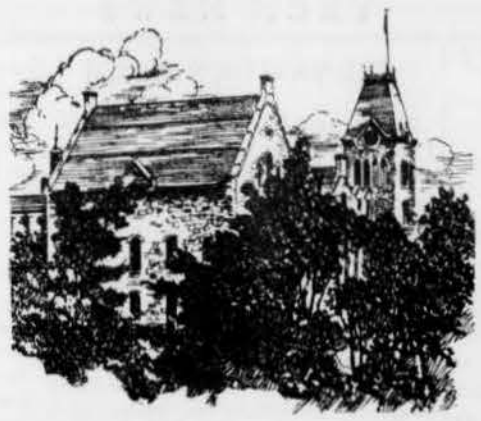
TECH NEWS



VOL. 25 WORCESTER, MASS., NOV. 22 1933 NO 8

MANY CANDIDATES TURN OUT FOR INITIAL BASKETBALL PRACTICE

Freshman Class Shows a Wealth of Material and Coach Bigler's Hopes For a Successful Season Soar High

WARWICK AND SUKASKAS ARE THE ONLY ELIGIBLE LETTERMEN LEFT FROM LAST YEAR'S SQUAD

Tech's lack of lettermen in basketball will undoubtedly necessitate the use of Freshmen for the varsity squad. There are several prospects from the entering class who have had considerable experience and who have shown real ability. The class of '37 has among its members some of the local high school products who are likely to be on hand at the opening of the season's drills. Whether or not these men can be developed into varsity material, remains to be seen. Kingston Atwood played a regular forward berth for Classical High, Herb Grundstrom played center for North High and Art Moosa was a guard at St. John's. Other freshmen who have had considerable experience on the basketball courts are, Leonard Anderson, a member of the football squad, played center for his high school in Atlantic City; Harold Townsley played center at Sanderson Academy, while "Red" Johnson of Norwood, John Chapman of Swampscott, and Albert Wheeler, of North Chelmsford, are also pivot players. Those having experience as guards are, Sidney Alpert of Chicopee Falls, Stanley Luscas of Woodbury, Conn., John Poeton of Southbridge, and Perry Clark of Bridgeport. Among the forwards are Charles Michael of Montclair, N. J., John Willard of New Rochelle, N. Y., and Rolland McMurphy of Bristol, N. H.

With this large number of hopefuls, it seems reasonably certain that coach "Pete" Bigler will uncover some players of varsity caliber from the yearlings. Being handicapped by the lack of experienced players seems to be very discouraging and a great deal must be accomplished before Dec. 16, if Tech is going to "bring home the bacon."

Captain Mike Warwick of Westfield, and Joseph Sukaskas of Worcester, are the only lettermen available. Warwick played center and Sukaskas played guard last season. The only forwards who are eligible are Phil Stafford of Middleboro, and Sonny Norton of Terryville, Conn. Both men are seniors and have had little experience. Graduation took Captain Gartrell, Tom Decker, Jack Henrickson, "Tack" Hammer and Dick Merrill from last season's squad. Johnny Noreika and Tom Ratkiewich, both varsity guards, are ineligible as is George Hodgkinson a varsity center. Dick DuVall another guard of some experience has left college to decrease "Pete's" hopes by another notch.

The entire freshman team of a year ago is on hand and there are possibilities of some of these men becoming regular first-stringers. Last season's freshman players were; Dan Harrington of Springfield, and Harold Hen-

(Continued on Page 6, Col. 1)

SKEP. CHYMISTS HOLD MEETING

McKinley and Romanoff Speak on Radium and Extracts

One of the most interesting and enthusiastic meetings of the Skeptical Chymists for some time was held at the Salisbury Laboratories, Tuesday evening, November 14. The speakers of the evening, Theodore McKinley of the class of '35, and Elijah Romanoff of the class of '34, presented as their subjects "The Commercial Production of Radium" and "Some of My Experiences as Manager and Chief Chemist of the Texol Corporation," respectively.

The meeting opened with a short description by Dr. Jennings of the recent changes in the student membership arrangements of the American Chemical Society. Dr. Jennings advised everyone who could possibly get the funds to join this society, membership in which is a "catalyst to success."

The first speaker of the evening, Theodore McKinley, described in detail the methods of producing radium commercially from its mineralogical sources. While the European sources are at present almost exhausted, the American sources and a rich deposit in Belgian Congo are being worked. Mr. McKinley described the concentration processes necessary, which are followed by the most intricate fractional crystallization processes in order to separate the barium present from the radium. These latter processes are rather difficult to carry out successfully since the chemical and physical properties of radium and barium compounds are so similar.

At present radium sells for about $50,000 a gram but the possibility of development of Canadian sources may cause this price to become lower.

Mr. Romanoff, the second speaker, who in the past has given exceedingly interesting, instructive and amusing talks to the society, exceeded the most optimistic expectations and kept the audience very much interested during the hour that he spoke.

Armed with a large basket of pleasant-scented chemicals the speaker proceeded to fill the lecture table with them, much to the interest of the audience. After taking the society on a detailed sight-seeing trip through Boston he finally conducted it to the Bureau of Industrial Alcohol where he described his amusing experiences in attempting to obtain a permit for the use of alcohol industrially. After having fulfilled all the requirements of the bureau some months later he found that the application was rejected on account of the youth of the applicant. However, due to the speaker's persis-

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CALENDAR

WED., NOV. 22—
9:50 A. M., Chapel Service. Rev. R. L. Packard.
4:00 P. M., Basketball Practice.
4:30 P. M., Band Rehearsal. Gymnasium.
7:00 P. M., Radio Club Meeting, Room B., E. E. Bldg.

THURS., NOV. 23—
9:50 A. M. Chapel Service. Rev. D. N. Alexander.
4:00 P. M., Basketball Practice.
4:30 P. M., Glee Club Rehearsal. Boynton 19.

FRI., NOV. 24—
9:50 A. M., Chapel Service. Rev. D. N. Alexander.
4:00 P. M., Basketball Practice.

SAT., NOV. 25—
8:30 P. M., Dorm Dance.

MON., NOV. 27—
9:50 A. M., Chapel Service. Rev. R. M. Pierce.
4:00-6:00 P. M., Pres. and Mrs. Earle at home, The President's Quarters.
4:00 P. M., Basketball Practice.
4:30 P. M., Glee Club Rehearsal. Boynton 19.

MECHANICS SEE PLYMOUTH FILM

Interesting Picture Shows Automobile Construction

Last Friday evening, shortly after seven-thirty, Edward L. Barrett, president of the Local Section of the A. S. M. E., opened the third meeting of the American Society of Mechanical Engineers. H. Ashley, the secretary, read the minutes of the two previous meetings. He described briefly the lecture on "Strange Mechanisms," which was given by Professor A. L. Smith on October twentieth, in the Mechanical Engineering building. After the secretary's report several announcements were made. Among these were:

A meeting of the Worcester Society of Engineers will be held on Thursday, November 23rd, in the dormitory at seven-thirty. Mr. Cooper of the A. S. M. E. will speak of his recent observations in Russia in regard to present conditions. Mr. Cooper has been connected with the electrical plant in Russia, and has done work recently at the Muscle Shoals project.

At a future meeting, date to be announced later, Dr. Hartag of Harvard will lecture on "Vibrations." This subject is announced as of especial interest to the Senior Mechanics.

The National meeting of the A. S. M. E. will be held in New York after Christmas. The exact date of this meeting is to be announced later.

When these preliminaries were over, the main issue of the evening was introduced. The Plymouth Company had contributed to the evening a film made by the F. L. Harris Corporation. Mr. Shattuck of the Plymouth Motors Corporation operated the moving picture

(Continued on Page 2, Col. 1)

DR. LEON P. ALFORD ADDRESSES STUDENTS AT FULLER ASSEMBLY

Speaker Emphasizes the Importance of Leadership Ability in the Character of an Engineer

GIVES MANY EXAMPLES — TAU BETA PI HOLDS ITS FALL PLEDGING

The second Fuller lecture of the year was given at the assembly held at 11:00 A. M. Tuesday, November 14. The president of the junior class, William McKay, was the presiding officer.

After the assembly had opened with the singing of "America," Gordon Whitcomb, '34, announced the fall pledges of Tau Beta Pi. They were as follows: C. Marshall Dann, '35; Theodore McKinley, '35; Edward Barrett, '34; Paul Grierson, '34; John Keenan, '34, and Philip Stafford, '34. Following this the band rendered a selection, with sound effects, in keeping with the spirit of the Thanksgiving season.

The speaker, Dr. Leon P. Alford, was then introduced by President Earle and delivered a lecture entitled, "Industrial Management." Dr. Alford first gave two definitions of engineering, one laid down in 1828, which stated engineering was a specific science applying to only a few certain things, and the other stated in the preamble of the constitution of the American Society of Mechanical Engineers in 1920 showing that engineering covers a multitude of sciences. Dr. Alford then stated that engineering will no doubt soon have to include the responsibility of the social effects which it has produced. He then stressed the importance of leadership ability. The majority of engineers are designers but they are not the ones that are greatest in demand or most highly paid. Management engineers—engineers who not only have a technical training but who are also capable of handling business affairs and other men are the ones that get the highest salaries and are highest in demand.

The importance of executive training is so great that engineering schools are now planning their curricula to give their students this necessary education. The speaker listed some of the qualifications and outlined the course to be followed by one in order to become an industrial management engineer.

Dr. Alford mentioned the engineers who pioneered in this comparatively recent branch of engineering and cited many instances where the managing engineer demonstrated his ability and gained the confidence of his fellowmen by doing jobs which were considered below his plane.

TECH CARNIVAL DATE ANNOUNCED

Warren M. Berrell Is the General Chairman in Charge

It was decided at a recent meeting of the Tech Council that the Annual Tech Carnival should be held on Friday, January 12th, under the auspices of the WPISCA, formerly the WPI YMCA—W. P. I. Student Christian Association for your information.

The carnival will be very similar to the one last year. The 1933 Carnival was different from those in previous years in that a professional promotor was hired to give the students in charge an idea of how it should be done. Each fraternity and each of the two lower classes ran booths in competition. The WPI Musical Association was represented by the band during the earlier part of the evening and later by the orchestra at a very successful dance.

The 1934 Carnival, it is expected, will be very much along the above lines, with last year's light-heartedness, and high-spirited gaiety. Paul Swan, the WPISCA secretary will be the faculty advisor in authority for this program. Warren M. Berrell, '34, will be the general chairman in charge, and he will be ably assisted by John Maloney, '34, who will be the business manager for the Carnival. Various committees will be appointed by the general chairman in the near future. This year's Carnival will be run without the aid of a professional promoter. The chairman and business manager are certain that they will offer something bigger and better than last year and will not have to turn over a large percentage of the profits to any hired promoter.

TECH PROMINENCE

The Institute was visited recently by Pierre Douel, a hydraulic engineer from Grenoble, France. Mr. Douel lectures in an engineering school in that city and is also a professional hydraulic engineer. He showed special interest in the work of the Institute being carried on at the hydraulic laboratories in Chaffins.

From December 4-8 the annual A. S. M. E. convention will be held in the A. S. M. E. building in New York City. On Tuesday morning, December 5, Prof. Charles M. Allen will read a paper entitled, "How water flows in a pipe line," before the water measurement symposium under the auspices of the hydraulic division of the A. S. M. E. Dr. Albert Kingsbury, president of the Kingsbury Machine Works in Philadelphia, will read a paper entitled, "Heat effects on lubricating films," before the department of lubrication research on Wednesday, December 6. Dr. Kingsbury was professor of Applied Mechanics at Worcester Tech from 1899-1903 and received an honorary degree of Doctor of Engineering at the last commencement exercises.

NOTICE!
The Campus Low-Down Column is on Pages 4, 5 & 7

DORM DANCE SATURDAY AT 8:30 P. M.

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RUSHING

With rush week only a short distance away it would be well for the incoming class to pause a moment and consider just what rushing means and just how it is controlled at our school. In contrast to some other schools we have a hands off period, while other schools grab the incoming class as soon as they arrive at the school and pledge them up immediately. This does not give the rushee a chance to examine the other houses on the campus or to really look over the house he has pledged to. Oftentimes, a man is pledged before he sees the house or more than a couple of the men living in the house. This method of rushing is not advantageous either to the fraternity or to the men whom they pledge. Each has not had a chance to size the other up and consequently there are many misfits. In our method of rushing most or all of this is avoided. The fraternity has a chance to look the man over and the man has a chance to size up the different houses and to note the different traits of each house and how their personal traits fit in with the respective fraternities.

In this way the fraternities benefit and the pledges benefit. It builds for stronger fraternities, all working for a common good, Tech, and consequently helps build the school up. There are many things to be considered before one finally makes up his mind to join a house; for example, the financial end of the matter. Almost all the houses on the hill have the same fee for initiation but there is a slight variation. The question of living quarters for the next year is a serious problem. The men must room somewhere and the houses must have men to live in them if they are to continue their activities. The men with whom you will live longest, that is the sophomores and juniors, as the seniors will not be here next year, should be the men most seriously considered. There are also many other things which are somewhat different and apply only to certain cases; and in these, those men must make a decision which will affect their entire lives. Thus to the men who are being rushed; take your time in deciding; weigh each fact; and finally, remember that the action of a few minutes will affect your entire life and happiness. However, as regards the time to make your final decision, a man should make up his mind by the time rush week is over. Last year quite a few men did not decide on a fraternity until the second rush period and this fact caused additional time and money to be expended by the respective fraternities to pledge up these "undecidables."

A. S. M. E.

(Continued from Page 1, Col. 3)

machine which was equipped with a photo-electric sound track. There were three reels shown. The first of these was in the assembling plant. Three cars a minute are produced here at a rate of 1750 cars per day. Short sequences were taken of the different departments of the plant leading up to the assembly lines. Crank shafts were shown "in the make" from rough, hot slugs of glowing steel, down to the finished product. There were enormous presses which make one-piece fenders and body sections. These body sections were then united by electric arc welding done by a machine automatically, and so flawlessly that the subsequent one piece body withstood terrific punishment in tests at the Plymouth proving grounds. In the foundry there were castings made much in the fashion of our own shops with the exception that everything was on a production basis, even to the cleaning operation which was done by a vibrator.

All these different operations were focused and brought to bear toward the assembly section of the plant. This was done by an elaborate system of conveyors which brought the respective parts to various points on the assembling lines. The double-drop frame had break-drums and wheel assemblies mounted first, with the drive shaft and its related parts placed and fixed subsequently. Then the frame was inverted and parts such as the motor, body, and other essentials were affixed in the proper order. There were special power wrenches to screw on nuts, suspended above, so that the workman had only to guide the power wrench to screw on and tighten different fastenings. At the end of the line these cars were driven off the line at the rate of one every twenty seconds, hence the title of the film, "Three A Minute."

But before these cars can be put on the market they must be submitted to gruelling tests. Of course the motor is put on the dynamometer block before it reaches the chassis, but after the car is assembled it is driven under all sorts of conditions to make sure that it will stand up. An example of the kind of testing that Plymouth motors goes through, to make assurance doubly sure in regard to the kind of a car they had put out, when the first ones came off the assembly line, was as follows: Two cars were given to Barney Oldfield and to Billy Arnold, famous race track drivers to see what they could do to cause a breakdown of some sort in these cars. These two veterans showed some heart-rending brutality to these automobiles. The cars were driven over railroad tracks, both crosswise, and along the ties. The purpose of this test was to show the strength of the steering mechanism which is constructed on a new shock-proof idea such that the road shocks are absorbed by the mechanism instead of being transmitted by it to the driver through the steering column. Another test was over frozen plowed ground. The cars were driven at a speed of around thirty miles per hour over this land and made to navigate sharp turns and twists. Following this came the test on the race track. The two cars were driven at high speeds around the icy, snow-covered track to test the motor and the frame strengths. All these tests alone seemed sufficient to put any well-built car into discard. Oldfield and Arnold, however, had had orders to ruin the cars so that it could be determined wherein they fell short of being perfect. The two drivers wracked their brains for some special means by which they could wreck their autos. Arnold hit on the scheme of driving the cars through a shallow stream to test its fording qualities. The car went into the stream over the hubs, and the exhaust pipe. It faltered, but gathered speed again and came out on to dry land. The return trip was made without mishap. The crowning test came, however, when the car was repeatedly driven into a track and dumped down hill sidewise. It turned over and over until it came to rest upside down at the bottom of the hill. Help was summoned and the car set on its wheels. The driver started it, and it was driven away. This was done to one car until it had been turned over fifty-two times. It was in a very much battered condition, as one can imagine, but the car still was in running shape.

In the last reel, which was originally intended as a sales talk, Harry Moock, General Sales Manager of the corporation, introduced a technician who explained the new features, so that salesmen of the company could "talk up" the car to prospective buyers in an intelligent fashion. He gave a very satisfactory explanation of floating power. Most motors used to be mounted right on the frame of a car at points below the center of gravity. The mountings of the Plymouth differ from this in several respects. In the first place there is one forward mounting which is almost directly below the fan shaft, well above the center of gravity, and the rear mounting, at which point there are two parts of the fastening, are located at opposite sides of the drive shaft, which is, of course, lower than the mountings on earlier motors. These mountings differ, furthermore, in character from the old type. In the front mounting is a curved collar. There is bonded to the metal, a heavy layer of new, tough, flexible, and resilient rubber. This rubber is bonded to the metal needless to say by a patented process. (The Packard Motor Company has a new car on the market with a high front mounting which is said by Mr. Shattuck to be a possible infringement on the patents in the new Plymouth discovery.)

A second great improvement, though not a new one, but novel in the low price field, is hydraulic brakes. The underlying principle of this is a well known application of Pascal's law of a force exerted on a liquid in a closed vessel. This force is distributed equally on all surfaces in proportion to the share of the area in a direction at right angles to the opposing wall of the vessel. Hydraulic brakes are of course successful, since they are well equalized as to pressure on each wheel, and are economical since they are very simple in design and construction.

Other improvements cited were heat resistant steel exhaust valves and valve seat inserts. The timing gears are driven by a chain, instead of by a transmitting gear or by direct gearing. The Plymouth piston is made of aluminum alloy with a slotted side to allow for expansion to exact size at a running temperature. This piston weighs 14 oz. as opposed to a previous 19 oz. for a similar piston. The crank shaft is balanced and counter-weighted, and has four bearings. The lubrication is by pressure, to all parts. The crank-case is ventilated with a breather on the opposite side of the case from the filling pipe. The frame, the back-bone of a car, is a double U bar, with a closed box section. This member is an X with special supplementary braces, and is completely underslung, so that the center of gravity of the car, as a whole, is low.

This description of the Pymouth with questions that were later asked completed the lecture by Mr. Shattuck. President Barrett then resumed the chair and the meeting was closed formally about nine-fifteen.

THE TAYLOR'S BENCH

If you and I had scads of money—I haven't given up wishing—and we planned to contribute to some good cause, would we not insist that those whom we assisted be worthy and appreciative? I should.

The Institute stands in just that position, even though it is not rich. By years of patient effort on the part of many presidents and trustees there has been built up here a comfortable endowment, amounting to about three and a quarter millions.

If it were not for the income on that endowment, you could not receive the fine education that is available. Some of you pay $250 a year for tuition, others pay $300, exclusive of fees. It costs the college, on the average, about $500 a year for every man who attends classes. Tuition income does not even pay faculty salaries, and they constitute less than two-thirds the running expense.

Do you not see why the Institute is justified in selecting very carefully the men upon whom it is to expend its hard-won income? You are under no debt to anyone for this benefit, because the money was given cheerfully by a host of people who believed in education of this sort and in you.

The trustees want you to get the full benefit of endowment income as well as of what your parents are investing. Sometimes they find it hard to understand why some men try to dodge getting the education they are paying for.

TWO LOWER CLASSES BATTLE TO 6-6 TIE IN GRIDIRON STRUGGLE

Freshmen Show Surprising Defensive Power to Stand Off Last-Minute Goal-line Threats of Sophomores

JOHNSON AND COLE SCORE ON SPECTACULAR AERIAL HEAVES

The Sophomores were held to a 6 to 6 tie by the Freshmen in a thrilling football contest featured by beautiful passing on both sides and a great goal line stand by the yearlings.

The Sophomores scored first, getting their touchdown early in the first period. Gaining possession of the ball soon after the kickoff the Sophs, by a series of runs by Webster and Cole, advanced the ball to the Freshman 26-yd. line. Webster then threw a pass to Cole, who ran for a touchdown. The kick for the extra point went wide.

In the second period, Taylor, Freshman center, intercepted a pass at midfield. This started a march down the field to the 25-yd. line. There the Freshmen running attack stalled, and the yearlings were forced to take to the air. Carlson threw a pass to Johnson, who, after making a spectacular catch, crossed the goal line. An attempted drop-kick failed.

In the third period, both teams were successful on the offensive, with Herb Grundstrom doing some pretty broken-field running for the Freshmen.

Toward the end of the final period, the Sophomores advanced deep into the Freshman territory, getting a first down on the Freshman 5-yard line. This was due chiefly to some hard line plunging by Al Chase, rugged Sophomore halfback. Here, however, the Freshmen rose to great heights, and held. Three line plunges netted the Sophs only three yards. It was fourth down and two yards to go, when Carlson broke through and spilled Chase in his tracks. The game ended at this point, and the final score was, Freshmen 6, Sophomores 6.

(Continued on Col. 3)

(Continued from Col. 1)

SOPHOMORES—6		FRESHMEN—6
Harrington le		re Hanson
Tripp lt		rt Creswell
G. Chase lg		rg Woodward
Fuller rg		lg Rosenlund
Healy c		c Taylor
Phelps rt		lt Townsley
Jones re		le Johnson
Cole qb		qb Titley
Howes lhb		rhb Grundstrom
Webster rhb		lhb Frawley
Crane fb		fb Carlson

Score by periods:

Sophomores	6	0	0	0—6
Freshmen	0	6	0	0—6

Touchdowns—Cole, Johnson.

Substitutions: Sophomores—Al Chase for Crane, Shepardson for Jones, McGrath for Harrington, Huntley for Fuller, Busby for Phelps, Grublerskas for Tripp, Casler for Howes, Atwood for Cole, Gowdy for Webster, Montville for Shepardson. Freshmen—Swarthout for Townsley, Dearbon for Woodward, Morse for Creswell, Denning for Hanson, Mencow for Titley, Anderson for Frawley, Moore for Grunstrom.

Officials: Referee, Bigler; umpire, Wilkinson; linesman, Cantor.

HARRIERS FINISH GOOD SEASON

Records Fall Twice in Close Running of Five Meets

The cross country team wound up their season last Saturday with a record of two victories and three defeats. The team, composed of veterans in the main, turned in much better work than the victory column shows. In both the Rhode Island State and Rensselaer meets the records were broken. The first meet of the year was held at Medford against Tufts. In spite of Captain Vinny Buell's first place, Tufts won by a close margin 26 to 29. The following week the team turned in a perfect score against the U. S. Coast Guard Academy 15 to 40. This was held over the "short" course and Tech won the first five places, Buell, McKinley, Granger, and Moran being tied for first, and Frary following right after. The disappointing showing of the Coast Guard is due probably for the most part to the fact that this is the first year that they have maintained cross country as a varsity sport.

The second victory for the engineers was at the expense of Mass. State by the narrowest of margins, the score being 27 to 28. With the meet undetermined a real race developed between Captain Buell and Captain Caird for eighth place. Buell's last minute spurt nipped Caird at the tape and decided the victory for Worcester. Charlie Frary was the first Tech man to finish, placing third, followed by Moran fourth, Granger fifth, and Rothemich seventh. The Rhode Island meet was something again and a young nemesis in the way of E. Cotter of R. I. upset the efforts and aspirations of Captain Buell and broke the school record by 23 and a fifth seconds. This was truly a marvelous feat and gave a suitable inspiration to his team mate who followed him at a distance of 300 yards for second place. Captain Buell came in third, closely followed by Frary and McKinley who tied for fourth. However, the damage had been done, and with sixth, seventh and eighth positions being taken by R. I. State, they won the meet 24-31.

The last meet was run off at Troy against R. P. I. This time the record was broken by the first three men to finish. The New Yorkers got first but Charlie Frary and Vinny Buell finished second and third. The outlook for next season is favorable. Graduation will take Buell, Frary, and Rothemich, but with three promising men in J. Guild, Randall, and Jordan coming up besides a strong nucleus of this year's team left, we should have a successful season.

FOOTBALL SEASON PROVES TO BE DISASTROUS ONE FOR WORCESTER

Loss of Backfield Material Kills Scoring Punch---McNulty Stood Out in a Strong Defensive Line

SOCCER SEASON SHOWS TWO WINS

Team Makes Fair Record in Six Hard-fought Games

The record of the soccer team for the season shows two victories, three losses, and one tie. The three defeats at the hands of Mass. State, Wesleyan, and Fitchburg Normal School were simply a case of the better team winning. They all had a scoring punch that developed when needed and an air-tight defense which kept the Tech scoring aces bottled up most of the time. The traditional game with Clark ended in an unsatisfactory tie 1 to 1. The two wins of the season were over Tufts and Conn. State.

The season opened at Amherst against the smooth-working Mass. State team. The engineers were the first to score, their goal coming in the second period. However, they could not hold this lead and in the second half Mass. State rolled up three points. Further scoring by the downstaters was prevented by Tech's crack defense, with Hebel starring. The following week at Middletown, Conn., Wesleyan administered a 5 to 1 trimming. The Wesleyan boys were far superior in every department of the game and scored at least once in every period. Faster, more aggressive, and with a large repertoire of plays, they had no trouble in downing the fighting Tech team. Borden scored the lone Worcester tally in the fourth period on a penalty kick. As usual, Hebel and Sargent played their usual good game on the defense.

The Tech booters scored their first triumph in a home game at the expense of Tufts by the close score of 1 to 0. The winning score was contributed by Bill Clark in the first period. The rest of the game was a see-saw affair with Tufts determined to tie the count and Worcester equally determined that they should not which resulted in exactly nothing in the scoring line. It was a fast and intense game with the outcome not definitely settled until the final whistle was blown. Another victory followed at Storrs over the Conn. State aggregation by the same score of 1 to 0. Although annoyed a little by a small field, Worcester played in good form and kept the ball in scoring position most of the time. Borden and Monks bore the brunt of the attack. One of these rushes resulted in the only score of the game by Monks on a nice angle shot on a pass from Jimmy Wilson. Connecticut made a real threat in the fourth period when hands was called on a Tech back inside the penalty area. Captain Sargent broke this up, however, by making a clean stop of the kick.

In the Clark game Tech slumped and could get no better than a tie 1 all. Although beaten by Conn. State 5 to 1, Clark showed an unexpected reversal of form and came pretty near beating Tech for the first time since 1928. Near the close of the game Gurham, playing right halfback, sent a kick from near midfield through half the players on the field and through the goal for the tying score. In comparison with the other games on the schedule it was a rather slow contest. Both teams played cautiously and Tech seemed decidedly off form. The Worcester defense starred again with honors going to Hebel and Sargent. The final game was played Armistice day at Fitchburg. Fitchburg Normal School won 2 to 1 in one of the best games of the year. Probably led on

(Continued on Page 6, Col. 1)

PROSPECTS MUCH BRIGHTER FOR 1934 SEASON

Tech's football team of the past season did not come up to expectations and earned a dismal record as far as games won are concerned. Victory eluded the Crimson and Gray on several occasions when they were decidedly the superior team. At the beginning of the year it was expected that Tech would be able to place a strong winning combination on the gridiron but ineligibility, and some men not returning, put the team at a disadvantage from the start. The scores of the games do not represent the quality of football played by Tech especially during the latter part of the season. At times Tech displayed signs of great possibilities but these were more than equalized by bad breaks.

The record of the team shows defeat at the hands of every opponent by a wide range of scores. Lack of practice was evident in the early season, and this, combined with a scarcity of material, proved a drawback to the team in its early games. Unlike most teams Tech did not play a set-up in its whole schedule. Opening with the Coast Guard Academy at New London, the Engineers went down to defeat to the tune of 25-0. The passing of the Cadets was a big factor in their victory, and Tech's light, fast team could do little against the heavier Coast Guard team.

The following week Tech was defeated by a strong Trinity team at Hartford, this time by a score of 25-6. The Nutmeggers got several breaks when Tech fumbled, thus ending scoring threats.

Tech opened its home stand on October 14, against Norwich and lost 6-0. Injuries had caused a change in the Tech line-up and throughout the season a lack of reserves was a continual drawback to the team. The Vermonters made 13 first downs against 5 for Tech. The game was a close tilt with the visitors striving to avenge the defeat handed them last year.

The following Saturday Arnold was Tech's opponent on Alumni Field. Tech's weak defense against an aerial attack was responsible for their defeat. The final score was 13-6. Tech's touchdown was the result of a misplay with Swenson carrying the ball over for the score. The Gymnasts showed a world of power but this was kept in check by a stubborn defensive Crimson and Gray team.

For the third time in a row Mass. State proved to be too much for Tech to handle. Although outplayed in the first quarter State showed where their advantage lay when Louis Bush entered the game and reeled off two touchdowns before the half ended. Tech put up a determined fight and scored on a long drive early in the third period, but Bush returned to the game and scored again before being removed again. Louis Bush, the nation's high scorer last year, again proved to be the only obstacle in the way of a Tech win.

On November 4, Tech played host to Rhode Island State. The score was 20-7 in favor of R. I. Freddy Cole, Tech's sophomore halfback, completely outshone the veterans, and his playing was a help towards preventing a greater score. Cole seemed to put new life into his team and throughout the second half the game was as well played as anyone could hope to see, with both teams on an even basis.

Tech played their biggest rivals on November 11, when they went to Troy to play Rensselaer Polytech. This was the evenest game of the year with R. P. I. winning by a single touchdown, the result of a 40-yard pass in the fourth

(Continued on Page 6, Col. 2)

PHI GAMMA DELTA

Founded at
Washington Jefferson College
April 22, 1848
Active Chapters—73

Pi Iota Chapter
Founded
November 21, 1891
Total Membership—29,600

Pi Iota Chapter of Phi Gamma Delta, oldest of Tech fraternities, founded its local chapter in the fall of 1891. A year previous to that a student who had transferred to Tech, which was then a small college, together with several of his chums decided to band together in a club. As fraternities were just coming into popularity, a petition was submitted to Phi Gamma Delta, and the society was admitted in November, 1891. After several experiments in location, the active chapter then purchased the property at 99 Salisbury Street from Stephen Salisbury, and built the present house there in 1899. Due to the fact that it was the first fraternity at Tech, the college co-operated with the organization and the opening of the chapter house was one of the social events on the Hill.

ACTIVE MEMBERS

Juniors—George Standish Beebe, Gordon Sharpe Cruickshank, C. Marshal Dann, Preston H. Hadley, Osmond L. Kinney, Roger H. Lawton, Harold A. Le Duc, Robert Logan, William C. Potter (pledge), Paul R. Shepler, Raymond F. Starrett, Frederick W. Swan.

Sophomores—George L. Chase, James K. Healy, L. Brewster Howard, A. Nelson Parry, James W. Phelps, Alan F. Shepardson, Robert Fox Webster, Robert C. Wright, Frederick L. Yéo, Hilliard Hiller, Anders B. Sandquist, William H. Titley.

Faculty—Assistant Professor W. L. Phinney, Professor L. L. Atwood, A. Francis Townsend.

Seniors—Richard D. Barnard, Paul W. Booth, Robert Norman Clark, William F. Drake, Paul S. Grierson, Thomas A. Hyde, Paul E. Johnson, Harvey Franc Lorenzen, Everett F. Sellew, George A. Stevens.

SIGMA ALPHA EPSILON

Founded at
University of Alabama
March 9, 1856
Active Chapters—108

Mass. Delta Chapter
Founded
April 10, 1894
Total Membership—42,561

Sigma Alpha Epsilon Fraternity was founded on the ninth day of March, 1856, at the University of Albama, in the old city of Tuscaloosa. Eight students who had become hard and fast friends were the founders of this brotherly society, which was destined to extend to the furthermost limits of the country and eventually to become the largest Greek-letter fraternity in the world.

The Massachusetts Delta chapter of Sigma Alpha Epsilon is the second oldest of the Tech fraternities, having its origin in what was known as the Tech Co-operative Society which was founded in the fall of 1892. The society form of organization was adopted because there was faculty opposition to fraternities at that time, but in the spring of '93 application for a charter was made to the national S. A. E. fraternity, and as a result, the new chapter was installed on March 10, 1894.

ACTIVE MEMBERS

Faculty—Prof. Charles M. Allen, Prof. Percy R. Carpenter, Prof. Herbert F. Taylor, Mr. Clyde W. Hubbard, Mr. Lawrence M. Price, Mr. Warren R. Purcell.

1934—Harry F. Clarke, William J. Denning, Jr., J. Roy Driscoll, Charles Egan, Paul G. Guernsey, Robert La Roche, N. Robert Mango, John A. McMahon, Paul J. Sullivan, Gordon Whitcomb, Howard Whittum.

1935—George Beaulieu, Robert Branch, William Grubert, John O'Shea, George Perry, Don Sleeper, David V. Smythe, Philip Sullivan, James Tasillo.

1936—Leo Benoit, Roger Bruce, Loring Coes, Daniel Harrington, Tom Healy, John McGrath, John Porter, George Rocheford.

CAMPUS LOW-DOWN

Well—I suppose some of you may be wondering just where all the sound (!!) effects were coming from during the last Band recitation. Yes they were good—we'll admit that. Though some of you may have given much credit to "Fitzy" we are of the understanding that he has some new protegés at work. Perhaps you saw one "gentleman" with a "red" jacket and reasonably clean white pants in the gym that day—Well, he certainly had all the qualifications of a good Indian yell—but he's no actual Indian. Who ever saw a blonde Indian?

* * * *

So you didn't like last week's issue! Well, we didn't think it so hot either, but where were you over the weekend—yes you lucky bums—you went home and some of us couldn't—so, considering our duties (seriously of course) we set about to give you some reading matter. Difficulties were immediately encountered, no one had thought to write anything.—Well—we gave you something and the few (very few) men who worked hard for your benefit (?) were the ones who heard the most crabbing. Thank you—at least you appear to be interested.

Well, this gives you something to think about—and it could have been much longer, too. If you want to kick now—let's hear it.

* * * *

Well—(yes, it's all wells)—did you ever get stuck at the end of a sentence with the tone of your voice higher than expected. Do as the faculty, just say "period". What's good enough for them ought to be good enough for you.

* * * *

There is a new member of the faculty, a young fellow who exists in a sort of nameless state. He needs a name—one to be called when out of classrooms and so far we haven't got it. Perhaps the bunch of us can do something about it. Specifications are that the name should be such that you can call him by it and it is not one to be used entirely behind his back. He might go under the following, "Vic," "Siegy," "Speed," (there's a story connected with that last one.)

Maybe some of the nimble-wits (nit wits if you prefer) can help us out.

* * * *

That football game last Saturday was almost as good as a hockey game. From an engineering standpoint one might say that the coefficient of friction was very low (too low). At least some of the participants had a chance to get their faces washed—in mud or something.

* * * *

The last ball carrier of that game must be a hardened athlete or he's merely used to it. He certainly had enough energy for the side-lines with a front flip (in favor and for view of the few young ladies present). It's too bad that he couldn't have used some of his energy in putting that ball the necessary 4 inches across the goal. Oh well—we can't say too much nor can the rest of the team. They were no doubt exhausted—or nearly, after the exertion necessary to lick (or try to) that Frosh team. Flips do take a little energy—so we've heard.

* * * *

We have recently noticed that the cat, mascot of one of the fraternities, is now spending much of his time on the campus, not so much in recitations, as down in the powerhouse with many more of his newly acquired friends. Well—maybe life at the house isn't so good for a cat, or then, maybe he likes the comparative peace and quiet of the boiler-room.

* * * *

We hear of a very interesting example of competitive "putting it over"—not the kind so common in class, however. Two magicians are concerned, both trying to put the other out, without much evident success. After many attempts

(Continued on Page 5, Col. 3)

THETA UPSILON OMEGA

Founded at
Amalgamation of Ten Chapters
May 2, 1924
Active Chapters—17

Beta Alpha Chapter
Founded
May 2, 1924
Total Membership, June 1, 1933—2520

Theta Upsilon Omega is the youngest national fraternity at Tech, as it did not become national until 1924 when ten fraternities at different colleges in various parts of the country amalgamated to form the present Theta Upsilon Omega fraternity. Since then there have been seven additional chapters in different parts of the country joined to the national organization.

The Tech chapter, Beta Alpha, was founded as Delta Tau, February 17, 1906, by nine men, headed by W. T. Roberts, '08. Since then the fraternity has had three homes, until 1911 at 66 Park Avenue, at 143 Highland Street until 1919, when the present quarters at 30 Institute Road were purchased.

ACTIVE MEMBERS

Faculty—Professor Jerome W. Howe, Dr. Gleason H. MacCullough, Professor Arthur J. Knight, Professor Kenneth G. Merriam, Mr. Ellis R. Spaulding.

Graduate Students—Frank L. Eaton, Frederick M. Potter, Bernard C. Shaw, Walter W. Tuthill.

1934—Warren R. Burns, Ernest M. Crowell (pledge), Herbert W. Daniels, Jr., Charles S. Frary, Jr., Curtis A. Hedler, Merton S. Williams.

1935—Carl G. Bergstrom, Walter A. Blau, Jr., Robert M. Cape (pledge), Edwin T. Clinton (pledge), Herbert F. Gale, Willy M. Hebel, Floyd L. Hibbard (pledge), Leonard G. Humphrey, Jr., Wallace L. Johnson, Evan C. Luce (pledge), Richard P. Merriam, Murray Robinson, Chester A. Spencer.

1936—Harry T. Anderson, Jr., Robert M. Bruce, Frederick F. Cole, John A. Crane, Thomas C. Frary, Edward K. Gladding, Harry C. Gray (pledge), J. Edward Guild, Albert H. Gurnham, Richard S. Howes, Frank K. Jones (pledge), Clinton E. Leech, Reginald A. Morrill, Lincoln D. Robbins, Raymond W. Schuh, Gilbert B. Smith (pledge), Harold C. Whitman.

ALPHA TAU OMEGA

Founded at
Virginia Military Institute
September 11, 1865
Active Chapters—91

Mass. Gamma Sigma Chapter
Founded
November 27, 1906
Total Membership—30,000

The Worcester Tech Chapter (Mass. Gamma Sigma) of Alpha Tau Omega had its beginnings in the form of a local fraternity known as the "Arm and Hammer." In the fall of 1903, Roger Del French, together with five other men, concluded that there was room for another fraternity at Tech.

A constitution was drawn up, and the name "Arm and Hammer" was adopted, the idea being taken from the Tech seal and the spirit which it indicated. For some months the existence was unknown, but the club had steadily grown, and when finally made known the group was very compact. The club acquired a house on West Street, when in 1906, it was installed into Alpha Tau Omega. The present chapter house at 24 Institute Road was purchased in 1909, to which an addition and extensive interior changes were added in the fall of 1929.

ACTIVE MEMBERS

1934—Warren M. Berrell, Francis J. Crowley, Edward W. Maddock, John S. Maloney, E. Hugh Osborne, C. Eugene Parta, A. Elmer Pihl, Wallace R. Powell, Philip C. Sherburne, Michael L. Warwick, Frederick F. Whitford.

1935—Robert C. Flagg, C. Gordon Lincoln, Kenneth L. Moran, Thomas F. McNulty, Homer R. Morrison, Joseph R. Sigda, Joseph Sukaskas, Roy O. Swenson, John E. Tholl.

1936—Edwin Brewer, H. Mason Dudley, Karl D. Eastman, Richard L. Morse, Richard Remy, George A. Sherwin.

Faculty Members—Professor Fairfield, Professor Morgan, Professor Newell, and Mr. J. E. Fitzgerald.

THETA CHI

Founded at Norwich University
April 10, 1856
Active Chapters—48

Epsilon Chapter
Founded
March 20, 1909
Total Membership—12,652

On October 12, 1905, nine undergraduate members of the Worcester Polytechnic Institute formed a society which they called Pi Omega Pi. This fraternity began as an athletic society and one of the restrictions for membership was that a candidate must have received a varsity letter in one of the recognized sports at Tech. As this restriction was later found too severe the aims were broadened to include "primarily to foster clean athletics at Worcester Polytechnic Institute."

Pi Omega Pi petitioned Theta Chi Fraternity in 1909 and was accepted, the installation taking place on March 20, 1909. The first home of Epsilon chapter was at 1 Lancaster Terrace. Here the chapter lived and held meetings until 1917 when the large duplex house at the corner of Dean and Salisbury Streets was taken over.

ACTIVE MEMBERS

Faculty—Professor Carl Meyer, Dr. Richard Beth, Dr. Samuel Plimpton, Mr. Arthur Tarbox.

Graduate Students—Ethan Bassett, Wesley Reed.

Seniors—Leonard Almy, Gordon Barnes, Charles Bissell, William Burpee, Willard Greenwood, George Kalista, Thomas Ratkiewich, Jr., Edmund Rothemich, James Rowley, Warren Snow.

Juniors—Karl Bohaker, Allen Hardy, Jr., Francis Harirngton, Theodore McKinley, George Makela, Gordon Swift, Plummer Wiley.

Sophomores—Edward Armstrong, John Balasevich, Walter Beth, Raymond Casler, George Dautrich, Paul Downey, George Estes, Robert Fowler, Jr., Scott Goodwin, Robert Hood, Ernest Krippendorf, Harry McRell, Jr., Henry Plimpton, John Richardson, Joseph Stead, Frederic White.

PLEDGES

Juniors—Richard Falvey, Russel Wood.
Sophomores—Irving Bottcher, Harold Henrickson.

LAMBDA CHI ALPHA

Founded at Boston University
November 2, 1909
Active Chapters—83

Pi Zeta Chapter
Founded
June 15, 1913
Total Membership—14,000

Pi Zeta of Lambda Chi Alpha was started as a local fraternity, Zeta Sigma Tau, on December 5, 1912, by a group of Juniors in the Class of 1914. The new local fraternity decided to petition Lambda Chi Alpha and on June 5, 1913, was granted a charter. The influence of the national fraternity began at once to manifest itself on the new chapter and its development was steady and permanent. The first chapter house was located on Fruit Street but in 1916 the present house on 30 Trowbridge Road was purchased and has been occupied by the chapter since that time.

ACTIVE MEMBERS

1934—R. W. Fulton, W. E. Mesh, E. L. Smith, Jr., J. H. Ray, B. H. Colby, F. R. McLaren, H. E. Stockwell.

1935—B. G. Larson, T. T. Clarke, P. S. Dean, R. L. Stone, T. M. Cole, D. L. Watkins, D. G. MacMillan, K. C. Smith, O. P. Lee.

1936—A. D. Tripp, Jr., D. L. Edmunds, G. W. Fuller, D. M. Morley, F. E. Hyatt, G. W. Huntley, A. D. Wilcox, J. R. Hastings, Jr.

Pledges—B. Simons, W. Dahlstrom, W. Proctor, H. Burr, H. Cox, J. Lane, R. Hunter, V. Olson, R. Hook.

Faculty—Dr. R. K. Morley, Professor C. D. Knight, Professor H. A. Maxfield, Mr. W. W. Locke, Mr. C. L. Wright.

CAMPUS LOWDOWN

(Continued from Page 4, Col. 3)

they called it a draw and departed. But, the hand is quicker than the eye and now one of these "gentlemen" has in his pocket a part of the equipment of the other.—The other doesn't even know it yet. Our advice is "watch your pocketbooks." We don't seem to be safe around here any longer.

* * * *

"Buggie Doesn't Live Here Any More," seems to be a popular song with one house on the Hill. Free Rent on Wachusett Street.

* * * *

Word comes to us from the "Powers-that-Be" in charge of Mr. Perry's Country Club for College Boys that there's going to be trouble if the boys don't stop parking their Model T's on the grass plots—you know—the vacant spaces immediately adjacent to the clubhouse. Dorm Jiggers are said to be the worst offenders.

* * * *

Yes—you're all guessing about one certain article of last week. Even if we knew, we wouldn't tell you—we're not stingy in any case, either.

* * * *

Some of these small cars certainly can go places—even along sidewalks. Why one man was even chased up his own front steps by this "runaway" driver and car. No paint gone so not much harm done but then—snow is new and someone has to enjoy it. Yes, this man even had a "lawn" to drive over in chasing his friend home.

* * * *

So you don't like this issue very well—too bad we can't all go home like you do, but someone has to stay on the job and two men can't do the work of six even under the N. R. A.

* * * *

We understand that the president of a certain class ran into difficulties and created considerable comment with his first meeting. Yes, when things get more regular your preferences won't be quite so obvious to others, who don't quite appreciate your efforts.

* * * *

Well we can now wonder what happened to the football team when they went off training. The City of Troy certainly has its opportunities for any man. From previous years' experience some of the boys might have lost something, perhaps a watch, if they had one.

* * * *

Did you ever freeze your hands (or something?) Drop in at the TECH NEWS office some Sunday afternoon and enjoy one of the most modern refrigerating plants. Air conditioning not so good.

* * * *

The E. E. Lab saw its fill of smoke this last week. Two wary, and careful (occasionally) Senior Mechanics, entertaining themselves, as well as others, last Wednesday, enjoyed one of the most favorite pastimes of the chemists—breaking things. However, they didn't exactly break, but they succeeded in burning out two transformers enveloping themselves in a cloud of smoke. The instructor, very much put out, decided to clear up the matter and reconnected the apparatus and set things going again. Well you can imagine his embarrassment when the rest of the lab lost him in the clouds of issuing white smoke. Of course the students felt better for how could an instructor or professor give them a zero when he got the same himself. The reason for the entire smoke screen was the use of a new instrument on which the connections were in reverse of the usual order. Well—zero for you and zero for me or duck egg to duck egg and eight hands around.

* * * *

Well we're glad to hear that the football team at least thinks they're good. Why don't some of them throw away

(Continued on Page 7, Col. 4)

PHI SIGMA KAPPA

Founded at Mass. State College
March 15, 1873*
Active Chapters—50

Epsilon Deuteron Chapter
Founded
June 3, 1915
Total Membership—9,693

ACTIVE MEMBERS

Faculty members—Dr. A. W. Duff, head of Physics Departments, Professor F. W. Roys, head of Mechanical Engineering Department, Mr. D. G. Downing, instructor in Mechanical Engineering, and Mr. E. C. Milde, instructor in Physics and assistant to Alumni Secretary.

Graduate student—Thomas E. Decker.

Class of 1934—Sumner A. Norton, Vincent F. Buell, George V. Sargent, Henry C. Ashley, Theodore F. Hammett, and Richard L. Goodwin.

Class of 1935—William E. McKay, Joseph A. Johnson, Charles S. Smith, Charles C. Puffer, William E. Wyman, Roland L. Nims, H. Victor Leckie, Frank O. Holmes, Robert L. Richmond, Eric W. Soderberg, Charles M. McElroy, Julius L. Gould, and George F. Hodgkinson.

Class of 1936—William R. Hannah, William C. Maine, **Herbert J. Erickson,** Carleton W. Borden, Vincent O. Stromberg, John R. Brand, Leonard W. Johnsson, and Harold N. Pierson. Pledges—George E. Brooks, William Miseveth, Allen C. Chase and Alfred C. Ekberg.

*In 1902 six men of the Institute founded Theta Chi local fraternity. When a chapter of the national fraternity Theta Chi came to the Institute in 1909, the name was changed to Kappa Xi Alpha, with the chapter house at 11 Dean Street. In 1915 they were granted a charter as Epsilon Deuteron chapter of the national fraternity, Phi Sigma Kappa.

MEN WANTED!

Several local churches would like to have Tech men available as substitute Sunday school teachers for boys' classes. Also, there are numerous boys' organizations in the city which would be very glad of Tech men as leaders. Have you had experience in either or both of these fields? If so, wouldn't you be interested? If not, wouldn't you be interested anyway? This is an excellent opportunity for us to be of service to the community. Please see either Mr. Paul Swan or Ray Schuh; or drop a note in Boynton mail box.

EDUCATIONAL EXPERIMENT

On September 25, 1933, a new departure in collegiate education in the United States had its beginning. On that date, an infant scholastic institution in North Carolina known as Black Mountain College, opened its doors. Few people knew of its humble beginning, for its enrollment included only thirty names, and its faculty number fifteen.

Black Mountain College is a pioneer in the field of higher education, a laboratory in which the feasibility of new ideas in education will be proved by experiment. The financial status of the college is sufficiently strong to carry it through one year. If the ideals on which the institution is based are found to be sound, it will have little difficulty in carrying on the work.

The program to be followed by the founders of Black Mountain is not complex. The college will have no board of trustees. The faculty will decide the policies of the college, provide for its administration and elect from their number a president, who will hold the chair only as long as he has the support of the body electing him.

Athletics will be entirely of the intramural variety with no intercollegiate competition at all. There will be no system of marking whatsoever. At the end of two years in the junior college, the student will take an examination to gain admittance to a senior college. To receive a diploma, each student will be required to pass a comprehensive examination given by a professor of another institution. For brilliant students, four years may not be required to complete the course. There will be no credit or hour requirements for graduation. Under the supervision of his instructors, each student will plot his course and cover it as slowly or as quickly as he cares to, the scholars working hard, and the other students learning to be scholars. There are many features of this plan which show the influence of the English universities on American ideas of college education.

GLEANINGS

Washington (IP)—After a conference with a committee of educators headed by President Lloyd H. Marvin of George Washington University here, Hugh Johnson, national recovery chief, issued a ruling that schools, colleges, universities, churches, hospitals and charitable institutions were to be exempt from the provisions of the National Recovery Act.

A letter going out to educational institutions affected from Dr. Marvin's committee, says in part:

"This ruling means that non-profit-making institutions under private control have the same status as have state and municipal institutions with regard to the N.R.A. The are exempt from the provisions of codes.

"This does not mean that they should not voluntarily meet as far as possible the specifications of the President's agreement and co-operate with the President in every way to hasten national recovery."

The committee of educators was appointed by Charles R. Mann as director of the American Council of Education.

BASKETBALL

(Continued from Page 1, Col. 1)

derickson of Holden, forwards; Carl Svenson of Worcester, center; and Whitey Hiller of Windsor, Conn., with Andy Sandquist of Braintree as guards. Perhaps this season's results may not be astounding on account of inexperienced players, but there certainly is a wealth of material to be developed for the future.

SOCCER

(Continued from Page 3, Col. 4)

by the great playing of the Normal School team, Tech played a beautiful brand of soccer. Every man played way over his head. Tech's score came on an unassisted corner kick by Jack Brand, which hit the further goal post and bounced back in. Outstanding for Tech were Captain Sargent, playing his last and probably greatest game, and Willie Hebel.

With Sargent the biggest loss through graduation, prospects for next season are very good. The forward line will lose only Norm Monks, who played a great game all year. The only backs to go are Whittum and Ashley. The big problem, undoubtedly, will be to uncover another goalie.

FOOTBALL

(Continued from Page 3, Col. 5

quarter. Tech advanced to the five-yard line no less than five times, and continually outplayed their opponents. The breaks went against them, however, on every occasion. Many passes were intercepted and fumbles at the crucial moments being to blame for their setbacks.

The outstanding player for the year was without doubt Tom McNulty. His work at end was really great and kept his team in the running many times when things were going against them. Hiller's playing in the backfield was another feature of the team. His long kicks and great defensive play were responsible for keeping the ball in the enemy territory. Freddy Cole the flashy little back, put much of the color into the game with his spectacular gains against much bigger opposition.

With only a few men graduating, and the possibility of the return of several other players next year the prospects of a strong team for the coming year appear bright. With these, the oncoming freshmen, and new men, next year's team ought to be a considerable improvement over this year's team.

SOPH SOCCER TEAM BEATS FROSH 5-0

Soph Varsity Too Strong for Inexperienced Frosh Players

The Sophomore Soccer team, composed almost entirely of varsity men, trampled a completely inexperienced Freshmen aggregation deep into the mud and slush on Alumni Field, Saturday, to the joyful tune of 5 to 0.

The Sophomores seem to have run amuck with the weather man, but this year, though handicapped, they didn't need the breaks of the game to pull it out of the fire. (Who said "fire?" It was plenty cold.)

The scoring began almost as soon as the game had started. In the first period, Bill Clark started the snow-covered ball on its initial journey through the goal, only after it had slithered off legs, and in and out of the goalie's arms. A few minutes later, Carl Borden thought that it was about time for another score so he put his foot against the pill and said "Go" and it went, ringing up number two.

In the second half the Sophs started with three fresh forwards and a new halfback in a desperate attempt to stave off something or other. Anyway, through the Herculean efforts of the entire left side of the line, they were able to take the ball through the opposing backs, and, after several good stops by Tom O'Neil, Borden was able to push through the fifth and final score of the day.

Capt. Brand, Borden, Erikson, Gurnham, and Osborn were the shining lights of the Sophs.

The lineups:

SOPHS		FROSH
Maine	g	O'Neil
Erikson	lf	Worthley
Osborn	rf	Wright (Farrar)
Gurnham	chb	P. Clark
Ekberg	rhb	Hyman, Capt. (Lucas)
Fowler	lhb	Powell (Leach)
Borden	cf	Dickson (Brand)
Dahlstrom	ir	McKnight (Cox)
Holt	il	Smith (Hyatt)
Clark	ol	Willard (Sherwin)

Time: 4 twenty-minute periods.
Score: Soph 5 Frosh 0.
Referee, Ed. Higginbottom.

INTERFRATERNITY TENNIS

With rather cool breezes, that hint of winter blowing over the Hill the tennis season comes to a close. There are two matches that are still incomplete and in all probability they will remain that way. There was one match played last week on Saturday in which Lambda Chi defeated the Friars 5-7, 6-4, 6-1. The two games that have not been played would not change the order of standing of the teams if they were played. The standing of the teams is:

	Won	Lost	Unpl'd.
1. P. S. K.	8	0	0
2. T. U. O.	7	1	0
3. T. X.	6	2	0
4. S. A. E.	4	3	1
5. P. G. D.	3	5	0
6. L. X. A.	3	5	0
7. A. T. O.	2	5	1
8. Friars	1	6	1
9. S. O. P.	0	7	1

The interfraternity relay races start Dec. 4. Training started Mon., Nov. 20, and the usual six training checks are required for eligibility.

COL. H. L. COOPER TO TALK TO W.E.S.

Pnieprostroy Hydro-electric Project to Be Subject of Talk

Colonel Hugh L. Cooper, one of the world's most prominent engineers, will be the guest of the Worcester Engineering Society at a banquet to be held in the Sanford-Riley Hall dining room next Thursday evening. Following the banquet he will talk on "Russia Today," illustrating the talk with motion pictures and slides.

Among the larger projects with which Col. Cooper has been connected are the Keokuk hydro-electric development on the Mississippi River and the Muscle Shoals development on the Tennessee River. He has also played an important part in the designing and construction of many other projects both here and abroad. He served with distinction during the war as Colonel in the Engineering Corps, and was Chief Engineer at Bordeaux during the time the major reconstruction was being carried on there. He was recalled from France to undertake the Muscle Shoals work.

His most recent enterprise has been as Chief Consulting Engineer on the Pnieprostroy Hydro-electric project, the largest in the world (750,000 H.P.), for the Soviet Government, started in 1927 and completed in 1932. It is about this project that Col. Cooper will talk.

LOST!

FRATERNITY RING

Inscribed L. G. H.
Marblehead, Mass.

Reward—Leave Note in H Box

PHYSICS DEPARTMENT NOTES

Dr. Beth is engaged on a research to test directly the fundamental question whether photons or the particles of energy that constitute light have momentum of rotation as well as linear momentum forward. This is a very difficult investigation and will probably require several months of work.

At the meeting of the Physics Colloquium on Tuesday, Nov. 14, Mr. Lawton presented an interesting summary of recent extensive work on photo-electricity, a branch of physics that is now becoming of very great importance both theoretically and practically. The Colloquium meets on Tuesdays at 4.15 and is open to anyone interested in research in physics.

CAMPUS LOWDOWN

(Continued from Page 5, Col. 3)

some of their conceit and ask someone who watches them. Well we all admit they need plenty of support—they tried under difficulties but it's not all their fault.

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Just imagine eight pages this week. Amazing disclosures, beautiful scenes, and unheard of personages all brought to light in one gala and festive issue of Worcester's most prominent newspaper—(ha-ha!).

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"Variety—the spice of life" is the slogan among the senior electrics at present on Thursday afternoons. The lads have been split into three groups, some to speed merrily o'er hill and dale in the general direction of Whitinsville, others to climb wearily along the New England Power Company's right of ways in order to catch Transmission towers in their native habitat, and the rest to slink warily through side yards and along backyard fences, tracking the elusive kilowatt to its ultimate consumer via the Worcester Electric Light Company's property. The efforts of the three groups are, so far, quite successful to a degree. Those who attend the Whitinsville display of electrical apparatus enjoy a nice long trip down the Blackstone Valley and lots of healthy exercise. The high-tension men scatter themselves over the landscape, climbing all sorts of obstacles to obtain better views of the lines—apple trees being very popular. But the last bunch are not so favored; they must ferret out a block and find the ramifications of the light and power system therein. Already comes news of one unfortunate who, in climbing a pole in order to become on better terms with a mysterious transformer, aroused the family watch-dog, which he declared to be only slightly smaller than a horse. After a dreary ten minutes, the would-be kilowatt-sleuth decided to leap to his fate rather than starve to death, only to be well lapped and pawed over by the canine menace, much to his disgust.

SKEP. CHYMISTS

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tence he finally secured the permit and started off as the one and only stockholder and employee of the Texol Corporation which manufactures extracts.

After describing many of his experiences in attempting to sell at a profit the products of the corporation and at the same time satisfy the governmental regulations, Mr. Romanoff drew the attention of the society to his chemical samples and gave detailed explanations of how some of the various extracts were manufactured. Of particular interest were his genuine and compound vanilla extracts, which in addition to being difficult to manufacture presented economic and biologic problems in their manufacture as well as those of a chemical nature.

The meeting closed at 9:45 P. M. with the seasonal refreshments of doughnuts and Whittum's cider.

C. E. DEPT. NOTES

Last Tuesday, the Architects made an inspection tour of the Warner Memorial at Worcester Academy. This Memorial was given to Worcester Academy by H. P. Warner, moving picture magnate, in memory of his son, who died there. Mr. Hoyle, instructor of Architectural Engineering at W. P. I., had charge of the class, whose purpose was to study the aesthetic qualities of this building, which are presented in a fine example of Georgian Colonial Architecture. This building is not only a thing of beauty but has also one of the most advanced theater arrangements in operation today, with the exception of Radio City. The three dimension movie projector is one of a limited number and the ventilation system, suspended ceiling and nearly perfect acoustic qualities are models for modern architectural engineering.