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Hail and Farewell

For many of us, this is the end, the farewell, the finish. It's goodbye to IIT. And, now that we are leaving, we're discovering how much we've come to think of Illinois Tech—stockyards smell, Rock Island smoke, ancient buildings and all.

We're not trying to paint things a rosy pink. Certainly there have been enough criticisms of IIT printed in this very column. But, underneath it all, we all feel that this school of ours is pretty good.

Actually, of course, it won't be goodbye. A better word would be the German "Aufwiedersehen"—until we meet again. For it's a safe bet that most of the fellows will come back to IIT to finish up after the war. Perhaps we'll be lucky enough to come back to new, modern buildings, on a beautiful campus. But at any rate, we'll be glad to come back.

For it's certainly not the physical aspects of a college or university that measure its quality. It is the men who work there and the job they do that counts. And on that score we can certainly hold our heads high, for IIT has an excellent faculty. Sure, you can name some professors you've had who didn't know what the score was. But there are very few of those, and for the most part the men are tops in their respective fields. Also, they are willing to cooperate with and aid the student as much as possible.

As a result, the standards of scholastic work here is quite high, and fellows from IIT always make a good showing when competing with men from other schools.

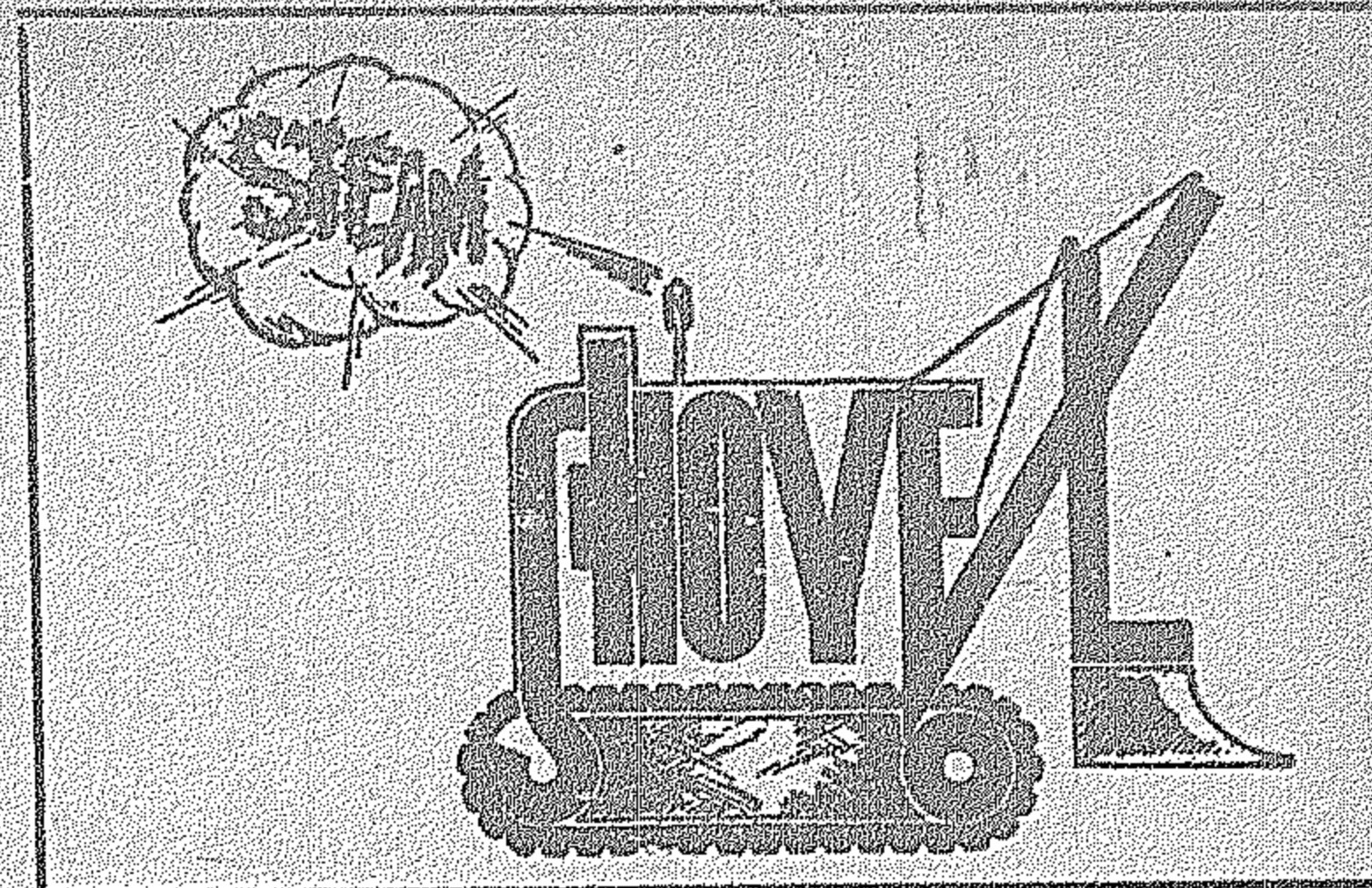
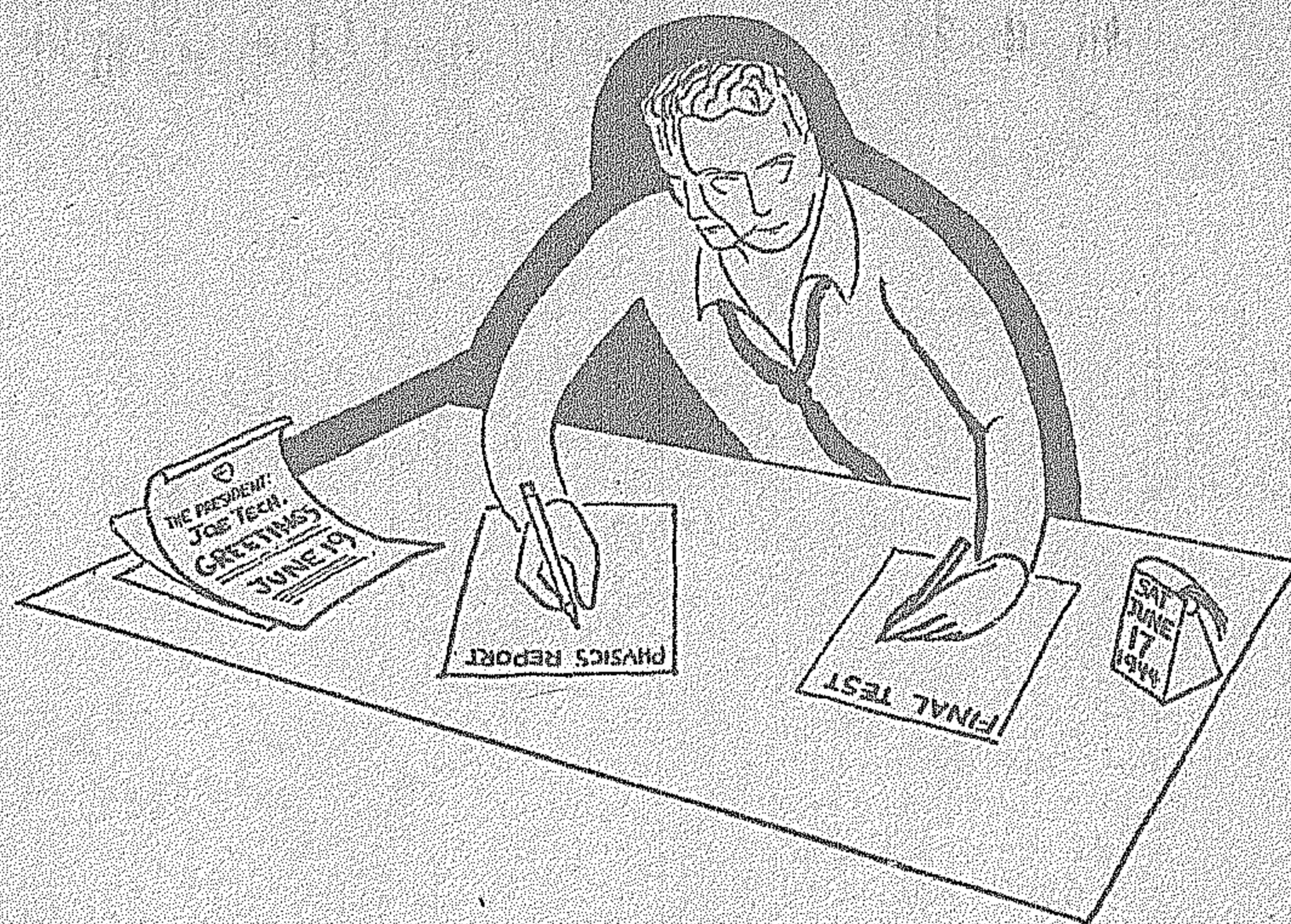
In the administration, too, are to be found some fine men. The deans have always taken a lively interest in student affairs. And no college student could ask for a better president than Henry T. Heald. He's tops in every respect.

To such men as these as well as to John Schommer and Sonny Weissman who have done so much for student activities here, go our sincere thanks.

While we're gone it will be up to the remaining civilians and the navy men to keep things going here. There are many traditions at IIT—newcomers had a chance to observe one of the more vigorous of these during the recent Junior Week—and many of the activities have a long history behind them.

We'd like to know, when we're slogging about in a foxhole or getting seasick, that things are still being carried on here at IIT. And, without entering into the involved politics or finances of the situation, this will only be possible if all of the fellows fortunate enough to remain here get their shoulders to the wheel and get on the ball.

—B. FRIED



During a recent German class A/S Arch Heim was asked by Dr. Fritz Richter to give the English personal pronouns. Heim recited, "I, you, he"; then he innocently continued in his southern drawl, "we, you-all, they."

Clarence "Shorty" Sikorsky, has finally stopped bragging about his two buddies in the service: Shorty's enthusiasm was cut short when further inquiries revealed that his friends are a dog in the K-9 Corps and a jack ass in the cavalry.

Perhaps some one should tell "Two Beer Bojanowski" where he got his new name. It seems that Bojo is unaware of his physical location after he drinks sixteen ounces of his favorite fluid.

Ted Pryst, freshman, claims to have broken a record of some sort last Friday. The box score shows that he was "pantzed" three times during a half hour as part of the Junior Week activities. Said Record Holding Pryst, "It appears that upperclassmen will do anything to get a look at a pair of gams."

Paul Therro couldn't understand why he got "better than expected" results in a compression test of a concrete cylinder. The dawn came when he later discovered that another groups' cylinder had been tested by mistake.

Leonard Brown, beard growing contestant, gave the doorman at the Swedish Club of Chicago quite a shock. Said the astonished custodian of the doors, "They're sure raising the diplomats young these days."

The gleam of delight in the eyes of Danial Mittman will have to be disposed of. Dan was put in a glad mood when he met the daughter of the proprietor of "Bowlium", a bowling establishment. Dan even had the lass keep his score while he bowled in a tournament. But...things are tough all over Dan...Sally is engaged!

Notes on Junior Week:

During our little leg art contest one of the ardent watchers was none less than Seymour Axelrod who was seen with bulging eyes and a satisfied grin on his face watching the proceedings. Seems he does not get around much as he had his avid eye on Marion's shapely pins.

After the faculty-senior game it was noted that the faculty retreated to their nurses and wheel chairs in sheer disgust.

The freshmen were typical as usual and allowed the upperclassmen to show what pigs they were by helping them to wallow around in the mud.

If talent scouts were around Friday of Junior Week we would undoubtedly have lost three good engineers to vaudeville. These lads are now known as the "trepsicoreans".

A diversion from daily routine was provided unknowingly by five of the campus lovelies including the popularity queen Dotty Jacobs. This occurred when they used the lawn in the rear of Chapin for sun-bathing, during their lunch hour. This was all to the delight of the rear window watchers.

Dick Blair has been accepted into the Sacred Order of the Sad Sacks. Blair was immediately made a member when it was announced that he was the victim of a flat tire the night of the Navy Ball. How well did your tuxedo double for coveralls, Dick?

How Hal Leftwich, sophomore chem major, can visit his one and only three times a week is readily explained by the gas coupons his friend's mother provides him with. Some people get all the coupons...I mean breaks.

Speaking of lady-killers, for a small man A/S Sol Rosenthal really knocks the Dance Club dames for a loop. Every Wednesday night would see an almost blank female population were it not for major attraction Rosenthal. Sol may have some trouble keeping all his promises after the war—or is it upon graduating from Middle School?

Physics Professor Rudolph Samuels has devised a new method of keeping his navy students awake during his lectures on hysteresis. Instead of the usual iron core, Dr. Samuel decided to substitute a life buoy.

P.S. They continued to sleep.

Said Don Arenson, Head Junior Marshall as several juniors attempted to drown him with a bucket of water, "They can't do this to me!"

The MA of Quarters 5 has guaranteed his men that their house will be the honor company of this week. He can make such a boast because he has volunteered to lend a helping hand on field day. This should make quite a difference!

—XETER

Research Reports—

Space Charge Limited Currents Applied to e/m Measurement

EDITOR'S NOTE: This column will present each week a brief report of the various research projects being carried on at IIT. Since Technology News is the student newspaper of a technical school, these articles will be of a more technical nature than would be possible in an ordinary newspaper, but they will nevertheless be written in such a manner as to be accessible to the majority of the student body.)

A new way of measuring the ratio of charge to mass of the electron (e/m) is being studied by Burt Fried and Fred Rest, senior physics majors. This quantity is fundamental to work in

electronics, and an exact knowledge of its value is important for many branches of both theoretical and applied physics.

Working under Prof. Paul L. Copeland, Rest and Fried are using the theory of space-charge limited currents. The simplest vacuum tube, a diode, consists of a hot filament, which emits electrons, and a metal plate which attracts electrons due to the fact that its potential is maintained above that of the filament, or cathode.

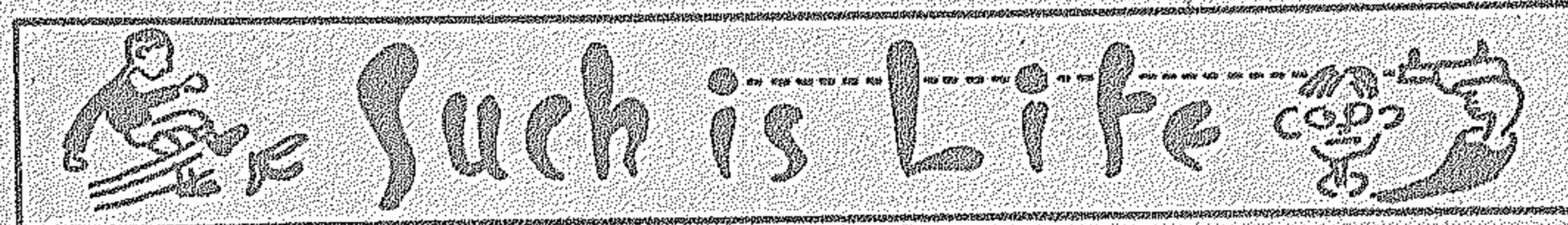
If the plate voltage is great enough, all of the electrons emitted by the filament will be pulled over to the plate. If not, some will be turned back by the negative space charge which accumulates in the space between the plate and filament.

If the plate and cathode are both assumed to be infinite parallel planes, an analytical treatment of the problem can be easily carried through to determine the plate current as a function of plate voltage, provided it is assumed that all electrons are emitted from the cathode with zero velocity. If the plate consists of a cylinder, concentric with a long wire filament (the cathode), the mathematics is more complicated and leads to a differential equation which can best be solved by power series. This case has been completely solved by Irving Langmuir and Karl T. Compton, again on the assumption of no initial velocities.

However, this assumption is not correct, and the results obtained are only approximate. Actually, the electrons are emitted with all velocities, from zero on up. If this fact is taken into account, the analysis becomes considerably more difficult. Assuming the velocity distribution to be Maxwellian, Langmuir and others have worked out a solution for the case of parallel planes. However, no completely satisfactory treatment of the cylindrical case with a velocity distribution has been devised.

Experimental work is generally done on cylindrical tubes because it is much easier to uniformly heat a wire filament than a large metal plate. As stated above, the exact theory of such tubes has not been worked out. Fried and Rest went over the literature pertaining to space-charge limited currents, and then tackled the problem of the cylindrical case. Although they were not able to solve the very nasty differential equation obtained, they have worked out a way of using it to obtain rather accurate information concerning the plate current produced by a given voltage, the geometry of the tube being known.

In this equation the quantity e/m occurs. Since the variables—plate current, plate voltage, and certain other geometrical and electrical factors—can be accurately measured, the equation can be used to find e/m.



Mortimer paused before the threshold of the new mansion. His effect trembling, his lips quivering, and his arms shaking Mortimer gently struck the knocker on the door in three very low strokes, and then quickly stopped as if wishing that no one had heard him or would come to the door.

No one did come.

Fifteen minutes later the brave hand again stretched toward the knocker. Again an unbelievable amount of restraint caused the knocker to emit some very faint sounds. No one answered.

Minutes ticked by. Mortimer wet his lips, bit his tongue and twiddled his fingers.

Glancing at his watch, Mortimer seemed suddenly rushed to new motions. Bracing his chest and inhaling

heavily he shot his arm out to the knocker and brought it crashing down onto the door six times in amazing rapidity. Whereupon he immediately turned and raced down the first four steps in a hope to escape. But by the time he reached the fifth step his fear seemed to have vanished and he reluctantly turned back to face the opening of the door.

Then he stood as in a daze and waited, and waited and waited. In two seconds the door opened and a butler who looked like a cartoonist's conception of "Tug Boat Annie" uttered "Good Evening, sir."

Mortimer clenched his fist and muttered in ever so squeaky a voice "Is Jean in? I have a date with her this evening."

This was Mortimer's first date; but then again, such is life.