

## Summer Grad Session Serves Trifold Purpose

By Charles McAleer

The success of this last summer's graduate school program is indicated by the enthusiasm for it shown by graduate students throughout the country. A maximum enrollment of 100 was effected; the actual enrollment reached was 165.

The summer session served a trifold purpose. First, it brought together some of the foremost minds and experts on essential industrial operations and theories. Second, it provided a foundation for training of engineers toward the trend of nation preparedness. And third, it gave a healthy shove to rapidly increasing rate of growth of Armour's graduate school.

### Shortage of Engineers

Of these three purposes, probably the most important is that concerning the question of national defense. Among the realizations brought about by this country's sudden awakening to its danger from unfriendly and antagonistic countries is its shortage of qualified engineers to plan and inaugurate, and supervise any extensive defense plans proposed by the government.

It is felt by many of the better informed persons in this country that the difficulty in production of the necessary war materials and equipment during an emergency period would be "bottlenecked" by the shortage of engineers and not by a shortage of labor, materials, or even organization. For this reason, through the efforts of "The Defense Coordinating Board of Armour Institute of Technology" composed of Dean Orinter, Harold Valborg, and Dr. Poulter, the summer graduate session emphasize courses with a view toward training such engineers.

Among the many renowned experts who convened here as part of the instructing staff were such men as Stephen P. Timoshenko of Stanford University, Hans Reissner of Armour, C. C. Furnas of Yale, J. C. Morrel of Universal Oil Products Co., W. L. Everitt of Ohio State U., Gabriel Kran of General Electric, and Max Jacob of Armour and several others equally well known and equally well versed in their particular fields.

The courses given were, in the main, practical and useful especially

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## Defense—

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will be short and so arranged that working men will be able to take them without hampering their jobs.

Under the program, an experienced die-maker, for instance will be given the opportunity to study special subjects which will enable him to take a job as a tool designer. A man working in the chemical industry may be given the chance to study explosion chemistry. A man now working in industry will be "boosted" into a higher bracket, thus making an opening for an unskilled man.

At the meeting, it was decided that any of 25 different courses can be taught at Illinois Institute under the new program. These courses could be placed essentially into five groups: production control, explosion chemistry, aeronautics, materials testing and engines.

It is expected that the program will go into operation very soon since it is considered essential to the future position of the United States at the present time.

## MOLECULES GET FINGERPRINTED BY LIGHT PHOTO

By Julian Bowers

"Seeing something that can't be seen" expresses exactly the function of the Raman spectra upon which Dr. Forrest F. Cleveland and Dr. Maurice J. Murray, instructors at Armour college of the Illinois Institute of Technology, have been working quite diligently for the past several years.

Performing this mysterious service is an apparatus which literally "fingerprints molecules". This so-called fingerprinting is attained by the photographing of light which passes through a liquid. The molecules of different fluids photograph differently, enabling identification of liquids by this process.

In operation, the spectrograph is quite unique. A mercury arc lamp sends out light waves which must pass through a specific solution. This solution filters out most wave lengths of light and allows only light of one length to pass through it. The beam is focussed into a large box where it is tremendously enlarged upon a screen and recorded on a film.

### From Darkest India

The principle of this spectrograph was uncovered by Raman, a native of India. In working upon the spectrograph, Dr. Murray is concentrating on the examination of the finished film taken by the spectrograph and Dr. Cleveland adjusts the light source and projecting stage. Also in this field, these two men are developing an infra-red ray device to aid in the work of the spectrograph. Four graduate students are contributing much work to the spectrograph research.

## ACSA TO AMEND ITS CONSTITUTION TO INCLUDE ALL

Last Tuesday, the delegates of the newly combined Armour and Lewis student organizations held their first meeting in the student union. It is hardly necessary to stress the significance of the event. Hitherto the ACSA represented the Armour students. Now, the ITSA will represent both Armour and Lewis on a single board.

### Everybody Included

Such activities are now enjoyed by students of both Armour and Lewis colleges. The former Armour officials met with two special delegates appointed by Dean Clark to represent Lewis.

It was not formally decided to amend the ACSA constitution, in order to take in all Lewis students.

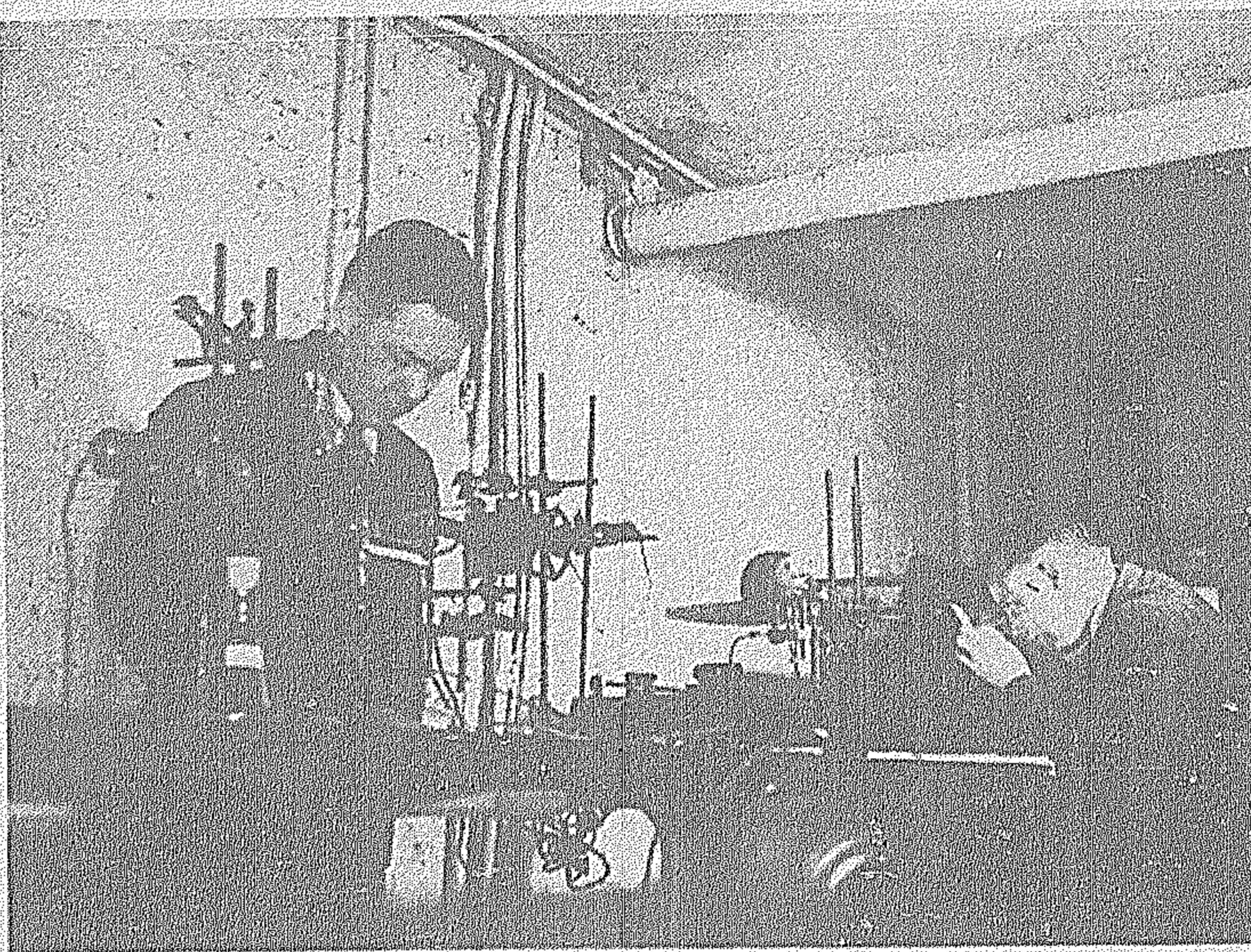
### Intra-Mural

It was decided that this year at Armour that ten medals are to be given for a maximum of interclass touch ball, and 12 medals for interclass hardball. The effect will be profound in intercollegiate competition. Illinois Tech will now have a greater number of potential athletes to choose from.

As we realize Technology News is the combination of the former Armour Tech News and the Lewis News, likewise the yearbooks may be combined into a bigger and better publication.

Much important discussion took place and great decisions will be announced officially in the near future. We await the next meeting to be held in two weeks when the Lewis delegates will have thoroughly discussed these problems with their fellow students.

## RAMAN SPECTROGRAPH



By Paul Leopold, Staff Photographer  
Dr. Cleveland readjusting the light source while Dr. Murray inspects a finished film.

## Chess Club Strives To Consolidate All Players Into Group

The initial meeting of the Armour Chess Club was held on Thursday afternoon, October 9, from 3 to 5:30 P. M. A satisfactory number of players responded to the call for students interested in chess, including two enthusiasts from the Lewis campus. There is still room for an additional number because the present members wish to defer the election of officers until the membership roster is of greater size.

### Aim Is Consolidation

The idea of an Armour Chess club is not new, as there was such an organization some years ago. This early club failed, and now George Reynolds, a student at Armour, is attempting to revive interest in the game. He estimates that there are at least twenty-five high-caliber chess addicts attending Armour college not counting the Lewis campus students. The main purpose of the club is to consolidate those interested in the game into one group, instead of the present scattering of private games being played almost constantly around the campuses.

### Tourney Soon

A chess tournament will be held in the near future. It will be open to anyone for the purpose of choosing a team to represent Armour in contests. Matches will be with various other college teams in the Chicago area.

Meetings will be held on Thursday afternoons from 3 to 6 P. M. in the auditorium. Prospective members are welcome, and are asked to bring their own chess sets.

## FPE Film—

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other equipment used by the fire departments.

### Serves Public

It is the testing of the other types of products that present the most interest to the ordinary man on the street. How should an electric iron be constructed for maximum safety? How many times will a certain wire withstand bending without a "short"? All of these questions and many more are constantly before the underwriters in one form or another, whether the public recognizes it or not.

## AIEE to Feature Student Papers At Next Meeting

"Developments in Facsimile Transmission," "The History of Television," "Automatic Train Control," and "Fluorescent Lighting" are the titles of the four student talks to be given respectively, by Jorma Leskinen, Hobart Bunce, Vitold Edutis, and Paul Kochale at the next meeting of the I.I.T. Branch of the A.I.E.E., which will be held on Friday, Oct. 18, at 10:00 a. m. in room 2W, student union.

### Train Control Systems

Vitold Edutis was given honorable mention for his paper at a contest of the A.I.E.E. last year. His paper describes in non-technical language the advantages, operation, and theory of various kinds of automatic train control systems used in America.

Jorma Leskinen will explain the problems and the adoption of the facsimile system of transmission to radio news broadcasts.

### Flourescent Lighting

Paul Kochale is to discuss the latest developments in the fluorescent lighting industry.

At the last meeting a new constitution was adopted to include both Lewis and Armour branches into one branch, called the Illinois Institute of Technology Branch of the American Institute of Electrical Engineers. The present officers are: Ben Cole, president; Tom Brown, vice-president; Leonhard Holmboe, secretary; and Joseph Corcoran, treasurer.

## Dutton To Speak In Fort Wayne

By William Laube

Professor H. P. Dutton, Dean of the evening division of Illinois Institute, will speak in Fort Wayne today, at the local chapter of the National Association of Cost Accountants. His speech, on "What are the essentials of a sound organization?" will include discussions on the structures of organization, possible plans of division of duties, general processes by which an organization is controlled, and the use of cost accounting in controlling it.

The National Association of Cost Accountants is an important organization, especially with respect to manufacturing companies. It has had a strong influence through the years on the increased recognition of the importance of the profession to industry.

## Large Automatic Air-Conditioning Lab For Armour

Through the cooperation of several prominent Chicago companies, Illinois Institute of Technology has recently installed a new \$5000 air-conditioning and refrigeration laboratory. The laboratory is fully equipped and said to be the best of its kind in this area.

### Peebles Directs Installation

Installed under the direction of James C. Peebles, professor of experimental engineering and a member of the staff of the Armour Research Foundation, the laboratory has been supplied with standard equipment for the study of particular problems of air-conditioning and refrigeration. The equipment is supplied with automatic controls so that a very close regulation of performance of the entire plant is possible. The refrigeration portion of the laboratory is also equipped with a standard water cooler of advanced design, making possible a number of highly important and very interesting experiments of heat-transfer, the essence of all refrigeration problems.

### Complete Conditioning

In the air-conditioning field, provision has been made for the complete conditioning of air intended for ventilating purposes. This includes washing, filtering, mixing, heating, and cooling. In connection with the washing operation it is possible to obtain considerable humidification and dehumidification.

The laboratory will receive much use by the evening students during the academic year 1940-41. The first research studies and courses in this field began Monday, September 30, with the opening of evening session work.

The installation of the laboratory is the first of many improvements planned for the Armour College of Engineering Division of Illinois Tech. This is especially important at this time in view of expansion plans predicated upon the program of making Chicago the center of engineering training and research work. Much of the equipment for this laboratory was donated by ILG Electric Ventilating Company, Powers Regulator Company, and Mills Novelty Company.

## New Courses—

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Advanced mechanics courses have been started. One of them, advanced mechanics of materials, is conducted by Prof. Marin, while Prof. Reissner teaches advanced flow of fluids.

### Advanced Study

Of significance is the program designed to provide laboratories for advanced study. A chemistry laboratory for research in general fields of chemistry has been located in Chapin Hall, and a movement to provide space on the third floor of the Physics Buildings for an electrical engineering research laboratory is underway.

Mr. Schumacher has also been experimenting with the use of different types of metals in die-casting. The use of the correct metal or alloy is a very essential factor in the perfection of the process of die-casting.

An indication of the amount of work accomplished thus far by the research foundry is shown by the fact that the furnace which was originally constructed for this process has already burned out. However, the furnace has been relined already and work is continuing at the same rapid pace.