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GRADUATION

ISSUE

1924



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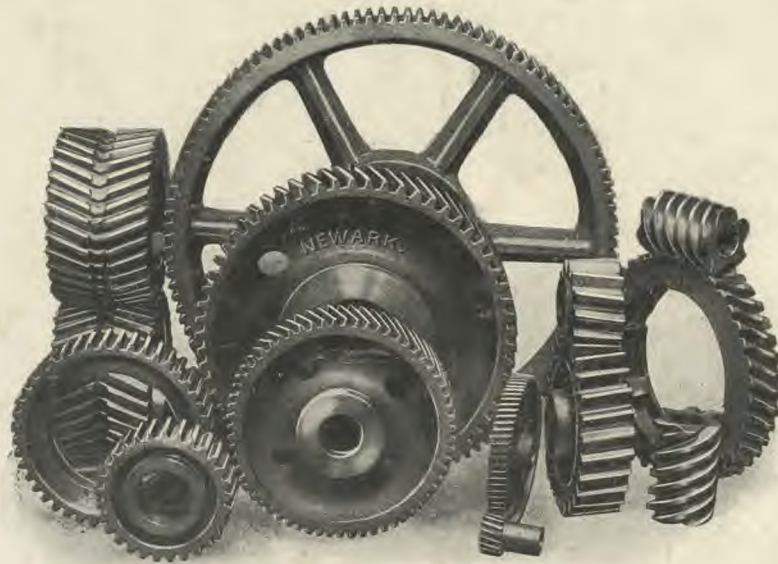
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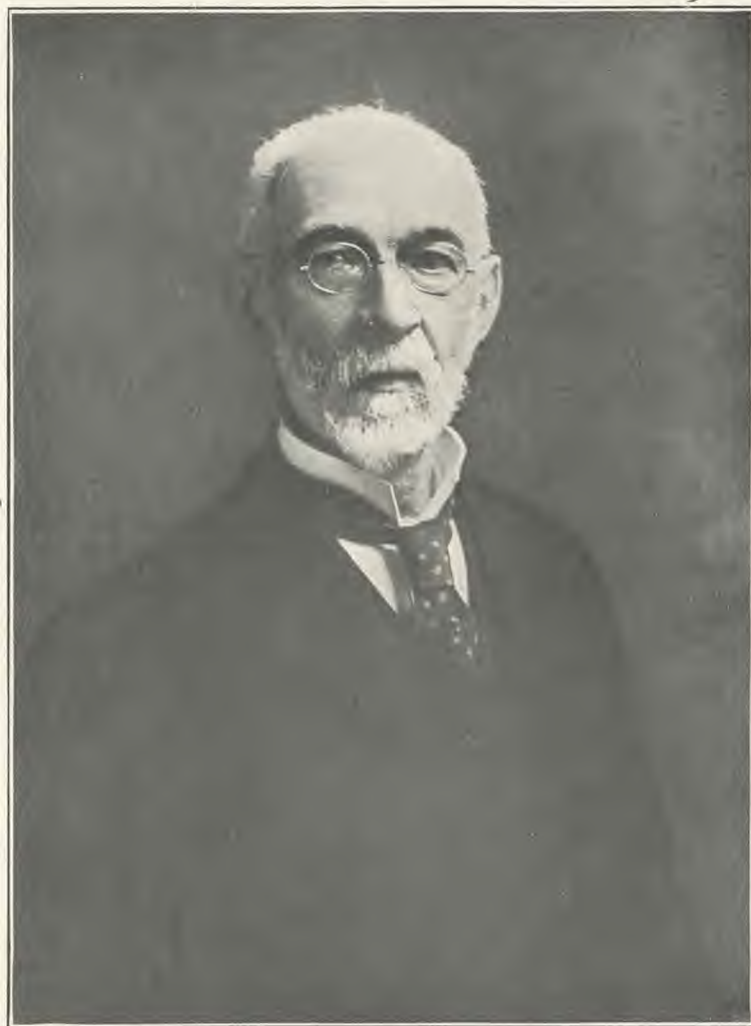
The Class of 1924

As this number of "The Fratech" appears we will be celebrating the graduation of the largest class in the history of the Newark Technical School. That the Director and the Faculty wish them professional and personal success goes almost without saying. We, who are charged with the responsibility of training these young men realize that they have completed satisfactorily a long and arduous task, but a graduation at the Technical School is not a commencement in the commonly accepted sense.

Both the graduates in the Evening School and in the College have already begun their professional life. They have all worked not only in the class rooms of our school but in their various positions under the exacting conditions of modern industry. They are in a better position than those who at graduation begin to serve, for they have served. The world of industry which they have chosen is not unfamiliar, they know its requirements, its standards and its methods. They will continue we hope and they will develop much but they are well and fairly started. It is not a commencement for 1924, it is a graduation.

In considering 1924 as a class and as individuals we are struck with their maturity. It would seem that we have completed a real step in the development of men, it does not seem that we have merely completed the academic training of a group of boys. Those of us on the faculty who have come closely into contact with these men have been gratified to see the responsibility and the judgment developing. Now at their graduation, as they leave us to continue their work without us, we can respect them as men, as men who have proved to us their mastery of books but which is of greater importance, men who have shown to us industry and integrity. They can work and be trusted.

So 1924 is leaving behind a very comfortable assurance. For we are assured of their success, and we know that in their success the success of our institution is assured. We know it, because to the faith we have in their future, is added the evidence of their present success. We do not need to guess what they will do when they enter their chosen work, for we know what they have done when they were in their chosen work.



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The Fratech

PUBLISHED IN THE INTEREST OF AND BY THE STUDENTS OF THE
NEWARK TECHNICAL SCHOOL AND COLLEGE OF ENGINEERING

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Volume 13

Number 4

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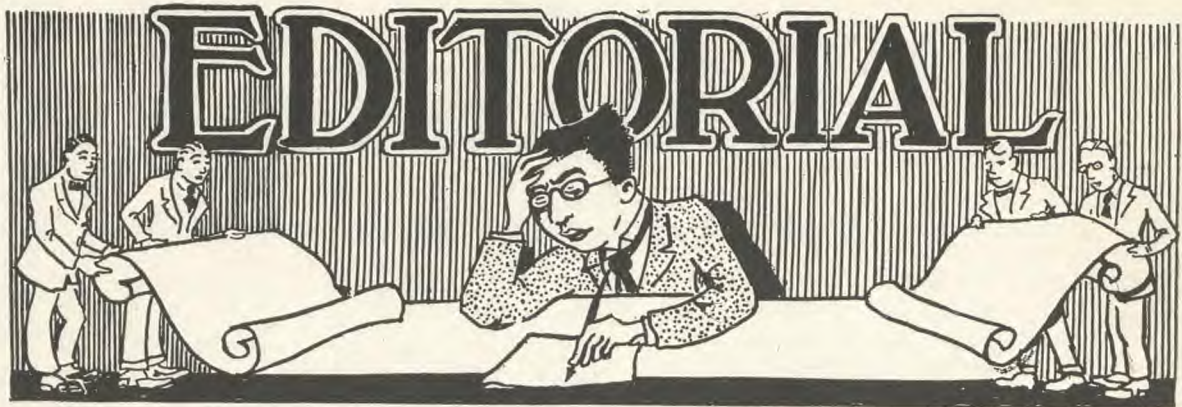
S. OWEN, '27

THE FRATECH

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RAY STEELE

A WORD TO THE WISE—

Another school year has come to an end, and with it the thrills of expectation that accompanies graduation. It means accomplishment of some task that has been more or less a difficult one. It has meant the privation of various pleasures. But we have learned that it has been a worthwhile privation because enjoyment is but of short duration while knowledge is something from which we cannot be separated.

There is much satisfaction in doing a task, the benefit of which is not immediately evident, and it is especially creditable to those who have studied at school in the evenings, while "carrying on" with their daily toil.

We are sorry to see our colleagues leave us, but the grief is there only because we shall miss their good fellowship, for we are glad that the time has come when they will receive the reward they so earnestly have worked for. Success belongs to them, and we hope they will not regret the time spent at "Tech."

And now, while we are talking of graduation, let us consider the duties of the undergraduate.

While the graduates are confronted by entirely new problems, the undergraduates will be responsible for the future tradition of the school. This means labor by each individual.

There are many things that have to be done at school that they have thought little about. The school paper is in need of some of that dormant talent, that glimpses in these pages but very seldom. Through this paper you can express your opinions of matters that relate directly to school or the outside world, and thus stir up interest afresh, in the actual work of the school.

This is the more grave side of school life, but even with social activities we could stand more support than has been received. Do not forget that if you cannot have a good evening's enjoyment at a class or fraternity dance, there is something wrong somewhere, and it is certainly not with the dance.

Of course this is only advanced as a suggestion, because as the Freshmen advance they will real-

ize that they are not entirely out of the happenings, and will realize their own follies.

This has been evident in the Junior class, which although it has been one of the most active classes of the school, has had its laggards. But as they assume the burden of their old Seniors, they are gallantly coming to the fore, and rendering "yeomen service."

Perhaps enough has been said, but do not forget, results will be expected.

Again we linger to bid adieu to our Senior classmen, and as the school *en masse*, wish them heartfelt congratulations, and God speed on their new voyage.

The Kem-Lec-Mec is the annual student publication of the day classes at the Newark Technical School. It contains all the activities and important events participated in during the school year.

Commenting on last year's issue, we will say that the publication as a whole was all that could be desired and much credit is due to its editors.

With the second issue in view the FRATECH staff takes this opportunity of wishing every success to the present editors. May your publication continue to represent the main object of the school, and assist in the upbuilding of the institution.

EXCHANGES

The Staff wishes to acknowledge receipt of the following periodicals, with many thanks in return.

The Rensselaer Polytechnic.

The Pivot—Central High School.

The Acropolis—Barringer High School.

The Orient—East Side High School.

The Optomist—South Side High School.

The Elm Tribune—Boys' Vocational School, Buffalo.

The Good Turn—Newark Boy Scouts.

It's faith in something and enthusiasm for something that makes life worth living.—*Oliver Wendell Holmes.*

"THE FRATECH" AND THE 1925 STAFF

To precede the staff that will carry on the work of the FRATECH for the coming year we will take the liberty to explain a few important features which pertain to the FRATECH and yourself.

The FRATECH is the school periodical which is published by the Newark Technical School and College of Engineering of the Newark Technical School. It is published for the students and by the students of the school. It is self-supporting and receives its finances from the advertisements and sales which occur through the circulation of the paper. An unpublished statement regarding its finances is made and audited after each issue, the profit being used to improve on the next issue or to overcome the loss on any preceding number. At the end of the year the funds, etc., are turned over to the following staff for their use in publishing the FRATECH. The executives of the staff are usually chosen from the graduating class and they do not receive any compensation or privileges for their work.

The purpose of the FRATECH is to acquaint the

student with the various organizations of the school and thereby create a more co-operative attitude with his fellow students.

The FRATECH aims to promote a social relationship within and without the school. It is a go-between for the students to express their intellect along engineering lines; a conveyor for information from our professors; a reviewer of all social and business events which occur; a connecting link from the outside world to our educational institution; and last, but not least, an optimistic view of life—our columns of jokes.

Readers, this is your paper. It cannot exist without you. Upon you depend the sales, upon us depends the publication. Is there any reason why our combined co-operation cannot make this a better and more circulative periodical? See that your name appears on the mailing list for a yearly subscription this coming year.

We take great pleasure at this time in announcing the personnel of the 1925 FRATECH Staff.

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SOME OBSERVATIONS IN THE LAKE SUPERIOR COUNTRY

ROBERT G. MERZ, M.E.

Approximately four hundred miles due north of Chicago, bordering the Southern shores of that enormous body of clear, fresh water—Lake Superior, and including the upper Michigan Peninsula, together with northern Wisconsin, lies an important and very interesting region, little known to the average individual. Those who have been fortunate enough to make the delightful trip by water from Buffalo, Cleveland, Detroit or Chicago to Duluth, located at the extreme western end of this great lake, have undoubtedly viewed its picturesque shores from the decks of the palatial steamers which traverse this route. But to see the country itself and to appreciate its industrial importance, requires a closer inspection and a more extended stay.

For those who enjoy the life of the "great outdoor," for those who appreciate nature with its ever-changing moods, for those who are interested in the mining of minerals from the earth and the gathering of the products of the forests, lakes and streams, this country affords a combination of attractions equaled by but few sections. Away from the rush and hustle of the great manufacturing centers, yet near enough to permit of rapid communication with several large cities and the obtaining of necessary supplies by both water and rail shipment, it must be obvious that this region offers much to commend it.

True, there is nothing particularly spectacular to be found, as in many other of the better known and more widely advertised sections, nevertheless it possesses certain characteristics as well as natural curiosities, which differentiate it from these more popular places. Among the latter may be mentioned the wonderful "Pictured Rocks" on the lake shore of northern Michigan, near Marquette, where the sandstone strata has been carved by

wave and weather into grotesque forms of variegated colors. Here also, in the coastal cliffs, are found unique and picturesque caverns—great arched openings cut out of the perpendicular sandstone walls—into which the surging waters of Lake Superior continually advance and recede.

Several of these caverns are of sufficient magnitude to even permit the entrance of vessels of considerable size. In winter these caverns glisten with iridescent colors from the ice-encrusted domes and from the stalactites at the crevices in the arched ceiling. It is said that this ice sometimes remains as late as July.

On summer nights, in this upper country, may be seen one of nature's grandest phenomena, the wonderful Northern Lights, casting their long shafts of gold down upon the water, making the nights nearly as bright as midday. Nowhere in America can the Aurora Borealis be seen to greater advantage and under such favorable conditions as in this region.

Inland from Lake Superior, the country is heavily timbered and the virgin forests extend for many miles in all directions. Bear, deer, moose, lynx, wild-cats, timber wolves, beaver, partridge, grouse, gulls, terns and many other wild animals and birds inhabit this region, which, during the open season, becomes the objective point for thousands of hunters. Here also are located probably the most extensive and finest deposits of iron and copper in the world, together with vast stands of the best grades of both hard and soft woods.

To see the giant steam and electric shovels scoop up the iron ore and drop it quickly into the great steel hopper cars, whence it is hauled to the elevated bins of the extensive ore docks on the lake shore, is in itself a sight worth a trip of

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PASTEURIZATION OF MILK

EDMUND REDMERSKI, '25

The process of pasteurization takes its name from Louis Pasteur, a son of a tanner, who was born December 27th, 1822, and died September 28th, '895. He showed in his experiments from 1860 to 1864, how fermentations such as in beer, wine and other fermentable liquids are due to living organisms. It may be defined as a process of delaying bacterial decomposition by exposing milk to heat in such a manner as to effect a partial destruction of the contained germs. He also showed that infectious diseases are due to these little "fellows," and when once properly known, the remedy for the disease may be found. All these hints, even if they have not been practically developed by Pasteur, have saved millions of dollars for the farmers alone, not mentioning the millions of dollars saved by other industries, such as wines, beer, silk worm growers in Europe, and too, the sheep farmers of Australia.

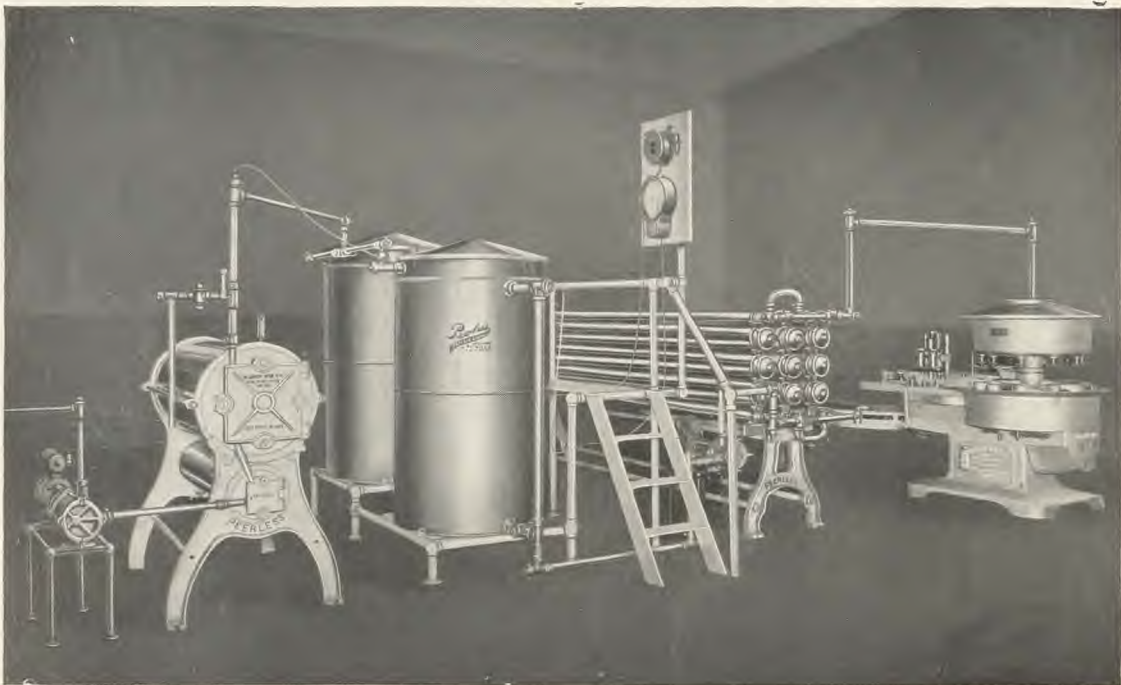
While his experiments were not with milk, his discoveries enabled others to apply his methods to milk with great success. In the early seventies, Prof. N. J. Fjord, of Denmark, was the first one to apply the process to milk with success. It was brought to America a few years later where it has been so developed that it is one of the greatest safeguards of health in the food industries. In 1889 the first pasteurized milk depot was established in New York by Dr. Henry Koplik, but it was not until 1893 that pasteuriza-

tion attained any appreciable public approval. It is historical that one large firm in New York City pasteurized its milk for five years before it was compelled to announce the fact to customers. In 1906 only five per cent. of the milk supply of New York City was pasteurized. Since that time, however, pasteurization has become largely adopted until 1914, New York City pasteurized eighty-eight per cent. of its entire milk supply, and the total is even higher to-day.

Epidemics such as typhoid fever, diphtheria, and scarlet fever, are on record as having been transmitted through raw milk. All these pathogenic germs are destroyed by proper pasteurizing and thus prevents the spread of contagion through infected milk. By proper pasteurizing, that is, by heating the milk to 142° Fahrenheit, and holding the milk at this temperature for thirty minutes, and then immediately cooling to 45° Fahrenheit, ninety-nine per cent. of the total bacteria count in the milk will be destroyed.

It was found that if the milk was heated to above 153°, even for only a short time, it will undergo a chemical change sufficient to interfere with its taste and cream qualities. Likewise, there is a danger point in applying too little heat. It was found that the danger point is 138°; that is, if the milk is not heated above this temperature, it is likely to contain injurious tubercu-

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PASTEURIZING APPARATUS

A PACIFIER FOR "KNOCKING MOTORS"

They have imprisoned a new genie in a squat, black bottle in the laboratories of the General Motors Research Corporation at Dayton, Ohio, and sealed him there with solder. His name is Ethyl Fluid and he is a very remarkable fellow. See what he does.

Thomas C. Midgely, Jr., vice-president and general manager of the General Motors Chemical Company, takes the black bottle into a room where a single cylinder gas engine has been hooked up with a generator. From the generator, which supplies the load, wires lead to an instrument board with an ammeter so that you can see at all times how much work the motor is doing. On the top of the cylinder head is a small brass pin held down by a spring. When the motor is running as all good motors should, the pin serves no purpose. But let the engine begin to knock and with each blow the pin rises in protest. When it is up it closes an electrical contact which lights an ordinary sixteen-candle power lamp.

Mr. Midgely, who is the creator of Ethyl Fluid, punches a hole in the mouth of the heavy black bottle and the stage is set.

The motor is started with the touch of a switch and soon warms up to its work. It is running on straight gasoline and doing it without a word of complaint. If you look at the ammeter you see that the indicator has moved over on the scale to a reading of twenty-three. Everything seems to be O. K.

Then suddenly it is not O. K. Mr. Midgely is making it act very badly by changing the size of the orifice through which the air is drawn. If you have driven an automobile too far up a long hill before changing gears the noise is familiar enough. It is a good healthy knock. The little brass pin is trying its hardest to jump out of the cylinder head; the electric lamp is flashing regularly and the ammeter hand has dropped back half a dozen places.

The inventor has filled a four-ounce bottle with the same gasoline. Now he pours a few drops of what looks like carmine ink from the mysterious bottle into the sample bottle and shakes it around. With a deft motion of the wrist he switches the glass tube on the gas line out of the fuel tank and into the small bottle. The hammering goes on just the same.

"That is the gasoline still in the line," says Mr. Midgely. "It needs a moment to be consumed. Now the motor is beginning to get its supply from this bottle."

Suddenly you have again a well-behaved engine, a better engine, it seems, than before it was made to knock. The brass pin is still and the electric lamp cooling off. Most interesting of all, the hand of the meter is climbing again for a new high record. The motor is developing

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ELECTRONS

LOUIS PISCHKITTEL, JR., '27

Undoubtedly the frequent appearance of the word electron in scientific and technical periodicals arouses some curiosity in the mind of the engineering student as to the arbitrary nature of these minute particles. Just as the scientists of a century ago abandoned all empirical theories and adopted the "Atomic Theory" formulated by Anaxogoras, extended by Lencippos and Democritus; and later ardently supported by Boyle and expounded by Dalton with verification, likewise we diverge from the latter belief to adopt a new theory, namely the "Electron Theory"—still in its infancy, but with bright prospects.

Space limits full discussion of this theory and its application to clarify many phenomena heretofore obscure. Therefore this article must necessarily be brief. In general the Electron Theory may be stated as follows: All atoms, regardless of atomic weight, consist of one or more negatively charged particles called electrons, revolving in definite orbits at a speed depending on its closeness of approach to a circum-centric positively charged nucleus or proton.

The atom is analogous to the solar system, but in one respect only, that is regarding the complex motion, differing from the celestial bodies in that all electrons are of the same mass.

The similarity of the radiations in a "Crook's tube" and those from radio-active elements, as radium and uranium, induced Sir Ernest Rutherford to recognize three distinct and unlike rays (Alpha, Beta and Gamma), from such metals. The Alpha rays consist of nuclei of helium atoms gas. The Gamma rays are not material but ethereal vibrations with penetrating power of a marked degree, like those of X-rays.

The Beta rays are the electrons. The number of electrons in an atom depends upon the position of the elements in Mendeleépp's Periodic Table. Thus, a hydrogen atom is supposed to have an atomic number of one, and consisting of one electron encircling a complementary proton; helium, an atomic number of two, and two electrons encircling a complementary proton, and so on to uranium, which has an atomic number of ninety-two.

As it was stated above that the speed of the electron depends "on its closeness of approach to the nucleus," it may be interesting to note the relative speeds. The outermost electrons are assumed to travel at a rate of one three-hundredth of the velocity of light and the innermost at a rate of one-half the velocity of light.

Before considering the properties attributed to electrons we will discuss the two contending theories regarding the structure of the atoms. Professor Bohr ardently supports the theory that the electrons revolve around the proton. And, he assumes that a diminution in the radius of the

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THE LOVE OF KNOWLEDGE

D. CAPASSO, '25.

It has been well said that, "Nothing is so costly as ignorance." You sow the wrong seed, you plant the wrong field, you build with the wrong timber, you buy the wrong ticket, you take the wrong train, you settle in the wrong locality, or you take the wrong medicine—and no money can make good your mistake.

The knowledge attained by any man appears to be a poor thing to boast of, since there is no condition or situation in which he may be placed without feeling or perceiving that there is something or other which he knows little or nothing about. A man can scarcely open his eyes or turn his head without being able to convince himself of this truth. And yet, without a fair working knowledge of the ordinary affairs of life every man is in some respects as helpless as a child. Indeed there is no kind of knowledge which, in the hands of the diligent and skillful, may not be turned to good account. Honey exudes from all flowers, the bitter not excepted, but the bee knows how to extract it, and, by this knowledge, succeeds in providing for all its needs.

Learning is like a river. At its first rising the river is small and easily viewed, but as it flows onward it increases in breadth and depth, being fed by a thousand smaller streams flowing into it on either side, until at length it pours its mighty torrents into the ocean. So learning, which seems so small to us at the beginning, is ever increasing in its range and scope, until even the greatest minds are unable to comprehend it as a whole.

Sir Isaac Newton felt this when, after his sublime discoveries in science had been accomplished, he said, "I do not know what I may appear to the world; but to myself I seem only like a boy playing on the seashore, and diverting myself by now and then finding a choice pebble, or a prettier shell than ordinary; while the great ocean of truth lies undiscovered before me."

Strabo was entitled to be called a profound geographer eighteen hundred years ago, but a geographer who had never heard of America would now be laughed at by boys and girls of ten years of age. What would now be thought of the greatest chemist or geologist of 1776? The truth is that, in every science, man is constantly advancing. Every generation has its front and its rear ranks; but the rear rank of the later generation stands upon the ground which was occupied by the front ranks of its predecessor.

It is important that our knowledge should be as full and complete as we can make it. Partial knowledge nearly always leads us into error. A traveler, as he passed through a large and thick wood, saw a part of a huge oak which appeared misshapen, and almost seemed to spoil the scenery. "If," said he, "I were the owner of this

forest, I would cut down that tree." But when he had ascended the hill and had taken a full view of the forest, this same tree appeared the most beautiful part of the landscape. "How erroneously," said he, "I have judged while I saw only a part." The full view, the harmony and proportion of things, are all necessary to clear up our judgment.

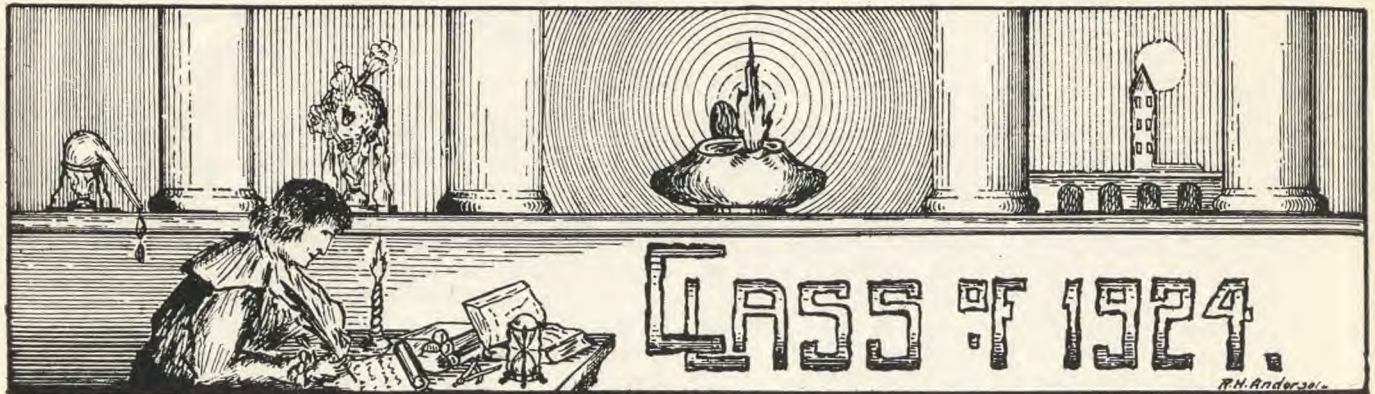
Walter A. Wood, whose keen business ability made him a wealthy man, and sent him to Congress as a representative from the great State of New York, is reported to have said, "I would give fifty thousand dollars for a college education." When he came to measure his ability with that of men who had had greater opportunities in the educational line, he realized his loss. Chauncey M. Depew is also reported as having said, "I never saw a self-made man in my life who did not firmly believe that he had been handicapped, no matter how great his success, by deficiency in education, and who was not determined to give his children the advantages of which he felt, not only in business, but in intercourse with his fellow-men, so great a need."

There is difference between knowledge and wisdom and understanding; but without the first the rest cannot be gained, any more than you can have a harvest of wheat without seed and skill of cultivation. Understanding is the right use of facts; facts make knowledge; knowledge is the root of wisdom. Many men know a great deal, but are not wise or capable; many others know less, but are able to use what they have learned. Wisdom is the ripe fruit of knowledge; knowledge is the beginning of character.

The love of knowledge has been characteristic of most great men. They not only loved knowledge but they were willing to work hard to attain it. As example of this: Gibbon was in his study every morning, winter and summer, at six o'clock. Milton is said to have stuck to the study of his books with the regularity of a paid bookkeeper. Raphael, the great artist, lived only to the age of thirty-seven, yet so diligent was his pursuit of knowledge, that he carried his art to such a degree of perfection that it became the model for his successors. When a man like one of these wins success, people say, "he is a genius." But the real reason for success, was, as you may see, that the love of knowledge led to the effort to obtain it.

Useful knowledge is the knowledge of what is benefit to ourselves and to others; and that is the most important which is the most useful. It is the belief of those who have spent their lives in the search of it, that knowledge is better than riches, and that its possession brings more com-

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VALEDICTION

We have come at last to the hour which marks the completion of our work at "Newark Tech." Once again we complete a task the completion of many of which is life.

Fond memories will always be ours of the happy and profitable days spent at "Newark Tech." We will never forget the comradeship we have enjoyed with each other and in years to come we will look back and long for a word or two from these old pals of ours.

Now that our work has come to a close and we part, mayhap, never to meet again, before we go we wish to extend to the faculty, to whom we owe all that we have been able to glean in our stay at "Tech." our deepest appreciation of their tireless efforts. We also wish to thank Dean Cullimore for the many times when he has helped us with his counsel.

We leave our duties to our successors, may they perform them in such a manner so as to bring new laurels to the school.

In our future work may we always carry the spirit that has been predominant during our years at "Tech."

THE GRADUATION DANCE

The Class of '24 held their last social function of the year on April 5th, 1924. This dance was deemed one of the best of the year and credit for it is due both to the committee and to the musicians. Schutte's orchestra excelled themselves and the evening was enjoyed by all.

We were honored by having Dean and Mrs. Cullimore, Mr. and Mrs. Peet and Mr. Netschert, present. The committee consisted of the following:

E. O. Then, Chairman; R. Torrance, L. Blaiklock, J. Odenthal, G. Miller, J. Pugsley, J. de Groot, J. Hirman.

NEW OFFICERS

The following are the officers who have been elected for the coming year:

President, Robert E. Torrance; Vice-President, Edward O. Then; Treasurer, Charles Graf, Jr.; Secretary, Ralph E. Stork.

CLASS OF 1924

THEATER PARTY AND BANQUET

Saturday evening, March 22nd, Class of 1924, enjoyed one of the best shows Proctor's Palace Theater has given this season. It had a variety of numbers on the program that even a critic could not find fault with. There were seventeen members of the class present.

Here are some extracts from the show:

It's too far to walk, my soles are thin.

The one in the Taxi was better.

One side of the table had a better time than the other, ask Miller.

Who went into the field first, the cow or the horse? Ans. Neither, John de Groot did.

Some ventriloquist, who said that?

Sherman insisted on having pork chops.

The chink service was wonderful?

Where's your grammar? Oh, she's dead.

Fruit salad is great, '24 is better.

Odenthal, our Sheik, tried to vamp a pretty girl but got chilled when he saw the size of her escort.

Pugsley who always is a great fellow, held one end of the table down. We wonder how he did it after eating oysters.

We were unable to dance because Hoffman didn't order soup.

"Pa" Netschert led the family to the eats.

Stork, poor fellow, had to be "Night Watchman"; he didn't go.

Eager wants the menu when he asks for literature.

He ordered steak and got a good pair of soles.

John is still hungry. He wanted to start all over again.

Hey, you big Swede, come here! A little chink came running over.

After eats were gone President Hartkopf asked Mr. Netschert, Class Advisor, to address us.

Mr. Netschert gave one of the best talks and advice on the social side of school life that we have ever listened to. He also gave some very valuable suggestions on how to keep up class spirit after we graduate.

Mr. Newitz, Editor-in-Chief of the FRATECH, outlined the plan of the Graduation Number of the FRATECH. And asked for more co-operation because of the more work that this number will require.

Then in turn each member of the class was asked to address us. J. de Groot led with jokes and stories, keeping us in continuous good humor.

Right here the class wants to thank that committee for their successful co-operation in making the evening one that all who were present will long remember. R. Stork, was chairman with two able and hard working assistants, de Groot and Fleckenstein.

THE POWERHOUSE TRIP

Due to the efforts of John de Groot, a party of about twelve members of the class enjoyed a trip through the Essex power plant of the Public Service Electric Company. This trip proved to be very interesting and instructive and the class appreciates the pains taken by the company to see that nothing was left unexplained.

CAN YOU IMAGINE:

John de Groot without medicated discs?
Harling with a moustache?
Cassedy with a complete riley?
Sherman as a doctor?
Ed. Then not studying?
Odenthal without a bow-tie?
Miller driving a Rolls-Royce?
Geiger getting stouter?

YEARS HENCE

Julius Hirman—Hillside builder and contractor
John de Groot—Public Utilities Magnate
George Miller—The Electro-plating King
Ted Newitz—Welding expert on joints where you can't use anything else.

FIVE MINUTES IN THE HALL

"Hello, Ted! So you are leaving us, uh? Well, you sure have done your work well as Editor of the FRATECH, and although it was your duty, the school is indebted to you, in a sense, for the success you have made of it. Well, g'bye old scout. Best of luck."

"Say, George! Yes, you George E. Miller, I am wondering whether we are going to see you in the Frat Orchestra, now that you're through at school. We will? Atta boy, Georgie. But just a minute, I see Harry Hartkopf."

"Harry! come here you smiling, blue-eyed boy; what's the matter? Gettin' highbrowed cause of your A.E., now? What I want to know is whether you intend to bring *her* to the '24-'25 Straw Ride? Which girl? Wow!!! S'long."

"Now, where the Sam Hill are you going to Storky, old boy? Lookin' kind of tired. Guess you're an understudy to Paul Revere nowadays, only you have to be the horse? How's married life? Fine? Perhaps I'll venture some day! Seen Cassidy 'round here? Oh, here he comes!"

"Hail smiling morn! Top o' the morning to ye Clarky old timer! They tell me you are going to abscond with the Fraternity funds. No? That's right, me lad! Honesty is the best policy—sometimes."

"Well, well, look who'se here, Thomas McCarter, oh, no! it's Johnnie de Groot. Nope! can't sell me any stocks to-day, John and listen, do you know of any good jobs in the Public Service? Sorry, old man, but have no time to listen to your joke just now. Keep it till the next time you see me. I've got to say hello to Bob Torrance before he leaves."

"'lo, there Bobbie aren't you going to say good-bye? Don't mean to say you're sorry to be leaving us? So are we! Never mind we will let you come and visit us occasionally, if you're good! Better scat now! I see the Dean over there and he looks as if he wants to speak to me. 'bye, Bob."

"Good evening, Dean Cullimore! I have just been saying good-bye to some of the '24 fellows. Yes, sir; they are a fine crowd of men, every one of them, and it makes me feel kind of sorry to see them go. But, I suppose that's the way of this world. Anyway, they are all active members, and intend to back the Alumni and Fraternity to the limit, so we will see them quite often. Well, good night, sir!!"

A. N. B.

ANOTHER TEST

He only thinks
He has the stuff,
But he, poor boob,
Is just a bluff.

Class Advisor



WILLIAM NETSCHERT, JR.

1924

"The evil men do lives after them;
The good is oft interred with their bones."

Did Shakespeare believe what he made Mark Antony say over the dead Ceasar? I think not. Antony was made to speak for the occasion.

In writing for this occasion, the graduation number of the Class of 1924, I would reverse the order, forgetting entirely the evil, for it has no place here. I would rather leave this thought with the reader:

The men who are going out from here in taking their best with them, are leaving goodwill behind them. With their work here they have built a foundation upon which they can continue to build, if they will, and in that building secure for themselves and their school recognition and approval.

I would remind them that hard work is not all behind, but that harder work is ahead; the higher the goal the steeper the climb. Perhaps we are too easily tempted to let well enough alone, and to rest on our achievements, great in our own sphere, but how small at its best. These achievements seem great to us only because we are looking backward.

I would say then, "Look forward, not to the morrow, but far beyond your present range, in order not to lose those things which to-day seem lost in the mist, but to-morrow become distinct and clear in their appeal to ambition and their aid to progress."

What is it that we admire most in men? Is it not their achievements? Why are some men called great? Is it not because they have done something bigger or better than others? It is not their greatness that makes them do, but the doing that makes them great. It is not for us to say who shall be great and who shall be small, but we can say very definitely that he who does will be bigger for the doing, and he who does not will not gain thereby. It is better to move backward, than not move at all. In each mistake there is a lesson that prevents many more; and thus we are set again in the right direction.

This is a world of people and things. As technical men our mastery of things is gaining more and more rapidly. But in that mastery has not our sight been trained keenly on the spot? Have we swept the horizon of human relations with broad vision. Have we been so intent on the line of sight that we have lost the other fellow who has focused on us and sees that which we have failed to see?

It appears, then, that we should see clearly in all directions, even within.

In conclusion, by doing, our vision is broadened; in broadening becomes clearer; and becoming clearer make the world a better place to live in for ourselves and for others.

HOWARD FINLEY

12 Homestead Park
Newark, N. J.

Civil

*"Silence reigns supreme,
Hearken to the stillness."*

WILLIAM BRADY, A.E. "Red"

Chemical

212 Smith Street
Newark, N. J.

"I go my own way silently and bother no one."



CARL J. JENSEN, A.E. "Carl"

Chemical

40 Edgewood Road
Glen Ridge, N. J.

"Fond of dress, but fonder of dresses."

N. T. S. Fraternity.

GEORGE E. MILLER, A.E. "George"

Chemical

73 John Street
Belleville, N. J.

"Music hath its charms and charmers."

N. T. S. Fraternity; Class President, 1922; Class
Treasurer, 1923-1924; Business Manager of FRATECH;
Frat Orchestra.





FRANK J. WEGMAN, A.E. "Frank"
William Street
Delawanna, N. J.

Chemical

"Perfume belongs to flowers."

N. T. S. Fraternity; FRATECH Staff.

ROLAND EAGER "Eager"
Box 82
Morristown, N. J.

Electrical

"From whence comest thou."

N. T. S. Fraternity.



C. A. FLECKENSTEIN, A.E. "Fleck"
32 Jay Street
Newark, N. J.

Electrical

"Yes, sure I'll do it. What is it?"

N. T. S. Fraternity.

STANLEY HARLING, A.E. "Stan"
78 Norwood Street
Newark, N. J.

Electrical

"Have one of my business cards."

N. T. S. Fraternity; FRATECH Staff.





JEROME SHERMAN, A.E. "Jerry"
30 Belleville Avenue
Newark, N. J.

Electrical

"The dignity of the class concentrated in one person."

FRATECH Staff.

FRANK WLOSINSKI, A.E. "Frank"
437 South 7th Street
Newark, N. J.

Electrical

*"I will array myself and go forth a renowned
breaker of hearts."*



AUGUST LITTMAN, A.E. "Gus"
76 Tremont Terrace
Irvington, N. J.

Electrical

"No longer will I be a free man"

N. T. S. Fraternity.

CLARK B. CASSEDY, A.E. "Clark"
71 Stuyvesant Avenue
Arlington, N. J.

Mechanical

"Well, you see it's this way"

N. T. S. Fraternity Treasurer.





THOMAS BLAIRLOCK, A.E., "Tom" Mechanical
132 Steuben Street
East Orange, N. J.

"Argue I will for I know I'm right."

N. T. S. Fraternity.

JOHN DE GROOT, A.E. "John" Mechanical
393 Central Avenue
Newark, N. J.

"A jolly old soul is he."

Sergeant-at-Arms, Class 1924.



HARRY A. HARTKOPF, A.E. "Harry" Mechanical
1051 North Avenue
Elizabeth, N. J.

"A conspicuous hill topper."

N. T. S. Fraternity; FRATECH Staff; Class President
1924.

JULIUS HIRMAN, A.E. "Julius" Mechanical
1424 Long Avenue
Hillside, N. J.

"I will build me a house."

N. T. S. Fraternity; Society of Married Men.





JOHN C. HOFFMAN, A.E. "John"
941 Flora Street
Elizabeth, N. J.

Mechanical

*"At 9.20 I leave,
Or else some one will grieve."*

N. T. S. Fraternity.

JAMES J. KANE, A.E. "Jim"
330 Grier Avenue
Elizabeth, N. J.

Mechanical

"Nothing is more useful than silence."

N. T. S. Fraternity.



CHARLES J. LESSER, A.E. "Lesser"
617 South 19th Street
Newark, N. J.

Mechanical

"He smiles, he will smile, let him smile."

WILLIAM F. LAWLOR, A.E. "Bill"
45 Chrome Avenue
Carteret, N. J.

Mechanical

"Perseverance is success."

N. T. S. Fraternity.





THEODORE P. NEWITZ, A.E. "Ted" Mechanical
66 Hinsdale Place
Newark, N. J.

"A business man through and through."

N. T. S. Fraternity; Editor FRATECH; Class President
1923; Class Secretary, 1922.

JOHN ODENTHAL, A.E. "John" Mechanical
39 Elmwood Road
Irvington, N. J.

"Manners and dress are more expressive than words."

N. T. S. Fraternity; Board of Managers; Class Secretary
1923; Advertising Manager FRATECH.



JOSEPH F. PALME, A.E. "Joe" Mechanical
33 Orleans Street
Newark, N. J.

"I go my own way silently and bother no one."

Society of Married Men.

JAMES E. PUGSLEY, A.E. "Pugs" Mechanical
219 Hollywood Avenue
Hillside, N. J.

"I've had quite some experience."

Class Vice-President, 1923.





RALPH E. STORK, A.E. "Storky" Mechanical
7 Howell Place
Newark, N. J.

"A night man who watches."

N. T. S. Fraternity; Class Treasurer 1922; Society of Married Men.

EDWARD O. THEN, A.E. "Ed" Mechanical
21 Wall Street
Newark, N. J.

*"No man so busy as he,
And yet he seemed busier than he was."*

N. T. S. Fraternity; Class Secretary 1924.



ROBERT E. TORRANCE, A.E. "Bob" Mechanical
399 Chestnut Street
Arlington, N. J.

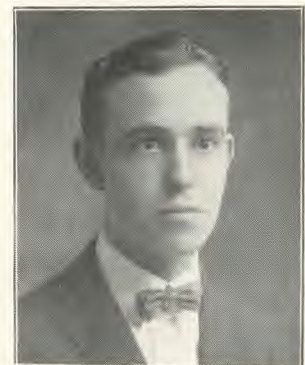
"On with the dance."

N. T. S. Fraternity; Class Vice-President 1924.

CHARLES F. GRAF, JR. "Charlie" Genl. Tech.
471 South 16th Street
Newark, N. J.

"Little, but Oh My!"

N. T. S. Fraternity.



THOMAS BERGEN

Related Mch. Work

39 Liberty Street
West Orange, N. J.

"Silence is supreme."

GEORGE GEIGER "George"

Related Mch. Work

24 Hunter Street
Newark, N. J.

"I'll draw me a line."



HENRY LOCK

Related Mch. Work

72 Lake Street
Bloomfield, N. J.

"Sitting in a corner all by myself."

WALTER A. GODFREY

Related Mch. Work

21 Holmes Street
Nutley, N. J.

"A man of many words and colors."



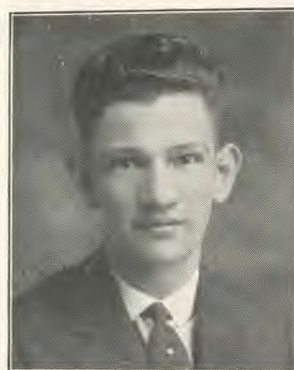


ALFRED RICHARDS "Al" Related Mch. Work
628 Elm Street
Arlington, N. J.

*"Fair is he from across the river,
For one little maid his heart does quiver."*

LEONARD SPATZ "Lenny" Design and Fabrication
of Tools
305 Danforth Avenue
Jersey City, N. J.

"Candy, Candy, Oh Candy, where art thou?"



GEORGE GLEDHILL Engineering Drawing
56 Ridge Road
North Arlington, N. J.

*"Every week to Elizabeth I must go,
Where lives a little girl whom I know."*

N. T. S. Fraternity.

ALFRED GREINER Engineering Drawing
16 Exchange Place
Clifton, N. J.

"In my Tippy Canoe."





CARL DINGE

Engineering Drawing

434 South 21st Street
Irvington, N. J.

*"Jazz bands are my hobby,
As a Sheik I'm very nobby."*

JOHN WHITE

Engineering Drawing

126 Watson Avenue
Newark, N. J.

"Silence belongs to Sphinx."



ANTHONY HUDCIK

Engineering Drawing

2 Center Street
Clifton, N. J.

"A permanent wave I have not."

RAY KNUDSEN

Engineering Drawing

87 Scherer Avenue
Newark, N. J.

*"What would life be without music and baseball?
Bow tie specialist."*





CHARLES ZANDER "Charlie" Sanitary House Drainage
300 Eighth Avenue
Newark, N. J.

"A heart with room but for one."

GEORGE KUNZENBACHER "George" Sanitary House
Drainage
59 Leslie Place
Irvington, N. J.

"I like to lend a helping hand."



ARTHUR McMANUS "Mac" Sanitary House Drainage
63 Llewellyn Avenue
West Orange, N. J.

"I think West Orange is a wonderful place."

FRED KILBY "Fred" Sanitary House Drainage
424 South 10th Street
Newark, N. J.

*"My ambition is to be president of the National
Association of Plumbers."*

HARRY ALBION "Hank" Sanitary House Drainage
59 Warren Street
Newark, N. J.

"Let me dance and be happy."

JOSEPH FRANCK "Joe" Sanitary House Drainage
157 William Street
Newark, N. J.

"I did not raise my voice to be a whisper."

JOHN LENTZ "Jack" Sanitary House Drainage
136 John Street
Nutley, N. J.

"The Future Plumbing Inspector of Nutley."

CHARLES CORONIA "Charlie" Sanitary House Drainage
573 Valley Road
West Orange, N. J.

"He came, he went, with one vast substantial smile."

HERBERT E. STERNKOPF "Stretch"
Sanitary House Drainage
16 Warwick Street
Newark, N. J.

*"In height I'm nearly six feet seven,
They say that I am near to heaven."*

W. VAN ASSEN "Van" Engineering Drawing

"New but not forgotten."

LIMRIKING LYMRICS

There was a young fellow named Harry,
Who said, "he never would marry,"
But, that's often been said
Perhaps he will marry a "co-ed"
And live to be ever so happy.

A man that is not to be led,
If ambition will keep him ahead,
He's been President, Secretary and Chief of
the Staff
And when speaking of girls he sure makes
us laugh (?)
He is known to us all as "Ted."

Two names with E in the middle,
Makes us think of George E. Miller, no little
With all girls he's fine,
With the ONE girl sublime,
But he hits "maximum peak" with the fiddle.

John Odenthal comes next on our file,
Blue eyes, bow tie, with a style,
He has proven a regular lad
A disposition that can't be made mad
So watch for his dimples and smile.

Ed. Then is our CHAMP from down neck,
At bowling he sure is a wreck,
He is secretary of the class
Not a girl let's him pass,
He too is a graduate in "Mech."

James Pugsley's the man with the car,
Ah! no! we are wrong—it's a STAR,
And now study is over
He will probably turn rover,
And travel to counties afar.

Clark Cassidy is known for his pate,
In class he knows how to rave,
He is treasurer of the Frat,
And he grows mighty fat,
Oh! I wonder what shall be his fate?

A fellow, well known, is de Groot,
With Public Service he has taken root,
He likes to talk STOCK,
And often he'll knock,
As a school man he's proved very good.

Now who does not know Charlie Graf
Curly headed and face with a laugh?
He has studied at "Chem."
And thinks much of "La Femme"
Besides he's on the FRATECH Staff.

Bob Torrance is known just as Bob,
From his one girl he can bring a sob,
He too has proven good at school
And you bet, he's no fool
As Vice-President he's out of the mob.

Ralph Stork has left bachelors flat,
He's chosen a "HOME, SWEET HOME" mat,
When he paces the floor,
No doubt he feels sore,
Perhaps he calls his offspring a "brat."

Fair Harling is knicknamed Stan,
He has grown to full sized man
All batteries he can fix
And motors play tricks
The "fair sex" he never can ban.

SPORTS

A new event, one that will go down in the pages of Tech History, took place not so long ago. It was one that will be talked about for a long time to come. I refer to the bowling match between the classes of '24 and '25.

After a seemingly wild goose chase, a vacant alley was secured in Steele's and then the dust began to fly.

The game had just started when there was a terrific noise, a gnashing of teeth, and when the dust had settled the worried onlookers who had grabbed their hats and coats in order to make a quick getaway were surprised to see "Bill" Osterheld sitting flat on the floor, half way up the alleys. Bill said it was because he had no rubber heels on his shoes, but we figured it out that he tried to create enough dust so as to sneak up and push the pins over with his feet.

Odenthal's "Johannsen Gage" eye found the pins except when the smoke from Miller's cigar made the other end of the alley invisible. Bob Torrance said he would present the Frat with Bamberger's high score cup when he won it. Better practice Bob, or the cup will rust from old age before we get it. One of the many sideline features of the game was Barney Diebold's cigar. By the end of the second game it was chewed beyond recognition. Ted Newitz made the first strike for '24, and Bill Osterheld for '25. Harry Younghans gave the gutter an awful punishment till he got in the swing of the game, but when he did, boy-o-boy, he sure did "knock-em-dead."

Class of '25 won two out of the three fast games played. Many of the boys complained of sore arms, but the writer is sure it was not from writing high scores for themselves. Score:

GAMES

Class	1st	2nd	3rd
'24	444	515	504
'25	428	539	590
'24			
Newitz	104	153	117
Torrance	103	80	109
Odenthal	102	125	116
Miller	135	157	162
'25			
Pizzi	98	142	149
Osterheld	84	115	150
Diebold	106	135	133
Younghans	140	147	158

Autographs



BERTL'S SUCCESS in Selling DIAMONDS and JEWELRY Is Due Chiefly to the Recognition of the Fact that the PUBLIC WANTS GOOD THINGS AND IS WILLING TO PAY FOR THEM.

THREE EFFECTIVE PRINCIPLES ARE USED

- I. The distinctive appearance of his goods backed by High Quality.
 - II. He does not consider competition with low figures in prices; it would not stand for High Quality. But reasonableness is the fine secondary point, because Bertl's establishment is out of the High Rent District.
 - III. The most agreeable selling point is the unlimited selection in Diamonds, Jewelry and Watches.
- Using these Three Points means "Real Honest Service." Bertl's five windows, "A Jewelry Dreamland," are recognized by the onlooker with great satisfaction and have proved to be the best salesman.

"IT PAYS TO INSPECT THESE WINDOWS"

Serving Three Generations of Satisfied Customers and Ready for You

NORBERT BERTL

The Popular Jeweler and Diamond Expert
 44-46 SPRINGFIELD AVENUE
 (One-half Block Above Court House)

(Continued from page 12)

orbit of the electrons is the cause of an expenditure of energy. Doctor Langmuir has forwarded a theory that denies the above one and assumes that the electrons remain in a state of vibration at a fixed distance from the proton.

Both theories are favored, and as to which one will survive depends upon the number of phenomena they will satisfactorily explain. Some physicists believe that there is still a smaller fundamental entity than the electron, which they call the sub-electron.

Knowledge and time only can alleviate.

In conclusion, let us summarize some of the common properties of electrons:

1. All electrons carry equal negative charges, approximately equal to 4×10^{-10} electrostatic units, or the same amount of charge carried by a hydrogen atom in electrolysis.
2. All electrons have the same mass of 1-1845 of that of a hydrogen atom.
3. A gas is rendered conductive by the passage of a stream of electrons due to the fact that the gas becomes ionized.
4. When matter in any state impedes the path of moving electrons, heat, light and mechanical force are developed.
5. Electrons are repelled by negatively charged bodies, and attracted by positively charged bodies.

JUNIOR PROM

(Informal)

Given by

Class of '25

2NTs5

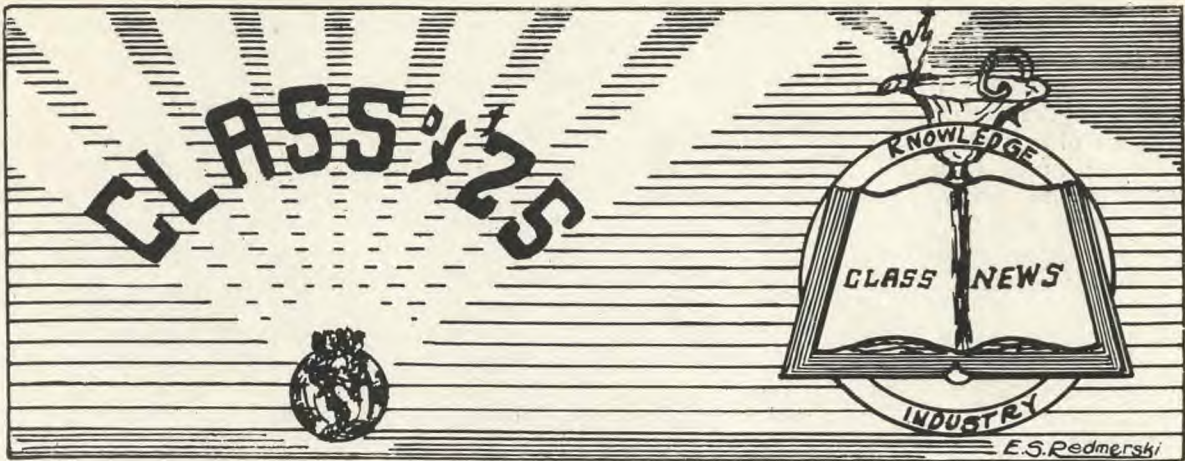
Help us give The Graduates
 a good send off

REMEMBER

The Place—School Gym
 The Time—Saturday, May 17, 1924
 The Girl—Bring Your Own

Subscription

ONE DOLLAR



President	W. A. Darby
Vice-President	W. Osterheld
Secretary	A. Braudé
Treasurer	L. Littman

CLASS '25 NEWS

Keep up the good work fellows—the attendance at our class meetings has increased fifty per cent. in the past year, and there is no doubt that if this keeps up, it will make us the liveliest class that ever held its meetings between the walls of Tech, a desire we have held dear since the last graduation issue of the FRATECH.

Inasmuch as we will be Seniors next fall, there is no doubt that business of importance will have to be attended to before school opening in the fall, so that our efforts may be manifest in making the FRATECH a school paper worthy of its predecessors.

The secretary will notify the class members by post card the date of such class meetings. It is advisable that you give your name and address to the class secretary, A. Braudé, if you have not already done so.

- LITTMAN
- SCHOFFELBERGER
- KUNC
- HOSEK
- ANDERSON
- HEIN
- PIZZI
- GROSBACH
- LENAZ
- DIEBOLD

The coming seniors desire to thank the retiring seniors for the help extended by them in their embryo stage of their growth. It is partly through their helpful criticisms and suggestions that the Class of '25 has become one of the most active classes in the annals of "Tech." Because not only of this, but of their good fellowship, we bid them a sad farewell (in as much as we lose comrades) and can only hope that they will continue to keep in touch with us so that they also can rejoice in our success!

WHO IS HE?

It would surprise some of us to know that we have a rival of John McCormack amongst us. At least those of us that heard him at the Fraternity's after theater dinner, think so. Don't miss hearing him should you have the opportunity which might avail itself at the straw ride of the Class of '24 and '25.

On Saturday, March 22, 25 class members, accompanied by Professor Netschert (faculty representative), journeyed to Point-No-Point for a tour through the Essex Power Plant of the Public Service.

For the first time some of us saw the construction of a large power plant and indeed were surprised to see the massive and intricate apparatus. Perhaps the greatest surprise came when we saw the control room with the hundreds of little lights that control the proper functioning of the system. We were eager to see the details of construction in a large turbine—nothing was overlooked when the opportunity availed itself.

Many thanks are due Garrett Den Bravn for securing the permit and Professor Netschert for making this trip instructive and enjoyable.

SOON HE'LL BE NAPOLEON

Anderson boasts to be the thirteenth man to understand the Einstein Theory.

GOOD MEMORY

Prof. Koskarian—Well, can you remember what we were doing last week?

Dunn—Oh, yes! Something new I think!

It takes 18 muscles to make a frown and but 4 to make a smile. Rest your face!

JUNIOR-SENIOR PROM.

Folks who are still talking about our last dance will have another opportunity to enjoy themselves at the Junior-Senior Prom (informal), which will be given by the Class of '25, on May 24, 1924, in the Laboratory Building. The committee is making every possible effort to insure an evening of real pleasure for all those who attend.

On this occasion, members of the graduation class of 1924 will be our guests, and it is expected that every member of the class will be present.

The committee consists of H. Younghans, Chairman, M. Grossberg, L. Littman, W. Osterheld, L. Dunn, A. Darby, J. Hosek, A. Hein, F. Kunc, E. Redmerski and B. Diebold.

The music will be furnished by the Frat Orchestra, under the able leadership of Ed Schutte.

H. HERBERT
H. KOLB
L. BOWER
J. MACMILLAN
W. OSTERHELD
A. BRAUDÉ
A. SIMONS
C. BIELING
J. LAMBERT
L. DUNN

SUMMER ACTIVITIES KEYS

Some time during our vacation the matter of keys will be discussed so that our order for them may be placed with the manufacturer soon after school opens next fall. It is advisable that you keep in touch with the activities of the class in order that you may acquire the necessary details concerning the graduation key.

STRAW RIDE

Arrangements have been completed for the straw ride of the joint classes of 1924 and 1925, to be held on Saturday evening, May 10, 1924. This is what we have been looking to for a long time, and there is no doubt as to its success.

Any one interested in the straw ride please see any of the following: M. Grossberg, W. Osterheld and E. Redmerski.

TENNIS

It is hoped that those who are interested in tennis will communicate with Ed. Redmerski, at their earliest convenience, so that a tournament during the vacation may be arranged with other classes.

At the class meeting of April 17, two trips were decided upon by the class, for the early part of our vacation.

On Saturday, June 7, we will take a trip to New York (just like the one last year), where we will visit a place of public interest (to be decided upon) in the afternoon, while in the evening the thrills of Coney Island will be enjoyed. We will meet at the Hudson Tubes, Park Place, at 2:15 P. M., for the afternoon trip and at 7 P. M. in front of the City Hall, New York, for the trip to Coney Island. This will enable those for whom it is impossible to come out in the afternoon to enjoy the thrills of Coney Island with the afternoon group.

On Saturday, June 28, a week-end trip to Bear Mountain is planned. Through the courtesy of B. Diebold, who has a camp there, this trip is made possible. Post cards will be sent out by the secretary advising the place and time to meet.

ALL PRESENT TO-DAY!

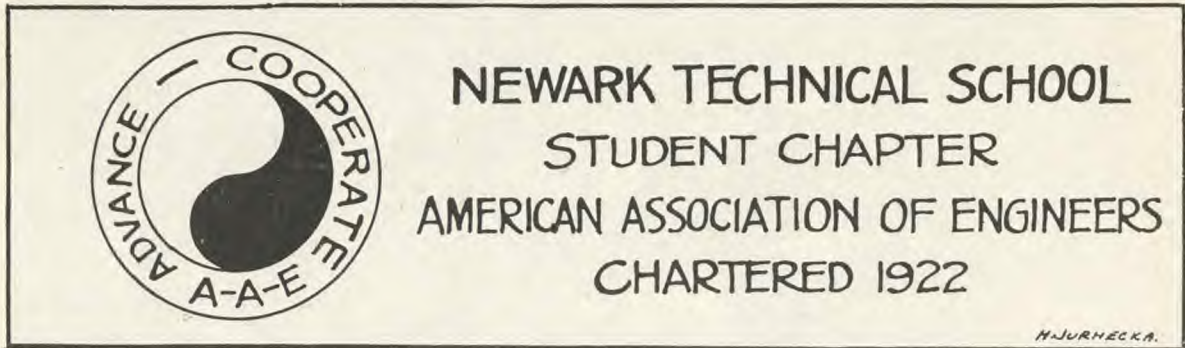
Mr. Merz—Beiling!
Mr. Beiling—(Evidently he didn't hear the call.)
Mr. Merz—Beiling!!
Beiling—(Slowly rises.)
Mr. Merz—Are you present, Mr. Beiling?
Beiling—Yes, sir.

SUCCESS to the GRADUATES

Compliments of
CLASS OF 1925



CLASS 1925



A Message from the Newark Chapter, A. A. E.
 H. W. HEILMAN, *Secretary and Treasurer*

It is a peculiar pleasure to be the spokesman of the Newark Chapter of A. A. E. Having been associated with the Student Chapter since its inception, and having carried on the preliminary and subsequent dealings between the parent chapter and the N. T. S. Chapter, I feel qualified in some degree at least, to positively outline and state the relations which have and do exist between the foregoing bodies.

The charter members who were present at the Chapter meeting in 1922 when we, the infant Student Chapter were endeavoring to establish our right to exist, will recall the immediate favorable response and support which was offered. In fact previous to this meeting, the writer, in conference with the former secretary of the Chapter and the Chairman of the Membership Committee, was actually urged to create a Student Chapter. It was a foregone conclusion in the minds of the senior members of the Association that the establishment and maintenance of a Student Chapter would insure a nucleus of future timber for the Newark Chapter and thus guarantee the stability and activity of the Association.

This feeling of encouragement and solicitation has existed ever since. There is hardly a meeting but several questions are asked concerning the welfare of the Student Chapter.

What shall the above mean to the Student Chapter? Obviously it should prompt them to reciprocate and offer their services and presence at Chapter meetings. A most cordial and warm welcome awaits every member. Ask those students who have attended meetings in the past. They will prove beyond a shadow of doubt that this is the truth.

The opportunities and privileges available to the Student Chapter are almost limitless. You are the future Junior and certified member. Success of the Newark Chapter depends upon you. The present older members must some day lay down the reins of the organization and you must be prepared to take them up, put your shoulder to the wheel and push.

The writer has watched the work and efforts of the Student Chapter with decided interest.

Their activities have prompted only the highest praise and commendation. We, the Student Chapter, have started in the right direction, the officers have faithfully performed their duties, and the members have supported the organization in such a manner as to bring only honor to the school. The Chapter, although still young, has ideals and characteristics to maintain in the future.

The hope that the activities of the Student Chapter in the coming years will even increase its efficiency and usefulness is certainly well founded. It is destined to become an institution of the Newark Technical School which will bring credit and give service to its Trustees and Faculty.

To the Members of the A. A. E.

The kindness of the FRATECH staff in allowing us a page of each issue enables us to get in touch with a great many of our number with whom direct communication is virtually impossible because of the strain on our finances that would be entailed. In this message, therefore, which will probably reach you just about the time our year's school work is ending, I would like to call your attention to some of the things our infant organization has accomplished during the year.

In a social way we were quite successful. Chairman A. E. Weiler, of the Social Committee, promoted two very enjoyable dances, both of which were well patronized and as a result gave our treasury a good start. Then there was that fine lecture given in December, by the New York Telephone Company's Lecture Bureau, "History of Communication," followed in January by a visit to the Telephone Company's plant on Washington street. The latter occurred on a Saturday afternoon, and forty members enjoyed it.

The Constitution Committee did exceptional work, even more than was expected. Chairman Wallace Gomperts has in his possession a letter of commendation from national headquarters at Chicago, stating that our constitution as submitted for approval is an exceptionally well devised document.

(Continued on page 43)



THE FRAT SONG

I

In the center of our city
 Stands our dear old school,
 Newark Tech, our Alma Mater,
 And the "Frat" its jewel.

Chorus:

Hail old Fratney and its Frators
 As this song we sing,
 Let our hearts be loyal ever
 And our praises ring.

2

Fratney stands for true school spirit
 And equality,
 Brothers, hold to these traditions
 Till Eternity.

3

As through life we wend our journey
 And we're far from home,
 Fondest thoughts we hold of Fratney
 'Ere our fancies roam.

Tune:—Cornell Alma Mater.

THE FRATERNITY AND THE SCHOOL

"All work and no play makes Jack a dull boy."
 How true this saying is when applied to many of
 the night school students.

Have you noticed the difference in the fellows
 that are members of the Fraternity and those
 that are mere school goers? Frat members are
 real fellows with a real spirit. They are the
 ones who get the full benefits that are offered by
 the school with all its branches.

When a fellow leaves the old gang and packs
 his brief case he has all the good intentions of
 getting the most out of his sacrifices, but if he
 fails to enter the social side of the school he is
 starting out in the wrong direction. He soon
 looks around for something to divert his
 thoughts from work in his spare moments. There
 is no better chance offered than to become a
 member of the frat, a real live organization with
 the real school spirit. Should he head for other
 amusements he soon loses sight of his real pur-
 pose and gradually drifts away from the school.

The "Frat" offers some of the finest amuse-
 ment for the students of the school; dances,
 theater parties, straw rides, ladies' nights, and
 you should see the rush on feed nights; how
 those boys like to eat.

OLD TIMERS' INITIATION NIGHT

Nothing could be written which could do justice
 to such an event as Old Timers' Initiation Night,
 which was held in the Fraternity Room, on Fri-
 day, April 11, 1924.

Who, of the 130 or more brothers that attended
 that meeting, will ever forget that memorable
 night (and morning)?

After a short and snappy business meeting the
 initiation was turned over to the "old timers."

Well—then the fun began for everyone (ex-
 cept the candidates).

The initiating team consisted of General Jim
 Bush, Dr. Carpenter, Pasquale the barber, Clar-
 ence the beauty parlor manicurist and shampoo
 artist, Dr. Yankem, Dr. Killem and a score or so
 of other reprobates.

Now we could tell you lots more but—well, any-
 way, after the fray, eats were served to all.

Everyone honored the candidates by allowing
 them a separate corner for themselves. To any
 of our readers who may not be members of the
 fraternity permit us to say that if you have any
 fear of joining the frat why dismiss those fears
 as we assure you our candidates never weaken, in
 fact we strengthen them.

In conclusion on behalf of the candidates we
 desire to thank the old timers for what they did
 for us and we assure them their services will never
 be forgotten.

RETROSPECT

"Count that day lost whose low descending sun
 Views from thy hand no worthy action done."

—Longfellow.

Another fraternal year has rolled around and
 as we look backward over the past events we can
 only feel and conclude that it was a very success-
 ful one.

Our worthy president, Mr. Henry Reid, with
 the co-operation of the officers and members, has
 guided and supported the fraternity in a manner
 that all should be mighty proud of.

The social events of the year have exceeded
 in number and grandeur those of any other year.

Our membership has increased considerably as
 may be observed from both records and attend-
 ance at the meetings.

(Continued on page 51)

ANNUAL JOINT BANQUET

of the

**Newark Technical School
Alumni and Fraternity****STETTER'S BANQUET HALL****Thursday, May 15, 1924, at 8:00 P. M.**

Colonel F. A. Snyder, Assistant Construction Engineer of the New York Bridge and Tunnel Commission, will favor us with an illustrated lecture on the new vehicular tunnel.

Other speakers will also favor us.

SUCCESS TO CLASS 1924



NEWARK TECHNICAL SCHOOL FRATERNITY

(Continued from page 9)

many miles. Discharged directly into the holds of the 600-foot lake carriers, which transport the material to various points on Lake Michigan, Lake Huron and Lake Erie—Milwaukee, Chicago, Detroit, Toledo, Cleveland, Erie and Buffalo, the ore is reduced to pig iron in the great blast furnaces or again transferred to hopper cars for transport to the more remote iron and steel centers like Youngstown, Pittsburgh, etc.

Only then does one realize how it is possible to mine and ship this ore such a great distance at a very nominal expense and compete with the richer ores closer at hand but more costly to recover from the earth.

Copper mining and smelting also play an extremely important rôle in the industrial activities of this northern region. The prosperous and flourishing cities of Houghton and Hancock, in the upper Michigan Peninsula, are often called the "gateway" and the "center" respectively of the copper country, comprising the Keweenaw region, which projects, like an extended finger, north-eastward into Lake Superior.

The famous Calumet and Hecla, the richest copper mine in the world, lies only a comparatively short distance north of Hancock. Here, even at a depth of over 8,000 feet the ore body shows no decrease in value over that in the surface layers, and hence it will undoubtedly continue to

produce profitably for many years to come. Several other important and well known mines such as the Tamarack, Old Reliable, Baltic and the Champion, are located in this region and serve to give employment to thousands of men. Houghton, a picturesque city on the south shore of Portage Lake, is the oldest settlement in the copper country and the home of that well known and excellent institution—the Michigan School of Mines.

Of course, lumbering and woodworking, as well as pulp and paper making, have always been a major factor in the commercial development of this region. The hard woods, especially maple, beech, yellow birch, ash, and elm are found in large quantity and of excellent quality and serve as the basis of important industries. The manufacture of boxes, crates and barrels, doors, windows and other housefittings, as well as furniture of all varieties, is a very extensive industry and one of great magnitude.

The abundance of clean, uncontaminated water, the proximity of vast supplies of spruce, hemlock and other suitable woods, together with cheap hydro-electric power, have combined to make this section one of the largest producers of pulp, paper and paper products in this country.

Further south the country is more open and extensive fields serve as the grazing grounds for large numbers of the finest cattle. Hence dairy-

ing has become a very important and profitable industry, especially in the State of Wisconsin. Great quantities of milk, butter and cheese are produced annually and shipped to all of the important cities. Well kept farms, under the care of the industrious inhabitants, are found on all sides and give evidence of a prosperous, thrifty and contented people.

In closing it might not be amiss to add a few words in regard to Lake Superior itself—the largest of the chain of the five Great Lakes. Four hundred and fifty miles in length, approximately one hundred and seventy miles across at the widest point, its water surface six hundred feet above sea level and extending over four hundred feet below, a total depth of more than one thousand feet, this enormous crescent-shaped reservoir is the largest body of fresh water in the world.

Fed by some two hundred streams, draining an enormous area, largely of timberland, in Michigan, Wisconsin, Minnesota and the Province of Ontario, Canada, this lake serves as the first unit of a great highway of water-borne commerce between the Northwest and Eastern points. Unlike the others members of the Great Lakes group, however, this lake is exceptionally free from violent storms and high winds and a wonderful asset to this northern region. The southern shore greatly resembles the rugged coast of Maine with its combination of rocky, often precipitous cliffs, alternating with level stretches of sandy beaches.

Several islands, of considerable magnitude, rise abruptly from the bottom of the lake, while smaller ones dot the surface closer toward the shore. The largest of these, Isle Royal, 45 miles long, about 9 miles wide and located 35 miles northeast of the beautiful and interesting city of Duluth, Minnesota, has recently been proposed as a national recreation ground and already steps have been taken to add this island to the National Park System by setting aside several thousand acres of its public lands for this purpose.

It has several large harbors and bays of great depth, which can readily accommodate the biggest lake steamers, besides 21 inland lakes and numerous swift-flowing trout streams. It is the home of a vast herd of moose and woodland caribou, as well as the breeding ground of countless song birds, wild fowl, gulls, etc. Geologically, it is also of great interest, affording a fertile field for investigation and research.

Space does not permit of a more extended description of this vast, interesting region, nor can words adequately portray the beauties of this little known section of our country. Here the conventions of the larger cities are left behind and one finds himself closer to wild nature, surrounded by an invigorating atmosphere, breathing the forest-scented air and living a real life.

E. Then—Yes, his hobby is antiques.

G. Miller—Is that one of them with him now?



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(Continued from page 12)

more power than it was a moment before, and doing it very quietly. But let the engineer speak:

"You know what the knock is. It is the detonation of the fuel charge. In other words, gasoline behaves like a high explosive which, if compressed too much or overheated, explodes with such violence that it breaks up everything in the neighborhood.

"That is the old problem, but it involved another one that is much more serious."

The motor has been switched back to its regular fuel supply and begun to clatter again. The adjustment is restored to normal and it throbs with rhythmic beat. The ammeter shows that it is generating less current than on the treated gasoline. Mr. Midgely resumes his story:

"We started seriously after this knock in 1916 and would undoubtedly have learned what we know now if the war had not come along and taken our minds off this particular difficulty. With the end of the war we went after it again.

"Our first real success came with the addition of the right amount of iodine. That stopped the knock, but there is not enough iodine in the world to go very far. From that we went to aniline, but that made a bad smell and created some engine difficulties which ruled it out. Then we eliminated the knock with silenium, with consequent troubles, and with telurium, ditto. And so at length we got to lead, and found tetra ethyl,

treated in a certain way, to be thoroughly as good as anything else that had accomplished the desired results and, best of all, obtainable in the quantities needed. It requires only one-tenth of one per cent. by volume to accomplish the desired result. We have been running tests on that now for about two years."

"But how about moth balls or naphthalene and these various patent medicines on the market for eliminating knock?" you inquire.

"We have tried everything we have heard about, and have yet to find one worth a German mark," said Mr. Midgely.

Ethyl is being made by the DuPont plant at Wilmington, Del., and after examination is packed in metal bottles containing about a quart each at the research laboratories. The method of supplying it to cars is extremely simple yet effective.

Excerpts from an article printed in the March number of "The Lamp," a magazine published by the Standard Oil Company of New Jersey, describing Ethyl Fluid, the phenomenal discovery that eliminates motor knocks, a product of the General Motors Chemical Company.

HEARD IN MR. CUMMINGS' CLASS

Hartkopf—But when the beam breaks—

Then—When the beam breaks it is broken.

De Groot—My pale faced brethren, they speak words of wisdom and deep intelligence.

FOUR YEARS BEHIND US



AHEAD

To Be or Not to Be

WHAT?

1924 MEN

WHICH MEANS

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GLASS APPARATUS MADE TO ORDER

(Continued from page 36)

The work of the Membership Committee needs no explanation other than the mere statement that forty-five new members were received since October.

The Publicity Committee, though functioning but a short time has proved its worth, and Chairman Harry Jurnecka and his assistants are deserving of our highest praise. This valuable page is a result of the work of this committee.

Very recently it became my duty to appoint another very important committee. For want of a better name I have called it the Committee on Employment. At various times some of our members will learn of positions open in the various branches of the engineering field. Then there will also be some of our members who would like to make connections with concerns operating on a different basis and with conditions differing materially from their present position. It will be the duty of this committee to figure out this law of supply and demand, and endeavor to help as many of our members as possible to better themselves in their chosen field. Edgar Shrope is chairman of this committee. Assisting him are James Darling, 1927, and Fred Haven, 1926.

The year just passing into history has been fertile in the production of A. A. E. achievement. And for the years to come I think we can safely promise bigger things. The spirit of harmony and co-operation so prevalent during the year will

surely spread during the vacation season just ahead. And when we return to our studies next October it will be with an eagerness, not only to complete the education which must come after the ceaseless effort which we notice night after night in the school, but also to renew our interest in our little organization of the American Association of Engineers.

To those students of our school who have not as yet affiliated themselves with our organization a word might be said. Your ideals are our ideals. Your ambitions are our ambitions. Therefore we need you, and also, you need us. So when the leaves are turning brown once more and you come back to your studies again we trust you will cast your lot with us. Our entire membership of one hundred and fifty men will be on hand to welcome you. The officers of the association will help you in any way, and all the committees will try to outdo themselves in showing you that you are welcome. So let your slogan during the summer be, "In October I will be a member."

(Continued from page 13)

fort to the owner. To be acquainted with the great deeds enacted in past ages; to find out how some nations have become powerful while others have fallen; or to learn something about the great mysteries of nature, brings with it to the diligent searchers many hours of pleasure. Also the ex-

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perience of man teaches that the exercise of the mind brings great satisfaction.

The power of intellectual knowledge, without the power of moral principle, can only tend to evil. Knowledge is the criterion of character. Not what a man has, but what he is, is the question, after all. The quality of soul is more than the quantity of information. Personal, spiritual substance is the final result. Have that and your intellectual furnishings and attainments will turn to the loftiest uses. Add obedience to your knowledge, and your education will be worth all that it costs.

The desire of knowledge, like the thirst of riches, increases ever with the acquisition of it.—*Sterne.*

(Continued from page 11)

losis bacteria. The danger point for temperature of milk held twenty minutes or more is 137° for streptococci, 135° for diphtheria, and 133° for typhoid. Also the holding of the milk at the proper temperature and time is a vital factor of proper pasteurization. Milk held at from 90° to 110° will quickly sour. It was found in experimenting that bacteria multiplies in milk at 90° Fahrenheit, twenty-three times in two hours, while at 54° they only multiply four times in two hours, and again at four hours at 90°, 215 times,

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and if left for six hours, at 90°, they multiply 3,800 times.

There is always present, of course, the possibility that pasteurization might become a menace through the careless handling of the milk by the dealer, but is obvious that if pasteurization is attempted it must be effectively accomplished. As the Board of Health authorities are furnished by the dealer with a chart upon which the temperature and time are recorded during the process of pasteurization this precludes any carelessness on the part of the dealer.

An old Scotchman was visiting a friend in the States. By way of diversion he was taken to a movie show. During the performance a picture of wild animal life was shown. When a great bull moose was thrown on the screen the old Scot tugged at his friend's sleeve and whispered, "And what kind o' animal is that?"

"That's a moose," was the reply.
"A moose," echoed Jock, "Well, if that's a moose a' dinna want tae see a rat!"

T. Newitz—That umbrella of yours looks as though it has seen better days?

J. Odenthal—Well, it certainly has had its *ups* and *downs*!

WELL, WELL!

First Comedian—Do you know how to get a violin for nothing?

Second Comedian—No, how?

First Comedian—Go to a drug store, buy some medicine and the druggist will throw the vial in.

She—Don't you ever get tired of writing jokes?

He—Not as long as they answer.

“What do they soak for coffee at the cafeteria?”

“Coffee beans, you simp.”

ANOTHER MAN

The hobo had asked the hard-faced woman for something to eat. “Yes,” she replied, “I'll fix you some supper if you'll saw and split some wood, sweep off the walk, fix that hole in the fence, tidy up the barnyard, and burn that rubbish piled up at the cellar door.”

“Lady,” said the hobo as he started away, “I'm only a hobo; I ain't your husband!”

A. Richard—I want to rise in the world.

L. Spatz—Well, buy an alarm clock!

C. Cassedy—I dreamed last night that you were in love with me. What's that the sign of?

She—That's a sign you were dreaming.

WHOLESALE

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J. Sherman—She swears she's never been kissed!

R. Stork—That's enough to make any girl swear!

A. Littman—Did you know that even Adam was a radio fan?

J. Palme—How's that?

A. Littman—He made a loud speaker out of his spare parts.

The foreman came around just after Mike had dropped a stick of dynamite and departed for parts unknown.

"Where is Mike?" he asked.

"Mike's gone away," answered Pat.

"When will he be back?"

"Well," said Pat dubiously, "if he comes back as fast as he went he will be back day before yesterday."

J. Hoffman—There are about 5,000 languages in this world!

W. Lawlor—Yes, and money speaks them all!

C. Dinger—Pooh! I wouldn't marry the best woman on earth.

She—Well, then, take me and you'll be running no risk!

LOOKING BACKWARDS

Bobbie—When were the dark ages, ma?

Ma—Back in the days when men gave up their seats in the trolley cars to the ladies.

ABSENTMINDED

Speaking of absent-minded professors, one of them started thinking about his motor boat while taking a bath and began bailing the water out of the tub onto the floor.

W. Fleckenstein—It's tough to pay fifty cents a pound for steak.

R. Eger—Yes, but it's tougher when you only pay twenty-five cents!

John—Why do they call you "Corns" in school?

George—Because I'm always at the foot of the class!

Julius—Pa, the teacher said something in school last night about finding the least common divisor!

Father—Gosh! Haven't they found that yet? Why, they were hunting for it when I was a boy!

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THE GRADUATE

Day in, day out, for four long years,
In spite of weal or woe,
He's studied, plugged, and tried to grasp
All things that one should know,
To sally forth and buck the world
And gather in the dough.

And now he stands with chest thrown out—
His daily grind is o'er—
All ologies and isms are
To him an open door;
And simple folk to him, of course,
Are just an awful bore.

He takes his parchment with a bow,
Then packs his little trunk
And sallies forth into the world
Of wealth, to snatch a hunk,
The weeks roll on, no job he grabs,
He's in a pesky funk.

And bosses laugh at him and say,
"Your A. E.'s so much junk."
Till finally, when self-esteem
Perceptibly has shrunk,
He plunges into politics
And lives by talking "bunk."

ELECTRICAL SPARKS

Sorry we missed the last issue, but it came and went so fast all we got was the whizz as it passed.

Harling better watch out. With all those stocks for freak inventions in his safe, Senate might come around an investigate.

Sherman believes he's another Steinmetz; he's getting round shouldered but simply can't smoke anything stronger than a cigarette.

Furey's working hard to come out with the rest of us. Atta boy, step on it.

Did cha see Fleckenstein hop during the Paul Jones at the Class Dance? Huh—neither did we.

Wright's going to stage a come back—come back to school next year again.

Wlonski now admits Prof. Nims is a whizz. The Prof. is always showing him up.

Wonder why Eager always beat it out when the 9:30 bell rang, couldn't see him for dust.

Littman has solved an easy way to work his problems in class. Sure, copy 'em from the other fellow. Ask Frank, he knows.

We're taking odds that Harling will even be late at the graduating exercises. Who'll take us up on it?

Well, so long fellows, here goes.

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CONGRATULATIONS

to

CLASS OF 1924

We Welcome You
THE ALUMNI

(Continued from page 37)

Financially the fraternity is sound and by next year we should be able to re-budget our accounts and establish ourselves to good advantage.

Election of officers will take place very soon and, brothers, it is urged that you consider carefully your choice. Because a certain brother is a "good fellow" is NOT sufficient reason to make him president, vice-president, treasurer or any other officer, unless he has the ability, time and inclination to fulfill the duties of that office. Remember what you do at the next election will decide very definitely the status of our organization for the next year, so above all things do not "railroad" men into office.

Conversely, if you are elected and know that you cannot fulfill those duties required of you then for the good of all concerned do not accept. On the other hand if you feel able to fill the job for which you have been elected then by all means accept the honor and take advantage of the opportunity and you will never regret the time spent. Unless you have been active in the administration of the fraternity you probably do not realize the wonderful chances awaiting you to gain real business and executive experience.

Professor—Nothing impossible.

Student—Did you ever try to strike a match on a cake of soap?

WE WOULD LIKE TO KNOW:

What objection there is to using Lester Dunn's "Covered Wagon" for the Straw Ride?

Who was the fellow that suggested bowling matches, which keep us out of bed almost every other night?

Who says that the class could not organize a baseball team that can hold its own against the teams of any of the other classes?

Who always comes in late on Wednesday evening?

Who is the fellow that has the habit of breaking into the instructor's discussions with questions?

Who could not laugh at the last frat meeting?

Who, with ultra sensitive ears can detect the falling of a pin during class meetings?

C. Pratt—I put a lot of thought into my work.

E. Torrence—Yes! You work ten minutes, then think about it for an hour.

H. Hartkopf—What's the difference between a hair dresser and a sculptor?

E. Then—One curls up and dyes, and the other makes faces and busts!

G. Geiger—How can I cure a sleep-walking habit?

W. Godfrey—Sprinkle tacks on the floor.

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