marked with three vittæ, rest of body black except fourth segment of abdomen, which is largely or wholly yellow; length 5 to 9 mm. Is found principally in the Southern portion of the United States. I obtained this species by sweeping rank vegetation, July 19th.

Genus *Winthemia* Desv.

W. quadripustulata Fabr. Palpi, scutellum and apex of abdomen yellowish; third antennal joint twice as long as the second, usually a marginal pair of macrochaetæ on second abdominal segment, which is generally wanting in the males; length 6 to 12 mm. This is a very widely distributed species, being

found in both North America and Europe. I have collected this species throughout the season.

Genus *Metopia* Meig.

Mleucocephala Rossi. This, the only species of the genus in our fauna, is black, including the palpi, sometimes the sides of the abdomen partly yellow; three dorso-postsutural and two sternopleural macrochaetæ; length, 6 to 8 mm. Also common to both America and Europe. Was taken June 19th.

Genus *Metaphlagia* Coq.

M. accidentalis Coq. This fly is black; the first two joints of the antennæ and the palpi yellow; three dorso-postsutural and three sternopleural macrochaetæ; length 7 mm. Only one specimen, the type of this species, was heretofore known. Mr. Coquillett collected his specimen in San Diego county, Cal., and described the genus and species in the Sept., '95, number of the Journal of the New York Entomological Society. My specimen was taken on the bank of Little Blue creek near Atherton, July 4th.

Genus *Spallanzana* Desv.

S. hesperidarum Will. Facial depression twice as wide as either side of face; bristles on the latter in two rows; pollen on sides of front yellowish, on face white; third joint of antennæ in the male three, in the female one and one-half times as long as the second; penultimate joint of the arista in the male four times, in the female slightly over twice as long as broad; length 10 to 12 mm. Heretofore reported from eastern part of the United States. To be taken by last of May.

Genus *Gonia* Meig.

G. capitata DeGeer. With four dorso-postsutural and four sternopleural macrochaetæ and with two marginal macrochaetæ on the first segment of the

abdomen; two pairs of orbital bristles; the head projects in front of the eye only slightly more than the horizontal diameter of the eye; abdomen black, with sometimes sides reddish or yellow; length 9 to 14 mm. Very common species and is met with throughout the season.

Genus *Archylas* Jaen.

A. analis Fabr. Third antennal joint strongly convex on the upper side; four dorso-postsutural and three sternopleural macrochaetæ; sides of face destitute of black hairs; abdomen shining, tinged with blue, not pollinose; thorax opaque gray pollinose, marked with five black vittæ; scutellum yellow; length 11 to 15 mm. A very common species.

A. aterrima Desv. Like the preceding species, this one has the third antennal joint strongly convex on the upper side; four dorso-postsutural and three sternopleural macrochaetæ; it differs from *analis*, however, by the possession of black hairs on sides of face; thorax bluish, subshining; abdomen blackish, strongly tinged with blue; first joint of arista scarcely longer than wide; length 10 to 15 mm. Also a very common species in this state.

Genus *Micophthalma* Macq.

M. disjuncta Wied. This, the only species of the genus, is black; the antennæ, face, cheeks, palpi and apex of proboscis yellow; three dorso-postsutural and three sternopleural macrochaetæ; thorax grayish pollinose; base of second, third and fourth segments of abdomen silvery; length 12 to 15 mm. Excepting *Trichophora ruficanda* I name this species the most frequently met with in our locality. I do not know, however, of its being reported from Missouri before.

Genus *Exorista* Meig.

E. confinis Fall. This small black fly has four dorso-postsutural and four

sternopleural macrochaetæ; palpi black: front in male three-fourths, in female one and one-sixth times as wide as either eye; third joint of antennæ in the male five, in the female three times as long as the second; scutellum largely yellow; second and third segments destitute of discal macrochaetæ; length 5 to 7 mm. A very common fly. It is known from Austria.

Genus *Euphorcera* Town.

E. daripennis Macq. With two or more macrochaetæ on the front side and near the middle of each middle tibia; head at the vibrissæ noticeably shorter than at base of antennæ, palpi yellow; three sternopleural and four dorso-postsutural macrochaetæ; second and third segments of abdomen destitute of discal macrochaetæ; facial ridges bare outside of the bristles; length 5 to 14 mm. A very common and widely distributed species. To be collected throughout the year.

Genus *Phorocera* Desv.

P. parva Bigot. With four sternopleural and four dorso-postsutural macrochaetæ; palpi black, sides of front destitute of macrochaetæ outside of the frontal bristles, except the orbital bristles of the female; frontal bristles descending below the arista, the latter thickened on its basal third; third joint of antennæ in the male six, in the female four times as long as the second; middle tibiæ each bearing a single macrochaetæ on the front side near the middle; length 6 mm. Heretofore known from Arkansas and California.

P. leucaniæ Coq. With only three sternopleural and three dorso-postsutural macrochaetæ; abdomen wholly covered with pollen, opaque, first two segments each bearing a pair of marginal, the third with a marginal row, the fourth with a discal and marginal row of macrochaetæ; wings hyaline, base of

third vein bearing two bristles, fourth vein strongly arcuate beyond the bend, calypteres white; length 7 to 11 mm. Not a very common fly here. I took my specimen on wing near Atherton April 21st.

II. SYRPHIDÆ.

I use the venation proposed by Prof. Comstock for this family. On page 471 of his manual is a good illustration of the venation of this group of flies, and I will refer the reader to that book for any term used in the following paragraphs on these insects.

TABLE TO GENERA.

1. Bend of vein V_{1+2} at junction with last cross-vein bearing an appendage. 2
Bend of vein V_{1+2} destitute of such appendage 5
2. Spurious vein not passing junction of vein V_{1+2} with last cross-vein 3
Spurious vein passing junction of vein V_{1+2} with last crossvein. *Mesograpta*
3. Scutellum yellow 4
Scutellum green 8
4. Last two segments of abdomen possessing three longitudinal black bands on dorsum . . . *Allograpta*
Last two segments of abdomen not possessing longitudinal bands on dorsum *Shacrophoria*
5. Cell III_5 deeply notched anteriorly by backward curving of vein III_{4+5} 6
Vein III_{4+5} nearly straight opposite cell III_5 7
6. Thorax, on dorsum, marked with three broad, black, longitudinal bands *Helophilus*
Thorax destitute of such bands *Pterallastas*
7. Crossvein at proximal end of cell VII_1 longer than crossvein at proximal end of cell 1st V_2 *Syritta*

Crossvein at proximal end of cell VII₁ and crossvein at proximal end of cell 1st V₂ same length

. *Tropidia*

8. Segments of abdomen possessing longitudinal black bands in median dorsal line *Platychirus*

Segments of abdomen destitute of such lines *Syrphus*

SPECIFIC CONSIDERATION.

Mesograpta polita Say. This is a very common fly. It is to be found quite frequently sipping the juices from decaying fruit. Between this and the following species it is very difficult to distinguish. Besides being larger it has the antennæ of a darker color. It is known as the corn-feeding syrphus fly on account of the habits of the larvæ.

M. marginata Say. As stated above is smaller than preceding species. It is quite common and found under similar conditions as *polita*.

Allograpta obliqua Say. This is another very common species. Of about the same size as *Mesograpta polita* and at first glance resembles it very closely. It is known by the three longitudinal bands on dorsum of last two segments of abdomen.

Spaerophoria cylindrica Say. Resem-

bles foregoing species very closely, but can be easily distinguished by characters given in table. The larvæ feed upon aphids.

Helophilus similis Macq. This is one of the largest species of the family. It closely resembles members of *Syrphus* in coloration. I have collected this species early in April.

Pterallastes thoracicus Loen. In coloration this species diverges from other species of the family. The thorax is solid yellow and the abdomen black. Not very common.

Syritta pipiens Linn. One of the smaller species of this family, yet one of the most beautiful. General color black. Sides of and abdomen marked with yellow. Larvæ feed upon decaying vegetable matter. Common.

Trophidia quadrata Say. Rather robust, with general color dark. Common in midsummer.

Platychirus quadratus Say. It resembles *Mesograpta* closely in size and color, but is slightly darker. Larvæ feed upon decaying vegetable matter.

Syrphus americanus Wied. A very common insect with usual coloration of family. The larvæ are aphidophagous.

C. F. ADAMS.

EXPLANATION OF PLATE ACCOMPANYING.

Winthemia quadripustulata.

Archytas aterrima.

Exorista confinis.

Pachyophthalma floridensis.

Ocyptera carolinæ.

Archytas analis.

Spallanzania hesperidarum.

Gonia capitata.

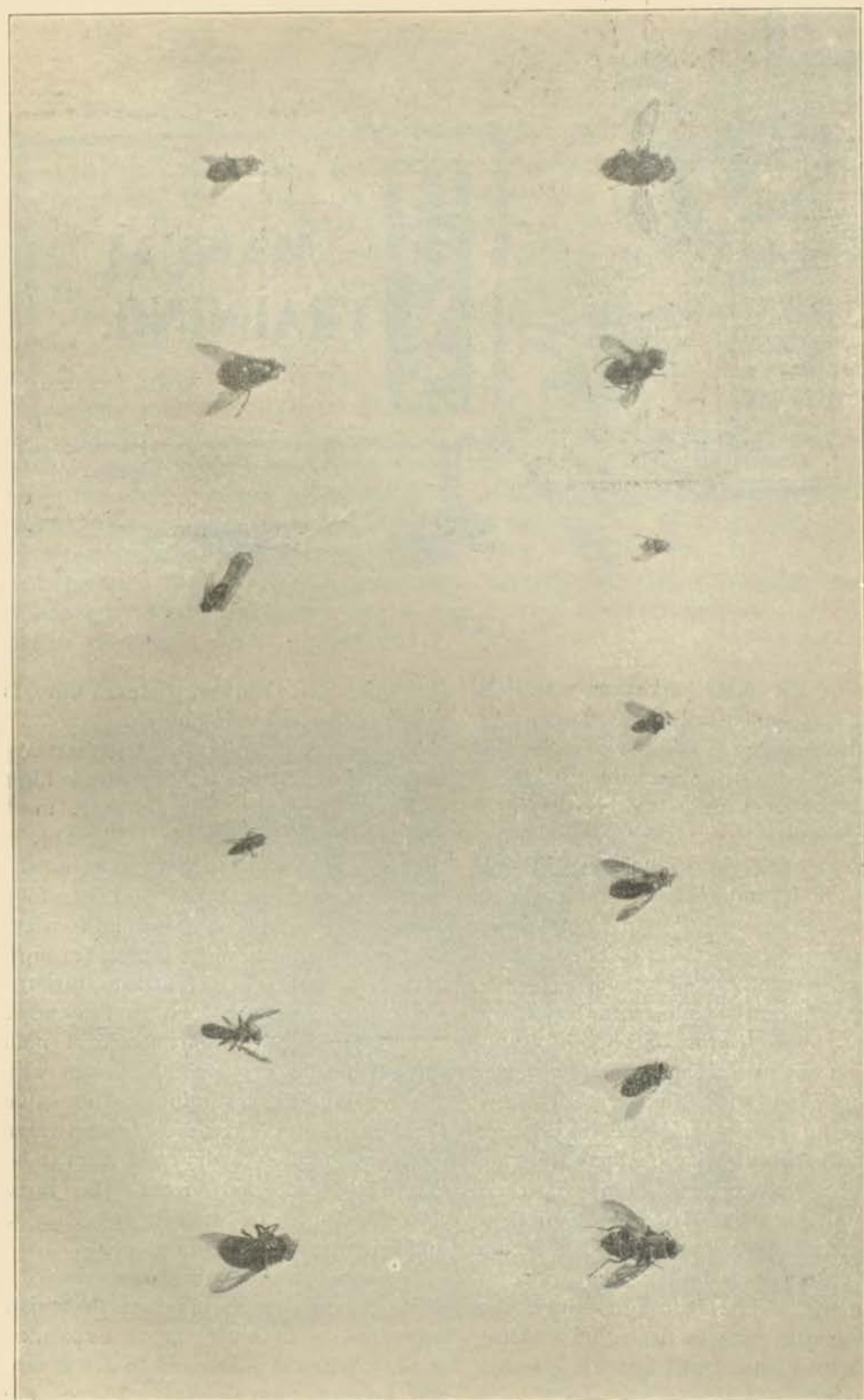
Metopia leucocephala.

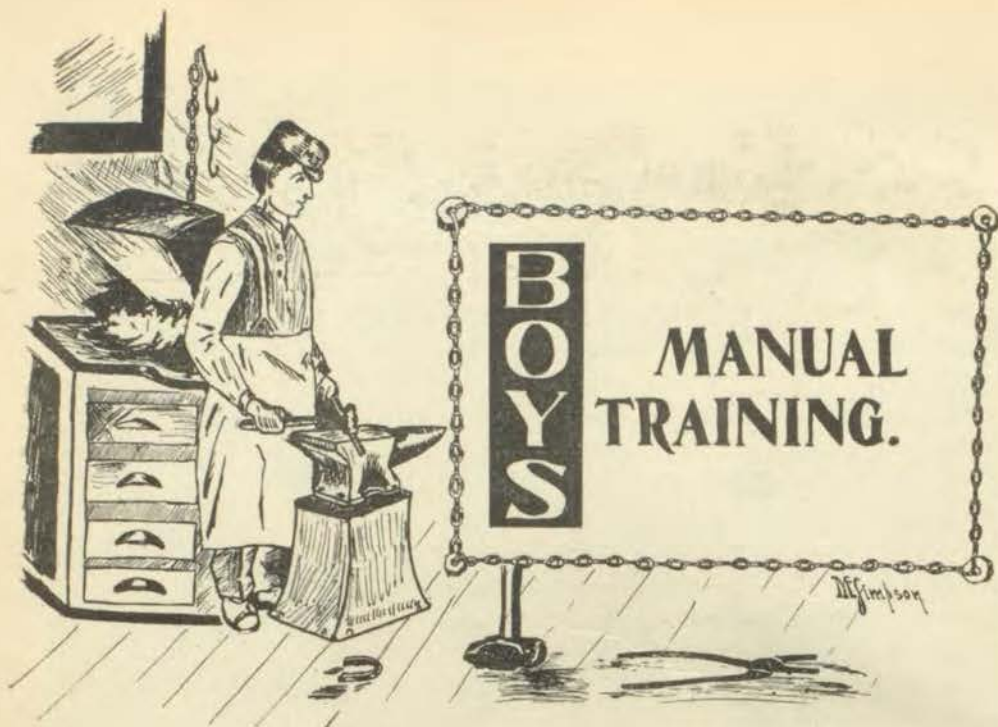
Phorocera parva.

Trichophora ruficanda.

Euphorocera claripennis.

Microphthalma disjuncta.





GLUE.

One of the most important materials used in the wood-working departments of our school is glue. While we might dispense with it in the majority of cases, still in the most difficult exercises it is very necessary.

Glue is one form of gelatin, but on account of its impure condition it is used as an adhesive medium for wood, paper and several other articles. The following is a method of preparing glue: Glue is originally made from the skins, tendons, bones, horns, and hoofs of animals. They are steeped for a few weeks in a pit filled with lime water. This is done to remove all the blood and any flesh that may have adhered to the gelatinous properties. This is then taken out of the pit, dried, and stored.

Next it is washed and boiled in hemp nets hung in open boilers that have a tap at the bottom through which the liquid gelatin may be drawn off. After boiling for about eight hours it is tested and when it forms a stiff jelly it is drawn off and boiled again with additional water. This operation is gone

through with about six times. Care is taken not to boil it too much.

The gelatin is next run into a setting-back tank where the temperature is high enough to keep it in a liquid state until all impurities can subside. The glue is then run into wooden troughs about six feet long, two feet broad, and one foot deep, until it becomes a stiff jelly. Water is then allowed to flow through troughs and the glue is cut into uniform squares of about an inch in thickness.

The squares are then placed in nets spread out to dry in the open air. The spring and autumn weather give the best results. It takes from twelve to eighteen days to dry, and it must be carefully protected from the rain. After drying it is washed to clean it and give the well known glaze.

In heated water glue dissolves to a slimy syrup, which is of a brownish color and is in a very much expanded state. When it is allowed to dry it sets and becomes very hard. There are also glues obtained from fish bones and bodies of small animals.

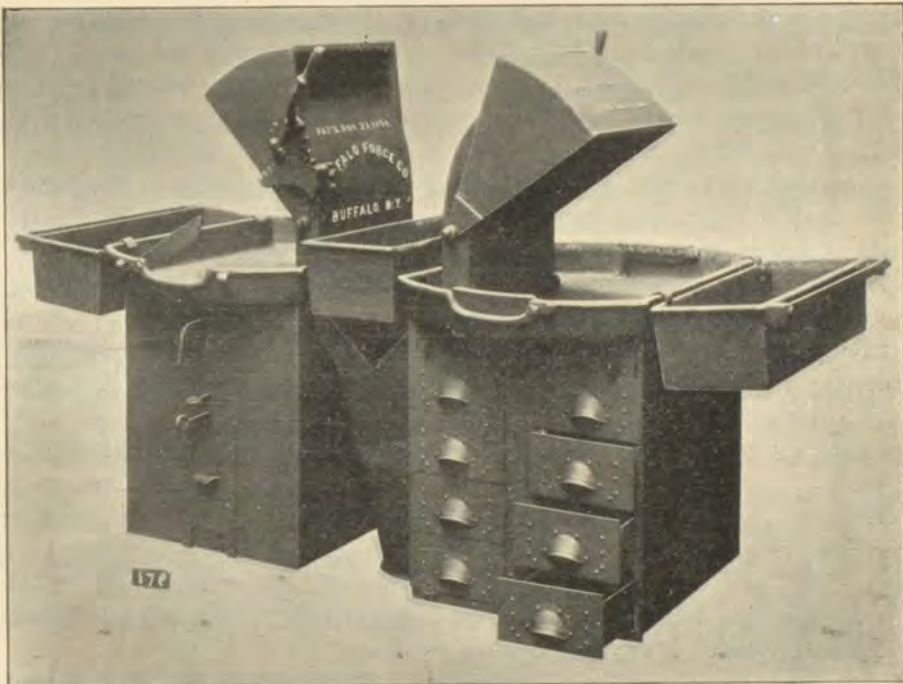
THE NEW FORGES.

The forges for the new shops are now completed and are ready to be set up as soon as the exhaust ducts are in and the floor laid. They were made by the Buffalo Forge Co., of Buffalo, New York. The accompanying cut is a picture of them taken after completion.

The box in front is to be used for the fuel and also as a tool bench. The forges are placed side by side so that the smoke may be drawn off through one outlet. The exhaust ducts are placed under the floor, thus doing away with the clumsy overhead piping that would otherwise be necessary. The box between the forges is for water, which is to be used for cooling and tempering the metal. The projections at the front are, beginning at the top; tweer shaker,

tweer dumper and blast damper. The tweer shaker is to shake the ashes out of the fire pan, the dumper is to let them down under the forge, where they may be taken out at the small sliding door at the bottom of the forge.

The boys will wear the regulation jumper and overalls, and the school will furnish the leather apron, there being one for each forge. The drawers at the front are receptacles for the boys' shop clothes and also for unfinished work on hand. These drawers are so made that they may be padlocked to prevent misplacement. The article on "The Shop," in the last issue, should give one a fair comprehension of the arrangement of the forge shop.





GIRLS' MANUAL TRAINING.

"Girls, do you remember pretty Margaret Vincent who used to be in our sewing class at Manual?"

The speaker, a bright, lively girl, and the four other girls addressed, were together that afternoon to have a social chat and to renew old friendships.

"Yes, we do," echoed the chorus.

"Well, you know," continued Agnes, "how quiet she always was and how attentive to her work." The girls assented with a nod.

"Girls, I went to see her yesterday. I had not seen her for more than a year. She is prettier than ever, but has been having such a time. Her mother is an invalid and her father died last summer, leaving them with very little money. I found Margaret sewing, and scolded her for having failed to visit me; but she glanced at her mother with the most cheerful little look and said, 'I have been earning my living since you last saw me.'"

"She told me all about her work and you can never-guess what she has been doing. She has been making lovely, fancy dresses for debutantes, and wedding clothes too. Margaret told me that she had never had any outside training, but all she knew was what she had learned at Manual. She drafts all of her own patterns. During our con-

versation she once said, 'O, Agnes, how thankful I am that I was permitted to learn sewing while in school. I would never have been able to take care of my dear mother had I not known.'"

"Girls, I am ashamed of us. Just think how we have wasted our time. I do not believe that I could sew one stitch."

"Margaret took me into an adjoining room and showed me one of the prettiest wedding dresses that I ever saw. It was an organdy, exquisitely made and almost every stitch of it was made by hand. I also noticed that she held her goods in the position we were taught, when she whipped on the lace. 'Whose are these, do you suppose,' she said with a queer little laugh. I turned and looked at her face and by the expression on it I knew they were her own.

"You can't guess, girls, whom she is going to marry!" and with this exclamation, Agnes jumped up and danced around the room. Knowing that she had some unexpected news to tell them, they all sat waiting with ill-concealed impatience until Agnes should quiet down.

"I just must tell you, I cannot wait any longer," Agnes burst out. "It is—is—Charles Clark. He is the nicest boy. I—" Here she was interrupted by the

different exclamations from the girls.

"O, girls, I thought we had made more of an impression on Charles' mind than that. Why, all of us have been loving Charles all these years and—Oh, it is just too funny."

"Wait, girls, if you will only give me a chance to tell the rest. I saw Charles on my way here and congratulated him. He told me that he had chosen Marga-

ret for her sweet, self-sacrificing nature, and lastly, because she knew how to sew."

Lively little Irene Mansfield broke in mischievously, "I see quite plainly that if we girls ever expect to get married we will have to learn to sew," and the meeting broke up with merry laughter from the girls. REBECCA JONES.



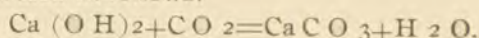
WATER FROM A STANDPOINT OF DOMESTIC SCIENCE.

When one begins the study of cooking he finds that almost every change, simple as it may be, is a chemical change. Take for example one of the simplest and most frequent operations, that of boiling water.

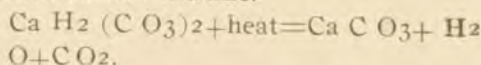
Most people have noticed a white lining in a teakettle after it has been in use for sometime. If you ask what it is you will probably be told that it is "fur" and that it boiled out of the water. You will be informed that hard water causes a heavier deposit of "fur" than soft water. They are probably ignorant of the cause of hard or soft water. From a chemical standpoint the hardness or softness of water is caused by the presence or absence of one or more compounds of some of the metals of the calcium group. Hard water contains some substances which attacks soap, forming an insoluble compound, which prevents the formation of a lather, while soft water lathers quite readily. Hard water also has a higher boiling point than pure water. Hard waters are divided into two classes, temporary and permanent.

If you take a clean test-tube and fill it half full of lime-water ($\text{Ca}(\text{OH})_2$) then by means of a clean glass tube, pass the air from the lungs slowly

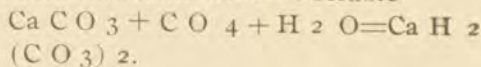
through this, you will notice a cloudiness first, then a precipitate which dissolves after the breath has been passing through for sometime. The explanation is simple. The air from the lungs contains about four per cent carbon dioxide (CO_2) produced by the oxidation of the tissues of the body. When brought in contact with lime-water normal calcium carbonate (CaCO_3) is formed as follows:



By heating, this is again changed to the normal carbonate with the liberation of carbon dioxide.



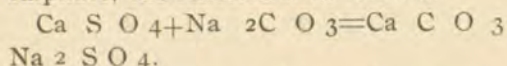
When carbon dioxide is passed in longer, the normal carbonate is changed to an acid carbonate which is soluble.



It will be noticed that hard water has at some period of its travel flowed over or through limestone rocks. In falling through the atmosphere as rain it has dissolved some of the carbon dioxide present. Hence, when it comes in contact with the limestone, which is principally composed of calcium carbonate, it is enabled to change and dissolve some of the carbonate, the amount de-

pending upon the amount of carbon dioxide contained in solution. If the rocks are at the surface, but little of the stone is dissolved, while if the limestone is some distance underground, the water percolating through the limestone will dissolve a larger amount than if it simply ran over the surface. This accounts for the fact that deep well water is generally harder than river water.

Water which contains calcium sulphate (CaSO_4) or magnesium sulphate (MgSO_4) is what is called permanently hard. This is not remedied by boiling and the water can only be softened by the addition of some chemical compound which either precipitates or counteracts the action of the substance in solution. This is generally accomplished by the addition of a "soap powder" or "washing compound," either of which contains some soluble carbonate, generally sodium carbonate (NaCO_3), or a free hydroxide. When a soluble carbonate is added to water containing calcium sulphate, the reaction is as follows:

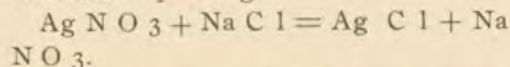


With magnesium sulphate the reaction is analogous, magnesium carbonate being formed instead of calcium carbonate. These precipitates, as before shown, are insoluble in water which is free from carbon dioxide, hence the water is softened while the by-product, sodium sulphate (Na_2SO_4), has valuable cleansing properties; so that hard water after the addition of a "washing compound" is

really better for washing purposes than soft water. The free hydroxides prevent the action of the calcium or magnesium salt upon the soap. The hydroxides generally used are ammonium hydroxide (NH_4OH) or ammonia and sodium hydroxide (NaOH) or "lye."

Water containing a large amount of mineral or organic matter is unfit for general use either for drinking or cooking. Water suspected of containing organic impurities is tested in two ways. The first is by the addition of a weak solution of potassium permanganate (KMnO_4) to the water until it is colored a light pink, then it is covered and allowed to stand for several hours. If at the end of this time the color is destroyed, organic matter is present. If the color is but slightly changed the water is fit for general use.

The other test is with silver nitrate (AgNO_3). A little of the solution is added to a sample of the water to be tested and if a heavy precipitate or a deep opacity results there is present too great an amount of soluble chlorides. While the chlorides themselves are not injurious they are never present in fresh water to such an extent unless the water is contaminated by sewage.



If water containing organic matter must be used it should always be boiled and then aerated by shaking in a jar half filled with air.

J. WARNER KEITER.





Kind editors our last issue was late in appearing, I know, but on account of the printers strike in our city, we beg of you this time to excuse us.

One of our neatest and most attractive exchanges is "The Crimson." If you haven't it on your list, "put it there."

FOUR EPITAPHS.

"Deep wisdom, swelled head,
Brain fever, he's dead."

—A Senior.

"False fair one, hope fled,
Heart broken, he's dead."

—A Junior,

"Went skating, 'tis said,
Floor hit him, he's dead."

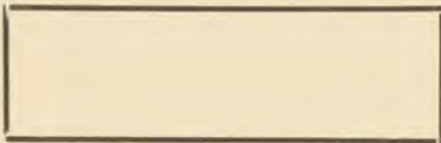
—A Sophomore.

"Milk famine, not fed,
Starvation, he's dead."

—A Freshman. Ex.

"The Jabberwock" and "The Rocky Mountain Collegian" are well edited papers, but as to the inconvenient size of each we recommend a change. You are too long and broad.

Map of Kansas showing trees and mountains:



Ex.

The exchange editor of the "C. A. C. Lookout" had the following criticism in his October issue. "I think that too often the exchange columns in the different papers are neglected because they are not thought to be of importance." In the November number no exchanges are to be found. I wonder why?

To the new "Prospectus" we offer every possible assistance. Continue. We need you.

Teacher: "How would you punctuate the following: 'The beautiful girl, for such she was, was passing down the street.'"

Bobby: "I would make a dash after beautiful girl."—Ex.

In the following magazines no exchange columns are to be found: "The Rocky Mountain Collegian," "The Manual," "The C. A. C. Lookout," "The Log Book" and "The Searchlight." Is this a new precedent? We hope not, for there will be many others that will not follow.

Exchange editors, can we not see a picture of you and your co-workers in one of your issues this year? Talking to one we have never seen is not near so pleasant as addressing one we have seen.

For a very attractive and appropriate Christmas cover design you must see "The M. S. U. Independent."



Mr. Morrison (Calling up Physicians Supply Company): "Hello! you sent up two skeletons and we only ordered one—more bones than we bargained for."

The Nautilus is now in better condition financially than ever before. Our thanks to the subscribers and advertisers.

Lionel: "The verb is imperfect."

Miss Drake: "No; but your answer applies to yourself all right."

John: "What does *demi* mean?"

Mr. Richardson: "Demi, means half, John."

John (Translating): It was half-john--"

Bobby: "May I look at the drawing, Mr. Sloan?"

Prof. Sloan: "Come look at me."

Bobby: "Oh, I want to look at something pretty."

Mr. Arrowsmith (After examining a turning chisel): "I could ride all over town on that and not lose any blood."

Impudent Senior: "Can't get blood out of a turnip."

Miss Drake: "You're a baby and have to spell."

22 years of successful business building is a record that no business man can afford to sacrifice, the motto: Love's Drug Store the best of every thing.

A young lady left a pocket-book in Miss Murphy's room and when it was examined for the owner's card, the only thing found was the left hind foot of a rabbit.

Isn't the reason for the loss plainly evident?

Haas: "Is there bismuth in soothing syrup?"

Mr. Miller: "It is only lately that you had it."

Goodness! Why don't Gertude Rothgeissiere and Jack Schweitzengaebielier effect some sort of a compromise on their names?

Myron C. Albertson, Carl F. Dieterich, James N. Russell, Ben E. Lindsly, Howard Whitehead, John H. Tate, Harry S. Frazer and Maurice E. Simpson are some of the many Manual boys who have tried George Herold's twenty-five cent hair cuts. Try him, boys, at 324 Ridge Building. He's fine.

Grace B: "I have two brothers-in-law and a prospect of a third."

When the staff posed before Mr. Hoit's camera the operator had a great time to get Harry's face in the lens. Mr. Bryant thought the side of his face was caving in, and Mr. Hertz was so very dignified that the photographer was almost frozen.

Miss Drake: "Well, you can be a parrot if you can't think."

Young lady (before taking physics): "O, I think Mr. Page is too lovely for anything. (After taking):—!!!"

My! how we did miss our stand-by, Miss Gilday, the week she was absent.

In the drawing room: Miss Murphy, are my ears large enough.

A REPRINT FROM CENTRAL.

Will Martin, the "shinning star" of Central's foot-ball team.

Mr. Shield: "Women can't vote, idiots can't vote." Are the terms homologous?

Overheard two girls in the Assembly Hall.

First: "What is that she is playing?"

Second: "Home Sweet Home."

First: No, It's "Annie Laurie."

It was "The Last Rose of Summer."

Why does Raymond Havens always look so dreadfully astonished when Miss Fisher asks him a question in German?

Mr. Page: "Is the popping of a soda water bottle a noise or a musical sound?"

Boy: "It depends on the temperature."

Emory put his fingers in a test tube which had chlorine in it. He told Mr. Miller that it hurt.

Mr. Miller: "Certainly, it formed chloride of Merston."

Prof. Chace, to geometry class: "Save your Nichol's and you can get Dodd's and Chace's."

What a bright Psychology class! When Miss Gilday is absent it takes two teachers to manage it.

"A Freshman was wrecked in a far-away isle.

Captured by cannibals and sentenced to die.

But they reaped their reward ere morning was seen

Cholera morbus had killed them—the Freshman was green."

When the snow balls (bawls) it isn't necessarily a squally night.

Mr. Page, explaining acceleration to Physics class: "Which of these two balls will reach the table together?"

Mr. Richardson says that if you drop the Herr (hair) off, the noun is singular. Mr. Frost says that it will be bald-headed.

Miss H. speaking of Prof. Page: "O, isn't he sweet!"

Can you tie

A tie?

A tie tied swell

Is well,

But a tied tie

Is never swell.

Follow the tie tide

And get

One of those

Swell ties

Of

HARRY B. WOOLF,

Quartersize Shirtman,

1119 Main.

"I had a heart

But Cupids dart

Did gently pierce it through,

Then my big brother

Got another

Now he's got 1 2 (one too).

Prof. Phillips: "Mr. Gillham, have you any criticism on this story?"

Gillham: "Yes, sir, she said that the girl sat still for two hours, fishing. I never saw a girl sit still that long."

Miss Fisher (in German class): "Patience, Thy name is Fisher."

Mr. Phillips: "Will Smith, will you see what time it is by the thermometer?"

Mr. Merrill: "Don't feed the squirrel grape sugar, Mr. Alexander, it will give it indigestion."

Mrs. C. J. Rudd, 1009-1011 Walnut street, manufactures, repairs and stores fine fur garments at moderate prices, Fifth floor. Take elevator.

What a difference between the odor of the chemical laboratory and that of the cooking room!

Freshmen, please take the elevator.



Mr. Hall out skating.



McFrost: "Propose my name to the OZOS."



Mr. Kilroy boxing.



Miss REED
"I'm so young."



Mr. Bryant answering:
"When will the Nautilus be out?"

HONOR WILKINS.



Miss Stoner looking for locals.



Mr. Burton, in his usual occupation.

We are distinguished! The Kansas City Manual Training High School is the only one of its kind in Missouri, and perhaps the second west of the Mississippi River, operated as part of the Public School system.

Once in the dusky twilight,
Of the Manual's basement hall,
I tripped upon the tiling
And got an awful fall.
The darkness was around me,
And my knees began to shake.
For a piece of tile upon the floor
My head had caused to break.

Why do all the students go to B. Glick's, 710 Main street, for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

To the students and teachers of Central, who committed the gross error of accusing us of taking the school yell from Cornell we would ask to compare

"I yell.
You yell
All yell
Manual."
with
"I yell—Cornell
Cornell—I yell."

The resignation of Miss Alice De Wolf goes into effect with this issue. On account of ill health Miss De Wolf was compelled to leave school. She will remain in California for sometime, but we sincerely hope that her presence will again grace the brass-railed office and her cheery voice resound through the corridors.

Hubbard's "Korrek Shape" Shoes for men and boys \$3.50 and \$5.00. 1005 Main.

Miss Lucile Edwards has been elected Girls' Manual Training Editor to fill the vacancy caused by Miss De Wolf's resignation.

Is Mr. Smith really mixed up in his directions? Although he lives south, he may be seen going east by west every evening.

Some one said Miss Hodson is the sweetest girl in school. Guess who *he* is.

Harry Frazer thinks some telephone girls are, oh! so nice, and others are—well they're not.

Miss Griffith says the supply of "lady fingers" makes up for the lack of all other refreshments at her "afternoons."

A certain "Mary" of this school seems to think that the Nautilus box is a United States mail box. Pupils, if she is a Freshman, please inform her.

People when learning to skate often act as if they really had a "skate" on.

Mr. Burton cracked the camera when he had his picture taken. There is no wonder about that for every one knows he is *very* striking.

We must thank the pupils of this school for their generosity in giving locals. We have been getting them regularly, now, one every month.

Heard in the drawing room. "Miss Campbell, may I put the fixative on my nose?"

According to Prof. Phillips, Shakespeare wrote "Paradise Lost."

It was very cruel of Miss Bachelier to deprive the poor girls of their only looking glass.

Ben: "Yes, the foot-ball pictures look just like the boys, but they aren't what I would call artistic affairs."

Mr. Frazer very cleverly persuaded the girls to go home because it was too dark to have their pictures taken, and then went in to pose for his "Ladies first" seems to be his motto.

Sarah was so interested in the toy windows at Emery's that it was hardly possible to drag her away. Dear thing she is still very young.

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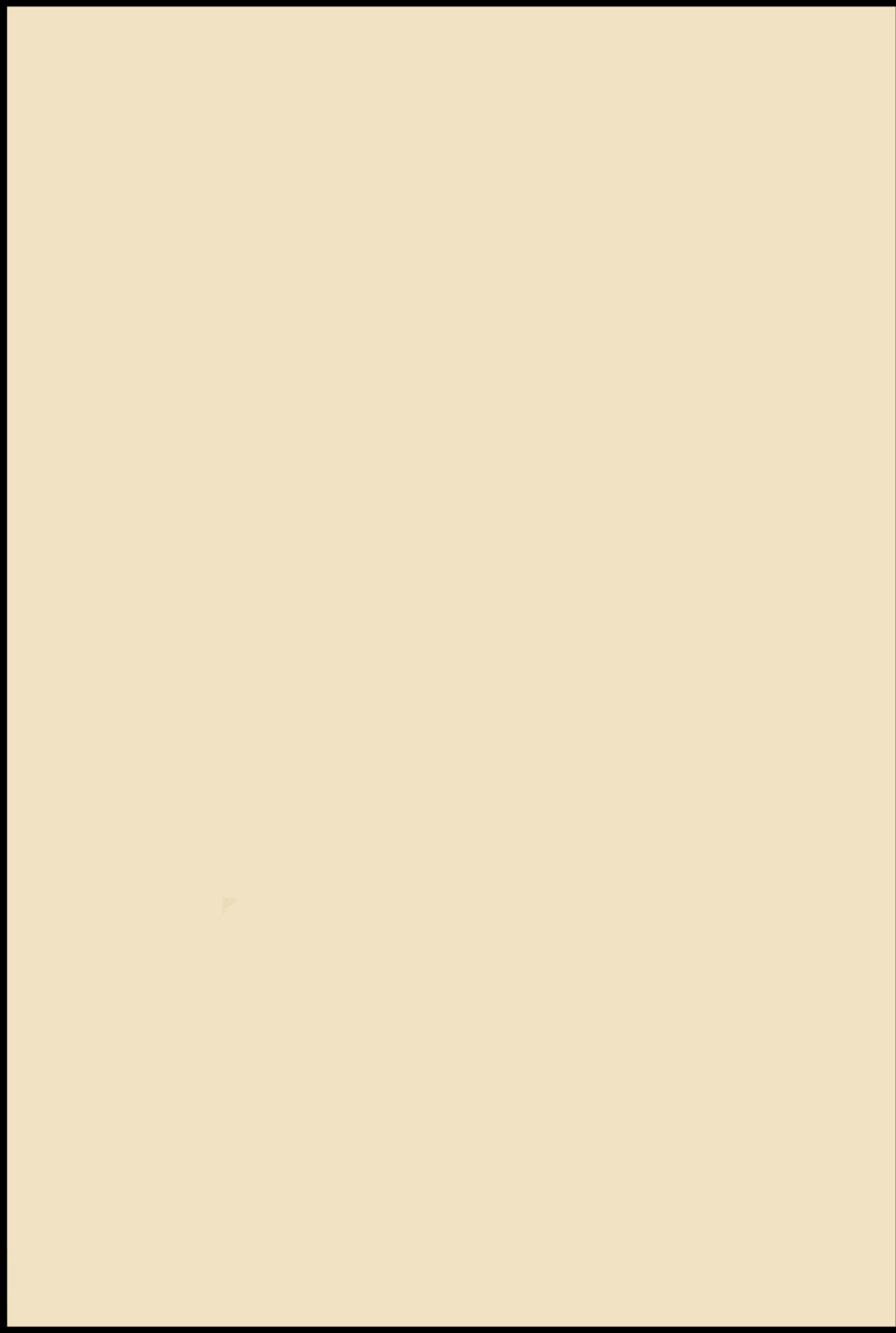
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VOL 3

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SCHOOL**

NO 3

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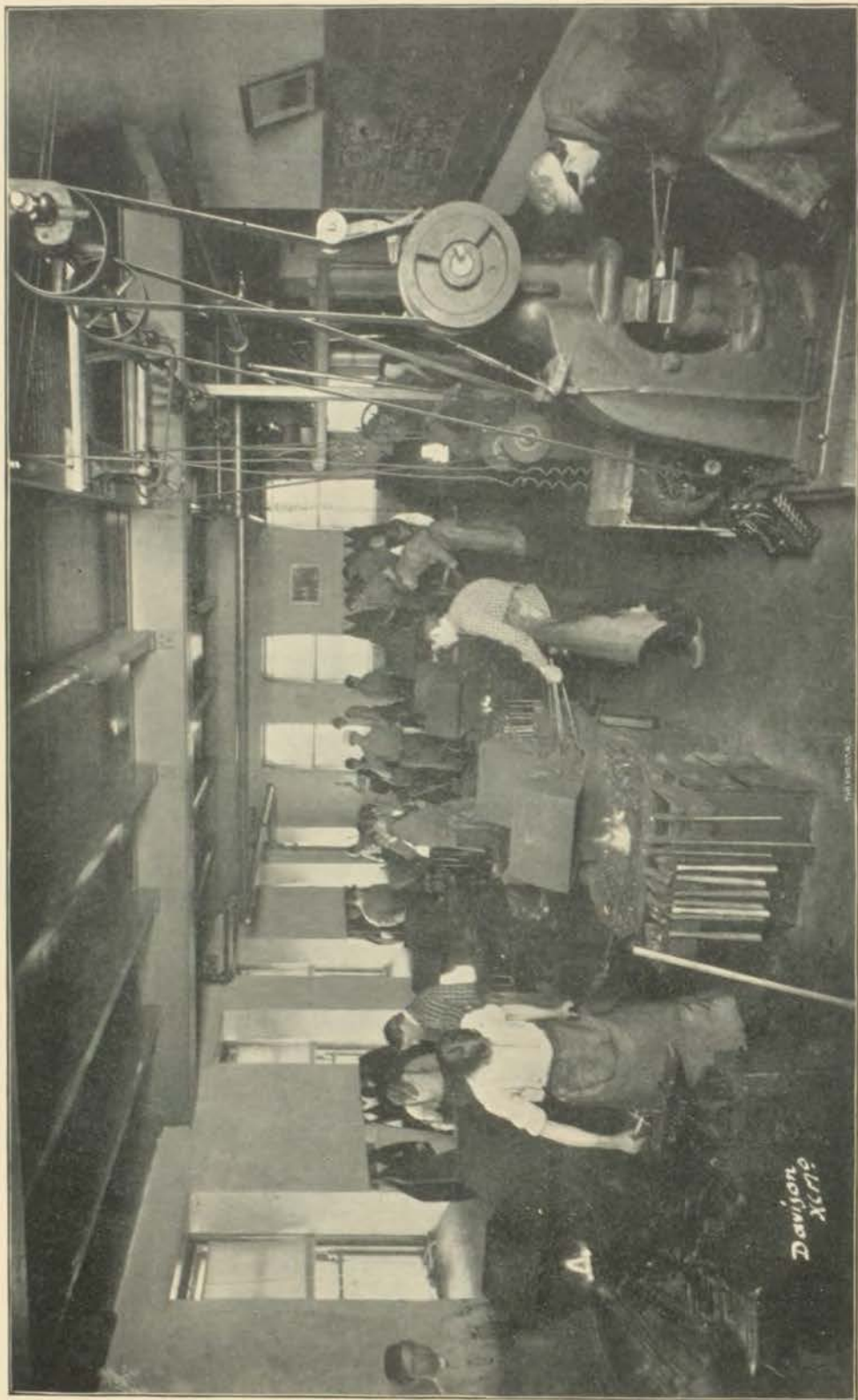
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NOTICE.—THE NAUTILUS is published once every two months in the general interest of the Manual Training High School, at Kansas City, Mo.

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

Contributions are requested from all members of the school.

Address all communications to

THE NAUTILUS,
 Manual Training High School,
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EDITORIAL DEPARTMENT.

For the commencement number, which is the next and last issue of the NAUTILUS this year, the members of the staff have unanimously consented to publish what may be called a souvenir or an extra prepared number of our paper. It is customary for most colleges and many of the high schools to get out an "Annual,"

and this year it is the desire of the NAUTILUS staff to establish a precedent with an extra sized magazine and see if our successors will not continue the same with every Commencement each year. Our paper is now in its third successful year of existence and not once has an attempt been made to increase the num-

ber of pages in any of the previous issues. To prepare a one-hundred page pamphlet will be no easy task, and to make our next number as attractive and interesting as possible we ask the co-operation of the entire school in the undertaking. The issue will have every department of the school well represented, including many new half-tones of the new wing and pictures of all the organized societies. We not only invite contributions from every one in the school, but any suggestions for the success of "The Year Book" will be gladly welcomed.

The NAUTILUS has been compelled to make many new changes in its list of editors this year. We have had the misfortune of being twice deprived of our highest officer, the editor-in-chief. It was the custom and is now a rule of the school to elect the staff at the beginning of each school year, but on account of serious illness and other impossibilities to serve on the part of some editors it has necessitated the election of three editors-in-chief. Walter Hidden, the first editor, was unable to remain in school on account of sickness. Carl H. Bryant, who succeeded Mr. Hidden, found it impossible to continue at the head of the paper and resume his course of extra outside studies. After performing his duty so satisfactorily on the paper for the first two issues, the staff regretted very much to have to accept his resignation.

At Kansas City, in the new convention hall, the next Democratic national convention will convene. The selection of our city as the place where the next Democratic candidate for the president of the United States shall be nominated was a happy surprise. To the members of the committee who so successfully

presented the claims of our city in Washington is due the praise and congratulations of all. And to those men, who by organized efforts and in the face of great opposition secured for Kansas City such a valuable advertisement, our citizens have shown their hearty appreciation.

Kansas City has never yet had a chance to entertain such a large delegation as is expected to be with us on the next Fourth of July. To properly prepare for such a convention has necessitated the appointing of many intelligent and energetic committeemen, who are willing to make for Kansas City a national reputation as the leading convention city. The "Gateway to the West" feels exceedingly honored in this new selection, for never before has she witnessed the naming of a leading man of either of the great political parties.

We should all be impressed with the fact that the honor of the city is at stake during this coming convention; that to be successful in our greatest undertaking, and to prove ourselves worthy of the choice, the plans proposed for entertaining will have to be faithfully carried out by the different committees.

The piano benefit entertainment recently given in our Assembly Hall was a success, not only in the excellence of the program rendered, but in the receipts, which amounted to \$233, clear of all expenses. For once the seating as well as the standing capacity of the hall was fairly tested. Fifteen hundred tickets were sold and nearly, if not all, were presented at the door. This successful sale of the tickets was due first, to the choice of the program, and second, to the systematic manner of disposing of the tickets, a complimentary being given for every five tickets sold by a single pupil. The entertainment was fully up

to the expectations. For two and a half hours Mr. Rocket exhibited in panorama his matchless views from slides made by himself along "the firing line" in the Philippines. The knowledge of the audience that the speaker had obtained the exposures at great hazard of his life added much interest to the entertainment. The lecture and views were exceedingly interesting and instructive and left a lasting impression on the minds of all who heard it. The collection included not only battle scenes but portraits of leading generals, of the natives, and of Aguinaldo himself. Many fine views of scenery in the Philippine Islands were given, showing the native characteristics of the flora and fauna of that country, as well as many of the peculiar forms of architecture employed by the natives in building their houses. The dissolving effect given by a double stereopticon, smoothing the transition between views, added much to the general artistic character of the entertainment.

This issue of the NAUTILUS witnesses still further progress toward the completion of our building, and the opening of several of the new departments in the new wing. The completion of the east staircases leading to all the new rooms and to the boys' lockers in the basement, and doubling as they do the exits from the Assembly Hall, furnishes the relief which our rapidly increasing attendance has made necessary. The plumbing in the new cooking laboratory is not yet completed, and in consequence the drawing classes, which are occupying temporary quarters in the Assembly Hall, are still unrelieved, but present indications promise that this condition will not have to be endured much longer. Arrangements are now being made to complete the seating of the Assembly Hall as soon

as the drawing tables find their places in permanent quarters. The twelve hundred opera chairs are no longer adequate to meet the requirements at our Monday entertainments. Four hundred more of these chairs are soon to be put in, making the seating capacity of our hall sixteen hundred.

OUR MONDAY MORNING ENTERTAINMENTS.

It has been, and is now, the custom of THE NAUTILUS to publish in detail the programs of our Monday morning entertainments. This is done so as to keep the Alumni, as well as present members of our school, in close touch with the happenings in our Assembly Hall. Since the last issue of our paper many excellent programs have been furnished and the success of these numbers is mostly due to the patient work of one member of our faculty, Mr. Phillips, who has had personal charge of these entertainments since the first year of our school. The following is a list of the entertainments:

Dec. 11—The program opened with a violin solo by Prof. Carl Walther, followed by a talk on the "Business Side of Art," by Mr. E. A. Huppert. More music closed the program.

Dec. 18—On this morning the pupils of Prof. E. H. Scott, of the Western Conservatory of Music, entertained us with a program of piano music.

Jan. 8—An exceptionally fine program was rendered by Miss Emilie Russell, assisted by Miss Caroline Leidleigh, violinist, and Mr. B. G. Bloom, baritone.

Jan. 15—Mrs. Layton and her pupils contributed an excellent program of vocal music to our enjoyment.

Jan. 22—As this date was so near the birthday of Burns, the poet, the program given by our own pupils in music,

under Miss Wilson, had a decidedly Scottish flavor. Miss Wilson was assisted by a Scottish piper in costume and Prof. E. D. Phillips, who recited Burns', "To a Field Mouse."

Feb. 2—On account of the reception of the Freshmen our Monday morning entertainment was held on Friday of this week, under the leadership of Miss Helene Meredyth.

Feb. 5—The annual open session of the Art Club, showing their last night in camp, and the program celebrating the occasion, reflects great credit upon the society as a whole and upon those participating, who were James Russell, Ralph Segur, Linda Loomis, Grace Berger, Bertha Schutte, Will Hall, Carl Bryant, Grace Green, Herman Henrici, Claud Clement, Roland Butler and Besie Freligh, who was the chaperon.

Feb 12—An interesting musical program was presented by Mrs. Elliott Smith and Miss Pauline Whitelaw. They were assisted by Mrs. C. R. Hunt, Mrs. H. S. White, Miss Beatrice Smith, Miss Barnby and Miss Marion Hartley, of our school.

Feb. 19—Miss Laura Reed, a member

of our school, played a violin solo, pre-facing the talk of the Rev. Cameron Mann on "Spring Flowers." A solo by Mrs. Dudley Kirk closed the program.

Feb. 26—Another of our school organizations was represented when the orchestra of the M. T. H. S. entertained us for an hour, under the leadership of Mr. Armand Miller. During the numbers of the orchestra, Mr. Kettler swung Indian clubs and afterward the torches.

March 4—Miss Adelaide Pribbenow opened the program with a solo, followed by Father Dalton with a talk on education. Miss Grace Greene, of our school, played a piano solo.

March 12—We were entertained by Prof. Carl Walther with his violin and Miss May Jackson, a talented pupil of our school, who recited one of the Van Bibber stories.

March 19—A trip through Japan with Mr. J. P. Raymond and the stereopticon was enjoyed by all of us, and so, equally, was the music of the Mandolin Club, which preceded it. The club is composed of Herman Henrici and Carl Ruckels, mandolins, and Claude Clement and Roland Butler, guitars.



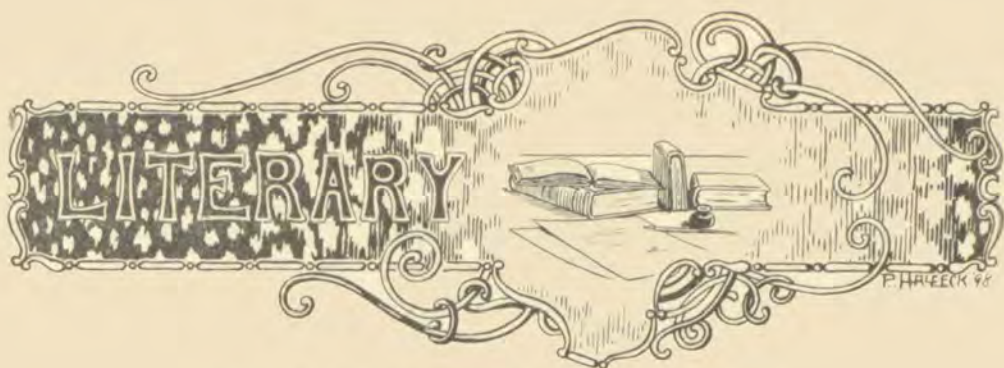
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HOW ELIZABETH ANNE FELL IN LOVE.

"Laws o' mercy, miss, whut on airth du you want next? I reckon you'd turn this here farm clean inside out if you had a nother year uv thet aristocratic schoolin!" And Mrs. Ruddle rolled vigorously at the snowy pie-dough for a few seconds, then continued: "Fust week yu come home, yu had all them high-falutin' gals out here a gooseberryin'; 'pears tu me y'u'd settle down and do a little work. But no siree! yu got tu hev the hull gang now, them sporty dudes mixed in with them gigglin' gals; seems tu me gals is a nough bother without a lot uv whimperin' goggle-eyed dudes, and besides yu want tu borry the wagon an team tu take 'em fishin'." Here she peered over her spectacles at the girl. "But I'll warrant yu didn't ask Jim Pinkerton tu it, did yu?"

"No, I never," snapped Eliza Anne, "and what's more, I don't intend to. I don't see why he's got to be in everything. Besides, he'd make a pretty figure among those town boys, wouldn't he?" she ended sarcastically, and picking up her hat Elizabeth Anne walked down the path.

Her mother stopped her pie-rolling, placed her floury arms akimbo, and looking out the window watched the receding maiden. As she turned again to her pies she said aloud, "It du beat all how thet girl has changed. She ust tu think the world and all uv Jim Pinker-

ton. I told him he had no business a-loanin' thet money tu Jeremiah tu send Eliza tu school. I know'd it would chock her purty he'd clean full of nonsense. I'll bet there warn't a purtier girl in thet hull Astorville school house if I do say it myself." And a look of motherly pride passed over her wrinkled face.

"And I reckon she hed more beaux then—"

"That's right, Mrs. Ruddle, I reckon you could't find a purtier girl than Eliza, nor one thet had more beaux."

Mrs. Ruddle suddenly turned and encountered the kind, smiling face of Jim Pinkerton in the doorway.

"Howdy, Jim?"

"Good mornin'; talkin' 'bout 'Liza?" he continued.

"Yes, some." Then after a moment's hesitation, "Say, Jim, whut's the matter 'tween you an' her? Yu don't get along as well as yu yust tu." Here she filled a pie and slipped it in the oven.

Jim's face clouded. "Don't know, Mrs. Ruddle. Nothin' far's I'm concerned. I think as much of Liza as ever only—." He paused.

"Only whut, Jim? Don't be afeared uv me, I'll stand by yu." And she made some pretty kinks in the pie-dough.

"O, I's just agoin' tu say as how she hed changed some, but I reckon all

girls do who goes off tu school. But I don't regret it. Wher's Hudspeth?" he suddenly asked.

"I see him down by the spring now, waterin' his horses," said Mrs. Ruddle, as she peered out the window. "He'll be along d'rectly; you go out on the porch an' talk tu Hester, she ain't feelin' right smart tu-day, an' I want tu git these pies done fur dinner."

Here I will give a short explanation. Mrs. Ruddle was a widow with one daughter. They lived with her brother and his crippled wife, Hester. Elizabeth Anne was a very pretty girl, spoiled and petted. She and Jim had been sweethearts since their log cabin school days. Now, Jim was an orphan and lived all alone. His last relative, an uncle, had died a year ago, leaving him a two-hundred acre farm and three thousand dollars; besides, Jim had been elected mayor at the fall election. He had always expected to marry Elizabeth Anne and supposed she thought the same, and hearing her wish to go off to school he had loaned her uncle the money, unknown to her. She had now completed her third year and some of the results were not very pleasing to her country friends. But to return to the family.

The pies were done and good things steamed upon the table around which the two men and the women sat to enjoy their noon-day meal.

"Where's Liza?" asked Mr. Hudspeth, as he placed a mealy potato on his plate. His sister told him she had gone down the pasture toward the post-office. The talk then drifted to politics and the coming school election. After dinner the two men sat on the porch and smoked while Mrs. Ruddle washed the dishes. Then Mr. Hudspeth went to the barn and Jim wandered slowly toward the village for his mail. At the

foot of the hill he met Eliza Anne. She was eagerly perusing a letter, but on seeing him hastily slipped it into her pocket and said rather coldly as they met, "Good morning, Jim."

"Howdy-do, Liza," he replied. There was a short silence and as she seemed about to pass on Jim said, "You folks get any letters?"

"Yes."

"Fur y'ur uncle about them hogs?" he queried again.

"No, Mr. Pinkerton, it is not; but if you are so anxious to know, I'll tell you. It's mine, from a friend in town. Are you satisfied?"

A pained look passed over Jim's face and he asked her forgiveness in such a tone that she really felt ashamed of herself, but before she could say as much her hand touched the pocket which contained her precious letter and drawing herself up proudly she walked away.

Poor Jim turned to watch her when a little square white object fell from her pocket. The letter! He reached and picked it up. The handwriting was that of a man and in one corner was, "From Julius, 624 Lakely St., Astorville." Jim pondered. "If it was a girl that'd a bin Julia, Liza wouldn't a hid it, but I reckon this Julius is the feller that come between us. All right, just so she's happy." He tried to quiet his conscience with this last but it was a failure. But the letter, he didn't want that. So he ran up the hill and called, "Dropped your letter, Liza." She turned on him suddenly but divining her thoughts he said huskily, "No, I never read it," and turned back down the hill.

Several days went by before the two again met.

One day Mr. Hudspeth and Jim were out in the field ploughing corn when Jim saw two figures crossing the pasture toward the pond.

"Who's visitin' y'ur house, Jerry?" he asked.

"O, some young sport come tu spend Sunday with Liza. You know the picnic was put off. He sleeps over 't the village what time he doesn't spend with Eliza. Reckon that gal'll get over her nonsensicalness some day." And he wiped the sweat from his face with a red bandana.

"That's him with Liza now, ain't it, goin' toward the pond?"

Mr. Hudspeth glanced up.

"Yep, that's him, I can see his glass eye and yaller shoes a shinin' now. Hi, there, you Bill and Nell, get in the track." This last to the horses seemed to settle the question, and Jim Pinkerton picked up his lines with a sigh.

Suddenly they were interrupted by an object tearing up the corn rows, his coat-tails flying, hat gone, and eye-glass dangling by his side, but he paid no attention to this nor the dirt on his "yaller" shoes, but waved his cane wildly and blubbered as he came up, "She's gone in, she's gone under. Help, fire, murder, save her!" And he dropped hysterically into a furrow, breaking the tender young corn.

"What's the matter, yu glass-eyed idiot?" shouted Hudspeth, shaking him furiously by the collar. But before the idiot could find his tongue Uncle Jerry was fast flying after the departing Jim.

When Mr. Julius Pettifish came to himself he arose, adjusted his eye-glass,

dusted his "yaller" shoes, then looked for his hat and cane, but failing to find them he carefully picked his way over the rough clods and reached the pond just as Jim emerged from the water with the unconscious Liza, who would no doubt have drowned had it not been for the brave man.

"O, Eliza-beth Anna, Elizabeth Anna, aw yuh safe at last?" drawled Julius, trying to squeeze a tear from behind the eye-glass. "Mistah Pink-uh-ton, yuh cawn't imagine how thankful I am for yuah—"

"Shut up," roared Mr. Pinkerton so loud that Julius trembled violently, and he trembled more violently still when Pinkerton raised his free arm and brought it so violently against Mr. Pettifish's ribs that he went reeling over the ground. "Now go," continued Jim, "and don't show your face here again."

Poor, whimpering Julius collected himself and walked away, without seeing his "deah Elizabeth Anna" open her eyes wonderingly, and as she saw who carried her so gently she nestled closer and whispered, "Jim."

Old Uncle Jerry stood and looked on, then slowly followed the dripping pair up the hill, as he muttered, "I'll be hanged; it tuk me a long time to fall in love, but I didn't haf tu fall in the water afore I found it out."

JEANETTE GILLHAM.



HOW THE CRIMSON WON.

On a bright day in the early part of May the little college town of Dresden was alive with excitement, for the great field day between the rival colleges of Windsor and Melrose was to take place.

It was such a fine day that everybody had deserted his home for the streets and avenues.

There might have been seen among the crowd going to the field of the com-

ing contest two young fellows with grips in their hands. The taller one was just saying, "Well, Bob, if I don't win that hurdle race, I will be heart broken, for I have trained so hard for it."

"Oh, I guess you will give them a good race, even if you don't win. Say, did you bring that bottle of witch-hazel and that jersey of yours with you?"

"They are in my grip," replied George Radford, "and everything else we shall need is there, too."

Bob Thompson and George Radford were chums, and had roomed together for four years, attending Melrose college, and wherever one was to be found the other was generally near. Many a time they had helped each other in college scrapes, and were very dear friends.

Great preparations had been made for this day and an exciting and enthusiastic meet was anticipated. These two boys were to graduate in a few weeks, and of course wished to distinguish themselves in the coming contest. Radford was a tall, well built young fellow, and being a very fast sprinter, he had made hurdling a specialty; whereas Bob was a splendid jumper and, though not so strong as his room-mate, he was as active as a cat.

The boys trudged on in silence and soon reached the campus where the meet was to be held. It was surrounded by a high fence, within which was a large grand-stand and bleacher.

When they arrived at the gate, their track team captain immediately took possession of them and showed our young friends the dressing room; they entered, and in a few minutes emerged, each wearing a crimson shirt, white track trousers and shoes. Both appeared to be in fine shape, and some of their fellow students who had gathered around them felt much encouraged.

"Well, Bob, are you and George going to win everything?" asked one.

"Oh, not everything, but we expect to have a few scalps dangling at our belts before the contest is over," replied Bob.

The two young men joined the rest of their team, who were all dressed alike, and following their captain, walked out on the field. Cheer after cheer went up, and crimson ribbon seemed to be everywhere, on the field and in the bleacher and the grand-stand. Their opponents had just come in on the two o'clock train, and in several minutes they appeared on the grounds in their suits of blue, and were received with applause by a train load of their own followers, as well as by their antagonists.

The grand-stand, bleacher and field presented a very beautiful sight, for there were many pretty girls waving colors, several tallyhos decorated with bunting, and many handsome turnouts.

The captains shook hands, conversed for a few moments, and then the contestants for the standing broad jump were called for. Each side was to have two men in each event; the winner received five points, the second and third, three and one, respectively.

In response to the summons, four young men threw aside their blankets and stood ready to participate in the jump. The first man to jump was Bob Thompson, who, toeing the line and getting a good spring, made a splendid jump of nine feet, ten inches, as the referee afterwards announced. His competitors took their trials, but no better jump was made. A Crimson man also took second place, with nine feet eight to his credit.

Oh, how the Crimson cheered! But alas, it seemed as though their applause was given too soon, for a succession of defeats followed. The hammer throw,

shot put, and one hundred yard dash were captured by the boys in blue.

There is no cheering from the Crimson followers now, for they are appalled by the score of twenty-four to twelve in favor of their opponents. The two hundred and twenty yard dash is the next event. At the crack of the pistol the four runners, waiting for the report, are off like the wind, and as pretty a contest as was ever seen took place, first one man, then another, taking the lead; they came to the stretch and the hard struggle for supremacy now commenced, but the Crimson runners seemed to have more speed and stamina, and at the finish won with several yards to spare. Their enthusiasts appeared to awaken at the victory, and gave vent to their feelings by prolonged yells.

There are but three events remaining, the running broad and the running high jumps and the one hundred and twenty yard hurdle. The crimson colors are again victorious in the broad jump and the score stands twenty-eight to twenty-six in their favor. Now is the exciting moment; will the score be tied or will one side obtain a big lead in the next event?

The jumping sticks are brought forward and a bar is placed between them, four feet from the ground. All four contestants easily clear this and the bar is raised, inch by inch, until five feet is reached. Here, for the first time, one man fails and he is retired. He was one of the Crimson team, and now but one of them is left, Bob Thompson, who, seeing his chance for glory, determines to win. Five feet four inches, and Bob and one opponent remain. They have been jumping very easily and both sides are doubtful of the outcome.

The bar is at five feet six, and with splendid jumps they both clear it in great style, but when the bar is raised

to five feet seven the man in blue knocks the bar off twice in succession, and although he rests for a few moments and then makes a last desperate leap, his feet are too heavy, the bar is displaced, and he retires amid the cheering of the Crimson.

Much advice is given to Bob, such as "Be careful and look what you're doing," "Do it or die, Bobbie," and so on. Bob with set face and clenched teeth looks at that bar, then runs swiftly toward it and within four feet of it he bounds into the air and clears the bar like a bird. The score is thirty-three to thirty and the followers of the crimson yell like demons, but they have not won; the one hundred and twenty yard hurdle remains and that may give the victory to the other side.

George Radford, who has been watching each contest closely and earnestly, is the first to congratulate Bob, and he now goes forward to enter the hurdle race with Bob's "Good luck to you, George," ringing in his ears. George thinks of how much is at stake on this race and he resolves "to do or die."

The four young men are at their places, and the referee says, "Get ready, get set," bang!—and they are off like a flash; at the fifty-yard mark the running is about even and it gives promise of a close race. George's thorough training stands him in good stead, for he takes the hurdle like a Kentucky thoroughbred, scarcely seeming to leave the ground. Within twenty yards of the finish he makes the greatest effort of the race and gains several feet on his nearest opponent, who is determined not to be outsprinted.

The crowd in the grand-stand and the bleachers jump to their feet and see George dash by them, winning by a foot.

The Crimson had won the day and

could justly be proud of her track team, who had so gallantly and victoriously defended her. Crimson colors were frantically waved, while cheer after cheer was given for both the victors and the conquered.

Eight young fellows dashed forward to where George and Bob were standing.

They were instantly put on their shoulders and paraded about the grounds and finally carried to the dressing room.

When they were alone George, still breathless from his recent exertions, could only clasp Bob's hand in his and give him an eloquent glance.

JOHN H. TATE.



A SUMMER VACATION.

Gradually the bright red which had mounted to Steve's good natured, freckled face at finding himself the cynosure of five pairs of feminine eyes, gave place to its usual sun-tanned hue. It was not so bad, after all, he reflected, stealing a second look of shame-faced admiration at the bright faced city girl sitting beside him in the old farm wagon. The object of his admiring glances didn't appear to think things dreadful either. She was chatting gayly with her companions in the back part of the wagon, and took not the slightest notice of Steve, who accordingly felt slighted, and turned his attention to his horses.

The party consisted of four young girls from the neighboring city and their chaperone, Mrs. Long. School was just out, and they had decided to spend their vacation in the now vacant farm house belonging to Mr. Story, father of Steve's paragon, Janet, a lively girl of fifteen, and her sister Madge, five years older. The other two girls, Evelyn Foster and Helen Carey, were sixteen and eighteen, respectively, and all were types of the ordinary school girl, agog for mischief of any kind, and charmed with the prospect of their novel vacation.

They had arrived at the little Kansas town half an hour ago, and were just coming in sight of their destination, a small red house picturesquely situated

amid a clump of trees on the brow of a steep and rocky hill.

On arriving, the girls took possession by dashing wildly through the three rooms of the house, flinging open all the doors and windows—Janet even falling down the cellar stairs in her excitement—poking their inquisitive noses into everything, and all talking and disputing at once. When things had calmed down somewhat, they were able to observe that most of the chairs were simply kegs, that two barrels with a wide board over it formed the only table, that the supply of china and linen was limited, and so forth. But these were mere details—one could have all these comforts at home—and the girls were charmed with their dwelling. They bestirred themselves briskly to supply deficiencies as well as possible from the two big trunks Steve had deposited in the front room. Janet, meanwhile, was investigating the larder, where she found sugar, salt, flour and such staples, but to her dismay, nothing more! Nothing for them to eat! The girls stared rather blankly at the announcement, made by Janet with a prodigious clatter of tin pans. All decided instantly that they were "starving," and then went off into a perfect gale of laughter at their unforeseen predicament. Just as Evelyn was disconsolately dividing a bag of pea-

nuts among the girls for their supper, a doubtful knock was heard at the door, which on being opened, disclosed Steve, blushing as ever, with a big basket on his arm. "Marm tho't ye might want sumpin' t'eat," was all he could manage to stammer, but his words brought down on him a whole avalanche of grateful, hungry girls, increasing his embarrassment tenfold, especially as Janet, reaching the basket first, almost included him in her generous embrace.

The next few days were uneventful ones, spent by all in getting acquainted with their dwelling, its surroundings, and the inhabitants of the little hamlet at the foot of the hill, where one of the girls went every day for provisions in an old spring wagon drawn by a superannuated grey mule. Steve speedily made Janet his idol, and worshipped her from afar, only venturing near in such cases as when she rashly tried to ride Joe, the mule, bareback, and being rather hastily dismounted, was brought home in pieces by the faithful Steve.

Now Janet was a rather naughty little maiden. "I am going to be the *man* of the party," she had declared before leaving home, "and I totally abjure *skirts* as a species of bondage to which I will *not* submit!" In pursuance of her noble renunciation, she had brought with her to Elsmore a pair of her brother's overalls, and in them enjoyed herself to her heart's content, turning surreptitious somersaults, climbing trees, and behaving in general like a very naughty little boy. One adventure she had which she didn't relish much, however.

Madge had gone to market that day, and on the way home Joe had balked, and Madge had just gotten out of the wagon to lead him, when a young gentleman in a golf suit, with an artist's outfit slung over his shoulder, appeared at the side of the road. "Can I be of

any assistance?" he inquired courteously, lifting his hat. Then, in surprise, "Why, Miss Story!" "Why, Mr. Drand!" said Madge, astonished, then added gayly, "Don't you know that you're trespassing?" "No, I didn't," responded the young artist pleasantly. "But do you mean to say that you're living near here?" Madge explained, and Mr. Drand in his turn said that he was staying at Elsmore in order to do some sketching in the vicinity. "Oh, then you're undoubtedly used to Bohemian ways. Come home with me and have supper with us," said Madge, hospitably. "It's been ages since we've seen any one civilized, and the girls would love to have you, I know." "Thank you, I'd be delighted," was the hearty response. "It seems very nice to meet old college friends in this out of the way place."

As Joe still insisted on being led, Madge had taken hold of one side of the bit and Mr. Drand the other, and they were walking along, chatting pleasantly of college days, when they came upon a sight that fairly took Madge's breath away, for there, tranquilly sitting on a fence in front of them, sat Janet, the reprehensible, with *those clothes* on. Any girl with little sisters can imagine what Madge's thoughts were at that moment. Mr. Drand, however, noticed nothing. "What a picturesque figure he makes, doesn't he? I should like to sketch him," he remarked, tranquilly. Then, catching sight of Madge's face, "Why, Miss Story, what's the matter?" Madge had to laugh in spite of herself, then of course she had to explain the joke, which Mr. Drand fully appreciated. Janet meantime had dashed wildly home, rushed into the house, violently shook Helen, who was taking her beauty sleep, and exclaimed incoherently, "Girls! Girls! He's coming. He's coming."

For mercy's sake help me out of this rig before he get's here." After hearing an explanation, the girls considered the matter quite as good a joke as Mr. Drand had. The latter and Madge arrived on the scene just as Janet appeared, properly attired. In spite of his unconscious air, Janet saw by the twinkle in his eye that he knew of her escapade. "Oh, he's the one whose picture Madge keeps always on her bureau, isn't he?" she inquired innocently in an audible aside to Helen, and then flounced off into the kitchen, seeing by her sister's heightened color that she was "quits" for that time.

Mr. Drand proved a very pleasant addition to the party, cracking jokes all through supper, insisting on wiping the dishes afterward and being foremost in telling ghost stories later when they assembled on the front steps. Janet was unusually dignified all evening, and it was only when the party proposed fortune telling and went indoors that she condescended to join in the merriment, and announced mischievously that Mr. Drand "liked Madge the best of any girl he knew." This caused much laughter and pretended chagrin among the other girls. Madge looked somewhat annoyed and a little bit conscious as she said aside to Mr. Drand, "I don't know what on earth I'm to do with that child. She's a perfect terror." "She seems to be a very observing young lady" was the smiling response.

After that Mr. Drand seemed to find much pleasure in the girls' society, and it was by tacit agreement that he was included in many of their pleasures. He always had on hand some plan for a hay ride, picnic, or boat ride on the little lake near by, but he remembered his sketching, too, on these occasions. Mrs. Long voted him "a dear," and even Janet, though she plagued her sister un-

mercifully, got over her first prejudice against him, though she haughtily refused to pose for him in her "farmer regimentals," as he once laughingly proposed. Steve, meanwhile, found himself utterly eclipsed by Mr. Drand in his capacity of man around the house, though he was sometimes made happy by being graciously permitted to accompany Janet to town on market day.

It was at about this time that a summons to return home was received with absolute dismay by all, including Mr. Drand. Nevertheless, go they must, and they decided to have one more grand frolic before leaving. It took the form of a hay ride conducted by Mrs. Long, to which the young country people were invited. Steve drove and was in his glory, with Janet sitting by him. Mr. Drand seemed no less content on the back end of the wagon with Madge by *him*. The affair was pronounced a grand success by all, and the young hostesses retired very much elated after bidding their friends good night. Janet only had a grievance. "I do wish I didn't have to be Miss Janet Story," she murmured, half asleep, before the words were out. "I want to be the only Miss Story."

The next morning beheld a disconsolate group of girls on the station platform waiting for the train. All were there but Madge. Janet was gazing pensively at the big bunch of wild flowers which was Steve's last offering, when Madge appeared, escorted by Mr. Drand, who bade all the girls a cordial farewell, then addressing Madge, "I'll see you in the city," he said, significantly, then raised his hat politely and walked away. Madge followed the manly figure with a new softness in her eyes, and then turning to Janet she said gently, "I hope you'll enjoy being the *only* Miss Story, my dear."

BETH BRADLEY.

BEAUTY AND SUBLIMITY IN SMALL THINGS.

"Flower, in thy crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

—Tennyson.

What thoughts, what feelings, what songs, are generated by the sight of a simple little flower! Artists have been inspired and a beautiful soul-full picture was the result. Poets Laureate have sung of this innocent love-bearing thing—the flower.

It fills us, as we behold it, with a feeling of kindness and gentleness, perhaps not before experienced. The crudest, harshest, and most ignorant nature is unconsciously influenced.

In gazing upon a tiny, lonely flower, springing from the base of a shattered wall, a feeling of awe steals into our being—awe of the sublimity of Nature, of the grand wisdom of our Creator, in his provision for man.

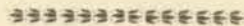
What a train of thought passes swiftly through our minds as we gaze at the flower, now torn, with its roots, from its bed. Even so small a thing has not escaped the wise provision of the Divine Being. It is supplied with all that is necessary to its life. We think, for what was the pretty posy meant? Ah,

a further purpose of His for the elevating of humanity. Why was it supplied with roots? To show us that even so small a thing as the flower has life and strength in itself, and capability of spreading and developing.

How differently we are affected when we discover a lonely little flower growing among the ruins of a great building, or by the brookside, than when we see one thriving in cultured beds, or in hot houses. A feeling of pity for the little posy that is living in a close, warm hot-house enters our hearts, and we picture it, in our imaginations, in the bright, green woods, peeping up from the long blades of waving grass, but happy in the freedom which Nature intended. The song of birds in the woods above the little flower attracts its attention, and it lifts its placid little face from its drooping position, and rejoices with them in the air and sunshine.

Ah, how unconsciously the tiny flower may cause the innermost chords of one's being to vibrate with the sweetest music to the soul! Could we but understand the origin of this tiny interpreter of Nature, we could comprehend the works of our God.

LETA ROGERS.



A STORY OF MISSOURI.

On a cool morning in June, when the dewey grass was drying in the southern wind, Amanda Martin picked up a basket of freshly washed clothes, and thrusting three or four clothes-pins into her mouth, walked into the garden. It was not a flower garden filled with hollyhocks and old-fashioned four-

clocks and overrun with myrtle, but an every-day Missouri vegetable garden, occupying an acre or two and containing nothing floral except a few big sunflowers. It was surrounded by a small wooden fence, whose boards placed at irregular intervals admitted the entrance of chickens to and from the adjoining

fields. The house stood near the rear of the garden. It was a small two-storied, red-brick building, with olive-green blinds, and it looked as though it was intended to be wedged closely in between two other houses in a crowded street of a city. Standing, as it did, alone in the midst of acres of surrounding gardens and corn fields, it seemed to the eye of a passer-by to lack some indescribable support. It was alike unprotected from the heat of the summer or the cold of winter, without vines, porches, or surrounding trees.

Amanda Martin had a very pleasant face. Her eyes were large and brown and her black hair was smoothly pasted down over her temples. Her complexion was sunburnt, and reddened by the kitchen fire, and her hands were roughened and shriveled by work. Putting down her basket, she began to hang up the clothes.

In the adjoining field she could see her uncle working in the corn. She cast a mournful glance toward him. He was kind to her in his way, she knew, but, oh! how she hated this life. She had lived with her uncle and aunt from her babyhood in this lonely red house, whose monotonous atmosphere was disturbed only by the coming and going of the trains nearby, and now and then by a farmer's wagon traveling to the city. It was not like living in the hilly country, where the farmers gathered together winter evenings and made the long cold season merry, after a summer of hard toil. No! It was the barren life of a single family, dwelling unsheltered and alone.

Once every fall Amanda rode with her uncle to the city and bought a few yards of red calico for dresses for herself and aunt, and once in her life she had been to a country fair.

Amanda was thinking of that fair,

when she saw that there was a respectable looking stranger at the gate.

"Is there a hotel in this 'ere town, mam?" he inquired raising politely his dingy straw hat.

"Laws, man," said Amanda, blushing, merely because she was unaccustomed to the sudden appearance of strangers, "this ain't no town."

"Well, then is there any place where a man kin git a bite ter eat?"

"I reckon you can get it here," Amanda answered hesitatingly, while she glanced at his honest young face earnestly. "Whar did you come from?"

"From Jefferson City, mam. I've been making my way up to Kansas City."

"You didn't come from the 'pen,' did you?" Amanda asked with a startled look.

The man seemed embarrassed for a moment.

"Well, yes, I might as well tell you I did," he explained in a straightforward manner, which Amanda thought was particularly manly. He glanced at the girl to see what effect this remark would have on her. She had come forward and was leaning both elbows on the fence, while he still stood without, fumbling with the latch of the gate. Amanda's face encouraged him. He proceeded:

"Yer see, it wus jes' this way," he began to explain, "I never hed a father ner a mother, and I naturally had to make my own way in the world. When I was a little kid, not much more 'n five years old, I sold papers. Then I got a good job as elevator boy in a big dry goods store. Then I fell into bad company, went on from bad to worse and landed in the 'pen.' But I'm out now and intend to stay out. I'm going to Kansas City and live an honest life. I'll tell yer what," he added emphatically, "dishonesty don't pay."

"No, it don't fer a sure thing," agreed Amanda, thoughtfully.

"But it'll be hard for me, with no recommend ner not even a friend."

"Law's sake, don't talk that way," she exclaimed before she could check herself, "I'm your friend." He looked gratified.

"But I wont see yer again, maybe never." He looked at the girl. Tears were shining in her eyes, and her lips trembled with checked sobs.

"Why, say now, what's the matter?" he asked.

Then Amanda told him the simple story of her life and of how she longed to leave it, during which she wiped her eyes and he turned away his face, looking intently at the ground, bright in the sunshine.

"Mary—is that yer name?"

"No, Mandy."

"Well, Mandy, come with me. I'll gev you the best home I kin. I've got ten dollars; we kin start out with that and try our luck together. We kin take the first train to Kansas City and get married at the court house. What do you say?"

Amanda did not hesitate a moment.

"Well, then, suppose we go in and tell yer folks."

At first there was consternation and

a great deal of argument followed, but finally her aunt said, "You foolish gal, yer'll regret it."

"It's all right, Mandy, but I wish ye could stay for the baking tomorrow."

"We're sorry to have you go, Mandy," her uncle remarked kindly, "I don't 'magine you like the life here as well as we do. He's peart enough chap, too. What's his name?"

"I don't know," Amanda faltered, pausing as she was dishing some potatoes out of the great pot on the stove, for him.

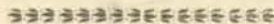
"Ned Barton," promptly answered the young man.

"Well, Ned, then here's twenty-five I've been saving fer 'Mandy when she should get married. We think a lot of 'Mandy, though maybe she don't know it, and if you ever need help send fer me."

Then Amanda and Ned started out together, she in the gorgeous apparel that she had worn to the country fair.

It was the desperation of loneliness with both. He was without a friend or even an acquaintance. She stifled in the isolation of farm drudgery. Each wanted a friend, a companion, a confidant. Who knows but that they found their quest?

R. E. S.



A VISIT TO WASHINGTON'S MONUMENT.

While the subject of this sketch is not furloughs, I cannot refrain from pausing for a moment to review my feelings as I received my first leave of absence. How changed was everything about me! The heated arrows of the sun, which, but a moment before, had been piercing me to the very soul, now glanced harm-

lessly off from the bright shield of my enthusiasm. That tired feeling, which always insensibly crept upon me as drill time approached, vanished—spirited away by the genii of my anticipated liberty. I looked upon the hot, weary men marching out to the parade ground with a feeling of pitying condescension.

Subduing these feelings as well as I could, I joined my comrades and we set our faces toward the great national capitol, leaving behind us, for a few hours, the hard routine of camp life and the harder hard-tack.

The question which naturally arises in the mind of anyone who has only a limited amount of time to spend in a noted place is, "What can I see that will be most worth seeing?" Not having time, nor indeed the inclination, to indulge in those profitless speculations, we resolved to leave it to chance, and a happy chance it was.

While the city was yet hidden beneath the horizon, we saw a great, white obelisk rearing its proud head to the sky, like a monster giant bidding a disdainful defiance to the united world. One look was sufficient. The question was, so far as we were concerned, answered.

As we drew nearer, the obelisk seemed to increase in size until we reached the beautiful grounds laid out around its base, then it stood revealed in all of its massive grandeur.

The monument is composed of over eighteen thousand blocks of marble, two feet thick. The base is fifty-five feet square, tapering upwards until at the top it is but thirty-five feet square. At the ground the walls are fifteen feet thick, gradually decreasing, until at the five-hundred foot mark they are only eighteen inches in thickness. The total height is five hundred and ninety-two feet, of which five hundred and fifty-five feet are above ground. The obelisk weighs nearly eighty-one thousand tons.

Going up to the door, we were conducted into the interior by the guardian of the tower, an old gentleman in a "high state of tobacco." He was first inclined to be rather gruff and reserved, but, seeming to imbibe inspiration with the contents of a small flask containing

a certain liquid of amber hue, he became quite communicative and furnished us with the particulars of which this sketch is composed.

The door is eight feet wide and sixteen feet high, facing the capitol. It opens into a room twenty-five feet square containing an elevator capable of holding thirty people. At one side of the elevator is the beginning of that vast steel stairway which contains fifty flights of eighteen steps each.

We entered the car and started upon the ascent. Owing to our eagerness, the distance seemed interminable, but upon inquiring we found that it took only twenty minutes to reach the top. At last the car stopped and we stepped out upon a floor five hundred and twenty feet above the earth. Eight windows open here, giving a view to all points of the compass. We stepped to the window facing the capitol and a beautiful scene burst upon our sight, lying stretched before us like a vast panorama.

At our feet lay Washington, looking, from our great height with the sun glistening upon its burnished domes, like an enchanted fairy city. There stood the stately capitol building, the battle ground of mental giants for a century, in whose chambers the destiny of a great nation has been decided; whose walls have resounded with the oratory of a Webster and a Hayne, of a Clay and a Calhoun; upon whose summit the Goddess of Liberty sits enthroned, gazing upon this, the fairest of all her fair domains. There, too, lay the patent office, an edifice erected to the ingenuity of man; the Smithsonian Institute, a monument to science; the Congressional library, an eternal memorial to the literature of a great people and all the varied machinery of a magnificent government; all much food for the sight and for the

imagination.

Reluctantly turning from this sublime prospect, we gazed upon the broad, placid bosom of the Potomac and beyond, upon the lofty and deeply shaded woodlands of the Old Dominion.

Gazing thus, I thought, O ye forests, lying there so calm and quiet, you are grown old now, and very weary. The marks of time are indelibly stamped upon each added ring of your gnarled trunks. You have stood thus while many generations of men have come into existence; you have stood there while they have lived and died and yet have you never departed from your calm. Young lovers have plighted their troth 'neath your wide spreading shade; they have gone forth bravely to the battle of life and have come back all weary and world worn, to lay down their lives where first they took them up. They sleep beneath the mosses now and the wind sighs a sad requiem o'er their grave as it rustles softly through your fostering branches. Other lovers walk the old walks now, but ah! they are not the children of your youth. The fugitive slave has hidden in your silent shades and gazed with burning eyes upon that land of freedom, which, mayhap, he was never to reach.

You have seen the brave sons of the North and of the South meet in deadly conflict, father against son, brother against brother; your hills have echoed to the roar of cannon, the clash of steel, and the cries of men in mortal agony, yet were you as quiet and as peaceful as ever. Ages come and ages go and yet you never change.

A laugh jarred upon our ears and we awoke from a day dream. The scenery

was still beautiful, but lo! the forest of our imagination had disappeared. Behold, in its stead a pretty bit of woodland landscape sleeping lazily 'neath a summer sky. We began the descent by the winding stairway, it being preferable to the crowded elevator. The interior of the monument is lined upon every side with stones having inscriptions carved upon them. Every state has contributed a stone; as have also many societies and organizations of all kinds.

The perusal of these inscriptions occupied so much of the remaining daylight that the sun was setting as we again reached terra firma. We spent some time in wandering about the base and becoming familiar with the details of this gigantic structure. Twilight, fast deepening into darkness, had come upon us before we left the grounds.

When at some distance away I turned and saw the monument sharply outlined against the darkening sky, something of its grand purpose flashed upon me. There it stood, massive in its structure, faultless in its workmanship, and graceful in its every detail, the fitting memorial of a grateful people to the grandest military hero, the broadest statesman, and the most sublime patriot of the greatest of nations—George Washington, the Immortal.

Yet will this great memorial have crumbled away and the river of time have melted into the infinite sea of eternity, before the affection and veneration which exist for him in the heart of every American will have withered or in any wise diminished.

LLOYD A. SABIN.



At the first meeting of the Missouri Valley Inter-Scholastic High School League, our school was represented by Jas. Peters. The purpose of this organization is to hold an annual field-day in which all the high schools of the Missouri Valley can compete for prizes and trophies. The meet for the coming spring will be held at St. Joe. The association wants an all Kansas City team to come there; but the Manual boys do not take kindly to this arrangement. Our boys are patriotic, and they desire to march on the field with the colors and banners of Manual floating over their heads, instead of the crimson of our school and the Blue and White of Central combined. Now, if Manual will be allowed to send a team there, we will very probably make up a sufficient number to occupy a car. The car will, of course, be decorated with our immortal *Crimson*.

"All time and money spent in training the body pays a larger interest than any other investment."

Every Manual boy and girl should take a pride in our present gymnasium. There is nothing the committee has overlooked which could add to its improvement, and we should feel more justly proud of the fact that all our apparatus was purchased with our own money, and not with the help of a donation from the

Board of Education. The total amount of paraphernalia purchased up to date is as follows: 3 punching bags and platforms; 2 horizontal bars; 1 parallel bar; 4 sets of boxing gloves; 3 Whitely exercisers; 4 flying rings; 2 tumbling rings; books of instruction on physical culture; all the Indian clubs and dumbbells we can use; 2 large mats and a climbing rope. Now, boys, all the things that could be found in a well equipped gymnasium are at your service, and all for the sum of 15 cents a month dues. A word to the wise is sufficient—*join*. There is but one more essential element and that is work. In the history of our school we have always found a sufficient number of hard workers, and I trust that as in the past so it will be in the future. If this plan is followed field-days and *Victory* will be *easy* tasks.

As the days become warmer and warmer and the great north wind has subsided, and we see 50 or 75 boys riding wheels to school, this question comes to our mind: Why not organize a bicycle club? A flourishing club was formed two years ago, and there is no reason why we should not have one now. Some of the riders that are now in the school are equal to, if not superior, to any amateurs in the city. After this club is organized it can take trips through the country and in this way prepare for the Waldo

Road Race on Decoration Day. Those members of the faculty who ride wheels should be looked to for their hearty support.

The track team, the one which achieved such a signal and brilliant victory last spring, is still with us. Bryant and Carter have left school, but I think we will have no difficulty in filling their places. Douglass and Tate, with the addition of some fast man—now developing—will hold their own against any runners or high jumpers in this part of the state. Lindsly, Estill and Arni, our strong boys, will be ready to show what they can do. D. D. Henry, the high flying broad jumper, is not at school this year. Of course there are a great many other athletes in our school, yet unknown to fame, and to them I now add a word of encouragement—*Persevere*—and when the preliminary trial comes off surprise the knowing ones by defeating the old stand-bys.

A meeting of the captains and managers of the Westport, Kansas City, Kas., Central and Manual High Schools was called on Feb. 26 to organize a base ball league. At this meeting a permanent organization was formed to be known as the Greater Kansas City High School Base Ball League. Jas. Peters, of our school, was elected president; George Doyle, of Central, secretary, and Prof. W. C. McClosky, Kansas City, Kas., treasurer. The schedule adopted is as follows:

MANUAL.

At Home—

Kansas City, Kas., April 14.
Central, April 21.
Westport, April 28.

Abroad—

Westport, April 7.
Kansas City, Kas., May 12.
Central, May 26.

CENTRAL.

At Home—

Westport, April 14.
Kansas City, Kas., April 28.
Manual, May 26.

Abroad—

Kansas City, Kas., April 7.
Manual, April 21.
Westport, May 12.

WESTPORT.

At Home—

Manual, April 7.
Kansas City, Kas., May 25.
Central, May 12.

Abroad—

Central, April 14.
Kansas City, Kas., April 21.
Manual, April 28.

KANSAS CITY, KAS.

At Home—

Central, April 7.
Westport, April 21.
Manual, May 12.

Abroad—

Manual, April 14.
Central, April 28.
Westport, May 5.

The league will be governed by the rules of the National League unless they conflict with the by-laws of the association. Spalding's base ball guide and the double unpire system will be used. An earnest effort will be made to keep the teams clear of all outsiders. That is the one element which always degrades high school sports. Every player must have credentials from the principal of his school, stating that he has been a bona-fide student of that school since Jan. 29.

Manual will practically have the same team to represent her as she did last year, with the exception of Bales and Carter and Corder who have left school. I think that there will be no trouble in replacing Bales and Carter, but a dupli-

cate of Corder will be hard to find. Corder was the star of both the Central and Wm. Jewell games last spring. Some new pitcher will have to be developed.

As our school colors were changed to Crimson, the red and black jerseys, purchased by the Athletic Association last fall for the foot-ball team, were out of

harmony, and that body very generously decided to return each player his jersey. This kindness is highly appreciated by the boys, and as it is always considered a great honor at an Eastern university to receive a sweater with the letter of that college on it, so here at Manual we consider it a high honor to receive the Manual "M."

J. L. K.



GIRL'S ATHLETIC ASSOCIATION.

The plea for more interest in athletics, which was made in the last issue of the NAUTILUS, has been energetically responded to, and although the new gymnasium, which was expected with the new wing, has not been built, yet we are not without excellent opportunities for gaining health and vigor.

Interest in athletics has for some time been lacking, but the girls are now in the path to success. The need of sports to maintain the enthusiasm has often been felt, and at the mention of basket ball as a possibility, if not a probability, all the old enthusiasm was aroused. The talk of basket ball soon took the form of earnest pleadings for an athletic association and sports. At last, Miss Casey and Miss Bone generously came to the rescue. Miss Casey offered her new room in the east wing for our practicing, and Miss Bone promised to coach us. Their offers immediately gained favor in the eyes of all the girls, and gave the organization the help which it needed.

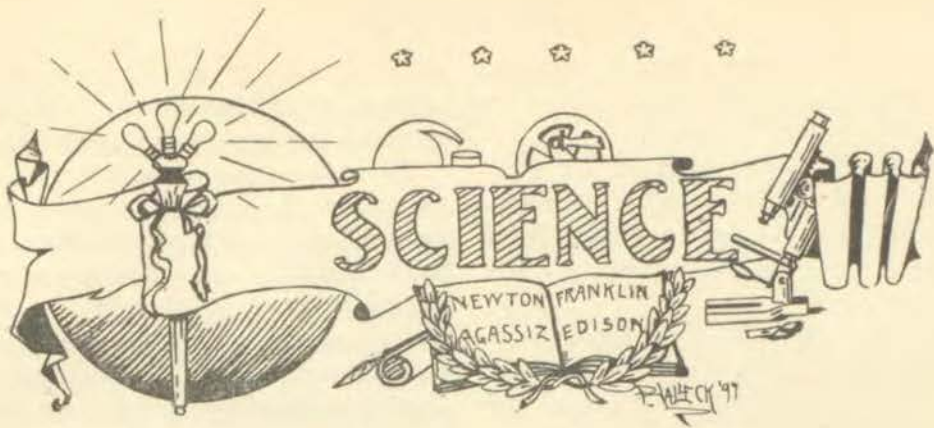
A meeting was called on Thursday, March the first, and forty-five girls who responded organized a new athletic association, the object of which is athletic honors and sports, as well as grace, health and happiness.

The problems of guarding the windows and removing the tables in the room when we practice were solved, and the officers were elected. Maud Hallam was elected president; Minnewa Shoemaker, vice-president; Grace Berger, secretary; Linda Loomas, treasurer; Dot Hewitt, sergeant-at-arms; Virginia Minter, business manager, and Florence Hall, reporter.

As yet, no instructor has been engaged, but when the demand of the girls will insure a class it is probable that an instructor can be had.

The girls met the following Wednesday, and teams were organized, and the constitution adopted and signed. The only requirements for membership are the will to exercise and the entrance fee. Therefore, girls, "be up and doing," for merit will win, and it is intended some day to give indoor contests with the other high schools which will rival field days for enthusiasm, perhaps excel them in quickness and grace. You are wanted to help, and to gain the honors for yourself and for your school. Join, and the girls will combine with the boys to lead the Crimson first in the line of intellectual athletes.

M. H.



THE SUN.

Great Helios, driver of the pure white sun horses, is yet making his daily journey across the skies. The beautiful chariot is still so brilliant that man cannot gaze upon it with unprotected eye. From the gorgeous equipage, the sunbeams come to earth lighting all lands, making objects distinguishable, tints and hues possible. In his light man can see violets, buttercups, peach and apple blossoms, leafy trees and grass, and can discover the various colors which so harmoniously combine. Also form and size are recognizable because of the sunbeam.

Our relations to the sun determines the hour, the day, the season. It also determines the relation of all other planets in our system. Each planet tends to move in a straight line, but the attraction of the sun trains its course, and causes it to revolve in a regular course about the center. Hence, "each and every world may be said to be lifted momentarily and swung perpetually at arms length by the power of the sun."

We are told that the earth is journeying through space which is 450° below zero and that only by the envelope of air and the absorbing and retaining quality of the earth is the transmitted heat of the sun kept near the earth. By

means of this heat, vegetable and animal life is perpetuated.

Helios sends his messengers, the gentle sunbeams, who spread their golden mantles over the bare ground, warm the tiny seeds below, and urge them to burst their coverings and send upward little shoots of green. Then the warm rays continue their influence and the little shoots grow larger, others come, and soon the thrifty plants have forgotten that they came from little seeds way down in the earth. Almost immediately hill, valley and plain are covered with a carpet of green. Little buds push their way up and the sunbeams coax them to unfold and show their bright faces to the world. Thus a variegated adornment is added to the verdure of the land.

The timid buds on the twigs of the trees are gently persuaded to break out their cozy homes. Little by little they yield to the pleading voice, and when once out, find the joyous earth ready to greet them. Thus the trees are robed in pink or white and add to the beauty of the earth, which the faithful messengers of the sun have prepared for the glorification of God, and the pleasures and use of man.

The dainty petals soon fall to the ground, but the sunbeams constantly

guard the life germ, which develops and ripens under their care. Thus the fruits are prepared for man.

The slender stalks of grain are daily strengthened and lifted higher; the tiny seeds increase and ripen and large fields of wheat, oats, rye, and barley are ready to be harvested.

Year after year the trees grow sturdier and taller. Great forests gradually arise and cooling shade is afforded for the enjoyment of all.

The energy which the sunbeams gave in ages long passed was stored away in the vegetation and buried deep in the earth, and now thousands of years later the needed energy is being used to great advantage. Our homes and public buildings are made comfortable during the winter; the bakeries, laundries, printing houses, smelters, all make use of the energy obtained from coal. We can

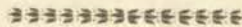
attribute all the power of the glowing furnace, of the locomotive, of the ocean steamer, to the vigorous sunbeams.

These same sunbeams lift the water vapor from the ocean and bear it to the skies where the precious burden is given to the winds to scatter over the earth. Barren lands are converted into fertile plains and deserted wastes yield fruitful returns, because of the generous rain. Copious refreshing streams are formed by the excess of water hastening to the sea, and much energy is obtained from the great force of this water.

The sunbeams also bear strength and vigor to the animal world and make working energetic bodies.

Electrical energy, too, is a gift of these cheerful benefactors and to them we owe many of the useful and beautiful things of the universe.

BELLE STEWART.



SOME NATURE FRIENDS.

"Nature never did betray the heart that loved her."

Nature surrounds us everywhere, but in places it is more perfect than in others, because it has not been interfered with by man. Hence, to study Nature in its perfect stage, one must go to the woods or some place where it grows unmolested.

At this season of the year everything looks dry and dead. There are large rocks, smooth, dark, without dirt upon them; in another place where the agencies of erosion have cut out a gorge, one can see soil, subsoil and rock. The question naturally arises, how did this all come to pass?

At one time this gorge was filled with rock. In the air, invisible, there are

floating about innumerable small cases filled with powder. These cases are so light they cannot settle at all, except when the air is very still, and then the least breath would disturb them, but they are sticky and this helps them to cling fast to the bare rock. After they once settle on the rock they begin to grow, and this is our first and oldest friend of nature. For a long time this little comer looks like stain or dust. These stains spread and grow, break down this hard rock little by little, and make it into dirt that helps their other brothers and sisters, the little sacks that come after the first ones, to take on a shape and form that we can see plainly in colors of gray, rusty brown, bright yellow and orange.

All have seen these little friends, for they grow everywhere on exposed rocks, on the ground, trunks of trees and fences.

According to their form, lichens are sometimes divided into bushy (fruticose), leafy (frondose), incrusting (crustaceous) and gelatinous. Of the first, the long gray *Usnea*, which drapes the branches of trees in swamps, is a familiar example; of the second, *Parmelia*, growing on tree trunks and wooden fences, forming gray, flattened expansions, with much indented and curled margins; of the third, *Grophis*, common on trunks of beech trees, to which it closely adheres, and of the last, *Collenia*, a dark greenish gelatinous form growing on mossy tree trunks.

When lichens have lived on the rocks awhile and have prepared the way, they are followed by mosses which loosen some more rock, which makes a nice home and food for the earth worm. The earth worm, in return, becomes a friend to the lichens and mosses, for he breaks up this subsoil, mixes it with the soil proper, and from this other animals and plants are enabled to live. One would not think when looking at the lichens, mosses and earth-worm, that they were nature's most useful friends. Without these, man could not live; neither could there be any pretty flowers, trees, birds or other animals.

This earth-worm is an animal possessed apparently of more than nine lives, and endowed with a power of adapting itself to the most adverse and diverse circumstances. Bodily injury hurts but little so far as life is concerned. The worm is said to have been "beheaded eight times in succession and to have perseveringly grown a new one each time; another worm was cut into fourteen pieces, thirteen of which became perfect worms,

while only one died."

The mouth of the earth-worm is a mere opening, but the earth-worm has the power of flattening its head and extending it on one side of the opening so as to form two lips, which enables it to grasp leaves and other things firmly enough to drag them under ground to its home. It is obliged to eat its way through the ground and to swallow the earth in order to pass through to make a large tube in which to live. By the dirt passing through it becomes very fine and black. Besides grinding up the dirt, it prepares channels through which the roots of flowers are enabled to spread with ease, and in all they are the best ploughmen that man can find.

God chooses the humblest things to perform the greatest work. It is the noiseless and invisible laborers who accomplish most, for they are at work, some or others of them every moment of every hour, day and night, throughout the whole year. The common mould found on bread and preserves is a plant having life. At first it is a mere spore, then there grows a tough thread called mycelium which gropes around underground until near state of maturity, when many bundles of this mycelium, having at their ends thousands of spores, come together, force themselves above ground and we have those club and stool shaped dusty sacks which are called mushrooms, puff balls and toad stools. Some become very large, others hard, like wood. Some furnish food to man, others are poisonous. They are either white, cream, brown, purple or brilliant orange in color.

Throughout the winter in our part of the country the birds go South, the plants, insects and animals go to sleep, but ere long now our old country will

be taking on a new life.

"Every clod feels a stir of might,
An instinct within it that reaches and towers,
Groping blindly above it for light,
Climbs to a soul in grass and flowers."

The trees, their tops seem in a single night to have thickened, burst their buds and put on its new coat of green.

Under the shelter of the fence along the edge of the stream, ere the snow and ice are hardly gone, can be seen the green leaves of the chick weed, shepherds purse, and before one can realize it the whole earth has covered itself with its new green carpet, the grass.

The birds are returning from their winter homes to seek new ones in the trees, bushes, fences and stubble. Everywhere is heard the chirping of the sparrow, black bird, cuckoo, oriole, thrush, robin and woodpecker; but the blue bird, who sets on an old fence post or on a very high limb of a tree, with his new coat of rich, bright feathers, has chosen to sound the note of welcome for the flower children to march forth and bedeck our land with beauty, and to call their friends, the insects, to emerge from their winter quarters and return to their summer homes.

In this world every one has his special friends and loves to be near them, to look upon their goodness and beauty: they form his society. Just so with plants and insects; they have their societies and friends. They are very particular what flowers they associate with and make it a study how to make themselves attractive, beautiful and pleasing to certain insect friends, which they want to visit their flower homes. They scatter themselves all over this carpet in gay circles, nodding gracefully to the bees, butterflies, beetles and moths, saying, "Come to see me, I am the most beautiful and have the sweetest honey for you." But they have a

purpose in trying to get these insects to visit them, for the insects do the flowers a great service, and without this service the flowers would not be able to be here from year to year.

An ordinary, complete, simple blossom, whether large or small, brightly colored or inconspicuous, consists of two sets of organs, an outer and an inner set. It is the function of the inner set to form seed; of the outer set, to protect the inner from all injury, and also in many cases to attract the under-gardeners, the bees, whose good offices are required for developing of seed.

The perfecting of seed is the great thing to be accomplished and those organs which contribute to this object are placed in the center, as far out of harm's way as possible. If we examine, for example, a common primrose, splitting it carefully upward, we shall see in the very center a hair-like stalk, with a knob on the upper end and a hollow swelling at the lower end. On splitting open the hollow part we find it contains a number of minute grains, ovules or little eggs, which will be converted into seeds.

This central organ is the pistil, which consists of one or more bodies named carpels, each with an ovary below and its stalk or style above. Outside of the pistil stands the dust spikes or stamens—stalks bearing each a double sack or anther which is filled with dust known as pollen.

The outer set consists of a double envelope; the inner, or petals, more delicate in texture and varied in color, forming the corolla, and the outer, or sepals, generally green, forming the calyx.

The immature grains in the hollow part of pistil, that are converted into seed, at first are mere specks, and will remain so unless they are brought into close contact with some of the pollen borne by stamens, and it is by the aid of the in-

sects that pollen is conveyed to the pistil.

Every pollen grain is delicately coated with oil, which is probably to protect it from the damp. Usually each grain consists of a single cell, though sometimes there are more, and these cells are filled with a liquid of most nutritious kind which is pleasing to the bee.

As the bee enters the blossom in search of honey he is dusted with pollen on different parts of his body, according to the height of the stamens, and when he flies off to blossoms of another plant, if spots of pollen come in contact with the pistil tips, they may be caught and kept.

The shape of blossoms and of insects by which they are fertilized are as beautifully and exactly fitted one to the other as a lock to the key. There are endless different devices for securing that visitor, who shall not depart without doing some service in return for the pollen or nectar which he has consumed.

The bee is the most popular among the flower belles. The beautiful clover, red and white, fix their little honey cups so that nothing but the proboscis of the bee can take their sweets; the wild hyacinth, in its royal purple, pink, blue and white, that is too full of its own honey to stand, falls back on its couch of moss waiting to be visited by the singing bee; the dandelion, jolly, popular, scattered to rich and poor alike, the gold of spring, that all have loved to make curls of in childhood; "Miss Daffodil, with her green petticoat, and her yellow gown," and the pompous thistle, whom we all want but do not dare go near on account of his dreadful stickers—all are courting his favors. The moth is partial to the brilliant morning glory, evening primrose and the evening flowers; while the beetles love to go to the waving fields of gold to spend their day in "the golden lap of luxury;" I

refer to the golden rod. The butterfly enjoys visiting them all.

'Tis true these insects admire all flowers of bright colors, but they go to see only those that have a sweet honey; those that contain bitter nectar they leave alone—also the unattractive weeds.

"Poor little vagabond waif that clings
To the pavement's narrow hem—
In all the breadth of this sunny land
There is no room for them.

Ragged, unwelcome, their stunted lives,
Are pleading to us for alms,
Yet even our careless feet pass by
In our search for beautiful charms."

Colors have much meaning in flower language, and shows what kind of insects are wanted. White attracts insects of all sorts; bright yellow seems to be favored by beetles, blue by bees, though they do not confine themselves to flowers of this or any other color, for what the flower lacks in color may be made up by its sweet scent or nectar; dull pink attracts swarms of bees and butterflies. Yellow is said to attract insects of lowest kind, and pink, red, lilac, purple, blue, rank higher and higher as to the insect.

As every one has enemies in this life, just so with flowers, and there is a constant war going on between these plants and insects. No wingless visitors are welcome, for they crawl slowly, loose the pollen by the way, by getting it rubbed off, and are usually so indiscriminate in their taste that they go as readily to one blossom as another, and it is quite a chance what dust, if any, they will bring with them. They plunder without making payment in return and thus rob the flower of its means to attract other and more useful insects.

The ant is the insect that is most distasteful to the flowers, for it is fond of their sweets and can find them out from an immense distance, and on account of

its smooth coat and tidy habits, it can carry no powder. When the ants do get a chance they make most of it and swarm in greedily, but on the whole they are pretty well kept out, now by one means, now by another.

The snap-dragon, e. g., keeps her mouth so firmly closed that none but the strong bumble bee can force its way in. All wingless insects prefer to avoid dew and so do not stir early in the morning. Some flowers unfold for only a short time and close by nine o'clock in the morning; others keep off their intruders by means of a basin, which they form with their leaves. Sticky juice is often fatal to them, for as the ant crawls up the stem its hooked feet are so sharp as to cut the outer skin, the juice oozes out, hardens rapidly, gluing them to the spot. We find this present in the milk weed, and the thistle with its prickles and bristles is armor clad against the slugs and snails, while the dandelion and nas-

turtium have a double defense—their small hairs and fringe inside. They keep out unwelcome visitors, and welcome those who can reach the nectar by the right way.

But there is one class of enemies that the poor little flower is helpless to defend itself against, the grub worm, cricket and caterpillar, for these insects live on the roots of flowers.

But the birds are nature's soldiers and keep in subjection these injurious animals. Birds are enemies to insects—friends to flowers.

"There's never a rose in all the world
But makes some green spray sweeter;
There's never a wind in all the sky
But makes some bird wings fleeter;
There's never a star but brings to heaven
Some silver radiance tender;
And never a rosy cloud but helps
To crown the sunset splendor;
No robin but may thrill some heart
His down light gladness voicing;
God gives us all some small sweet way
To set the word rejoicing."



OUR HEATING AND VENTILATING SYSTEM.

The heating and ventilating system of our school provides for the maintenance of an even temperature in the building. In fact, since the rules concerning ventilation are being strictly enforced it is noticeable that the thermometers in the rooms stay within one degree of 70° F. all day, while in the halls they do not vary one degree either way from 68° F. And, too, we have an abundant supply of fresh air. The means by which this circulation of warm air is kept up is at once simple and very effective.

The fresh air enters the building through two openings, one on each side of the north entrance. From there it goes down and into the fresh air room,

where the plenum fan forces it through a coil of steam pipes into the warm air room. The upper part of this room extends the entire length of the building, and from it the warm air is allowed to escape by means of dampers into ducts leading to the various rooms.

This air, as it becomes vitiated and cooled, settles to the floor and leaves the room through a register near the floor and goes through a duct into the foul air room. Here the exhaust fan forces it through the chimney out of the building. The chimney is on the south side of the building directly opposite the fresh air inlet. The two fans are six feet in diameter and are calculated to deliver

something near 50,000 cubic feet of air per minute. They are run by two ten horse-power electric motors at a speed which may be varied from zero to 350 revolutions per minute.

Complete as this may seem there is yet one thing, perhaps two, lacking to make our comfort during cold weather complete. There should be some efficient means of moistening the air before it is delivered to us to use, and the air would not be injured, rather it would be helped by filtering. The moistening is by far the more important, for if air saturated with moisture at 25° F., our average winter temperature, be raised to 70° F., it will be but little more than twenty-five per cent saturated, consequently it will have a great tendency to dry anything with which it may come in contact. This, of course, must result in parched lips and dry throats for those breathing it. It has been noticed often that on a cold day everyone seems to be thirsty; the drinking faucets are kept busy.

There are several ways in which this fault might be remedied. One is to allow a jet of steam to escape into the air just after it has left the heating coils. This would effectually moisten the air, but where the exhaust steam from an

engine is used for heating purposes, as it is here, there would be introduced into the air a certain amount of grease which would be, although not harmful to life, extremely annoying in its effect on faces and on walls. It might be well to use a water spray instead of a steam jet, for this would not only dampen the air, but it would also cleanse it of whatever solid matter might be present and of some injurious gases, such as sulphur dioxide and hydrogen sulphide, which are very soluble in water and are apt to be present in the atmosphere of a city.

Another method is to hang where the warm air will be forced through them a number of large sheets of some coarse material, like jute, woven with quarter-inch meshes. Over these screens a constant supply of water is kept running. By this means the air is given the proper degree of humidity and is freed from dust particles and noxious gases.

Either of the two latter methods would serve not only to warm the air in winter, but also to cool it in summer. Of course, the filter screens would require an occasional washing, but this would be a matter of five minutes time and a little city water.

Taking everything into consideration, it is but reasonable to expect that it will not be many years before we may have in our school a means of moistening the air before we breathe it.

J. L. H.



THE CHEMIST'S SERENADE.

Come where the Cyanids silently flow,
And the Carburets droop o'er the oxides
below,

And the rays of Potassium white on the hill,
And the song of the Silicates never is still.

Come, yes come,
Tweedle dee dum,
Peroxide of soda
And Uranium.

When alcohol's liquid at 30
And no chemical change can effect Maganese,
When Alkalies flourish and Acids are free
My heart shall be constant, sweet Edith, to
thee.

Yes to thee,
Tweedle dum dee,
Lead, sulphur, and KNO_3 .

—FROM A CONTEMPORARY.



The new forge shop is at last a reality, and the interest of the whole school is centered upon it. They seem to enjoy seeing the boys with coats and collars off, dressed in their overalls, jumpers and leather aprons "toiling, rejoicing, sorrowing"—and finally, but not least, perspiring.

The blast, together with the ring of the hammers on the anvils, greet your ears as you near the shop, and as you enter, the bright light from the forges nearly blinds you. You begin to think it no wonder that poets so often take the blacksmith and his shop as subjects of their poems. The ring reminds you of Ferguson's poem, "The Forging of the Anchor," in which he writes the following verse:

"Swing in your strokes in order;
Let foot and hand keep time;
Your blows make music sweeter far
Than any steeple's chime."

And if you could put yourself in the boys' place you would realize why Longfellow wrote:

"The smith, a mighty man is he,
With large and sinewy hands;
And the muscles of his brawny arms
Are strong as iron bands."

The boys show their interest and enjoyment in the shop by their actions. They roll up their sleeves and go at it in a real workman-like manner. The perspiration stands out on their faces, and rolls off in great quantities as they hammer the hot iron. They certainly would make a fine study for an artist.

The work so far is rather of the initiative order so as to get the boys accustomed to the management of the forges and to teach them a few principles of forging. The first exercise was to draw out a square bar of iron uniformly and then draw out the ends to points. The second exercise was much more difficult, as it was just the opposite of the first. They had to enlarge the cross-sectional area by hammering the iron on the ends; this is called "upsetting." The ends were then drawn out—one to a square point and the other rectangularly and

then bent so as to form an eye on the end of the stock.

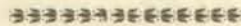
The third exercise was the making of a meat hook. This begins the work on round iron. The bar has to be drawn out to an oblong shape at one end and then bent to hold to the wooden beam. The other end is pointed off round and bent so as to hold the meat. The next exercise is to make a square wrench, which will be used in the new turning shop to remove the face plates from the lathes.

Of the three years' manual training

the boys seem to like the forging best. We have such a nice shop with a wash room where hot or cold water may be had. The boys took up a general collection and bought a nice mirror, brushes and combs and a whisk broom, so now there is no reason why a boy should leave the shop without as good an appearance as when he entered.

"Thus at the flaming forge of life,
Our fortunes must be wrought;
Thus on the sounding anvil shaped,
Each burning deed and thought."

H. M. W.



MECHANICAL DRAWING.

This is one of our most interesting courses. It begins by giving us an idea in what we will study, and the way in which we are going to advance to the degree of an architect or a draughtsman.

The course is very essential to all who intend to go to college for the purpose of becoming architects, and is also indispensable to the engineer, as all of his work, no matter how trivial, must be concisely comprehended by him before he can proceed with it. This is one of the most popular branches of the manual training course, as is shown by the number of boys that have finished the third year of it, and also by their demands for the privilege of entering the fourth year course.

Mechanical drawing affords the best opportunities for the training of the eyes, nerves and hands as well as the brain. The degree to which the eye has been trained may be observed by accuracy, and also by neatness; accuracy also shows the hands' training.

In this mechanical age there is hardly a profession in which a knowledge and skill in mechanical drawing does not play an important part. Few people stop to think that, back of the simplest mechanical device which we use every day, as well as the most wonderful and com-

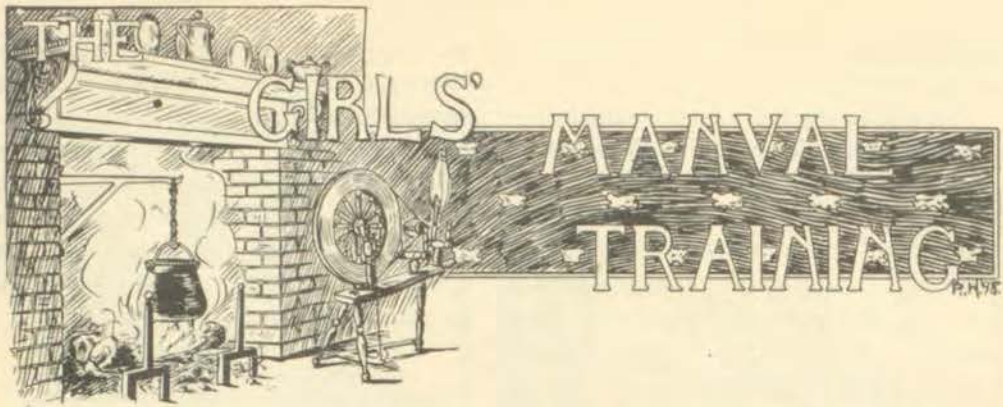
plex triumph in mechanics, draughting is indispensable. The mechanical inventions of the mind can only be interpreted to other minds by the medium of mechanical drawing.

There is hardly a manufactured article that we see about us that was not first drawn by the draughtsman. In learning this art we develop the efficiency of the mind, hand and eye greater than by any other study.

Chief Hale, our brave and praise-worthy fire department chief, once said that if all the young inventors could interpret their mechanical ideas by means of mechanical drawings we would have more new appliances and more successful inventors. As it is, most of them have to seek the assistance of some one capable of bringing to view their ideas for them. This often causes mistakes and injures the invention.

Through the teaching of our instructor, Professor Sloan, the boys soon become very interested in this delightful study. The majority of our instructor's beginning pupils have continued through three years of the course with him, and are now anxiously and patiently waiting for the time when they may enter upon the advanced or final year of the course.

JAMES C. LEAVITT.



As an introductory paragraph, the editor wishes the girls to understand that the pages devoted to the Girls' Manual Training are for the girls of the school; and as they should necessarily be interested, we had hoped some interest would have been manifested. As no response to our suggestions were forthcoming, however, these pages are at the mercy of your criticism as short order work.

Those who would escape criticism must avoid being seen by the M. T. H. S. girls, as their eyes have become accustomed to lines of beauty. One girl was telling the class not long since of the incongruous effect produced by a lady's wearing an immense picture hat and long cape with a short rainy day skirt while shopping.

An interesting clipping taken from the New York Sun upon this same subject is quoted below:

"An enlivening spectacle which met the eyes of many who ventured forth while the last snow flurry was 'on,' was a woman wearing a golf skirt shorter than usual, and topped with a knee length, tight fitting, sealskin sacque, such as were fashionable a dozen years ago. It was all a matter of proportion, of course, or rather disproportion; but if the woman had tried to cater to incongruity she

couldn't have succeeded better. The curtailed skirt left her hands free for umbrella and bundles, and with the extra length of coat she was undoubtedly warmer, but it was a sad blow to symmetry. It was more than grotesque; it was ludicrous. The only way the short skirt for any kind of service can hope to become popular is by conforming to the laws of beauty in general 'and becomingness in particular.' "

Miss Sackett, of the Pratt Institute, gives a practical view of sewing which we do not often see advanced. She says: "One argument, to my mind, in favor of sewing, is that a knowledge and love of it is a helpful antidote against restlessness. So many girls need something new always to amuse them; they have no other resources indoors when tired of reading or music, and if they had a fondness for making things for themselves, they might enjoy sitting down to the work."

The New York Times says in regard to sewing: "A girl who has come from a family where she has had the best educational and social advantages, shows it immediately in her work. There is a daintiness about it, a ladylikeness, which will not be found in the work of others."

How many of us know, I wonder, that America is setting the pace for Paris in some fashion matters? George H. Perry says in one of his excellent articles: "America stands head and shoulders above Paris and the rest of the world in one branch of costuming—that of the plain 'tailor made' gown. Both Paris and London are taking lessons from us in this line, and any American woman who buys gowns of this character abroad may be compared to the Kansas man who came to New York City to buy a car load of wheat."

"Literary style is the dress of thought. It's purpose is to reveal, not to conceal; to embody, not to cover out of sight by its draperies; to render attractive, not to attract notice to it."—ANON.

"Life in its fulness and totality means much. It means the life of the body, that it shall be clean, sweet and wholesome; it means the life of the intellect, that it shall be inquisitive, receptive, creative; it means the life of the emotions, that they shall be strong, and deep, and human.

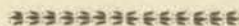
To accomplish this end is manifestly the social purpose of which education is the formal process. The unfolding and perfecting of the human spirit is the object of the Manual Training. It rests upon a belief in the unity of man. It creates a definite environment for the life of every individual. It has for its social ideal the complete life of every in-

dividual."—MANFORD HENDERSON, PH. D.

Many people in our city, even today, speak in a derogatory way of manual training. Whether this is from ignorance or prejudice or both, for the one is the result of the other, it is difficult to say. Mr. Henderson shows the importance of the manual training department when he says: "The particular difficulty in the way of manual training, just now, is in finding men and women *wise* enough and skillful enough to carry it out. The teachers of manual training should be men quite as carefully educated, quite as acceptable in language, quite as broad in their sympathies as the teachers of language, science and mathematics." Let us congratulate ourselves that our school is an unusually fine one then, as our teachers certainly answer these requirements fully.

Until late, there has been little call for literature concerning manual training, but it is difficult now to supply the demand.

In the mad rush for something new and extraordinary, to the extent of gaudiness, we can well say with Ruskin: "So far as education does indeed tend to make the senses delicate, and the perceptions accurate, and thus enables people to be pleased with quiet instead of gaudy color, and with graceful instead of coarse form—so far, acquired taste is an honorable faculty and it is the true praise of anything to say it is in good taste."



MEDITATION OF THE SPHINX.

"Long ago," said the Sphinx,—"How long ago? You must be explicit if you satisfy our Missouri inquiring minds, old Sphinx," interrupted Young America

saucily. "Missouri? What is that? But I must tell my story."

"Long ago, when the world was old in vice and the temple beneath my feet

was buried in sand, two travelers looked up at me, wondering, and pitched their camp on my right foot. I, even I, listened to their talk as I have listened many ages, and this is what they said:

"What think you, friend Giudo, of the new painter of Cortona?"

"The Dominican? Fra Giovanni da Fiesole?"

"Even so, he whom men call 'Angelico' and 'Il Beato.' "

"Truly, I saw a few of his works at Rome and they were, beyond doubt, excellent."

"'Tis said that the Pope appointed him an arch-bishop. Fat living for him. He, I would like to be arch-bishop."

"'Tis said that he rejected it and preferred Fra Antonio."

"Notoriety, notoriety, brother Giovanni."

"Also people say that he prays long and earnestly before he paints."

"Ay, and that he never will change his design."

"Why?"

"Father of all, how should I know? Perhaps he thinks that the blessed saints do it."

"That is a pretty idea. Why should they no?"

"How should I know? Give the camels food and let us sleep."

"How long ago?" demanded Young America.

"What know I of time, except as I see empires rise and fall. Goths, Ro-

mans, Greeks, Macedonians, Egyptians. My memory is away beyond the span of men. I have looked across the desert and seen kings; I look across the desert and I see men. Trouble me not; I must meditate."

CHARCOAL SCRAPINGS.

"Girls, where are your vanishing points?"

Miss Campbell—"She's gone and put my drawing up there and I think it's mean." What's mean, the drawing?

If one should, in a savage state, be inconvenienced by rain, would he practice architecture, and if so, why? [First question on final exam.]

Was Leonardi da Vinci the missing link?

In sketching, which is more important, the features or the action?

There are some people yet who don't know how to use a plumb-line!

Miss Murphy—"What is a frieze?"

Bright pupil—"Just what we are having now."

Girls, have we learned to spell perspective? I think so.

What were the Children of Israel doing when they were wandering through the wilderness?

Bright Pupil—"Carrying the tabernacle around."

Question—"Who can tell us something about this man Giotto?"

Miss B.—"I have something down in my jacket pocket about him."





We desire to compliment our new exchange, the *William Jewell Student*, for its excellent reading matter. It is one of our best exchanges.

Don't laugh at a girl because she can't hit the side of a barn with a brick. You may marry her some day, and then you'll be glad of it.—*Ex.*

It is a good deal easier for some men to keep a crease in their trousers than an increase in their pockets.—*Ex.*

The Hedding Graphic would be more attractive if some neat design was placed on its cover.

The *C. A. C. Lookout* contains a very interesting article on the "Philippines." The Agricultural notes in the February number are very beneficial.

A grave digger dug a grave for a man named Button, and when the bill was sent in it read, "One Button hole, \$1.00.

A cat may have nine lives, but it only takes one small dog to make them all miserable.—*Ex.*

The *M. S. U. Independent* is a very interesting and well edited paper, but I suggest that it add some neat cover to make it more attractive.

Soap Box: "Heard the other day a Knight of Pythias, while being initiated, was thrown into a barrel of flour."

Barrel: "Well, that was when Knighthood was in Flower."—*Ex.*

We are pleased to note that the *Rocky Mountain Collegian* has an exchange column in its January issue.

The *Steele Review*, published by the students of the Steele High School, Dayton, Ohio, is worthy of great praise for its excellent publication. The cover is very neat and attractive.

George (at the gate): "Don't tell anybody that I took you home to-night."

Christine: "Never fear; I am as much ashamed of it as you are."—*Ex.*

Why is a pancake like the sun?

Because it rises out of der yeast and sets behind der vest.—*Ex.*

The February number of the *Prospectus* contains a short but interesting story. The exchange editor seems to take great interest in his department.

"If all women were transported to China, where would all the men go?"

"They would go to Pekin."—*Ex.*

"What is the largest weapon on record?"

"The world," because it is a revolver.—*Ex.*

The *High School Messenger* contains an excellent poem on "George Washington." It is altogether a well edited paper.

Professor: "A fool can ask questions which a wise man cannot answer."

Student: "I suppose that is why so many of us flunk."—*Ex.*

The *Lawrence High School Budget* is very good as far as it goes, but it contains only four pages of reading matter.

MIXED.

'Tis not amiss to kiss a Miss,
 But 'tis a Miss to kiss amiss;
 As for a Miss to kiss a Miss,
 Far more a miss to miss a kiss.

—*Ex.*

Prof.: "What is the meaning of Equinox?"

Student (thoughtfully): "Equi means horse, and nox means night; night mare, sir."—*Ex.*

We are pleased to welcome our new exchange, the *High School Scholastic*, to our table. It would be greatly improved if they would add a short story and an exchange column.

"By Chimney," the smoke did say,
 As the draft flew up the flue;
 "I get a new suit ever day.
 A mixture of black and blue."

—*Ex.*

The *Crescent* contains some very neat designs for the heading of the different departments.

The *Walking Leaf* contains an excellent story, entitled "On Washington's Birthday." It is said to be a true story, which makes it all the more interesting.

"No, Fred, I can't marry you, but I will be—"

"Don't say a sister! Annie, please, I'm tired of hearing that."

"No, I was going to say I would be an Aunt, as I accepted your Uncle Tom last night."—*Ex.*

The *Crimson* is one of the neatest and best edited papers we receive. We are pleased to note that the pupils take so much interest in athletics.

Ex-President Cleveland is to be a lecturer at Princeton this year. He has agreed to deliver the lectures called for by the Strafford-Little fund of \$10,000, which establishes a lectureship on the themes connected with public life.—*Ex.*

Hamlet evidently rode a bicycle. He says, "Watch over my safety while I sleep."—*Ex.*

The *Aegis*, published by the pupils of the High School in Houston, Texas, contains several interesting stories and poems.

"My lips are sore, but camphor ice

I will not have," said May;

"Of course, 'twould cure them, but you see

'Twould keep the 'chap' away"—*Ex.*

"I am not much of a mathematician," said a cigarette, "but I can add to man's nervous troubles; I can subtract from his physical energy; I can multiply his aches and pains, and I can divide his mental powers; I can take interest from his work, and discount his chance of success."—*Ex.*

The prize story, "Christmastide," in the *Herald* is very interesting and commendable for the excellent grammar used.

The February issue of *The Tack* contains the photograph of each member of the faculty of the school and a short biography of each.

Mother, (angrily): "Joe Jefferson, how many times mus' I call yo' befo' I can make yo' hear."

Joe Jefferson. "Dunno; yo' stand thar and holler, an' I'll set here and count."

—*Ex.*

After all there are but two really bad things about the cigarette smoking; one is the cigarette, and the other is the fellow who smokes it.—*Ex.*

The cover of the *University Log-Book* is very unique. This paper is published by the students of the Kansas City, Kas., University.

Senior:—"History repeats itself."

Freshman:—"Our'n don't; we have to learn it by heart and repeat it ourselves."—*Ex.*



Hurrah for the Crimson!

Mary Clemons, studying perspective: "Those parallel lines will meet in eternity."

Someone says, "Heaven sends us good meat, but the devil sends us the cooks." We are assured of this when the sandwiches in the box lunches taste like sulphur.

Mr. Frost: "Mr. Vincil is a cracker-jack!"

Mr. Frazer: "So is Miss Whitney."

Minnewa said it takes the secretary an hour to find a few minutes.

Lena Gilbert couldn't sleep the night of the social session. Maud said it was too much "Short"ening.

Linda: "Edna will be a Lady-in waiting."

Dwight: "Well, she won't have to wait long."

The Athletic Girls are organizing a basket ball team. Keep on as you have started, girls, and you will surely succeed.

Frank Carpenter and Pearl Woolery have exchanged photo buttons. We envy each the possession of such badges.

Girl, translating in French: "It side-walked through my head." Why not cake-walk?

"Staid and strong and unwise, but jovial, nevertheless."—Mr. Kilroy.

Someone caught one of the forges "sparkling" the air.

Freshmen, please let the committee run the gymnasium.

Making light of serious things—the study of the skull and candle in the drawing room.

"Guiltless of steel and of the razor free."—Horace Hamm.

Miss Casey: "One slippery day last week I took a six weeks' course in astronomy in six minutes."

Extract from Freshman's essay: "You can learn sewing, cooking, drawing, turning and *forgery*."

22 years of successful business building is a record that no business man can afford to sacrifice. The motto: Love's Drug Store the best of everything.

A TRUE PROPORTION.

Dwight L. Frost : Edna Messinger : :
Harry Frazer : Sadie Whitney.

The burst of oratory from Kilroy for Maroon and White has never before been equalled by a pupil of this school.

1st girl: "There is a skeleton here at school."

2nd girl: "A real live one?"

Why is the Science Club so progressive? Because it has three Wynn(d)s to blow it along.

Who are the talking machines in Mr. Shield's Two A Civil Government class?

Mr. Berg gets very interested in magazine ads. during class hour; especially when the lesson is hard.

The Spring Styles in Hats are now here. If you would be in fashion come to the **FASHION.** The one price, \$2.25; guaranteed \$3.00 values.

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HATTERS,**

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1226 MAIN STREET.

The Staff welcomes Miss Whitney as Exchange editor, and Miss Hallam as Girls' Athletic editor. Miss Whitney fills the vacancy made by Mr. Russell's election to Editor-in-chief, and Miss Hallam takes the place of Miss Harzfeld, who has resigned.

Something awful happened in the "Debaters" meeting the other day. Scammon cracked a joke and Kilroy saw the point.

Mr. Page: "We will take for an example a square ball."

Miss Van Metre (exasperated): "How many times are you going to say, 'I don't know?'"

Charles: "I don't know."

Oh! suppose some of the Freshmen should drink the fire water in the buckets on the landings? Janitors, *please* watch them carefully.

Mr. Page can boil water by putting his hand over a glass filled with it. Any inference is unnecessary.

A great number of boys' names were put up for discussion in the Ozos, the girls' society. Here are some of the names and the reasons for blackballing: Mr. Burton, an affliction of the head compels him to have his hats made to order and they were afraid the disease might be contagious. Harry Frazer was—well, some of the girls thought he might be monopolized and be a monopolizer. Jack Schnitzengeabiller's name wasn't voted on; it took too much time, and Henry Maas teased all the girls so they tho't him just *horrid*. Others? Well, Leavitt was elected, but then—

Mrs. C. J. Rudd, 1009-1011 Walnut street, manufactures, repairs and stores fine fur garments at moderate prices. Fifth floor. Take elevator.

Katherine: "Why is the moon, in German, masculine and the sun feminine?"

Mr. Richardson: "There is but one reason I know and that is that the moon is generally out all night and the sun isn't."

Wasn't the Scotch programme *great*? Miss Wilson and Prof. Phillips deserve great credit for their successful efforts.

Mr. Dodd: "What is the definition of a locus?"

Pupil: "I don't know what Webster says, but it's a thing with wings that sits around on the grass and makes an awful noise."

Miss Gilday: "Students, when England began war with the Boers, she opened her mouth and put her foot in." For the benefit of the rising generation of Freshmen, let us say that this joke is worn out school property and was long ago consigned to the attic.

Mr. Merrill in zoology: "I shall now pass around the appetite" (apatite, a mineral).

Russell: "Cliff, did you make any New Year resolutions?"

Cliff: "No."

Rusty: "You needed to."

Mr. Dodd: "How many cases have we had this morning, Mr. Dart?"

Eddie: "Cases of what?"

Mr. Shield: "Who coins money in Mo.?"

Clement: "Farmers and saloon keepers."

2 B or not 2 B is the question when you bring the wrong set of books.

Mr. McCurdy: "This area of the brain tells me when and to what extent I have been touched."

Gems from the beginning Latin class: "Caesar conquered Pompey in ante Africa a herd of ghosts ran into the woods."

When you're in school you want the best instruction. When you're sick you want the *best* physician, so you'll get the best prescription filled *best* at Love's Drug Store, Walnut & 10th Street.

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Manufacturers and Retailers of Correct Clothing for Men, Boys and Children

Main & Eleventh Sts., KANSAS CITY, MO., U. S. A.

Frazer & Tate wish you to mention **THE NAUTILUS** when trading with its advertisers.

Mr. Dodd: "I think this is a case where Adam got Eve into trouble."

Miss Gilday: "Had Carthage conquered Rome what would have been the result?"

Joe Whitehead: "We wouldn't have had any Caesar to translate."

Miss Drake: "Henry, don't throw paper wads; you are not too large for me to throw into the hall."

Ask Bobby if his shoes have cracked yet?

Mr. Dodd: "Don't let me catch you Knapping."

Marie wonders where and how Mr. Frost procures those "horrid mice." Do you suppose he goes hunting in the "attic"?

Mr. Phillips, speaking of Paderewski: "This magnetic Pole."

Vincil: "Do any of these limestone rocks have an odah?"

We are getting tired of Kilroy's "Henry Clay" speeches.

Mrs. Elston: "There may be more than one Dickens, but this is the Dickens."

Miss Batcheller: "The lobster engages in frequent conflicts and the loss of a leg is often the result, but this in no way harms the animal, for the legs grow back on again."

Cliff: "Just think how great it would be if our legs would do that. It wouldn't hurt us at all to have them pulled."

Hubbard's "Korrekct Shape" Shoes for men and boys \$3.50 and \$5.00. 1005 Main.

Herbert: "And the king was executed again. I don't remember his name." The class was unable to supply the name of this twice executed monarch.

Mr. Phillips: "Tell? What tell? Oh, yes, William Tell."

Mr. McCurdy: "The bee sometimes uses its proboscis in defending its honey."

The printer acknowledges that he is to blame for running such an inappropriate cut over the Athletic Department in this issue.

All those members of the school who intend to write for the NAUTILUS Annual will please see the editors before the 15th of April. No material will be received after the first of May, excepting locals.

The school now possesses a Junior and Senior class. The members of the Junior class were the first Freshmen at Manual.

The cover design for this issue was drawn by Maurice E. Simpson.

In order that you may receive the last number of the NAUTILUS, or in other words the Annual, all the subscribers are requested to hand in their extra ten cent assessment. Mr. Burton will willingly receive all dimes. See him at once.

The cover design for the Annual is open to competition. Will you not try and see what you can do?

The NAUTILUS receives daily many good exchanges, and to those in school who are anxious to see what the other high schools are doing, may do so by asking for the papers at the NAUTILUS office.

Why do all the students go to B. Glick's, 710 Main street, for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

Crimson is the color on the cover.

Whew! Whew! Miss Gilday and her Psychology class. What happened that morning?

Suggest to the Junior class some appropriate class colors.

Edwin Sutton, Roy Stoller and Robert Ripley are now members of "The Art Club."

Twelve pages are assigned for locals in the Annual. Help us get some spicy ones, will you?

NEW MUSIC...

Our Sheet Music Department is the most complete in the city; all the latest hits at popular prices. Mail orders promptly filled.

The Sun-Kissed Sea, H. O. Wheeler's latest, in two keys, bass and mez. sop., 25c. Why, (song), 25c. I'd Leave My Happy Home for You, 25c. I Ain't Seen No Messenger Boy, 25c. In California, 25c. A Jolly Night's Waltz, 25c. Of Course, new song, companion to "Why," 25c. I'm Glad I Met You, Mary, 14c. Smoky Mokes, song or two-step, 14c. The Latch String's Always Hanging Out for You, 25c. My Beautiful Annabel, 14c. In Society Waltz, the season's greatest success, 25c. When Knighthood was in Flower, two-step, 14c. I Used to Know Her Years Ago, Charles K. Harris' latest, 25c.

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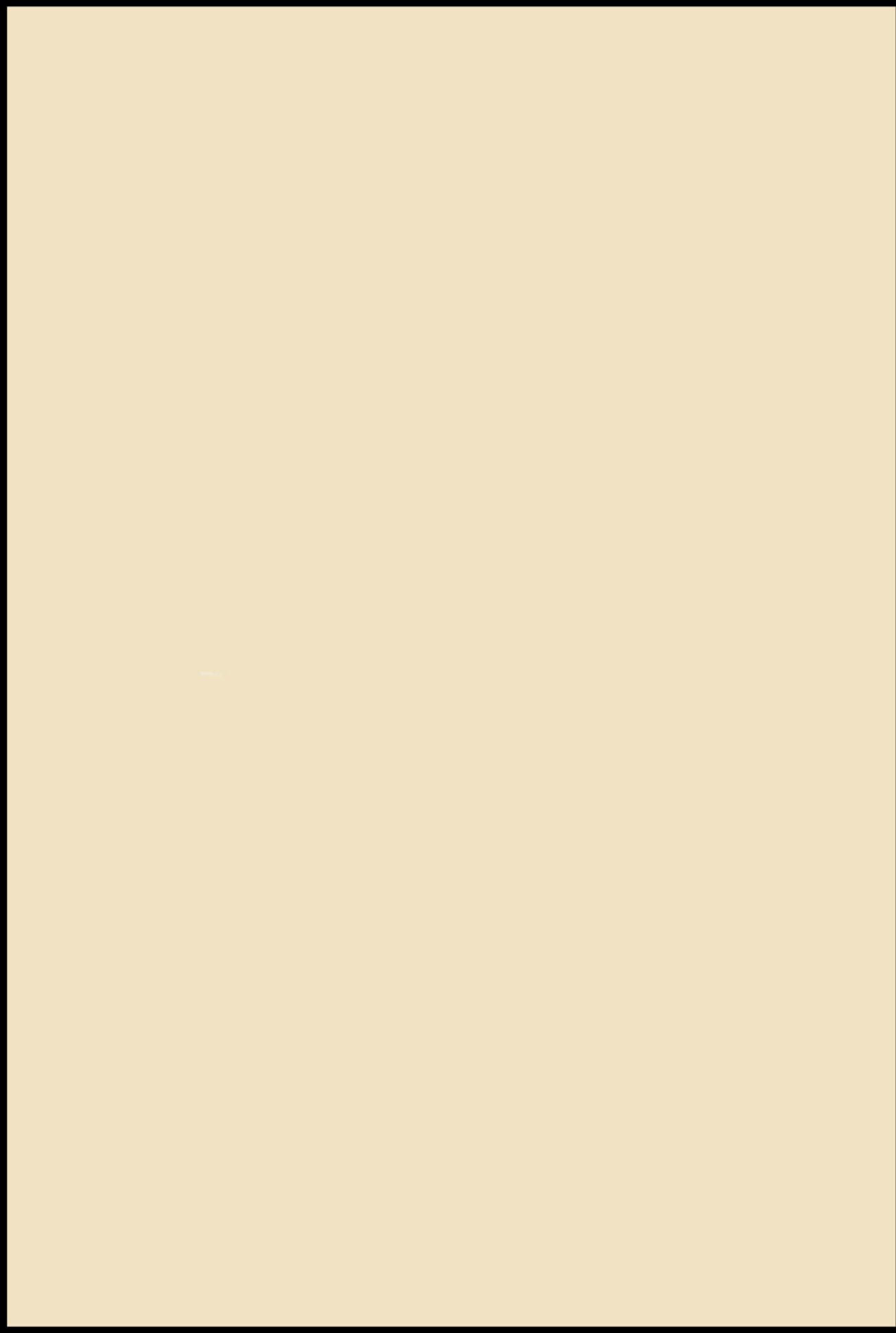
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E. S. BISHOP,
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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. The text also highlights the need for regular audits to detect any discrepancies or errors early on.

In the second section, the author provides a detailed breakdown of the accounting cycle. This includes steps such as identifying the accounting entity, choosing the accounting method, and recording transactions. Each step is explained with clear examples and practical advice to help readers understand the process thoroughly.

The third part of the document focuses on the classification of assets and liabilities. It explains how to distinguish between current and long-term assets, as well as current and long-term liabilities. This classification is crucial for determining the company's financial health and its ability to meet its obligations.

Finally, the document concludes with a summary of the key points discussed. It reiterates the importance of accuracy, regular audits, and proper classification in the accounting process. The author encourages readers to apply these principles consistently to ensure the reliability of their financial reporting.



...The Nautilus...

Commencement Number

..1900..



PUBLISHED BY THE STUDENTS OF

THE MANUAL TRAINING HIGH SCHOOL



VOLUME III

NUMBER IV

KANSAS CITY, MISSOURI.

May, 1900.





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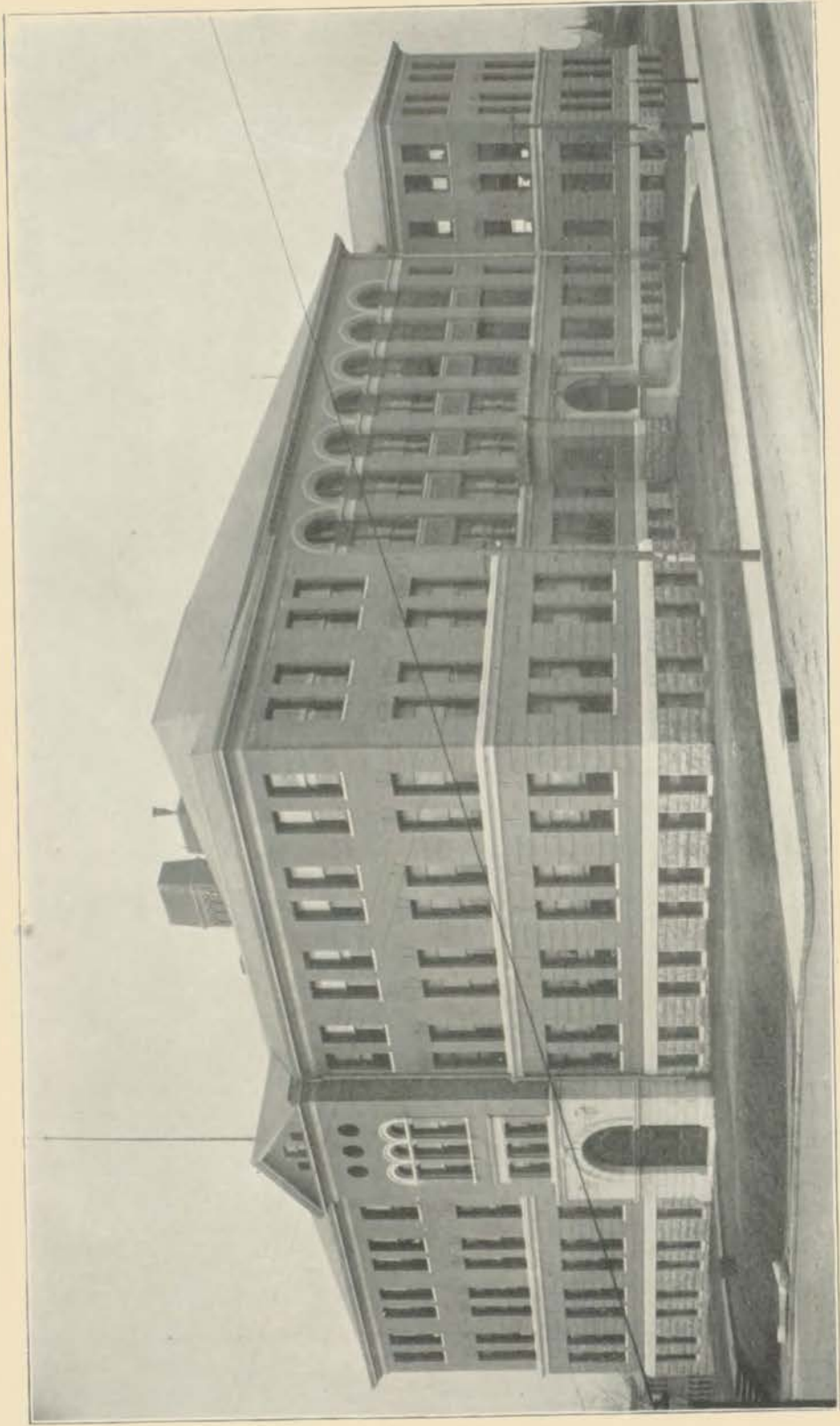
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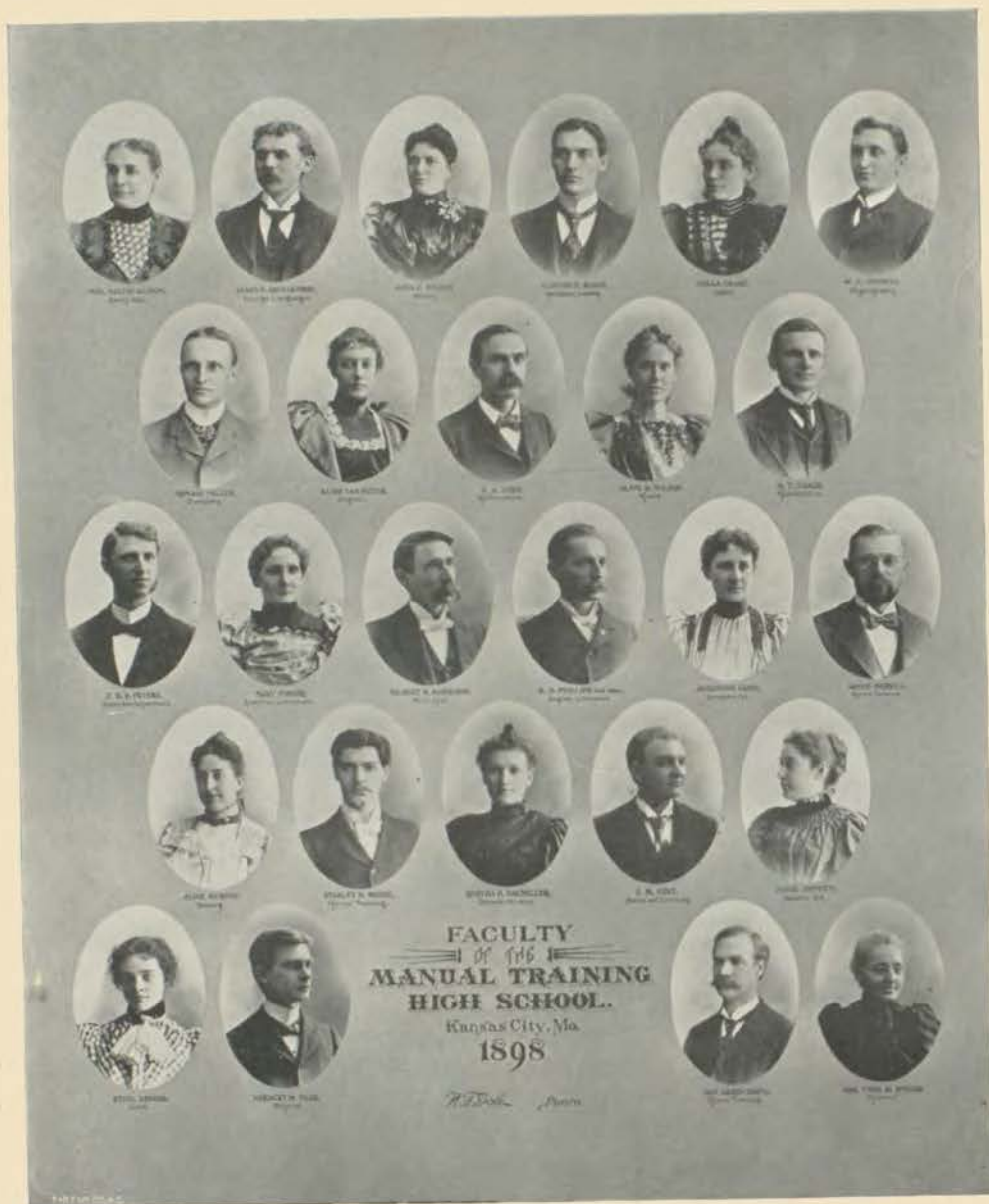
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THE FACULTY.

NOTE—THE NAUTILUS wishes to say that in this picture all the members of The Faculty are not represented. Since having secured the photograph, many changes and new additions have occurred in the list of teachers. Mr. W. A. Connell and Mrs. Thos. M. Speers are now no longer with us, and on account of the growing demand for instructors, it has necessitated the appointing of the following new teachers, of whom we have been unable to secure pictures for this number:

MR. R. F. KNIGHT,
 MR. HANSFORD McCURDY,
 MR. WALLACE B. SHIELD,
 MR. O. E. HERRING,
 MISS CHRISTINA M. THOMPSON,
 MR. BARRY FULTON,

MISS KATHERINE DUNN,
 MISS STELLA JENKINS,
 MISS FLOY CAMPBELL,
 MRS. A. C. LAVINE,
 MRS. ELLA SARGENT,
 MISS CORRINE BONE.

MISS EVA SULLIVAN.

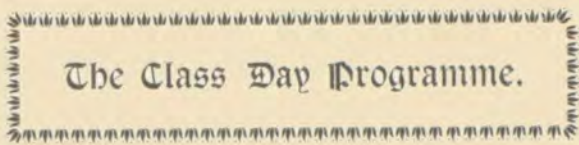
The Faculty.



| | |
|--|--|
| GILBERT B. MORRISON | Principal |
| E. D. PHILLIPS | Vice-Principal |
| English Literature and Director of English Course. | |
| MARY FISHER | American Literature |
| SARAH E. VAN METER | English |
| MRS. SALLIE ELSTON | English |
| STELLA JENKINS | English |
| JAMES A. MERRILL | Botany, Zoology, Geology, and Director of Biology Course |
| HANSFORD McCURDY | Zoology, Physiology and Physiography |
| JAMES C. RICHARDSON | German, French, and Director of Language Course |
| DELLA DRAKE | Latin |
| KATHERINE DUNN | German and Latin |
| A. A. DODD | Director of Mathematics Course |
| B. T. CHASE | Mathematics |
| R. F. KNIGHT | Mathematics |
| STANLEY H. MOORE | Forging and Director of Boys' Manual Training |
| O. E. HERRING | Woodwork |
| GEORGE ARROWSMITH | Turning and Pattern-making |
| CLIFTON B. SLOAN | Mechanical Drawing |
| BARRY FULTON | Assistant in Drawing and Woodwork |
| M. ALICE MURPHY | Free-hand Drawing |
| FLOY CAMPBELL | Drawing |
| ANNA C. GILDAY | History and Economics |
| WALLACE B. SHIELD | History and Economics |
| P. B. S. PETERS | Bookkeeping, Typewriting, Stenography, and Director of Business Course. |
| EVA SULLIVAN | Assistant Business Course |
| JOSEPHINE G. CASEY | Director Domestic Art Course |
| JESSIE L. GRIFFITH | Sewing |
| CHRISTINA M. THOMPSON | Dressmaking |
| BERTHA A. BACHELLER | Domestic Science (Cooking) |
| MRS. ELLA SARGENT | Assistant in Cooking |
| ARMAND MILLER | Chemistry |
| HERBERT M. PAGE | Physics |
| CORRINE BONE | Sewing |
| J. M. KENT | Electrical and Mechanical Engineer, Instructor in Applied Electricity. |
| OLIVE B. WILSON | Music |
| MRS. A. C. LAVINE | Matron |
| ETHEL E. OSGOOD | Clerk |
| L. R. CLAFLIN | Janitor |
| C. W. MARSHALL | Fireman |



THE SENIOR CLASS.



The Class Day Programme.

Assembly Hall, Friday Morning, June 1st, 1900.



- | | | |
|--------------------------|-----------|--------------------------|
| 1. Music, | - - - - - | THE ORCHESTRA. |
| 2. Class Song, | - - - - - | CLASS OF 1900. |
| 3. President's Address, | - - - - - | MR. HARRY S. FRAZER. |
| 4. Class Prophecy, | - - - - - | MISS JEANETTE GILLHAM. |
| 5. Solo—Vocal, | - - - - - | MISS VIRGINIA MINTER. |
| 6. Junior Charge, | - - - - - | MR. CLIFFORD E. BURTON. |
| 7. Response (by Junior), | - - - - - | MR. JAMES N. RUSSELL. |
| 8. Grumbler, | - - - - - | MISS LUCILE E. EDWARDS. |
| 9. Stereopticon, | - - - - - | MR. FRANK L. WYNNE. |
| 10. Music, | - - - - - | THE ORCHESTRA. |
| 11. Giftorian, | - - - - - | MISS JENNIE B. SUBLETTE. |
| 12. Class Song, | - - - - - | CLASS OF 1900. |
| 13. Funeral Oration, | - - - - - | MR. HERMAN H. KUBE. |
| 14. Music, | - - - - - | THE ORCHESTRA. |



COMMITTEE.

- | | |
|--------------------------|-------------------------|
| MISS JENNIE B. SUBLETTE. | MR. CLIFFORD E. BURTON. |
| MR. RALPH E. SEGUR. | MISS VELMA SQUIER. |
| MR. HERMAN H. KUBE. | |

THIRD COMMENCEMENT
—OF THE—
MANUAL TRAINING HIGH SCHOOL

—IN THE—
M. T. H. S. ASSEMBLY HALL

THURSDAY EVENING, MAY 31ST, 1900.

Programme.

1. Music, - - - - - M. T. H. S. Orchestra
2. Invocation, - - - - - Rev. W. J. Williamson, D. D.
3. Essay, "What We Owe," - - - Miss Velma Squier
4. Song, - - - - - Class Chorus
5. Oration, "Paddle Your Own Canoe," - Mr. Clifford E. Burton
6. Instrumental Solo, - - - - - Mr. Ralph E. Segur
7. Essay, "The Value of City Parks," - Miss Jennie B. Sublette
8. Vocal Solo, - - - - - Miss Minerva Shoemaker
9. Oration, "Great Oaks from Little Acorns Grow,"
Mr. Herman H. Kube
10. Music, - - - - - M. T. H. S. Orchestra
11. Address to Class, - - - - - Hon. Frank A. Faxon
12. Presentation of Diplomas, - - - Hon. R. L. Yeager

THE NAUTILUS
Athrop Ripley

VOLUME III.

KANSAS CITY, MO., MAY, 1900.

NUMBER IV.



JAMES N. RUSSELL,
Editor-in-Chief.

EDITORS.



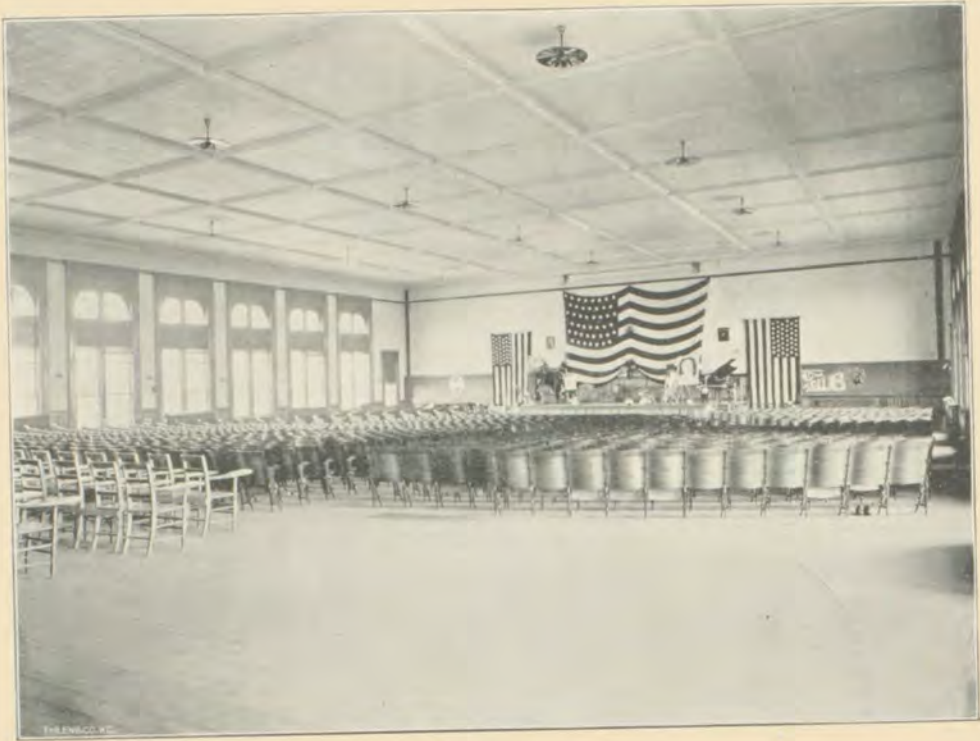
ANNIE L. WYNNE,
Associate Editor.

EDITORIAL.

This is the first "Annual" that THE NAUTILUS has ever attempted to publish. The members of the staff are aware that a great deal has been expected of them—not on account of the ability of the Editorial Board—but because of the unusual discussions and promises of certain members of the staff. And, of course, many criticisms will be made upon our work, but we trust that we have not grievously disappointed the expectations of our many friends. The assistance and suggestions received from the pupils of the school have been exceedingly good, and the subscriptions and general patronage to the paper have never been equaled in previous years. The

kind assistance that was so willingly given us by the Board of Education was a very necessary one for the publishing of this issue, and to the members of the Board we extend our utmost thanks for your financial aid.

In this number the unnecessary cartoons and useless statistics, which so often appear in other school papers, have been dispensed with, and in our work we have not strictly adhered to precedent, but have endeavored to give a true realization of what high school life is. Our best efforts have been put forth to equal any previous issues, and if this has been accomplished we are content; otherwise, we can but say, "It is our best."



THE ASSEMBLY HALL.

THE SOCIETY ENTERTAINMENTS.

Excellent, is what THE NAUTILUS has to say in speaking of the success of the open-sessions of the different literary societies, this year. Each entertainment given was a surprise to the school-at-large, for the societies have never undertaken to do such entertaining as they have done in the assembly hall the past year.

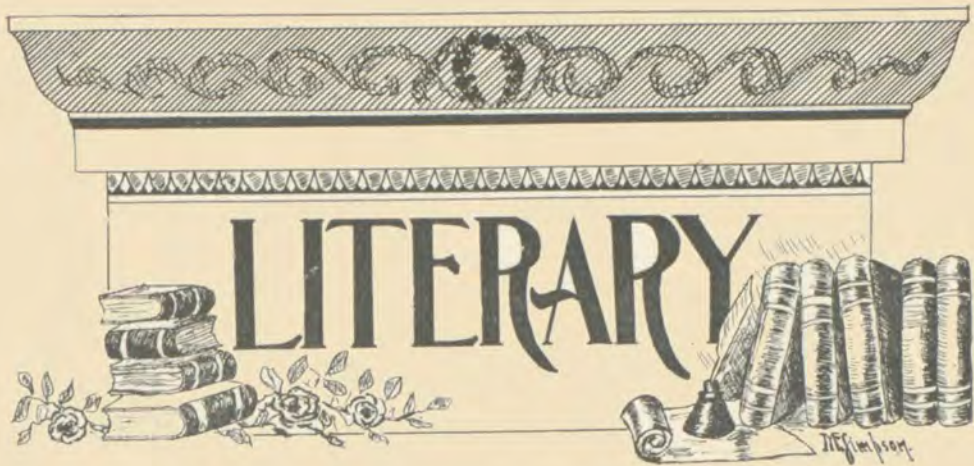
The Art Club, the oldest organized society in the school, was the first to entertain, this year. The stage, on this morning, was decorated very artistically, and the scene represented an outing of the Art Club members. The entertainment showed originality, and was very successfully acted out.

The second open session, which was given by the Science Club, was the representation of a village school. In this way the society performed some scientific ex-

periments, and rendered an interesting literary programme.

The boys' society, The Manual Society of Debate, was the third in giving their first open session. This programme, we might say, was the most original of all, for they had a very unique way in bringing in their programme. The plot was such that capital and labor were fully discussed, and with the two acts presented, all was well understood.

The last, but not the least, was that of our young lady friends, The Ozo Society. It was a success—quite a success. The idea of representing young ladies at college has been used very much by societies, but this does not in any way cast any reflections upon the success of The Ozo's entertainment, for it could not have been better, and the stage was never so handsomely decorated as it was on that morning.



ALFRED W. HERTZ.

EDITORS.



SARAH E. REED.

LITERARY DEPARTMENT.

A NIGHT ON THE RIVER.

Into the life of every rightly constituted boy there comes a time when the desire to go a-fishing and to camp out is irresistible. I am not prepared to say when this desire first manifests itself, but it dates back almost to the time when the hated kilt is discarded for the first pair of knee trousers.

At last the time comes when the great dream of his life is to be realized; he stands on the bank of the river with the necessary camp utensils, fishing tackle, etc., the happiest day of his short existence.

Such were my feelings several years ago as, in company with my brother and a neighbor boy, I found myself one summer evening encamped near a little spring, on the banks of the Kentucky river.

We had set and baited our trot-lines, and were going through the indefinable pleasure of preparing our own supper—frying bacon, making coffee (which, by the way, we couldn't drink), and roasting potatoes in the ashes.

After supper, we sat around the fire, telling stories and enjoying ourselves

generally until time to "run" the lines. This we did, with poor success, however, getting only one little fish. It was a *fish* nevertheless, and we were proud of our skill in securing it. Having gone over the lines, we resolved to sleep an hour or two until time to "run" them again.

Then it was we realized that we were not the only living creatures on the river that night. At first, a lonely owl sat up an abominable screech, so strikingly like a human groan that we had no trouble in imagining the woods peopled with ghosts and goblins of every description. We thought that no torture could be more acute than the harrowing notes of this melancholy bird. But here we were sadly mistaken, as we soon found out.

A far-away, musical buzz was heard, as if some kind nymph of the forest was trying to lull us to slumber with an unseen lyre. At the beginning of this serenade I very wisely put my head under the cover, but my neighbor was less fortunate. I heard a loud "whack," then several hot words were exchanged, and I learned that the neighbor, in trying to murder a mosquito, had failed in his foul intent and landed a heavy blow on the mouth of my sleeping brother. After a lengthy explanation, we again tried to sleep.

The night was sultry (although there was quite a change in the temperature later on), the mosquitos innumerable. We would keep our heads under the cover until nearly suffocated, when, coming up for a breath of fresh air, we would be greeted with an ominous buzz and a sting we were not soon to forget. We endured this as long as possible; then resolved to defend ourselves against such an invasion.

One of our party—not myself—got out an old cob pipe and filled it with

"long green" tobacco. He had heard that this was a sure way to get rid of these little pests, and was willing to be a martyr for five minutes in order to gain a few hours' sleep.

But even this heroic means failed, and we were forced to give up the attempt to sleep. We went over our trot-lines with no better luck than before. The night grew colder; the thick fog chilled us through and through, and coming back to camp we gathered around the fire, vainly trying to keep warm and hoping for the morrow.

Thus moodily we sat, saying but little; the monotony of the thing being broken only by occasionally "running" the lines. Even this had ceased to be interesting; for the water was cold, and we were never rewarded with more than two or three small fish, and often with nothing at all.

Finally day began to break—scarcely perceptible at first, then the fog slowly rolled away, and over the crest of a neighboring hill we were delighted to see the most perfect sunrise ever witnessed.

I have seen some few sunrises; I have read of many more; but never has one seemed more beautiful or more welcome than this, which told us that the night was at last ended. Our spirits rose with the sun, and as we began to thaw out we compared notes. Our faces were red and swollen; our clothes saturated from handling the dripping lines; our shoes were covered with mud and our hair full of sand. It was an experience to be remembered. I may forget my native land and my kinsfolk; but never, though I live to be as old as the proverbial Methuselah himself, shall I forget the experiences of that first night on the river.

WALTER HOCKER

DICK'S CHOICE.

"Girls, I want you to give me some information on a subject about which, I must confess, I am completely in the dark."

The above statement was made by Sadie Montrose one afternoon when the girls of the "Studious Spinners' Society" were assembled in her dainty parlors for their annual banquet, or "Feast of Friendship," as the girls called it. Her forehead wore a tiny pucker of thought as she made the announcement, and Edith Lyle, her chum, laughingly replied:

"'Tis for thee to speak, gracious President, and your adoring subjects will cease their constant babble to hear thy voice."

"Now, no nonsense, Edith, for I am dreadfully in earnest, and you will be, too, before I finish. The fact is, girls, I want to know whom you think Dick Philbrook will take to the entertainment this year. I cannot even imagine who the honored person will be."

"Oh, you fibber," laughed Edith, "as though Dick hasn't been sending you all of the souvenirs and ribbons that he could get possession of, and then you play Miss Innocence with us just to have your vanity satisfied by our assuring you that we think you are the chosen one."

Sadie gave a satisfied little laugh, and her face assumed an expression of complete self-confidence; but it changed to one of annoyance when matter-of-fact little Corrine Sanford looked at her pretty friend and said seriously:

"Well, I am sure I do hope you are the one he will take, Sadie, for you are undoubtedly the prettiest representative we have. But I remember that last year he sent me flowers twice, and

took Rose to the theater, but surprised us all by choosing our most frivolous member, Edith Lyle, for entertainment night."

Much laughter and jesting at Edith's expense followed this straight-forward speech, and the girls resolved themselves into a committee of the whole to discuss the momentous question.

All of the girls entered the debate but Helen Meredith, called the graveyard member by Edith, because she would never enter their lively controversies. The girls all liked her, and she was really attractive in appearance, but her unusual quiet manner when the other girls were at the height of amusement, caused them to ignore her somewhat at times.

Perhaps it is best to explain here the cause of the popularity of just one boy in a crowd of eight or ten girls. Not that the other boys did not share this popularity, oh no; but Richard Philbrook was different from the rest, and consequently caused more discussion. He had never followed the custom of the other boys and asked a girl for her company some time before the entertainment, which was given each year after the contest, but waited until the night it was given, and then sauntered nonchalantly up to the bevy of girls assembled in the waiting room, mischievously eyed each one, and finally decided upon one of the many. He then gallantly offered her the honor of wearing his badge of blue and gold, and considered himself her escort for the evening.

There was not a girl who did not long for this favour to be shown her. The cause of this was due chiefly, perhaps, to the high standing Dick had

acquired with his instructors and friends; then, too, for three successive seasons he had carried away the honors in the contest, after competing with able students, many of whom were his superiors in age as well as in experience. But above all this, there was with his manliness of character which won him many boy friends, something so courteous and deferential that he won his way immediately to the hearts of the girls and ladies who knew him.

"Oh, girls, he is coming down the street now. Come, quick, and stand near the window, perhaps we can tell by the one he looks at when he smiles which one is to be the queen of the evening!" And dainty Miss Sadie posed herself gracefully in the window where there would be no mistake of his seeing her.

Dick was certainly attired to please, in his dark gray suit, which fitted him in a manner that made his broad shoulders appear even broader and his brown hair look darker and richer in contrast with the gray of his suit. His handsome face brightened at sight of the girls, and Sadie's face dimpled with expectation, for she felt so confident of those eyes resting on her. What was the astonishment of the crowd, however, when Dick seemed to smile right over their heads, and, turning of one accord in the direction of his smile, their eyes encountered those of Helen Meredith, who was blushing violently.

"Well, who would have thought it," said blunt Corrine, "I believe he made a mistake."

"How unkind of you, Corrine," said Edith, though she felt in her heart that her schoolmate was right. "Helen has as many merits as any of us, and she certainly is more thoughtful than her chum." But Edith put her arm

around Sadie and bestowed an assuring little pat on her head.

Helen Meredith laughed quietly and said, in her pleasing voice: "Yes, girls, it must have been a mistake, for Dick Philbrook would not want the 'grave-yard' of this assembly for his companion that night."

Of course, the girls discussed the affair on the way home, and we will follow Edith and Sadie, as they are the most interested parties.

"Why, it's absurd to think of such a thing," Edith was saying. "You know, dear, Helen has never been what we call popular, although she is well liked; and you know that Dick, who has always chosen a jolly girl, will not make such a complete change this time."

"I don't see why he shouldn't like variety occasionally," said Sadie, with a grieved expression; "but I do hope it was a mistake, as Corrine said."

"Well, you can rest assured it was, dear, and I would not say it unless I felt it. It must be dreadful to be as indifferent to such things as Helen, for you can see by what she said that she was confident a blunder had been made."

This little speech of Edith's was sincere, for a lively girl like herself could not imagine one so reserved as Helen Meredith being popular, and she also wished to cheer her friend.

The night of the contest had arrived and the girls were assembled in the waiting room, each one flushed with excitement and telling the others how sweet they looked. But Sadie Montrose looked her best, and there was a feeling of satisfaction in her mind as to Dick's choice, which gave her a composure many of the girls did not possess. Helen Meredith stood apart

from the crowd, near a window, gazing down upon the people entering the building below. Presently, without turning from the window, she said pleasantly:

"Girls, look your sweetest now, for here comes Dick Philbrook wearing an unusually pretty badge on his coat, and, if I am not mistaken, he is carrying a box of flowers."

Accordingly the girls tried to appear unconcerned, and succeeded in looking only the more self-conscious. They all gathered around a table of programmes, with the exception of Helen, who still stood looking from the window.

It was in this grouping that Dick found them, and, with his usual friendly manner, shook hands with each one, at the same time saying something appropriate so that each girl felt that he was giving her especial notice.

After waiting a few minutes, the girls grew impatient, for those who had accepted the badges of other boys were anxious to see who of their remaining friends would be Dick's choice.

Dick's eyes sparkled with merriment, yet there was an expression of annoyance about his face which was also noticeable. Finally they could hear an announcement being made from the platform, and Dick, with his lips set firmly, walked straight across the room to the silent figure at the window. As she turned to speak to him he offered his arm, at the same time saying loud enough to be heard over the room:

"It is time I was behind the stage, Helen, so please take the badge and flowers and I will see you to your seat." With that he left the crowd of astonished girls and proudly walked with Helen into the auditorium.

It was done too suddenly for comment, and the girls had to follow im-

mediately after them in order to hear the contest. Dick, as the hero of the contest, was Helen's attentive escort during the evening, and, of course, Sadie and Edith had to save their torrent of words until they reached Edith's home, where Sadie stayed for the night. Sadie combed the tangles in her hair so violently that Edith felt she must say something in order to save her friend's beautiful hair, so she burst out indignantly:

"Well, it was simply dreadful of him, and I will never like Dick Philbrook again."

Sadie was still silent, and the tangles were as obstinate as before; so Edith continued:

"I must admit that Helen looked charming to-night, and her composure through it all was something wonderful; but how Dick could take her after looking at you is more than I can comprehend."

Upon this, Sadie turned to her friend, with her eyes filled with tears, and said, penitently:

"Edith, it serves me right for my vanity. I was so sure that, because you girls flattered my pretty face, and I was so lively and friendly, that Dick would take me. I presumed to place myself above Helen Meredith and her quiet sphere, and almost pitied her because she has a pug nose. Don't look surprised at my humility, it has taken till this very last minute to obtain it, and I must say it right now before it leaves me; but I, for one, am proud of Helen for her simplicity and of Dick for his choice."

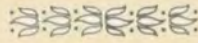
And, as Sadie was a leader in the crowd of girls, they soon adopted her way of thinking, though with some conflict of consciences, for Sadie was a great favorite, and they could not conceive of Dick's choice being so dif-

ferent from theirs. Perhaps Corrine best expressed their feelings when she said, in her frank way:

"We girls would all have chosen Sadie, but there is no telling what kind

of a choice a boy like Dick will make. Yet Dick's choice is sure to be a good one, so we have all concluded to imitate Helen."

LUCILE E. EDWARDS.



SCHOOL SPIRIT.

Father Time relentlessly leaves his impress on all things. Three years have passed, and he has transformed our school from a pile of rough building material into a beautiful edifice, whose walls echo to the sound of a thousand voices, and through whose halls a thousand bright, intelligent, wide-awake pupils pass to and fro. The Manual Training High School, once a doubtful enterprise, has proven a success—its name and fame have spread near and far. Yet time alone has not wrought all these changes, for without the spirit which has existed among the teachers and the students we might still have been as we were at the beginning—unknown to each other, without love for work, and without loyalty for our school.

It is the spirit with which we enter upon an undertaking that determines its success or failure. Cæsar, Napoleon, Washington, these great generals, owed most of their success to the power they possessed of arousing spirit and enthusiasm in the hearts of their men. What could they have accomplished, with all their carefully laid plans, had they not commanded men of spirit on which they could depend for carrying out that which they had determined upon? It was national spirit by which we gained our independence and established ourselves as a nation among nations. It was Kansas City spirit by which we started the fund for rebuilding Convention

Hall while it was still a mass of flames; and it is Manual Training High School spirit by which we have won for our school its high reputation.

Friendship for each other, love for work, and a never dying loyalty for our school; these are the principles which should be instilled into the heart of every student, for this is the spirit without which no school can successfully exist. If each one could feel the personal responsibility which rests on him or her, for making every worthy undertaking in the school successful, we should have no need to fear the word fail, no need to mourn over disappointment and defeat, but only to feel confident of future success and to rejoice in ultimate victory.

It is with a feeling of pride that we look back upon the three years during which our school has existed, and refresh our memories with the number of successes and victories it has attained; and it is with a feeling of joy and anticipation that we look forward to future years, in which we hope to add numerous other successes and victories to our present fair record.

May that splendid spirit, which exists at present, continue with undiminished fervor, and may the combined efforts of principal, teachers, and students continue to add forever to the efficiency and renown of the Kansas City Manual Training High School.

A. H.



Our Ship-The Manual.

Right from the launch
 We proved her staunch,
 Our bonny ship, the School;
 With unfurled sail,
 We, through each gale,
 The boisterous billows rule:

So man-you-all
 The Manual,
 Ye admirals to be;
 Our ship and crew
 Are staunch and true,
 And true and staunch are we!

From commodore
 To midddy, o'er
 The ship with hope we thrill;
 Our victory
 More great shall be,
 Our conquests, grander still:

So man-you-all
 The Manual,
 Ye admirals to be;
 Our ship and crew
 And staunch and true,
 And true and staunch are we!

A.M.R.

AN EXCITING EXPERIENCE.

It was my privilege on a dark July night last summer, to be in a small Missouri town fifteen miles from a ranch, my temporary home. This town was in a district which, although it was not a "Crackerneck," was becoming famous for daring holdups. Not the holding up of trains, but of road travelers.

It was a certainty that I had to go home that night and pass the very spot where a man was brutally murdered and robbed on the previous evening. It was almost ten o'clock, and I was not ready to start on my journey, as I was awaiting a message from my employer at Kansas City.

Along the streets men were seen in small groups, discussing the daring feats of these mysterious bandits, who were making things uncomfortable for night travelers.

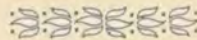
This night was extremely dark, there was no moon to be seen in the heavens, nothing but the dim and silent stars to guide the traveler.

As the old clock in the court house struck ten, I unhitched "Jim," my Texas pony, from the public rack in front of the court house, led him over to the trough, gave him a drink, girted the saddle a little tighter, and mounted. As the cold chills ran up my back, I

gave "Jim" a good spur in the flanks and was off for home.

It took all the nerve I had to leave this little town, knowing what was likely to be my fate, but nevertheless I was off. But by this time, we were well out of town, and the glimmering lights in the court house tower were very dim, and I could see nothing but the gray road ahead. The thoughts that ran through my mind. — Well I won't tell you how I felt, but I was aware of the fact that I possessed an imagination.

Horrors! The spot where the poor man of the night before had been attacked, was soon at hand. "Jim" was going at a slow single foot. I now could see forms! and "Jim" was at his best! The chills went up my back! and I could feel my hair rising! I expected every minute to hear "Halt!" I closed my eyes and all at once "Jim" jumped to the other side of the road and stopped! he, himself was shaking. I was unconscious. Upon collecting my thoughts, I turned around and saw two cows! on the opposite side of the road, one a white spotted, the other a black. Yes! an agreeable surprise, but I was too badly scared to appreciate it. Three o'clock found me at home, in bed, and all that I could say was that I was still alive. M. E. SIMPSON.



A TRUE FISH STORY.

If you will look for it upon the map of Iowa you will find the "Skunk River," or, as it is generally called, the "Skunk." I cannot conceive why such an uncommonly good river should

have such an uncommonly bad name. The river abounds in catfish and pickereel, and along the banks are woods in which rabbit and squirrel shooting could not be better.

In the fall of 1896 there were two camps located about half a mile apart upon the river. There were six campers, and they had not camped apart because they were enemies or because they were unacquainted. The boys were the best of friends, and had camped apart that they might go visiting and because a big crowd made too dirty a camp. They had come to spend their last two weeks of vacation fishing, and so each camp had given the other the worst name in the fisherman's vocabulary. One camp was named "Camp Shark" and the other "Camp of Suckers." Bob Murray, Will Harvey, and Joe Freeman were the "Suckers," while Roscoe Roberts, George Healey, and Tom Whorton were "Sharks."

The first day the boys were so busy making camps that they had no time to try the river, but early next morning three canvas canoes left each camp "to catch some dinner." Fishing was "bum," and, like breakfast, the dinners consisted of cakes and bacon.

In the afternoon each boy resolved to have a fish for supper "if it took a leg;" yet the evening bill of fare in each camp was crackers, bacon, and eggs. The eggs came from a farm house, and the farmer laughed as he told the boys they could get more eggs when they got tired eating fish. He also told them he had some nice chickens. The boys felt the sarcasm keenly, as they had intended to live on game.

The third morning trolling for pickerel was tried, and soon given up as a "bad job." Then some tried frog hunting. Frogs were plentiful, and the frog-leg dinners were so highly appreciated that, in the afternoon, fishing was abandoned, and frog-hunting occupied their attention entirely. In

the evening the "Suckers" visited the "Sharks," and found that George had been made cook, as Roscoe and Tom were tired cooking for him. "He ate so many frogs I believe he will croak," said Tom. Then followed songs and music by the "string band," and when at last the "Suckers" started off down stream, they sang the only appropriate song, "We Won't Be Home Till Morning."

About six o'clock next morning the Suckers were startled by hearing three shots from the direction of the other camp. Immediately all jumped into their canoes and paddled as hard as they could, hardly knowing what to expect from a call signal at that time of day. When they reached the Sharks' camp, George asked if they had had any breakfast. "We've some fish here, and thought you might like some. It's cooked and ready to serve; so come on." The Suckers could not believe him until he showed them a pile of heads, tails, and fins lying near the shore. Then they started for the camp fire and found fish enough for a dozen.

The Suckers lost no time asking "when," "where," or "how." They fell to work, and it was only when they were well filled that these questions were asked.

"We just got up real early and fished," was the simple answer of the Sharks. "No, we didn't fish in any particular place—just mosied around—we were pretty near you Suckers, once," said George, with a grin.

That evening the Sharks went visiting, and gave the others small hints. "You don't want to save anything smaller than George, here," said Roscoe, "because it's too much trouble dressing minnows and sunfish."

"Say, fellows," said Joe, "I read of a

dandy way to bake a fish in mud and leaves. You Sharks come over early to-morrow morning and I will feed you some," said he, counting his fish while they were yet in the river.

Three o'clock next morning found the Suckers in their canoes all ready to shove off from the rude landing.

"Guess we are *early* enough," yawned Will. "Those fellows stayed late, last night, to make us oversleep. I am glad I took a nap."

Soon the boys settled down to silent, careful fishing. Two hours dragged by and a small turtle was all that had been caught. Another half hour went by, and then Joe said:

"Boys, you fish till they come. I am going after some chickens and eggs. We've got to fill their mouths, or they will gub us to death."

When the Shark canoes arrived each seemed one great grin from end to end.

"Say, did you catch any catfish or pickerel, or were they all suckers?" was the first greeting, and it is probable there would have been no "let up" had the chicken not been tough enough to give the mouths all they could do.

"Is this a spring chicken?" asked George, as he rested his teeth for the next bite.

"Yes," said Will. "Don't it spring in your teeth?"

At noon the Sharks left, saying: "Say, boys, come over and breakfast with us in the morning—we will feed you fish again—if you can stand another meal."

The poor Suckers felt that they had been correctly named—they could not solve the mystery. "Trot-lines did not help, because we tried that." "Seines were not used, because there were none to use." "The fish were not bought, because there was no place to buy." Such remarks as these might have

been heard until ten o'clock at night, when Will said:

"Those Sharks just had a streak of luck, and to-morrow we will have our fun. I am going to bed, and you had better come along."

"No," said Joe, "the evening is too fine. Come on, Bob, and go on a canoe trip. I had rather have your sister on a nice, starry night like this, but I guess I will have to take you this time."

"Well, if you want my company you will have to paddle," said Bob. "Sis and I are alike there; besides I won't box your ears for holding my hand, as she did once."

"No; but I would just as soon hold your old cow's hoof as your hand," said Joe, angrily. Soon they silently passed the Shark camp. They had just gone around the next bend when they saw a light about one hundred feet up the river. This was so strange that Joe stopped; but as they could not see plainly, he went ahead until they could.

There were Roscoe and George in a canoe. George was directing the rays of a bulls-eye camp lantern into the water, while Roscoe had a cross-bow upon one knee and was peering into the water. Presently he aimed the bow, there was a swish, and then George was seen tugging at a string, then he lifted a large, shining pickerel into the canoe, and said, "Here is one of those fish as big as I am." Bob wanted to yell, but Joe silenced him and paddled noiselessly back around the bend.

"Those boys are sure enough sharks," said Bob. "I know now why Tom wanted that old, wire ramrod of mine. He made a fish harpoon out of it."

"And now to get even," said Joe, as he took off his camp moccasins.

"What on earth are you going to do?" said Bob.

"I am going to swim around to the dark side of that canoe and tip those chaps into the water. I guess they will think they made a big mistake when they named us." By this time he was undressed, and said, "I would not do this, but both of them can swim and the water is not deep enough to prevent diving after what is spilled." Then he slid into the water and swam with lusty, silent strokes until he was on the opposite side of the boat from the one the boys were looking over. Roscoe was taking careful aim as he said:

"Here goes for the last—! —!"

"Say, you big, fat tub, did you go to sleep and roll over?" sputtered Roscoe, as he hung on one side of the boat while George hung on the other.

"N-n-o-o," shivered George, "I didn't roll over, it was the boat."

"Well, we have got to get this boat to shore and turn the water out of her. The bow is floating somewhere on the water, and the harpoon is tied to the canoe, but the lantern—"

"Is right here in my fist. I knew I would not sink, so I held to it," said George.

"Good. We can get another lot of fish by midnight," said Roscoe.

Joe was floating within twenty-five feet of the upset canoe, and when he saw the boys swimming behind and pushing it toward shore, he started for his own canoe. He had not gone far when his arm struck something that caused him to stop and examine it. "Hully gee," he chuckled, "here is their cross-bow. I guess it will be later than midnight before they get another mess of fish," and he swam

gleefully back to Bob and told him all about it.

The next morning the happy Suckers paddled up at the other camp with the greetings: "We are hungry. Got any fish to eat?" "What's the matter? Did you over-sleep or think cakes and bacon were better than fish?" "We want fish; we are not sick of fish, if you are."

The poor Sharks preserved a blameless silence and endeavored to fill the others so full that talking would be out of the question; but it was impossible. Presently Will said:

"Say, Roscoe, what did you want with that 'G' guitar string, the other day?"

"Wanted it for my mandolin. What did you suppose?"

"Now look here. Do you suppose I believe you intended to use a gut string on a mandolin?" said Will, derisively. "Besides, as we were coming up this morning we found a cross-bow on the bank, and that same 'G' was the bow-string."

The Sharks turned red, but there was nothing to say—so they kept still. Presently Joe saw two full sets of clothing hanging to the limbs of some trees.

"Well, well! So you thought you would rather wash than go a-fishing did you? Cleanliness may be next to godliness, but it doesn't feed me."

"Now stop that! George and I were fishing, and the canoe happened to tip over, and spilt us and the fish," said Roscoe, who could stand no more.

"Yes, we know how your boat 'happened' to tip over, and how you caught the fish; but let me tell you this. When we get to town, this episode must never be mentioned," said Will, "because I read in one of father's law books that flambeating, or spearing fish with a light is an offense against the State."

B. C. 1900.

WAS IT OK'D?

Harreld Ernescliffe sat in one corner of the neat, little dancing hall watching indifferently the few couples in promenade and waltz. He was thinking of how and why he had happened to be there. Then, as a graceful girl with flowing robes of white entered the door at the other end of the room, on the arm of a tall, handsome man, did young Ernescliffe find his senses. How came he there? Why, his best friend and old Yale chum, Jack Dalton, had just married a few hours before, and he, Harreld Ernescliffe, had been best man and that little Dorothy Dare, the maid of honor. Strange it was that he had acted as best man at three weddings, now, and he himself not yet married, nor even thinking of it.

"Well," he said aloud, "they say there is no hope for one when they've danced attendance three times on some other fellow; so I guess there's none for me."

"No hope for you, Mr. Ernescliffe? Why, you are not going to die or get married, or—or—anything, are you?" cried a laughing voice at his elbow. And there stood the bewitching Miss Dorothy, looking more bewitching than ever in her blue silk dancing gown.

"No, Miss Dare, quite the opposite from dying or getting married, but possibly the 'anything' will answer my case," he replied, with a smile.

"Now, Mr. Ernescliffe, that's too bad. You mustn't get so down-hearted." Here she bounced out of her chair. "Jack said he wanted me to be real good to you because you are a stranger, so come along and I'll introduce you to some nice girls, and perhaps you will make a hit." Laugh-

ing merrily, she half dragged him from the room.

To tell the truth, Harreld Ernescliffe would have been content to spend the rest of the evening in that cozy corner with Dorothy Dare's dimpled face opposite. "But," he thought, with a smile, "let the witches have their way as usual."

On entering the supper room, Dorothy led her charge towards a group of jolly, laughing girls and eager young men, who quieted down at once. But as soon as introductions had been made and our friend fairly well established among them, they began again with their chattering, each one trying to make a hit, as Dorothy said.

Time passed more quickly, and Dorothy flitted here and there among the guests, while young Ernescliffe's eyes followed her whenever she was near or in the room. As soon as refreshments were brought in, Harreld looked about for his new friend, but was doomed to disappointment, for that young lady was perched on the arm of a chair making away with a goodly plate of cream and cake, while one of her many followers stood by her with a similar dish. Seeing poor Ernescliffe's eager glance and the disappointment that followed, she smiled and nodded her head. He returned it, then replied to his companion's question, who had not seen the little by-play, by asking: "Shall we take refreshments, now, Miss Keller?"

"Yes, I thank you," she answered.

They found places near Miss Dare and young Horden.

"How pretty the bride looked today," remarked Miss Keller.

"Yes, indeed," answered our friend,

"Jack Dalton is certainly a lucky fellow."

"You're right, Ernescliffe," said young Horden. "I almost envy him myself. But I fear we're safe for another year. I know I am, for I fell up stairs this morning."

"Oh!" cried Dorothy Dare, "the idea of you two staid, young bachelors envying Jack Dalton! Why, there's hundreds of girls in this big world. For instance——" And she stopped short with a mischievous smile on her lips and her brown eyes dancing merrily, while the dimples came in her rosy cheeks. "Oh, here comes the bride's cake, let me tell your fortunes!" continued the irrepressible Miss Dorothy. "Come, Mr. Horden, loan me a pencil and I'll fix you up finer than a feather."

So saying, she took the proffered pencil and paper and wrote busily for a few minutes, then tore the paper into seven strips, placed it on the wedding cake and retied it in the paper.

"Now, Mr. Horden, here are the names of five young ladies, whom you know and admire; then on one of these slips is 'Stranger,' and on another 'Bachelor,' making seven slips in all. You must sleep for seven nights in succession on this and take out one name each morning, but destroy the paper without looking at it. On the seventh morning you pull out the seventh and last slip, and it decides your fate. That is, you will marry a stranger, a girl you know, or remain an old bachelor." And she dropped the little package into his hand.

Then she looked with uncertainty at Harreld, but he was ready for her, and said:

"Won't you be so good as to decide my fate, Miss Dorothy? And be sure you put your own name in," he added.

"If you wish," she replied, merrily. There was mischief in her eyes as she bent over the second writing. When finished, she gently folded the paper and handed it to him. "Now, good night. Hope I'll see you again; and *don't* look at any name but the last one."

"I promise; good night." He saw her no more that evening. He bade adieu to his friends and went out into the warm summer night.

"I do hope she put her name in, but she seemed very anxious that I should not look at them," he murmured, as he reached his friend's house.

[Perhaps she wrote them all alike. Who knows?]

Harreld Ernescliffe left on the early train, the following morning, for his home in Kentucky.

Seven days passed, when our young hero dropped a letter into the post-office addressed thus:

MISS DOROTHY DARE,
1022 W. Twenty-fifth St.,
Clifton, Ohio.

Inside, the letter ran:

"DEAR MISS DARE:

"I have tried my fate, and drew your name last. Can you O. K. it?"

"Yours, HARRELD ERNESCLIFFE."
JEANNETTE GILLHAM.



A SENIOR'S REFLECTIONS.

For many years we have looked forward to the time when we could be free from the duties of school life, but now that the goal is near, we find ourselves drawing closer together, with a feeling of regret and a realization that, in our haste to reach the end, many of our happiest hours may not have been appreciated.

As we look down the long corridors of our dear old school this morning, each happy face of our class-mates brings to mind some past pleasure, some generous act of kindness. Yonder rosy face recalls a picture of a merry group seated around a camp fire, relating varied experiences with the snakes, frogs, and mosquitoes of that day. That silvery little laugh floating down the hall reminds me always of an evening a year ago in May. How we enjoyed that ride home from the picnic grounds! passing first the old musicians walking quietly along in the glowing sunset; next, the country lass carrying the wild flowers,

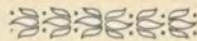
which we were pleased to believe were given her by the young gallant at her side; then the quaint little farm house with the many bright lights twinkling through its small windows, fortelling a joyous Virginia reel.

There is one who was a pleasing companion on many a ramble in pursuit of scenery, and there a friend on various dangerous occasions in class room.

This will be the last year of school for many of us, and we are not only deprived of the pleasant companionship of our schoolmates, but we must part from those who we realize, now, have for many years so earnestly directed our thoughts, words, and actions.

How often in years to come when our feet are weary and we sit pensively reviewing the past, will we look to the Alma Mater as a beacon still directing to higher planes of thoughts.

MINNEWA SHOEMAKER.



TURQUOIS MINING.

Although a small amount of the semi-precious stone, turquoise, which is worn in this country is imported, by far, the greater quantity is produced by the mines of the Southwestern United States, where are some of the richest undeveloped mineral lands in the world. The experiences of an excursion to one of these mines, and what was acquired in the way of interest, will be related by this article. No attempt will be made to explain scientifically and exactly the chemical character of the stone or the other abstruse

features which would place this paper in the science department.

In the Territory of New Mexico are located three mines which supply a fortune of azure to the operators every year. They are owned and operated by the Tiffany Company, of New York, and a more jealous guard would not be kept over Cræsus's gold than is maintained over the mouths of these caverns in the shale-like hillside into which they penetrate. Surrounding these large mines are numerous small ones. The surface of the mountain

side is perforated with "holes" which sanguine prospectors have sunk, only to meet with disappointment, and which have in nearly every case been abandoned. The claims upon which these mines are located are procured by making application to the Secretary of Mines and Mining. A deposit of twenty dollars must be paid and ten cubic feet of earth removed the first year. This must be continued for five successive years, when the claim is registered as the property of the individual. The fifty-foot hole may be dug and one hundred dollars paid at the same time the application for the claim is made, but prudence demands the former method, and it is usually followed.

The mines are known as La Castenada, La Espanola and The Azurite. To Castenada and The Azurite there is no admittance, even the state geological surveyor being denied ingress; all attempts to approach are met with red flags and Winchester rifles. To La Espanola, however, visitors are suffered, but not encouraged to go, and the visitor must show credentials before he is allowed to step inside the tunnel leading to the mine itself.

Our passes being shown, we followed the guide into the blackness of the interior, with only one small lamp to light the way. The tunnel led back some distance, when two branches left it, showing even more intense darkness than had been perceptible before. Soon we stopped, and the guide held the light above his head and called our attention to a narrow streak of green color crossing the surface of the soft, white rock at a sharp angle. "This," he said, "is one of the smaller veins of the mine, and has not been worked to any great extent on account of the angle

along which it lies, which would necessitate the sinking of a shaft to follow the vein. We avoid this as much as possible on account of the expensive apparatus which it would be necessary to transport from the railroad."

He then explained how, in the early summer, a party of experienced workmen arrive from New York and are carried by burros across the long trails leading to the mines. On the way an Indian village and two or three Mexican settlements are passed, where a number of the inhabitants are employed to do the digging and hauling out from the mines. They are preferred because their scale of wages is decidedly lower than that of white men, and because they do not care enough about the stone to steal it. The party remain at the mines for about one month, when all the stone, which has been removed with some of the soft, white matrix surrounding it, is carefully packed on the backs of burros and transported to the nearest railway station, which is many miles distant. A large amount of apparatus has been received here, and this is unpacked. Emery wheels are set up and the process of the first shaping and cutting of the stone begins. After all the matrix has been removed and the stones reduced in bulk they are packed in cases resembling egg cases, but much shallower, and filled with cotton to prevent breakage. The cases are of iron, and are sent to New York carefully guarded. The pieces of mineral receive their last shaping on a perfectly clean oil stone and the final polish is put on with oxide of tine, which fills the pores of the stone and takes a polish that turns the lump of blue rock into a precious stone.

WILL HALL.

POPULARITY.

Popularity is the goal of ambition

Toward which all Americans strive;

But the journey is long, and finished at last,
Finds the traveler more dead than alive.

True genius coupled with shrewdness

Finds, yet bars, the short way.

Hence common men never reach in a life-
time

What genius may gain in a day.

Vice, too, has found other short paths

Which have led to this final goal;

But God has closed these to the virtuous
man,

Lest he lose what is best in his soul.

And yet any man may be popular

For the hour, perhaps for the day.

There are ways one may go and return from
the goal,

Yet he cannot go there to stay.

For instance, if you're a small boy

And fight a large boy, as a rule

You're a hero 'mongst your friends for the
time.

Though you may get suspended from
school.

Or, if you're an older school boy

And study is one of your joys,

Get all your lessons, then help out your
friends,

You'll be popular, then, with the boys.

But, perchance, you're a man without millions
And you think no one cares who you are.
Just spend a short time at a summer resort,
Or visit a church bazar.

Now, if you're a girl, you are lucky,

'Tis said, by folks able to judge,

A girl may gain favor with all of her set,
Just by making a box of good fudge.

But a woman's task is the greatest.

If she would be sought for at all,

She must give social functions at least twice
a year,

And never forget her friend's call.

She might get a set of new dishes,

Neatly boxed, sent up to her door,

And until her neighbors found out what she
had,

Her callers would come by the score.

Thus may we all be admired,

If but for the hour or the day.

Just follow advice, or, if you like better,

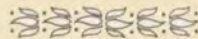
Travel your life-long way.

Dear reader, if I have wearied,

Or you've found we don't quite agree,

You've one comfort left—no money was lost,
For advice to all was free.

L. J. B.



FOOT BALL AS PLAYED BY THE GODS.

It becomes my lot to record one of the greatest foot-ball games that ever took place upon the gridiron. Circumstances peculiarly my own made me the writer of this history. My enthusiasm over foot ball was continually at the boiling point, and the study of Ancient History and mythical gods at school, were sufficient to bring about greater results than herein reported. About the year 500 B. C. I found myself one of a hundred million spectators anxiously awaiting the remaining

five years until the game should be called. A year or so had elapsed before we were able to find seats in that vast amphitheatre. When we began to leisurely review the grounds, we found the length of the field to be 11,000 miles by 60,000 miles wide with goal posts 1,000 miles high. A further survey of the grounds was interrupted by three terrific blasts of thunder, each blast lasting about six months with an interval of three months between blasts. The line up was as follows:

| GODS | POSITIONS | GREEKS |
|---------|--------------|--------------|
| Mercury | Right End | Phidias |
| Pan | Right Tackle | Alcibiades |
| Neptune | Right Guard | Xenopone |
| Pluto | Center | Leonidas |
| Protius | Left Guard | Themistokles |
| Apollo | Left Tackle | Miltiades |
| Aeolus | Left End | Pericles |
| Cupid | Quarter | Plato |
| Mars | Right Half | Demosthenes |
| Vulcan | Left Half | Aristotle |
| Jupiter | Full Back | Socrates |

Time of halves, 30 and 25 years; 10 years between halves.

Officials—Alexander and Dionysius.

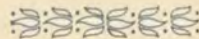
The Greeks won the toss and chose the south goal, giving the Gods the ball. Jupiter, their star kicker (for they used a small planet for a ball), kicked 40,000 miles to Pericles, who returned 10,000 miles. Socrates went through center for gains; Demosthenes and Aristotle went around their respective ends for 5,000 miles. Here the Greeks lost 5,000 miles on a fumble by Plato. After a trial of the line by Socrates, the ball went to the Gods on downs. The Gods began to play in

earnest, and the superiority of their backs became evident; Mars and Vulcan were put through the Gods' tackles on crossbucks, and Jupiter made 20,000 miles through guard. Mars, Vulcan, and Jupiter carried the ball to the Greek's 7,000 mile line. Aeolus made a play for wind, and two years' time was taken out. Vulcan was sent through right tackle on a crossbuck and placed the planet safely over the goal line. Jupiter kicked an easy goal. With but two years to play, Socrates kicked 30,000 miles to Jupiter, who came back 2,000 miles. Jupiter then punted 40,000 miles and Aristotle came back 10,000 miles. Here it was discovered that Jupiter had his suit padded with thunderbolts, and he was ejected from the game.

The half ended with the planet on the Gods' 40,000 mile line. Score, Gods 6, Greeks 8.

We were patiently awaiting the beginning of the second half, when I was rudely awakened and prevented from witnessing the remainder of this very interesting game.

WALTER E. GILLHAM.



MR. MORRISON'S MONOGRAPH.

Through the generosity of the State of New York, the educational exhibit of the United States at the Paris Exposition will contain a series of monographs on the various phases of educational activity and the problems involved in education in this country.

The editor of the series is Nicholas Murray Butler, Professor of Philosophy in Columbia University. The contributors are educators who are especially qualified to treat their respective subjects. Among them are W. T.

Harris, who discusses "Elementary Education;" President A. S. Draper, who presents "Educational Organization and Administration;" B. O. Hinsdale, who contributes the monograph on the "Training of Teachers," and H. B. Adams, who considers "Summer Schools and University Extension."

No. 9, of this series, is prepared by G. B. Morrison, Principal of this high school.

The writer states that the principles

underlying the subjects considered in the monograph have been more fully discussed in his book on "Warming and Ventilation of School Buildings," and it is his object to outline to what extent these principles have been applied. With this end in view, the various types of school buildings are considered, ranging from the country school-house of one room to the modern city high school. The treatment of each style of building is directive as well as descriptive.

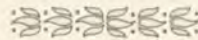
The Latin and English High School of Boston, which was begun in 1877, is taken as the best illustration of the opening of a new epoch in high school construction. The simple, yet elegant, Cambridge English High School is noticed as making a farther advance, and

finally, the Manual Training High School, as illustrated in our own building, is considered. This school is taken as a type, not on account of its superiority in all respects, but because it was arranged after others had been studied.

This monograph also notes the influence of legislation on school architecture and the work of school supervisors and architects. It contains the modern feature of a good bibliography and is provided with a set of excellent plates showing the plans and the exterior of the buildings described in the text.

It is a succinct, yet comprehensive discussion, and is a valuable contribution to the series.

W. B. S.



A DAY IN THE COUNTRY.

I spent a part of last vacation visiting friends in the country, and I shall attempt to picture the first day and its experiences as nearly like the actual happening as possible.

The place visited, which we will call Roxburry, was to first appearances a very desolate town, in which one could hardly expect to have a good time. Finding no one at the station, I hired a single buggy, to drive over to my uncle's farm about two miles distant. I scarcely got in the buggy before a neatly dressed young fellow came up to me and asked if he might ride with me as he was going my way.

He jumped in and soon proved to be very inquisitive as to my affairs. To pass the time, I talked with him freely and the next afternoon was very much surprised to find myself the subject of a half-column biography in the village

paper. Also in the "Society Notes" there was this heading: "We have the pleasure of announcing that Mr. S. E. Ralph of Kansas City is at present enjoying the hospitality of his uncle, Mr. Ralph, our well known brother. He intends to remain about two weeks."

I had just settled down next morning to pass a tiresome day of it, as I thought, when one of the boys on the neighboring farm came over and asked me if I should like to hunt squirrels. I jumped at the chance, and procuring an old shotgun and some lunch, we started out. We shot a number of squirrels and went home to supper. This meal and the others during my stay are counted among the times that I could drink milk without its first being tampered with by the milkman.

After supper, my cousin who is

about twenty-one years old, suggested that we go on horseback to town and call on some of the young folks. It was with a feeling that I would meet a set of awkward young people that I mounted the horse. We had just started when we heard some singing in the distance and my cousin said we had better wait for developments.

We unsaddled our horses and had turned them into the field, when the jolliest looking hay ride party hove into sight that it has ever been my good fortune to meet. We turned back to the house and they gave me a royal reception.

A new canvass tarpaulin was brought in and quickly stretched on the floor thus making a fine surface to dance on. A tune was immediately struck up on the organ and the dance went on merrily. One thing I soon noticed was that the boys were somewhat backward in asking for a dance, and you may be sure this was taken advantage of by me.

I had forgotten to mention that this was the town crowd and so about nine o'clock we were suddenly broken in upon by the "valley crowd" as the people further from town are called. They brought with them three monstrous watermelons and for the next fifteen minutes I cannot swear to, being too deeply employed in a struggle with a slice of melon fully six pounds in weight, and when I finished you couldn't have made any pickle with the rind either—there wasn't any.

Then one of the late comers suggested a square dance, and the dancing that followed is simply past description. The "towners" danced the quadrille and lancers in conventional style, but

when the others became thoroughly warmed up, coats and collars came off and red and other variously colored bandanas took their place.

Having seen a considerable amount of cake walking I had thought that I knew some points about this art, but the ludicrous combination of fancy steps, shuffling, clogs and old Alabama hoe downs that these strapping six-footers improvised in perfect time was a revelation. Imagine if you can some of the real thing in blue jeans and homespun trying to be graceful, the imagination to be helped out by the uncertain light of two reflector lamps.

The girls were resplendent in everything from silk to gingham with stripes two inches wide, and some having the added luxury of county fair jewelry or those extreme beautifiers called "mitts."

About eleven-thirty some one suggested that, as there was going to be a picnic on the morrow, it was time to be going home. Acting on this advice everybody made a wild dash for the hay wagon and, of course, thinking that everything was over, I began saying good-bye to everyone. But what was my surprise to find that I was expected to go along too and come back horseback.

So I jumped in and going back they sang about all the tunes that have ever been composed, singing "Georgia Camp Meeting" which was new to them, about every fifth song. And so ended my first rustic experience. Some might think that country people don't do this sort of thing because they have to work too steadily, but this was in the fall, when all the hard work is over.

RALPH E. SEGUR.



JAMES L. KILROY.

EDITORS.



MAUDE HALLAM.

REVIEW OF ATHLETICS.

Behold! the conquering heroes come,
 The many victories they have won;
 But this, the last, by far the best,
 Comes now to us with welcomed rest.

Never before, in the history of our school, has such universal interest been manifested in athletics. From the smallest freshman to the greatest senior, from the fireman and the janitor to the principal and vice-principal, athletics have been the watchword; and justly it should be so, for in the physical abilities of a school we generally find a measure of its intellectual capacity. If you do not know what Manual's interest means, I will tell you that it means victory.

Here is our formula: Universal interest equals universal victory.

Our base ball team, after a week of preliminary practice, opened the High School League season on Westport grounds, April 7. The result of this game was never in doubt. The heavy batting of the Manuals was the feature. The score stood: Manual, 24; Westport, 15. The following week we met and defeated the Kansas City, Kas., High School. The closing innings of this game were very exciting. The

last part of the ninth inning the score stood 20 to 16 in favor of Kansas City, Kas., but when our hard hitters were given a chance they turned the tables, and made five runs; thus winning the game for Manual, the score being, Manual, 21; Kansas City, Kas., 20.

On April 14 we played our old friends, the boys from William Jewell. The errors, on both sides, in this game

which they had played, the struggle for supremacy was on. The first pitcher Central put in the box had a "south wing" delivery, but that counted for nothing, as he lasted but four innings. Next, the foot ball boy, Washer, was placed in the box, but he fared little better. Bases on balls were followed by singles, singles were followed by doubles, until the game was

THE BASE BALL TEAM.



CORDER.
SCHWITZGEBEL.

SHIELD.
KILROY.
FORD.

BARRICK.
PETERS.
URIE.

PARSONS.
CAMPBELL.

were numerous, but the batting of Manual was of such a character as to allow them to win an easy victory. The features of the game were the strong pitching of Corder and the batting of the whole team. The score was: Manual, 19; William Jewell, 10.

The first game scheduled with Central was played on April 17. Each team having won one of the two games

safely won. Then the Manual rooters, with their crimson streamers, yelled and howled with delight. The score was: Manual, 14; Central, 10. There was a large attendance at the game. After this game Manual took the lead for the cup, and has maintained it ever since.

A word, I think, should be said in regard to the protest made by Cen-

tral's manager against this game. His grounds for protest were non-attendance and professionalism of Pitcher Corder. A meeting of the managers and captains of the league was called and the books of record showed that Mr. Corder attended school after January 29th, and that soon after this date he was taken sick and was unable to return to school until April. Central's manager withdrew his protest

By far the most exciting game of the season was played at Kerr's Park, on April 25. It was decidedly a pitcher's battle, in which Corder came out a shade the better. In the seventh inning the score was 5 to 4 in favor of Kansas City, Kas., but after two men were out the Manual boys began to solve the mystery of Trussel's "benders," and when the storm was over, and the clouds and dust cleared away,



THE TRACK TEAM.

when he found that the constitution was not violated. At the charge of professionalism we smile with complacency. That they play well enough to be professionals we will admit, but I believe that Webster could show a wide discrimination between a school boy and a professional ball player.

Blees Military Academy, of Macon, Mo., after promising us a game at two different times, disappointed us, for reasons obvious to themselves.

the score stood, Manual, 8; Kansas City, Kas., 5. In the eight they managed to score two, making the final score, Manuals, 8; Kansas City, Kas., 7.

On May 2nd we met Westport High School team for the second time. This game promised to be close, but the batters of Manual soon began to use their batting eye, and the way they hit that ball—well, say! it was enough to make any pitcher gray-headed, or else fall back on the record and good

deeds of his ancestors in order to prevent the audience from mobing him. It was suggested that bicycles be provided for Westport's outfielders, as they were getting tired of running after the ball without carfare. The features of the game were Parson's pitching and Manual's heavy batting.

Again, Central High School has been defeated. On May 11 the two teams met at Exposition Ball Park

This is the motto of the team: We came, we saw; muscle, brawn and brains conquered. Caesar's victorious legions never had a cleaner record than our base ball team. Do it again next year, boys.

Five of our boys, Captain Douglass, Lindsly, Frost, Tate, and Bayce, as a track team, represented our school at the St. Joseph meet on May 5. The athletic finances were not in condition

OFFICERS OF THE BOYS' ATHLETIC ASSOCIATION.



EARL NEWMAN, Vice President. J. ARTHUR PETERS, President. JAMES N. RUSSELL, Secretary.
WALTER E. GILLHAM, Treasurer. RALPH BENEDICT, Sergeant.

and the expected happened. The score: Manual, 28; Central, 9.

The winning of this game gives Manual first place in the league, and also that beautiful trophy presented by the Schmelzer Arms Company.

The following is the final standing of the league:

| Clubs. | Won. | Lost. | Per cent. |
|-----------------------|------|-------|-----------|
| Manual | 6 | 0 | 1000 |
| Central | 3 | 3 | 500 |
| Westport..... | 1 | 4 | 200 |
| Kansas City, Kas..... | 1 | 4 | 200 |

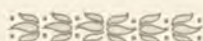
to send a larger team. There were seven high schools represented. The result was: Lincoln, 67; St. Joseph, 37, and Manual, 11; the other four high schools did not get anything. Now, this record is not so bad when it is considered that Lincoln had four men who played on the Nebraska University foot ball team last fall, and that St. Joseph was on their own ground. The track was covered with

cinders and very loosely rolled. It was highly banked, and very unsuitable for the hundred yard dash and the hurdle race, and Lindsly made six points, and would have made nine if the disqualified hammer throw had not been allowed by the referee. Tate made 3, Douglass 1, and Bayce 1. The order of events were very unfavorable to Manual. The meet is to be held in Kansas City, next spring, and we will endeavor to show those people that we have some athletics at the mouth of Kaw.

The remaining event in track athletics this year, is field day at Exposition Park. The result of this should be a Manual victory. We have about the same team that won the victory

last year, while Central's best man, Shaw, is at college. However, if they can secure the intervention of the fates, and give Mars a pink pill, or the good will of the referee, as in foot ball last fall, the result may be doubtful. Remember, that supernatural powers are rare things, these days.

The cricket team has been partly equipped by Mr. Nelson, of the Kansas City "Star." Only one practice has been indulged in so far. It is amusing to watch some of the boys, who, by the way, are descended from the Emerald Isle, try to play the Englishman's game of cricket. Let us hope that next spring we may have the pleasure of seeing a real English game of cricket.



THE GIRLS' ATHLETIC ASSOCIATION.

Shortly after the Girls' Athletic Club was reorganized, the necessity of having an instructor was greatly manifested, and, through the aid of our Principal, an assistant of Professor Berger has been obtained. Miss Hernig has been very successful with her work, and has succeeded in organizing a class of about thirty members.

After four o'clock on the afternoons of Tuesday and Friday of each week the girls may be seen in their blue gymnasium suits practicing either in room seventeen or in the gymnasium. In room seventeen Indian club swinging and fancy stepping exercises are indulged in. On Friday afternoon the gymnasium is used, and following the exercises on the apparatus are the athletic games. As a substitute for a basket-ball, the girls are using the boys' foot-ball.

It was hoped that the basket-ball room could be fitted up in time to play that greatly anticipated game this year. On account of the time necessary to screen the windows and lattice the space above the partitions of the dressing rooms, it was thought advisable to postpone the games until next year, when we hope to have all these requirements. Even if we are not now playing the regular game of basket-ball, it should be remembered that we are working to that end; and meantime we substitute other rollicking and interesting games for our amusement.

The hours spent with Miss Hernig in exercising are so profitable and interesting that we feel certain that if more of the girls would stay for athletics that they would soon see the importance of becoming members. By so doing this would increase the

possibility of choosing better material for basket-ball teams which could successfully compete with other amateur teams in Kansas City.

Some of the boys in our school, with the aid of their teachers, are making the screens for the protection of the windows, and we can show our appre-

ciate the work accomplished by the boys' teams. We rejoice with them in their many victories, and when any small defeat comes our sympathies are with them, and we realize that defeat only stimulates their future efforts.

During this vacation we hope that the girls will combine with their pleas-

OFFICERS OF THE GIRLS' ATHLETIC ASSOCIATION.



LINDA LOOMAS,
Treasurer.

MINERVA SHOEMAKER,
Vice President

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President.

GRACE BERGER,
Secretary.

FLORENCE HALL,
Reporter.

VIRGIE MINTER,
Business Manager.

ANNA HAZEN,
Sergeant.

ciation of their kindness by availing ourselves of the opportunities for physical culture which our school offers. Then they may have cause to be as proud of us as we are of them.

The practice in the gymnasium, this year, enables us to more fully appre-

ures some thoughts of the work to be accomplished next year, and return with ambitions which will enable us to enjoy the pleasures of victories, which, though limited, are as encouraging as those which the boys now achieve.



SCIENCE



RICHARD E. SCAMMON.

EDITORS.



J. LEE HEWITT.

LIQUID AIR.

About three years ago magazines and periodicals of every description were teeming with articles on the "Roentgen Rays." To-day, the subject of liquid air is hardly less discussed by these same magazines, and in a way certainly not less interesting to the general reader. Some articles, as well, have an attraction for the scientist. An intelligent physicist or chemist, for instance, must enjoy immensely the perusal of certain sensational papers on the subject, not so much for the information they contain, as that they exhibit in a marked degree the heights

to which a well-trained imagination can ascend. For instance, in a popular magazine a little over a year ago, it was asserted by a man prominently connected with work in liquid air that he could make ten gallons of that product with nothing to start from but three gallons of the liquid. Now of course this is absurd. Only too many scrap heaps of searchers for perpetual motion stand as mute contradictions of such a statement.

But the newspapers and some of the magazines, always ready to seize upon materials with which to create a sen-

sation, have found it most suitable to their purposes to spread reports like these. We believe this policy does no good. Indeed, it is rather detrimental; hence it is with a view to correcting, as far as possible, the erroneous impressions formed by it in connection with liquid air that this article is written. Our purpose is to set forth clearly the facts as we know them, and let the reader judge for himself as to which assertions have a foundation of

nished us with by far the more information as to the physical and chemical properties of liquid air, no one but the three lay workers named above can supply reliable data concerning its cost of production in commercial quantities. This they respectfully decline to do, and we cannot blame them for their silence, though it does leave us awkwardly in the dark, and precludes the possibility of prophecy with any certainty the future of the product.



THE BIOLOGICAL DEPARTMENT.

probability, and which are simply vagaries of the imagination.

At least twelve noted European chemists have made extended researches on liquid air, but the investigations of only three men have a direct bearing upon the commercial possibilities. These men are Linde, in Germany, Hampson, in England, and Tripler, in America. Though the more purely scientific researches have fur-

It is evident that the cost of production of liquid air will have the greatest bearing upon its future. Hand in hand with this we must take into consideration the amount of power we shall be able to get out of the product after it is made. Unfortunately, these are the things we know least about, but Mr. Elihu Thomson, after due consideration of the subject, estimates that the cost of liquid air in large

quantities is not over ten cents a cubic foot, and further, he figures that a cubic foot, if highly superheated, may possibly be made to do five horse-power hours of work when used in a properly constructed motor. This makes one horse-power hour cost about two cents. These figures are based upon the supposition that only that power which in large plants sometimes goes to waste, or is generated at stations installed purely for the production of power, is to be used to store up energy in this manner. Now a good gasoline engine will do the same amount of work as a liquid air motor at half the cost, or less. Just where the advantage in shipping liquid air to be used as a motive power comes in over shipping gasoline for the same purpose, we do not see. To be sure, there is no noxious exhaust to liquid air, as there is to gasoline, and it is not limited to use in reciprocating motion engines, another advantage which may be immensely in its favor. But on the other hand, its very nature necessitates its use.

It has to be kept below 197° centigrade in order to remain a liquid, and to keep it anywhere near this temperature it must be packed in cans insulated as well as possible against the entrance of heat. The best insulating that has been done still leaves a leakage of 5% a day, the original volume being sixty gallons. But it may be merely enclosed in an air tight cylinder and allowed to become of the same temperature as the surrounding air. In this condition, however, it rapidly returns to the form of a gas and develops somewhere near *twelve thousand pounds* pressure to the square inch. Of course, this necessitates its being divided up into small quantities for shipment, and further, these portions

must be packed in the strongest drums, which, of course, must weigh considerable. Now the first method of transportation, that of mere insulation, is, to say the least, an undesirable and wasteful one, and the second method seems to have little or no advantage over the use of storage batteries. For storage batteries, while they may weigh more, certainly do not possess the possibilities of accident which drums under such a pressure present. If the excess power of large plants is to be stored up and transported as energy, why not put it into a storage battery or simply compress air with it to a reasonable degree and transport this? Where is the advantage in expending half the air that is compressed in liquifying the other half, when this liquid must be reconverted into a gas immediately? Air under 2,000 pounds pressure represents only a fraction of the danger possessed by the same gas under 800 atmospheres, and can be handled without the loss of the least power. One suggests that perhaps a pipe line could be built from the producing to the consuming plant for the purpose of conveying the liquid air. But we are bound to add, however, that the gentleman admits there is only a bare possibility of such a thing.

The problems of transportation present a really great obstacle to the general use of liquid air. The alternative is either that given above—where energy must be transported—or the one now practiced at Niagara Falls, where the consumers come to where the energy is stored up, and do not have the energy sent to where they are.

One use for liquid air is so closely connected with the vaporation of it that we will consider it here, though really out of place. Those who know of Deacon's process for the isolation of

chlorine know that in it the oxygen of the air is what acts on the hydrochloric acid, and that the nitrogen is simply a useless intruder. Now since the boiling point of nitrogen is twelve degrees lower than that of oxygen, it evaporates much the faster from liquid air, and if by some means we can keep the temperature of the liquid at about 185° practically all of the nitrogen will pass off and leave us almost pure liquid oxygen. This constitutes such a rel-

sure. Neither condition is exactly conventional, but considering the first one, let us introduce some of the liquid automatically into the cylinder of a machine at regular periods, as we would steam. At first the heat of the metal it comes in contact with will convert it into a gas and cause expansion, just as the high temperature of boilers causes the vaporization of water—and motion of the machine results. But gradually the temperature of the



THE PHYSICAL LABORATORY.

atively cheap process for obtaining so valuable a reagent that already a large liquid air plant has been installed by Linde in a European alkali works which uses the Deacon process.

Let us now suppose that we have surmounted all the difficulties of shipping the liquid air, and that we have a hundred cubic feet of it delivered to us. We can have it in the liquid state, at 197° c., or under 12,000 pounds pres-

cylinder becomes lower and lower until finally it reaches the temperature of the liquid air itself. This latter will no longer be gasified, and at this point our machine stands still. Further action will come only with heating of the cylinder, and in order to get any kind of satisfactory action, the heat applied must be quite considerable. Evidently this would not be very practicable. The most efficient method would be to

introduce the liquid air into a system of pipes surrounded by brine, such as is in use now in ammonia ice plants, and there allow it to expand, say to 200 pounds pressure, in a continual stream. This would be exactly analogous to the use of steam. A great deal of cold could be obtained by allowing the gas under 12,000 pounds pressure to expand, as well, and for this reason it must be allowed to fill the cylinders of a machine slowly, or the latter would soon become coated with a mass of ice. If all the difficulties of manipulating liquid air are eliminated, it may become quite popular for propelling such machines as automobiles and submarine boats. It *may* even supplant steam in some places, but this is quite improbable with such a competitor as electricity in the field.

And now to speak of two other uses which have been proposed for liquid air. Perhaps the more important of these is its explosive power when mixed with certain combustible materials. It is claimed that liquid air and powdered carbon in suitable proportions is as potent an explosive as dynamite. The explanation of this is that such a large surface of carbon is presented to so concentrated a form of oxygen, that the merest disturbance of equilibrium is sufficient to cause an explosive reaction. It is only an exaggerated exemplification of the same principle which caused the great mine disaster in Utah so lately. There the carbon was coal dust, and this being in contact with oxygen under somewhat greater pressure than at the surface of the earth, needed only a slight explosion of wethane, perhaps, to set it off. The harmless character of the combustion products of the liquid air mixture mentioned above, forms one of the

greatest arguments in its favor. The sole result is carbon dioxide. This gives at once a non-poisonous, smokeless explosive, which can be handled with the greatest ease, and which is capable of exerting as much power as its more undesirable rivals.

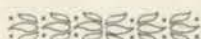
A charge of liquid air and carbon which failed to explode, could be let alone until the liquid all evaporated, and then the residue removed. This is an especially valuable feature in blasting, where so many lives are lost by trying to remove unexploded charges of powder. Following the suggestions of a number of writers, a liquid air plant could be caused to operate at the scene of action, whether this be on a warship, in a mine or on the field. This seems perfectly feasible if the manipulation of the liquid air is proven practicable. Sure it is that the cooling effect of the product could not but be welcome in the turrets of the great war ships.

Still another advantage of liquid air as an explosive arises from the fact that steel has a much greater tensile strength when lowered to the temperature of liquid air, than is ordinarily the case. On this account guns could be made somewhat lighter than they are now. This, of course, applies especially to field guns, where lightness is more of a desirable quality than with naval guns. But another fact must be taken into account. When iron is only slightly heated in liquid air, it burns with great fierceness. Now it is only reasonable to suppose that this action would take place in the breech of a gun, and cause an erosion more or less severe, at every discharge. If the carbon be present in sufficient quantities, however, it is possible that such action would not occur.

Another use for liquid air, more properly a minor use—is as a local anaesthetic and caustic. If the cold is sufficiently "diluted", the part to be operated upon can be quickly frozen and then treated. In cases of cancer and the like, application of liquid air to the diseased surface has an effect similar to that of a red hot iron—instantly killing the tissues. New York hospitals are now making extensive use of liquid air in this manner, and report cures of various diseases through its agency.

In closing, we would repeat that the future of liquid air is practically what man chooses to make it, and if the example of Mr. Tripler of New York is followed, it certainly has rosy possibilities. That gentleman, though a lay-worker, has done much toward the solution of problems connected with his branch of study and investigation, and deserves much credit for his great diligence and patience. (He shows a progressive spirit—one step in the right way, at least).

KARL ZIMMERSCHIED.



SOME OF THE FOUR-FOOTED BUTTERFLIES ABOUT KANSAS CITY.

The most beautiful insects to the casual observer, as well as the most interesting ones to the naturalist, are undoubtedly the butterflies. Floating over the bright meadows and fluttering through the dark woods, they call forth the admiration of all, even at the unsatisfactory glance which is procured of them while on the wing, and when mounted in the cabinet of an enthusiast, a short study of them will much increase the interest shown before.

The butterflies, together with the moths, form the great order *Lep-i-dopteia*, or scaly winged insects, which contains, in the United States alone, over six thousand species. They differ from the moths in having hooked or knobbed antennæ and in flying only during the day. They are divided into four great families: *Papilwindæ*, *Nymphalidæ*, *Lycaeindæ* and *Pesperidæ*; but in this sketch we will deal only with the *Nymphalidæ*.

The *Nym-phal-ids* are large or medium sized butterflies whose chief characteristics are that the first pair

of legs in both sexes are much shorter and more shrunken than the others, and project from under the head. They are generally gaily colored, and the inner angle of the hind wing is quite often clothed with long hairs. There are over two hundred species in this country alone; this being the largest family of butterflies. In this locality there are about thirty-five species, seven of which have been described in a previous article. The larvæ of this family are quite cylindrical and are generally covered with spurs of hair. The pipæ hang head downward and are supported only by the tail, which is attached to a button of silk.

Early in the spring, or, indeed, on warm days in late winter, may occasionally be seen flying through the still, bare woods the Mourning-cloak butterfly, *Envanessa antiopa* (No. 2). This beautiful species expands about two and a-half inches. The ground color is a deep musty brown, which is bordered first by a band of purplish spots, and second by a border of straw yellow, minutely dotted with brown

or black. The inner angle of the hind wings are clothed in long, black hairs. This species is found all over the temperate zone.

Closely related to the Mourning-cloak butterfly are three other species belong to the species *Vanessa*; *Vanessa Atalanta*, *Vanessa Huntia*, and *Vanessa Cardui*. *Vanessa Atalanta* has been described in a previous issue of this paper. *Vanessa Huntia* (No. 3), commonly called the painted beauty,

Vanessa Cardui (No. 7), the "cosmopolitan butterfly," closely resembles the above species, differing from it mainly in size, as it expands only about one and one-half inches, and also in the fact that on the under hind wing of the *Vanessa Cardui* there are but two spots, while there are five in the same position in *Vanessa Huntia*. The larvæ feeds on the same plants as *Vanessa Huntia*.

Another species, which appears early



THE CHEMICAL LABORATORY.

is a species expanding about two inches. The tips of the upper wings are black, spotted with white, and below this are two varying bands of orange. The lower wings are mottled and have a triple row of black spots on an orange background. The inner angle of the hind wings is densely clothed with orange colored hair. On the under side of the hind wings a row of five eye-like spots is visible.

in the spring and again in the autumn, is the leaf butterfly, *Anaea Andria* (No. 5). This butterfly is rather rare in the collection of the amateur entomologist, not because it is of rare occurrence, but on account of its rapid, erratic flight and its habit of suddenly alighting on some dead leaf and raising its wings, the ground color of which is a perfect miniature of a dry, brown leaf, which enables it to elude

the eyes of a very careful observer. The color of the upper wings of the male is a deep orange red, shading on the edges of the wings to a slatey gray color. In the female there is an indistinct light band crossing both the upper and lower wings. The color of the under side of the wings in both male and female is, as I have said, exactly that of a dry, dead leaf, and the peculiar shape of the wings aids in the deception. The larvæ feed on goat weeds.

In the woods, during the spring and early summer months, may be found the Snout butterfly, *Libythea Backmannii* (No. 10), so called on account of its long palpi, which closely resembles a snout or beak. This is the only species of this genus which is found in the United States. The ground color of its wings is a blackish brown, which is marked with a few large white and orange spots; it expands only about an inch and a quarter. The larvæ feeds on coltis. This species is found all over the eastern part of the United States.

Limeuitus Ursula (No. 1) is a beautiful bluish black species which can be taken all throughout the summer, hovering about the underbrush on the edges of the wood. The lower wings are ornamented with a beautiful shading of sky blue. On the under side of both pairs of wings are a number of orange spots. This butterfly has a wing expanse of about two inches.

One of our rarer butterflies is *Apatura Clyton* (No. 13). Belonging to the same genus is *Apatura Celtis*, a rather small brown species, which has been described in a previous issue of this paper. The former species is found in June and July. It expands about two and one-half inches, although there is a smaller form expand-

ing very little over an inch and a quarter. The upper wings are a light orange with yellow and brown markings. The hind wings shade into very deep brown and are ornamented in the outer edge with a row of light yellow lashes, and just above these a row of small yellow rings. The under surface of the wings is a yellowish drab color. This butterfly is generally found about hackberry bushes. Of the satin butterflies, or meadow-browns, we have three species, the commonest of which is *Neonympha Emythis* (No. 9). This is a small, round-winged butterfly, varying in color from a light fawn to a deep brown, almost black. The principal markings are two black spots, each surrounded by a light yellow ring on each wing. This species is found only in deep and shady woods. It is common during the summer months.

Debis Sortlandia (No. 12), is a rather large species, and not quite so common as the *Neonympha Emythis*. The general ground color of the wings is a fawn yellow and each wing bears five brown spots, which are rather more prominent on the hind than on the front wings. Around the outer edges of both the primary and secondary wings have a border of several fine lines. The habits of this species are the same as those of the preceding.

The last of the group is *Satymis Alope* (No. 8). This is one of the rarest of our butterflies. It is taken once in a great while on the borders of woods which open out on grassy meadows. The ground color is drab on both sides of the wings. On the upper wings is a large light yellow area in which are two distinct black dots or spots. This is the largest of the satyrs, expanding about one and two-thirds inches.

Late in the autumn comes the peacock butterfly, *Juniona Coenia* (No. 4).

This most beautiful and peculiar species is not very common in this locality. It is generally taken flying about the meadow lands. It is easily distinguished by the prominent eye spots. The ground color is a mouse color shading to orange on the edges of the wings. On the front wings there are two short, orange colored bands near the inner angle. On both hind and front wings near the outer margin are two prominent eye spots, one large, the other small. On the front wings these eye spots are surrounded with orange and white.

Along small streams of running water and occasionally by quiet pools may be found small orange colored butterflies marked with black, which belong to the genus *Phyciodes*. In this locality there are three species belonging to this genus, two of which are figured in the plates. The third is very rare and is not likely to be taken by the beginner. It is not given.

Phyciodes (nycteis?) (No. 6), is the smaller of the two species, expanding only about three-quarters of an inch. The outer margin of the wings has a quite distinct broad black band, and there is a row of fine black spots on

the lower wings. The larvæ feed on ragweed. This species is common in summer.

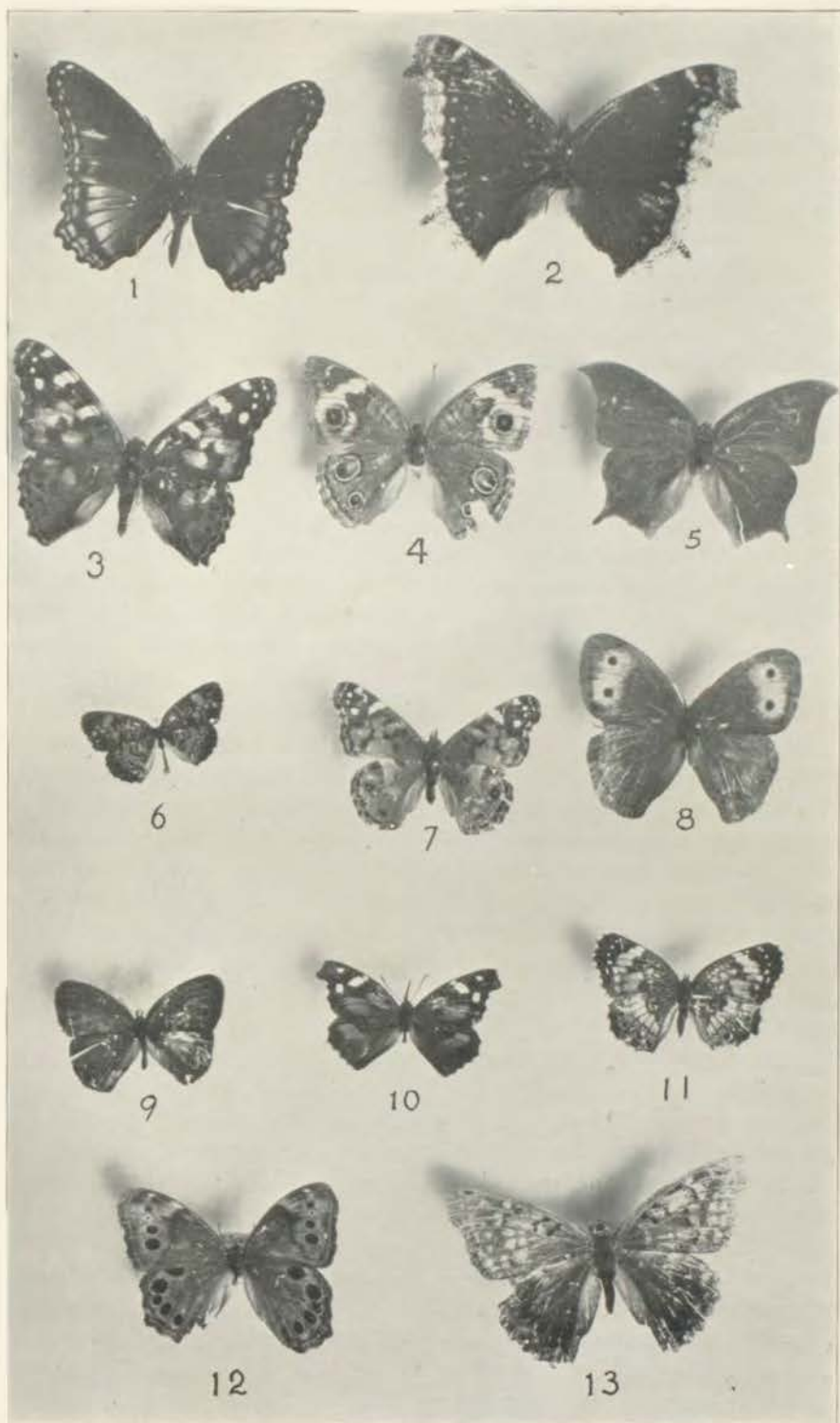
Phyciodes (No. 11), is considerably larger than the preceding species and may be easily distinguished from it by the light colored areas on each wing, which extend in a waving band over both wings. It is also common.

For the use of more advanced students the following table from Comstock is given. This table traces the insect only to the sub-family:

- | | |
|-----|--|
| A. | With none of the veins of the fore wings unusually swollen at the base. |
| B. | Anteumæ clothed with scales, at least above. |
| C. | Fore wings at least twice as long as broad..... <i>Heliconinae</i> |
| CC. | Fore wings less than twice as long as broad. |
| D. | Palpi much longer than the thorax..... <i>Libytheinae</i> |
| DD. | Palpi not as long as thorax.. <i>Nymphalinae</i> |
| BB. | Anteumæ naked..... <i>Euploeinae</i> |
| AA. | With some of the veins of the fore wings greatly swollen at the base..... <i>Satyrinae</i> |

EXPLANATION OF PLATE ACCOMPANYING.

- | | |
|------------------------------|----------------------------------|
| 1. <i>Limnitis insula</i> . | 7. <i>Vanessa cardui</i> . |
| 2. <i>Vanessa antiopa</i> . | 8. <i>Satyrus alope</i> . |
| 3. <i>Vanessa huntera</i> . | 9. <i>Neonympha eurythis</i> . |
| 4. <i>Junonia</i> . | 10. <i>Libythea lachmanini</i> . |
| 5. <i>Anœa audria</i> (male) | 11. <i>Phycodes</i> . |
| 6. <i>Phyciodes</i> . | 12. <i>Debis fortilandia</i> . |
| 13. <i>Apatina chyton</i> . | |



COMMON BUTTERFLIES IN OUR VICINITY.

POLARIZED LIGHT.

Polarized light may be termed the pastime of physical science. It is a subject which has received both theoretical and experimental attention until it is well nigh as thoroughly known as it can be in the present state of our knowledge of physics. And much as is known on the subject, it has received only three practical applications, only two of real importance—that of detecting, by means of the tourmaline tongs, spectacle lenses not made of quartz. Another instrument is the polar clock, which, although more reliable than a sun-dial or an hour-glass, can stand no comparison with a modern chronometer. The saccharometer depends on the polarization of light for its action.

If a crystal of Iceland spar be placed on a printed page the printing will seem to be in duplicate. Place the spar over a single dot and slowly rotate it in a plane parallel to that of the page; the two images seem to revolve about each other, one describing a large circle, the other a smaller one. This phenomenon of double refraction is exhibited by a number of crystals. When the ray of light enters a crystal it is split into an ordinary and an extraordinary ray, which vibrate in planes perpendicular to each other. That is, the crystal has the property of resolving light vibrations, which in common light are in all planes, and in circles and ellipses into two plane vibrations at right angles to each other and of reflecting these two "planed polarized rays" in slightly different directions. You ask, "How do we know these two rays are not exactly alike, and that they vibrate in planes at right angles to each other?" All this is not known positively, but there is

some very strong evidence which tends to uphold the generally accepted explanation. Suppose we arrange a projecting lantern or stereopticon to throw a parallel beam. In this beam we place a diaphragm which cuts off all but a small, round beam the size of a lead pencil core. This beam we pass through a piece of Iceland spar then through a piece of plane glass inclined to the beam. As we change the inclination of the glass first in one direction then in another the two dots on the screen will alternately become dim and bright again—while one is at its brightest the other will be faintest. This is very conclusive proof that there is some common property between these two beams, yet they are not exactly alike. Again, let us take two plates of tourmaline cut parallel to a direction called the optic axes. Either of them looks, by transmitted light, like any transparent, but slightly colored substance. The coloring is due simply to the natural color of the tourmaline, which may be anywhere from white to red, brown or green. The two plates when placed together, with their optic axes parallel, that is as if formed on solid black, act just as does a single one; but if either plate is turned in its own plane through a considerable angle, the light will be seen to fade gradually until the plates stand with their optic axes perpendicular, one having been turned through ninety degrees, when the light disappears altogether. This is explained by saying that tourmaline is a substance which will allow light vibrating in only one plane to be transmitted by it. Then when light strikes the plate all vibrations in a certain plane are allowed to pass, but those at an

angle to that plane are resolved into two components at right angles to each other, just as a resultant force may be resolved into its components, then one of these components parallel to that plane is allowed to pass, while the other perpendicular to it is suppressed by absorption. The transmitted polarized beam on striking the second plate, if it is vibrating in the right plane, is transmitted; if its vibrations are inclined to this plane, it is resolved into two components, the transmitted one being of greater or less brilliancy as the angle between the two tourmaline plates is less or greater.

Light reflected at an oblique angle from a plate of plain glass will be found to be partly polarized, the amount of polarization being greatest when the light strikes the glass at an angle of 35 degrees 25 minutes from the glass, or 54 degrees 35 minutes from a perpendicular to the surface of the glass. Fifty-four degrees 35 minutes is the polarizing angle for glass. It is an angle such that the reflected and refracted rays are at a right angle to each other.

Light which reaches us from any part of the sky, not in a line with us and the sun is, to a certain extent, polarized.

So much for the causes of polarization. Let us now speak of a means of detecting it. We have seen how one plate of tourmaline serves to detect polarization caused by another, and how an inclined plate of glass served to detect polarization due to Iceland spar. In fact, any polarizer may be used as an analyzer. Anything which will cause polarization will also detect it. One of the best instruments for either of these purposes is a Nichol's prism or nichol; a rhomb of Ice-

land spar is cut in two and the cut surfaces cemented together again with Canada balsam in such a way that the cut surfaces totally reflect the ordinary ray and allows the extraordinary ray to pass. A combination of polarizer and analyzer is called a polariscope. A simple, yet effective polariscope may be made as follows: Fix two uprights four inches apart onto a base six inches square, the uprights being fifteen inches high. On the base, inclined at an angle of 35 degrees 25 minutes to the uprights, fix a piece of glass four inches square, painted black or smoked on the back. Half way to the top of the supports fasten a horizontal stage of glass, and at the top put a wooden stage with a one-inch hole in the center. The plate of blackened glass serves as polarizer; the analyzer may be either a nichol or a bundle of thin glass plates inclined at the proper angle, 35 degrees 25 minutes, to the axes of the apparatus. Take a paper tube an inch in diameter outside and about two inches long. Fit inside it another heavier paper tube with the upper end cut off at the required angle. The inner tube should be about an inch and a half over all. Next get some thin glass, such as is used to cover microscope slides. It is best to get the elliptical glasses if possible, but any that will not slip through the tube may be used. Place them on the inclined upper end of the inner tube and fasten in place with another inclined tube fitted inside at the top. Use six or eight of the thin glass plates. Next, put a collar around the whole thing to keep it from slipping through the hole at the top of the polariscope.

Before we go on with our experiments perhaps it would be well to mention a property of many crystals, name-

ly, that of producing circular or rotary polarizations. If a beam of polarized light be allowed to pass through a plate of quartz cut perpendicular to the main axis of the crystal it will be split into two rotary polarized rays turning in opposite directions at different rates. These when they leave the quartz interfere to produce the prismatic colors vibrating each in its own plane but combining to produce white light. The planes of vibration of the colors are arranged in a circle so that when viewed with an analyzer first one, then another may be cut out, leaving the field the complementary color. Thin sheets of mica will produce this same effect. Mica stars may be cut and fastened to a mica background, when the stars will be of one color, the background of another. Many crystals exhibit this property, but most of them require viewing under a microscope, when the po-

larizer is placed beneath the stage and the analyzer in the draw tube. Many liquids act in the same way. Sugar solutions are tested by means of the saccharimeter, simply a tube filled with the sugar solution and placed in a polariscope. In one kind of sugar, dextrose, the right hand rotation is most evident; in another kind, levulare, the left hand rotation predominates.

These and many other interesting and simple experiments may be performed with a polariscope. This paper is written with the hope that it may interest someone sufficiently to warrant their looking into the subject. Some good reference books are Spottiswoode's "Polarization of Light," Hopkins' "Experimental Science" and in fact any book on physical science except some of the most elementary.

J. L. H.



MANUAL TRAINING HIGH SCHOOL, KANSAS CITY, MO.

MANUAL ED TRAINING



HOWARD M. WHITEHEAD.

EDITORS



LUCILE E. EDWARDS.

BENCH WORK.

The freshman manual training has been subject to but very few changes this last school term. Mr. Stanley Moore, who has had charge of this work, previous to this term, is now the instructor of the forge shops in the new wing, and Mr. O. E. Herring has been appointed to take charge of the bench work in his stead. Mr. Herring is a graduate of an Eastern manual train-

ing school, and to him this work is not new.

The bases to the work benches in this department have been changed—new ones taking the places of the old. The new benches are now fully equipped with lockers, and the protection of the boys' tools and aprons is much better, and it is a great advantage, because of the proximity of the boys to their lockers.

TURNING.

The members of the turning classes have taken up their abode in new quarters on the second floor of the new wing.

This is one of our prettiest shops, and the work turned out shows a great improvement over the work of the old shop. The benches were made especially for this department, and every con-

ive work. For the annual exhibition this year we expect to see much original work from this department on show. Last year the turning exhibit was quite a success.

Since the new wing of the building has been built, another department has been added to the second year manual training class. It is that of



THE WOOD WORK SHOP.

venience that could be thought of has been added. The lathes are fastened to the benches, thus allowing more room for the tools and less vibration for the work.

This second year course of manual training has proven very popular with the boys, and many of them have turned out some very neat and attract-

moulding. This work is taken in connection with the turning, and at present the boys are moulding some very pretty things. Next year this moulding department will occupy the engine room, and Mr. Kent will move his engine to the present quarters of the moulding room.

FORGING.

The forge shop has been occupied since the first of the term, and the boys are quite accustomed to it now. The course is about completed, and the work is growing more and more interesting.

Welding was one of the hardest ex-

tongs, hammers, and lathe tools.

During the warm weather it is not so pleasant to be in the forge room. Nevertheless, the boys continue to stay with it, and they seem not to mind the heat, for during any of the hot days you may find the boys pounding away



THE TURNING ROOM.

ercises, and took a great many trials before the pupils learned how to get a good weld. The difficulty in this exercise is to keep from burning up all of your stock in order to get a portion up to the melting point. The remaining exercises comprise mostly the construction of tools, such as

at a red-hot piece of iron before the flaming forges, with the perspiration dropping from their cheeks.

This shop has been a great success, and we greatly appreciate the efforts of our instructor, Mr. Moore, our principal and the School Board in making it such.

THE MACHINE SHOP.

The machine shop is a thing of the future, so far as the classes are concerned. It is in a state of construction, and will be ready for exhibition by commencement.

This shop promises to be the most interesting of the entire school. The lathes and tools are the best that money could buy; and here again we

thank our professors for their deep research. The course will be very complete, and we should expect great results from the boys.

The shop occupies the south room on the first floor of the new wing. This is one of the best rooms in the new building, and is very suitable for this purpose.



THE MECHANICAL DRAWING ROOM.

MECHANICAL DRAWING.

The drawing rooms have been changed considerably during the last term. The drawing tables in Mr. Sloan's room were removed to the auditorium and new ones were put in their places. The advantage of these new tables lies in the changeable tops and the position of the drawers on one side of the tables. The third year course

was finished last term, thus allowing the boys all of this term to finish the forging course.

The tables that were removed to the auditorium have been placed in Miss Murphy's old room, as she now has the room that was vacated by the cooking department. Mr. Fulton has charge of this new mechanical drawing room with the freshman drawing classes.



THE FORGE ROOM.

*Davidson
XCT's*

ART.

The free-hand drawing course has had a splendid development during this last year, and with their wonderful increase in numbers it is well that they have been able to become stationary in their own studio, on the second floor, which has many improvements upon the temporary one occupied on the third floor. The walls are painted an old rose

frames. Each pupil used his own individuality in regard to the pattern and combination of colors. One young lady, who made a charming little frame of violets, gathered the violets in the woods and made a close study of them before making her design. There were also frames of wild roses, holly, forget-me-nots, margurites, and thistles; each being decorated with



THE DESIGNING ROOM.

color, with borders of dark green, and the white coats show to a much better advantage with this background.

The course as now followed, is first and second year, charcoal sketching; third year, designing; and fourth year, sketching and painting from life. An interesting feature introduced this year was the painting of picture

corresponding colored ribbons, making in all a beautiful and interesting exhibit.

Much interest has been taken in a new phase of designing, this year, which consists of designs made by the pupils for the books used in the school. Dodd & Chace's Plane Geometry has had a wonderful cover designed for it so that one might almost be persuaded

by viewing it that the contents of the book would be as delightful as the cover. Mr. Merrill's Zoology has also been honored, and varied and interesting are the covers designed for it.

The sketching from life gains interest and strength each year, and some of our artists are becoming exceedingly expert in the delineation of pose and features. The cut shown in this issue is a splendid sample of what is being done, and is the work of one of our well known artists.

Indeed, we are pleased to state that

art is now receiving the interest that is its due and the pupils are realizing its importance in connection with many other studies pursued in the high school. Visitors, in viewing our note books in different departments, but chiefly in the literary departments, remark upon the excellent illustrations which impress one with the pleasing effect of originality combined with scientific study and appreciative interest; thus complimenting not the literary department and students alone, but the art department as well.



SAMPLE OF DESIGNING WORK.

DOMESTIC ART.

Since the sewing classes have been given permanent quarters in the new wing, there has been a much deeper interest in the work. Whether this is caused by the innovating morning sun or the knowledge of possessing permanent quarters we cannot say, yet the enthusiasm is in greater evidence at the present time than it has ever been before.

their graduating underskirts in class, and they are, in the greater number of cases, real works of art. Such laces, and ruffles, and tucks cannot be found in department stores, for every stitch means something to the girl when she herself has placed it in the dainty piece of apparel which will belong entirely to her when finished.

It is pleasant, indeed, to enter the



THE FIRST YEAR SEWING ROOM.

The course, leading from elementary stitches to the making of petticoats and shirt waists, and finally to the dress skirt, seems to obtain fresher interest by usage; and girls who were once heard to grumble over the tediousness of the sewing class, now wear an expression of interest when entering the class that was at one time foreign to their faces.

Many of the senior girls are making

sewing room after class hours, and see the pretty face of some senior which wears an expression of utmost complacency in most classes, puckered into anxious frowns of expectancy over this mass of material which would mean little to another, perhaps. We sincerely wish them success, and hope their attempt will be an example for the senior girls who will follow next year.

COOKING.

The cooking classes are highly elated over their new laboratory, and seem to work with even greater interest, if such a thing were possible, than they did in the old one.

It is, indeed, worth the toiling up three flights of stairs to get a view of the clean, fresh room, with its many windows, marble sink, and dainty cupboards, behind the shining windows of

The desks are arranged in the form of a horseshoe, in the center of which Miss Bacheller reigns supreme; the pupils working on the outside and entering the center only for oral recitation.

An interesting feature of the laboratory is the profusion of charts representing various cuts of meat and proportion of nutriment in different



THE COOKING LABORATORY.

(The above picture represents our Old Laboratory, and not the new one now in use.)

which can be seen dainty dishes and shining utensils.

Each girl is here provided with individual gas stove, sink, oven, and locker, and much trouble is also saved by having hot and cold water right at hand, thus saving much valuable time which might otherwise be lost, were it necessary to wait for the water to boil.

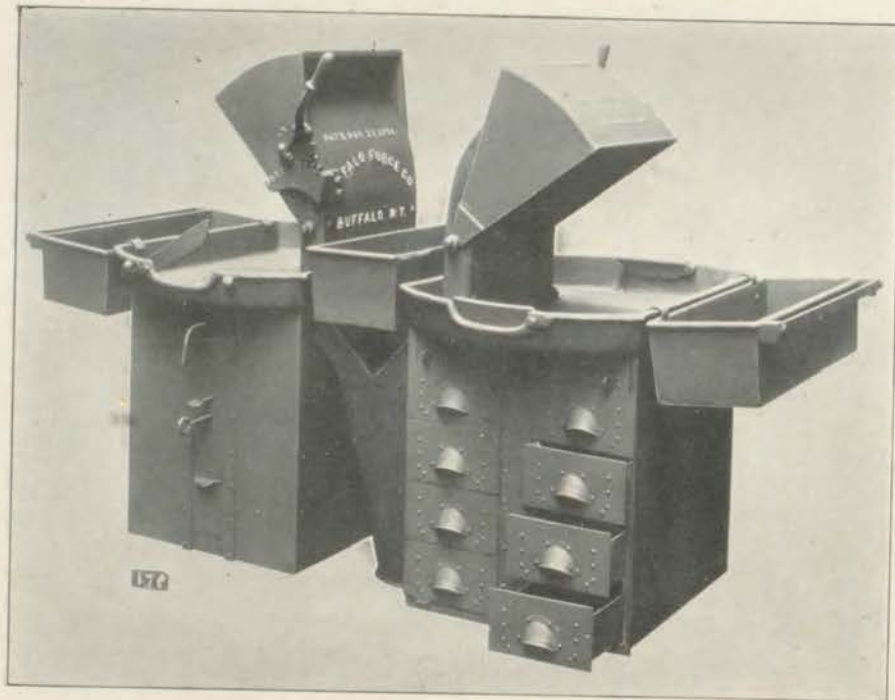
foods. Against the walls are exhibition cases containing jars of preserves and glasses of jellies prepared by the classes. In these cases also are rows of bottles containing the relative amount of constituents of different foods.

The interesting time in the year for cooking is now at hand, as we are making ice cream, ices, gelatins and

all such dainties. We will also serve a breakfast some time soon, and each pupil will be required to show what has been remembered and how daintily she can serve. It is interesting to see how the number of visitors increase at this time of the year, and all seem to feel that in this refreshing room some cooling, pleasant dainty will be found which will seem all the more

pleasant in contrast to the warm day outside.

Many are wishing for a course of second year cooking, which it is possible we may have next year. If the course is instituted it will be upon a more scientific basis than first year cooking, and will thus consist more of the advanced. From all present indications the class would be a large one.



THE NEW FORGE.



SADIE H. WHITNEY, Editor.

THE PARSING OF A KISS.

Kiss is a conjunction, because it connects. It is a verb, because it signifies to act and to be acted upon. It is a preposition, because it shows the person kissed bears no relation. It is an interjection (sounds like one, at least), and it is a pronoun, because she always stands for a kiss. It is a noun; it is the name of the osculatory act; common and proper, second person necessarily, and plural number, because there is always more than one (masculine and feminine, generally mixed). Frequently the case is governed by circumstances and light, according to the rule. If she smite you on one cheek, turn the other for another smite. It should always begin with a capital letter; be often repeated, and contin-

ued as long as possible, and end with a kiss. Kiss may be conjugated, but never declined.—*Ex.*

Some men could learn things if they did not think they always knew them.—*Ex.*

Senior—"It must have taken Daniel Webster a long time to complete the dictionary; don't you think so?"

Junior—"Daniel? You mean Noah, don't you?"

Senior—"Now, don't be silly. Noah built the ark."—*Ex.*

You can't always judge a man by the high standing of his collar.—*Ex.*

"Of all sad words of lad or lass, the saddest are these: I might have passed."—*Ex.*

He—"Have you read Carlyle's essay on Burns?"

She—"No; I hate a medical treatise."—*Ex.*

Patient—"What do you think of a warmer climate for me, doctor?"

Doctor—"Gracious, man! That's just what I am trying to save you from."—*Ex.*

TO THE SENIOR GIRLS.

Never smile, unless it is to your own sex.

Never applaud a speaker; this also applies to the boys.

Never vote for a girl when a boy candidate is running.

Never bow to a classmate; it is the height of folly.

Never talk to a boy in the hall; it is against the rules.

Never know your lessons when called on to recite.

Never allow a senior boy to say a word about class affairs.

Never address a senior boy by any other title than Mr.

Never be affectionate with your girl friends in public.

Never get nervous if some one combs your hair with their fingers.

Never, in fact, forget yourself so far that you forget your dignity as becoming a senior.—*Ex.*

Lawyer—"You were in the bar at the time of the event complained of?"

Witness—"Yes, sir."

Lawyer—"Did you take cognizance of the bartender at the time?"

Witness—"I don't know what he called it, but I took what the rest did."—*Ex.*

She sat on the step at the evening tide,

Enjoying the balmy air.

He came and asked, "May I sit by your side?"

And she gave him a vacant stair.—*Ex.*

Keith—"Was the play tragic last night?"

Word—"Awfully; even the seats were in tiers."—*Ex.*

Within a hammock they snugly sat,

But how the two behaved

You could not tell, until she said,

"Frank, you must get shaved."—*Ex.*

"What are you doing, Tommy?"

Tommy—"Taking the windows out of grandma's specs so she can see better."—*Ex.*

Foolish is the woman who puts a special delivery stamp on her letter and gives it to her husband to mail.—*Ex.*

The day you swear your lips to seal,

And vow that nothing you'll reveal,

Guard well yourself that day—for lo,

'T is then you'll tell all that you know.

—*Ex.*

Teacher—"Class, how many senses have we?"

Jimmie—"Six."

Teacher—"Six? I have only five."

Jimmie—"I know it; the other one is common sense."—*Ex.*

Two Irishmen were looking at a weather vane, when the first one remarked: "Pat, why do they always put a rooster up there?"

"Sure, and that's aisy," replied Pat. "Because it would be too unhandy to crawl up there after the eggs if it was a hin."—*Ex.*

Visitor—"Does lynching prevent crime?"

Kentucky Colonel—"Yes, sir; I have never known a person to commit a crime after he'd been properly lynched, sir."—*Ex.*

Hoax—"Why is it that Jones is afraid somebody will see the inside of his watch?"

Joax—"I suppose there is a woman in the case."—*Ex.*

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."—*Ex.*

The following is probably the best definition of mind and matter ever given:

What is mind? No matter.

What is matter? Never mind.

"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.

—*Ex.*

We sometimes call our seniors
The naughty-naughts, for fun.

Of next year's class let all beware,
'T will be the naughty one.—*Ex.*

"My task in life," said the pastor,
"is saving young men."

"Well, then," said the maiden, "save
a nice looking one for me."—*Ex.*

"Yes, Dad, when I graduate I intend
following a literary career—write
for money, you know."

"Why, Will, my boy, you've done
nothing else since you've been at
college."—*Ex.*

"Dat's jus' de way!" said Rastus,
"Here I's stole and stole chickings for
years an' never got caught. But de
minnit I goes an' buys a hen for supper
I's 'rested on s'picion. Honesty's de
wust policy I eber seed."—*Ex.*

Teacher of Physics—(After explaining
the nature of the "Harvest Moon")
—"Robert, what did you wish to ask?"

Robert—"Why, I just wanted to
know what caused the long and the
short honey-moon?"

Teacher—"My boy, you are by far too
young to think of such things." (Ap-
plause).—*Ex.*

Why are teeth like verbs? They are
regular, irregular and defective.—*Ex.*

A bonnet covered with birds does
not sing, but it often makes a man
whistle when the bill comes in.—*Ex.*

Mr. Grumpsy—"What's that queer
odor? Smells like burning lye."

Mrs. G.—"Don't know; I haven't put
anything into the fire except some of
your old love letters."—*Ex.*

The bald-headed man in his family pew

Leaned back on the cushion and slumbered,
And he dreamed that the preacher the 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 on his knees and fervently
prayed:

"Oh, Lord! send me down the back num-
bers." —*Ex.*

Senior—One who rides a pony in the
race for a sheepskin.

Junior—A wise person; one of
nature's noblemen.

Sophomore—One who knows it all,
and tries to teach the faculty.

Faculty—A troublesome organiza-
tion that interferes with the students'
enterprises.—*Ex.*

Master (rapping on the Butler's door
at 9 A. M.)—"Michael! Michael! are
you awake?"

Michael(suddenly aroused)—"A wake
is it? Begorra, Oi'll be there directly,
b'ys."—*Ex.*

Butcher—"Be lively, now. Break
the bones in Mr. Jones' chops and put
Mr. Smith's ribs in the basket for
him."

—Boy (briskly)—"All right, just as
soon as I've sawed Mrs. Murphy's leg
off."—*Ex.*



ALUMNI NOTES.

THE NAUTILUS, on account of not having been able to hear from the alumni, is not able to publish a correct list of the graduates. Hereafter it is very desirous that the graduates of the school keep the paper informed as to where they are and what they are doing.

With this year's graduates there will be about sixty new members added to Manual's list of alumni members. THE NAUTILUS would like to hear of the alumni organizing. Can you not get together?

Clyde Hawkins, '98, has just completed a course in dentistry at the Western Dental College. He is now practicing for himself.

THE NAUTILUS delights in announcing the engagement of Miss Martha Miller, '99, to Mr. John Kelley, of Omaha, Nebraska.

Dyke Wilson, '98, is attending the Rolla State School of Mines.

Louis Swan, President of the class '98, is in business with his father—J. D. Swan & Co.

Walter Burton, '99, is a frequent visitor at Manual.

Grace Phillips, '99, very ably relieved her father of his classes during his (Prof. Phillips) few days' attack of la Grippe during the past term.

Clarence Rowe, '98, is now and has been in Cuba the last year, working under the government as a civil engineer.

Sadie Kinley, '98, has been assisting her father in his law office.

Karl Zimmerscheid, '98, is taking a scientific course at Ann Arbor. He has written an interesting article in this number.

Francis Black, '98, the first Editor-in-Chief of THE NAUTILUS, has been preparing himself to be a master mechanic.

The marriage of George McKenzie, '99, to Miss Pearl Bartlett, has recently occurred. THE NAUTILUS extends its best wishes to Mr. and Mrs. McKenzie.

Bailey Hewitt, '99, is now at West Point Military Academy.

Myrtle Chrisman, '99, is with Emery, Bird, Thayer & Co.

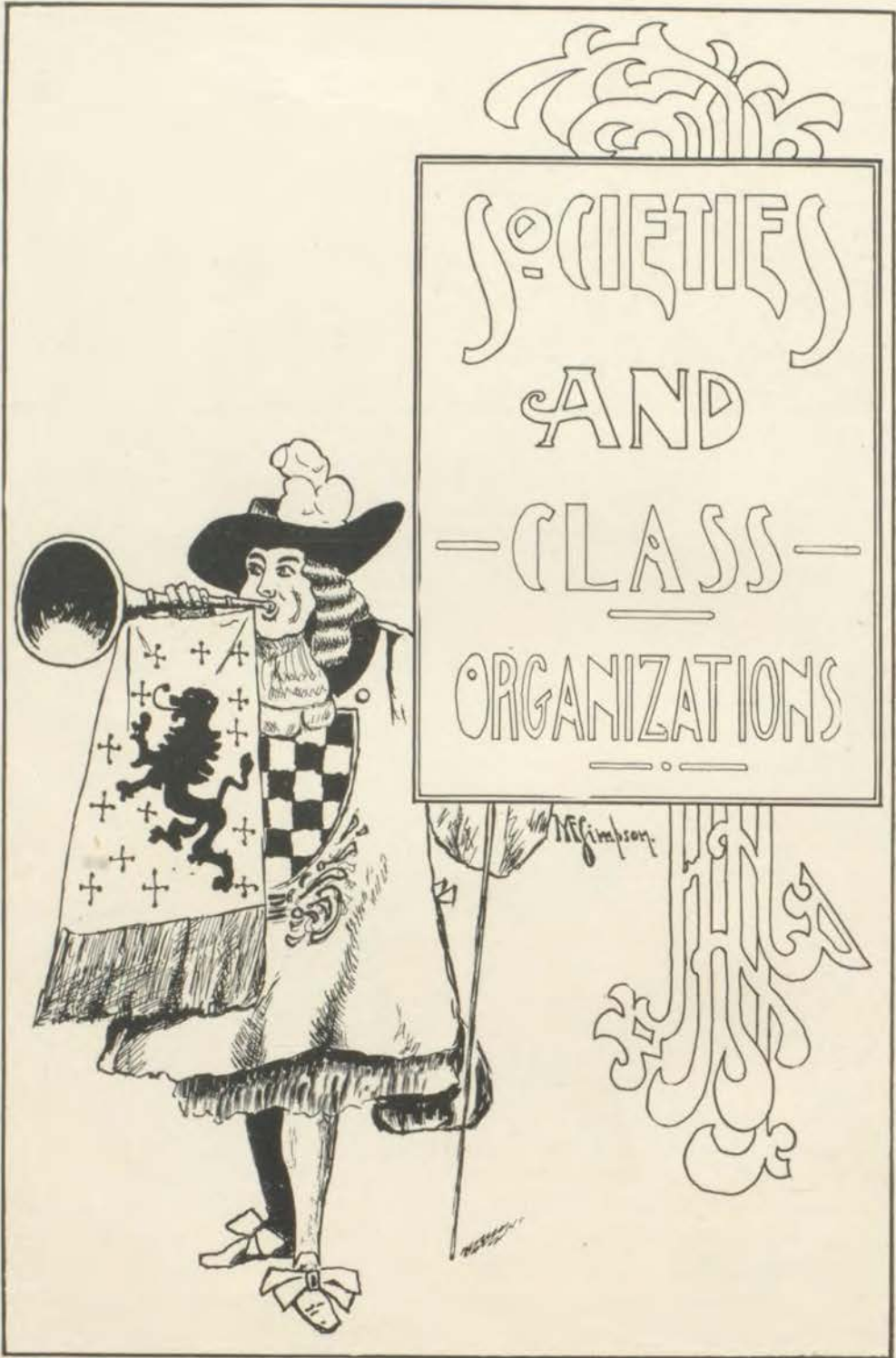
C. Lee Staley, '99, is at Congress, Arizona, in the mining business.

Alice DeWolf, '99, has just returned from a many months' visit to the Rockies.

Perrin Rouse, '99, is in business with his father in the West Bottoms.

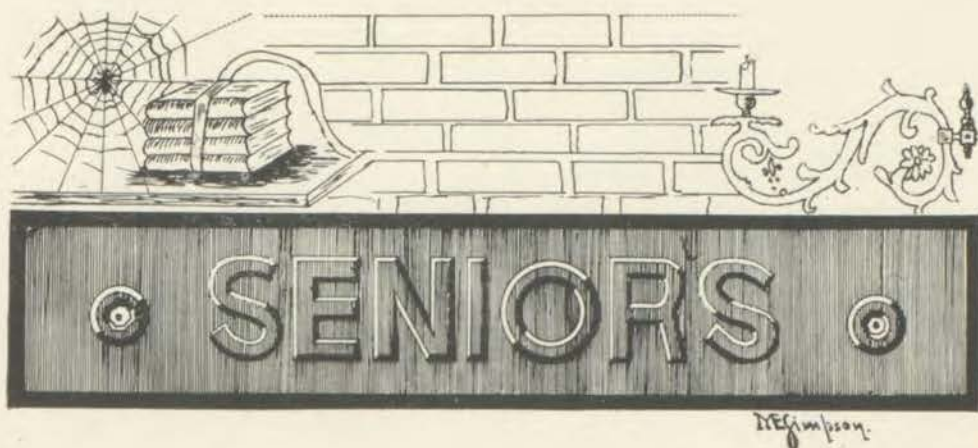
Clara Lindsly, '99, the President of the second graduating class, is devoting her time to the study of music.





SOCIETIES
AND
-CLASS-
ORGANIZATIONS

McGimpson



THE CLASS OF 1900.

About the fifteenth of January the first meeting of the senior class was called in order to see who the possible candidates for graduation were, and to perfect a strong organization of this year's class. At this first meeting nothing more of importance took place than the election of officers.

In order that no unnecessary meetings would be held, it was decided not to have any regular meetings, but to only have special meetings when the president of the class found it important to call them; however, meetings have been held about every two weeks.

At the first meeting of the class there were present about sixty members, and since then the attendance has been quite regular.

The choosing of class colors and the selecting of a class pin were attended to at the second meeting. The design of the pin selected is very pretty, and all the enamel work upon it was done in the East. Many of the members of

the class have purchased the souvenir, and the good selection of the class pin has met with much approval from outsiders.

The Board of Education has decided to hold our commencement exercises on Thursday evening, the last day of this month. Previous to this year it has been customary to hold the exercises on the last Wednesday evening in May. For this year's commencement a well prepared programme has been arranged, as may be seen in front of this issue.

As the class has proceeded with meetings this year, the idea of holding a class day has met with much approval. This year the class will hold the first class-day exercises that have ever been held in the school. From all present indications the prospects for the success of the programme are bright and encouraging, and if the entertainment does prove successful, the faculty will consider the possibilities of holding one each year. Friday

morning, the next day after commencement, has been decided upon as the date for these exercises.

This year's class is the largest one that has completed the high school course in the Manual Training High School. With this graduating class goes a great many talents of various kinds, and in the near future it is

hoped that the graduates will be occupying positions of great responsibility and honor.

In behalf of the class, I will say that the time spent at Manual has been the happiest of our school days, and we appreciate the courtesy and kindness extended to us by our teachers and fellow-students.

H. S. F.

THE SENIOR CLASS OFFICERS.



LUCILE EDWARDS,
Vice-President.

ROBERT CLEMENTS,
Reporter.

EDITH STONER,
Secretary.

HOWARD M. WHITEHEAD,
Treasurer.

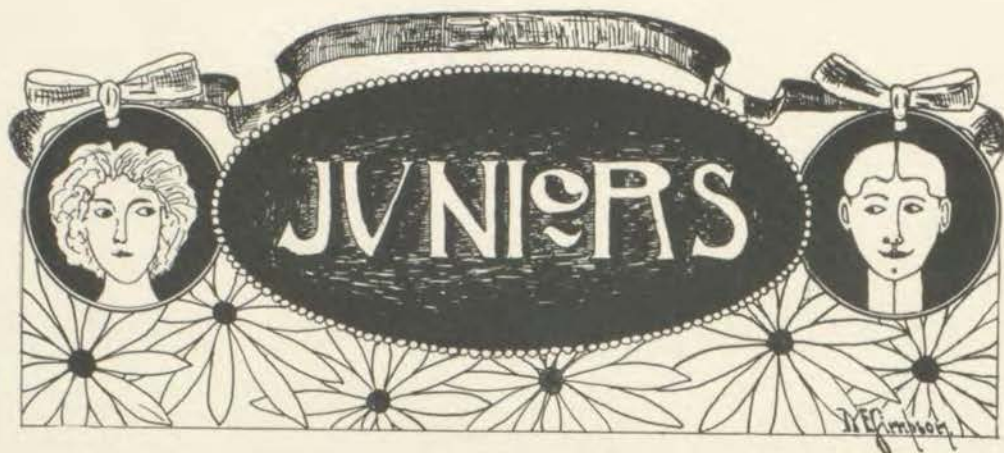
HARRY S. FRAZER,
President.

BEN. E. LINDSLY,
Sergeant.

...CLASS OF 1900...
OF
THE MANUAL TRAINING HIGH SCHOOL.



- | | |
|---------------------------|-----------------------|
| Virginia Lee Minter | Belle Stewart |
| Grace Eleanor Greene | Sadie Harris Whitney |
| Ralph Eugene Reed | Lucile E. Edwards |
| Ben E. Lindsly | Bertram Sooy |
| Herman H. Kube | Ruth E. Wilkerson |
| Harry S. Frazer | Edith Stoner |
| Mary Clemons | Flossie Reinhardt |
| Herman Carl Hase | Lillie L. Humfeld |
| J. William Estill | Inez Filley |
| Clifford E. Burton | Robert W. Clements |
| Adolph William Stukenberg | James Koogler |
| William F. Smith | Jeannette Gillham |
| Frank Wynne | Sadie Davidson |
| Edna Daley | Ethel Joe Wilkins |
| May Hoye | Honor Marie Wilkins |
| Alfred R. Hillgren | Robert Tschudy |
| Velma Squier | Walker Campbell |
| Flora M. Haward | Agnes E. Sharp |
| Bertha West | Hortense Gerhart |
| Lena West | Bessie Freligh |
| John Fowlston | Minnewa Shoemaker |
| Alice George | Theodore C. Stewart |
| Lulu Pearl Holcker | Rebecca C. Jones |
| Ralph E. Segur | James C. Harline |
| William L. Bayha | Blanche Loeb |
| Fannie E. Scott | May Perkins |
| J. Warner Keiter | Jennie B. Sublette |
| Fred Tschudy | Howard M. Whitehead |
| Dora Rowe | Ernst O. Zimmerschied |
| | Clark Randall |



THE CLASS OF 1901.

The first freshmen who wandered up and down through the new halls of Manual in the year 1897 are now pushing themselves to the front, and are coming into prominence more and more every day. We have gone through the daily routine of a freshman's life, and have undergone all the trials and tribulations of a sophomore, and have now, in the past year, had the experience of realizing the vast importance of our junior year, and, furthermore, we are anxiously waiting to climax all in the year 1901.

It is a delightful sensation to realize that we are at last juniors—that the "beginning of the end" of our course has been reached and we are now well on our way to the long desired summit of the mountain, on to graduation. But yet, we are not so desirous of becoming a Senior, for the Junior, we must all acknowledge, is the ideal high school student. How unlike the others who come before and after him. Here the anticipation of

the future takes on its rosiest hues. He has been taught to form his own opinion and wax strong in his arguments.

The first full fledged class to be graduated from the Manual Training High School is to be this year's Junior class. By this is meant that we are the first class that have had the full advantages of the school for four years.

This "Junior Class," which is the first of its kind to organize in school, was established for the sole purpose of having the members to become better acquainted and to assist in "disposing of the Seniors at the close of this year." We have also been asked to participate in their class day exercises.

The duties of this class of 1901 are more numerous than those of the average ones, and much more is expected of us as our experience broadens. Many important meetings have been held, at which by-laws and constitution, class colors and a class

flower have been accepted. The class colors chosen are canary and white, and the flower is the daisy.

In the full realization of our important position in this school as Juniors, and in order to impress the other members of our school with this same importance, we, as a class, have assembled and perfected a strong organization, and we are especially proud of the fact that our class has taken the initiative in this organization.

The membership, which is about two hundred, embraces more than two-thirds of the third year students. This shows that the organization is supported by more than the required majority. What awaits this organization in the future is not in my power to tell, but we close with the hope and assurance that we will try to live up to all expectations next year.

J. N. R.

THE JUNIOR CLASS OFFICERS.



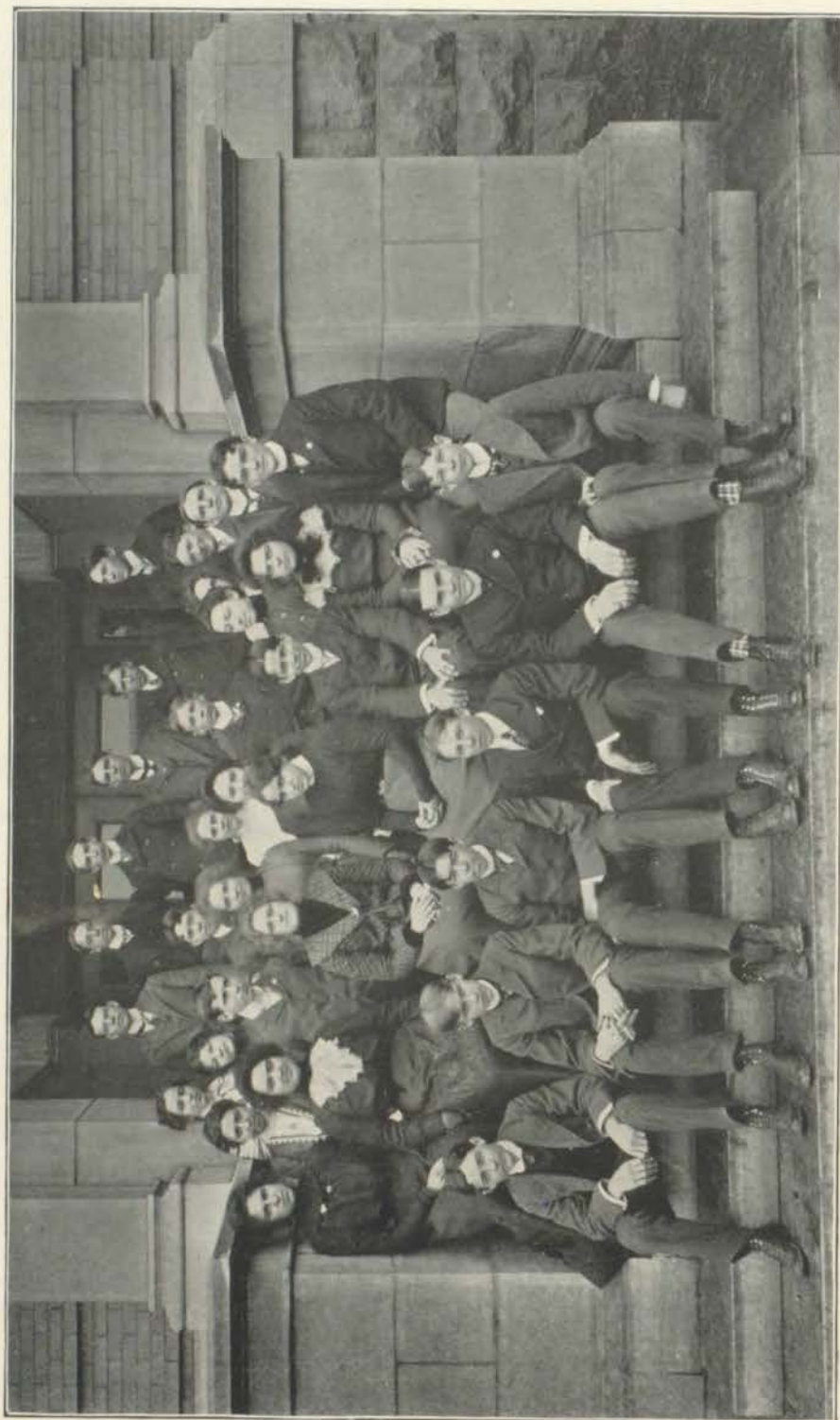
JOHN H. TATE,
Treasurer.

JAMES N. RUSSELL,
President.

E. BRUCE LOCKWOOD,
Vice-President.

ROBERT RIPLEY,
Sergeant.

SARAH REED,
Secretary.



THE ART CLUB



Colors: Yale Blue and Orange.

Organized November, 1897.

OFFICERS.

| | | |
|---------------------|---------|-----------------|
| DWIGHT L. FROST. | - - - - | President. |
| LINDA LOOMAS, | - - - - | Vice President. |
| BESSIE FRELIGH, | - - - - | Secretary. |
| EDWIN S. VINCIL, | - - - - | Treasurer. |
| BERTRAM SOOY, | - - - - | Sergeant. |
| JENNIE B. SUBLETTE, | - - - - | Critic. |
| EDNA MESSINGER, | - - - - | Recorder. |

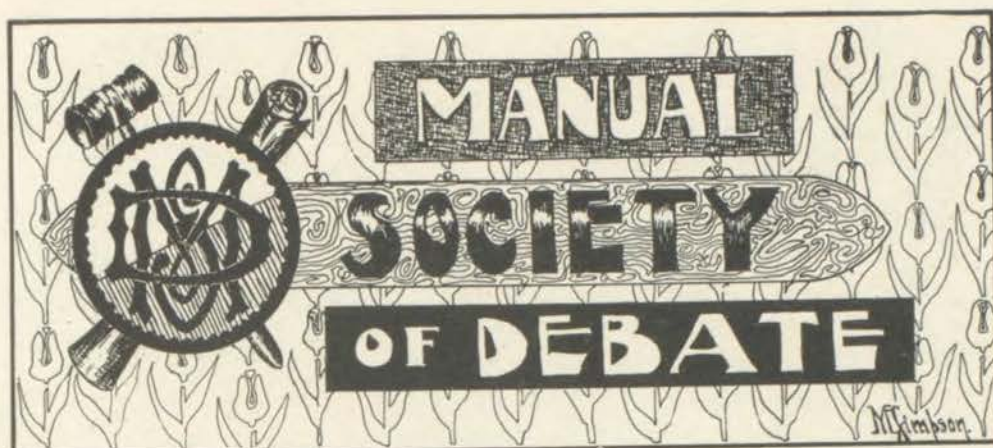


MEMBERS.

| | |
|-----------------------|-----------------------|
| Grace Berger, | Lois Oldham, |
| Myron C. Alberton, | Dwight L. Frost, |
| Bessie Freligh, | Edna Messinger, |
| James N. Russell, | Levere P. Nellis, |
| Virginia Minter, | Edwin S. Vincil, |
| Ralph E. Segur, | Linda Loomas, |
| Grace Green, | Henry Maas, |
| Claud Clement, | Bertha Schutte, |
| Gertrude Rothgeisser, | Leo B. Crabbs, |
| Claud Minter, | Jennie B. Sublette, |
| William S. Hall, | Grace Muir, |
| Herman Henrici, | May Jackson, |
| George Oppenheimer, | Roy Stoller, |
| Edwin A. Sutton, | Jack D. Schwitzgebel, |
| Fannie Taft, | Bertram M. Sooy, |
| Harold E. Frost, | Robert Ripley, |
| Edna Welch, | Carrie Stoner. |
| | Clarence Hanley. |



THE MANUAL SOCIETY OF DEBATE.

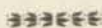


Colors: Crimson and Old Gold.

Organized December, 1898.

OFFICERS.

| | |
|------------------------------|-----------------|
| HERMAN H. KUBE, - - - - - | President. |
| E. BRUCE LOCKWOOD, - - - - - | Vice President. |
| NOBLE SHERWOOD, - - - - - | Secretary, |
| CHARLES WELLS, - - - - - | Treasurer. |
| ARTHUR WOOLF, - - - - - | Critic. |
| RALPH BERG, - - - - - | Sergeant. |
| DARWIN DELAP, - - - - - | Reporter. |
| ROY ALEXANDER, - - - - - | Librarian. |



MEMBERS.

| | |
|----------------------|--------------------|
| Edward Knapp, | James Anderson, |
| Richard E. Scammon, | Herman H. Kube, |
| Marshall P. Myles, | James L. Kilroy, |
| Noble Sherwood, | E. Bruce Lockwood, |
| J. Bruce Frazier, | Darwin Delap, |
| Horace E. Hamm, | Albert W. Hertz, |
| Arthur W. Woolf, | Charles Wells, |
| George L. Conkey, | Theodore Stewart, |
| Roy Alexander, | Ralph Berg, |
| Philip Mc Kinley, | Edward J. Short, |
| Chouteau Legg, | John Hutchings, |
| Walter Hocker, | Waldo Whitman, |
| Earl Shields, | John Woodward, |
| Arthur Peters, | Murray Harrington, |
| Charles M. Christie, | Fred McClure, |
| John H. Tate, | Perry Prater, |
| Lem Chandler, | Benjamin Barrick, |
| Harry S. Frazer. | |



THE SCIENCE CLUB.



Color: Yale Blue.

Organized January, 1899.

OFFICERS.

| | | |
|-------------------|-----------|-----------------|
| ANNIE L. WYNNE, | - - - - - | President. |
| FRANK BARRY, | - - - - - | Vice President. |
| WILLIAM BAYHA, | - - - - - | Secretary. |
| ALBERT CARPENTER, | - - - - - | Sergeant. |
| LISTA MAKINSON, | - - - - - | Critic. |
| LEE HEWITT, | - - - - - | Librarian. |

WAYS AND MEANS COMMITTEE.

| | | |
|----------------|-----------------|-------------|
| BELLE STEWART, | PAUL ARMSTRONG, | GRACE CALL. |
|----------------|-----------------|-------------|



MEMBERS.

| | |
|-----------------|-------------------|
| Paul Armstrong, | Frank Barry, |
| William Bayha, | Albert Carpenter, |
| Will Coleman, | Herman Hase, |
| J. Lee Hewitt, | J. Warner Keiter, |
| Emory Mershon, | Raymond Neevil, |
| Arthur Patton, | Ralph Page, |
| Rossa Stewart, | Victor Stewart, |
| Frank Wynne, | Pearl Barrick, |
| Rea Barrick, | Grace Boler, |
| Beth Boright, | Grace Call, |
| Mary Clemmons, | Nell Douglas, |
| Agnes Hale, | Flora Howard, |
| Dottie Hewitt, | Genevieve Kelly, |
| Lista Makinson, | Martha Rouse, |
| Etta Steenrod, | Belle Stewart, |
| Ruth Wilkerson, | Annie Wynne, |
| Louie Wynne, | Mabel Rogers, |
| | Margaret Walton. |



A. C. WHITE PHOTO

THE OZO SOCIETY.



Colors: Cream and Moss Green.

Organized October, 1899.

OFFICERS.

| | |
|-------------------|-----------------|
| SARAH E. REED, | President |
| MAUDE HALLAM, | Vice President. |
| ALICE WALTON, | Secretary. |
| EMILY TALIAFERRO. | Treasurer. |
| SADIE H. WHITNEY, | Sergeant. |
| VELMA SQUIER, | Critic. |
| MABEL DAVIS, | Reporter. |



MEMBERS.

| | |
|--------------------|---------------------|
| Emily Taliaferro, | Jeanette Gillham, |
| Velma Squier, | Sarah Reed, |
| Lena Gilbert, | Lucile Edwards, |
| Minerva Shoemaker, | Sadie Whitney, |
| Maude Hallam, | Rachel Brinkerhoff, |
| Louise Judson, | Edith Shepard, |
| Laura Reed, | Marie Nettleton, |
| Elizabeth Tuttle, | Alice Walton, |
| Rebecca Jones, | Mabel Davis, |
| Ione Bone, | Harriet Young, |
| Florence Corcoran, | Celia Traber. |
| | Myrtle Hart. |

BUSINESS



HARRY S. FRAZER.

JOHN H. TATE.



DWIGHT L. FROST,
Treasurer.



CLIFFORD E. BURTON,
Subscription Clerk.

TO ADVERTISERS.

It is nothing more than opportune that in this series of our paper we should extend a word of thanks to our advertisers.

When the first issue of THE NAUTILUS was published, the business managers had a very hard struggle making the paper profitable; and as the succeeding issues came forth, progress in the shape of improvement made its

entrance, until to-day we have one of the best high school papers in the West.

In connection with this, and probably the most important of all the departments, is the advertisements, or business department. It keeps the managers working early and late, and requires more actual time than any other department.

In soliciting advertisements, we only approach reliable firms, and in this manner the standard of the paper is kept at its highest. Again it is with great pleasure we state that each and every advertiser this year has paid all due to us and has obtained a written receipt for all paid out.

If it were not for our patrons the paper could not be issued, as the greater part of the expenses are borne by the collections of the advertisements.

In dealing with business men, it is constantly their motto, "Make it

short," and so when soliciting and collecting it is our aim to save as much of their time as possible. Throughout the year these gentlemen have treated us with the greatest of respect and courtesy.

In regard to the patronage, all the purchasing done by the school organizations is given to our advertisers.

And now, in closing, again we extend our greatest appreciation to those who have so graciously helped us in our year's work in the business department.

HARRY S. FRAZER.



THE NAUTILUS OFFICE.

MERIT WINS.

The five dollar prizes offered by the Doggett Dry Goods Company, in the last issue of THE NAUTILUS, were won by the following students of the school:

HARRY S. FRAZER,
 JOHN H. TATE,
 GERTRUDE KIMMELL,
 CLARENCE P. HANLEY.

All the advertisements were excellent, and appeared in the daily newspapers consecutively.

BUSINESS EXPERIENCE.

If a young man or woman wants to be very successful in this age, he or she must possess some business experience. While talent is a great gift, yet it is worth more when a little shrewdness comes with it, for if your interests are to be protected, there must be something business-like in your makeup.

The best way to become a competent business man is to be prudent yet

pils' very best efforts. All of the most important branches pertaining to a practical education are taught in the school, such as stenography, bookkeeping, short-hand, typewriting, forging, cooking, turning and woodwork, and if a person, after completing the four years' course, is not able to make his way in the world, it is his own fault, with such advantages offered as these.

The Business Department is one of



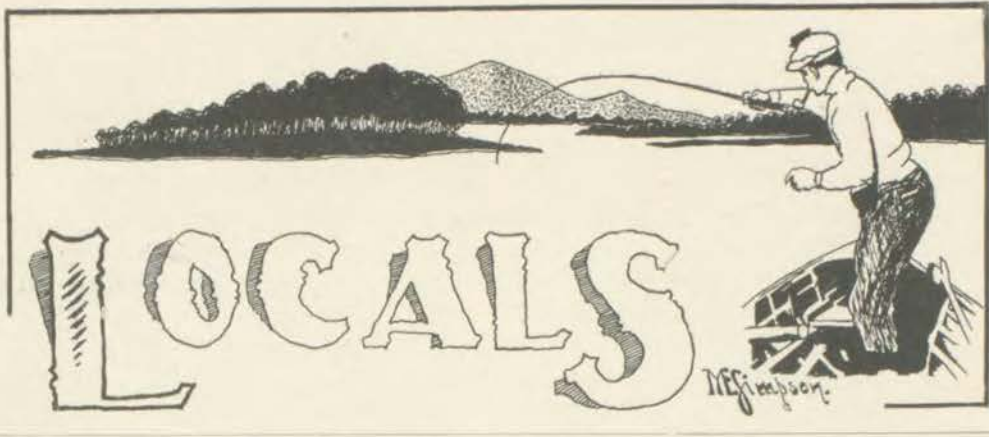
THE BOOK-KEEPING DEPARTMENT.

alert, and to work hard on everything you undertake; because if you earnestly strive to conquer small obstacles, it will be easier to subdue the larger ones.

The Manual Training High School has a Business Department of which she may well be proud, as it is well equipped with the necessary paraphernalia, and also a splendid instructor, who knows how to bring forth his pu-

the foremost departments in this or any school, because it is daily becoming more necessary for young men and women to have a good business education; and I think in the future, as well as in the past, the men and women who will make the very best citizens and most successful merchants, are those who had a good business education in their youth.

JOHN H. TATE.



WILLIAM S. HALL.

EDITORS.



EDITH STONER.

CLASS-DAY GIFTORIAN PAPER.

I am no orator as Mr. Burton is,
 But as you all know me, a plain blunt Senior
 That loves my fellow students, and that ye
 all know full well
 That gave me public leave to speak,
 For I have neither wit nor word nor worth,
 Actions nor utterances to stir men's blood.

And this is the reason I suppose I
 have been chosen for that humble part
 of Giftorian, but it has been said—

"The soul that gives is the soul that lives,
 And bearing another's burden
 Doth lighten your own and shorten the way,
 And brighten the homeward road."

Happy am I, fellow students, in
 sharing your burden, and gladly do I
 give you these gifts today, that in
 future years may lighten and brighten
 your pathway by recalling floods of
 happy memories of days gone by.

My basket is heavily laden with
 gifts of every description, yet each
 present has received undivided thought
 and attention; midnight oil has been
 burnt by the hour, without any
 thought of expense, in order that
 nothing but appropriate items should
 be given.

1. Our noted secretary, Miss Edith
 Stoner, whose witty, thoughtful brain
 has supplied THE NAUTILUS with such
 excellent locals, is also a lover of na-
 ture, especially Botany, and is at pres-
 ent paying all of her attention to that
 interesting, small, green, bushy plant,
 the *Mass.* I present to you this piece
 of moss, trusting it will continue to
 grow and give you pleasant thoughts
 in the future to think about.

2. My brain was so relieved when it came to Mr. Walker Campbell's name, for it did not have to be puzzled a moment. I knew there was only one gift he could appreciate, a base ball. May this be your mascot and bring you many victories.

3. A bow of ribbon—this must be a mistake, so few of you girls use ribbons on your hair, and besides, never a big bow like this; let me think—Ah, yes, of course, I know now. It is for Velma Squier, who never had a beau. Now here, Velma, is one you can have. Keep it always and it will never grow old, nor prove false, like most of the other cherished beaux of to-day.

4. A compass usually has its needle pointing North, but this one points directly West. Yes, nothing but West. Shake it as you will, yet it still points West. No North, no South, no East, but all West. Yes, West, and only West. Then there is no doubt as to its ownership—Mr. William Smith.

5. A pair of shoes made especially to order as a sample of a pair Mr. Frank Wynne will soon need when he starts out on his walking expedition around the world in the interest of science. They are warranted not to wear out, crack or make the feet sore. Accompanying this is a little poem in which are named the other equipments necessary for such a journey.

6. A thing of beauty and a joy forever
Is our little girl, Miss Virgie Minter.
Whose passing hours are pleasant ever
When Segur (cigar) is ever near her.

7. Little people have great aspirations to be tall so that people will look up to them. Miss Blanche Loeb, I did not wish such a bereavement to follow you through life, so I present you with this pair of stilts. Already they are proving their intrinsic value, for they have made me step aside and compelled

me to place them otherwise than in this basket.

8. A picture book and a rattle. These are for our baby boy, Master Robert Clements. You know the old saying that "babies must be amused to keep them out of trouble."

9. Mr. Theodore Stewart, knowing that your bashfulness and timidity have prevented us from hearing your musical voice in regard to questions and opinions on the great subjects discussed in Senior meetings, I became fearful of your future welfare and determined if possible to give you a talking machine. On writing to Washington they sent me this little machine called Questiphone, stating it could answer the most complex and difficult questions. All you have to do is to ask it a question you are desirous of knowing, then turn this crank and it will speak right out the answer. I trust it will render you satisfactory service.

10. Who would have expected to find here an hour glass and sickle, the symbol of "Old Father Time?" Yet I am sure that it belongs here (look at it closely), for it bears the name of Mr. Howard Whitehead.

11. A hickory twig, a pair of glasses and a book of outlines for a teacher. A perfect equipment for a dignified teacher. Miss Bessie Freleigh, use with moderation the twig; remember thou wast once a child; look not too stern from out of those eyes, for a kind look can turn the world; and before thou useth these outlines for notes to be written up, stop and think o'er the sleepless nights thou hast pored over, to thy sorrow, thy note books.

12. Mr. Robert Tschudy is happiest when he is talking about or leading a little pet dog around with him

by a chain. It gives me great pleasure to give you this dog.

A fine a fellow as you would wish to see.
Thy house is large, thy heart is wide,
There's room for him and you besides.

13. Miss Inez Filley, this is the latest song, "I Leave My Happy Home for You." Long has the class recognized your marvelous talent as the coming Melba or Florence Nightingale. Thou shall sway the world and men shall bow in adoration at thy feet. We delight in encouraging such a rare gift of nature.

14. Mr. Ernst Zimmerschied, fain not to climb nor fear to fall henceforth in thy Latin, for here's a pony. When trying times press hard upon you, just jump right on and ride upon him.

15. Mr. Segur, here is a mint, now get your *Minter*. If this does not suit you get *Rothy* and *Geiser* like.

16. "All smiles and courtesy and bows" is our butterfly, Miss Sadie Whitney.

17. Miss Rebecca Jones has been a faithful student four long years and has succeeded marvelously in developing her mental powers, but her fate has been like that of many other hard students. While her mind has been steadily widening its scope of knowledge, her body has been somewhat stunted so that now there is a giant intellect in a dwarf body, and desiring that the physical development shall be equal to the mental, I present her with this preparation and pair of dumbbells, which if used three times a day will in a short time add several inches to her stature and muscles to her bones.

18. Early in the manual course we became conscious of the fact that we had among us an artist. As time went on this became more evident, until now we recognize in Miss Honor Wilkins a genius, who would put Rosa

Bonheur, Rembrant and Van Dyke to shame. Portrait painting and charactering are her favorite fields of work. As a future incentive to work we tender her this box of artist supplies.

19. It is said that Shakespeare used 15,000 words, Milton 9,000; but these numbers are modest when compared with Miss Mary Clemons' daily vocabulary. It is confidently asserted by those who know her that she has at her command 150,000 words, Anglo Saxon and Classic. It is a well known fact among the students of Manual High School that when Miss Clemons has the floor in recitation the rest of you have no chance whatever of showing your knowledge of the subject in hand. Perhaps there are still a few words in the language which our ambitious friend has not added to her list, so we give her this Webster's Unabridged Dictionary.

20. Here is a music tablet. For whom, did you ask? Miss Grace Green. We are rich in musical talent, but Grace is the only member of the Senior Class that has had time to spend by the hours improvising. But let me see; it has attached to it a piece of wood which has a name written on it. I believe it is Lock, I have heard of dogwood, hemlockwood, lynwood, ironwood, yes, and, I believe, cottonwood and basswood—Woodlock—it must be a new kind. Oh, now I have it. It is *Lockwood*.

21. A promissory note for \$500, made payable to Mr. Adolph Stukenberg when he has earned it and found courage enough to answer the questions put to him by the cashier of the bank.

22. Often we find a girl is very fond of cats, dogs, horses, or pet lambs, but Miss Bell Stewart has startled us by

announcing of all the pet vertebræ, she thinks the *Campbell* is very nice.

23. The Class of 1900 is justly proud of that member who has won the honorable distinction of having memorized verbatim every text-book prescribed in the Sophomore, Junior and Senior years. Marvelous tales are told of Macauley's faculty for making everything he reads his own. 'Tis stated by the highest authority that at the tender age of nine years he read "The Lay of the Last Minstrel," then closing the book repeated it from beginning to end without the addition or omission of a word. Many years later he modestly claimed that were the existing copy of *Paradise Lost*, lost to the world, he could reproduce it from memory. The world, 'tis said, has never produced another Thomas Babington, but Manual has. In addition to the text-books mentioned, this young man has memorized the *Encyclopedia Britannica*, the *Century* and *Standard* dictionaries, *Shakespeare*, the *Bible* and every work that has been produced on *satire*. Now who will dare say that England's cherished essayist has no parallel in history? That our worthy classmate may exercise this rare faculty still further and prevent this marvelous mind from falling into stupor from lack of activity, we herewith present Mr. Clifford Burton with this little volume of *Consular Reports*. Pardon me, but may I throw out one hint of advice—above all things to avoid that mistake that has ruined so many young men, *Egotism*.

24. Miss Flossie Reinhardt says she can hardly decide which she likes better, *Geology* or *Botany*, because the one deals extensively with a subject she would like to become better acquainted with, Cliff(s) of Bur(nt)

earth by the tons, and the other instructs you how to cultivate Hill (of) gr(a)in. From present observation she is enjoying the latter most. I have decided to give her this bag of grain. Now plant it, Flossie, on some hill and then you can have and watch your Hill(of) gr(a)in as much as you please.

25. Miss Ruth Wilkerson's fondest dreams places her on a beautiful farm playing the romantic part of Maude Muller raking new mown hay and posing gracefully by her rake lost in sweet meditation as she watches a man Bay(ling) hay. So I give to you this bale of hay to keep your ideal ever before you.

26. Miss Lula Holcker has by her actions throughout the year revealed unto us that she has waited eagerly for the time when she should receive her sheepskin and anticipate in sweeter pleasures than ever given her by Science or Philosophy and more lasting joy than can be found within the classic halls of M. T. H. S. We hope she will not be dissatisfied in her expectations, and as she is soon to make entree into the world of fashion, we give her the fashion book, "*The Bon Ton*."

27. Miss Flora Haywood continues to wear short gowns (which the Board of Education think quite improper in the school room). We herewith present her with one of Worth's most wonderful inventions, containing the necessary equipment, the skirt with the sweep.

28. At last I have come to that rustling thing. It *Russells* and *Russells* no matter where I place it. I am truly glad to dispose of it, for it has so distracted my thoughts I hardly remember to whom it belongs. Ah, here it is! But see what it has around

it. Ha! ha! It is for you, Miss Lucile Edwards.

29. A small book of quotations for Mr. James Harline, the sweet, pretty boy, with curly hair, of the class who loves(?) to learn quotations.

30. That member who is open and serene as a May morning, always smiling, polite and agreeable, but yet not the humble personage of Uriah Heap, is Mr. William Bayha, who is always ready to furnish the mayonnaise dressing for the class and carries an ample supply of oil to throw upon the water in case of any uprising or turbulence, and I beg of you to do me the favor of accepting this bottle of oil that shall in a small way replenish some of the oil you have so generously spilt.

31. Mature, simple, unassuming lad is Mr. Warren Keiter, who has at the tip of his tongue all the hard names of every animal, plant and mineral in the surrounding states and can give a perfect analysis of every experiment that has ever been put before the world. He turns night into day, day into night in order to dig into the mysteries of science. He aspires to be a Darwin and hold the chair of natural science in Harvard. "The thing we long for, that we are," so I present you this box of collections. It contains rare specimens of this vicinity in Zoology, Geology, Mineralogy, Botany, Chemistry and Physics. This is a start for your handsome display that shall adorn the walls of Harvard.

32. To Mr. Herman Hase nothing more appropriate could be found than a prism, for like the prism he has not become a perfectly transparent lens, yet continually emits rays of beautiful, brilliant colors. In time, if only the hard edges be beveled down and polished, he shall send forth rays that

shall illumine the whole earth and be recognized among men as the bright and evening star.

33. Once during the wee hours of morning while still pouring over my gifts, Morpheus with his noiseless step hovered over me holding his cluster of poppies, and ere long I passed into dreamland, whence came a vision, in which I beheld all my class-mates, extending their hands bearing gifts for me—gradually there appeared before my vision a huge piece of Sen Sen as if suspended in the air, then an appalling chill stole over me, for suddenly a strong, firm, masculine hand snatched at this Sen Sen from over my shoulder. Quaking and shuddering with fear I turned and lo! it was the hand of my fellow student, Mr. James Koogler.

34. While walking down Twelfth Street the other day my attention was called by the tap, tap, tap of the toiling shoemaker, and it occurred to me that a certain young man, Mr. Benjamin Lindsly, was particularly fond of everything pertaining to a *Shoemaker*, so I slipped in and bought him this article.

35. Behold and lo! here is a jumper and the overalls. Who could have sent them? Why, here this mystery is explained, for here in the left hand pocket is a large cake of "Peet Brothers' Soap, made in K. C. U. S. A.," bearing a card with Mr. Harry Frazer's name upon it. The value of this soap can not be judged by its size, for it is warranted to make the *dirt run*, but not the colors. By liberal application of this useful little article, Mr. Frazer, you will be putting to practical use the much advertised motto of the Kansas City Star, "Patronize home industry."

36. We have solved the problem how to make Kansas City a good place

to live in. Let woman's rights reign supreme. The new mayoress, Miss Dora Rowe, stands forth as the bright and shining example of our twentieth century mayoress for this grand, glorious and world-wide known city of ours. We hope she will accept this pen with which to veto all saloon and gambling licenses and other corrupting vices of our city.

37. Miss Lillian Humfeld is our walking flower garden. She has scattered no thorns, only sweetest flowers along our pathway. These flowers are what I have for you.

38. Miss Edna Daly will be a spinster no longer, but an unappropriate blessing, as those who are destined for a life of single blessedness. The concatenated Order of Hoo Hoos send her their sympathies, regret and emblem of their order, a black cat.

39. The New York World has sent Miss Hortense Gerhart this globe. She is the globe trotter, the second Nellie Bly. They have forwarded this useful article (a globe) for you to study up the points of interest, and want to know when you will be ready to start. It seems as though I had forgotten something important they stated in their last letter. Let me think. Oh, I have it now. "If you do not visit the Paris Exposition they will be hurt."

40. There is among our fair goddesses one who lacks in woman's rarest gift, *a voice*. When she speaks it is so soft one might imagine Zephyr was playing among the flowers, and it is all sweetness lost on the desert air. This has been a point of extreme vital importance and grief to the class, and after holding consultation they have asked me to advise you, Miss Wilkerson, to

Go get a Megaphone.
Practice it all alone.
It will make you rejoice
At the sound of your voice
And save you a sigh or a moan.
Go get a Megaphone,
That is the thing to own.
You can then have your say
And be six miles away
If you will go get a Megaphone.

The Epperson Megaphone Co. has kindly lent you this one, knowing that at the end of two weeks it will prove so satisfactory that you will offer your aid to the Megaphone Bells in their effort for roofing Convention Hall.

41. Here and there amid our massive hills are quiet, serene little dells through which after years of struggle and labor there bubbles and gushes forth springs of living water. Minerva has lifted the veil and permitted me to take a look into the future just at a Commencement season. I wandered to that mighty hill, the new University Medical College to see its wondrous rocks start out on their life career, but to my surprise I beheld in its serene dell it had bubbled forth a new spring called Woman's Surgery Department, and on this day comes forth Dr. May Perkins to receive her sheepskin, permitting her to practice doctor of surgery, and to "use her herbs and bile them on the kitchen stove." Therefore, May, through the kindness of Minerva, I found out just what you would appreciate—this box of surgical instruments, imported from Europe, brightened and sharpened for your special use.

42. I would have our friends to understand that Miss Agnes Sharp never engages in anything except with lightning speed. In her haste her ways are not always straight, but sometimes *Bias*. This express train, with the aid of a careful engineer

whose views are not too *Bias*, I hope will carry you safely through life.

43. For months two of our young ladies, the Misses West, have been hurled along by a will-o'-wisp, who has flittered across their pathway, leading them on until they have reached the swamp of despair. Here we find them busy at their forges, hammering away, night and day, with a promise of a reward for the one becoming the most proficient *Smith* in due time. The wisp has returned today in the form of Cupid, and bestows upon the victor this heart which designates her to be the silver *Smith*; upon the unsuccessful sister he bestows her hammer and forge. Lena, the heart is for you; the forge and hammer for you, Bertha.

44. From the inexhaustable store house of Madam Rumor, who is always on the qui-vive for news, she announces soon the marriage peals of the wedding bells. Miss Alice George is soon to leave the stool of single blessedness for matrimonial repentance. 'Tis a wise man that prepares the cage before catching the bird. Therefore, in behalf of the class, I present to our comrade this bird cage.

45. Out in the Southern part of our city a modest maiden dwells, guarded so carefully by loving friends and parents. Her beautiful blue eyes rest only upon the gentlest sex.

"Full many a gem of purest ray serene

The dark, unfathomed care of ocean bear,
Full many a flower is born unseen to blush
And waste its sweetness on the desert air."

But not so with this fair maiden, for already a darkeyed gent has had his thoughts turned in that direction, and has sent your Miss May Hay this statute of himself.

46. "You scarce expect one of my age
To speak in public on the stage.
If I should chance to fall below
Demosthenes or Cicero,
Don't view me with a critic's eye,
But pass my imperfections by."

Language fails to express our admiration and esteem for our orator of Manual Training High School, Mr. Herman Kube. Professors and pupils accord to him his merits and bow before his oratorical power. In the great convention that is soon to be held in our new phoenix-like hall, we propose that he be nominated running mate of the distinguished William J. Bryan, for we believe he has the power of convincing people that the moon is made of green cheese. We give you this little speech book, Mr. Kube.

47. Unlike the noted man Diogenes, with a lantern looking for an honest man, is our friend Mr. Alfred Hillgren. He can use his lantern in exploring in dark cellars deciphering gas meters. So let your light shine, Mr. Hillgren, that others may profit by your ability.

48. Only one member of the class can feelingly debate on the subject, "Is Marriage a Failure?" I present to you, Mr. Fowlston, this timepiece, so you can have no excuse when detained late to tell your wife that you didn't know what time it was.

49. In the turning room of our school Mr. Fred Tschudy met with quite an accident. The Indian clubs upon which he was working, took life and rather rudely turned upon the young man's cheek, and politely took a slice. To finish Mr. Club he has declined, but the boys took pity on him, and here, Mr. Tschudy, are your Indian clubs.

50. For our dude, Mr. Ralph Reed, here's the cane and Monark glass, "for it is quite English, you know." I re-

gret that our finances would not permit us to add the high silk hat.

51. To our novelist, Miss Jeanette Gillham, with her romantic and dreamy ways, we present to her "English Orphans," by Mary J. Holmes; and if she aspires higher, here is *Quo Vadis*.

52. After due consideration and much meditation, I concluded to present Miss Fanny Scott a kitchen with all its paraphernalia of a profession. No doubt, when she becomes teacher she will reflect great credit on her Alma Mater, Manual Training High School.

53. For Mr. Clark Randall, a foot ball cushion. Pleasant, sweet dreams as his remembrance of his attempt at success on the field.

54. Hail to the coming of the second Sam Jones, Mr. Bertam Sooy. Here is a book whose precepts not only preach, but practiced, will help the preacher and the hearers. The title of this book is "In His Steps."

55. But I must not forget the talking chatterbox,
Minnewa, the famous conversationalist.
This is her style: Firstly, she does allure
the conversation
By many windings to her clever chinch;
And, secondly, lets fall no occasion
Nor abates her hearer of an inch,
But takes an ell, and makes a great sensation,
If possible; and, thirdly, will never flinch
When some smart talker puts her to a test,
But seizes the last word, which, no doubt, is
the best.

Two-thirds of the decorations of to-day have been bought with Miss Shoemaker's fines. She *will talk*, it matters not what cost it may be, so I give to her a Chatter-box. I trust, in future years, this ailment will not make you pay so dear.

56. Miss Sadie Davidson, *delsart*, has so far over cultivated the natural poise of her body, and this same poise is one of the fundamental doctrines of the *delsart* system, in so much that she has misapplied these said doctrines, we offer this excellent antidote (washing tub and board) for the purpose of cultivating such muscles as the former work has neglected, hoping that this last prescription, in the afore-said infirmary, may prove effectual in reforming poise and *avoirdupois*.

57. In concluding the reading of my proof for THE NAUTILUS, I heard a deep voice say, "Miss Sublette, how is it that you have only fifty-six gifts written up and there are fifty-nine members of the class?" Immediately a great shot came in my direction, and before I could make my escape it struck me right in the head and continued to work its ill effects until I recalled the name of Mr. William Estill, who has been a shot thrower lo these many days, but up to the present time has never attained the laurels he desires. Now, we know the fault all lay in the size and weight of the ball, so we give him this one, which ought never to make you miss your attempt.

JENNIE B. SUBLETTE.



14 OLD MASTERS' PAINTINGS.

The finest of their kind in the United States. All are invited to come. The paintings are believed to be by the following artists.

Saman Sibyl.

by Guercino, size 2½x3 feet, Glove Department, first floor, valued at \$5,000.

John Philip Kemble (Actor).

by Sir Thomas Laurence, 1783, valued \$5,000, first floor.

Spaniards Driving the Moors out of Spain.

Basement.

The Presentation of the Child Jesus.

A. M. de Tobar, size 13x6½ feet, valued at \$115,000, China Department, first floor.

Descent of the Holy Ghost.

by Murillo, valued at \$100,000, size 13x6½ feet, China Department, first floor.

Christ Nailed to the Cross.

by Belasco, valued at \$35,000, size 8x7½ feet, Shoe Department, Baltimore avenue floor.

Saint Cyril of Alexandria.

By Bonas, 7½x6 feet, Trimming Department, Baltimore avenue floor.

Noah and Sons.

"Noah Drunk," Silk Department, Baltimore avenue floor

The Ascension.

by Murillo, size 6½x10 feet, valued at \$125,000, Boys' Clothing Department, third floor.

The Assumption of the Virgin Mary.

by Murillo, size 13x6½ feet, Infants' Department third floor, valued at \$100,000.

Death of Saint Francis Xavier.

by Zaraban, fifth floor.

Saint Michael.

by Cabrena, Receptoin Room, third floor.

Saint Theresa.

Dressmaking Department.

Madonna and Child.

by Del Sarto, valued at \$25,000, size 8½x4 feet, Millinery Department, second floor.

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Young man, improve your time, mind and body. This

May be done at the **YOUNG MEN'S CHRISTIAN ASSOCIATION.** You

Can 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.

At 810 Wyandotte Street.
 All privileges only \$7.00
 per year.

C. S. BISHOP,
 General Secretary.

F. H. CLARK,
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IN AND ABOUT THE SCHOOL.

First Junior (talking in a whisper): "Are we going to give the Seniors a banquet?"

Second Junior: "Well, I guess not. We couldn't give a banquet for less than \$108, and what we are going to give will cost but \$12.50."

Comment: Poor, bankrupt Juniors. It is actually a fact that they have only \$12.50 in their treasury.

A girl went into a book store not long since and asked for "Weary Men of Rome," (*Viri Romae*).

Miss Murphy (to pupil lolling on stool): "Edwin, you wouldn't do that in your mother's parlor."

Edwin—"My mother has more comfortable chairs than this in her parlor."

Lost—A voice. Please return to Miss Lake.

Mr. Peters (not Arthur) has found out that he really *can* make a mistake.

Miss Dunn: "Yes, indeed, that is an excellent translation; but hadn't you better turn over about thirty pages and get the right place?"

Miss Shoemaker, in 22: "I want my mamma." She had the sympathy of the class.

Scammon: "I consider Mr. Kilroy a great calamity howler."

Mr. Miller: "I would just as soon talk to a row of bottles as this class."

Ralph Benedict: "It would be all right if we were full."

Girl: "Were there any girls going to St. Joe?"

Boy: "Why, yes; Miss Gilday and Miss Jenkins were going."

Good for Earl Newman! He behaved himself at St. Joe.

A SNAP-SHOT.

There is a cloud of dust and a slight breeze in the hall. Around the corner comes a flying figure, and the pupils scatter to right and left to make way for it. It may be the figure of a man, or it may be the spectre of "mental labor" wrap't within itself, for behind it fluttered what may be either wings or coat-tail. One hand upon its learned brow, the other holding a massive volume, while the eyes are fixed straight in front of it, and its hair is in a state of chaos. With a rush it is gone, leaving only a vision of those coat-tails fluttering in the distance. Ah! those immortal coat-tails! What wisdom and learning they proclaim!

GEORGE CONKEY.

Dwight said he wouldn't flirt at St. Joseph because he wouldn't risk his permanent position here for just one day of fun.

Keep away from Henry Maas. He has a mania for pencils.

She's only a freshman at Manual, but I think she is pretty cute, though.

He's only a sophomore at Central, and he thinks he's all right.

The Junior class should have selected Rose of Kansas as their class flower.

Mr. Herring divides his time between rooms 11 and 10.

Miss Swope is "starring" in Mr. Phillips' comic opera, first hour.

It is to be hoped that Alice will have a "Rhetoric" of her own, next year, for when Phillip shares his book with her neither one seems to recite so well.

Art Peters got "a hit" at Liberty.

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 Mr. S. B. Ladd,
 Mr. C. O. Tichenor,
 Hon. R. J. Ingraham,
 Mr. J. W. Snyder,
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 Mr. E. D. Ellison,
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 Mr. D. B. Holmes,
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In Tenderest Remembrance

of

CARL WALTHER.

"I am always saddest when I hear sweet music."

But saddest of all to us is the thought that the gifted hand that could produce such music is stilled in death

First Freshie: "I wonder why they don't make Mr. Fulton sit on the front seat?"

Second Ditto: "Why?"

F. F.: "Didn't you see him sitting on the fence talking to that girl, last Monday?"

Who ain't seen no Messinger boy? Dwight Frost is the only *Messinger* boy down here.

What would Mr. Sloan do if anyone should hand in a cover design like that of the April "Luminary?"

Mr. Knight said the class considered square root as easy as 2×3 are 4.

Why did Charles Wells look at The Ozos when he said, "We plant this tree for you and me?"

Gertrude: "Then you will get the sum of the consequences."

Mr. Sloan said he used dynamite last year. Wonder if he went quail hunting?

Wanted—A pair of side combs and a pompadour rat; also, about two yards of green and white ribbon. Any person having such articles for sale, address Mr. Ozo Leavitt, Ozo headquarters, M. T. H. S.

Miss Loomas: "Did you hear about our turkey shedding hairs?"

Miss Hallam (translating): "The grandson of his father's aunt."

Central's colors are very aptly chosen. They get the blues after base ball games, for they always show the white feather when Corder pitches.

Mrs. Elston says that our bodies are only dust. Does it follow that when we were babies we were mud pies?

When Howie and Edna (the other Edna) were going to the party, the lights on the car were so bright that Howie said his hands got cold.

The "Luminary" said that if Central was not at the head of the base ball league they would be very much "off their guess." They guessed right the very first time—the very first time(?).

Most of the boys in school swore off studying during Lent. Swore off? Did they ever study?

A SCENE FROM "QUO VADIS."

Linda: "I am Eunice."

Mr. Sloan: "May I play Petronius?"

Sarah: "Oh, yes, Jack is very nice, but I don't want him."

They say that Frank Wynne is a good meter reader, but he didn't display his talent to any marked degree in Professor Phillips' Shakespeare class.

Grace Muir has a great time getting the boys to tease her. Don't you enjoy it, Grace?

Lois: "Why, I don't know what I'd do if anybody would propose to me. I believe I'd run."

Lois said she didn't care if we did put the above in, for all the boys would have better sense.

Edna: "Did you find my handkerchief walking upstairs?"

HIGH SCHOOL "TAILOR MADES."



The hit of the season—those tailor made suits for misses, ages 13 to 18 years, skirt length 33 to 39 inches. Nothing like them at the smaller stores. Made by men tailors, mostly in the new Eton jacket styles; elaborately stitched, some made with stitched taffeta trimming to match, some appliqued, plain and kilted skirts, all colors, silk lined jackets, at

**\$10.98, \$12.75, \$13.50,
\$15 and up to \$25.**

Over 20 styles, many new ones just in for Saturday selling. Bring the young ladies to the misses' dress department—*Third Floor.*

SHIRT WAIST NECKWEAR.

This season the demand will be greater than ever for dainty neckwear for the ubiquitous shirt waist. The manufacturers prepared early for this demand and we are already well stocked with the prettiest ideas for the coming season, in Madras, Pique and Cheviot, made up into English Squares, Golf Stocks, with straight or turn down collars, butterfly ties, etc.

Many of these ties originate with the makers of men's finest Neckwear, and their styles can be depended upon.

- | | | | |
|--|-----|--------------------------------------|------------------|
| Ladies' Pique Stocks | 25c | Sirdar Silk Turnover Stocks..... | 75c |
| Ladies' Sirdar Turnover Pique Stocks | | Ladies' Butterfly Bows..... | 75c |
| for | 75c | Black Velvet Ties, with fringe, very | |
| Ladies' Turnover Linen Collars, 15c; two | | new..... | 25c, 35c and 50c |
| for | 25c | New String Ties, each..... | 25c and 50c |
| Persian four-in-hand Ties, 50c, 75c and \$1.00 | | Satin Strings, with fringe..... | 25c, 35c and 50c |

Correct Dress for High School Boys and Young Men

You can make no mistake if you select your boys' and young men's Spring Suits from our new stock—every garment must be right in style, fit and workmanship before it is offered for sale. Then the prices are from \$1.00 to \$3.00 less than what you would pay had you not bought before the advance in woolens, and whether you pay \$3.98 or \$10.00 for a suit the style and tailoring is correct. It will pay you to examine our stock. Hundreds of styles make selections easy. New things for Saturday's selling.

Boys' Double Breasted Knee Pant Suits in navy blue all wool serge (plain and fancy) Cheviots in serviceable mixtures and checks—over 300 to select from—sizes 7 to 16 years.

Nestee Suits, of same fabric; single and double breasted vests, open in front, some fancy, others of same material; hundreds to select from; sizes 3 to 9 years..... **\$3.98**

Double Breasted Suits of fine all wool Navy Serge, handsome mixtures, checks and plaids, fifteen different patterns to select from, all showing the highest grade of workmanship; sizes 7 to 16 years..... **\$5.00**
Finer grade, \$5.95, \$6.98, \$7.50 and \$8.98.

Young Men's Suits of Navy serge and fancy mixed cheviots, made up in the most approved fashion by the best known tailors. Stylish patterns; sizes 14 to 20 years, or 30 to 36 breast measure..... **\$8.00 to \$19.75**

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Mr. Miller will sometime write a great literary allegory. Even now, if his molecular allegories were published, they would make him famous.

Professor Merrill: "What did that clay show?"

Roy Alexander: "It was composed of disintegrated shale and lamentalious were present."

Is there a stiff hat in our school without a stove in it?

Miss Gilday says the rumors are microscopic.

The soap manufacturers are longing for the time when the girls will wear low necked dresses again.

Wynne (nervously): "Is my eye still black?"

Central never accredits us with having "professionals" attending our school.

"There was a young fellow named Tate,
Who went out to dine at 8:08.
But I will not relate
What this fellow, named Tate,
And his tete' tete ate at 8:08."

Did James Russell get his full due out at Vincil's? Ask Grace. Why not ask James?

Edna Welch and Harold Frost went to a party. Edna's first remark—"I feel rather frosty, this evening." What was her last?

Miss Fisher said she had to put all the chalk away to keep the Debating boys from playing with it.

Miss Messenger (translating in French class): "We went—"

Miss Fisher: "No, Edna, you are not two yet."

To whom was Miss Welch throwing kisses the other day?

WHAT THEY ARE CALLED AT HOME.

Howie—Harold Frost.
Ditie—Dwight Frost.
Bud-boy—Edwin Vincil.
Say—Gertrude Rothgiesser.
Edna comes without calling.
Babe—Leveré Nellis.
Sister—Lois Oldham.
Gracie—Grace Muir.
Kid—George Oppenheimer.
Jack—John Dooley Schwitzgebel.
Hank—Henry Maas.
Sugar—Ralph Segur.
Pete—Linda Loomas.
Bud—Virgie Minter.
Sis—Claude Minter.
Hun—Edna Welch.
Toots—Laura Negbaur.
Tom—Jeanette Gillham.
Billy—William Estill.
Frankie—Frank Wynne.
Sonny boy—George Conkey.
Skeeter—Henry Conkey.

Miss Jackson: "Did Dwight say he liked me? Oh, I am so glad!"

Did you know Miss Jenkins has seen the Chicago University?

Mr. Page: "Name some effects of electricity."

Bud: "Sparks."

Mr. Page: "What do you call that operation?"

Bud: "Sparkling."

Mr. Herring is comparatively a new member in our school, but he has an able guardian.

Jack Schwitzgebel won't join the "Bulgers" because he is afraid that the boys, instead of breaking his bad habits, will break his bones.

Miss Jackson said she didn't care how much we roasted her in the Annual. Hints are sometimes rather blank faced.



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The Manual boys may have defeated the Westport boys, but just one Westport girl won a half dozen Manual boys. But, then, was it the girl or her dress?

Mr. Vincil: "I have an idea." How strange, Bud.

Laura: "Why, Romulus lifted his guns to heaven."

Mr. Miller: "Mr. Lindsly, what is the chemical occurrence when the cork is drawn from a bottle of soda pop?"

Ben: "I don't know. I never waited to see?"

Some of our boys are doing missionary work. They are trying to convert the *Savages* by means of *Darts* and other weapons.



Mr. Miller's new assistant in chemistry

Why is Roy Alexander like a girl?
Because he always has the last word.

From the depths to thee we cry,
Hear! O teachers, from on high.
Flunkers, sing the sad refrain,
Let, O let us pass again.

Miss Loomas says she can't change her face. *We* don't see why she should wish to.

If you see any mention of Miss Rothgiesser in this number don't be surprised.

Dick Scammou has at last succumbed to the inevitable. He has fallen in love.

Ask J. Lee what he knows about "Meta-Robigc" acid.

R. T. THORNTON, DRUGGIST.

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909, 911, 913 MAIN STREET.

Grace Muir (at the Central-Manual ball game): "Why, Central don't even know its own holler!"

Why is Roy Stoller like truth? Because, "crushed to the earth, he will rise again."

Bayha (hearing Ozo's singing): "H-o! That sounds like Science Club open session."

Why is it so hot in THE NAUTILUS office? Because there are so many roasts kept in there.

Miss Sublette (in luncheon room): "I think that when those boys have pickels, they might offer me at least *one*."

Miss Muir: "I'm looking for some one to occupy a cottage with me."

Ripley translated that Latin phrase, "There is no one averse to booze."

Levere was asked what was the matter with he and Grace. "Oh," he replied, "someone has stole her" (Stoller).

Miss Minter said she would blush if a boy looked at her.

Miss Rothgensieriezz (etc.) says Ralph Segur is a better looking kid than George Conkey.

"Claude, have you seen Miss Muir?"

Claude: "No, but I know she's in the building—I hear her."

Miss Fisher: "You look like a baby that hasn't had its breakfast."

Mr. Miller: "How does phosphorus occur in nature?"

Levere: "In matches."

Mr. Vincil made the text-book grind very much out of the usual dry bone method by introducing his inductive system of reasoning.

"No word was spoken, when they met,
By either, sad or gay,
And yet one badly smitten was;
'T was spoken of next day,
They met by chance this autumn eve,
With neither glance nor bow.
They often come together so—
A railroad train and a cow."

Grace: "I think the boys just treat Levere horrid. He's been awful good to me."

Professor Morrison: "They will meet at 15 o'clock at 3:30 and Vine."

On the way up to St. Joseph, Frazer's head swelled so that his hat slipped off and blew out of the window. On the way back, Crabbs lost his cap, not because his head was swollen, but from the very opposite reason.

EDWIN STARK VINCIL.

He wanted his name in the paper.

In forging (fourth hour), Maurice: "I wish they would put a restaurant in school."

Conkey: "What will you want next?"
Maurice: "Soap!!!"

The Art Club has formed an alumni for the purpose of retaining an interest in the school by the graduates. The officers are: President, Ralph E. Segur; Secretary, Virginia Minter; Treasurer, Myron Albertson. Members: Myrtle Chrisman, Alice DeWolf, Bessie Freligh, Grace Green, Virginia Minter, Lelia Moore, Mable Peeples, Madge Pickering, Nell McGowen, Myron C. Albertson, Paul Halleck, Ben Lindsly, Earl Ridge, Perrin Rouse, Ralph E. Segur, Bertram Sooy, Val Thomas, Carl Bryant.

Didn't Bruce Lockwood make a *swell* girl? That powder puff! those eyes!! oh, that hair!!! But he forgot to put any paper in the typewriter, hence his work was all wasted.

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KANSAS CITY, MO

Mr. Miller has a new theory in which old bachelor and old maid molecules hold hands and feet.

Darwin thinks the bell on the wall of Mr. Chase's room the sweetest music ever heard.

A POEM BY A MATHEMATICS TEACHER.

"What's the distance from M to A
At each succeeding day?"

B. T. CHASE.

Dick (demonstrating): "If you compare a drop of water to the earth, one of its molecules will be the size of a base ball bat."

As she enters school, this morning,
There are roses on her cheeks.
She has a voice of gladness
For all to whom she speaks.

She twines a rosebud in her hair,
As down the hall she walks;
And, if we're not mistaken,
'Tis the rose to whom she talks.

But before the day is over
The roses disappear;
For a summons from the office
Means calamity is near.

We'll spare you painful details
Of the fate this poor girl met;
But since that day, to register
She'll ne'er again forget.

MINNEWA SHOEMAKER.



THE SCIENCE CLUB—OPEN SESSION.

Pupil (prostrate with spring fever): "How many more seconds will school last?"

The answer then was 2,937,601,402. What it is now we are unable to compute.

Edna: "O, no; I have Sundays reserved."

Will: "You mean someone else has."

Lois: "O, I wish I could find something to cry about."

Mr. Shield (to Central post-graduate): "How old was Lincoln when his father married the second time?"

P. G.: "He was nine years old when he married the second time."

The language shows that person to be from Central.

May Jackson: "I told Henry Maas I didn't like Dwight Parsons any better than I do him; but I do." Poor Henry!!!


\$25.00.


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A REVISED LIST OF THE GRADUATES.

| NAMES | WEAKNESS | AIMS TO BE | REMARKS |
|------------------------------------|---|------------------------|---------------------------------|
| Virginia Minter | Avoirdupois | Dignified | Succeeds very well. |
| Grace Green | Music | A musician | Be sharp, or you'll fall flat. |
| Ralph Segur | Church | An actor | Successful in neither. |
| Ben Lindsly | Girls | A gallant | "You'r mine, all mine!" |
| Herman Kube | Oratory—Hazel eyes | A dashing army officer | His voice and eyes do the work. |
| Harry Frazer | Advertisements | It | Is in love. |
| Mary Clemons | Her size | Taller | We wish her success. |
| Herman Hase | In his head | A politician | A Frenchman from Cork. |
| William Estill | Forging | A blacksmith | A second Basil. |
| Adolph Stukenberg | English literature (?) | A jumper | —X |
| William Smith | "West" | Swell | Which one? |
| Frank Wynne | Chemistry | Teacher | The lost is found. |
| Edna Daley | Her coiffure | Prim | As neat as a pin. |
| May Hoye | Sedate | Quiet | Is successful. |
| Alfred Hillgren | His mamma | A man | Growing. |
| Velma Squier | Frankness | Good | Thinks she is. |
| Flora Hayward | Soldiers | A Cook | Has a good voice. |
| Bertha West Lena West | Smith(ing) | Wealthy | May be. |
| John Fowleston | Marriage | A doctor | Is precocious. |
| Alice George | Dog-collar belts | Married | Just wait and see. |
| Lulu Holcker | Are unknown | A burnt cork artist | Our minstrel. |
| Ralph Reed | Excuses | A crack rider | Wheels, wheels everywhere. |
| William Bayha | Too many to mention | Scientific | Oh, my. |
| Fannie Scott | Boys | Great | Great Scott! |
| Warner Keiter | Big jaw | Like Wynne | Long and lank. |
| Fred Tschudy | Turning | A carpenter | He's all cut up over it. |
| Dora Rowe | Woman suffrage | A stump speaker | "Gettin' along." |
| Clark Randall | Hunting | A prize fighter | Time will show. |
| Belle Stewart | Hustling | Chemist | Vinegar and H 2 O. |
| Sadie Whitney | For "It" | Like Lucile | "In her step." |
| Lucile Edwards | "Bossing" | A belle | Is. |
| Minnewa Shoemaker | Voice | Fascinating | Failed. |
| Theodore Stewart | In his legs | A runner | "Uneda tonic." |
| Rebecca Jones | Her height | Like Mr. Lockwood | A good match. |
| James Harline | Miss Scott | Pessimist | N. G. |
| Blanche Loeb | Her stature | Graduated | She's from Chicago. |
| Bertram Sooy | Actresses | Lady killer | Too shy for his calling. |
| Edith Stoner | Hasn't any (?) | Nothing at all | Is. |
| Ruth Wilkerson | Fred | Mrs. — | Can't always sometimes tell. |
| Flossie Reinhardt | Kodaks | A photographer | "Look pleasant, please." |
| Lillie Humfeld | Water colors | Famous | "That's great." |
| Inez Fitley | School | Teacher | May heaven help her. |
| James Koogler | Me and de boys | Bad | Needn't work hard. |
| Jeanette Gillham | Collars | Giraffe | Is getting there. |
| Sadie Davidson | "La Mode" | Paris model | My heart! where is it? |
| Ethel Wilkins | Cute | Cuter | Is cutest. |
| Honor Wilkins | Art | A painter | We hope she may. |
| Robert Tschudy | Political snaps | Census Supervisor | Good job. |
| Walker Campbell | Gum | Preacher | Who's all right? Campbell! |
| Agnes Sharp | Neatness | An old maid | It won't be allowed. |
| Hortense Gerhart | Clothes | A dog fancier | Swell. |
| Bessie Freleigh | Mathematics | Proper | A good chaperone. |
| May Perkins | Inez | A doctor | She can't forget us. |
| Jennie Sublette | Delsarte | Graceful | Is. |
| Howard Whitehead | Work | Idle | Is. |
| Ernst Zimmerschied | Sliding through | A college professor | What's in a name? |
| Clifford Barton Robert Clements | These two just happened to be numbered among the seniors. | | |



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SOME APPLIED QUOTATIONS.

"A young man of great promise, which promise, however, hides itself."
—Tom Reed.

"A wit with dunces and a dunce with wits."—Dwight L. Frost.

"It is a joy to stretch out one's limbs."—Burr Douglass.

"Out o' sight."—Frazer and Tate.

"Just a little more sleep, then I'm ready."—Ed Knapp.

"Benedict, the married man."—Ralph Benedict.

"Stiff in his opinions, always in the wrong."—Darwin Delap.

"Ma, gimme a penny, I want to be tough."—Claude Minter.

"Even so."—James N. Russell.

"Oh! what a beard."—Horace Hamm.

"Perhaps he'll grow."—Claude Clement.

"Better to have gone to college and loafed than never to have played base ball at all."—Walker Campbell.

"A lion among ladies is a most dreadful thing."—Clifford Burton.

"And I have not forgotten what the inside of a church is made of."—Dwight Parsons.

"Maidens withered i' the stalk."—The Ozos.

"The rankest compound of villainous smell that ever offended the nostrils."—The chemical laboratory.

"A gentleman that loves to hear himself talk."—Maurice Simpson.

"Mind your speech a little lest it mar your fortunes."—James Kilroy.

"A mother's pride a father's joy."—Jack Schwitzgebel.

Jack fell down so hard that the springs gave way and he went clear through.

NOTE.

THE NAUTILUS is greatly indebted to Maurice E. Simpson for the designs he has so willingly made for this issue. His work is neat and attractive, and throughout this book you may see his drawings well represented. Again, Maurice, we thank you for your work.

Why is George Conkey like a cat-fish? Because he has more — than brains.



AT ST. JOSEPH.

Manual—K. C. Manual.

There are other good schools, but not so swell.

Books or game,
She's just the same,

We'll be happy forever with Manual.

When in St. Joseph the Manual boys seemed to enjoy sliding down the fire escape so much. If we had one at Manual we would spend all our time in going down the chute.

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We have a good assortment in both light and dark colored, light weight **FLANNEL SHIRTS**, the correct **Summer Apparel**.

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MEN, BOYS AND CHILDREN.**MAIN and ELEVENTH STREETS, - - - - - KANSAS CITY, MO., U. S. A.**Our advertisers like to have you mention **THE NAUTILUS**.

THE FLOWERS THEY REMIND ONE OF.

Virgie Minter—Marechal Neil Rose.

Lucile Edwards—A Red Carnation.

Grace Muir—Bouncing Betty.

Hester Jones—A Hollyhock.

Gertrude Rothgeisser—Wild Cucumber (green).

Linda Loomas—Cabbage Rose.

Lois Oldham—The Whole Garden.

Campbell sings:

"Well, I got a base ball on de brain.
 When de Manuals win I never complain.
 Well, a Westport had a very good team,
 But Central's de one dat a thinks she's mean.
 And that left-hand pitcher made a very good
 show,
 But a Corder beat him, don't you know."

Professor Phillips to Darwin: "Please
 erase that board, *Doctor Delap*."

Miss Van Meter: "Well, you must
 give some excuse, Marie."

Marie: "Well, we were cleaning
 house."

Miss Van Meter: "A very good ex-
 cuse, indeed."

Mr. Dodd: "I call you."

Mr. Phillips: "April has produced
 some wonderful characters. I was
 born in April."

Mrs. Elston: "There may be more
 than one Dickens, but this is *the* Dick-
 ens."

Miss Drake: "I am going to get a
 pin to wake you up."

Elsa: "O, yes, I speak Greek like a
 Trojan."

Miss Casey constantly lectures
 against "striding," but one day how
 the girls in her class did laugh to see
 her come down the hall as though she
 had on the seven league boot. There
 is an old proverb, "Practice—" you
 know the rest.

How is Mr. Richardson for a school
 poet? What a joy it would be if more
 people remembered their college days
 as he, Professors Phillips and
 Miller do.

A bald-headed man,
 A four-legged stool,
 A blue-eyed laddie
 Late to school.

The bald-headed man,
 With eyes of "Knight,"
 Gave the blue-eyed lad
 An awful fright.

For the four-legged stool
 Came down with a crash,
 And this very wise man
 Disappeared like a flash.

He arose from the wreck,
 With a smile in his eye,
 And continued subtracting
 Zx's from y's.

Miss Casey made a pie; she forgot
 to put any flavoring in it. Mr. Phil-
 lips said that all she would have to do
 would be to smile on it and it would
 be flavored. "O," she exclaimed, "it
 was to be a lemon pie; you horrid
 man!"

Horace Hamm, if you come back to
 this school next year with that mus-
 tache of yours, we will not allow you
 to enroll.

To these familiar faces we owe the
 dustless condition of our school: J. E.
 McElhenry, A. L. Bonnell and H.
 Hopper.

"The Centralian '00" has reached
 THE NAUTILUS office. We are sur-
 prised in this year's Luminary Annual.
 It does not come up to the expecta-
 tions. The Manual Training High
 School wishes the Central High School
 better success next year in the publish-
 ing of its paper.

No, Prof. Fulton, we do not go to
 St. Joe next year.

“UNDER FIRE.”

The Hit of 1900.

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W. L. HAZEN, Secretary and Manager.

John wasn't aware of the fact that there was anybody else in school but Mr. Leavitt. There are some other people affected this way, also.

Mr. Marshall has a bottle of Mellin's Infant Food on his desk, in the basement.

Hubbard's "Correct Shape" Shoes in patent leather, for men and boys, \$3.50 and \$5.00. 1005 Main.

Professor Merrill (to physical geography class who were going for a field trip): "Pupils, all bring your bottles."

Henry (translating): "I clumb up."

Miss Fisher: "Please clumb down, Henry."

Why do all the pupils go to B. Glick's, 710 Main street, for their school books and supplies? Because he always treats them right. If you go to him once you will surely go again.

Lois cried when she saw the account of her Henry's death.

Lucile (speaking to Sadie): "Say, hun."

Russell: "What?"

Lucile: "Oh, I wasn't talking to you. I don't always address only you in that way."

The Lincoln boys had to go and get shaved between events, so as to keep their whiskers from showing their age.



LATHROP RIPLEY.

ARTISTS.



HONOR M. WILKINS.

How did Kersey Hurley hurt his teeth coming from St. Joseph?

Roy says some clays show *lamentations*.

Frazer: "Everybody fined five cents." O, if we could only *find* that much!

Voice (in chemistry class): "Are those rings square?"

Ever since Miss Wilson has disappeared from room 19, visitors can come without getting nervous prostration.

Soph: "I wonder what race Mr. Holmes belongs to."

Fresh: "He must be a Gaul."

Walter's lady was all decked out in crimson.

You ought to see Frazer's new hat. He caught it in St. Joseph.

This is for Burr. He says he hasn't been roasted since the first issue of the first year.

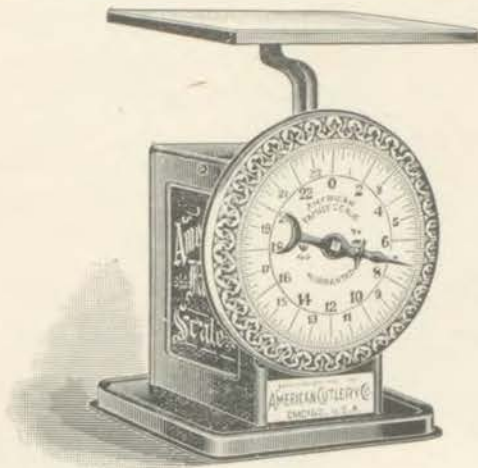
A NOTE FOUND IN THE HALL.

First part—"I think Clifford Leavitt is the dearest, sweetest boy in school, don't you?"

Second part—"Yes, he's all right; but John Tate is just to my taste."

Guess who the writers were.

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What has come over Alfred Hillgren lately? The following bit of sentiment is taken from his chemistry book:

"Other lips, perchance, may claim
By sweeter song to win thee.
Dearest, mine can only frame
The simple truth: 'I love thee.'"

Mr. Arni (at Liberty): "I don't see why they put three pieces of bread on the table for six people?"

Mr. Corder: "And I can't see why they put this meat on the table without an extra set of teeth."

Myron C. Albertson, Dwight Parsons, James N. Russell, Ben E. Lindsly, Howard Whitehead, John H. Tate, Harry S. Frazer and Maurice E. Simpson are some of the many Manual boys who have tried George Herold's twenty-five cent hair cuts. Try him, boys, at 324 Ridge Building. He's fine.

Miss Fisher wants to know why the Debaters didn't give Horace Hamm a *bearded* part on their program. She evidently wants him to be the whole hog while he is about it.



F. RIEZ

When you're in school you want the best instruction. When you're sick you want the *best* physician, so you'll get the best prescription filled *best* at Love's Drug Store, Walnut & 10th St.

John: "St. Joe's asphalt is about as *faulty* as can be."

The Lincoln boys ought to have been loyal to Free Silver Bryan and not have tried to win those *gold* medals.

Mr. Chace: "What is a polygon?"
Bright pupil: "A dead parrot."

Mr. Phillips looked at Miss Gilbert, who was reciting, and exclaimed: "I am looking at my love." Miss Gilbert turned sixteen colors.

When the people of St. Joe are not wiping dust out of the right eye with the right hand, they are busily engaged in wiping dust from the left eye with the left hand.

Man asking for Prof. Morrison: "Where is the head high mucky-muck?" Pointing to Alfred Hillgren: "Is that him?"

The Spring Styles in Hats are now here. If you would be in fashion; come to the **FASHION.** The one price, \$2.25; guaranteed \$3.00 values.

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1102 Walnut Street.

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A Central boy who is a Central boy just because he can be manager of the Luminary said: "Manual's green would go there." He unintentionally gave us a puff, for unless things are green they can't grow.

Did you have a nice time at St. Joe, Gillham?

He calls her his little Lucy,
She calls him her little Jim.
He thinks the world of her,
She thinks the world of him.

It's too bad the Seniors are going to leave us after they have amused us so long.

Harry said the wind was strong enough to blow your shoes away. We understand why his were'n't blown away.

There are other missionaries in a school who adopt different means of converting the savages. Robert Oliver is converting Miss Savage with a rubber tired buggy and Ralph Berry and Miss Savage's little sister ride on behind.

He: "Why does Ben wait at his window every morning for Lucile's coming?"

She: "Oh, he's trying to cut Rusty out."

Carl Rader has joined the Anti-Cigarette Club. Isn't that a good thing?

FIELD DAY.

Manual 61. Central 47.

The only boys who behaved themselves at St. Joe were the members of the track team, and that was because they had to.

Ask Professor Sloan where he got the hairpins hanging on the thermometer.

Professor Peters (to class taking test in short-hand): "Now, there is no use in your trying to cheat on this examination. I know all the different ways. The last time I took one, some had the answers on their cuffs, some had books in their laps, some had the answers in their watches, and some—"

Pupil: "Which way did you use?"

Professor Peters (quickly): "We have not time to talk any longer."

Twenty-two years of successful business building is a record that no business man can afford to sacrifice. The motto: Love's Drug Store the best of everything.

John Tate says he admits he is good looking.

OUR BALL TEAM.

We've got a battery worth the name
They're Corder and Campbell,
Who'll do any old thing.

Parsons is a pitcher, too.
Signs his Christian name.
When he gets out in the box,
There's nothing ever tame.

Jimmy Kilroy's out on first.
Knows his business, too.
Every fellow that starts for there
Gets into the stew.

Shield is a fellow who can play better ball
Than the whole Central team,
Taken in all.

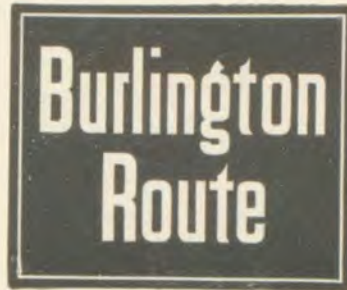
Ford plays on third as a veteran would,
And bats just like one, too.
Every pitcher sees his end
When Ford sets up to do.

There're other fellows on this team,
Which have never met defeat.
They've helped us win the Champion cup,
And never seen us beat.

AN OBSERVER.

Mrs. C. J. Rudd, 1009-1011 Walnut street, manufactures, repairs and stores fine fur garments at moderate prices. Fifth floor. Take elevator.

Maurice likes to show off before the girls in forging.



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FROM ITS ORIGIN TO THE PRESENT TIME

BY JOHN HENRY MADDISON

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1926

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