



# TECH NEWS

SCHOOL OF TECHNOLOGY

CITY COLLEGE OF NEW YORK

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THURSDAY, APRIL 24, 1958

By Student Fees

## UNIFORM FINALS DROPPED FOR MOST E.E. LABS

This semester, uniform finals have not been scheduled for electrical engineering laboratory courses, with the exception of the measurements sequence.

Professor Froelich, chairman of the department, informed us that the change was an "emergency" measure, made at the request of the registrar's office, because of a lack of space for final exams. Professor Froelich said that when space is available, uniform finals in laboratory courses will be resumed; she feels the last week of the term should be devoted to tying together the term's work and reviewing.

Final examinations in the measurements labs have not been switched to classroom finals, because there are too many sections, and the work is too diversified and packed with material.

In order to evaluate the effects of this change, we questioned several instructors.

We would like to ask whether you would favor such a revision in the measurement labs?

Professor Abramowitz: *I would not favor such a change. It is fairer to the larger number of students concerned to have the same final, because the degree of difficulty is the same for all students.*

Professor Schacter: *It would be advantageous to have the final examination in class because the teacher will then be better able to key the final to the work his class has covered and give more attention to the individual student.*

Since the change in procedure directly affects the communications sequence, what will its effects be?

Professor Taub: *With the examination schedule as crowded as it is now, the change will relieve the pressure on the student who is in the position of being required to take three examinations in one day. The examinations themselves, will be reviewed by members of the department.*

How will the change in final examinations affect the communications sequence?  
(Continued on page 7)

## NORMAN THOMAS TO SPEAK AT COLLEGE UNDER AUSPICES OF TAU BETA PI

By David Katz, Math '60

On Tuesday, April 29, Norman Thomas, six times a candidate for President of the United States on the Socialist Party ticket, will speak at the College on the subject of "World Disarmament."

Part of TAU BETA PI's cultural program, the speech will be given in room 200 Shepard (the faculty lounge opposite the Great Hall) at 5 P.M. TAU BETA PI is the national honorary engineering fraternity.

## Homecoming Day

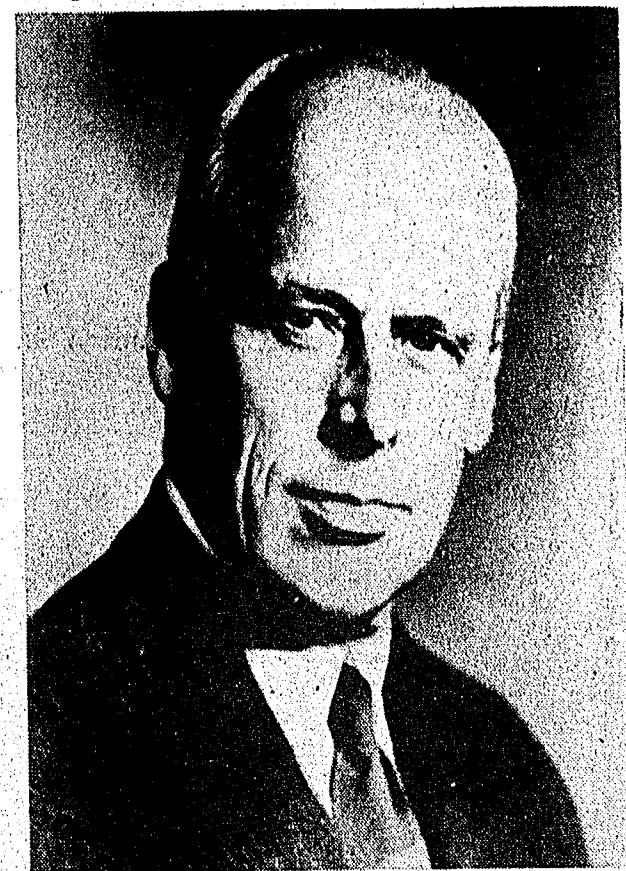
By Robert Kahn

Saturday, May 3, the Alumni Association of the City College will sponsor Homecoming Day; an annual reunion of former graduates where they meet, discuss new endeavors, and most important, revisit the College together.

This year, Homecoming Day takes an added significance, as the new Morris Raphael Cohen Library will be dedicated that same day, at 2 P.M. In effect, this is the main purpose of this year's ceremony. Justice Felix Frankfurter, Class of 1902, present Justice of the U.S. Supreme Court and a good friend of the late Professor Cohen will honor the College by delivering the principal address. Bernard Baruch, Class of 1889, will conclude the program by dedicating the "Baruch Bench," a mosaic marble piece located at the entrance to the Cohen Library.

Although this is the main feature of all Homecoming Day, several other events are scheduled. Every year the alumni hold their reunion on the lawn while partaking of box lunches especially prepared for them by the Homecoming Committee. It is here that the Alumni Service Awards and the Golden Anniversary Diplomas are presented to past alumni by the Alumni Society in recognition of having been a graduate for 50 years. Other events will include a presidential reception in Finley Center, guided tours of the new library, a student art exhibit and a track meet against Farleigh Dickenson.

It is the purpose of the Alumni Ass'n  
(Continued on page 6)



NORMAN THOMAS

ing World War I to promote his pacifist and socialist beliefs. He founded and edited *The World Tomorrow* and was one of the organizers of the Civil Liberties Bureau, which later became the American Civil Liberties Union. He joined the Socialist party because he believed it was the only organization realistically facing  
(Continued on page 7)

# TECH NEWS

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## Emotions as an Engineering Factor

For all our study of the rules of natural phenomena we should never forget that the motivating force behind the development of rational and economic techniques is quite human, founded on emotionalism. Certainly higher wages and status appeal, the greater labor incentives of today, are emotional when analyzed in terms of the human animal.

To an engineer who considers more than the simple how in his planning, the appeal to emotion is a challenging problem. Possibly the most obvious example is the sale of consumer products. Here the direct problem is to encourage sales and indirectly to gratify. Using a necessarily attractive design as a base, the advertis-

## THE PLANNERS OF ECONOMY:



ing people will glorify the item to develop desire and after the sale gratify the customer by convincing him of his wisdom in purchasing the item.

Certainly the most realistic approach to the employment of human beings in an organized economic activity such as a mass production system must consider the laborer's emotional outlook. A favorable situation would be complete empathy between the laborer and management. An unfavorable situation would be the laborer's acceptance of the class struggle philosophy. Well known are management's methods of maintaining a positive labor relationship such as the company centered social life and the suggestion box with its resulting and well publicized bonuses.

A great deal of the development work of the engineer is not dependent upon formula or technique; what formula does one apply to the basic shape of a bridge or the shape of a building? Is there a specific shape for a telephone or an automobile? How can you find the formula for the layout of a cafeteria? The fundamental shape of things people use must be designed by people who recognize people's need for aesthetic gratification.

Whenever the engineer is employed as a manager, he should be aware of the emotional techniques required for the efficient operation of any social organization.

The understanding of the emotional side of man is a difficult study. How many Psychology majors lack the ability to move masses? The ability to understand people is an intangible skill that is developed by some unknown process. One thing is obvious though, no serious student of technology can afford to consider technical knowledge by itself as being adequate for his functioning.

EMERSON RESEARCH LABS, in Washington, D. C., has positions available for graduating E.E.'s and M.E.'s and will interview candidates tomorrow, the 25th, on campus. See Placement Office, F204, immediately to arrange an interview.

## LETTERS

April 11, 1958

I would like to congratulate you and your staff on the editorial that appeared in the Thursday, April 3, 1958 issue of TECH NEWS. If possible, I would like to see the text of the editorial appear in the other school publications. This, I feel, would make the rest of the student body aware of the prevailing opinion of the informed Tech student.

There is one point in your editorial where my opinion differs with yours. You stated that, although you do not favor representation by schools, you advise us to vote yes on the coming referendum. I feel that this would not be a solution to the present mess. Because, if TUC has succeeded in its drum-beating and noise making, then the entire tech student body should come out and rally around its school and vote for representation by schools. And when the next election rolls around, and there still is a shortage of candidates, the general student opinion will still be, "let the other fellow do it." A better system of representation would be twelve representatives from the schools at large, and twelve representatives from the respective classes. This would create a broader field of student interest and opportunity.

As a former member of Student Council, and as a former School Affairs committee chairman, I have had the opportunity to observe that no one individual or group of individuals can combat student "apathy" and disinterest. Only a large group composed of members from Student Government, TUC, House Plan, and IFC can successfully wage such a fight.

I am also glad to see that TUC has no hold over TECH NEWS.

Sincerely yours,

STAN GREENWALD, E.E. '60



## TECH LIFE

With the warm sun shining through our window on the great lawn lounge which is South Campus, we sit here wishing all our profs would forget how to give tests and check homework. And since they won't forget we'll merely try not to remember the test scheduled for Monday or the tons of homework we haven't done. But meanwhile the more aggressive TECH NEWS members have wandered out onto the Great Lawn to hunt women.

Professor George Guerdan, M.E., has been elected by the brothers of Alpha Mu Epsilon to honorary brotherhood. Professor Guerdan will be inducted at the Fraternity house on April 26 at the scheduled Induction Dinner.

Pi Tau Sigma, the national honorary mechanical engineering society, has scheduled its Induction Dinner for April 26 in the Barbizon Hotel For Women. After many years of struggle, the chicken clique headed by Stan Small finally convinced the rest of the members (Dick Labinger held out to the end) to order chicken for the meal.

A few days ago, a cute young thing rushed into our office and pointing out the window, being unable to speak, indicated several cavemen lifting weights on the lawn. Of course we comforted the poor child and explained that the strong men were pledges for Epsilon Nu Gamma, social frat for engineers, namely Marty Braunstein, Dan Fishman, Sam Hollander, Marv King, and Steve Solomon.

So far only two organizations have contacted us concerning our claim as the bowling champs of the School of Technology. Sim '62 and SAME are the only two organizations who believe they can beat us. If any other organization is brave enough to challenge us to a game, we can be contacted any time in our office, 335 Finley.

On May 8th, from twelve to two P.M. in Townsend Harris Auditorium, the World University Service will present a show, "Hidden Talents of the Faculty." As of yet we haven't heard of any engineering instructor volunteering to perform. Those teachers wishing to participate should leave a note in the W.U.S. mail box, or contact Dr. Jeanne Noble or Professor Bailey Harvey.

Aw, come on, don't be shy.

### COMING EVENTS

ASCE — April 24 — Film on Aluminum Skyscrapers.

AIEE — April 24 — Automation and Data Processing Discussion.

All organizations have student-faculty softball games scheduled for May 1 and elections May 8.

ROBERT HAIKEN

## NUCLEAR TRENDS PROPHESED



Someday engineers will have a handbook for industrial uses of radioisotopes, but not before much basic research is logged in laboratories and many applications are demonstrated successfully in manufacturing plants.

This is the opinion of Farno L. Green of GM Research Staff's Physics & Instrumentation Department in an article prepared for the *General Motors Engineering Journal*. He warns against overselling isotopes as miraculous production or processing tools because "industry is only beginning to collect its (nuclear) apparatus and skills."

Up to now, he writes, medicine has made the most significant uses of radioisotopes.

Industry's nuclear progress is necessarily slow, he says, because techniques are still crude, supplies of a variety of isotopes are not abundant and nuclear data is still new and comparatively unreliable.

To some extent, he explains, progress is hampered by the false notion among uninformed people that radioisotopes produce "invisible death rays" and cannot be handled safely. Also, trained specialists to handle them are scarce, and he suggests that young engineers now in school consider nuclear knowhow a vital part of their education.

He advocates a boost in the number of "conventional engineers with some nuclear knowledge" because this would leave such specialists as nuclear engineers and nuclear scientists free to concentrate on basic scientific work in the atomic field.

"Eventually," Mr. Green predicts, "the normal education system will produce a large supply of 'engineers with nuclear knowledge,' as distinguished from nuclear reactor engineers, a specialist breed unto themselves. An engineer with nuclear knowledge probably should not have more than 10 per cent of his nuclear education devoted specifically to reactors — important as they are — because a nuclear reactor is only one of the many atomic devices that may be useful to the engineer in industry."

The problem of putting nuclear techniques into industrial production and processing, Mr. Green writes, is comparable to the problems that once were involved in putting X-ray, spectroscopy, special electronic gadgets and other quality control techniques on the production line.

"First," he says, "they had to prove themselves in the laboratory. Then they moved into the production cycle, but not without some doubt and skepticism as to their reliability and usefulness. . . ."

"Admittedly, possibilities for new nuclear techniques in production are vast. But phasing them into the production and processing area takes time and study, basic research and experimentation . . ."

"In any mass production industry, the plant manager has day-to-day schedules to maintain. If he produces a certain part or small assembly and his mechanized assembly line is operating well enough to meet these schedules, his understandable wish is to leave the line alone.

"He feels no pioneering compulsion to introduce some newfangled technique. After all, in the beginning it was difficult enough to get his overall production cycle debugged.

"Paradoxically, however, automatic assembly and heavy production schedules, anywhere from 20,000 to 100,000 units a day, do present some hazards. An axiom of any high production operation is: 'After you detect a flaw in an assembly, you may have a barn full of bad parts before you can walk over and punch the STOP button,'"

Mr. Green writes.

When a plant manager has trouble, he says, "the engineer or scientist who can solve the problem must be ready on the double to put a new device on the assembly line, a device that assures the manager his production will flow again — flawlessly."

Meantime, in citing examples of current nuclear techniques, Mr. Green reports that there are more than 20 density-thickness gages in use in three GM plants and several radiography installations which use Cobalt-60.

For further development of production inspection processes, more radioactive materials with short half-lives are needed — or a gamma-ray emitter with short half-life.

"For example," Mr. Green writes, "a gamma-ray emitter could be painted on a part moving down an assembly line and used as a 'present-not-present' indicator in the final assembly at the end of the line."

"The half-life would have to be so short that the customer would get none of the radioactivity. Just as important is the fact that the radioactivity would have to vanish soon enough to obviate the storage problem. . . ."

"Some new radioisotopes with short half-lives in 10 to 100-curie quantities a

(Continued on page 8)

## AN INDUSTRIAL ENTITY: CORNING GLASS WORKS

*On Wednesday, April ninth, a group of TECH NEWS writers traveled to the Corning Glass Works in Corning, N. Y. A primary reason for the trip was to study a factory in terms of its environment. The Corning Glass Works because of its position as major employer in the town seemed to be an ideal specimen. The company's affect on the town could be deduced more easily because there were no other major industrial plants in the town itself.*

*The trip was planned with the help of Mr. Schnable, of the College Placement Office. A tour of the varied company properties was organized. We should like to thank Mr. Saunders of the Corning public relations department for acting as our guide and host. We also thank Mr. McCulloch for showing us through the experimental facilities.*

To the worker, the factory may merely be a means of earning money, perhaps notable for its cleanliness and the attitude of its managers. No engineer can possibly imagine a factory as a simple entity when planning for production. The fundamental rule of production planning is efficiency and the pursuit of economic methods. Every aspect of the factory's environment must be considered. For example, it would be ridiculous to build a plant apart from large concentrations of people and make no provision for a labor force. Also, the cheapest means of transportation should be sought and utilized. Quite probably the ideal industrial community could be planned; no structure, no road, and no communications network would be built without regard for the entire industrial setting.

### COMMUNITY SETTING

One can only speculate as to why the glass works ever settled in the town of Corning. It is not Elmira or Binghamton. Unlike Buffalo, it is not located on a great body of water and unlike Schenectady, it was not a major railroad city. Certainly the glass works utilize virtually every bit of available labor in the community, of course, excluding those people engaged in consumer goods and services; the company employs 6000 people in a town with a population of 18,000.

The factories were built along both banks of the Chemung River. The Erie and Lackawanna Railroad built sidings for the plants as the company grew. New York route 17 and U. S. 15 serve as arteries to the factories. The five Corning plants were laid out with no zoning restrictions.

Quite probably the company eventually realized the limitations of the local labor market and proceeded in 1924 to build plants in other towns, namely Central Falls, R. I., Pittsburgh, and Louisville.

The effects, though, of a town having the large bulk of its working force employed by one company are rather interesting. One can only speculate on the individual citizens attitude toward the firm, but there is evidence that the company has an active interest in the town's activities. The company contributes to library facilities, recreational facilities, the community trust, local scholarship funds, and other community services.

So traditional is the glass works' policy of community service that the latest community program is organized on a five year basis.

### PERSONNEL POLICY

The company's labor policy is certainly among the more enlightened in the country. A poster asking for applicants for a trainee press operator was noticed, and the salary quoted was \$1.87 an hour, par for unskilled labor. The union, Local 1000 of the American Flint Glass Worker's Union of North America, has enjoyed the co-operation of the company and each are quite proud of the labor-management relationship maintained.

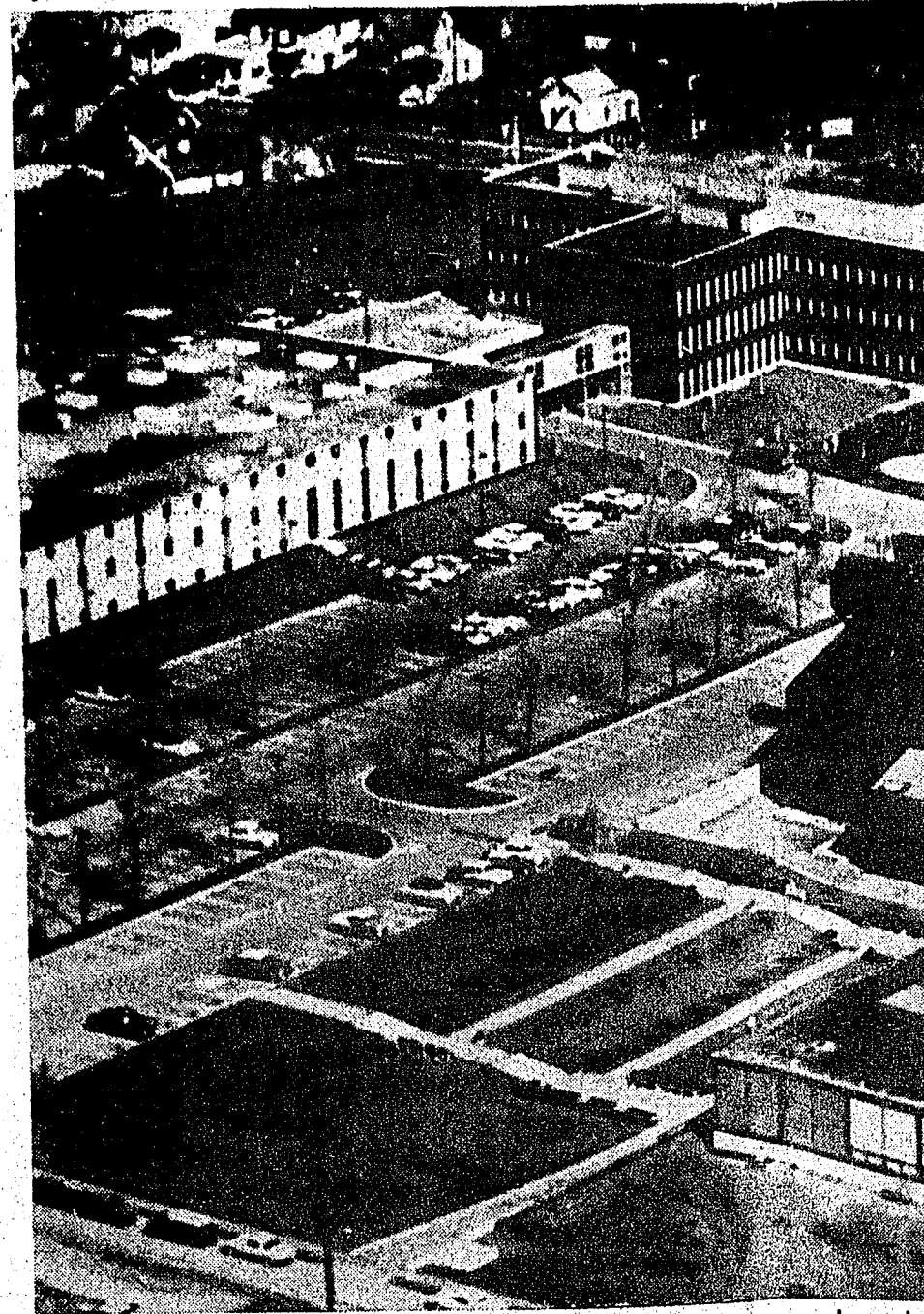
The personnel policies obviously aims to create empathy between the workers and company. The company's own newspaper, *Gaffer News*, is almost a textbook on modern personnel practices. As many individual names as possible are printed in each issue; only a laborer in a large factory can appreciate this bit of individual attention. The newspaper records every worker who has worked for Corning for at least five years and describes in detail the awards given to laborers for clean shops, length of service and useful suggestions presented to the company. Stories are written about workers who are enjoying retirement and about every slight achievement of a Corning employee or close relative. The traditions of the company are emphasized and its permanence and the promise of security are common subjects of company discussion in the paper and in speeches.

The company has built for its employees free bowling alleys and an indoor theatre and basketball court. The highly developed company coordination of recreational activities makes the factory more than a place of livelihood, but a social outlet.

### EFFECT OF HISTORY

The Corning Glass Works in view of its history, cannot serve as an example of the ideally designed production unit. The company was formed in 1857 as the Union Glass Company in Somerville, Massachusetts. After moving to Brooklyn in 1864, the Company finally settled in Corning and changed its name to the Corning Flint Glass Company in 1868. By 1875, when the firm renamed itself the Corning Glass Works, the major products were signalling equipment, Thermometer tubing, and Pharmaceutical glass. The original manufacturing plant was built before the development of the mass production line by auto makers. It is also obvious that there was no need of mass production in consideration of the firm's early products.

It is only in recent years that consumer products have become a concern of the company. This new activity has required the redevelopment of the Corning plant system in terms of mass production techniques. To produce items such as television picture tube bulbs and housewares at the lowest cost the company has set up each factory as a specialist in the manufacture of only one item or a related group of items. The names of some of the branch factories suggest their specialty: Refrac-



This is a bird's eye view of Houghton Park, new research and Corning Glass Center and behind it, the Steuben Factory. At rear and administration building.



tories, Apparatus, New Products, and Vycor.

### FACETS OF PRODUCTION

The Pressware plant can serve as an example of the intensive tooling of the Corning plants. Because of the special nature of the plant's present product, television picture tube bulbs, the plant has a continually replenished reservoir of molten glass. The raw materials are mixed for this supply in a specified ratio of components that form a glass of desired properties.

The plant is an example of the basic rule of mass production, the minimum use of human labor, but quality is insured through constant inspection by trained personnel. Glass products are not easily inspected by machine, although part of the inspection process involves the use of mechanical and electrical devices.

Every production station is coordinated for economical movement. Extensive research has led to the development of machines which form parts with no waste of material. The glass parts are die cast or extruded and the resulting internal faults are eased by fire annealing on conveyor belts passing between banks of flames.

Many specialized conveyor belts were designed especially for the handling of

the television tube shape. Each unit is labeled at production stations, and is inspected by eye, symmetry testing machines, ultraviolet light and hand tapping.

The factory conditions are made as pleasant as possible with ample space between machines, and the heat required by glass working is dissipated by air drafts.

### CONSTANT RESEARCH

Like all modern industrial organizations of any size, the Corning Glass works is constantly trying to perfect existing products and develop new ones. Their record in the research and development field is quite outstanding. In May of 1957 Corning announced that they had perfected a new material, *pyrecceram* a ceramic which is crystalline in structure. It is lighter than aluminum and harder than steel. At the present time it is being used for nose cones on missiles because of its phenomenal resistance to heat. Some of the other crystal products developed recently are a copper-metallized printed circuit board for extremely high temperature use, photo sensitive glass and electrically conducting glass; these are just a few. There have been glasses developed that are strong enough to hammer nails into, and which undergraduate student has not used a pyrex test tube that can be

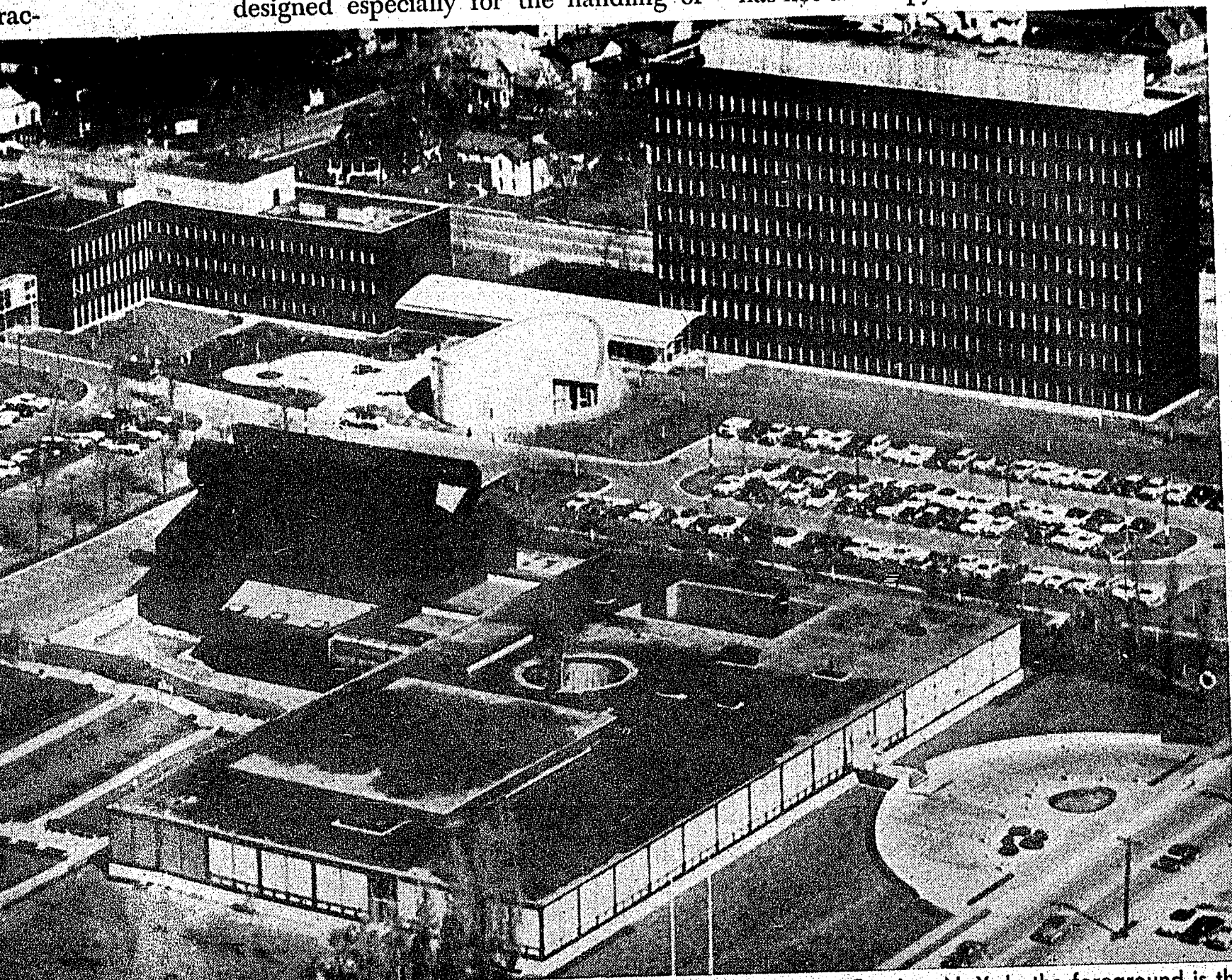
used over a wide temperature range?

To keep up with the demand for better and cheaper products Corning Glass Works has a research and development organization. This team starts with the research and development men in their laboratories. The labs that we were shown at Corning consisted primarily of pyro and chemical labs, but often the equipment resembled those machines and instruments in an electrical or nuclear testing laboratory. Automatic reading potentiometer-pyrometers were evident. Special testing machines, which had to be adapted from the usual types of tensile and flexural testers, are also used. Because of the nature of glass, it can crack easily if it is cut; therefore no type of fixture could be devised to test glass in tension, so a special type of instrument was developed which can measure the glass' strength in flexure, and others to measure its hardness. Methods are so modern that in one of the laboratories there was a nuclear magnetic resonance tester which first irradiates the test sample and then measures the frequency of the return ray to determine the nature of the material being tested. When a potentially useful fact or development is discovered, many tests are run on batches of the substance to definitely determine all of its properties. The tests are run on batches of less than a pound each. When all the facts about the substance are known, it is produced in a trial run plant, which turns out larger batches but still not on a commercial level. Here, applications of the material are tested and it is decided whether they are worthy of manufacture. If they are to be considered, even more tests must be run, because it is quite costly to set up a manufacturing process and find yourself producing something useless.

### DESIGN FOR PRODUCTION

If the newly developed product is to be produced, the research and development team often finds itself in the position of designing the machinery necessary for mass production. This is the largest group of engineers on the research and development staff, and their primary concern is the design and development of machines used in forming and polishing processes.

To test the operation of the machinery and work operations, a pilot plant is set up where small quantities are produced, and all the kinks are eliminated. In 1946, Pilot Plant No. 1 was constructed at Corning, New York to develop manufacturing methods for new products. In 1950 pilot plant No. 2 was constructed at Corning, along with a new engineering building, which makes the labs among the most modern; and in 1957 with changing times and needs, a ceramic research laboratory was established at Corning.



on Park, new research and administration headquarters for Corning Glass Works, at Corning, N. Y. In the foreground is the Steuben Factory. At rear (left to right) are the development workshop, research laboratory, reception lobby and cafeteria,



# IRE CONVENTION

By Arthur Biederman and  
Allen Golden

New York played host to the annual meeting of the Institute of Radio Engineers, from March 24-27. The convention was held at the Waldorf Astoria Hotel and the New York Coliseum. The main attraction of the convention was the show at the N. Y. Coliseum.

The exhibits this year had somewhat of a different format from those shown in former years. Companies advertised their products in a "living catalogue" sort of presentation.

Another change in this year's convention was that fewer companies conducted job interviews. This affected many June graduates who often take advantage of these interviews. Of course, the trend in the national economy since last summer serves as the explanation.

Other effects of the recession were obvious. Attendance was not as good as some exhibitors might have liked, and there was a great deal of selling pressure.

Probably the first thing noticed when looking at the exhibits was the emphasis on transistors. There were transistorized power supplies, pulse circuits, computers, and whatever else you might name. In the field of transistors themselves the silicon transistors were much more prominent than the germanium variety.

The field of digital and analog computers was well represented. To demonstrate the versatility of the analog computer an exhibitor fed a step function into it, and then under, over and critically damped the output. This particular model was a high speed device and showed the response on a large oscilloscope. In an exhibit by Electronic Associates Corp., I.B.M. cards were fed into a computer that operated a drawing instrument which very accurately reproduced a suspension bridge with all its intricate details.

Another function of the convention was that of a forum for the presentation of papers on a wide range of subjects. These lectures were generally over the head of students. For example, "The Effects of Pulse Shape and Frequency Separation on F.S.K. Transmission Through Fading" or "Applications of Topological and Group Concepts to Circuit Theory." This writer decided to attend one lecture. "Choosing General Systems" appeared to be the simplest one. The more interesting of the two papers which comprised the lecture was on the subject of digital computers as applied to language translation, in particular Russian, for technical

purposes. A talk was given by Mr. G. A. Shiner of the Rome Air Development Center. Emphasis was placed on a new memory device now being perfected, and its possibilities. Rather than using ferrite cores or magnetic tape, it uses transparent plastic discs, similar to phonograph records. It should be in operation within three years.

The four large floors of exhibits included radar equipment, counters, computers, many different types of meters and do-it-yourself kits. There were enough pamphlets and brochures to keep the home fires burning for a year. In short, there was practically every engineering product on the market, but no seat to rest your tired feet.

## Homecoming Day

(Continued from page 1)

to allow these distinguished past graduates to keep in touch with each other and the college as much as possible. It is their hope that future graduates will become members of the Alumni Association and preserve the spirit and brotherhood of City College after graduation.

## SPORTS . . .

(Continued from page 8)

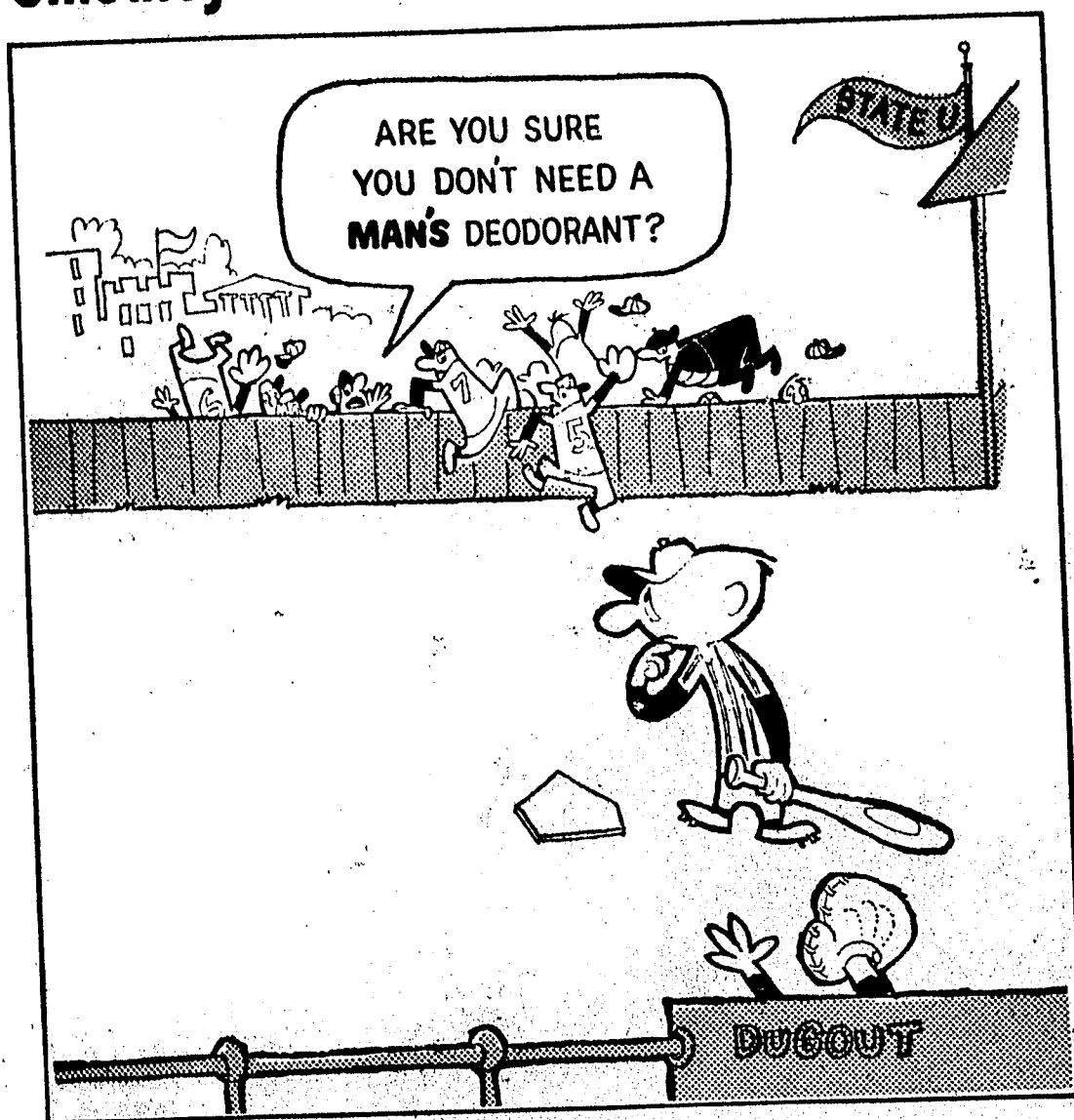
from being overtaken, however. He totalled 18 points while Jack Stein scored 24. Rosenfeld and Marek scored 26 and 15, respectively, for ASCE.

The Standings: AIEE 7-1  
AICHE 5-4  
ASME 3-5  
ASCE 2-7

Tonight: AICHE vs. ASCE  
AIEE vs. ASME

MORTON COHEN

## Smedley



Mennen Spray Deodorant for Men keeps on working all day long—working to prevent odor, working to check perspiration. For this non-stop protection, get Mennen! 60¢ and \$1.00



**WIN \$25!** For each college cartoon situation submitted and used! Show how Smedley gets the brushoff! Send sketch or description and name, address and college to The Mennen Company, c/o "Smedley", Morristown, N. J.

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**NORMAN THOMAS***(Continued from page 1)*

the problems of war and the need for economic change.

The height of his influence, and that of the Socialist Party as a political party, came in 1932 when, running against Roosevelt and Landon, he polled nearly a million votes. Since World War II, Mr. Thomas has campaigned for world disarmament—with international control and inspection—and against both “get tough imperialism” and appeasement of Russia.

Norman Thomas' speech will be the concluding cultural event of the semester in the Tau Beta Pi series of events of social and cultural interest. Other programs held this term to fulfill TBP's aim of fostering a spirit of liberal culture in the engineering colleges of America have included a film on Buddhism and a lecture on modern art by Dr. Norman Schlenoff of the English Department. Because of this sort of initiative, the C.C.N.Y. chapter was runner-up in last year's National Tau Beta Pi Association annual contest to choose the outstanding chapter in the nation.

**E. E. Lab Finals***(Continued from page 1)*

tion procedure affect the power labs? Professor Hunt: *I don't think that there will be any difference except as to the time and location of the final examination.*

To round out the picture we asked some of the students how they feel about the change?

Herb Elkins LS5: *I think the change is for the best, because it breaks up studying for final examinations. One disadvantage that I can see is that if one question on the uniform final is not appropriate it is up to the individual instructor to judge whether to grade it or not. Now the instructor will feel justified in scoring all questions.*

Jerry Goldman UJ5: *The teacher will be able to key his exam to what the class has covered.*

*If I might voice an opinion, I would like to defend uniform lab finals. I believe that they should be given so as to make the course more uniform in nature. All classes are expected to have covered the same material, and should be held responsible for such. It will not be fair to those students whose teachers make up a relatively hard exam to lose a grade because of this, while another student who has not worked as hard, and doesn't know as much receives a higher grade. I am not trying to intimate that a grade in a course is the only thing of importance, but let us not be so blind as to close our eyes to the fact that it must hold a rather important position.* HOWARD WHITE

**ASCE at Bethlehem Steel**

The American economy is often measured by the activities of certain large companies—one of which is Bethlehem Steel.

During the spring vacation, the College chapter of the American Society of Civil Engineers traveled to Bethlehem Steel's Pennsylvania plant to see how the steel industry is doing and what the future holds.

The first indication of conditions in Bethlehem, Pa. is what is not seen. The usual smoke-filled skies above a steel plant are not in evidence as only a few of the tall chimneys are in operation. When ASCE arrived at the plant, they were shown a film about steelmaking. This film provided a contrast with the actual operations being carried on at the plant.

Pig iron for steelmaking is produced in a blast furnace. Usually, there are seven blast furnaces in operation at the Bethlehem Plant; at this moment only about four are in use. After the pig iron comes from the blast furnaces, it is processed into steel, ninety per cent of which is made in open-hearth furnaces. ASCE toured through one of the buildings where the open-hearth furnaces are; only one-half of the furnaces were in operation.

Two of the five buildings ASCE went through were completely deserted. No workers were seen; tools lay unused; machines were stopped—these were the rolling and structural mills. It is here that the steel is shaped and formed. In the fabricating shops where the structural steel is cut, work is about fifteen per cent below normal. The automobile industry uses a wide variety of alloy steels. For that reason, Bethlehem has felt the current slump in automobile buying by the public, as automobile manufacturers are being stocked up with unsold cars. Because the Bethlehem Plant is not working at full capacity, three thousand workers have just been laid off and more lay-offs are planned.

All this may sound very depressing, and comforting to pessimists. However, prospects for an improved situation are very good. The new highway program will create a large demand for steel for use in highway overpasses and in reinforced concrete. Also, increased construction of homes and buildings will create a demand for more steel. At the moment, a large number of workers are being used to prepare the structural parts and members for the new Time-Life Building being erected opposite Radio City. In addition to supplying steel to other construction firms, Bethlehem often does the contracting work itself. The steel in the Golden Gate Bridge was rolled, fabricated and erected by Bethlehem. Expecting an upturn in

business, Bethlehem is enlarging and remodeling several of its furnaces.

Like the other steel producing companies, Bethlehem Steel needs engineers of all branches in its work. An employee at Bethlehem can take part in informal training or in graduate work on a term basis. The members of ASCE were all impressed by the size of the plant and were treated to an excellent lunch at the Bethlehem Steel Club, a country club for the foremen and supervisors.

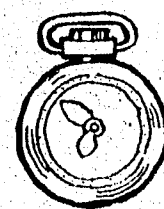
BRUCE PODWAL

**BLOOD DRIVE**

The C.C.N.Y. blood bank drive for donors is now in progress. Booths where students may register are located opposite Knittle Lounge on the North Campus and opposite Finley 151. A student giving blood becomes a member of the bank and can receive blood for himself or his immediate family whenever needed. Those under 21 years old must have parental permission to give blood.

The 19th annual House Plan Carnival will be held, rain or shine, on Saturday, May 3rd, at 8 P.M. The carnival theme this year is the Brussels World's Fair, which will be duplicated in miniature, by booths on the south campus lawn. The evening will include dancing, 40 booths and a musical comedy show. The carnival queen, chosen that night, will be flown via Pan American World Airways to Brussels this summer. Tickets are now available in the House Plan and Student Government Offices for \$1 per person.

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## SPORTS

In one of the season's most thrilling slide rule league basketball games, ASCE beat AICHE 62-61. The outcome was in doubt until the very last second of play. Dick Marek led both teams with 27 points while Aaron Fierstein of the losers scored 22.

The contest began with Marek and Charles Morfopoulos scoring quick jump shots for the CE's. Stan Arrow's driving and playmaking kept the Chem E's even. The Civil Engineering team then executed some clever plays which put them ahead by as much as 11 points. As soon as a Chem E. took a shot, they had a man run ahead of the pack to receive a football type pass and score a layup. This play was successful because of Dick Marek's rebounding, which was very strong throughout the game. The half ended with ASCE leading 34-25.

The second half saw AICHE steadily cut into the CE lead. With Jay Simon Fierstein and Arrow leading the attack, the lead was down to one point with a minute to go. The Chem E's Ron Rotherberg then scored an outside one hander to put his team in the lead for the first time in the game. Sol Korman, of ASCE, scored a jump shot while Arrow put in 2 foul shots to keep the Chem E lead intact. With 34 seconds left, Korman drove through the entire Chem E. team to put the CE's on top again. The Chem E's missed their shot but walking was called on ASCE and the clock showed 5 seconds left. For the last shot in the game, Aaron Fierstein threw up a pumping one hander from 10 feet out. The ball hit the top of the rim, came down, hit the rim again, rolled around and fell out. As it did, the whistle blew ending the game.

This marked the fourth consecutive loss for the Chem E's who had been undefeated until they ran into this losing streak. The MEE-ASME was not played because neither team had five men.

The previous week, ASME beat AICHE 63-56. Aaron Fierstein led both teams with 22 points. Joe Bernardo of the varsity led the ME's with 15. The lead changed hands several times with the Chem E's on top at the intermission 28-27. Stan Arrow and Herb Frank aided the winners with 15 and 14 points, respectively. Ed McGrabe scored 14 for ASME.

In the second game MEE beat ASCE 70-67. With Dave Newmark's set shots and Jack Stein's pivot play the EE's got off to a 33-21 half-time lead. Led by Larry Rosenfeld, the CE's whittled the lead down to 2 points. Larry Seciniaz's fine all around play prevented his team

(Continued on page 6)

## Nuclear Trends . . .

(Continued from page 3)

day are needed. They must be produced at locations not subjected to shipping delays by weather conditions, if they are to be used in the production processes," Mr. Green explains.

Unfortunately, he adds, in applying nuclear techniques, the physical principle may be ingenious, and the mechanical design inventive, but if the instrumentation doesn't function reliably every minute of the production shift, the whole technique might as well be stored in the library on Mars.

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