Annual fall awards banquet Monday in Brookside Park

Steak, football stories and sports awards will spark the annual shindig starting at 6:20.

By "Moose" Henderson

It’s steak time again! The annual Fall Awards Banquet will be held next Monday, December 8, at Brookside Park. The following week, the traditional steak dinner will be set on the table. The steak will be further supplemented by plenty of rolls, butter and milk. After chow everyone will hit back and paw on their elbows. There will be no business as under the direction of Dr. J. Kent Clark.

The main speakers will be Don Paul and Tom Fearns and they will add to the东北 with tales of pro football. The coach will follow with what jokes and stories are left as they introduce their teammates who have really defended the good name of Tech throughout the term. The affair will last up to 9:30.

You can get your ticket from your team manager or from Jim Crosby, Tom Stockebrand, Jack Miles or Moose Henderson.

For those out for athletics, this term’s ticket, hardwood or not, will be at a premium for others they are 25c.

Art prints display in Dobney lounge

On Thursday, December 14th, Mr. and Mrs. Herbert B. Palmer, under the auspices of the Delta Wives Master of Student Houses, will once again bring their collection of prints and reproductions for exhibition and sale. The exhibition will be held in the Dobney Hall Lounge from 10 am to 6 pm and then move to Dobney Lounge on Friday and Saturday from 1-10 pm.

For those who plan to attend

(Continued on Page 6)

Campus Calendar

THURSDAY, Dec. 4
2:00 Student Council, Board of Directors, Faculty, with remarks by Dean Otter.

FRIDAY, Dec. 5
1:30 PCC Women’s Basketball vs. Occidental.

FRIDAY, Dec. 5
7:15 Friday Evening Demonstration of the PCC gym on the campus.

SATURDAY, Dec. 6
10:00 Conference, Home, Country (Veterans and their friends at Mt. San An­

7:00 PCC Basketball vs. Redlands Tournament at Redlands.

SUNDAY, Dec. 7
8:00 Chamber Music Concert

YMACA gives scholarships for Asilemar

In order to assure the best possible representatives from Caltech at the Asilemar student YMCA-YWCA conference this May, the board of directors has a number of scholarships available for those who otherwise might have been unable to go to Asilemar. Some full scholarships of $25 each will be given by Dr. Dahlke for Professors, Sophomores, Juniors or Asilemar students; and several other partial scholarships open to any undergraduate.

Good

The contest is open to all individuals and is competitive as any of those who have once been there will be enthralled maint­

anyone interested in a scholarship with a normal-

should see Wes Hunsen as being as possible, and not later than December 7.

Courage subject of McKinney essay

"The meaning of courage will be the subject of the 1953 McKinney Essay Contest to be sponsored this spring by the Caltech Humanities Division, announced Prof. G. B. Campbell, professor of physics in charge of the contest. The contest is open to all students, and a second prize of $30 will be awarded.

Juniors and Seniors

Only those who are members will be eligible to participate in the event, which will require essays on the subject of courage. Ideas for the essays are to be drawn from the assigned reading. This year’s novels for assigned reading are Stephen Crane’s The Red Badge of Courage and Ernest Hemingway’s The Old Man and the Sea. The essay on this year’s novel, Sapiens, suggests that this can be done during Christmas vacation.

Due in April

The essays are due April 13, 1953. They will be judged by a committee from the English department. The selected essays will be read by all juniors and seniors for entertainment.

AFROTTC rifle team begins practice

Tech’s AFROTTC rifle team begins practice last week. Practice will be held Tuesday, Wednesday and Thursday from 6:00 to 7:00 pm each week at FDC. The range is in the base of the gym of PCC.

Pendulum features French philosophy

The fourth issue of PENDULUM, a French literature magazine, will be available next week. The feature article in this Autumn issue introduces a new feature: "Le Pendule," which had no significant publicity in the past. The article themes were published. The philosophy, Lettrissm, advocates a new approach to art and literature. (Continued on Page 6)

Feynman lecture features tour of world of the atom

"Atoms in Motion" will be the topic of a talk by Dr. Richard P. Feynman, the world-renowned proponent of the concept of the quantum. In his talk he will explain, by the kindle theory of matter, how the atoms and molecules act in certain common conditions. To be a desk or a glass of water seem to be very static things when actually they are very dy­

Atomic people

Dr. Feynman will discuss what his audience to be the size of an atom and then tell them what the world around them looks like. At first there seems to be no order all, with each molecule going on its own way. It is only when one takes in a broad

No such program will take the visitors to every part of the campus where distinctly different types of activity are going on. They have no choice as to what they can see since elaborate traffic control has already been worked out by Dr. William Younts, faculty chief for Student’s Day, and Jack Behnke, undergraduate manager. Meeting in the student houses, guides will take groups of 20 around the campus to the departments of the houses and at noon and seven.

Blowhards

Many new exhibits are being installed on the campus, and some of the most notable is the view into the world of the atom. The most notable is that the view into the world of the atom is being installed on the campus. The tour will be further supplemented by plenty of rolls, butter and milk. After chow everyone will hit back and paw on their elbows. There will be no business as under the direction of Dr. J. Kent Clark.

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Student Day

On this third annual Student Day, the staff of the California Tech would like to extend a hearty welcome to all the visiting freshmen here today (that sounds dull enough to start with). Cal-tech is all decked out in its best to impress any future Techno, and you will hear all the virtues of Cal-tech extolled; you'll have lectures, visits to museums, and just plain ball about what goes on at Tech; each department is putting on demonstrations and giving talks about its most spectacular, or interesting (7) feature. These demonstrations and lectures will be interesting enough, but all they are not of Cal-tech The real Caltech is in its people. Get to know them and you know most of what Tech is. You are eating lunch with us in the Student House; take that opportunity to get acquainted. All the students here have ideas about Tech and they will probably be able to tell you about them. Actually you are not even going to get much out of reading this paper, so get into that ball session over there, that’s where Caltech really is.

President’s Message

Graduate instruction in undergraduate classes has been the major topic of discussion at Student Faculty meetings for the past two months. During these two meetings a considerable amount of time was devoted to discussion of the Lovejoy report of 1930 on this topic and of the actual efforts that have been made to insure and maintain the high level of graduate instruction. Classroom visitation by the faculty member in charge of the course has been the policy of the past two years. This program has had its shortcomings in not being enforced. The course has been the policy of the Student Faculty Relations Committee to make to insure and maintain the high level of graduate instruction.

Department of Things We Feel Could Have Been Said More Simply:

... the width of the monitor should not be less than twice the height of its window, nor should the height be more than half its width.

Also in this department we feel we should include the word “Villipendency” which appeared in last week’s letter in the Tech. Anyone that uses a semiprepitium villipendium with such as should be shot. We should like to post a lemma for letter writers, namely, simplicity is best.

Any who think the typesetting of this paper could be improved certainly has a legitimate gripe.

Yummy!

Tickets are now on sale for Luke Hoggenson’s coming astronomical, gnomastrophic performance. It seems poor Luke made the sad mistake of vowing that if a certain party finished the copious quantity of food before him, he (Luke) would gladly eat the certain party. Said party came true, and now Luke has a free meal coming. Don’t play with your food Luke, EAT!

The Grand Award for casual attire goes to Professor John Gee, in his favorite collar styles

White’s Smart solid colors! With the best-styled collars in the world

ARROW SHIRTS

Shirts – ties – underwear – handkerchiefs – sports shirts

Costumes: $3.95 up

HOTALING’S

921 East Colorado St.
Free Parking Near Location

ARROW SHIRTS worn by the entire student body.

Graduate teaching assistant situation are interesting. They are in charge of a considerable portion of the entire student body. This column will be an attempt to answer the many questions that graduate assistants receive. The repartee of questions is being asked, and the jobs assigned to them. The teaching jobs vary from merely graduate students being responsible for almost all the teaching of an undergraduate subject, to being responsible for the entire student body.

(Closed On Page 4)

The biggest wheels on campus

Department of Things We Feel

(Closed On Page 4)

(Closed On Page 4)
Today, the December 1952 issue of California Tech features articles on various topics, including sports, campus life, and social events. Here are some highlights:

**Debaters setting records this year**

One of the less frequently heard about, yet very active extracurricular activities at Caltech is the forensics program, encompassing debating, interpretive reading, extemporaneous speaking, discussion, and many other types of oratory. The sponsoring of Dr. Lester McCreery, the forensics teams have already won several interscholastic tournaments which they won with the outstanding record of four undefeated teams.

**Won again**

At Santa Barbara, two weeks later, Caltech again took first place by having contestants receiving the grade of excellence. The events included in the most discussion and interpretive renditions were oratory and extemporaneous speaking.

The individuals participating in the interscholastic activities include Jim Short, Tom Bergstrom, Bob Wolfe, Martin Rock, Jim Enright, Kim Malville, Miles Nassos, Ray Orlisch, Bill Linnely, Myron Block, Marvin Hamrick, Sig Porter, William Ribble, Mike Reel, Paul Lindo, John, Van Blueem, Irwin Rubenstein, Herb and Leon Shamonson.

**Choke!**

He: I suppose you dance?
She: Oh, yes. I love to.
He: Great, let’s do that instead!

**Letters**

“I would like to thank, on behalf of the Caltech YMCAs all those who worked on the Fitness drive, as well as those who gave so generously. Approximately $2500 of the goal of $2000 has now been raised, and all the solicitation cards have been turned in yet. ‘Those I especially want to thank for their support in making the drive a success are Jim McMartin, chairman; Mr. Lantau and Ralph Kismescel; class chairman, Jerry Platoff, Miles Nassos; Leon Shamonson; and David Stevens; and Leo Diggler, producer. Also those chairman men Al Holgerman and Van Walkley, with Dave Clark, George Moore, and Bill Gardner, as well as Bob Stinton on publicity.”

**The space Beavers**

By WALT LEE

The December Astounding, now on sale, contains The Tin Man’s Traversal by David Fox, Feynman’s interpretation of the problem of electron traveling backwards in time is contained.

The January, 1953 issue—on sale December 17, 1952—will feature Paul Anderson’s first reactor at the Argonne Laboratory. Also included is “The First Power Unit,” data on the new nuclear reactor at the Argonne Laboratories, which produces more radioactive material than it uses and produces power at the same time.

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History and future of 200” scope is Astro lecture

The Astronomy Department presents this year’s program of the department of astronomy will include many exhibits of interest to the scientifically minded, plus a talk by graduate student Dale Vrabec.

In the afternoon a one hour talk entitled “The History of the Telescope” will be given by great student Dale Vrabec. This will include a brief resume of the development of the telescope, touching upon much interesting points as the growth of Mt. Wilson into the astronomical center that it is today.

The major part of the time, however, will be utilized in a discussion of the three-year operational history of the Mt. Palomar 200 inch reflector. What is being done with the world’s largest telescope? What is the latest word on the red shift, on interstellar gas, on the composition of the stars, on the structure of the metagalaxy? What can we hope will be accomplished in the near future at Mt. Palomar? These are some of the questions which Dale Vrabec will try to answer. Everyone is sure to see satisfaction this Saturday afternoon.

The Doug Carlo Monte Carlo method feature of math lecture

Contrary to popular opinion, mathematics is more than the arithmetic which trips us up to solve the problems originally proposed by the Egyptians of the Phoenicians of through a great deal of chemical engineering.

Mr. Wilmington, engineer of the Du Pont Company, will describe the interesting point as the growth of Mt. Wilson into the astronomical center that it is today. The major part of the time, however, will be utilized in a discussion of the three-year operational history of the Mt. Palomar 200 inch reflector. What is being done with the world’s largest telescope? What is the latest word on the red shift, on interstellar gas, on the composition of the stars, on the structure of the metagalaxy? What can we hope will be accomplished in the near future at Mt. Palomar? These are some of the questions which Dale Vrabec will try to answer. Everyone is sure to see satisfaction this Saturday afternoon.

THE PLACE TO GO FOR BRANDS YOU KNOW

Vogel and Cathey’s

Men’s Store

459 E. Colorado, Pasadena

THE Du Pont DIGEST

Plant and Equipment

Design and the Engineer

At Du Pont, men with many types of training translate laboratory developments into full-scale production. Among the most interesting fields for engineers at Du Pont is the design of plants and equipment.

It takes ingenuity of a high order to translate a small-scale laboratory operation into all-out commercial operation. Design engineers cannot always use purchaseable equipment to solve an engineering problem. It is often necessary to design equipment with considerable adaption. About half of the time at Du Pont, entirely new equipment must be designed because of the novelty of the process developed by research. For example, a number of unusual problems were involved in designing the equipment and plant for a process in which benzylidienemodine, one of the intermediates for nylon, is made from furfural, derived from such agricultural by-products as cornmeal and husks of cottonseed, oats and rice.

In this conversion, these steps are involved:

C₆H₅OCH₃ + HCHO → C₆H₅OCH₂CHO

Heat

C₆H₅OCH₂CHO + C₂H₅OH → C₆H₅OCH₂CH₂OH

C₆H₅OCH₂CH₂OH + NaCl → C₆H₅OCH₂CH₂ONa + HCl

The theorem Dr. Beherbush will propose is that L, the perimeter, equals (pi) x (the average width of the curve). The average width is determined by selecting a set of random widths and averaging them.

It is clear that this theorem holds in case of a circle, where c equals (pi) x d equals (pi)r, where r is the diameter.

The theorem will be extended further to cases in which the area of a convex body equals (pi) x (the average area of the area of the circle that an arc encircles).

Although most of these problems involve a great deal of chemical engineering, also needed on the designing team were mechanical, electrical, civil, metallurgical and industrial engineers. Thus design work at Du Pont is open to men with many types of training, and there is abundant opportunity for all.

OLD DOM gets turkey dinner for Thursday, December 4, 1952

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Although most of these problems involve a great deal of chemical engineering, also needed on the designing team were mechanical, electrical, civil, metallurgical and industrial engineers. Thus design work at Du Pont is open to men with many types of training, and there is abundant opportunity for all.
High potential lab to shower million-volt sparks in show

Bolts of man made lightning will streak and thunder across the ceiling of the High Voltage Laboratory this Saturday afternoon at three different times, 1:50, 2:30, and 3:30 pm. All members of the laboratory will be there to witness the demonstrations presented by Mr. J. K. Conner and his grad assistants. Cylindrical electrodes with million-volt charges will be set up by the million volt transformers on busbars that run the entire length of the High Volt Lab. The half-inch sparks will seem almost too close to those on the second balcony. Using the same transformers, a spark between two diverging wires will climb majestically to the ceiling in the Jacobs Ladder exhibit.

The two million volt spark generator will be used to drive copper wire, split blocks are looking for. In the limit it who is in charge of wood to fragments and make is the exact value. And (on the left) the methods of formulation.

The determination of crystal structure, on which Dr. Bergman has done much work, will be covered next. Mention will be made of methods of determination such as electron diffraction, and most important of all—X-Ray analysis.

In conclusion there will be a discussion of several interesting classes of crystals. Several scale models of specific crystals will be available to illustrate the points under consideration. The Inorganic crystals will be illustrated by sodium chloride and others, the metals by copper and iron, and there will be some general remarks on some of the simpler organic crystals.

"Incomplete grade" to mean just that

In an attempt to avoid the idiosyncrasy of the grade Incomplete the Faculty, on November 24, 1952, voted to change the rule governing this grade to read as follows: "The grade of Incomplete is given only in the case of sickness or other emergency which justifies the non-completion of the work at the usual time. An Incomplete will be recorded only if the reasons for giving the Incomplete are stated to the Instructor on a form which will be sent with such grade sheet and only if, in the opinion of the appropriate committee, (Freshman or Upperclass, for undergraduates and Master of Science Candidates and Graduate Study for those working for a Bachelors or Ph.D. degree) the reasons justify an Incomplete. If, in the opinion of the appropriate committee, the Incomplete is not justified a Condition will be recorded.

L. W. Jones, Registrar

CAMPUS BREWINS (Continued from Page 4)

(X Continued on Page 7)

Lucky Taste — Better!

They’re made better to taste cleaner, fresher, smoother!

Ask yourself this question: Why do I smoke?

You know, yourself; you smoke for enjoyment. And you get enjoyment only from the taste of a cigarette.

Lucky Strike tastes better-cleaner, fresher, smoother! Why? Because Luckies are made better to taste. And, what’s more, Luckies are made of fine tobacco. Lucky Strike—Lucky Strike Means Fine Tobacco.

So, for the thing you want most in a cigarette... for better taste—cleaner, fresher, smoother taste... Be Happy—Go Lucky!

For a cleaner, fresher, smoother smoke... Be Happy—Go Lucky!
A VAST SOURCE OF U.S. OIL STILL UNTOUCHED!

1. Many Americans have probably never heard about oil shale—one of our country's greatest natural resources. Shale is a rock formation that contains kerogen—a solid that breaks down into oil and coke when heated. There are a number of shale formations in the U.S., the richest of which is in the Green River Basin of Colorado and Wyoming. This single 1000-square-mile deposit contains three times as much oil as the total proven crude oil reserves of the U.S.!

2. However, the big problem has been how to extract the oil from this shale on an economical basis. Union Oil research men have been experimenting with shale oil extraction since 1943. One of their accomplishments was the development of a retort that can extract shale oil far more economically than any previous method.

3. This retort—along with improved mining and refining techniques—has reduced the cost of producing oil from shale more than most people realize. And each year the cost of finding and producing crude oil continues to rise. At some time, then, it is probable that oil can be obtained from shale at a cost competitive with crude oil.

4. When this will come about is anybody's guess. But one thing is certain: the American people can be sure that this natural resource of theirs will be developed at the earliest possible date with the greatest efficiency only if private enterprise is left free to do the job. For our competitive private enterprise system has demonstrated time and time again that it can develop better products, for more people, at lower prices than any method yet devised by man.
Anson, Tyler lead Tech into Redlands tourney

Basketball season really got under way with the Redlands Tourney coming up today through Saturday. Oiler Coach paired with Whittler in the top bracket this afternoon. The other game in the top bracket is Redlands vs. Chaminade tonight. The bottom bracket included a potential against Westmont and Pomona against Pasadena Nazarene. If Tech can come away with Whittier, the probable power in the SCI this year, there will be a smooth sailing to the finals. Thoree the opponent will almost certainly be Nazarene.

Tyler improves

Leading the Beavers into the tournament is conference high-scorer, Pete Anson. Anson, who was named Dave Steiner at forward, and Art Britt and Bill Chambers at guard. Tyler has also shown exceptional improvement over last year. The defensive unit has never looked over against the small school, Coast Conference runner-ups last year. Staging back from this defeat, the Beavers took a good one from Cal Poly, 65-45.

Tech beats Cal Poly

Led by "Thirty-point" Hopkins, Nazarene downed Tech in a spirited battle, 95-68. This is just the first step on the road back on the court, against Nazarene and Cal Poly respectively while Anson caged 20 and 26 in these two contests. Tech beats Cal Poly

Soccer team upsets Cal-Poly and UCLA

Three Techmen made the All-Conference, John Goenett for a driving game at defensive guard, Neil LaTourette as shooting guard and he was even better as defensive line- man, and Gene "Buddy" Muhlbarger at offensive tackle. Whittier's Ray December who made both offensive and defensive teams also made All-Coast squad.

Over the wall

By John Wall

About this time of year most coaches sit back on the bench, as they have never known to turn the year off the back-to-back, ball and water polo seasons, and that sets the mind that Tech never wins an athletic contest. Fortunately we who would do this are wrong, for there walks among us a team of champions who can win.

The soccer team has beaten or refused a challenge by every major soccer team on the coast. If this holds them through the two more games, Tech will have its second Pacific Coast Championship team (this may be disputed by SF State who refused Tech's challenge for no apparent reason). It is hoped that this school can muster a few dollars to send the team to the national finals. Also a salute to the irrepressible cross country squad which ended up with a lone 3rd in a very rugged conference.

Next Monday is the sports banquet, so awards are in order for the football team, To Moose Henderson for the hardest blocking. To El Gibie, and Eric Ward for the most improvement. To Bruce Kueker for the most faithful. To John Koeder for the prize for being the flattest foamed gal catching cath in the business. To Al Johnson, which Ward the prize for the hardest running. To Walt Plant for my respect for being the keystone of the offensive line. To Pat Nevis and Nell Stefaniades for heading and for it. And to Ivan Moes and Pete Mahringer the thanks for their fine assist in scouting and teaching.

Most of all I raise my pen in salute to the assistant who have nothing but losses to remember, but whose fine spirit took the team through a tough season. The players in the class of '55 will have to go a long road to fill the gaps left by such as Stafisales, Fazio, Walker, Tallman, et al.

CAMPUS BREWINGS

(Continued from Page 5)

Hills over the lovely Forest Lawn cemetery. Bob Koeter, who was reluctantly talked into standing at the front of the line, announced by friend Sam Wilkes, made up for the extra presence. Wilkes, in turn, opened the track of the same

CONFERENCE IN THE CLOUDS

Among the undergraduates on any college campus, you'll find the talk reaching up to the clouds. And once in a while — in a classroom, around a study table, or even in a hull session — a really big idea is born.

Big ideas come, too, from the men and women in laboratories, business offices, and on the job. But often these professionals are exploring a path first glimpsed in college.

How do we know? Because of the many college people who have come into the Bell System, where big ideas and a lot of dreams have taken their place in progress. The human voice, carried along a wire, first across town, then a city, a nation, across the ocean, then across the globe, is one of these big ideas, and so are the music and pictures and things happening delivered into cities and hamlets across the land by radio and television networks.

We're always looking for the men and women who get big ideas — whether they're about people, or machines, or ways of doing things. Your Placement Officer can give you details about opportunities for employment in the Bell System.
The best lift news of the season is that Mount Baldy will go into operation this winter. Bad weather can slow, but not stop, the completion of the $350,000 development, including two chair lifts of about 3000 feet each, a skyliner, tavern, and numerous trails. Holiday Hill, Snow Valley, and Teide Mountain have spent a total of $250,000 on some much-needed improvements, including a second chair lift at Holiday Hill.

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At the beginning and end of the six-months, each smoker was given a thorough examination including X-rays, and covering the sinuses, nose, ears and throat. After these examinations, the medical specialist stated...

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