

Junior Formal Bids Offered On New Plan

For three years the class of 1941 has waited for an opportunity to give the school a real party. And now with the announcement of the time and place of the Junior Formal, it seems as though their long wait has ended.

Bids Are \$5.50

As was stated a few weeks ago, and as shown on the posters in the Union Lobby, the Junior Formal will be held on Friday evening, March 29, in the Bal Tabarin room of the Hotel Sherman. The price of the bid for this dinner-dance is \$5.50, the same as it has been in previous years. For those who have already taken advantage of the "installment plan" this figure is being rapidly reduced.

Designed by Arx

So far, more than fifteen students have plunked their 50 cents down as each week rolled by. With each Thursday noon, the time payments are accepted, more students sign up for this way of purchasing their bid. The details for the Formal are being worked out rapidly. The bid itself has been designed by the Arx, and will add a definite Formal touch to the affair. Arrangements for the renting of tuxedos are almost complete, and in a few weeks measurements will be taken of those who want to rent their formal outfits. These outfits will include all accessories—that is, all but the shoes.

Radiomen Get New Antenna

With an enlarged membership and new equipment, the Armour or Epsilon chapter of Rho Epsilon radio fraternity has formulated plans for this present semester. The purpose of the fraternity is to promote interest in amateur radio and to present all amateur radio operators at Armour with a medium of expression.

Contact Difficult

Although the efforts of the members have been characterized by perseverance, still they have not been successful in regard to communication with the Byrd Expedition. Ferranto, marine operator with the Snow Cruiser, has been attempting to contact "hams" in the vicinity of Chicago. He has contacted several amateurs, but has been unable to reach the radio station of the Rho Epsilon club at Armour.

Since the erection of a three element beam antenna, with assistance of the Research Foundation, hopes have run high for connection with Byrd's Expedition. According to Julian O. Leonhardi, president of the club, the operators of Rho Epsilon should start communication with Byrd any day now.

Another project of the Radio Club concerns the National Intercollegiate Press Association. The purpose of the N.I.P.A. is to exchange interesting college items for the college newspapers, through the medium of the amateur stations established at their colleges.

Schools Cooperate

A network has been organized to fulfill the purpose of the N.I.P.A. by the Rho Epsilon chapter here at Armour. Under the direction of Sigmond Mentzel of this chapter, the network has been enlarged to include nine college and university stations. Among the stations are ones at Ohio State University, Washington State, University of Washington, Montana State, and Michigan Tech.

The equipment of the fraternity includes a twenty meter phone and a forty meter telegraph, two prized possessions. Under construction at present is a 25.0 watt all band transmitter, which will be a valuable asset.

Although the club recently initiated seven pledges to increase its membership to twenty-five, it still hopes to enlist more amateur operators or those interested in radio work. The more erudite members of the club are willing to instruct those interested in the art of radio operating.

S.A.M. Group Hears Talk by Blaine Hoover

Expounding the essentials of government employment, at the S.A.M. meeting last Friday morning, Mr. Blaine Hoover, the speaker, pointed out the fact that the government, being our biggest business, is consequently our largest single employer. Our government is a business in which everybody is a partner. Exclusive of work relief, eleven percent of wage workers are in public service. Fifty-seven percent of the Federal, thirty-six percent of the state, and fifty-six percent of the municipal operating budgets, are utilized to pay government employees.

Federal Jobs Increase

Government employment has been constantly increasing. In 1830 there were only 20,000 employed while in 1937 there were 1,202,000. The increase was gradually throughout these years except in 1933 when there was a slight drop. The population is now twelve times as great as it was in 1830 while Federal employment has increased sixty times. This increase is accounted for by the increase in governmental functions. Once installed, few government activities are ever relinquished. Enterprises involving social welfare have to be undertaken by the government. Government services have also been increased to include such new fields as automobile inspection, smoke elimination, and crime prevention. In all these activities the engineer is indispensable and is ever present.

Demands Increase

Engineers are now also being drafted for important executive positions where previously only attorneys were given consideration. This of course means that the engineer must deviate from his fixed course and incorporate social studies into his studying. The failure of many engineers lies in the fact that they can not work with intangible material.

Public service has dropped for two main reasons: the lack of prestige, and the failure to set standards. This in turn is caused by misunderstanding.

(Continued on page four)

Harold Davey Gives Talk at S.A.M. Meet

Dr. Harold W. Davey, legal eagle of the social science department, gave a brief one-hour chat at a dinner meeting of the Chicago chapter of the Society for the Advancement of Management, which was held at the Electric Club on February 20. Dr. Davey, who has specialized in the field of labor relations, spoke on "Recent Developments Under the Wagner Act."

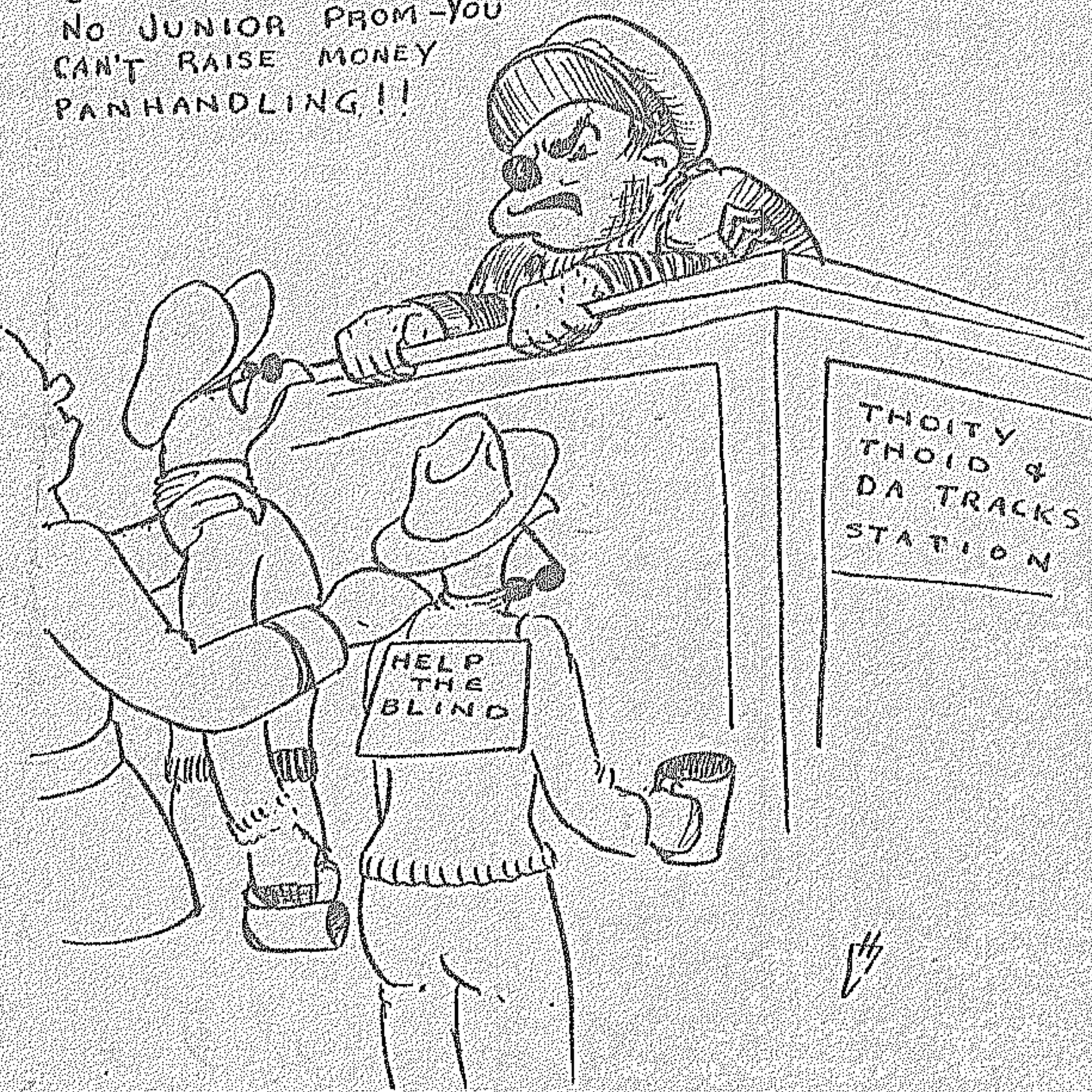
Pointing to the fine examples of Great Britain and Sweden, the Armour social scientist regretted the necessity of having a Wagner Act to guarantee the rights of collective bargaining and organization, already provided for under numerous other laws. The Swedes and the English, having had a longer history of labor relationship, need no such acts to guarantee labor's elementary rights.

No Amendment Needed

No fundamental changes, either substantive or procedural, are deemed necessary in the Wagner Act by Dr. Davey, nor should any amendments prescribing unfair practices for employees be added. The "Coercion From Any Source" amendment and its kin would, in the opinion of the speaker, restore labor to its pre-Wagner Act inequality with respect to employers.

All the union excesses should come under local, civil, and criminal jurisdictions, thus avoiding the creation of a "tremendous labor policing bureaucracy." It is professor Davey's contention that after our labor and capital groups become accustomed to dealing with each other collectively, the need for the N.L.R.B. will diminish.

JUNIOR PROM OR
NO JUNIOR PROM—YOU
CAN'T RAISE MONEY
PANHANDLING!!



Talk by Calkin On "Space" to Be Given Friday

In room 105 Chapin Hall, Friday morning from 10:10 to 11:00 Dr. John W. Calkin Assistant Professor of Mathematics will deliver a paper entitled "Spaces with Infinite Dimensions." Professor Calkin intends to develop the concept through the exposition of analogies dealing with two and three dimensional spaces. Though the lecture is to be devoted principally to the treatment of this thesis in the form of pure mathematics, it is expected that applications will be given considerable weight, particularly with reference to Modern Quantum Theory Mechanics, and to the prediction of frequencies of lines in spectral bands of heavier elements and compounds. To date the extension of the Bohr and subsequent theories to these molecules, has been delayed because of inadequate mathematical tools.

One of the outstanding authorities in the field of Space Geometry, Dr. Calkin has had papers published in the "Transactions of the American Mathematical Society and a series of notes for the National Academy of Sciences.

Frosh Support Hockey Group

Clarence McDonald, newly elected president of the freshman class, opened the freshman class meeting held last Friday with a discussion of Dr. Davey's freshman hockey team. The class voted unanimously to support the team and seek funds from the A.T.S.A. Board for equipment.

Then followed a spirited discussion on the subject of green hats. After much discussion a movement was made to appoint a committee to investigate the cost of green hats. Bill Lease was appointed chairman of the committee.

Will Don The Green

Preliminaries on the forthcoming Freshman Dance were given an airing. The chief point of this discussion was the selection of an approximate date for the coming out of the green. The matter was put to a vote and St. Patrick's Day was chosen.

A report on the partially completed plans of their dance was presented by John Peterson, social chairman. At present the affair will be held at the Knickerbocker Hotel on the 26th of April. Following their policy of "bringing out the green" the committee has chosen an attractive bid in the green motif. Selection of the orchestra is pending a decision between Peevee Johnson and Pearson and Hall.

The meeting was concluded with a brief discussion of plans for the spring rush.

Gus C. Mustakas Enthralls Audience At Concert Friday

Expertly directed by Mr. O. Gordon Erickson, the Armour Musical clubs delighted a large audience with their sincere performance at the Goodman Theater last Friday evening. Under lighting, blending to the mood of music and voice, soloists stood out as capable artists and at every opportunity the audience demonstrated its appreciation of the varied program. Numerous comments were also heard complimenting the staging as handled by Wallis Smith and Ade-Rolfe Floren of the Art Institute.

Many Soloists

The program opened with the stirring overture *Orpheus* by Offenbach consisting of short solos by George Frost with his clarinet, Peter Woods on his oboe and Bill Mashinter and his violin. Perhaps the violin solo "Czardas" by Gus Mustakas was the hit of the evening, but the audience seemed to be unable to choose between the capable renditions of Bernard Domenz and Robert Hamman, or Harold Doolittle and John Segner. In *Glorious Forever*, *The Silent Violin* and *Great Is Jehovah* the ensemble showed to advantage the work of both Glee Club and Orchestra. Even after the husky strains of *Alma Mater* officially closed the performance, no great rush for exits was apparent, for the audience seemed to want the affair to last all night.

Father and Son Banquet Set for Saturday, April 13

Last Thursday afternoon the A.T.S.A. met in Sonny Weissman's office to discuss sports and a major social event, the Father and Sons Banquet. It was decided to hold this banquet on April 13, in the Student Union restaurant where a capacity crowd is expected. Charges will be \$1.00 if tickets are purchased in advance; \$1.25 at the door.

In the matter of letter award standardization, the following was decided: First awards will be yellow on black, second awards will be red on gray sweaters. After the decision the major letter awards were voted to Sherer, Markus, Shiwa, Sher, Schmidt, Fahey, Ludakas, O'Connor, and Lurz. Minor letters were voted to Brierly, Sieg, Carey, Herring, Barret-Smith, and Futtner.

Further decisions were as follows: Weissman was appointed Assistant Athletic Director, intramural bowling was established as a sport, hockey stands as an informal sport, horse shoe pits are to be constructed before spring in the open space behind Chapin Hall.

New Foundry Nearly Ready

At the south end of the Armour campus stands the new partially-completed foundry lab, which is being built to house a project by the Wetherill Manufacturing Company of Philadelphia. The purpose of the research, which is to be conducted there, will be to develop a process of die casting of cast iron by a method known as the counter gravity-flow system. The method may be operated at relatively low pressures.

In the present arrangement there will be a series of dies mounted on cars so that they can be moved over a pressure pot which will be fired by burners produced by the Surface Combustion Company. The temperature is automatically maintained at a constant. The molten metal will be produced in a Whiting eupola.

The dies will be constructed with interchangeable liners so that it will be possible to try a large variety of metals in order to determine which one best resists the heat. Upon completion, the dies will open automatically and eject the casting while still at a high temperature. The rate of cooling of the casting will then be controlled. By this method it will be possible to obtain the type of cast iron desired.

Work was begun on this building approximately 3 1/2 months ago, and if everything runs smoothly it is expected that it will be completed within 60 days.

Spectrum Lab In Sub-Physics

In the near future some of the Physics Research Laboratories will be moved to the basement of the Physics building. Three or four rooms have been cleaned out and are now available. After a few walls have been inserted there will be three rooms of considerable size. This space will be used for the most part by Dr. Cleveland and Dr. Murray. One room will contain the apparatus for Raman Spectra Analysis which is now located in a temporary lab on the second floor of Physics building. This work has been going on for almost a year. However, because of the many vibrations from the traffic on the stairs and other interference from the railroad, it has been decided to move this lab to the basement where the vibrations will be of less intensity.

New Wave Apparatus

Another room in the basement is to house valuable infra-red equipment which is now being constructed for our school. This apparatus will contain two prisms polished down to the nearest 0.00001 cm., and its assembly will take four months. The prisms are to be made of sodium chloride and potassium bromide respectively, which necessitates a watertight coating that will absorb none of the infra-red heat waves.

A varnish of pyroxylin and amylacetate in dilute solution will suffice. Outside of these prisms which form the most expensive part of the whole machinery, the setup calls for a perfect, parabolic reflector, two galvanometers of 0.0000001 volts sensitivity, and a thermocouple.

Involved Theories

Dr. Murray of the chemistry department and Dr. Cleveland of the department of physics have been partners in the investigation of atomic structure by means of these methods for a long time. By very involved theories it is possible to deduce different conclusions about atomic structure through a consideration considering the intensity and distance between the lines in the spectra.

Last Thursday Dr. Cleveland left for New York to attend the meeting of the American Physical Society which will be held from Feb. 22-24. At this meeting there will be a symposium on molecular structure which is of great interest to Dr. Cleveland. He will read a short paper on "Raman Spectra in Acetylenes." An abstract of this will be published in "Physical Review."

Bailey Stresses Responsibilities In Engineering

"Engineering is the economic application of science to social purposes."

Such is the latest definition of engineering as quoted by Mr. A. D. Bailey, chief operating engineer of the Commonwealth Edison Company. Mr. Bailey spoke before a general assembly on night school students last Tuesday evening, on the "Responsibilities of the Engineer."

Social Knowledge Needed

His talk was an emphasis on the "social purposes" in the definition. Because of this, he said, the aspects of engineering have grown broader, especially during the last decade. An engineer now can work much better if he has a working knowledge of the social sciences, since it is his business to see that the technological improvements made are applied for the comfort of society. Many inventions these days have possibilities in so many directions that damage might be done unless their uses are carefully supervised. This is the job that confronts the engineer today. A solution of such a problem must come from knowledge in fields apparently foreign to engineering.

Instructor At Lewis

Mr. Bailey is a graduate of Lewis Institute, from which he received an M. E. degree in 1903. He was a night school instructor there for five years. He went to Commonwealth Edison Company in 1906, with whom he has been ever since. He has been their chief operating engineer since 1936.

At present Mr. Bailey is Vice President of the A. S. M. E., and is an active member of several of its committees. He is also a member of the National Electric Light Association, the Edison Electric Institute, the W. S. E., and several other well known organizations.

Hand Books To Be Awarded A.S.M.E. Student Speakers

Competition for student speakers to represent Armour at the convention of the student branch of the Midwest A.S.M.E. will begin at the next meeting of the Armour branch next Friday, March 8, at 10:00 A.M. in Science Hall. A student speaker will be chosen to represent Armour at this convention. Prizes amounting to approximately \$100.00 will be offered.

The Armour chapter will award several valuable books to the winners of the local competition. Some of the books to be awarded are "Handbook of Engineering Fundamentals" by Esback, and "Diesel Engineering Handbook" by Morrison.

Talks will be of fifteen minutes duration and will be judged by the A.S.M.E. members in attendance. Those who are planning to compete are requested to see Leon Epstein, a senior mechanical.

Dr. Poulter to Be Home Soon

According to a radiogram received last week, Dr. Thomas C. Poulter has been relieved as commander of the Byrd Antarctic Snow Cruiser by Dr. F. A. Wade. Dr. Poulter is now somewhere in South America en route for the United States.

The message, probably sent by Dr. Wade, was received in Washington, D. C., at the Army radio station. From Washington it was relayed by Commander English to Armour Institute.

Byrd's Snow Cruiser is now at West Base in the southern polar region. The fluid in its hydraulic steering and lifting mechanism has been changed and the craft is now ready for the low temperatures. The tail section is being welded back into place by Clyde Griffith, chief mechanic. (Continued on page four)

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Courtesy

It has been called to our attention by a number of students that courtesy on the campus is definitely on the wane. Not only is discourtesy to be found in the classrooms, but in the halls and in the washrooms. In a great many classes the usual constant undertone during a lecture has increased at an alarming rate during the last few months until students find necessary such expedients as cupped hands over ears in order to follow the lecture. A remark by one distressed pedagogue has become legendary since the start of this semester, "You can use as many ponies as you like on my examinations, but please pay attention in class!"

We have noticed a decided increase in those impromptu wrestling bouts in the Student Union washroom and have noted that many of the participants are sophomores, who are generally supposed to know better. Perhaps these same students are the ones who create the sound effects for the "thundering herd" in the halls of Chapin while classes are in progress.

We certainly hope that these and other breaches of the laws of courtesy (disturbance in the library, included) are just passing fads among certain students, but our better judgement tells us that it is more completely a case of general laxity and indifference on the part of the student body.

Accoustics

While we listened to the musical club concert last Friday, we debated why it is that the clubs always sound so much better at the Goodman Theater than they do in our own auditorium. The answer came to us in one word—acoustics. Our auditorium has seen much improvement in looks and equipment during the last year and is now the proud possessor of an up to date P. A. system with all the fixings including a lapel microphone. The only hitch is that with all the improvements, the auditorium still drags its old fetters of unfavorable acoustics, manifested particularly by an annoying echo. The reverberations produced by a musical performance in the Student Union are painful to the listener when the auditorium is only partially filled, the effect lessening only slightly when a great number of human bodies provide a measure of sound absorption.

The reverberation is so pronounced when the amplifying system is used that two of our most recent speakers in general assemblies, both of them experienced in the use of P.A. systems, refused to use the help that the unit offered them because of the disturbing effects produced.

As a step forward in remedying this situation, we suggest that our world famed Research Foundation be engaged to do a little home work. Surely our sound experts could be persuaded to make a sound survey of the auditorium and report what changes would have to be made. Our experience in such matters, though slight, tells us that a 100 per cent improvement would be accomplished by hanging plain wall coverings at strategic points. What do you say, researchers?

"The Slipstick"

Cleave to "The Slipstick"; let
the Slapstick fly where it may

Hi muh hearties! Swell day ain't it. Only 15 days till Easter vacation or didn't you guys know? And only 93 days till we get out for summer or rather till we get out for the ten days between then and summer school. Aw goshalmuddy I got spring fever already.

I see no evil, I hear no evil, I speak no evil; gee, but I'm a sissy.

Prof. Oldenburger: Wake up that fellow next to yov Martiniak.

Leo Martiniak: Aw gosh, Prof, you do it, you put him to sleep.

"Did your husband use to do crazy things when he became intoxicated?"

"Goodness, no! He married me!"

"James, is my wife dressed?"

"No, sir!", promptly.

"You're fired!"

Reformer: "Stop, do you think a glass of that vile stuff will quench your thirst?"

Howie Young: "No, sir, I'm gonna drink the whole jug."

A sugar daddy is just a simple form of crystalized sap.

There once was a maiden of Siam,

Who said to her lover, young Kiam,

"If you kiss me, of course

You will have to use force—

But God knows you're stronger than I am!"

If all the college boys who slept in class were laid end to end they would be more comfortable.

It's an ill wind that shows no pretty knees.

To a bottle:

'Tis very strange that you and I

Together cannot pull;

For you are full when I am dry,

And dry when I am full.

Father—"Did you give Rita that copy of 'What Every Girl Should Know'?"

Mother of Coed—"Yes, and she's writing a letter to the author suggesting the addition of three new chapters."

Swedish cop: "Pull over there, where in H-I do you think you're going?"

Doctor: "I'm a physician."

Cop: "I don't care if you are going fishing, you're coming along to the station with me."

A small boy was leading a donkey past an army camp. A soldier, looking for some fun, asked: "What are you holding onto your brother so tight for, sonny?"

"So he won't join the army," the youngster retorted without pausing.

A town girl, staying in the country, became friendly with a young farmer.

One evening, as they were strolling across a field, they saw a cow and her calf rubbing noses in affectionate fashion.

"Ah," sighed the farmer sheepishly, "that makes me want to do the same."

"Well, why not," said the girl calmly; "It's your cow, isn't it?"

A customer sat down at a table in a smart restaurant and tied a napkin around his neck. The scandalized manager called a waiter and instructed him to, "try to make him understand as tactfully as possible, that that's not done."

Said the thoughtful waiter to the customer: "Pardon me, sir. Shave or haircut, sir?"

She: "I just saw Dot walking down the street with her new evening gown under her arm.

He: "Don't tell me the styles have come to that."

MORE CORSETS

A bewildered man entered a ladies' specialty shop. "I want a corset for my wife," he said.

"What bust?" asked the clerk.

"Nothin'. It just wore out."

"I've finished with that girl."

"Why?"

"She asked me if I danced."

"What's so insulting about that?"

"I was dancing with her when she asked me."

REGULAR MEALS

In the early days in the Northwest, farmers and homesteaders had a hard time.

Said a homesteader to a storekeeper one day, "Gimme a slab of bacon."

"Big or little slab?" inquired the storekeeper.

"Biggest slab you've got. I've eaten so many cotton-tails and jackrabbits that everytime I hear a dog bark I run under the porch."

I know! I know! I'll be seeing you.

Oh Mia!

Fraternity Notes

THETA XI

Theta Xi's officers for the coming year are:

President—Forrest R. Wolf.

Vice President—Charles Durkee.

Treasurer—Edward Mock.

Secretary—John Mangan.

Housman—Frank Grote.

Assistant Houseman—William Dres.

Theta Xi has pledged: Gene Clears, E. E. '42; Phil Graham, Co-op, '43; Robert McFarland, M. E., '42; George Novotny, M. E., '42 and Rudy Rieder, Co-op, '43.

DELTA TAU DELTA

Thursday and Friday of last week were the days of the convention of the Western Division of the Fraternity up at Evanston. Saturday was also included, but after the annual Founders' Day banquet held at the Union League Club, all thoughts were turning to the famous "Delt Prom" being held that night at the Terrace Casino of the Morrison. Deltas from all over the west were in attendance and many new friends were made.

During the past week Delta Tau Delta pledged Dick Ekstrom, and John M. Peterson.

PHI KAPPA SIGMA

On Friday, Feb. 23, Phi Kappa Sigma initiated Wendell Christensen, Quine Douglas, Allan Gullborg, Frank Hull, Frank Havlik, Richard Hameister, William Lease, Gus Mustakus, William Rush, Harry Storey, Charles Woel, Edward Walinski, and Charles Wright. To fill the vacancy, Dr. H. W. Davey and Harry Devine, Jr., were pledged.

Phi KaKppa Sigma beat Triangle 18 to 13 in the basketball tourney but were beaten by Alpha Sigma Phi in the finals.

BETA OMEGA NU

At the last meeting Harold Davey passed the initiation tests and got the vote of the active chapter, and so he became a member. Ernie Harrison's initiation was postponed one meeting because of the Beloit wrestling match.

Arx News

Memories, memories, of that old BILL we knew so well, of the boy that's gone to . . . to cupid's fold. His "JAY WALKING" around the lower school and we do mean "JAY," has caused him no end of razzing, but hark! he has set March 29 as the day of revenge, so tormentors beware, this Junior is out to cook your goose.

Then there is that story about the Frosh that we missed . . . one day coke bottles were kept on the window sills till Tea Time, (their hour of relaxation, around three o'clock) at which time the said liquid was prepared for consumption, and during the consumption the door opened . . . Guess who! . . . Dean Tibbals . . . Here and there . . . Gittelson almost paying Joe two cents for a Tech News . . . Pointek hot on the trail of knowledge, or is there some other attraction in the library . . . Christensen in the Glee Club concert . . . Fox or maybe Mirotanic, senior checker champ . . . Artistic "instinks" to be revealed in the Junior Formal posters . . . Hyams trying to tell a joke, any joke, the answer of which his listeners don't already know.

Andy has a new girl who comes calling for him, with her chauffeur if you please . . . How does he do it! . . . let's hope there won't be any more snow till Woehl can remedy the damage done by the varmints who nailed his rubbers to the wall . . . Eric chief frosh pencil sharpener . . . Dodge will be with the men in white Junior Week (wrong angle Reinke) as he was elected the Arx Junior marshal . . . Dan Miller elected as the alternate Marshal . . . M'love Stienweg and his classy new pants . . . Leap day offered Michaelson his chance, but alas, he stalled to long and Moore accepted the pleas of our Southern Magnolia . . . and so the marriage minister Weese put our couple through the famous Soph Marriage Mill . . .

SPECS.

Announcing!!

HAL DAVIS

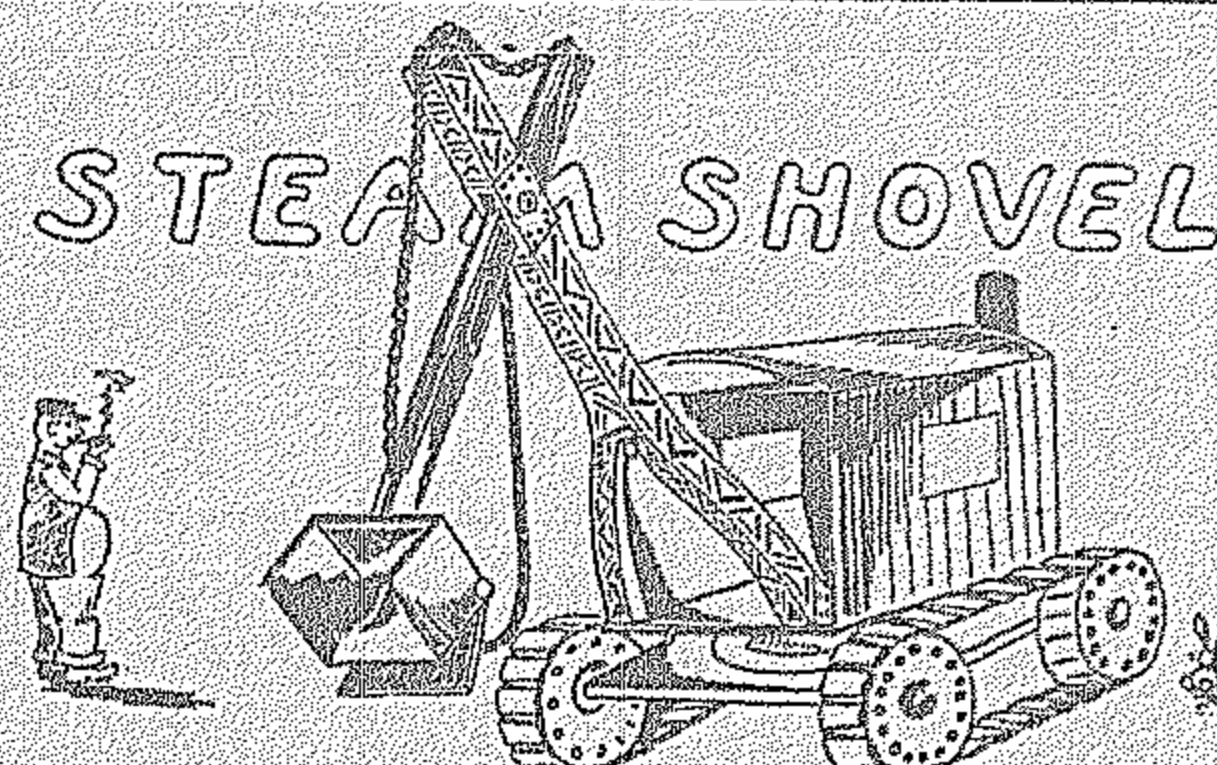
and His Orchestra

Featuring

DANCEABLE SWING

For Auditions and Terms

Phone Bill Weathersby at Ave. 2693



While passing the blasted little hours away, the other day, writing the last chapter in our newest and very latest masterpiece, "The Simplified Theoretical Analytical Theory in Support of Inter-universal Seventh Dimensional Snooping—A Working Handbook," we suddenly realize what a sensational addition this would make for any home library, something for the kiddies to teeth on, you know. On second thought almost any library can hardly afford to do without it; and, upon completion, complementary copies will be sent to JOHN CRERAR, NEWBERRY, and NELL STEELE. In fact, why stop at libraries? Such famous personages as ADOLPH HITLER, MATA HARI, MAHATMA GANDHI, CAPTAIN NERO, UNCLE ELBY, and BUCK ROGERS are already outside pounding at the door. "Let 'em in HEDY, what have we got to lose—anyhow?"

Carl "Casanova" Anderson, Junior Meeh, made his girlfriend walk two miles in fresh snow, when wearing those cute little open-toed pumps, the other night. Upon phoning her for another date, later on, he was informed that "Jeannie doesn't live here any more." Wonder why.

WARREN "DOWNWIND" UMBRIGHT did a little jay-flying last week and wound up a bit too far from home for comfort. Doing his regular stint of cross-crossing soloing in accordance with requirements of the Army Air Course being given at Armour, "Downwind" just forgot about that big water tank land-mark down there, and deciding that being lost in the clouds was no way to spend an evening, sat down on a small field. Where, did you ask? O, just a little less than a mile from an airport. "Come and get me," "Downy" phoned, and had to continue the rest of the ride in a lowly automobile.

What math class jumped at the Professor's snap offer of a grade of seventy-five for any or all, after a sizzling calc quiz last week?

ROG "CARUSO" LONG is still trying to buy that voice recording Wong made of him. WONG calls it black mail and won't lower his skyrocket price.

RIGHT OR WRONG?

A 2-minute test for telephone users



1. It's impossible for you to telephone to people in two different cities at the same time.

RIGHT ☐ WRONG ☐



2. Police Radio Telephone made by Western Electric is an outgrowth of research at Bell Telephone Laboratories.

RIGHT ☐ WRONG ☐



3. About 75% of the Bell System's 85 million miles of telephone wire is contained in cable.

RIGHT ☐ WRONG ☐



4. Lowest telephone rates to most out-of-town points are available every night after 7 P. M. and all day Sunday.

RIGHT ☐ WRONG ☐

ANSWERS:

1. Wrong. Telephone Conference Service enables you to talk simultaneously with as many as five other people.

2. Right. And that's true also of broadcasting equipment, aviation radio telephone and marine radio telephone.

3. Wrong. Over 95% is now protected by cable—nearly 2% of which is underground.

4. Right. Why not telephone home often? Your family will enjoy it—so will you!



BELL TELEPHONE SYSTEM

Beloit Stops Wrestlers 16-14; Techawks Adopt Point System

Drop Last Three Bouts After Holding 14-5 Lead

Inability to win the bouts in the heavier weight divisions brought about a 16-14 loss to the matmen, on February 24, when they traveled to Beloit. After holding a 14-5 lead at the end of the first five matches, the Techawks dropped the next three bouts to lose the meet. The meet was conducted under the point system and Coach Sonny Weissman has announced that all the succeeding meets will also be run under this system. This is a new intercollegiate wrestling rule and Armour is falling in line with other schools in adopting it.

Point System Explained

In view of the fact that all of Armour's meets are to be wrestled under this rule, a brief summary of the value of points is as follows:

1. To go behind opponent (from feet or from underneath) is worth 2 points.
2. To escape from underneath and go free is awarded one point.
3. Credit for a near fall is 3 points.
4. For each minute of time behind, one point is awarded.

To start off the meet Till won a decision 16-4, over Phalen in the 121 lbs. division. Wasilenko at 128 lbs. followed with a 15-5 decision over Elwood to add another three points. In the 135 lbs. class Harrison finally was pinned by Vogel after 6:30 minutes. Captain George Hanna, at 145 lbs., added five points more when he pinned Morse in 6:20 minutes. Nigrelli, fighting in the 155 lbs. class, tossed Virgili all over the gym with a 13-0 decision to complete the Armour scoring for the day.

Last Bout Win For Beloit

Kazmierowicz, wrestling at 165 lbs., lost a close decision to Thomas, 6-5, and Wolniak, at 175 lbs., lost another close decision, 8-7, to Plinske. Going into the final bout in the heavyweight division, the Techawks still were leading 14-11. Balsewick, outweighed fifty pounds, had Vaughn pinned in the opinion of most of the spectators, but the referee didn't see it, and so John finally lost on a fall in 4:15 minutes.

Alpha Sigs Try For Win Over Phi Kaps

In the semi-finals of the intrafraternity basketball tournament Phi Kappa Sigma played Triangle on Monday and when the action was over the Phi Kaps were ahead 18-13. The game started off with plenty of action but with little scoring by

Boxers Lick Valparaiso In First Meet of Year

COLANT UNABLE TO FIGHT

With a large audience to cheer them on, the boxing team started its season with a spectacular victory in its meet with Valparaiso University, of Valparaiso, Indiana on February 29 at Armour by winning four out six bouts.

De Georgi Loses First Bout

In the 125 lb. division Di Georgi lost after a hard fought battle with Hirsch of Valparaiso who had the height and reach advantage over Di Georgi. Di Georgi, incidentally, is the boy who went three fights in the Golden Gloves Tournament. Eriksen, a fast and shifty fighter, won his bout easily against Doty in the 135 lbs. division. At 145 lbs. Wolf of Valparaiso took the decision from Collins after a very close battle.

Haymakers Rain on Valparaiso

Peterman outboxed Helbling of Valparaiso for the match in the 160 lb. division. Would be "haymakers" by Rehwaldt were the main attractions in the 175 lbs. division, in which Rehwaldt finally slugged out a victory over Maier of Valparaiso. The battle between Norkus and Blatz of Valparaiso, in the heavyweight division, was a very lively bout for heavyweights. Norkus' hard right which was continually pounding his opponent's body finally won the decision for Armour.

Captain Ernest Colant was unable to participate in the meet due to a broken finger which he received in the Golden Gloves Tournament. This was the first time that Armour had a meet with Valparaiso, boxing being a comparatively new sport at that college.

either side. However it didn't take long for them to find the hoop. The end of the half found the Phi Kaps ahead by the slight margin of one point, but the Triangle boys only managed to get three points in the second half and when the smoke cleared away the score was 18-13, favoring Phi Kappa Sigma.

In the earlier stages of the tournament, Triangle came out ahead of the Deltas 17-13 and Rho Delta Rho whipped a spunky Sigma Alpha Mu team 57-11. The Pi Kaps lost to a strong Alpha Sig team 48-16 and Phi Kappa Sigma won out over Theta Xi 31-16 with little trouble Alpha Sigma Phi then went on to beat the Rho Deltas 26-22, advancing them to the final game with Phi Kappa Sigma. This promises to be a thriller on Monday night, with Alpha Sig out to get a third leg on the cup and the Phi Kaps out to stop them.

Weissman Gets Another Duty

To top off his present accomplishments as manager of the Student Union, Sonny Weissman, by vote of the board of ATSA, was given another new and important job as assistant to John J. Schommer. Sonny's official title is now "Assistant Athletic Director."



The amiable Mr. Weissman's duties will consist of being an official witness to all sport events, especially intramural touchball, and giving official verdicts to any question regarding rules and events that may come up.

At present, besides being the manager of the Student Union, "Sonny" is coach of both boxing and wrestling. Although it was only last year that Sonny received his referee's license from the National Boxing Association, he is widely known in both professional and amateur ring circles. Sonny graduated from Loyola with a L.L.B. tucked under his arm. He soon became a parttime coach of boxing and wrestling at Armour, then coach of those sports; and in December, 1938, he was made manager of the new Student Union.

Pollak Takes Kegling Honors

While the bowling tournament last year was discontinued for lack of interest, such was not the case this year, as Intramural Manager Frank Opila completed the summaries of another successful intramural sport.

R. Pollak, a freshman on No. 5, took top honors as he won the individual award for high man with a total of 4815 pins for twenty-four games or an average of 200.64. Team award was given to team No. 5 with a score of 12 games won as against three losses. Team No. 5 was composed of E. Blevins, A. Hauswald, R. Lake, R. Meagher, and E. Olson. Team No. 2 was close behind with a record of eleven wins and four losses. A. Hauswald had high game of 256 and high series of 189-243-196 for a total of 628. R. Pollak was next with a high series of 208-221-190 for a total of 619. The results of the tourney have been put to the A.T.S.A. board and the awards will be given as soon as possible.

The ping pong tournament went into the quarter finals this week with four teams left in the running. The Senior Fire Protects, composed of Ransel, Hunter, Eggers, and Worcester wandered into the quarter finals on a win over the Junior Chems and a forfeit. The Junior Civils won their second match in a row as Olson, Zimmerman, and Bauch took the frosh team of Noonan and Noonan. The Senior Chems breezed through the Soph Mechs as they won their second in a row.

FINAL INDIVIDUAL SUMMARY					
Player	B	FT	Total	FTM	Games
Sher	19	12	50	13	13
Fahey	13	4	30	9	12
Scherer	45	22	112	15	14
Norkus	41	28	110	27	14
Sliwa	22	9	53	20	14
Brierly	0	0	0	0	3
Barrett Smith	0	0	0	0	6
C. Jones	1	0	2	0	2
Lagodney	5	5	15	5	5
Lurz	12	6	30	9	11
O'Connor	17	19	53	14	11
Rudaka	4	5	13	2	7
Schmidt	6	4	16	13	10
Totals	185	114	484	123	



By Fred DeMoney

We'll start off with a bang this morning. First item: No sooner had we said the word about the "undefeated" Rifle team when they go out to Wheaton and get defeated by a mere five points. The final score read Wheaton 867, Armour 862. However, the local hot shots came back during the week and riddled Stevens Poly by a 909-863 score. There is a postal meet Saturday with Brooklyn Poly, and two matches next week with Missouri School of Mines and Indiana State Teachers. The boys who have been doing most of the shooting are Borre, Dost, Dryer, Hartman, and Galandak. Smith, Lannier and Eck are right up there too.

Second item: The basketball team's record was 12 and 2, not 11 and 2. Speaking of the hoopshooters, congratulations are in order for Scherer, Norkus, Sliwa, Sher, Schmidt, Fahey, Rudakas, O'Connor, and Lurz for winning major letters; and orchids are in store for minor letter winners Sieg, Casey, Brierly, Herring, Barrett-Smith, and Futterer. And least we may forget, Frank Lasker got one for slinging towels around. He was a great manager.

See where the Boosters, that hot Indiana bunch of basket swishers, swamped the Phi Kaps in a game last Friday up in the Box. The Booster, alias "the Frosh basketball team," rolled up forty points to the Greek-men's fourteen.

And the Frosh basketball team, alias "the Boosters," or vice versa, were repulsed by Company D in the Armory last week by a 27-23 score. It was a good game until the soldiers started using gas masks.

"Sonny" Weissman, that versatile star boarder of the Student Union, served as corner man last week in the Golden Glove fights. That is, as soon as the boys in the ring got cut up a little, over would come Sonny and away would disappear the cuts. According to reports, Mr. Weissman had quite a number of messy jobs last week. But the pretty medal and honor were enough reward for Sonny.

What's ailing the track team these days? The field events are very strong, but the track events, . . . phhhht. After looking at all these boys that make that 8:09 sprint from the "L" to Federal street in the morning, it seems that maybe some good talent is slipping away unnoticed. Of course, perhaps Cerovski's injured leg may have something to do with the track results.

WAIST LINES

We're getting our last crack at the basketball bunch . . . they missed more free throws than they made . . . Hockey is to be considered an informal sport, like the Rifle team . . . Yursis and Bauch, likely battery . . . Saturday the swimmers meet Kentucky . . . They take a training trip to Florida each year . . . and probably had to break the ice this year . . . the ATSA board really went places in their meeting . . . Father and Son Banquet set for April 13 . . . make a date for those Tech Relays, March 16 . . . Mashinter, top rifleman, hasn't been able to shoot since the middle of December . . . eyes are overstrained . . . Balsewick pinned his man first . . . but the ref missed it.

Techawk Track Squad Bows To Strong Wilson Jr. College Team

Top Track Teams Enter Tech Relays

Soon the sound of tremendous applause will resound through the U. of Chicago fieldhouse. On March 16, the Armour Tech Relays will bring together the cream of collegiate track stars of the Middle West. That evening the audience will have an opportunity to see among other stars Piker of Northwestern and Davenport of Chicago match spikes in the dash events. These are but two of the outstanding athletes who will participate in the Relays.

Already five colleges have sent in their entry blanks. Iowa State, at Ames, Iowa; Lawrence from Appleton, Wisconsin; Milwaukee State Teachers; Hildburg College for Hildburg, Ohio; and Western State Teachers College from Kalamazoo, Michigan have notified John J. Schommer their intention of participation. By the end of this week there should be some 30 colleges and universities who have sent in the blanks.

Many schools have made participating in the Relays a habit. Wayne University, Illinois, Northwestern, Chicago, Beloit, Illinois Normal, Carleton, North Central, Grinnel, Michigan Normal, winners last year, Kansas, Kansas State, and others have been consistent in their attending the Tech Relays and winning events. Last year nearly 400 athletes took part in this great event.

As has been the custom of the Tech Relays in previous years, Armour students will be admitted to the Relays by showing their activity card. For parents and friends of the students tickets at 50 cents will be sold at the bookstore before the event.

Hurlers Start Winging Them

If you doubt the old adage about the ground-hog and his shadow, you need only visit the school gym during the noon hour for proof that spring is drawing near. The old Armour gymnasium is resounding with the smack of baseballs hitting the mitts, as battery men practice up for the ensuing season.

A spring training program for the Techawk nine has been outlined by Coach Grant Stenger and at present the pitchers and catchers are to practice every Monday, Wednesday and Friday in the school gym from 12:00 to 1:30. No practice sessions are scheduled for the fielders until the latter part of March at which time a definite announcement will be made.

Running Events Remain Armour's Main Weakness

A strong Wilson Junior College track team trounced the Techawks in a meet held last Thursday afternoon in the University of Chicago Fieldhouse. Wilson tallied fifty-nine points whereas the Armour aggregation accumulated a grand total of thirty-nine points.

Techmen Win Field Events

Wilson captured seven first places leaving Armour four. Three of Tech's four were garnered in the field events, which as they have done in nearly all previous meets, the Techmen swept with comparative ease. Lanky "Curly" Mongeau, Armour's new freshman sensation led the Techawks in scoring by capturing a first in the high jump by leaping 5' 6" and also placing second in the shot-put and tying for third in the pole-vault.

Cerovski Takes Half-mile Event

Johnny Cerovski, senior architect and co-captain of the track squad, was the only Armour man to score a first in the running events. Despite a pulled tendon, which has kept him out two weeks, Johnny came through to a victory in the half-mile running the event in 2:11.3.

Springs led the Junior College in scoring by tallying points in the broad-jump, shot-put and low-hurdles. Wilson was victorious in the relay event although the Armour lads ran a tough race.

SUMMARY

60 yd. dash—Taylor (W); Grandpre (W); Ryan (A)—Time :6.4.
1 mile run—Denoms (W); Campbell (W); Jackowski (A)—Time 5:10.8.
440 yd. dash—Driscoll (W); Redmond (A); Scott (W) and Matthews (A)—Time 54.6.
70 yd. high-hurdles—Sherman (W); Johnson (W); Keigher (A)—Time 10.1.
880 yd. run—Cerovski (A); Olander (W); Creagan (A)—Time 2:11.3.
70 yd. low-hurdles—Goldsmith (W) and Springs (W); Bujan (A)—Time :8.6.
Shot-put—Burman (A); Mongeau (A); Springs (W)—39' 6".
High-jump—Mongeau (A); Stevens (W); Mitchell (W) and Kent (W)—5' 6".
Pole-vault—Elwood and Heidenreich (A); Mongeau (A) and Kent (W)—10' 0".
Broad-jump—Springs (W); Goldsmith (W); Sherman (W)—20' 1".
Relay—Won by Wilson (Taylor, Goldsmith, Scott, and Grandpre)—Time 1:36.9.

Cagers Finish Season With Two Wins Against Twelve Losses

Armour's Techawk cagers, facing their toughest schedule in recent years, did not fare too well this year. During the season of 1939-40, the cagers won two games while losing twelve. However, this record does not tell the complete story.

There are several factors which enter into the poor showing.

This year's team was riddled with injuries and ineligibility as follows: At the outset of the season, Captain Bill Sherer injured his shoulder, which slowed up his playing considerably throughout the schedule. Then in mid-season Herb Sher, an invaluable and indispensable player was laid up by a sprained ankle, and this loss was keenly felt.

Freshman squads of the past two years have been sadly incapable of producing any strong material for the varsity squad. Hank Sliwa is the only varsity product coming up from the freshman teams in the last two years. This led to a serious lack of competent reserves which proved the downfall of the Techawks in several games. Both the first Elmhurst game and the North Central game might have been won if Coach Stenger had had good reserves.

Although the majority of the players were loyal and cooperated with Coach Stenger, there were one or two members of the team that might have extended themselves quite a bit more

than they did. However, for the most part, the men that represented Armour on the hardwood this season were out there fighting all the way. Unlike recent cage teams at Armour, this year's squad really worked together, each man pulling for the team.

Individual scoring honors for the year were copped by Captain Bill Scherer, who amassed a total of 112 points for the season. However, Lloyd Norkus was a close second, scoring 110 points, only one basket less than Scherer. Hank Sliwa, junior forward, and "Smilin' Ed O'Connor, were tied for the third place in this division, each scoring 58 points. The team this year was managed by Frank Lasker, who did an efficient job.

From the viewpoint of many of the players on the team, the season's best and worst games were played with the North Central Cardinals. At Naperville the Techawks reached their season's high as they were nosed out of a victory in the last few minutes of play by a 48-40 count. As a prelude to the Bruin-Sheboygan game, the Techawk's performance was at ebb tide as the mighty Redbirds dealt them a solid defeat. This was the last game of the season for the team, and the last game that four men will play for Armour. These players are Captain Bill Scherer, Lloyd Norkus, Herb Sher, and Jim Fahey.

Memoirs of Basketball Season Reviewed by Armour Tech Cager

By Jim Fahey

Well, the season's over now and despite its disastrous results it contained many items that pull at one's throat or cause a smile to break thru an otherwise grim pan. . . . Opener at Beloit with a confident Techawk squad going by car . . . a chap named May knocked the hell out of the team's confidence . . . Lake Forest and a fight both ways . . . 18 up at the half . . . 50-36 at the end . . . Scherer and Gates and Rhine battling with fists instead of baskets with Weissman getting the best of it . . . Arkansas State and Tilley and twenty-eight points . . . Sher playing a great game . . . De Kalb and giants . . . Sliwa bottling Price in great show of defensive ability . . . watching Scherer playing basketball on a losing team . . . a tough break for a swell fellow and a darn good ball player . . .

Chicago . . . with the Maroons barely missing doubling the score . . . and the pleasure displayed by certain Techawks at coming that close . . . Lake Forest again without Fahey and Sher . . . revenge the motive but despite willingness of spirit, Jaybirds knew more basketball . . . Grand Rapids . . . a setup . . . lack of blocking spelt defeat . . . again Scherer showing how to play the game . . . Elmhurst with the Bruins . . . 28-26 . . . a heart breaker . . . had big lead but folded in second half as usual . . . then the game of the year . . . a

strong North Central team led by Leasure against the underdog Armour without a coach . . . Weissman and O'Brien fill in . . . O'Brien picks faults . . . Weissman pulls strategy . . . Techawks poop out in last minute 48-40 after keeping game close all the way . . . Norkus, Scherer, Sher, Sliwa, outstanding . . . big feed at Scherer's house after game . . . wonderful people these Scherers . . . The trip . . . Grand Rapids . . . poker . . . Morton Hotel . . . hospitality . . . another loss . . . O'Connor hot . . . after game poker, maltdes . . . Detroit . . . Tuller Hotel . . . burlesque . . . more poker . . . Lawrence Tech . . . snobs . . . Blue Lantern Nite Club . . . Barrett-Smith sick . . . O'Connor and "The Face on the Bar Room Floor" . . . sleep at 6 A.M. . . Sher sick . . . O'Connor fresh as a daisy and up at 7 A.M. . . the Mercury and home.

Williams . . . a win for Bill . . . old gang gone . . . seems strange without O'Connor . . . a swell guy . . . Lurz off too . . . another swell guy . . . Party at Frank's house . . . Elmhurst . . . another win . . . this one for Lasker . . . then the topper . . . beaten by four sophomores and a junior from North Central 41-30 . . . worst game of year . . . well two and twelve with, as two ardent followers of the Techawks said, "The best material in seven years isn't much of a season . . . and it's tough that such a swell captain and group of fellows had to go thru it,

Engineer and Alumnus To be Released Soon

According to information received from Professor Finnegan, the March issue of the Armour Engineer and Alumnus will be out about the middle of March. This issue will see the establishing of two new departments.

Faculty Articles

The March issue will contain many articles of interest by men who are well-known in their fields. Of particular interest will be an article on traffic control by Professor S. M. Spears of the Armour civil department. Professor Spears has done a considerable amount of highly specialized work on a graduate level in this field. Other articles will be: "Research in Mathematics" by Dr. Rufus Oldenburger, and one on smoke abatement by Frank A. Chambers, chief of the Smoke Abatement Department of Chicago, who graduated from Armour in 1922. Articles will also appear on "Carburization of Iron" by Professor Swineford and "Engineering in Air Transportation" by W. C. Metzger, chief engineer of United Airlines.

The new departments will include a section devoted to literary criticism, written by Elder Olson of the English department and a column of interesting reflections called "I've Been Thinking Again" by Professor J. C. Peebles.

I. R. E. To Present Student Meeting At Central YMCA

Of a semi-technical nature, and of interest to men either in school or just out of school will be the student sessions of the Institute of Radio Engineers to be held monthly at Central Y.M.C.A. beginning sometime this month. Strictly speaking these will not be student sessions, but sessions presided over by men in the field and for the benefit of men just getting into the field. The following will be the nominal program: 6:15-7:00 dinner, 7:00 to 7:30 p.m. preliminary session (for the less experienced men), 7:30-7:45 p.m. discussion and question, 7:45 on papers of a more technical nature. Attendance at the dinner is not necessary. The men to present the papers have been chosen by Prof. Sear of our Electrical Engineering Department since he is the head of the Committee on Topics (papers, speakers and time assignments).

Tentatively the next meeting will be held in about two weeks when Mr. Crosley, private consultant engineer and representative of the "Q" meter manufacturers, will talk on "Measure of Resistance in Transmission Lines with the 'Q' Meter."

Concrete Lab In Sub-Chapin

For quite some time we have had a cement testing laboratory, but only recently this laboratory has come to the attention of the majority of the students.

Many years ago the cement testing lab was located in a small room in Chapin Hall. In 1917 the laboratory was moved to larger quarters in the basement of Machinery Hall. Now the lab has outgrown the space allotted to it in Machinery Hall, and recently it has been moved to the basement of Chapin.

The experiments done in this lab consist of the standard tests on cement and concrete. Starting next semester asphalt testing will be added. Some of the asphalt testing equipment has already been received by the institute.

SNOW CRUISER—

(Continued from page one)

chanic of the party. A radio station on the cruiser, under the guidance of Sergeant Felix Ferranto, is handling all communication for West Base because the West Base set is out of order. The Beechcraft airplane atop the cruiser has made two mapping and photographing flights thus far.

In all probability, the cruiser will stay at West Base until the end of March. Dr. Wade will remain in charge during this period.

Ford Gives Talk on Theory of Mapping To Graduate Division

Opening the spring series of public lectures last Friday, the Graduate School presented Doctor Lester R. Ford, who gave an interesting lecture on "Conformal Mapping and its Engineering Applications." Dr. Ford opened his lecture with a discussion of the Mercator system of mapping, the system of mapping that is used today in almost all popular maps and atlases. He stated that this system was "treacherous" in as much as it tried to do the impossible—the drawing of a spherical surface upon a plane surface. Any person who sews covers, made from flat sheets of leather, on spherical baseballs will testify as to the truth of this statement. Another form of mapping discussed was stereographic projection, which was used by Pappas (remembered by all who have labored through the calculus) as early as 150 B.C.

Explains Theory

After a preliminary explanation to the audience, Dr. Ford gave the simplest description of a Conformal Map as being one wherein every small unit retains its true shape. With this description in mind, the fundamental theorem of Conformal Mapping can be stated as follows: "... any plane region with a single boundary can be mapped conformally upon any other plane region." By this theory then, a map of a circular area can be made to perfectly fit a plane square, triangle or any other plane surface and still be a true Conformal Map. At first this may seem confusing, but further reasoning will show that it is true, that every small unit within the new map will still retain its true shape. To emphasize this point, Dr. Ford first drew a rough outline map of Chicago and then a human profile, asserting that with the proper equation the map of Chicago could be made to fit exactly into this profile.

Research Lab Has New Boiler

Perhaps the reader has noticed a new brick smokestack emerging from the old "Ice House" and what is now known as the Research Foundation Combustion Lab. A new boiler has been installed for the use of a new fuel oil, a colloidal product developed by the Foundation.

By placing it on a two foot brick foundation, the boiler is especially adapted to give an extensive and variable combustion chamber. According to Prof. Godwin, a Johnson oil burner is to be installed in conjunction with the boiler.

To Use Colloidal Fuel

To allow variation in the combustion chamber, the boiler was placed on a brick foundation two feet from the floor to give the opportunity of building with fire brick any size combustion chamber desired for experiments. A standard Crane 3-12 steam boiler was erected with a special adjustable firebox to allow variation colloidal fuel. This fuel is half coal-oil. One interesting feature of this plant is the ability of the experimenter to take colored and fast moving pictures of the combustion processes. This will be done by the use of three ports situated on one side of the brick foundation.

By the use of this boiler, the Research Foundation will be able to predict the efficiency of their oil when burned in different size plants after the oil has been marketed.

S.A.M.—

(Continued from page one)

and uncooperative spirit of many government employees. In these troubled times the government must show reason for its existence. If it is to endure it must have a firm foundation. It must not only guarantee "life, liberty and the pursuit of happiness," but it must go beyond the limits of the Constitution and insure the proletariat an equal right in business enterprises. The turbulent belligerent nations in Europe were thrown in a chaotic condition primarily because they had no firm basis for existence. Confronted with the enigmas of racial prejudices, religious persecution and avariciousness, the nations flung themselves against each other like a lion leaping for its prey. To prevent the perilous conditions prevalent in Europe, it is imperative that government employees offer their utmost in service and co-operative spirit there by engendering a nation comparable to a modern Utopia.

Faculty Members Attend Convention Of Concrete Men

Several members of the faculty of the department of civil engineering recently attended the 36th Annual Convention of the American Concrete Institute. This convention was sponsored by the Portland Cement Association and other prominent manufacturers in the cement and concrete industry. The purpose of the institute is to promote the use and application of cement and concrete.

Dr. Grinter Speaks

This year the convention was held at the Palmer House Feb. 27-29. Vice-president Linton E. Grinter of Armour was one of the men who presented material on concrete research. His speech was entitled *Long-Time Laboratory Tests of Concrete Floor Panels*. Dr. Grinter summarized the experiences of our laboratories during the last few years, and the results obtained by them.

Among the topics taken up during the convention were: simplification of concrete-mix design, frost resistant concrete, tolerances in building construction, and proposed revisions of the "Building Regulations for Reinforced Concrete."

Dr. William A. Pearl Holds Welding Class

Looking through the school catalog, one might come across a course labeled M.E. 511 N. This title is not very descriptive, but it refers to the post-graduate welding class that Doctor Pearl conducts in the night-school division.

The course consists of lectures with demonstrations of welding and covers the behavior of metals and alloys, both ferrous and non-ferrous, at high temperatures. During the first semester, Doctor Pearl expounds the general methods of welding in theory and in practice.

In the second semester, M.E. 512 N., each student is given an individual welding problem, which includes the welding of certain alloys and the preparation of a report describing the methods and technique used to make a successful weld. The report and the weld are submitted together, and the grade for the second semester is almost entirely determined by them.

Bruce Longtin Presents New Thermo Theory

A scientific contribution of primary importance, dealing with rates of change has been recently announced by Dr. Bruce Longtin, instructor in graduate physical chemistry and thermodynamics. At a recent Thursday seminar in thermodynamics, Dr. Longtin discussed results of extended studies of phenomena involving problems of rate of change undertaken in an attempt to give a mathematical formulation to a very common assumption, the principle that in any flowing system or flow of streams, the streams tend to follow the path of least resistance.

Conversion Explained

His research has resulted in a general unified method of studying all problems of the rate of conversion of energy from one form to another. It emphasizes the fact that all rate phenomena are examples of a single phenomenon, the rate of transformation of energy from one form to another. Thus a reason is given for what previously appeared to be only formal analogies between the rate laws for different types of flow.

The most important aspect of his presentation is the recognition that the principle could be made a harmonious part of the subject of thermodynamics. Professor Max Jakob, international authority on thermodynamics, said, "Dr. Longtin has developed a unified formulation for the evaluation of equalization processes. The method is general and seems to be original."

"We know," said Dr. Longtin, "that in any flowing system or flow of streams, the streams tend to distribute themselves so as to minimize the conditions of resistance which they must encounter. A function which represents the extent of interaction between streams and the ob-

VIVIAN BOSWELL, operator at the busy switchboard of Chicago's Stevens Hotel, largest in the world, takes time out to enjoy a Chesterfield.

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stacles or resistances is what is sought for by this study. The function should have a smallest value when the stream distributes itself in the manner actually observed during experiments concerning that particular stream flow."

New Method

J. Onsager, working along somewhat similar lines, gave, in 1932, a satisfactory mathematical expression of the function, for certain cases. On this basis Onsager set up a number of expressions for special forms of the function, which have led to some interesting results, such as the theory of diffusion and conductivity of electrolytes. Quite independently, Dr. Longtin has developed the general formulation by using thermodynamic methods.

"For any flowing system there exists a function whose general formulation we give by the expression:

$$F(\Phi - r_s)$$

where Φ depends on the rates of flow and reaction and designates in-

teraction between streams and resistances due to relative motion; r_s is the rate of generation or creation of entropy, and $-r_s$ represents the rate at which the streams are building up potential barriers. There are two general types of obstacle: frictional resistance and potential barriers. The value of r_s can be expressed by ordinary thermodynamic methods in terms of quantities which we already know how to measure.

Forms Presumed

"We do not pretend to give the function any a priori mathematical form, but simply to determine its value experimentally. I have set up," said Dr. Longtin, "some forms that the function might be presumed to take, in order to see what results that leads to."

He then showed how some simple substitutions in the general expression would give Ohm's law of electrical conductivity; Fourier's law of heat transfer; Fick's law of diffusion; Poiseuille's law of fluid flow;

the laws of non-linear conductors such as in vacuum tubes, certain types of lightning arrestors, and certain types of rectifiers; and the Soret effect in which the flow of heat establishes gradients of the concentrations of the various chemical components, to mention only a comparatively few examples.

Evaluation Simpler

The complete statement of Dr. Longtin's principle appears to be a special form of the principle of least action which forms the basis of classical mechanics. Onsager has shown a historical relation between the two. On this basis it is possible to obtain expressions for the interaction from molecular-kinetic theory and statistical mechanics. The evaluation of Dr. Longtin's function appears to be much simpler than other methods of applying statistical mechanics to rate problems, allowing the getting of workable results by applying statistical mechanics to cases that are too difficult to handle otherwise.